

edition 2013

General catalogue



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General catalogue



Bremas Ersce SpA
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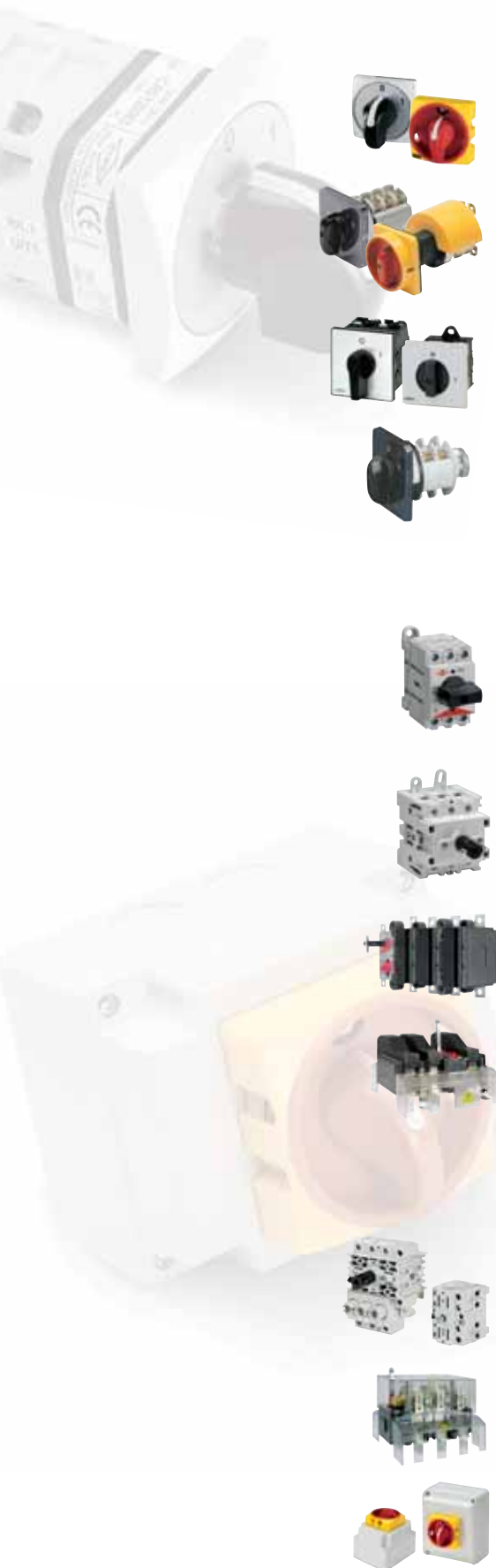


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CR series

CA series

CQ series

Cam switches

CR Series

page 13

12 ÷ 40A

IP20 terminals protection

IP66 handle protection

- Fixing:
- rear mounting with screws or single hole ø22 mm (0,87") and nut
 - base mounting with screws or on DIN rails

CA Series

page 55

12 ÷ 630A

IP00 terminals protection

Up to IP66 handle protection

- Fixing:
- rear mounting with screws
 - base mounting with screws

CQ Series

page 81

12 ÷ 32A

IP20 terminals protection

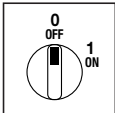

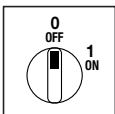

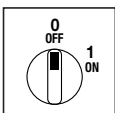
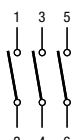
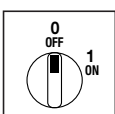
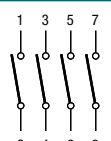
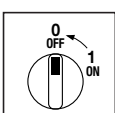
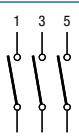
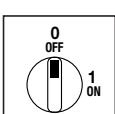
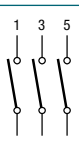
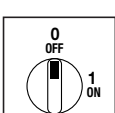
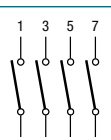
IP66 handle protection

Easy made wiring

Compact dimensions

- Fixing:
- rear mounting with screws
 - base mounting with screws or on DIN rails
 - base mounting on DIN rails with escutcheon plate for standard 45mm (1.77") knock-out

Circuit diagrams

Switches																													
plate	diagram	function	circuit diagram	contact/element description	element no.																								
	0001	ON-OFF switch 1 pole		<table border="1"> <tr><td></td><td>0</td><td></td><td></td><td>CR</td><td>60°</td></tr> <tr><td></td><td>1</td><td>X</td><td></td><td>CA</td><td></td></tr> <tr><td>Contact</td><td>1</td><td>3</td><td>4</td><td>CQ</td><td>90°</td></tr> <tr><td>Element</td><td>1</td><td></td><td></td><td>Angle</td><td></td></tr> </table>		0			CR	60°		1	X		CA		Contact	1	3	4	CQ	90°	Element	1			Angle		1
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	1	X		CA																									
Contact	1	3	4	CQ	90°																								
Element	1			Angle																									
	0002	ON-OFF switch 2 pole		<table border="1"> <tr><td></td><td>0</td><td></td><td></td><td>CR</td><td>60°</td></tr> <tr><td></td><td>1</td><td>X</td><td>X</td><td>CA</td><td></td></tr> <tr><td>Contact</td><td>1</td><td>3</td><td>4</td><td>CQ</td><td>90°</td></tr> <tr><td>Element</td><td>1</td><td></td><td></td><td>Angle</td><td></td></tr> </table>		0			CR	60°		1	X	X	CA		Contact	1	3	4	CQ	90°	Element	1			Angle		1
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	0003	ON-OFF switch 3 pole		<table border="1"> <tr><td></td><td>0</td><td></td><td></td><td>CR</td><td>60°</td></tr> <tr><td></td><td>1</td><td>X</td><td>X</td><td>CA</td><td></td></tr> <tr><td>Contact</td><td>1</td><td>3</td><td>5</td><td>6</td><td>8</td></tr> <tr><td>Element</td><td>1</td><td>2</td><td></td><td>Angle</td><td></td></tr> </table>		0			CR	60°		1	X	X	CA		Contact	1	3	5	6	8	Element	1	2		Angle		2
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	0035	ON-OFF switch 3 pole with spring return to "OFF"		<table border="1"> <tr><td></td><td>0</td><td></td><td></td><td>CR</td><td>45°</td></tr> <tr><td></td><td>1</td><td>X</td><td>X</td><td>CA</td><td></td></tr> <tr><td>Contact</td><td>1</td><td>3</td><td>5</td><td>7</td><td>8</td></tr> <tr><td>Element</td><td>1</td><td>2</td><td></td><td>Angle</td><td></td></tr> </table>		0			CR	45°		1	X	X	CA		Contact	1	3	5	7	8	Element	1	2		Angle		2
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	00G3	ON-OFF switch 3 pole with padlockable handle		<table border="1"> <tr><td></td><td>0</td><td></td><td></td><td>CR</td><td>90°</td></tr> <tr><td></td><td>1</td><td>X</td><td>X</td><td>CA</td><td></td></tr> <tr><td>Contact</td><td>1</td><td>3</td><td>5</td><td>7</td><td>8</td></tr> <tr><td>Element</td><td>1</td><td>2</td><td></td><td>Angle</td><td></td></tr> </table>		0			CR	90°		1	X	X	CA		Contact	1	3	5	7	8	Element	1	2		Angle		2
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Switches																																																												
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	0005	Change-over switch 1 pole		<table><tr><td>2</td><td></td><td></td><td>X</td><td></td><td>CR</td><td>60°</td></tr><tr><td>0</td><td></td><td></td><td></td><td></td><td>CA</td><td></td></tr><tr><td>1</td><td></td><td></td><td>X</td><td></td><td>CQ</td><td>45°</td></tr><tr><td>Contact</td><td>1</td><td>2</td><td>3</td><td>4</td><td colspan="2">Angle</td></tr><tr><td>Element</td><td colspan="5">1</td><td></td></tr></table>	2			X		CR	60°	0					CA		1			X		CQ	45°	Contact	1	2	3	4	Angle		Element	1						1																				
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	0007	Change-over switch 3 pole		<table><tr><td>2</td><td></td><td></td><td>X</td><td></td><td>X</td><td></td><td>X</td><td>CR</td><td>60°</td></tr><tr><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>CA</td><td></td></tr><tr><td>1</td><td></td><td></td><td>X</td><td></td><td>X</td><td></td><td>X</td><td>CQ</td><td>45°</td></tr><tr><td>Contact</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>Element</td><td colspan="2">1</td><td colspan="2">2</td><td colspan="2">3</td><td colspan="3">Angle</td></tr></table>	2			X		X		X	CR	60°	0								CA		1			X		X		X	CQ	45°	Contact	1	2	3	4	5	6	7	8	9	Element	1		2		3		Angle			3					
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Motor control switches 3 phase

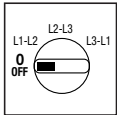
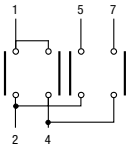
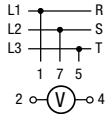
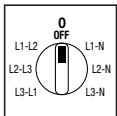
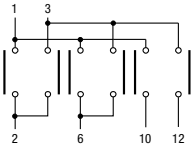
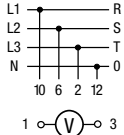
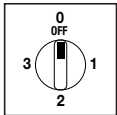
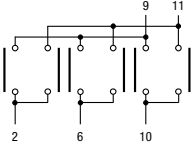
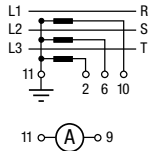
Motor control switches 3 phase

plate	diagram	function	circuit diagram	contact/element description	<div><div><div>L1</div><div>L2</div><div>L3</div></div><div><div>R</div><div>S</div><div>T</div></div></div>
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element no.| | 0008 | Reversing switch 3 pole | | | | | | | | | | | | | | | | |---------|---|----|----|---|---|----|---|----|-------|----|----|----| | 2 | | | XX | | | XX | | CR | 60° | | | | | 0 | | | | | | | | CA | | | | | | 1 | | XX | | | | XX | | CQ | 45° | | | | | Contact | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | Element | 1 | 2 | 3 | | | | | | | | | | | | | | | | | | | | Angle | | | | | | 3 |
	0036	Reversing switch 3 pole with spring return to "off"																	---------	---	----	----	---	---	---	----	----	-------	----	-----	----		2			XX					XX		CR	45°			0										CA				1		XX					XX	XX		CQ				Contact	1	2	3	4	5	6	7	8	9	10	11	12		Element	1	2	3																				Angle						3																																																																																																																																																																																																								
	0009	Changing switch Dahlander pole																					---------	----	---	----	----	---	---	----	----	-------	----	-----	----	----	----	----	----		2	XX		XX	XX				XX	XX	CR	60°							0										CA								1			XX				XX	XX		CQ	45°							Contact	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Element	1	2	3	4																							Angle										4																																																																																																																																																																								
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	0011	Reversing switch Pole changing																													---------	----	----	----	----	----	---	----	----	-------	----	-----	----	----	----	----	----	----	----	----	----	----	----	----	----		2	XX		XX	XX	XX			XX	XX	CR	45°															0										CA																1	XX		XX				XX	XX		CQ																0																										1	XX	XX					XX	XX	XX																	0																										2	XX	XX	XX	XX			XX	XX	XX																	Contact	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Element	1	2	3	4	5	6																													Angle																		6

Motor control switches single phase









Motor control switches single phase							L1 L2	R S	element no.																																																															
plate	diagram	function	circuit diagram	contact/element description																																																																				
		Switch single-phase motor + aux phase		<table> <tr> <td>Avv</td><td>X</td><td></td><td></td><td>X</td><td>X</td><td></td><td>CR</td><td rowspan="3">45°</td></tr> <tr> <td>1</td><td></td><td></td><td></td><td>X</td><td>X</td><td></td><td>CA</td></tr> <tr> <td>0</td><td></td><td></td><td></td><td>X</td><td>X</td><td></td><td>CQ</td></tr> <tr> <td>Contact</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>Angle</td></tr> <tr> <td>Element</td><td colspan="2">1</td><td colspan="2">2</td><td colspan="3"></td><td></td><td></td></tr> </table>	Avv	X			X	X		CR	45°	1				X	X		CA	0				X	X		CQ	Contact	1	2	3	4	5	6	7	8	Angle	Element	1		2								2																					
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Voltmeter & Ammeter switches																																																																																																																			
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	0022	Ammeter switch 1 pole 3 current transformers		<table border="1"><tr><td>3</td><td></td><td></td><td>X</td><td>X</td><td></td><td>X</td><td>X</td><td></td><td></td><td>CR</td><td rowspan="4">90°</td></tr><tr><td>2</td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td><td>CA</td></tr><tr><td>1</td><td></td><td></td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td>CQ</td></tr><tr><td>0</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td>X</td><td></td><td></td></tr><tr><td>Contact</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>Angle</td></tr><tr><td>Element</td><td>1</td><td>2</td><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	3			X	X		X	X			CR	90°	2			X	X	X	X	X			CA	1					X	X	X	X		CQ	0	X							X			Contact	1	2	3	4	5	6	7	8	9	10	11	12	Angle	Element	1	2	3												3																																				
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11

Cam switches

International standards and approvals

Country	USA / Canada	Canada	Germany	Switzerland	Denmark	Norway	Sweden	Finland	Austria	Great Britain	IEC International electrical Commission
Authority	UL investigated according to CSA	CSA International	Verband Deutscher Elektrotechniker	Schweizerischer Elektrotechnischer Verein	Danmarks Elektriske Materielkontroll	Norges Elektriske Materielkontroll	Svenska Elektriske Materielkontroll-anstalten	Sähkötar-kastuskeskus	Österreichischer Verband für Elektrotechnik	British Standards Institution	
Mark of standard	 ⁽¹⁾ c _{UL} LISTED	 ⁽¹⁾ C _{RA}	 ⁽²⁾ SP	VDE 0660 ⁽³⁾	 ⁽⁴⁾ D	 ⁽⁴⁾ N	 ⁽⁴⁾ S	 ⁽⁴⁾ FI	 ⁽⁴⁾ OVE	BS ⁽³⁾ EN 60947	IEC 60947 ⁽⁴⁾
CA012	•		+	+	+	+	+	+	+	+	+
CA016	•		+	+	+	+	+	+	+	+	+
CA020	•	•	+	+	+	+	+	+	+	+	+
CA025	•	•	+	+	+	+	+	+	+	+	+
CA032	•	•	+	+	+	+	+	+	+	+	+
CA040	•	•	+	+	+	+	+	+	+	+	+
CA050	•		+	+	+	+	+	+	+	+	+
CA063	•	•	+	+	+	+	+	+	+	+	+
CA100	•	•	+	+	+	+	+	+	+	+	+
CA200		•	+	+	+	+	+	+	+	+	+
CA400		•	+	+	+	+	+	+	+	+	+
CA630		•	+	+	+	+	+	+	+	+	+
CQ012	•	•	+	+	+	+	+	+	+	+	+
CQ016	•	•	+	+	+	+	+	+	+	+	+
CQ025			+	+	+	+	+	+	+	+	+
CQ032			+	+	+	+	+	+	+	+	+
CR012	•		+	+	+	+	+	+	+	+	+
CR016	•		+	+	+	+	+	+	+	+	+
CR020	•		+	+	+	+	+	+	+	+	+
CR025	•		+	+	+	+	+	+	+	+	+
CR032	•		+	+	+	+	+	+	+	+	+
CR040	•		+	+	+	+	+	+	+	+	+

• Approved

+ conforms to requirements

Note:

1) UL Approval File E101686

2) CSA Approval File 039540-0-000

3) It is not required to bear a symbol but switches must conform to requirements.

4) IEC does not operate an approval diagram



Cam switches
CR Series



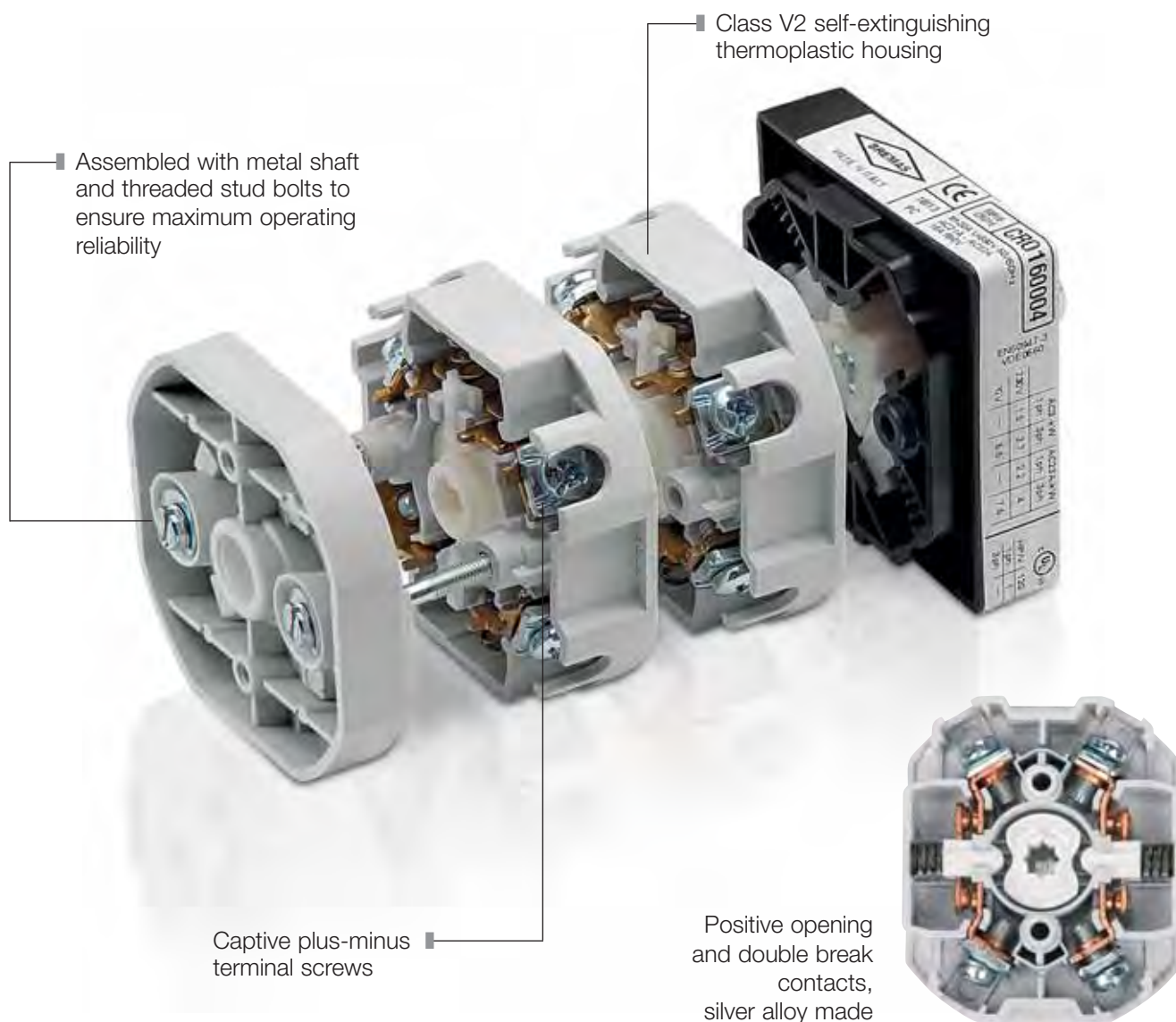
Overview

The **CR series** includes cam switches rated from 12 to 40A (referred to category AC-21A) and with insulation voltage of 690V.

According to the highest market standards, the CR series offers IP 20 terminals protection degree and IP66 handle protection degree.

Available with different mounting systems: rear mount with screws, base mount with screws or on DIN rail and rear mount Ø 22mm (0.87") hole with locking nut.

Diagrams for every application are available: ON-OFF switches, line switches, cam switches for motor control, ammeter and voltmeter switches, multi step switches and other special diagrams can be made on request.



■ Main features

The CR series includes different amperage sizes: **12A, 16A, 20A, 25A, 32A** and **40A**

- Rated insulation voltage **690V**
- **IP20** terminals protection degree
- **IP66** handle protection degree

■ Base mounting

All base mounting items
(BL6 - BK6 - HL6 - HK6 handles)
include a 175 mm (6.89") shaft.



■ Improved connection capability

An additional benefit for this new release of the CR series is the improved connection capability of the terminals, that allows to use wires with larger cross-sections and eases the use of ferrules.

Maximum cross-section is now:

- CR012-020: 4 mm² solid and flex wire (AWG 12)
- CR025-040: 10 mm² solid and flex wire (AWG 8)

■ Customized solutions

More than 10,000 diagrams are available **upon request** to tailor every customer's need
(see page 81)



**Technical
data
IEC 947-3
EN 60947-3**

Rated insulation voltage	Ui	V
Rated operating voltage	Ue	V
Rated impulse withstand voltage	Uimp	kV
Rated thermal current for open switch	Ith	A
Rated operation frequency		Hz
Power dissipation for each pole		W
Rated operating current		
AC-21A Switching resistive loads, including moderate overloads	Ie	A
AC-22A Switching of mixed resistive and inductive loads, including moderate overloads	Ie	A
AC-20A Connecting and disconnecting under no load conditions		
Rated operating power		
AC-23A Switching of motor loads or other highly inductive loads 3 phase - 3 pole	230V	kW(A)
	400V	kW(A)
	500V	kW(A)
	690V	kW(A)
AC- 23A Switching of motor loads or other highly inductive loads 1 phase - 2 pole	110V	kW(A)
	230V	kW(A)
AC-3 Squirrel cage motors: starting, switching off motors during running 3 phase - 3 pole	230V	kW(A)
	400V	kW(A)
	500V	kW(A)
	690V	kW(A)
AC-3 Squirrel cage motors: starting, switching off motors during running 1 phase - 2 pole	110V	kW(A)
	230V	kW(A)
AC-4 Squirrel cage motors: starting, plugging, inching	400V	kW(A)
	230V	kW(A)
AC-15 Control of a.c electromagnetic loads	400V	kW(A)
	230V	A
Rated breaking capability in category in AC-23A (cosφ=0,45)	400V	A
	230V	A
Short circuit protection		
Rated short time withstand current	Icw	A
Rated short-circuit make capacity	Icm	A
Rated conditional short-circuit current		kA
With fuses class gG	500V	A

**Technical
data UL**

Rated insulation voltage	UL	V
Rated operating voltage	UL	V
General use current	UL	A
Rated operating power		
1 phase - 2 pole	120V	Hp
	240V	Hp
3 phase - 3 pole	200V	Hp
	240V	Hp
	480V	Hp
	600V	Hp

**Mechanical
characteristics**

Mechanical life		Cycles x 10
		Cicles/hour
Connections according to IEC 9471-1 and EN 50947-1		
Connecting capability	with flexible wires	Min-Max
		mm ²
	with solid wires	Min-Max
		AWG
Connection terminal screw dimensions		Type
Screw tightening torque		Nm
Protection degree IEC 529 EN 60529		
Terminals		IP
Ambient conditions		
Operating ambient temperature		°C
Storage ambient temperature		°C
Withstand to constant humid according to IEC 60068		
Withstand to cyclic humid according to IEC 60068		

CR012	CR016	CR020	CR025	CR032	CR040
690	690	690	690	690	690
690	690	690	690	690	690
6	6	6	6	6	6
16	20	25	32	32	40
50	50	50	50	50	50
0,27	0,5	0,4	1	1	1,3
12	16	20	25	32	40
12	16	16	20	25	32
-	-	-	-	-	-
3(9)	4(14)	5,5(17)	7,5(24)	8,5(27)	10(32)
4(9)	7,5(14)	9(16)	11(20)	15(27)	18,5(30)
-	-	9(13)	11(15)	15(22)	18,5(27)
-	-	9(9)	11(11)	15(16)	18,5(19)
0,75(8,5)	1,1(12)	1,1(5)	2,2(25)	2,2(25)	3(34)
1,5(8,5)	2,2(14)	3(17)	3,7(20)	3,7(20)	5,5(30)
2,2(7)	3,7(12)	4(13)	5,5(17)	5,5(17)	7,5(24)
3,5(7)	5,5(10)	7,5(14)	9,5(16)	10(17)	15(27)
-	-	7,5(11)	9,5(12,5)	10(14)	15(22)
-	-	7,5(8)	8,5(10)	10(10)	16(16)
0,37(4)	0,75(9)	1,1(13)	1,5(17)	1,5(17)	2,2(25)
1,1(6)	1,5(8)	2,2(12)	3(17)	3,17)	4,5(25)
-	-	3,7(12)	-	-	-
-	-	1,5(4,5)	2,2(7)	2,2(7)	3(10)
-	-	2,2(2,6)	3(5,5)	3(5,5)	5,5(10)
4	6	7	8	8	10
3	4	5	6	6	8
72	112	136	192	216	256
72	112	128	160	216	240
150	240	240	400	400	500
-	-	1500	2000	2000	2000
4	4	5	10	10	10
16	20	20	35	35	50
600	600	600	600	600	600
600	600	600	600	600	600
12	16	20	25	32	40
0,5	1	1,5	2	2	3
1,5	2	3	3	3	5
1,5	2	5	5	5	7,5
2	3	5	5,5	7,5	10
3	7,5	10	10	10	15
5	7,5	10	15	15	20
2					
120					
2x1,5 -2,5	2x1,5 -2,5	2x1,5 -2,5	2x2,5-10	2x2,5-10	2x2,5-10
16/12	16/12	16/12	16/8	16/8	16/8
2x1,5-4	2x1,5-4	2x1,5-4	2x2,5-16	2x2,5-16	2x2,5-16
M3,5	M3,5	M3,5	M4	M4	M4
1	1	1	1,7	1,7	1,7
20					
-25 ÷ +55					
-30 ÷ +70					
2-78					
2-30					

Standard IP66 handles for 2-screw or Ø22mm (0,87") single-hole fixing

Rear mount switch	Handles for screw fixing		
 <p>Rearmount, with screw fixing</p>		RT4	Grey plate 48x48mm, black knob
		RT6 ⁽¹⁾	Grey plate 67x67 mm (2.64"x2.64"), black knob
		RL6 ⁽¹⁾	Yellow plate 67x67 mm (2.64"x2.64"), red padlockable knob (max 3 padlocks)
		RK6 ⁽¹⁾	Grey plate 67x67 mm (2.64"x2.64"), black padlockable knob (max 3 padlocks)
Handles with Ø22mm (0,87") single-hole and nut fixing			
 <p>Rearmount, with Ø22mm (0,87") fixing</p>		GT4	Grey plate 48x48mm, black knob
		GT6	Grey plate 67x67mm (2.64"x2.64"), black knob
		GL6	Yellow plate 67x67 mm (2.64"x2.64"), red padlockable knob (max 3 padlocks)
		GK6	Grey plate 67x67 mm (2.64"x2.64"), black padlockable knob (max 3 padlocks)
Base mount switch	Handles for screw fixing		
 <p>Base mount with screws or DIN rail fixing</p>		BL6 ⁽¹⁾	Yellow plate 67x67 mm (2.64"x2.64"), red padlockable knob (max 3 padlocks),
		BK6 ⁽¹⁾	Grey plate 67x67 mm (2.64"x2.64"), black padlockable knob (max 3 padlocks),
	Handles with Ø22mm (0,87") single-hole and nut fixing		
		HL6	Yellow plate 67x67 mm (2.64"x2.64"), red padlockable knob (max 3 padlocks),
		HK6	Grey plate 67x67 mm (2.64"x2.64"), black padlockable knob (max 3 padlocks),

Possible fixing options in rear mount depend on the combination of the plate with the body of the rear mount cam-switch. All the handles are suitable for 2-screw fixing with 2 holes at 28mm (1.10") vertical distance or 2 holes at 32mm (1.26") horizontal distance.

Note: (1) On request the handle can be supplied in a 4-screw fixing version (for 4 holes at 48x48mm (1.89" x.89") distance).

Optional handles for 2-screw or Ø22mm (0,87") single-hole fixing

Rear mount switch		Handles for screw fixing				
 Rearmount with screw fixing		RT4L	48x48mm (1.89"x1.89")	RT6L ⁽¹⁾	67x67 mm (2.64"x2.64")	Grey plate black padlockable knob (max 3 padlocks), IP66
		RY4L	48x48mm (1.89"x1.89")	RY6L ⁽¹⁾	67x67 mm (2.64"x2.64")	Yellow plate, red padlockable knob (max 3 padlocks), IP66
		RRO	ø 62,5 mm (2.46")			Round aluminium plate, black knob, IP40
Handles with Ø22mm (0,87") single-hole and nut fixing						
 Rearmount with Ø22mm (0,87") single-hole and nut fixing		GT4L	48x48mm (1.89"x1.89")	GT6L	67x67 mm (2.64"x2.64")	Grey plate black padlockable knob (max 3 padlocks), IP66
		GY4L	48x48mm (1.89"x1.89")	GY6L	67x67 mm (2.64"x2.64")	Yellow plate, red padlockable knob (max 3 padlocks), IP66
		GRO	Ø42 mm (1.66")			Round plate without legend, black knob, IP66
Base mount switch		IP66 Handles for screw fixing		IP66 Handles with Ø22mm (0,87") single-hole and nut fixing		
 Base mount with screws or DIN rail fixing		BT4L	48x48mm (1.89"x1.89")	HT4L	48x48mm (1.89"x1.89")	Grey plate black padlockable knob (max 3 padlocks), IP66
		BT6L ⁽¹⁾	67x67 mm (2.64"x2.64")	HT6L	67x67 mm (2.64"x2.64")	
		BY4L	48x48mm (1.89"x1.89")	HY4L	48x48mm (1.89"x1.89")	Yellow plate, red padlockable knob (max 3 padlocks), IP66
		BY6L ⁽¹⁾	67x67 mm (2.64"x2.64")	HY6L	67x67 mm (2.64"x2.64")	

Possible fixing options in rear mount depend on the combination of the plate with the body of the rear mount cam-switch. All the handles are suitable for 2-screw fixing with 2 holes at 28mm (1.10") vertical distance or 2 holes at 32mm (1.26") horizontal distance. Note: ⁽¹⁾On request the handle can be supplied in a 4-screw fixing version (for 4 holes at 48x48mm (1.89"x1.89") distance).

 standard article
 on Request

■ New IP66, 4-screw or Ø22mm (0,87") single-hole fixing handles

■ New fixing plates

new release of the CR series allows various fixing opportunities in the rear mount versions.

In addition to the traditional 2-screw fixing options

- 2 holes at 28mm (1.10") vertical distance
 - 2 holes at 32mm (1.26") horizontal distance
- the new plates allow also 4-screw fixing layouts
- 4 holes at 36x36mm (1.42"x1.42") distance
 - 4 holes at 48x48mm (1.89"x1.89") distance (standard for CR025-040, on request for CR012-020)



■ CR012-020



■ CR025-040

■ A new range of handles with new fixing opportunities

A new range of IP66 handles has been developed in different sizes and fixing options:

- 4 screw fixing: 36x36mm (1.42"x1.42") and 48x48mm (1.89"x1.89") (*)
- Ø22mm (0,87") single-hole and nut fixing

■ Padlockable versions

- 67x67mm (2.52"x2.52"), in yellow/red
- 67x67mm (2.52"x2.52"), in grey/black



Notes:

* possible fixing depends on the combination of the plate with the body of the rear mount cam-switch: please, check the compatibility with the desired fixing layout.

■ Non padlockable versions

- 48x48mm (1.89"x1.89"),
in silver-grey/black and yellow-red



- 64x64mm (2.52"x2.52"),
in silver-grey/black and yellow-red



- 48x59mm (1.89"x2.32") with label holder,
in silver-grey black





















- 64x78mm (2.52"x3.07") with label holder,
in silver-grey black



- Versions with label holder:
 - 48x59mm (1.89"x2.32") version,
for marking labels maximum size
58x10x0,3mm (2.39"x0.39"x0.012")
 - 64x78mm (2.52"x3.07") version:
for marking labels maximum size
42x10x0,3mm (1.65"x0.27"x0.012").
A transparent cover will fix and protect the
label against dust and dirt.



IP66 handles for 4-screw or Ø22mm (0,87") single-hole fixing



Rear mount switch	Handles for 4-screw fixing			
 <p>Rearmount, with screw fixing</p>		RV4 ⁽¹⁾	48x48mm (1.89"x1.89")	Grey plate black padlockable knob (max 3 padlocks), IP66
		RV6 ⁽²⁾	64x64 mm (2.52"x2.52")	Grey plate black padlockable knob (max 3 padlocks), IP66
		RV4-T ⁽¹⁾	48x59mm (1.89"x2.32")	Grey plate black padlockable knob (max 3 padlocks), IP66
		RV6-T ⁽²⁾	64x78mm (2.52"x3.07")	Grey plate black padlockable knob (max 3 padlocks), IP66
		RW4 ⁽¹⁾	48x48mm (1.89"x1.89")	Yellow plate, red padlockable knob (max 3 padlocks), IP66
		RW6 ⁽²⁾	64x64 mm (2.52"x2.52")	Yellow plate, red padlockable knob (max 3 padlocks), IP66
		RK5 ⁽¹⁾	67x67 mm (2.64"x2.64")	Grey plate black padlockable knob (max 3 padlocks), IP66
		RL5 ⁽²⁾	67x67 mm (2.64"x2.64")	Yellow plate, red padlockable knob (max 3 padlocks), IP66
Rear mount switch	Handles for 4-screw fixing			
 <p>Rear mount with Ø22mm (0,87") single-hole fixing</p>		GV4	48x48mm (1.89"x1.89")	Grey plate black padlockable knob (max 3 padlocks), IP66
		GV6	64x64 mm (2.52"x2.52")	Grey plate black padlockable knob (max 3 padlocks), IP66
		GV4-T	48x59mm (1.89"x2.32")	Grey plate black padlockable knob (max 3 padlocks), IP66
		GV6-T	64x78mm (2.52"x3.07")	Grey plate black padlockable knob (max 3 padlocks), IP66
		GW4	48x48mm (1.89"x1.89")	Yellow plate, red padlockable knob (max 3 padlocks), IP66
		GW6	64x64 mm (2.52"x2.52")	Yellow plate, red padlockable knob (max 3 padlocks), IP66
		GK5	67x67 mm (2.64"x2.64")	Grey plate black padlockable knob (max 3 padlocks), IP66
		GL5	67x67 mm (2.64"x2.64")	Yellow plate, red padlockable knob (max 3 padlocks), IP66

Notes: ⁽¹⁾ suitable for 4-screw fixing (with 4 holes at 36x36mm (1.42"x1.42") distance)

⁽²⁾ suitable for 4-screw fixing (with 4 holes at 36x36mm (1.42"x1.42") and 48x48mm (1.89"x1.89") distance)

^{(1), (2)} On request, the handle can be supplied in a 2-screw fixing version with 2 holes at 28mm (1.10") vertical distance or 2 holes at 32mm (1.26") horizontal distance.

 standard article
 on Request

Base mount switch	Handles for 4-screw fixing			
 Base mount with screws or DIN rail fixing		BK5 ⁽¹⁾	67x67 mm (2.64"x2.64")	Grey plate black padlockable knob (max 3 padlocks), IP66
			BL5 ⁽¹⁾	67x67 mm (2.64"x2.64")
	Handles with Ø22mm (0,87") single-hole and nut fixing			
		HK5	67x67 mm (2.64"x2.64")	Grey plate black padlockable knob (max 3 padlocks), IP66
			HL5	67x67 mm (2.64"x2.64")

Notes: (1) suitable for 4-screw fixing (with 4 holes at 36x36mm (1.42"x1.42") and 48x48mm (1.89"x1.89") distance).
 On request, the handle can be supplied in a 2-screw fixing version with 2 holes at 28mm (1.10") vertical distance or 2 holes at 32mm (1.26") horizontal distance.

 standard article
 on Request

Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.



RT4



RT6

Rear mounting

Ø 22mm (0.87") single hole fixing





GT4




GT6



ON-OFF switch 1 pole

 0001	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120001RT4	1	CR0120001RT6	1	CR0120001GT4	R	CR0120001GT6	R
		16A	CR0160001RT4	1	CR0160001RT6	1	CR0160001GT4	R	CR0160001GT6	R
		20A	CR0200001RT4	1	CR0200001RT6	1	CR0200001GT4	R	CR0200001GT6	R
		25A	CR0250001RT4	1	CR0250001RT6	1	CR0250001GT4	R	CR0250001GT6	R
		32A								
		40A								

ON-OFF switch 2 pole

 0002	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120002RT4	1	CR0120002RT6	1	CR0120002GT4	1	CR0120002GT6	R
		16A	CR0160002RT4	1	CR0160002RT6	1	CR0160002GT4	R	CR0160002GT6	1
		20A	CR0200002RT4	1	CR0200002RT6	1	CR0200002GT4	R	CR0200002GT6	R
		25A	CR0250002RT4	1	CR0250002RT6	1	CR0250002GT4	R	CR0250002GT6	R
		32A	CR0320002RT4	1	CR0320002RT6	1	CR0320002GT4	R	CR0320002GT6	R
		40A	CR0400002RT4	1	CR0400002RT6	1	CR0400002GT4	R	CR0400002GT6	R

ON-OFF switch 3 pole

 0003	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120003RT4	1	CR0120003RT6	1	CR0120003GT4	1	CR0120003GT6	R
		16A	CR0160003RT4	1	CR0160003RT6	1	CR0160003GT4	R	CR0160003GT6	1
		20A	CR0200003RT4	1	CR0200003RT6	1	CR0200003GT4	R	CR0200003GT6	1
		25A	CR0250003RT4	1	CR0250003RT6	1	CR0250003GT4	R	CR0250003GT6	1
		32A	CR0320003RT4	1	CR0320003RT6	1	CR0320003GT4	R	CR0320003GT6	1
		40A	CR0400003RT4	1	CR0400003RT6	1	CR0400003GT4	R	CR0400003GT6	R

 standard article

R = on Request

Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.



RT4



RT6



GT4



GT6


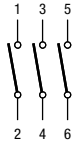
Rear mounting

Ø 22mm (0,87") single hole fixing



■ ON-OFF switch 4 pole

 0004	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120004RT4	1	CR0120004RT6	1	CR0120004GT4	R	CR0120004GT6	R
		16A	CR0160004RT4	1	CR0160004RT6	1	CR0160004GT4	R	CR0160004GT6	1
		20A	CR0200004RT4	1	CR0200004RT6	1	CR0200004GT4	R	CR0200004GT6	R
		25A	CR0250004RT4	1	CR0250004RT6	1	CR0250004GT4	R	CR0250004GT6	R
		32A	CR0320004RT4	1	CR0320004RT6	1	CR0320004GT4	R	CR0320004GT6	R
		40A	CR0400004RT4	1	CR0400004RT6	1	CR0400004GT4	R	CR0400004GT6	R

■ ON-OFF switch 3 pole with spring return to "OFF"

 0035	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120035RT4	1	CR0120035RT6	1	CR0120035GT4	R	CR0120035GT6	R
		16A	CR0160035RT4	1	CR0160035RT6	1	CR0160035GT4	R	CR0160035GT6	R
		20A								
		25A								
		32A								
		40A								

■ Change-over switch 1 pole

 0005	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120005RT4	1	CR0120005RT6	1	CR0120005GT4	R	CR0120005GT6	R
		16A	CR0160005RT4	1	CR0160005RT6	1	CR0160005GT4	R	CR0160005GT6	R
		20A	CR0200005RT4	1	CR0200005RT6	1	CR0200005GT4	R	CR0200005GT6	R
		25A	CR0250005RT4	1	CR0250005RT6	1	CR0250005GT4	R	CR0250005GT6	R
		32A								
		40A								

 standard article

R = on Request

Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.



RT4



RT6

Rear mounting

Ø 22mm (0.87") single hole fixing

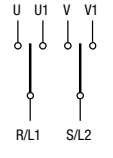


GT4



GT6


Change-over switch 2 pole

 0006	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120006RT4	1	CR0120006RT6	1	CR0120006GT4	R	CR0120006GT6	R
		16A	CR0160006RT4	1	CR0160006RT6	1	CR0160006GT4	R	CR0160006GT6	R
		20A	CR0200006RT4	1	CR0200006RT6	1	CR0200006GT4	R	CR0200006GT6	R
		25A	CR0250006RT4	1	CR0250006RT6	1	CR0250006GT4	R	CR0250006GT6	R
		32A	CR0320006RT4	1	CR0320006RT6	1	CR0320006GT4	R	CR0320006GT6	R
		40A	CR0400006RT4	1	CR0400006RT6	1	CR0400006GT4	R	CR0400006GT6	R

Change-over switch 3 pole

 0007	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120007RT4	1	CR0120007RT6	1	CR0120007GT4	R	CR0120007GT6	R
		16A	CR0160007RT4	1	CR0160007RT6	1	CR0160007GT4	R	CR0160007GT6	1
		20A	CR0200007RT4	1	CR0200007RT6	1	CR0200007GT4	R	CR0200007GT6	R
		25A	CR0250007RT4	1	CR0250007RT6	1	CR0250007GT4	R	CR0250007GT6	1
		32A	CR0320007RT4	1	CR0320007RT6	1	CR0320007GT4	R	CR0320007GT6	R
		40A	CR0400007RT4	1	CR0400007RT6	1	CR0400007GT4	R	CR0400007GT6	R

Change-over switch 4 pole

 0039	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120039RT4	1	CR0120039RT6	1	CR0120039GT4	R	CR0120039GT6	R
		16A	CR0160039RT4	1	CR0160039RT6	1	CR0160039GT4	R	CR0160039GT6	1
		20A	CR0200039RT4	1	CR0200039RT6	1	CR0200039GT4	R	CR0200039GT6	R
		25A	CR0250039RT4	1	CR0250039RT6	1	CR0250039GT4	R	CR0250039GT6	1
		32A	CR0320039RT4	1	CR0320039RT6	1	CR0320039GT4	R	CR0320039GT6	R
		40A	CR0400039RT4	1	CR0400039RT6	1	CR0400039GT4	R	CR0400039GT6	R

standard article

R = on Request

Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.



RT4



RT6



GT4



GT6


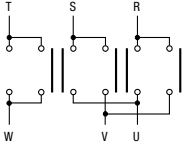
Rear mounting

Ø 22mm (0,87") single hole fixing


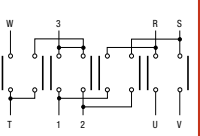
■ Reversing switch 3 pole

 0008	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120008RT4	1	CR0120008RT6	1	CR0120008GT4	1	CR0120008GT6	R
		16A	CR0160008RT4	1	CR0160008RT6	1	CR0160008GT4	R	CR0160008GT6	1
		20A	CR0200008RT4	1	CR0200008RT6	1	CR0200008GT4	R	CR0200008GT6	1
		25A	CR0250008RT4	1	CR0250008RT6	1	CR0250008GT4	R	CR0250008GT6	1
		32A	CR0320008RT4	1	CR0320008RT6	1	CR0320008GT4	R	CR0320008GT6	1
		40A	CR0400008RT4	1	CR0400008RT6	1	CR0400008GT4	R	CR0320008GT6	R

■ Reversing switch 3 pole with spring return to "off"

 0036	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120036RT4	1	CR0120036RT6	1	CR0120036GT4	R	CR0120036GT6	R
		16A	CR0160036RT4	1	CR0160036RT6	1	CR0160036GT4	R	CR0160036GT6	R
		20A	CR0200036RT4	1	CR0200036RT6	1	CR0200036GT4	R	CR0200036GT6	R
		25A	CR0250036RT4	1	CR0250036RT6	1	CR0250036GT4	R	CR0250036GT6	R
		32A								
		40A								

■ Changing switch Dahlander pole

 0009	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120009RT4	1	CR0120009RT6	1	CR0120009GT4	1	CR0120009GT6	R
		16A	CR0160009RT4	1	CR0160009RT6	1	CR0160009GT4	R	CR0160009GT6	1
		20A	CR0200009RT4	1	CR0200009RT6	1	CR0200009GT4	R	CR0200009GT6	1
		25A	CR0250009RT4	1	CR0250009RT6	1	CR0250009GT4	R	CR0250009GT6	1
		32A	CR0320009RT4	1	CR0320009RT6	1	CR0320009GT4	R	CR0320009GT6	R
		40A	CR0400009RT4	1	CR0400009RT6	1	CR0400009GT4	R	CR0400009GT6	R

 standard article

R = on Request

Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.



RT4



RT6

Rear mounting

Ø 22mm (0.87") single hole fixing


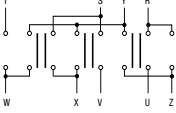


GT4


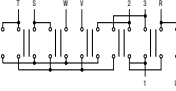


GT6


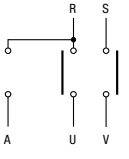
STAR-DELTA Starter

 0010	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120010RT4	1	CR0120010RT6	1	CR0120010GT4	R	CR0120010GT6	R
		16A	CR0160010RT4	1	CR0160010RT6	1	CR0160010GT4	R	CR0160010GT6	R
		20A	CR0200010RT4	1	CR0200010RT6	1	CR0200010GT4	R	CR0200010GT6	R
		25A	CR0250010RT4	1	CR0250010RT6	1	CR0250010GT4	R	CR0250010GT6	1
		32A	CR0320010RT4	1	CR0320010RT6	1	CR0320010GT4	R	CR0320010GT6	R
		40A	CR0400010RT4	1	CR0400010RT6	1	CR0320010GT4	R	CR0400010GT6	R

Reversing switch pole changing

 0011	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120011RT4	1	CR0120011RT6	1	CR0120011GT4	R	CR0120011GT6	R
		16A	CR0160011RT4	1	CR0160011RT6	1	CR0160011GT4	R	CR0160011GT6	R
		20A	CR0200011RT4	1	CR0200011RT6	1	CR0200011GT4	R	CR0200011GT6	R
		25A	CR0250011RT4	1	CR0250011RT6	1	CR0250011GT4	R	CR0250011GT6	R
		32A								
		40A								

Switch single phase motor + aux phase

 0031	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120031RT4	1	CR0120031RT6	1	CR0120031GT4	R	CR0120031GT6	R
		16A	CR0160031RT4	1	CR0160031RT6	1	CR0160031GT4	R	CR0160031GT6	R
		20A	CR0200031RT4	1	CR0200031RT6	1	CR0200031GT4	R	CR0200031GT6	R
		25A	CR0250031RT4	1	CR0250031RT6	1	CR0250031GT4	R	CR0250031GT6	R
		32A								
		40A								

standard article

R = on Request

Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.



RT4



RT6



GT4

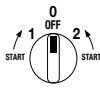
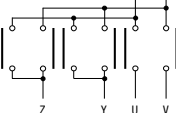


GT6


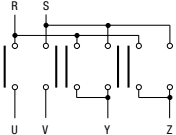
Rear mounting

Ø 22mm (0,87") single hole fixing


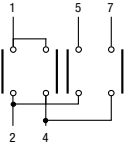
■ Reversing switch single-phase motor + aux phase

 0032	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120032RT4	1	CR0120032RT6	1	CR0120032GT4	R	CR0120032GT6	R
		16A	CR0160032RT4	1	CR0160032RT6	1	CR0160032GT4	R	CR0160032GT6	R
		20A								
		25A	CR0250032RT4	1	CR0250032RT6	1	CR0250032GT4	R	CR0250032GT6	R
		32A								
		40A								

■ Reversing switch single-phase motor + centrif.

 0034	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120034RT4	1	CR0120034RT6	1	CR0120034GT4	R	CR0120034GT6	R
		16A	CR0160034RT4	1	CR0120034RT6	1	CR0160034GT4	R	CR0160034GT6	R
		20A	CR0200034RT4	1	CR0200034RT6	1	CR0200034GT4	R	CR0200034GT6	R
		25A	CR0250034RT4	1	CR0250034RT6	1	CR0250034GT4	R	CR0250034GT6	R
		32A								
		40A								

■ Voltmeter switch 3 concatenated voltages

 0016	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120016RT4	1	CR0120016RT6	1	CR0120016GT4	1	CR0120016GT6	R
		16A								
		20A								
		25A								
		32A								
		40A								

 standard article

R = on Request

Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.



RT4



RT6



GT4


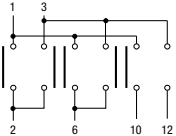


GT6


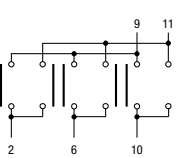
Rear mounting

Ø 22mm (0.87") single hole fixing


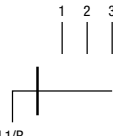
■ Voltmeter switch 3 concatenated voltages and 3 phase voltages

 0018	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120018RT4	1	CR0120018RT6	1	CR0120018GT4	R	CR0120018GT6	R
		16A								
		20A								
		25A								
		32A								
		40A								

■ Ammeter switch 1 pole 3 current transformers

 0022	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120022RT4	1	CR0120022RT6	1	CR0120022GT4	R	CR0120022GT6	R
		16A								
		20A								
		25A								
		32A								
		40A								

■ Multi step switch with off 1 pole 3 steps

 MZ13	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012MZ13RT4	1	CR012MZ13RT6	1	CR012MZ13GT4	R	CR012MZ13GT6	R
		16A	CR016MZ13RT4	1	CR016MZ13RT6	1	CR016MZ13GT4	R	CR016MZ13GT6	R
		20A	CR020MZ13RT4	1	CR020MZ13RT6	1	CR020MZ13GT4	R	CR020MZ13GT6	R
		25A	CR025MZ13RT4	1	CR025MZ13RT6	1	CR025MZ13GT4	R	CR025MZ13GT6	R
		32A								
		40A								

 standard article

R = on Request

Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.



RT4



RT6



GT4

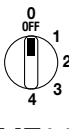
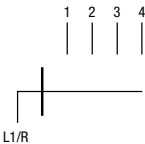


GT6


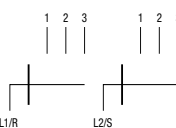
Rear mounting

Ø 22mm (0,87") single hole fixing


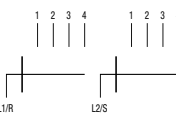
■ Multi step switch with off 1 pole 4 steps

 MZ14	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012MZ14RT4	1	CR012MZ14RT6	1	CR012MZ14GT4	R	CR012MZ14GT6	R
		16A	CR016MZ14RT4	1	CR016MZ14RT6	1	CR016MZ14GT4	R	CR016MZ14GT6	R
		20A								
		25A								
		32A								
		40A								

■ Multi step switch with off 2 pole 3 steps

 MZ23	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012MZ23RT4	1	CR012MZ23RT6	1	CR012MZ23GT4	R	CR012MZ23GT6	R
		16A	CR016MZ23RT4	1	CR016MZ23RT6	1	CR016MZ23GT4	R	CR016MZ23GT6	R
		20A	CR020MZ23RT4	1	CR020MZ23RT6	1	CR020MZ23GT4	R	CR020MZ23GT6	R
		25A	CR025MZ23RT4	1	CR025MZ23RT6	1	CR025MZ23GT4	R	CR025MZ23GT6	R
		32A								
		40A								

■ Multi step switch with off 2 pole 4 steps

 MZ24	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012MZ24RT4	1	CR012MZ24RT6	1	CR012MZ24GT4	R	CR012MZ24GT6	R
		16A	CR016MZ24RT4	1	CR016MZ24RT6	1	CR016MZ24GT4	R	CR016MZ24GT6	R
		20A								
		25A								
		32A								
		40A								

 standard article

R = on Request

Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.



RT4



RT6

Rear mounting

Ø 22mm (0.87") single hole fixing





GT4


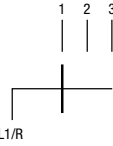


GT6

Multi step switch with off 3 pole 3 steps

 MZ33	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012MZ33RT4	1	CR012MZ33RT6	1	CR012MZ33GT4	R	CR012MZ33GT6	R
		16A	CR016MZ33RT4	1	CR016MZ33RT6	1	CR016MZ33GT4	R	CR016MZ33GT6	R
		20A								
		25A								
		32A								
		40A								

Multi step switch without off 1 pole 3 steps

 M013	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012M013RT4	1	CR012M013RT6	1	CR012M013GT4	R	CR012M013GT6	R
		16A	CR016M013RT4	1	CR016M013RT6	1	CR016M013GT4	R	CR016M013GT6	R
		20A								
		25A								
		32A								
		40A								


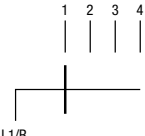
Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.


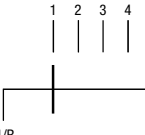
**RT4****RT6****Rear mounting**

Ø 22mm (0,87") single hole fixing

**GT4****GT6****Multi step switch without off 1 pole 4 steps**

 M014	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012M014RT4	1	CR012M014RT6	1	CR012M014GT4	R	CR012M014GT6	R
		16A	CR016M014RT4	1	CR016M014RT6	1	CR016M014GT4	R	CR016M014GT6	R
		20A								
		25A								
		32A								
		40A								

Multi step switch without off 1 pole 5 steps

 M015	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012M015RT4	1	CR012M015RT6	1	CR012M015GT4	R	CR012M015GT6	R
		16A	CR016M015RT4	1	CR016M015RT6	1	CR016M015GT4	R	CR016M015GT6	R
		20A								
		25A								
		32A								
		40A								

Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.



RL6



RK6

Base mounting*

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.


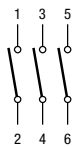


BL6

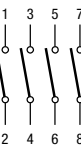


BK6

ON-OFF switch 3 pole with padlockable handle

 00G3	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR01200G3RL6	1	CR01200G3RK6	1	CR01200G3BL6	1	CR01200G3BK6	1
		16A	CR01600G3RL6	1	CR01600G3RK6	1	CR01600G3BL6	1	CR01600G3BK6	1
		20A	CR02000G3RL6	1	CR02000G3RK6	1	CR02000G3BL6	1	CR02000G3BK6	1
		25A	CR02500G3RL6	1	CR02500G3RK6	1	CR02500G3BL6	1	CR02500G3BK6	1
		32A	CR03200G3RL6	1	CR03200G3RK6	1	CR03200G3BL6	1	CR03200G3BK6	1
		40A	CR04000G3RL6	1	CR04000G3RK6	1	CR04000G3BL6	1	CR04000G3BK6	1

ON-OFF switch 4 pole with padlockable handle

 00G4	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR01200G4RL6	1	CR01200G4RK6	1	CR01200G4BL6	1	CR01200G4BK6	1
		16A	CR01600G4RL6	1	CR01600G4RK6	1	CR01600G4BL6	1	CR01600G4BK6	1
		20A	CR02000G4RL6	1	CR02000G4RK6	1	CR02000G4BL6	1	CR02000G4BK6	1
		25A	CR02500G4RL6	1	CR02500G4RK6	1	CR02500G4BL6	1	CR02500G4BK6	1
		32A	CR03200G4RL6	1	CR03200G4RK6	1	CR03200G4BL6	1	CR03200G4BK6	1
		40A	CR04000G4RL6	1	CR04000G4RK6	1	CR04000G4BL6	1	CR04000G4BK6	1

* Base mounting switches are supplied with standard 175mm (6.89") shaft


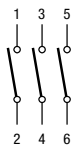
Rear mounting
Ø 22mm (0,87") single hole fixing

**GL6****GK6**


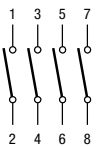
Base mounting*
Ø 22mm (0,87") single hole fixing

**HL6****HK6**

■ ON-OFF switch 3 pole with padlockable handle

 00G3	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR01200G3GL6	R	CR01200G3GK6	R	CR01200G3HL6	R	CR01200G3HK6	R
		16A	CR01600G3GL6	1	CR01600G3GK6	R	CR01600G3HL6	1	CR01600G3HK6	R
		20A	CR02000G3GL6	R	CR02000G3GK6	R	CR02000G3HL6	R	CR02000G3HK6	R
		25A	CR02500G3GL6	1	CR02500G3GK6	R	CR02500G3HL6	1	CR02500G3HK6	R
		32A	CR03200G3GL6	R	CR03200G3GK6	R	CR03200G3HL6	1	CR03200G3HK6	R
		40A	CR04000G3GL6	R	CR04000G3GK6	R	CR04000G3HL6	R	CR04000G3HK6	R

■ ON-OFF switch 4 pole with padlockable handle

 00G4	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR01200G4GL6	R	CR01200G4GK6	R	CR01200G4HL6	R	CR01200G4HK6	R
		16A	CR01600G4GL6	1	CR01600G4GK6	R	CR01600G4HL6	1	CR01600G4HK6	R
		20A	CR02000G4GL6	R	CR02000G4GK6	R	CR02000G4HL6	R	CR02000G4HK6	R
		25A	CR02500G4GL6	1	CR02500G4GK6	R	CR02500G4HL6	1	CR02500G4HK6	R
		32A	CR03200G4GL6	R	CR03200G4GK6	R	CR03200G4HL6	1	CR03200G4HK6	R
		40A	CR04000G4GL6	R	CR04000G4GK6	R	CR04000G4HL6	R	CR04000G4HK6	R

* Base mounting switches are supplied with standard 175mm (6.89") shaft

Rear mounting

4-screw fixing: □ 36mm (□1.42") / □ 48mm (□1.89")



RV4



RV6

Rear mounting

Ø 22mm (0.87") single hole fixing





GV4


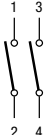


GV6



ON-OFF switch 1 pole

 0001	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120001RV4	R			CR0120001GV4	R		
		16A	CR0160001RV4	R			CR0160001GV4	R		
		20A	CR0200001RV4	R			CR0200001GV4	R		
		25A			CR0250001RV6	R			CR0250001GV6	R
		32A								
		40A								

ON-OFF switch 2 pole

 0002	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120002RV4	1			CR0120002GV4	R		
		16A	CR0160002RV4	1			CR0160002GV4	R		
		20A	CR0200002RV4	R			CR0200002GV4	R		
		25A			CR0250002RV6	R			CR0250002GV6	R
		32A			CR0320002RV6	R			CR0320002GV6	R
		40A			CR0400002RV6	R			CR0400002GV6	R

ON-OFF switch 3 pole

 0003	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120003RV4	1			CR0120003GV4	R		
		16A	CR0160003RV4	1			CR0160003GV4	R		
		20A	CR0200003RV4	1			CR0200003GV4	R		
		25A			CR0250003RV6	1			CR0250003GV6	R
		32A			CR0320003RV6	1			CR0320003GV6	R
		40A			CR0400003RV6	R			CR0400003GV6	R

standard article

R = on Request

Rear mounting

4-screw fixing: □ 36mm (□1.42") / □ 48mm (□1.89")



RV4



RV6



GV4


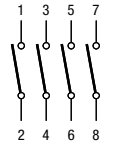


GV6


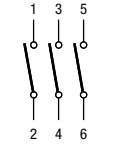
Rear mounting

Ø 22mm (0,87") single hole fixing


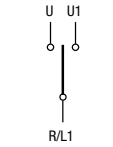
■ ON-OFF switch 4 pole

 0004	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120004RV4	R			CR0120004GV4	R		
		16A	CR0160004RV4	R			CR0160004GV4	R		
		20A	CR0200004RV4	R			CR0200004GV4	R		
		25A			CR0250004RV6	R			CR0250004GV6	R
		32A			CR0320004RV6	R			CR0320004GV6	R
		40A			CR0400004RV6	R			CR0400004GV6	R

■ ON-OFF switch 3 pole with spring return to "OFF"

 0035	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120035RV4	R			CR0120035GV4	R		
		16A	CR0160035RV4	R			CR0160035GV4	R		
		20A								
		25A								
		32A								
		40A								

■ Change-over switch 1 pole

 0005	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120005RV4	R			CR0120005GV4	R		
		16A	CR0160005RV4	R			CR0160005GV4	R		
		20A	CR0200005RV4	R			CR0200005GV4	R		
		25A			CR0250005RV6	R			CR0250005GV6	R
		32A								
		40A								

 standard article

R = on Request

Rear mounting

4-screw fixing: □ 36mm (□1.42") / □ 48mm (□1.89")



RV4



RV6



GV4


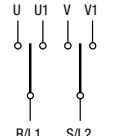


GV6


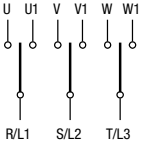
Rear mounting

Ø 22mm (0.87") single hole fixing


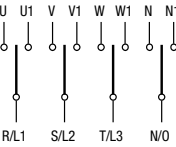
Change-over switch 2 pole

 0006	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120006RV4	R			CR0120006GV4	R		
		16A	CR0160006RV4	R			CR0160006GV4	R		
		20A	CR0200006RV4	R			CR0200006GV4	R		
		25A			CR0250006RV6	R			CR0250006GV6	R
		32A			CR0320006RV6	R			CR0320006GV6	R
		40A			CR0400006RV6	R			CR0400006GV6	R

Change-over switch 3 pole

 0007	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120007RV4	R			CR0120007GV4	R		
		16A	CR0160007RV4	1			CR0160007GV4	R		
		20A	CR0200007RV4	R			CR0200007GV4	R		
		25A			CR0250007RV6	1			CR0250007GV6	R
		32A			CR0320007RV6	R			CR0320007GV6	R
		40A			CR0400007RV6	R			CR0400007GV6	R

Change-over switch 4 pole

 0039	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120039RV4	R			CR0120039GV4	R		
		16A	CR0160039RV4	1			CR0160039GV4	R		
		20A	CR0200039RV4	R			CR0200039GV4	R		
		25A			CR0250039RV6	1			CR0250039GV6	R
		32A			CR0320039RV6	R			CR0320039GV6	R
		40A			CR0400039RV6	R			CR0400039GV6	R

 standard article

R = on Request

Rear mounting

4-screw fixing: □ 36mm (□1.42") / □ 48mm (□1.89")



RV4



RV6



GV4


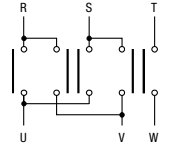


GV6


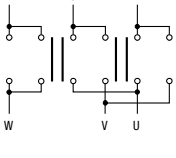
Rear mounting

Ø 22mm (0.87") single hole fixing


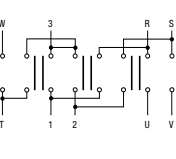
■ Reversing switch 3 pole

 0008	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120008RV4	1			CR0120008GV4	R		
		16A	CR0160008RV4	1			CR0160008GV4	R		
		20A	CR0200008RV4	1			CR0200008GV4	R		
		25A			CR0250008RV6	1			CR0250008GV6	R
		32A			CR0320008RV6	1			CR0320008GV6	R
		40A			CR0400008RV6	R			CR0320008GV6	R

■ Reversing switch 3 pole with spring return to "off"

 0036	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120036RV4	R			CR0120036GV4	R		
		16A	CR0160036RV4	R			CR0160036GV4	R		
		20A	CR0200036RV4	R			CR0200036GV4	R		
		25A			CR0250036RV6	R			CR0250036GV6	R
		32A								
		40A								

■ Changing switch Dahlander pole

 0009	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120009RV4	1			CR0120009GV4	R		
		16A	CR0160009RV4	1			CR0160009GV4	R		
		20A	CR0200009RV4	R			CR0200009GV4	R		
		25A			CR0250009RV6	R			CR0250009GV6	R
		32A			CR0320009RV6	R			CR0320009GV6	R
		40A			CR0400009RV6	R			CR0400009GV6	R

 standard article

R = on Request

Rear mounting

4-screw fixing: □ 36mm (□1.42") / □ 48mm (□1.89")



RV4



RV6



GV4


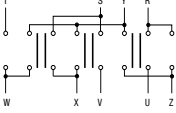


GV6


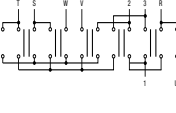
Rear mounting

Ø 22mm (0,87") single hole fixing


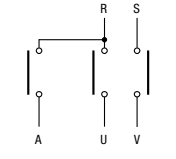
STAR-DELTA Starter

 0010	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120010RV4	R			CR0120010GV4	R		
		16A	CR0160010RV4	1			CR0160010GV4	R		
		20A	CR0200010RV4	R			CR0200010GV4	R		
		25A			CR0250010RV6	1			CR0250010GV6	R
		32A			CR0320010RV6	R			CR0320010GV6	R
		40A			CR0400010RV6	R			CR0400010GV6	R

Reversing switch pole changing

 0011	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120011RV4	R			CR0120011GV4	R		
		16A	CR0160011RV4	R			CR0160011GV4	R		
		20A	CR0200011RV4	R			CR0200011GV4	R		
		25A			CR0250011RV6	R			CR0250011GV6	R
		32A								
		40A								

Switch single phase motor + aux phase

 0031	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120031RV4	R			CR0120031GV4	R		
		16A	CR0160031RV4	R			CR0160031GV4	R		
		20A	CR0200031RV4	R			CR0200031GV4	R		
		25A			CR0250031RV6	R			CR0250031GV6	R
		32A								
		40A								

□ standard article

R = on Request

Rear mounting

4-screw fixing: □ 36mm (□1.42") / □ 48mm (□1.89")



RV4



RV6



GV4

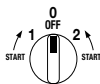
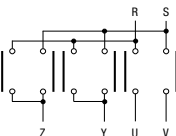


GV6


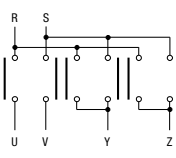
Rear mounting

Ø 22mm (0,87") single hole fixing

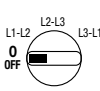
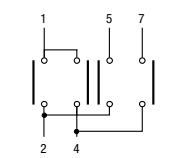
■ Reversing switch single-phase motor + aux phase

 RT6-GT6 0032	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120032RV4	R			CR0120032GV4	R		
		16A	CR0160032RV4	R			CR0160032GV4	R		
		20A								
		25A			CR0250032RV6	R			CR0250032GV6	R
		32A								
		40A								

■ Reversing switch single-phase motor + centrif.

 0034	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120034RV4	R			CR0120034GV4	R		
		16A	CR0160034RV4	R			CR0160034GV4	R		
		20A	CR0200034RV4	R			CR0200034GV4	R		
		25A			CR0250034RV6	R			CR0250034GV6	R
		32A								
		40A								

■ Voltmeter switch 3 concatenated voltages

 0016	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120016RV4	1			CR0120016GV4	R		
		16A								
		20A								
		25A								
		32A								
		40A								

 standard article

R = on Request

Rear mounting

4-screw fixing: □ 36mm (□1.42") / □ 48mm (□1.89")



RV4



RV6



GV4

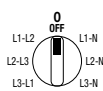
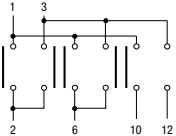


GV6


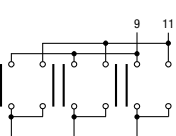
Rear mounting

Ø 22mm (0.87") single hole fixing


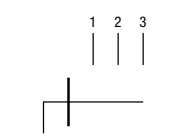
■ Voltmeter switch 3 concatenated voltages and 3 phase voltages

 0018	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120018RV4	R			CR0120018GV4	R		
		16A								
		20A								
		25A								
		32A								
		40A								

■ Ammeter switch 1 pole 3 current transformers

 0022	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR0120022RV4	1			CR0120022GV4	R		
		16A								
		20A								
		25A								
		32A								
		40A								

■ Multi step switch with off 1 pole 3 steps

 MZ13	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012MZ13RV4	R			CR012MZ13GV4	R		
		16A	CR016MZ13RV4	R			CR016MZ13GV4	R		
		20A	CR020MZ13RV4	R			CR020MZ13GV4	R		
		25A			CR025MZ13RV6	R			CR025MZ13GV6	R
		32A								
		40A								

□ standard article

R = on Request

Rear mounting

4-screw fixing: □ 36mm (□1.42") / □ 48mm (□1.89")



RV4



RV6



GV4

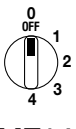
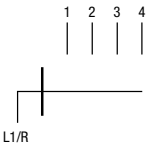


GV6

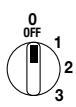
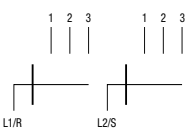
Rear mounting

Ø 22mm (0.87") single hole fixing

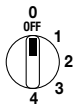
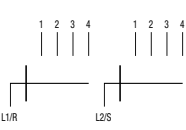
■ Multi step switch with off 1 pole 4 steps

 MZ14	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012MZ14RV4	R			CR012MZ14GV4	R		
		16A	CR016MZ14RV4	R			CR016MZ14GV4	R		
		20A								
		25A								
		32A								
		40A								

■ Multi step switch with off 2 pole 3 steps

 MZ23	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012MZ23RV4	R			CR012MZ23GV4	R		
		16A	CR016MZ23RV4	R			CR016MZ23GV4	R		
		20A	CR020MZ23RV4	R			CR020MZ23GV4	R		
		25A			CR025MZ23RV6	R			CR025MZ23GV6	R
		32A								
		40A								

■ Multi step switch with off 2 pole 4 steps

 MZ24	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012MZ24RV4	R			CR012MZ24GV4	R		
		16A	CR016MZ24RV4	R			CR016MZ24GV4	R		
		20A								
		25A								
		32A								
		40A								

 standard article

R = on Request

Rear mounting

4-screw fixing: □ 36mm (□1.42") / □ 48mm (□1.89")



RV4



RV6

Rear mounting

Ø 22mm (0.87") single hole fixing


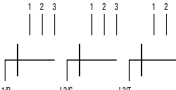


GV4


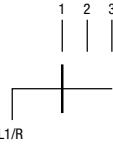


GV6

Multi step switch with off 3 pole 3 steps

 MZ33	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012MZ33RV4	R			CR012MZ33GV4	R		
		16A	CR016MZ33RV4	R			CR016MZ33GV4	R		
		20A								
		25A								
		32A								
		40A								

Multi step switch without off 1 pole 3 steps

 M013	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012M013RV4	R			CR012M013GV4	R		
		16A	CR016M013RV4	R			CR016M013GV4	R		
		20A								
		25A								
		32A								
		40A								

Rear mounting

4-screw fixing: □ 36mm (□1.42") / □ 48mm (□1.89")



RV4



RV6



GV4


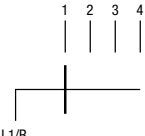


GV6


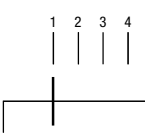
Rear mounting

Ø 22mm (0.87") single hole fixing

■ Multi step switch without off 1 pole 4 steps

 M014	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012M014RV4	R			CR012M014GV4	R		
		16A	CR016M014RV4	R			CR016M014GV4	R		
		20A								
		25A								
		32A								
		40A								

■ Multi step switch without off 1 pole 5 steps

 M015	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR012M015RV4	R			CR012M015GV4	R		
		16A	CR016M015RV4	R			CR016M015GV4	R		
		20A								
		25A								
		32A								
		40A								

Rear mounting

4-screw fixing: □ 36mm (□1.42") / □ 48mm (□1.89")



RL5



RK5

Base mounting

4-screw fixing: □ 36mm (□1.42") / □ 48mm (□1.89")


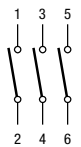


BL5


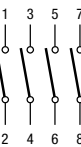


BK5

■ ON-OFF switch 3 pole with padlockable handle

 00G3	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR01200G3RL5	1	CR01200G3RK5	R	CR01200G3BL5	R	CR01200G3BK5	R
		16A	CR01600G3RL5	1	CR01600G3RK5	R	CR01600G3BL5	1	CR01600G3BK5	R
		20A	CR02000G3RL5	R	CR02000G3RK5	R	CR02000G3BL5	R	CR02000G3BK5	R
		25A	CR02500G3RL5	R	CR02500G3RK5	R	CR02500G3BL5	1	CR02500G3BK5	R
		32A	CR03200G3RL5	R	CR03200G3RK5	R	CR03200G3BL5	R	CR03200G3BK5	R
		40A	CR04000G3RL5	R	CR04000G3RK5	R	CR04000G3BL5	R	CR04000G3BK5	R

■ ON-OFF switch 4 pole with padlockable handle


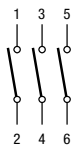
 00G4	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR01200G4RL5	R	CR01200G4RK5	R	CR01200G4BL5	R	CR01200G4BK5	R
		16A	CR01600G4RL5	R	CR01600G4RK5	R	CR01600G4BL5	1	CR01600G4BK5	R
		20A	CR02000G4RL5	R	CR02000G4RK5	R	CR02000G4BL5	R	CR02000G4BK5	R
		25A	CR02500G4RL5	R	CR02500G4RK5	R	CR02500G4BL5	1	CR02500G4BK5	R
		32A	CR03200G4RL5	R	CR03200G4RK5	R	CR03200G4BL5	1	CR03200G4BK5	R
		40A	CR04000G4RL5	R	CR04000G4RK5	R	CR04000G4BL5	R	CR04000G4BK5	R

* Base mounting switches are supplied with standard 175mm (6.89") shaft


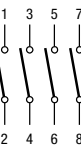
Rear mounting

Ø 22mm (0,87") single hole fixing

**GL5****GK5****HL5****HK5****■ ON-OFF switch 3 pole with padlockable handle**

 00G3	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR01200G3GL5	R	CR01200G3GK5	R	CR01200G3HL5	R	CR01200G3HK5	R
		16A	CR01600G3GL5	R	CR01600G3GK5	R	CR01600G3HL5	R	CR01600G3HK5	R
		20A	CR02000G3GL5	R	CR02000G3GK5	R	CR02000G3HL5	R	CR02000G3HK5	R
		25A	CR02500G3GL5	R	CR02500G3GK5	R	CR02500G3HL5	R	CR02500G3HK5	R
		32A	CR03200G3GL5	R	CR03200G3GK5	R	CR03200G3HL5	R	CR03200G3HK5	R
		40A	CR04000G3GL5	R	CR04000G3GK5	R	CR04000G3HL5	R	CR04000G3HK5	R

■ ON-OFF switch 4 pole with padlockable handle







 00G4	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CR01200G4GL5	R	CR01200G4GK5	R	CR01200G4HL5	R	CR01200G4HK5	R
		16A	CR01600G4GL5	R	CR01600G4GK5	R	CR01600G4HL5	R	CR01600G4HK5	R
		20A	CR02000G4GL5	R	CR02000G4GK5	R	CR02000G4HL5	R	CR02000G4HK5	R
		25A	CR02500G4GL5	R	CR02500G4GK5	R	CR02500G4HL5	R	CR02500G4HK5	R
		32A	CR03200G4GL5	R	CR03200G4GK5	R	CR03200G4HL5	R	CR03200G4HK5	R
		40A	CR04000G4GL5	R	CR04000G4GK5	R	CR04000G4HL5	R	CR04000G4HK5	R

* Base mounting switches are supplied with standard 175mm (6.89") shaft

 standard article







R = on Request

Plates and knobs

	Description	Handle fixing option	Switch fixing option				Legend included	
			Rear mount	Pack	Base mount	Pack	Legend type	Degrees
	grey plate 67x67mm (2.64x2.64"), black padlockable knob (max 3 padlocks), IP66	with 2 screws	FINRK6Q5	5	FINBK6Q5	5	0 - 1	90°
		with Ø22mm (0,87") single-hole	FINGK6Q5	R	FINHK6Q5	R	0 - 1	90°
	grey plate 67x67mm (2.64x2.64"), black padlockable knob (max 3 padlocks), IP66	with 2 screws	FINRL6Q5	5	FINBL6Q5	5	0 - 1	90°
		with Ø22mm (0,87") single-hole	FINGL6Q5	5	FINHL6Q5	5	0 - 1	90°
	grey plate 67x67mm (2.64x2.64"), black knob, IP66	with 2 screws	FINRT6Q5	5	FINBT6Q5	R	0 - 1 1 - 0 - 2	60°
		with Ø22mm (0,87") single-hole	FINGT6Q5	5	FINHT6Q5	R	0 - 1 1 - 0 - 2	60°
	yellow plate 67x67mm (2.64x2.64"), red knob, IP66	with 2 screws	FINRY6Q5	R	FINBY6Q5	R	0 - 1 1 - 0 - 2	60°
		with Ø22mm (0,87") single-hole	FINGY6Q5	R	FINHY6Q5	R	0 - 1 1 - 0 - 2	60°
	grey plate 48x48mm (1.89x1.89"), black knob, IP66	with 2 screws	FINRT4Q5	5	FINBT4Q5	R	0 - 1 1 - 0 - 2	60°
		with Ø22mm (0,87") single-hole	FINGT4Q5	5	FINHT4Q5	R	0 - 1 1 - 0 - 2	60°
	yellow plate 48x48mm (1.89x1.89"), red knob, IP66	with 2 screws	FINRY4Q5	R	FINBY4Q5	R	0 - 1 1 - 0 - 2	60°
		with Ø22mm (0,87") single-hole	FINGY4Q5	R	FINHY4Q5	R	0 - 1 1 - 0 - 2	60°

Two-screw fixing, distance between holes: 28mm (1.10") Vertical or 32mm (1.26") Horizontal

■ Plates and knobs

	Description	Handle fixing option	Switch fixing option				Legend included	
			Rear mount	Pack	Base mount	Pack	Legend type	Degrees
	grey plate 67x67mm (2.64x2.64"), black padlockable knob (max 3 padlocks), IP66	with 4 screws	FINRK5Q5	R	FINBK5Q5	R	0 - 1	90°
		with Ø22mm (0,87") single-hole	FINGK5Q5	R	FINHK5Q5	R	0 - 1	90°
	yellow plate 67x67mm (2.64x2.64"), red padlockable knob (max 3 padlocks), IP66	with 4 screws	FINRL5Q5	5	FINBL5Q5	5	0 - 1	90°
		with Ø22mm (0,87") single-hole	FINGL5Q5	R	FINHL5Q5	R	0 - 1	90°
	grey plate 64x64mm (2.52x2.52"), black knob, IP66	with 4 screws	FINRV6Q5	5	FINBV6Q5	R	0 - 1 1 - 0 - 2	60°
		with Ø22mm (0,87") single-hole	FINGV6Q5	R	FINHV6Q5	R	0 - 1 1 - 0 - 2	60°
	yellow plate 64x64mm (2.52x2.52"), red knob, IP66	with 4 screws	FINRW6Q5	R	FINBW6Q5	R	0 - 1 1 - 0 - 2	60°
		with Ø22mm (0,87") single-hole	FINGW6Q5	R	FINHW6Q5	R	0 - 1 1 - 0 - 2	60°
	grey plate 48x48mm (1.89x1.89"), black knob, IP66	with 4 screws	FINRV4Q5	5	FINBV4Q5	R	0 - 1 1 - 0 - 2	60°
		with Ø22mm (0,87") single-hole	FINGV4Q5	R	FINHV4Q5	R	0 - 1 1 - 0 - 2	60°
	yellow plate 48x48mm (1.89x1.89"), red knob, IP66	with 4 screws	FINRW4Q5	R	FINBW4Q5	R	0 - 1 1 - 0 - 2	60°
		with Ø22mm (0,87") single-hole	FINGW4Q5	R	FINHW4Q5	R	0 - 1 1 - 0 - 2	60°



Two-screw fixing, distance between holes: 28mm (1.10") Vertical or 32mm (1.26") Horizontal

Four-screw fixing, distance between holes: 48x48mm (1.89"x1.89") or 36x36mm (1.42"x1.42")


 standard article

R = on Request

Plates and knobs

	Description	Handle fixing option	Switch fixing option				Legend included	
			Rear mount	Pack	Base mount	Pack	Legend type	Degrees
	grey plate 64x78mm (2.52"x3.07"), black knob, IP66	with 4 screws	FINRV6-TQ5	R	FINBV6-TQ5	R	0 - 1 1 - 0 - 2	60°
		with Ø22mm (0,87") single-hole	FINGV6-TQ5	R	FINHV6-TQ5	R	0 - 1 1 - 0 - 2	60°
	grey plate 48x59mm (1.89"x2.32"), black knob, IP66	with 4 screws	FINRV4-TQ5	R	FINBV4-TQ5	R	0 - 1 1 - 0 - 2	60°
		with Ø22mm (0,87") single-hole	FINGV4-TQ5	R	FINHV4-TQ5	R	0 - 1 1 - 0 - 2	60°

Optional shafts

	Part no.	Description	Pack
	PALBL300	Shaft L=300mm Q5	5
	PALBL500	Shaft L=500mm Q5	5
	PALBL065	Shaft L=65mm Q5	R
	PALBL075	Shaft L=75mm Q5	R
	PALBL095	Shaft L=95mm Q5	R
	PALBL115	Shaft L=115mm Q5	R
	PALBL135	Shaft L=135mm Q5	R
	PALBL155	Shaft L=155mm Q5	R
	PALBL175	Shaft L=175mm Q5	5

Flexible PVC protections IP40

IP40 PVC protections against dust and dirt are available on request.

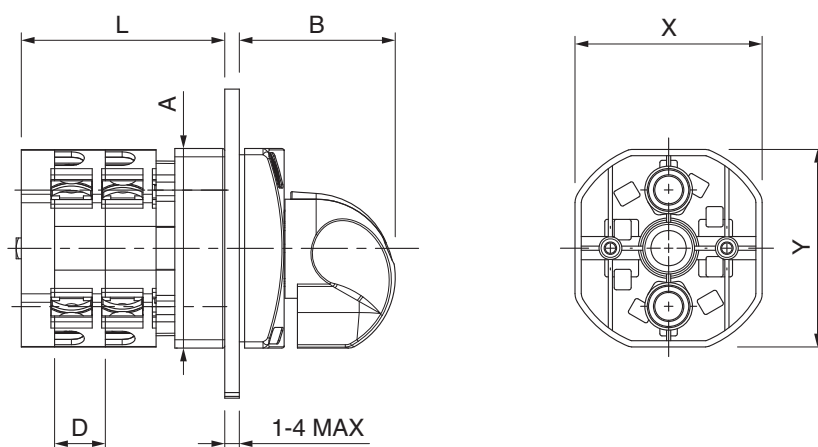


 standard article

R = on Request

■ Rear mounting

(RT - RY - RL6 - RK6 - RR0) - Measures in mm (in)

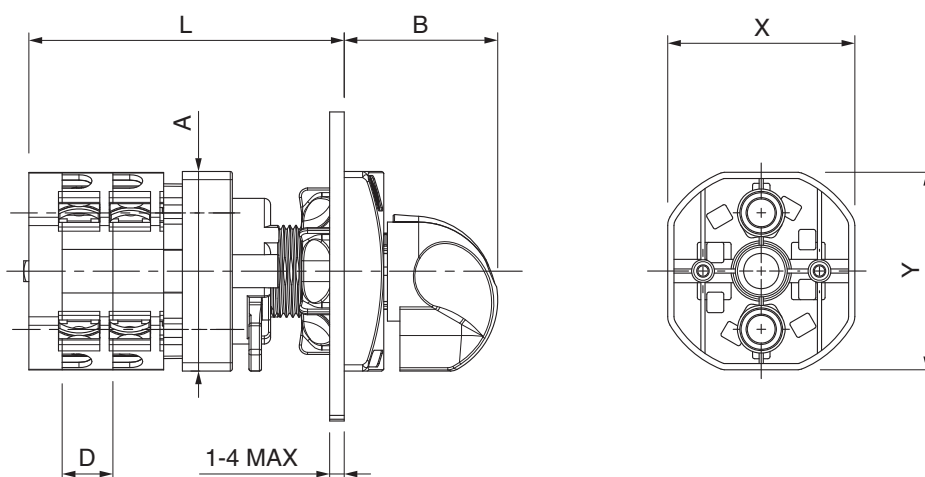


Series	X	Y	A	D		no. of stages					
						1	2	3	4	5	6
CR 012-016-020	45	47,5	□ 48	12,2	L	36,7	49	61,1	73,3	85,5	97,7
	(1.77")	(1.87")	(□1.89")	(0.48")		(1.44")	(1.93")	(2.41")	(2.89")	(3.37")	(3.85")
CR 025-032-040	53	62	□ 60	16,2	L	42,8	59	75	91,5	108	124
	(2.09")	(2.44")	(□2.36")	(0.64")		(1.69")	(2.32")	(2.95")	(3.60")	(4.25")	(4.88")

Handle	B
RT4	37 (1.46")
RT6	39 (1.54")
RL6-RK6	39 (1.54")
RR0	34 (1.34")

■ Rear mounting

(GT - GY - GL6 - GK6 - GR0) - Measures in mm (in)



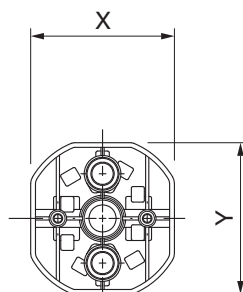
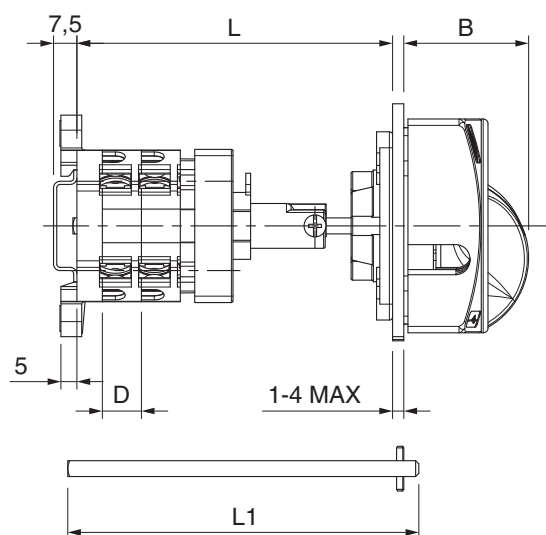
Series	X	Y	A	D		no. of stages					
						1	2	3	4	5	6
CR 012-016-020	45	47,5	□ 48	12,2	L	63,5	76	88,2	100,5	112,6	124,8
	(1.77")	(1.87")	(□1.89")	(0.48")		(2.50")	(2.99")	(3.47")	(3.96")	(4.43")	(4.91")
CR 025-032-040	53	62	□ 60	16,2	L	69,8	86	102	118,5	135	151
	(2.09")	(2.44")	(□2.36")	(0.64")		(2.75")	(3.39")	(4.02")	(4.67")	(5.31")	(5.94")

Handle	B
GT4	37 (1.46")
GT6	39 (1.54")
GL6-GK6	39 (1.54")
GR0	38 (1.50")

■ Base mounting

Switching angle 90°, padlockable (max 3 padlocks)

(BT - BY - BL6 - BK6) - Measures in mm (in)



Handle	B
BL6-BK6	39 (1.54")
BT4L-BY4L	40 (1.57")
BT6L-BY6L	40 (1.57")

	no. of stages				2	
	X	Y	D	L1	Lmin	Lmax
CR 012-016-020	45	47,5	12,2	175 (6.89") *	99 (3.90")	243 (9.57")
	(1.77")	(1.87")	(0.48")	300 (11.81")	99 (3.90")	368 (14.49")
				500 (19.69")	99 (3.90")	568 (22.36")
CR 025-032-040	53	62	16,2	175 (6.89") *	109 (4.29")	253 (9.96")
	(2.09")	(2.44")	(0.64")	300 (11.81")	109 (4.29")	378 (14.88")
				500 (19.69")	109 (4.29")	578 (22.76")

Overall length (min-max)** for different shaft lengths (L1)

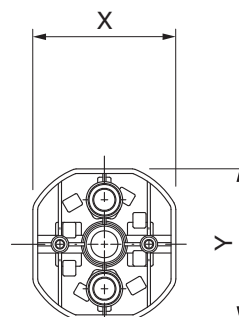
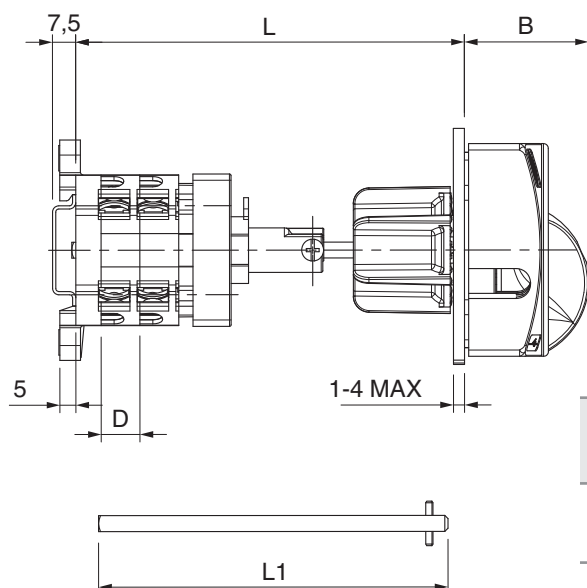
* Standard shaft, bundled

** Minimum length is obtainable by cutting the shaft

■ Rear mounting

Switching angle 90°, padlockable (max 3 padlocks)

(HT - HY - HL6 - HK6) - Measures in mm (in)



Handle	B
HL6-HK6	39 (1.54")
GT4L-GY4L	40 (1.57")
GT6L-GY6L	40 (1.57")

	no. of stages				2	
	X	Y	D	L1	Lmin	Lmax
CR 012-016-020	45	47,5	12,2	175 (6.89") *	111 (4.37")	255 (10.04")
	(1.77")	(1.87")	(0.48")	300 (11.81")	111 (4.37")	380 (14.96")
				500 (19.69")	111 (4.37")	580 (22.83")
CR 025-032-040	53	62	16,2	175 (6.89") *	121 (4.76")	265 (10.43")
	(2.09")	(2.44")	(0.64")	300 (11.81")	121 (4.76")	390 (15.35")
				500 (19.69")	121 (4.76")	590 (23.23")

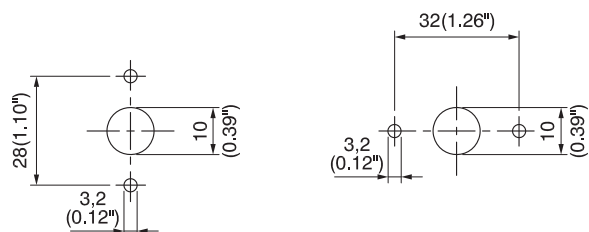
Overall length (min-max)** for different shaft lengths (L1)

* Standard shaft, bundled

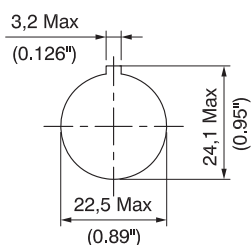
** Minimum length is obtainable by cutting the shaft

■ Rear mounting

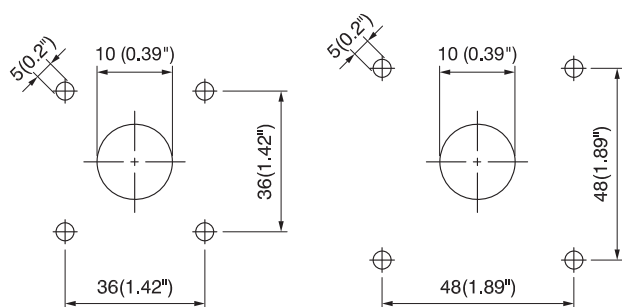
(RT - RY - RL6 - RK6 - RR0) - Measures in mm (in)



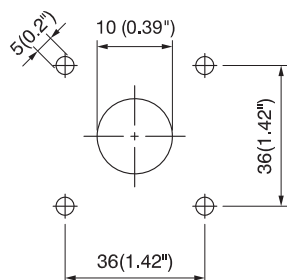
(GT - GY - GV - GR0)



(RV6/RV6-T - RW6/RW6-T - RL5 - RK5)



(RV4/RV4-T - RW4/RW4-T)



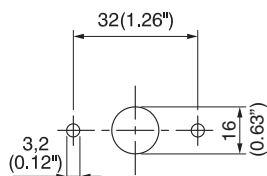
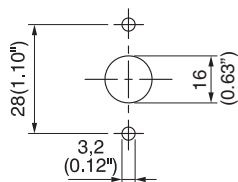
■ Base mounting

(BT - BY - BV - BW - BL - BK) - Measures in mm (in)

Escutcheon plate mounting options:

1) 2 holes with vertical distance 28mm (1.10")

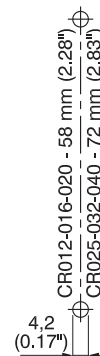
2) 2 holes with horizontal distance 32mm (1.26")



Switch mounting options:

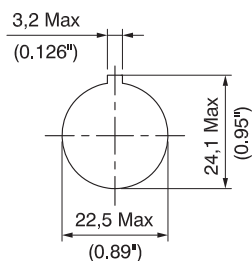
1) 2 holes with distance 58mm (2.28") - 72mm (2.83")

2) snap mount on DIN 46277/3 rail



(HT - HY - HV - HW - HL - HK)

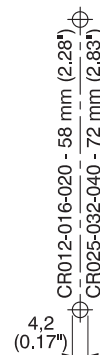
Escutcheon plate



Switch mounting options:

1) 2 holes with distance 58mm (2.28") - 72mm (2.83")

2) snap mount on DIN 46277/3 rail





Cam switches
CA Series



Overview

The range of cam switches **CA series** includes ratings from 12 to 630A and insulation voltages of 690V.

The CA series offers IP00 terminals protection degree (it's possible to increase the protection degree by mounting terminal covers, optionally available) and up to IP66 handle protection degree. Available with different mounting systems: rear and base mounting, both with screws.

Available diagrams for every application: ON-OFF switches, line switches, cam switches for motor control, ammeter and voltmeter switches, multi step switches.

Assembled with metal shaft and threaded stud bolts to ensure maximum operating reliability



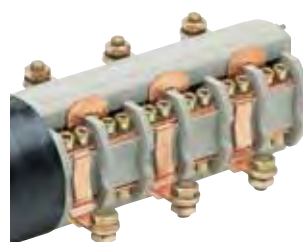
■ Class V2 self-extinguishing thermoplastic housing

Positive opening ■
double break contacts,
silver alloy made.



Base mounting (12A-40A)

- All base mounting items (BL6 - BK6 handles) include a 175 mm (6.89") shaft.
- Terminals with self raising plate and captive screws for sizes 12 ÷ 20A and 25 ÷ 40A.
- Connection terminals with screws provided with cable clamp for switches up to 100A and with cable coupling for bigger sizes.



■ New compact size

The new release of the CA series has been redesigned to be more compact, while preserving the electrical performances.

Total length (rear mount) Number of elements	CA012/020		CA025/040	
	New release	Old release	New release	Old release
1	36,5mm (1,44 in)	38,0mm (1,50 in)	42,5mm (1,68 in)	49,5mm (1,94 in)
2	49,0mm (1,93 in)	51,0mm (2,01 in)	59,0mm (2,32 in)	65,5mm (2,58 in)
3	61,0mm (2,41 in)	63,0mm (2,49 in)	75,0mm (2,96 in)	81,5mm (3,22 in)
4	73,5mm (2,91 in)	75,5mm (2,99 in)	91,5mm (3,61 in)	98,0mm (3,89 in)
5	85,5mm (3,37 in)	87,5mm (3,45 in)	107,5mm (4,23 in)	114,0mm (4,49 in)
6	97,5mm (3,85 in)	100,0mm (3,93 in)	123,5mm (4,87 in)	130,5mm (5,13 in)

A new additional benefit for this new release of the CA series is the improved connection capability of the terminals, that allows to use wires with larger cross-sections and eases the use of ferrules.

Maximum cross-sections are now:

- CA012-020: 4 mm² solid and flex wire (AWG 12)
- CA025-040: 10 mm² solid and flex wire (AWG 8)



CA012-040

This new release of the CA series allows 2-screw fixing options with two layouts:

- 2 holes at 28mm (1.10") vertical distance
- 2 holes at 32mm (1.26") horizontal distance



■ Customized solutions

In our archive are available more than 10,000 diagrams to tailor every customers' needs.

(see page 99)

Technical data
IEC 947-3
EN 60947-3

			CA012
Rated insulation voltage	Ui	V	690
Rated operating voltage	Ue	V	690
Rated impulse withstand voltage	Uimp	kV	6
Rated thermal current for open switch	Ith	A	16
Rated thermal current for enclosed switch	Ithe	A	16
Rated operation frequency		Hz	50
Power dissipation for each pole		W	0,27
Rated operating current			
AC-21A Switching resistive loads, including moderate overloads	Ie	A	12
AC-22A Switching of mixed resistive and inductive loads, including moderate overloads	Ie	A	12
AC-20A Connecting and disconnecting under no load conditions			-
Rated operating power			
AC-23A Switching of motor loads or other highly inductive loads 3 phase - 3 pole	230V	Kw (A)	3 (9)
	400V	Kw (A)	4 (9)
	500V	Kw (A)	-
	690V	Kw (A)	-
AC-23A Switching of motor loads or other highly inductive loads 1 phase - 2 pole	110V	Kw (A)	0,75 (8,5)
	230V	Kw (A)	1,5 (8,5)
AC-3 Squirrel cage motors: starting, switching off motors during running 3 phase - 3 pole	230V	Kw (A)	2,2 (7)
	400V	Kw (A)	3,5 (7)
	500V	Kw (A)	-
	690V	Kw (A)	-
AC-3 Squirrel cage motors: starting, switching off motors during running 1 phase - 2 pole	110V	Kw (A)	0,37 (4)
	230V	Kw (A)	1,1 (6)
	400V	Kw (A)	-
AC-4 Squirrel cage motors: starting, plugging, inching	230V	Kw (A)	-
	400V	Kw (A)	-
AC-15 Control of a.c. electromagnetic loads	230V	A	4
	400V	A	3
Rated breaking capability in category in AC-23A (cos φ=0,45)	230V	A	72
	400V	A	72
Short circuit protection			
Rated short time withstand current	Icw	A	150
Rated short-circuit make capacity	Icm	A	-
Rated conditional short-circuit current	-	kA	4
With fuses class gG	500V	A	16

Technical data
UL/CSA

Rated insulation voltage	Ui	UL/CSA V	600/ -
Rated operating voltage	Ue	UL/CSA V	600/ -
General Use Current	Ie	UL/CSA A	12
Short Circuit Rating@600Vac		Arms	5000
Fuse size (Class RK5, 600Vac, 200kA A.I.C.)		A	60
Rated operating power			
1 phase - 2 pole	120V	Hp (A)	0,5 (9,8)
	240V	Hp (A)	1,5 (10)
3 phase - 3 pole	200V	Hp (A)	1,5 (6,9)
	240V	Hp (A)	2 (6,8)
	480V	Hp (A)	3 (4,8)
	600V	Hp (A)	5 (6,1)

Mechanical characteristics

Mechanical life		Cycles x 10 ⁶	2
		Cicles/hour	120
Connections according to IEC 9471-1 and EN 60947-1			
Connecting capability	Connecting capability with flexible wires	Min-Max	mm ²
		Min-Max	AWG
	Connecting capability with solid wires	Min-Max	mm ²
Connection terminal screw dimensions		Type	M3,5
Screw tightening torque		Nm	1,0
Protection degree IEC 529 EN 60529			
Terminals		IP	
Ambient conditions			
Operating ambient temperature		°C	
Storage ambient temperature		°C	
Withstand to constant humid according to IEC 60068			
Withstand to cyclic humid according to IEC 60068			

CA016	CA020	CA025	CA032	CA040	CA050	CA063	CA100	CA200	CA400	CA630
690	690	690	690	690	690	690	690	690	690	690
690	690	690	690	690	690	690	690	690	690	690
6	6	6	6	6	6	6	6	6	6	6
20	25	32	32	40	50	75	115	200	400	630
20	25	32	32	40	50	75	100	160	-	-
50	50	50	50	50	50	50	50	50	50	50
0,5	0,4	1,0	1,0	1,3	1,6	2,5	4,7	7	15	30
16	20	25	32	40	50	75	115/110 ⁵	160 ⁵	-	-
16	16	20	25	32	40	63 ⁵	110	160	-	-
-	-	-	-	-	-	-	-	-	400	630
4 (14)	5,5 (17)	7,5 (24)	8,5 (27)	10 (32)	15 (48)	18,5 (58)	30 (95)	40 (125)	-	-
7,5 (14)	9 (16)	11 (20)	15 (27)	18,5 (30)	25 (45)	30 (54)	45 (85)	59 (106)	-	-
-	9 (13)	11 (15)	15 (22)	18,5 (27)	33 (48)	22 (32)	30 (40)	75 (108)	-	-
-	9 (9)	11 (11)	15 (16)	18,5 (19)	22 (23)	-	-	-	-	-
1,1 (12)	1,1 (5)	2,2 (25)	2,2 (25)	3 (34)	3,7 (42)	5,5 (63)	9 (102)	11 (125)	-	-
2,2 (14)	3 (17)	3,7(20)	3,7(20)	5,5 (30)	7,5 (40)	10 (32)	15 (82)	22 (120)	-	-
3,7 (12)	4 (13)	5,5 (17)	5,5 (17)	7,5 (24)	11 (35)	15 (47)	22 (70)	30 (95)	-	-
5,5 (10)	7,5 (14)	9,5 (16)	10 (17)	15 (27)	18 (33)	22 (40)	37 (67)	45 (82)	-	-
-	7,5 (11)	9,5 (12,5)	10 (14)	15 (22)	22 (32)	22 (32)	30 (40)	59 (85)	-	-
-	7,5 (8)	8,5 (10)	10 (10)	16 (16)	20 (20)	-	-	-	-	-
0,75 (9)	1,1 (13)	1,5 (17)	1,5 (17)	2,2 (25)	3,7 (42)	4 (45)	7,5 (85)	9 (102)	-	-
1,5 (8)	2,2 (12)	3 (17)	3 (17)	4,5 (25)	7,5 (40)	7,5 (40)	11 (60)	15 (82)	-	-
-	3,7 (12)	-	-	-	-	-	-	-	-	-
-	1,5 (4,5)	2,2 (7)	2,2 (7)	3 (10)	3,7 (12)	5,5 (17)	7,5 (85)	-	-	-
-	2,2 (2,6)	3 (5,5)	3 (5,5)	5,5 (10)	6 (11)	7,5 (14)	11 (20)	-	-	-
6	7	8	8	10	-	-	-	-	-	-
4	5	6	6	8	-	-	-	-	-	-
112	136	192	216	256	384	464	760	1000	-	-
112	128	160	216	240	360	432	680	848	-	-
240	240	400	400	500	600	800	1500	2000	-	-
-	1500	2000	2000	2000	2000	2500	3000	3000	-	-
4	5	10	10	10	15	15	15	15	-	-
20	20	35	35	50	50	63	125	200	-	-
600/-	600/300	600/600	600/600	600/600	600/600	600/600	600/600	600/-	600/- ⁴	600/- ⁴
600/-	600/300	600/600	600/600	600/600	600/600	600/600	600/600	600/-	600/- ⁴	600/- ⁴
16	20/16	25/25	35/25	40/32	60/40	85/63	125/100	240/-	400/- ^{3 14}	630/- ^{3 14}
5000	5000									
25 (30)	60									
1 (16)	1,5 (20)/ -	2/-	2/-	3/ 2,5	5/-	7,5/-	10/5	-	-	-
2 (12)	3 (17)/ 2,5 ²	3/ 6	5/-	7,5/ 4,5	10/-	10/-	15/12	-	-	-
2 (7,8)	5 (16,7)/ -	5/-	7,5/5	10/-	15/-	20/-	20/-	-	-	-
3 (9,6)	7,5 (22)/ 5 (16) ²	7,5/-	10/-	15/ 9,5	20/-	20/-	25/24	-	-	-
7,5 (11)	10 (14)/ -	10/-	15/-	20/ 20	30/-	30/-	40/50	-	-	-
7,5 (9)	10 (11)/ -	10/15	15/ 17	20/ 25	30/32,5	40/50	50/65	-	-	-
2	2	1,5	1,5	1,5	1,5	1	0,3	0,1	-	-
120	120	120	120	120	120	120	120	120	-	-
2x1,5-4	2x1,5-4	2x2,5-10	2x2,5-10	2x2,5-10	2x2,5-6	6-16	10-25	50-70 ¹	Terminals designed for cable lugs or copper bars suitable for bolts	
16-10	16-10	16-8	16-8	16-8	14-8	10-6	10-3	1/0-2/0		
2x1,5-6	2x1,5-6	2x2,5-16	2x2,5-16	2x2,5-16	2x4-10	10-25	10-25	16-35		
M3,5	M3,5	M5	M5	M5	M5	2XM5	M8	M10		M12X20
1,0	1,0	47	47	47	2,8	2,8	2,8	23	40	98
00										

CA 12-40A

**Standard
plates and
knobs**



Rear mount
with screw fixing



PL1 ⁽¹⁾

Transparent plate 52x52mm (2.05x2.05"),
black knob, IP40



PL2 ⁽¹⁾

Transparent plate 75x75mm (2.95x2.95"),
black knob, IP40



RL6 ⁽²⁾

Yellow plate 67x67 mm (2.64"x2.64"),
red padlockable knob (max 3 padlocks),
IP66



Base mount
with screw fixing



BL6 ⁽²⁾

Yellow plate 67x67 mm (2.64"x2.64"),
red padlockable knob (max 3 padlocks),
IP66

**Optional
plates and
knobs**



Rear mount
with screw fixing



RT4 ⁽²⁾

Gray plate 48x48mm, black knob, IP66



RT6 ⁽²⁾

Grey plate 67x67 mm (2.64"x2.64"),
black knob, IP66



RK6 ⁽²⁾

Grey plate 67x67 mm (2.64"x2.64"),
black padlockable knob (max 3 padlocks),
IP66



Base mount
with screw fixing



BK6 ⁽²⁾

Grey plate 67x67 mm (2.64"x2.64"),
black padlockable knob (max 3 padlocks),
IP66

Possible fixing options in rear mount depend on the combination of the plate with the rear mount cam-switch body

(1) suitable for 2-screw fixing with 2 holes at 28mm (1.10") vertical distance

(2) suitable for 2-screw fixing with 2 holes at 28mm (1.10") vertical distance and 2 holes at 32mm (1.26") horizontal distance

(3) suitable for both 2-screw fixing (with 2 holes at 28mm (1.10") vertical distance and 2 holes at 32mm (1.26") horizontal distance) and 4-screw fixing (with 4 holes at 36x36mm (1.42"x1.42") and 48x48mm (1.89"x1.89") distance)



 standard plates

 optional plates



Rear mounting

2-screw fixing: 28mm (1.10") V.



**PL1****PL2****■ ON-OFF switch 1 pole**

 0001	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120001PL1	1	CA0120001PL2	R
		16A			CA0160001PL2	R
		20A			CA0200001PL2	R
		25A			CA0250001PL2	1
		32A				
		40A				


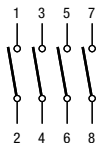
■ ON-OFF switch 2 pole

 0002	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120002PL1	1	CA0120002PL2	R
		16A	CA0160002PL1	R	CA0160002PL2	1
		20A	CA0200002PL1	R	CA0200002PL2	1
		25A			CA0250002PL2	1
		32A			CA0320002PL2	1
		40A			CA0400002PL2	R

■ ON-OFF switch 3 pole

 0003	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120003PL1	1	CA0120003PL2	R
		16A	CA0160003PL1	R	CA0160003PL2	1
		20A	CA0200003PL1	R	CA0200003PL2	1
		25A	CA0250003PL1	R	CA0250003PL2	1
		32A			CA0320003PL2	1
		40A			CA0400003PL2	1

■ ON-OFF switch 4 pole

 0004	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120004PL1	1	CA0120004PL2	R
		16A	CA0160004PL1	R	CA0160004PL2	1
		20A			CA0200004PL2	1
		25A			CA0250004PL2	1
		32A			CA0320004PL2	1
		40A			CA0400004PL2	1

 standard article

R = on Request

Rear mounting

2-screw fixing: 28mm (1.10") V.



PL1



PL2

Change-over switch 1 pole

	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
 0005		12A	CA0120005PL1	1	CA0120005PL2	R
		16A			CA0160005PL2	1
		20A			CA0200005PL2	R
		25A			CA0250005PL2	R
		32A				
		40A				

Change-over switch 2 pole

	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
 0006		12A	CA0120006PL1	1	CA0120006PL2	R
		16A	CA0160006PL1	R	CA0160006PL2	1
		20A			CA0200006PL2	1
		25A			CA0250006PL2	1
		32A			CA0320006PL2	1
		40A			CA0400006PL2	1

Change-over switch 3 pole

	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
 0007		12A	CA0120007PL1	1	CA0120007PL2	R
		16A	CA0160007PL1	R	CA0160007PL2	1
		20A			CA0200007PL2	1
		25A			CA0250007PL2	1
		32A			CA0320007PL2	1
		40A			CA0400007PL2	1

Change-over switch 4 pole

	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
 0039		12A	CA0120039PL1	1	CA0120039PL2	R
		16A	CA0160039PL1	R	CA0160039PL2	1
		20A			CA0200039PL2	1
		25A			CA0250039PL2	1
		32A			CA0320039PL2	1
		40A			CA0400039PL2	1


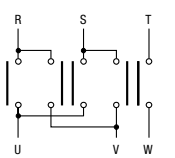
standard article

R = on Request


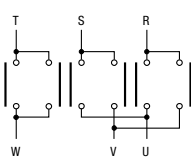
Rear mounting

2-screw fixing: 28mm (1.10") V.


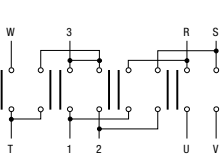
**PL1****PL2****Reversing switch 3 pole**

 0008	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120008PL1	1	CA0120008PL2	R
		16A	CA0160008PL1	R	CA0160008PL2	1
		20A			CA0200008PL2	1
		25A			CA0250008PL2	1
		32A			CA0320008PL2	1
		40A			CA0400008PL2	1


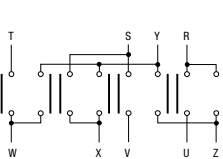
Reversing switch 3 pole with spring return to "OFF"

 0036	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120036PL1	1	CA0120036PL2	R
		16A			CA0160036PL2	1
		20A			CA0200036PL2	R
		25A				
		32A				
		40A				

Changing switch Dahlander pole

 0009	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120009PL1	1	CA0120009PL2	R
		16A	CA0160009PL1	R	CA0160009PL2	1
		20A			CA0200009PL2	1
		25A			CA0250009PL2	1
		32A			CA0320009PL2	1
		40A			CA0400009PL2	1

STAR-DELTA Starter

 0010	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120010PL1	1	CA0120010PL2	R
		16A	CA0160010PL1	R	CA0160010PL2	1
		20A			CA0200010PL2	1
		25A			CA0250010PL2	1
		32A			CA0320010PL2	1
		40A			CA0400010PL2	1

 standard article

R = on Request

Rear mounting

2-screw fixing: 28mm (1.10") V.



PL1



PL2

Reversing switch pole changing

<p>0011</p>	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120011PL1	1	CA0120011PL2	R
		16A	CA0160011PL1	R	CA0160011PL2	1
		20A			CA0200011PL2	1
		25A			CA0250011PL2	R
		32A				
		40A				

Switch single phase motor + aux phase

<p>0031</p>	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120031PL1	1	CA0120031PL2	R
		16A			CA0160031PL2	1
		20A			CA0200031PL2	1
		25A			CA0250031PL2	1
		32A				
		40A				

Reversing switch single-phase motor + centrif.

<p>0034</p>	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120034PL1	1	CA0120034PL2	R
		16A	CA0160034PL1	R	CA0160034PL2	1
		20A			CA0200034PL2	R
		25A			CA0250034PL2	R
		32A				
		40A				

Voltmeter switch 3 concatenated voltages

<p>0016</p>	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120016PL1	1	CA0120016PL2	R
		16A			CA0160016PL2	R
		20A				
		25A				
		32A				
		40A				

standard article

R = on Request

Rear mounting

2-screw fixing: 28mm (1.10") V.

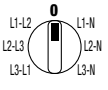
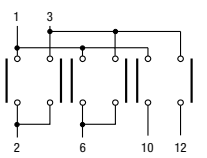


PL1


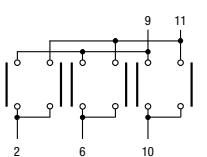


PL2


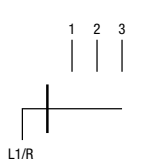
■ Voltmeter switch 3 concatenated voltages and 3 phase voltages

 0018	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120018PL1	1	CA0120018PL2	R
		16A			CA0160018PL2	R
		20A				
		25A				
		32A				
		40A				


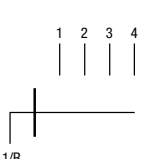
■ Ammeter switch 1 pole 3 current transformers

 0022	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CA0120022PL1	1	CA0120022PL2	R
		16A			CA0160022PL2	R
		20A				
		25A				
		32A				
		40A				

■ Multi step switch with off 1 pole 3 steps

 MZ13	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CS012MZ13PL1	1	CS012MZ13PL2	R
		16A	CS016MZ13PL1	R	CS016MZ13PL2	R
		20A			CS020MZ13PL2	R
		25A				
		32A				
		40A				

■ Multi step switch with off 1 pole 4 steps

 MZ14	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CS012MZ14PL1	1	CS012MZ14PL2	R
		16A	CS016MZ14PL1	R	CS016MZ14PL2	R
		20A				
		25A				
		32A				

 standard article

R = on Request

Rear mounting

2-screw fixing: 28mm (1.10") V.


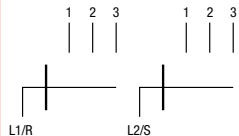


PL1



PL2

Multi step switch with off 2 pole 3 steps

 MZ23	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CS012MZ23PL1	1	CS012MZ23PL2	R
		16A			CS016MZ23PL2	R
		20A				
		25A				
		32A				
		40A				

Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.



RL6



RK6

Base mounting*

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.


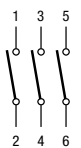


BL6



BK6

ON-OFF switch 3 pole with padlockable handle

 00G3	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CA01200G3RL6	1	CA01200G3RK6	R	CA01200G3BL6	1	CA01200G3BK6	R
		16A	CA01600G3RL6	1	CA01600G3RK6	R	CA01600G3BL6	1	CA01600G3BK6	R
		20A	CA02000G3RL6	1	CA02000G3RK6	R	CA02000G3BL6	1	CA02000G3BK6	R
		25A	CA02500G3RL6	1	CA02500G3RK6	R	CA02500G3BL6	1	CA02500G3BK6	R
		32A	CA03200G3RL6	1	CA03200G3RK6	R	CA03200G3BL6	1	CA03200G3BK6	R
		40A	CA04000G3RL6	1	CA04000G3RK6	R	CA04000G3BL6	1	CA04000G3BK6	R

* Base mounting switches are supplied with standard 175mm (6.89") shaft

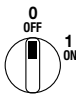
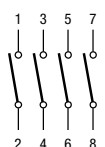
Rear mounting

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.

**RL6****RK6****Base mounting***

2-screw fixing: 28mm (1.10") V. / 32mm (1.26") H.

**BL6****BK6****■ ON-OFF switch 4 pole with padlockable handle**

 00G4	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		12A	CA01200G4RL6	R	CA01200G4RK6	R	CA01200G4BL6	R	CA01200G4BK6	R
		16A	CA01600G4RL6	1	CA01600G4RK6	R	CA01600G4BL6	1	CA01600G4BK6	R
		20A	CA02000G4RL6	1	CA02000G4RK6	R	CA02000G4BL6	1	CA02000G4BK6	R
		25A	CA02500G4RL6	1	CA02500G4RK6	R	CA02500G4BL6	1	CA02500G4BK6	R
		32A	CA03200G4RL6	1	CA03200G4RK6	R	CA03200G4BL6	1	CA03200G4BK6	R
		40A	CA04000G4RL6	1	CA04000G4RK6	R	CA04000G4BL6	1	CA04000G4BK6	R

* Base mounting switches are supplied with standard 175mm (6.89") shaft

**■ Handle R03**

Circuit diagram

0002			0003		0008		0009		0011	
Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
12A	CA0120002R03	R			CA0120008R03	R	CA0120009R03	R	CA0120011R03	R
16A	CA0160002R03	R	CA0160003R03	R	CA0160008R03	R	CA0160009R03	R	CA0160011R03	R
20A	CA0200002R03	R	CA0200003R03	R	CA0200008R03	R	CA0200009R03	R	CA0200011R03	R
25A	CA0250002R03	R	CA0250003R03	R						

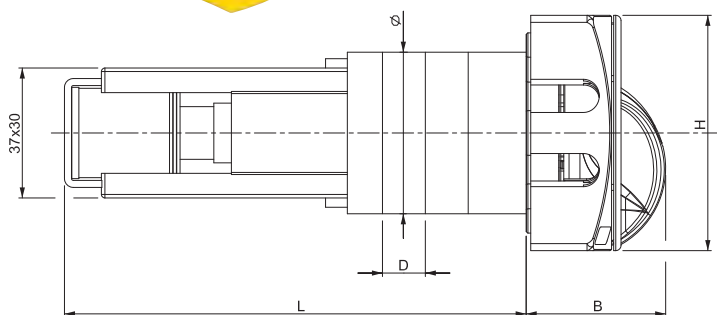
 standard article

R = on Request

Switches with electromagnet



Device with safety electromagnet. It allows the spring return of the switch to "OFF" position in case of supply failure.



	B	H
PL2	32	75x75
RT6	39	67x67
RL6	39	67x67

dimensions in mm

dimensions in mm

Stages no.		2
CA 016 D = 12,2 Ø = 40x46	L	126
CA 025 D = 16,2 Ø = 58	L	140,5



RL6



PL2

Rear mounting

Circuit diagram

0035

Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
16A	CA0160035E3RL6	1	CA0160035E3PL2	1	CA0160035E4PL2	R	CA0160035E5PL2	R
25A	CA0250035E3RL6	1						
* rat. n. voltage	110V		110V		220V		380V	



RT6

Rear mounting

Circuit diagram

0035







Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack
16A	CA0160035E3RT6	R	CA0160035E4RT6	R	CA0160035E5RT6	R
25A	CA0250035E3RT6	R	CA0250035E4RT6	R	CA0250035E5RT6	R
* rat. n. voltage	110V		220V		380V	

* Rated nominal voltage


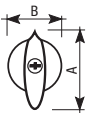

standard article

R = on Request

■ Plates

	Part no.	Description	Handle fixing option	Legend included		Pack
				Type	Degrees	
	FINPL1Q5	transparent plate 52x52mm (2.05x2.05"), black knob, IP40	Rear mounting with 2 screws	0 - 1 1 - 0 - 2	60°	5
	FINPL2Q5	transparent plate 75x75mm (2.95x2.95"), black knob, IP40	Rear mounting with 2 screws	0 - 1 1 - 0 - 2	60°	5
	FINRK6Q5	grey plate 67x67mm (2.64x2.64"), black padlockable knob (max 3 padlocks), IP66	Rear mounting with 2 screws	0 - 1	90°	5
	FINBK6Q5					5
	FINRL6Q5	yellow plate 67x67mm (2.64x2.64"), red padlockable knob (max 3 padlocks), IP66	Rear mounting with 2 screws	0 - 1	90°	5
	FINBL6Q5					5
	FINRT6Q5	grey plate 67x67mm (2.64x2.64"), black knob, IP66	Rear mounting with 2 screws	0 - 1 1 - 0 - 2	60°	5
	FINRT4Q5	grey plate 48x48mm (1.89x1.89"), black knob, IP66	Rear mounting with 2 screws	0 - 1 1 - 0 - 2	60°	5

■ Knobs

	Part no.	Description	Pack
 	M4G083N10	Black knob square section 5mm (0.20") 41x28 mm (1.61x1.10")	10
	M5G025N10	Black knob square section 5mm (0.20") 50x34 mm (1.97x1.34")	10
	M05G028N10	Black knob square section 5mm (0.20") 50x34 mm (1.97x1.34")	10
	M6G086N10	Black knob square section 7mm (0.28") 70x48 mm (2.76x1.89")	10
	MRNON10	black round knob Ø 38mm (1.50") square section 5mm (0.20")	10

 standard article

R = on Request

Protections


PVC protections against dust and dirt are available on request.



■ Terminal protection for diagrams 00G3,00G4

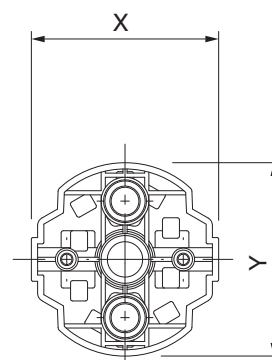
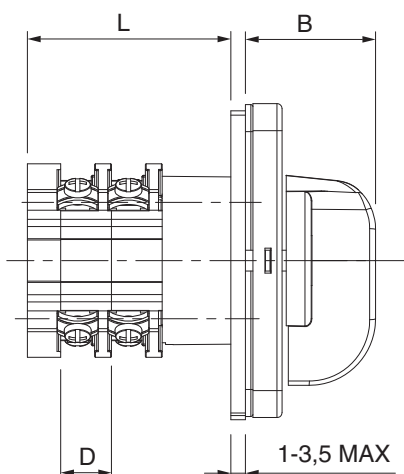
Part no.	Description	Pack
	PROTLE6747	Terminals protection CA012 ÷ 020 2 stages
	PROTLE6748	Terminals protection CA025 ÷ 040 2 stages

■ Optional shafts

Part no.	Description	Pack
	PALBL300	Shaft L=300mm 05
	PALBL500	Shaft L=500mm 05
	PALBL065	Shaft L=65mm 05
	PALBL075	Shaft L=75mm 05
	PALBL095	Shaft L=95mm 05
	PALBL115	Shaft L=115mm 05
	PALBL135	Shaft L=135mm 05
	PALBL155	Shaft L=155mm 05
	PALBL175	Shaft L=175mm 05

■ Rear mounting - PL Handle

Measures in mm (in)



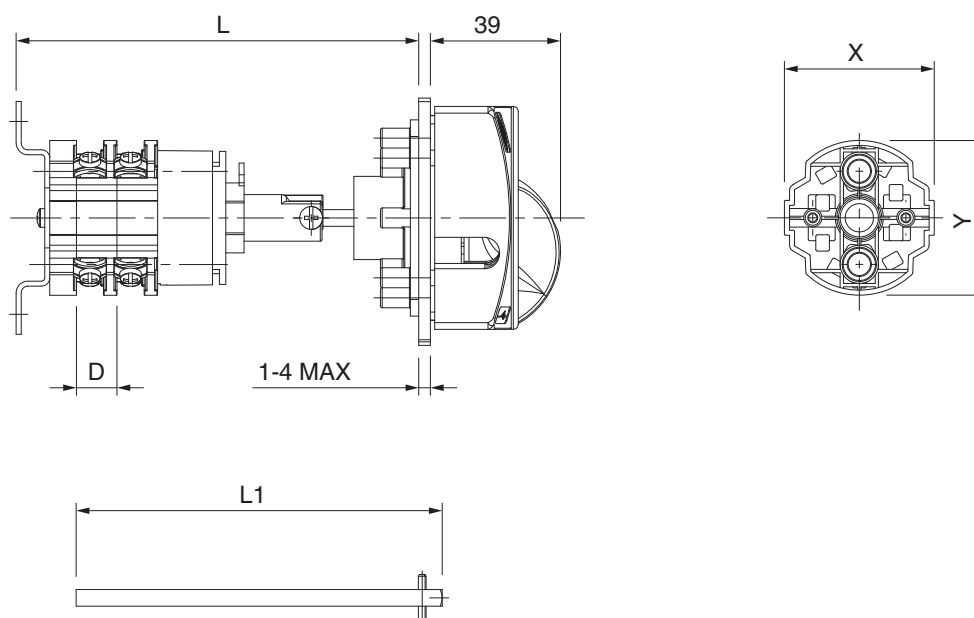
Series	X	Y	D		no. of stages					
					1	2	3	4	5	6
CA 012-016-020	45	∅ 46,5	12,2	L	36,7	49	61,1	73,3	85,5	97,7
	(1,77")	∅ (1,83")	(0,48")		(1,44")	(1,93")	(2,41")	(2,89")	(3,37")	(3,85")
CA 025-032-040	-	∅ 58,5	16,2	L	42,8	59	75	91,5	108	124
	-	∅ (2,30")	(0,64")		(1,69")	(2,32")	(2,95")	(3,60")	(4,25")	(4,88")

Handle	B
PL1	30 (1,18")
PL2	32 (1,26")

■ Base mounting - Handles BL6/BK6

(switching angle 90°, padlockable with max 3 padlocks)

Measures in mm (in)



Overall length (min-max)** for different shaft lengths (L1):

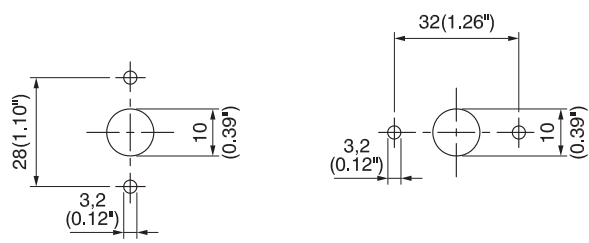
Series	no. of stages			L1	2	
	X	Y	D		Lmin	Lmax
CA 012-016-020	45	∅ 46,5	12,2	175 (6.89")*	114 (4,49")	258 (10,16")
	(1.77")	∅ (1.83")	(0.48")	300 (11.81")	114 (4,49")	383 (15,08")
				500 (19.69")	114 (4,49")	583 (22,95")
CA 025-032-040	-	∅ 58,5	16,2	175 (6.89")*	117 (4,61")	261 (10,28")
	-	∅ (2.30")	(0.64")	300 (11.81")	117 (4,61")	386 (15,20")
				500 (19.69")	117 (4,61")	586 (23,07")

* Standard shaft, bundled

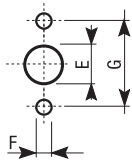
** Minimum length is obtainable by cutting the shaft

■ Drilling templates - Rear mounting

(RT - RL - RK) - Measures in mm (in)



(PL)



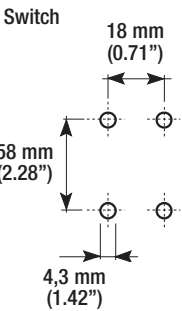
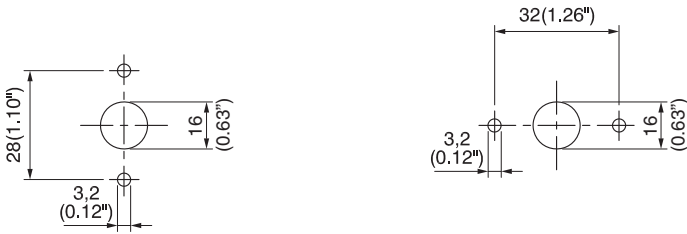
Dimensions						
cod.	E		F		G	
PL1	10	0.39	3,2	0.15	28	1.10
PL2	10	0.39	3,2	0.15	28	1.10

■ Drilling templates - Base mounting

(BL6 - BK6) - Measures in mm (in)

Escutcheon plate mounting options:

- 1) 2 holes with vertical distance 28mm (1.10'')
- 2) 2 holes with horizontal distance 32mm (1.26'')



Switch mounting options:

- 1) 4 holes with distance 58x18mm (2.28x0.71'')

CA 50-630A

**Standard
plates and
knobs**



Rear mount
with screw fixing



Base mount
with screw fixing



PL3 ⁽¹⁾

Transparent plate 105x105mm
(4.13x4.13"), black knob, IP40



PL4 ⁽²⁾

Transparent plate 130x130mm
(5.12x5.12"), black knob, IP40



3L3 ⁽¹⁾

Yellow plate 105x105mm (4.13x4.13"),
red padlockable knob (max 3 padlocks),
IP40



3L4 ⁽²⁾

Yellow plate 130x130mm (5.12x5.12"),
red padlockable knob (max 3 padlocks),
IP40



LE3 ⁽³⁾

Yellow plate 105x105mm (4.13x4.13"),
red padlockable knob (max 3 padlocks),
door interlock in "ON" position,
IP54, terminals cover

LE4 ⁽⁴⁾

Yellow plate 130x130mm (5.12x5.12"),
red padlockable knob (max 3 padlocks),
door interlock in "ON" position, IP54,
terminals cover

**Optional
plates and
knobs**



Rear mount
with screw fixing



Base mount
with screw fixing



PL9 ⁽²⁾

Transparent plate 130x130mm
(5.12x5.12"), black lever length 115 mm
(4.53"), IP40



PL5 ⁽²⁾

Transparent plate 130x130mm
(5.12x5.12"), black handwheel, IP40



3N3 ⁽¹⁾

Grey plate 105x105mm (4.13x4.13"),
black padlockable knob (max 3 padlocks),
IP40



LN3 ⁽³⁾

Grey plate 105x105mm (4.13x4.13"),
black padlockable knob (max 3 padlocks),
door interlock in "ON" position, IP54,
terminals cover

LN4 ⁽⁴⁾

Grey plate 130x130mm (5.12x5.12"),
black padlockable knob (max 3 padlocks),
door interlock in "ON" position, IP54,
terminals cover

Possible fixing options in rear mount depend on the combination of the plate with the rear mount cam-switch body

(1) suitable for 2-screw fixing with 2 holes at 40mm (1.57") vertical distance

(2) suitable for 4-screw fixing with holes at 30 x 90mm (1.18" x 3.54") distance

(3) suitable for 4-screw fixing with □ 65 ÷ 85mm (□ 2.56" ÷ 3.35") holes layout

(4) suitable for 4-screw fixing with □ 94 ÷ 110mm (□ 3.70" ÷ 4.33") holes layout

 standard plates

 optional plates

Rear mounting



PL3



PL4





PL9





PL5


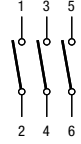
■ ON-OFF switch 2 pole

 0002	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA0500002PL3	R				
		63A	CA0630002PL3	R				
		100A						
		200A						
		400A						
		630A						

■ ON-OFF switch 3 pole

 0003	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA0500003PL3	1				
		63A	CA0630003PL3	1				
		100A			CA1000003PL4	1	CA1000003PL9	R
		200A			CA2000003PL4	1	CA2000003PL9	R
		400A			CA4000003PL4	R	CA4000003PL9	R
		630A					CA6300003PL5	R

■ ON-OFF switch 4 pole

 0004	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA0500004PL3	1				
		63A	CA0630004PL3	1				
		100A			CA1000004PL4	1	CA1000004PL9	R
		200A			CA2000004PL4	1	CA2000004PL9	R
		400A						
		630A						

 standard article

R = on Request

Rear mounting



PL3



PL4


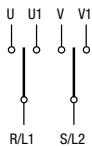


PL9


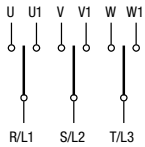


PL5


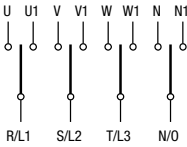
Change-over switch 2 pole

 0006	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA0500006PL3	1						
		63A	CA0630006PL3	1						
		100A			CA1000006PL4	1	CA1000006PL9	R		
		200A			CA2000006PL4	1	CA2000006PL9	R		
		400A					CA4000006PL9	R	CA4000006PL5	R
		630A					CA6300006PL9	R	CA6300006PL5	R

Change-over switch 3 pole

 0007	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA0500007PL3	1						
		63A	CA0630007PL3	1						
		100A			CA1000007PL4	1	CA1000007PL9	R		
		200A			CA2000007PL4	1	CA2000007PL9	R		
		400A					CA4000007PL9	R	CA4000007PL5	R
		630A							CA6300007PL5	R

Change-over switch 4 pole

 0039	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA0500039PL3	1						
		63A	CA0630039PL3	1						
		100A			CA1000039PL4	1	CA1000039PL9	R		
		200A			CA2000039PL4	1	CA2000039PL9	R		
		400A							CA4000039PL5	R
		630A							CA6300039PL5	R

Rear mounting



PL3



PL4


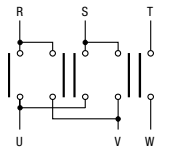


PL9


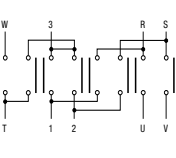


PL5


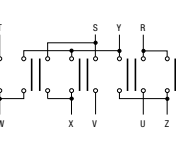
■ Reversing switch 3 pole

 0008	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA0500008PL3	1						
		63A	CA0630008PL3	1						
		100A			CA1000008PL4	1	CA1000008PL9	R		
		200A			CA2000008PL4	1	CA2000008PL9	R		
		400A					CA4000008PL9	R	CA4000008PL5	R
		630A							CA6300008PL5	R

■ Changing switch Dahlander pole

 0009	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA0500009PL3	1						
		63A	CA0630009PL3	1						
		100A								
		200A								
		400A								
		630A								

■ STAR-DELTA Starter

 0010	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA0500010PL3	1						
		63A	CA0630010PL3	1						
		100A			CA1000010PL4	1	CA1000010PL9	R		
		200A			CA2000010PL4	1	CA2000010PL9	R		
		400A								
		630A								

Rear mounting



3L3



3N3



3L4

■ **ON-OFF switch 3 pole with padlockable handle**

 00G3	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA05000G33L3	1	CA05000G33N3	R		
		63A	CA06300G33L3	1	CA06300G33N3	R		
		100A					CA10000G33L4	R
		200A					CA20000G33L4	R

■ **ON-OFF switch 4 pole with padlockable handle**

 00G4	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA05000G43L3	1	CA05000G43N3	R		
		63A	CA06300G43L3	1				
		100A					CA10000G43L4	R
		200A					CA20000G43L4	R

Base mounting



LE3



LN3



LE4

■ **ON-OFF switch 3 pole with padlockable handle**

 00G3	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA05000G3LE3	1	CA05000G3LN3	R		
		63A	CA06300G3LE3	1	CA06300G3LN3	R		
		100A					CA10000G3LE4	1
		200A					CA20000G3LE4	1




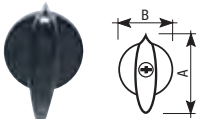
■ **ON-OFF switch 4 pole with padlockable handle**

 00G4	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack
		50A	CA05000G4LE3	1	CA05000G4LN3	R		
		63A	CA06300G4LE3	1	CA06300G4LN3	R		
		100A					CA10000G4LE4	1
		200A					CA20000G4LE4	1


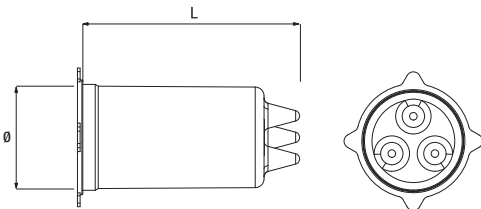
■ standard article

R = on Request


■ Plates and knobs

	Part no.	Description	Legend included		Pack
			Type	Degrees	
	FINPL3Q7	Rear mounting with screws, transparent plate 105x105mm (4.13x4.13"), black knob, IP40	0 - 1 1 - 0 - 2	60° 60°	5
	FINPL4Q10	Rear mounting with screws, transparent plate 105x105mm (5.12x5.12"), black knob, IP40	0 - 1 1 - 0 - 2	60° 60°	R
	FIN3L3Q7	Rear mounting with screws, yellow plate 105x105mm (4.13x4.13"), red padlockable knob (max 3 padlocks), IP40	0 - 1	90°	5
	M9G034N5	black knob square section 10mm (0.39") 105x75 (4.13x2.95")	-	-	5


■ Flexible PVC protections IP40

	Part no.	Description	Dimensions in mm (in)		Pack
			L	Ø	
	PROT2271003	CA050 up to 5 stages CA063 up to 4 stages	155 (6.10)	84 (3.31)	2
					

■ Terminals covers for diagrams 00G3,00G4

	Part no.	Description	Pack
	PROTLEG3229001	terminals cover CA050	2
	PROTLEG3229002	terminals cover CA063	2
	PROTLEG3942	terminals cover CA100-200	2

■ Shaft extensions with coupling

	Part no.	Description	Pack
	PALBL185	CA050-063, L.185mm (7.28"), □ 7mm (0.28")	10
	PALBL180Q10	CA100-063, L.185mm (7.28"), □ 10mm (0.39")	R

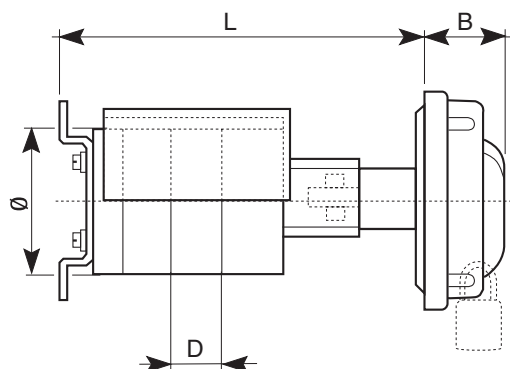
 standard article

R = on Request

■ Base mounting - Handles LE/LN

(switching angle 90°, padlockable with max 3 padlocks)

Measures in mm (in)



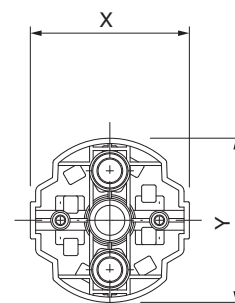
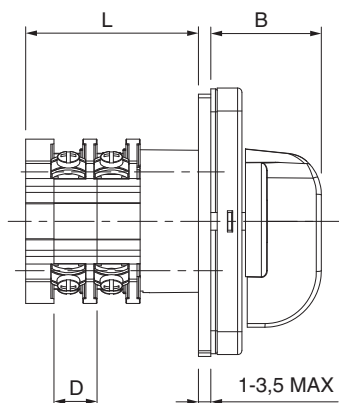
Stages no		2	
CA 050	D = 18	L (mm)	135 - 139
	0.71		
	Ø = 74	L (in)	5.31 - 5.47
	2.91		
CA 063	D = 25	L (mm)	151 - 155
	0.98		
	Ø = 84	L (in)	5.94 - 6.10
	3.31		

Stages no		2	
CA 100	D = 30	L (mm)	182 - 186
	1.18		
	Ø = 110	L (in)	7.16 - 7.32
	4.33		
CA 200	D = 39	L (mm)	200 - 204
	1.54		
	Ø = 110	L (in)	7.87 - 8.03
	4.33		

	B	
	(mm)	(in)
LE3-LN3	44	1.73
LE4-LN4	62	2.44

■ Rear mounting - PL Handle

Measures in mm (in)



Series	X	Y	D		no. of stages					
					1	2	3	4	5	6
CA 050	-	Ø 74	18	L	52,5	70,5	88,5	106,5	125	142,5
	-	Ø (2,91")	(0,71")		(2,07")	(2,78")	(3,48")	(4,19")	(4,92")	(5,61")
CA 063	-	Ø 84	25	L	60,5	85,5	110,5	135,5	160,5	185,5
	-	Ø (3,31")	(0,98")		(2,38")	(3,37")	(4,35")	(5,33")	(6,32")	(7,30")
CA 100	-	Ø 110	30	L	80,8	110,8	140,8	170,8	200,8	230,8
	-	Ø (4,33")	(1,18")		(3,18")	(4,36")	(5,54")	(6,72")	(7,91")	(9,09")
CA 200	-	Ø 110	39	L	90	129	168	207	246	285
	-	Ø (4,33")	(1,54")		(3,54")	(5,08")	(6,61")	(8,15")	(9,69")	(11,22")

Handle	B
PL3	44 (1,73")
PL4	62 (2,44")
PL5	63 (2,48")
PL9	73 (2,87")
3N3-3L3	44 (1,73")
RL6-RK6	39 (1,54")



Cam switches

CQ Series



Overview

The range of cam switches **CQ series** includes ratings from 12 to 32A with insulation voltage of 690V. According to the latest industrial application standards, CQ series offers IP 20 terminals protection degree and up to IP66 handle protection degree. Available with different mounting systems: rear panel with screws, base mounting with screws or snap mounting on DIN rail (EN 50022) with escutcheon plate for 45mm standard knock-out. Available diagrams for every application: ON-OFF switches, line switches, cam switches for motor control, ammeter and voltmeter switches.

Easy made wiring

■ Rear access to terminals screws for rear mounting versions

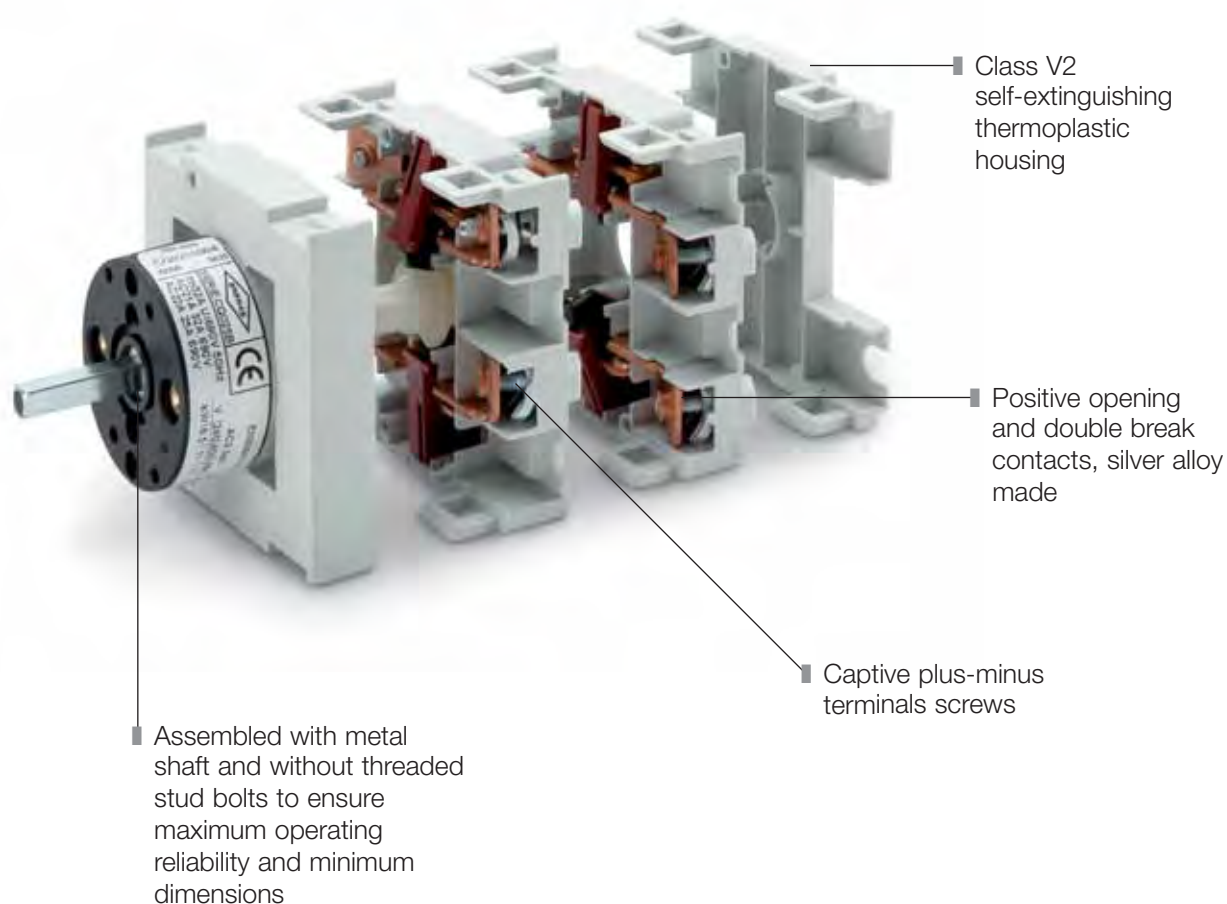


■ Front access to terminals screws for base mounting versions



■ Escutcheon plate for 45mm (1.77") standard knock-out

45mm (1.77") plate for fixing in standard panel/distribution boards slots. Available diagrams for ON-OFF switches, line switches, ammeter and voltmeter switches



■ Base mounting

All base mounting items (BL6 - BK6 handles) include a 175 mm (6.89") shaft



Technical data IEC 947-3 EN 60947-3

Rated insulation voltage

Rated operating voltage

Rated impulse withstand voltage

Rated thermal current for open switch

Rated thermal current for enclosed switch

Rated operation frequency

Power dissipation for each pole

Rated operating current I_e

AC-21A Switching resistive loads, including moderate overloads

AC-22A Switching of mixed resistive and inductive loads, including moderate overloads

AC-20A Connecting and disconnecting under no load conditions

Rated operating power

AC-23A Switching of motor loads or other highly inductive loads 3 phase - 3 pole

AC-3 Squirrel cage motors: starting, switching off motors during running 3 phase - 3 pole

AC-4 Squirrel cage motors: starting, plugging, inching

AC-15 Control of a.c. electromagnetic loads ≥ 72 VARated breaking capability in category in AC-23A ($\cos \varphi = 0,45$)

Short circuit protection

Rated short time withstand current (1s)

Rated short-circuit make capacity

Rated conditional short-circuit current

With fuses class gG

Technical data UL/CSA

Rated insulation voltage

Rated operating voltage

General Use Current

Rated operating power

1 phase - 2 pole

3 phase - 3 pole

Mechanical characteristics

Mechanical life

Connections according to IEC 9471-1 and EN 60947-1

Connecting capability Connecting capability with flexible wires

Connecting capability with solid wires

Connection terminal screw dimensions

Screw tightening torque

Protection degree IEC 529 EN 60529

Terminals

Ambient conditions

Operating ambient temperature

Storage ambient temperature

Withstand to constant humid according to IEC 60068

Withstand to cyclic humid according to IEC 60068

		CQ012	CQ016	CQ025	CQ032
Ui	V	690	690	690	690
Ue	V	690	690	690	690
Uimp	kV	6	6	4	4
Ith	A	16	20	32	40
Ithe	A	16	20	25	32
	Hz	50	50	50	50
	W	0,4	0,6	0,85	1,3
Ie	A	16	20	32	40
Ie	A	12	16	25	32
-	-	-	-	-	-
230V	Kw (A)	4 (13)	5,5 (17)	9 (28)	11 (35)
400V	Kw (A)	7,5 (14)	9 (16)	15 (27)	18,5 (33)
500V	Kw (A)	7,5 (11)	9 (13)	15 (22)	18 (27)
690V	Kw (A)	7,5 (8)	9 (9)	15 (16)	18,5 (19)
230V	Kw (A)	2,8 (9)	4 (13)	6,5 (20)	8,5 (26)
400V	Kw (A)	5,5 (10)	7,5 (14)	11 (21)	15 (27)
500V	Kw (A)	5,5 (8)	7,5 (11)	11 (16)	14 (20)
690V	Kw (A)	5,5 (6)	7,5 (8)	11(12)	14 (15)
230V	Kw (A)	1,1 (3)	1,5 (4)	3,7 (12)	4 (12)
400V	Kw (A)	1,75 (3)	2,2 (4)	4 (7)	5,5 (10)
230V	A	5	6	8	10
400V	A	3	4	6	8
230V	A	112	128	240	280
400V	A	112	128	216	264
Icw	A	200	240	500	640
Icm	A	1000	1000	2000	2000
-	kA	5	5	10	10
500V	A	20	20	50	50
Ui	UL/CSA V	600	600	-	-
Ue	UL/CSA V	600	600	-	-
Ie	UL/CSA A	16	20	-	-
120V	UL/CSA Hp	0,5/0,5	1,5 /0,5	-	-
240V	UL/CSA Hp	1,5/1,5	3/1,5	-	-
200V	UL/CSA Hp	2/2	5/3	-	-
240V	UL/CSA Hp	3/3	7,5/5	-	-
480V	UL/CSA Hp	5/5	7,5/7,5	-	-
600V	UL/CSA Hp	7,5/7,5	10/10	-	-
-	cycles x 10 ⁶	2	2	2	1,5
-	cycles/hour	120	120	120	120
Min-Max	mm ²	2x1,5-2,5	2x1,5-2,5	2x2,5-6	2x2,5-6
Min-Max	AWG	16-12	16-12	14-10	14-10
Min-Max	mm ²	2x1,5-4	2x1,5-4	2x2,5-10	2x2,5-10
-	Type	M3,5	M3,5	M5	M5
-	Nm	1,0	1,0	2,8	2,8
IP		20			
°C		-25 ÷ +55			
°C		-30 ÷ +70			
		2-78			
		2-30			

**Standard
plates and
knobs**



Rear mounting
with screws



Base mounting
with screws or snap
on DIN rail



Q01

Rear mounting with screws, grey plate
48x48mm (1.89x1.89"), black knob, IP65



Q06

Rear mounting with screws, grey plate
64x64mm (2.52x2.52"), black knob, IP65



RL6

Rear mounting with screws, yellow plate
67x67mm(2.64x2.64"), red padlockable
knob (max 3 padlocks), IP66



BL6

Base mounting with screws or with
snap mount on DIN rail, yellow plate
67x67mm(2.64x2.64"), red padlockable
knob (max 3 padlocks), door interlock in
"ON" position, IP66



DDN

Base mounting with screws or snap
mount on DIN rail, escutcheon plate
for standard 45mm (1.77") knock-out,
black knob, IP40

Optional plates and knobs



Rear mounting
with screws



QG1

Rear mounting with screws, yellow plate
48x48mm (1.89x1.89"), red knob, IP65



QG6

Rear mounting with screws, yellow plate
64x64mm (2.52x2.52"), red knob, IP65



RK6

Rear mounting with screws, grey plate
67x67mm(2.64x2.64"), black padlockable
knob (max 3 padlocks), IP66



Base mounting
with screws or snap
mount on DIN rail



BK6

Base mounting with screws or with
snap on DIN rail, grey plate 67x67mm
(2.64x2.64"), black padlockable knob
(max 3 padlocks), door interlock in
"ON" position, IP66

Rear mounting





Q01





Q06


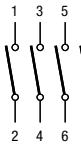
ON-OFF switch 2 pole

 0002	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120002Q01	1		
		16A	CQ0160002Q01	1	CQ0160002Q06	R
		25A			CQ0250002Q06	R
		32A				



ON-OFF switch 3 pole

 0003	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120003Q01	1	CQ0120003Q06	R
		16A	CQ0160003Q01	1	CQ0160003Q06	R
		25A			CQ0250003Q06	R
		32A			CQ0320003Q06	R

ON-OFF switch 4 pole

 0004	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120004Q01	1	CQ0120004Q06	R
		16A	CQ0160004Q01	1	CQ0160004Q06	R
		25A			CQ0250004Q06	R
		32A			CQ0320004Q06	R

Change-over switch 1 pole

 0005	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120005Q01	1	CQ0120005Q06	R
		16A				
		25A				
		32A				

 standard article

R = on Request

Rear mounting


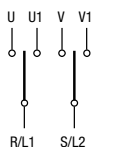


Q01


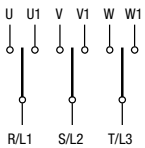


Q06


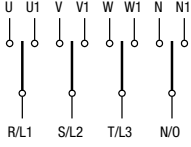
■ Change-over switch 2 pole

 0006	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120006Q01	1		
		16A	CQ0160006Q01	1	CQ0160006Q06	R
		25A			CQ0250006Q06	R
		32A			CQ0320006Q06	R


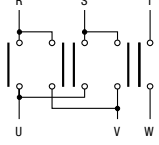
■ Change-over switch 3 pole

 0007	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120007Q01	1	CQ0120007Q06	R
		16A	CQ0160007Q01	1	CQ0160007Q06	R
		25A			CQ0250007Q06	R
		32A			CQ0320007Q06	R

■ Change-over switch 4 pole

 0039	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120039Q01	1		
		16A	CQ0160039Q01	1	CQ0160039Q06	R
		25A			CQ0250039Q06	R
		32A			CQ0320039Q06	R

■ Reversing switch 3 pole

 0008	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120008Q01	1	CQ0120008Q06	R
		16A	CQ0160008Q01	1	CQ0160008Q06	R
		25A			CQ0250008Q06	R
		32A			CQ0320008Q06	R

 standard article

R = on Request

Rear mounting


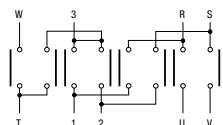


Q01


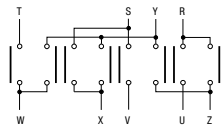


Q06


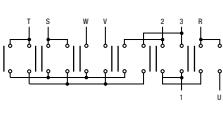
Changing switch Dahlander pole

 0009	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120009Q01	1	CQ0120009Q06	R
		16A	CQ0160009Q01	1	CQ0160009Q06	R
		25A			CQ0250009Q06	R
		32A			CQ0320009Q06	R


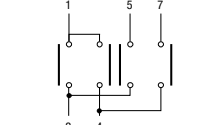
STAR-DELTA Starter

 0010	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A				
		16A	CQ0160010Q01	1	CQ0160010Q06	R
		25A			CQ0250010Q06	R
		32A			CQ0320010Q06	R

Reversing switch pole changing

 0011	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A				
		16A	CQ0160011Q01	1		
		25A				
		32A				

Voltmeter switch 3 concatenated voltages

 0016	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120016Q01	1	CQ0120016Q06	R
		16A				
		25A				
		32A				

 standard article

R = on Request

Rear mounting

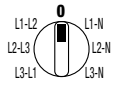
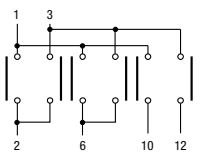


Q01

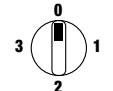
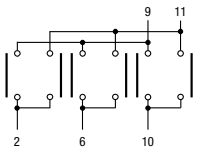


Q06

■ Voltmeter switch 3 concatenated voltages and 3 phase voltages

 0018	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120018Q01	1	CQ0120018Q06	1
		16A				
		25A				
		32A				

■ Ammeter switch 1 pole 3 current transformers

 0022	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120022Q01	1	CQ0120022Q06	R
		16A				
		25A				
		32A				

Rear mounting





RL6

Base mounting*





BL6

■ ON-OFF switch 3 pole with padlockable handle

 0003	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120003RL6	1	CQ0120003BL6	1
		16A	CQ0160003RL6	1	CQ0160003BL6	1
		25A	CQ0250003RL6	R	CQ0250003BL6	R
		32A	CQ0320003RL6	R	CQ0320003BL6	R

■ ON-OFF switch 4 pole with padlockable handle

 0004	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120004RL6	1	CQ0120004BL6	1
		16A	CQ0160004RL6	1	CQ0160004BL6	1
		25A	CQ0250004RL6	R	CQ0250004BL6	R
		32A	CQ0320004RL6	R	CQ0320004BL6	R

* Base mounting switches are supplied with standard 175mm (6.89") shaft

Rear mounting





RK6

Base mounting*


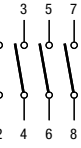


BK6

■ ON-OFF switch 3 pole with padlockable handle







 0003	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120003RK6	R	CQ0120003BK6	R
		16A	CQ0160003RK6	R	CQ0160003BK6	R
		25A	CQ0250003RK6	R	CQ0250003BK6	R
		32A	CQ0320003RK6	R	CQ0320003BK6	R

■ ON-OFF switch 4 pole with padlockable handle

 0004	Circuit diagram	Rated nom. current	Part no.	Pack	Part no.	Pack
		12A	CQ0120004RK6	R	CQ0120004BK6	R
		16A	CQ0160004RK6	R	CQ0160004BK6	R
		25A	CQ0250004RK6	R	CQ0250004BK6	R
		32A	CQ0320004RK6	R	CQ0320004BK6	R


* Base mounting switches are supplied with standard 175mm (6.89") shaft

Plates and knobs

	Part no.	Description	Legend included		Pack
			Type	Degrees	
	FINRL6Q5	Rear mounting with screws, yellow plate 67x67mm (2.64x2.64"), red padlockable knob (max 3 padlocks), IP66	0 - 1	90°	5
	FINRK6Q5	Rear mounting with screws, grey plate 67x67mm (2.64x2.64"), black padlockable knob (max 3 padlocks), IP66	0 - 1	90°	5
	FINBL6Q5	Remounting with screws, yellow plate 67x67mm (2.64x2.64ar"), red padlockable knob (max 3 padlocks), IP66	0 - 1	90°	5
	FINBK6Q5	Rear mounting with screws, grey plate 67x67mm (2.64x2.64"), black padlockable knob (max 3 padlocks), IP66	0 - 1	90°	5
	FINQ01Q5	Rear mounting with screws, plate 48x48mm (1.89x1.89"), black knob, IP65	0 - 1 1 - 0 - 2	90° 90°	5
	FINQ06Q5	Rear mounting with screws, plate 64x64mm (2.52x2.52"), black knob, IP65	0 - 1 1 - 0 - 2	90° 90°	5

Accessories

Optional shafts

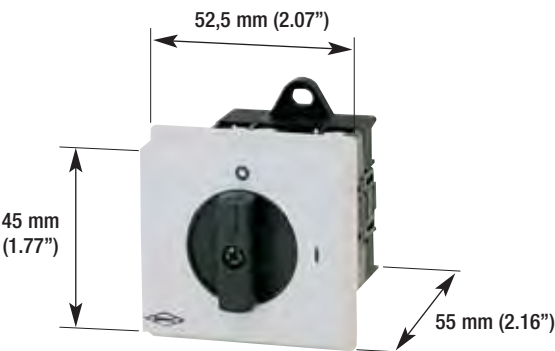
	Part no.	Description	Pack
	PALBL300	Shaft L=300mm 05	5
	PALBL500	Shaft L=500mm 05	5
	PALBL065	Shaft L=65mm 05	R
	PALBL075	Shaft L=75mm 05	R
	PALBL095	Shaft L=95mm 05	R
	PALBL115	Shaft L=115mm 05	R
	PALBL135	Shaft L=135mm 05	R
	PALBL155	Shaft L=155mm 05	R
	PALBL175	Shaft L=175mm 05	5

 standard article

R = on Request

Construction data

DDN is the solution proposed by BREMAS for mounting the switch in panel/distribution boards standard slots, with 45mm (1.77") plate.
The main mounting system is snap mount on DIN rail, otherwise it's possible to fix the switch with screws with 48mm (1.89") or 75mm (2.95") interaxis between the holes.
Available diagrams for ON-OFF switches, line switches, ammeter and voltmeter switches.
Grey escutcheon plate, black knob, IP40.



DDN version

	Rated nominal current			
	12A		16A	
Circuit diagram	Part no.	Pack	Part no.	Pack
DN07	CQ012DN07DDN	R	CQ016DN07DDN	R
DN08	CQ012DN08DDN	1	CQ016DN08DDN	1
DN09	CQ012DN09DDN	1	CQ016DN09DDN	1
DN10	CQ012DN10DDN	R	CQ016DN10DDN	R
DN16	CQ012DN16DDN	R		
DN18	CQ012DN18DDN	R		
DN22	CQ012DN22DDN	R		

 standard article

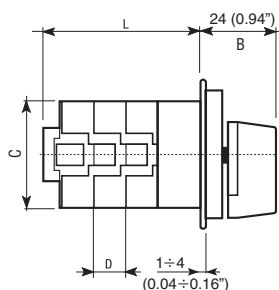
R = on Request

Switches

<

■ Rear mounting - Q01/Q06/QG1/QG6 handles

Measures in mm (in)

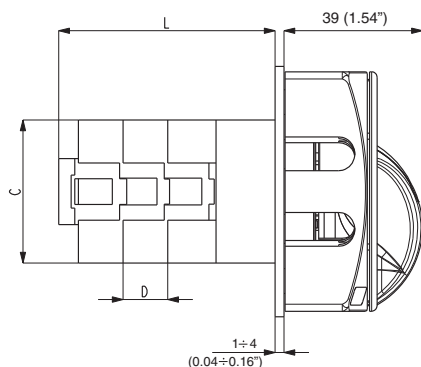


	B	
	(mm)	(in)
Q01-QG1	24	0.94
Q06-QG6	30	1.18

Stages no		1	2	3	4	6
CQ 012-016						
D = 12,5	L (mm)	48,0	60,5	73,0	85,5	110,5
0.49						
C = 40x40		1.89	2.38	2.87	3.37	4.35
1.57x1.57	L (in)					
CQ 025-032						
D = 12,5	L (mm)	50,5	63,0	75,5	88,0	113,0
0.49						
C = 63X62		1.99	2.48	2.97	3.46	4.45
2.42x2.40	L (in)					

■ Rear mounting - RL6/RK6 handles

Measures in mm (in)

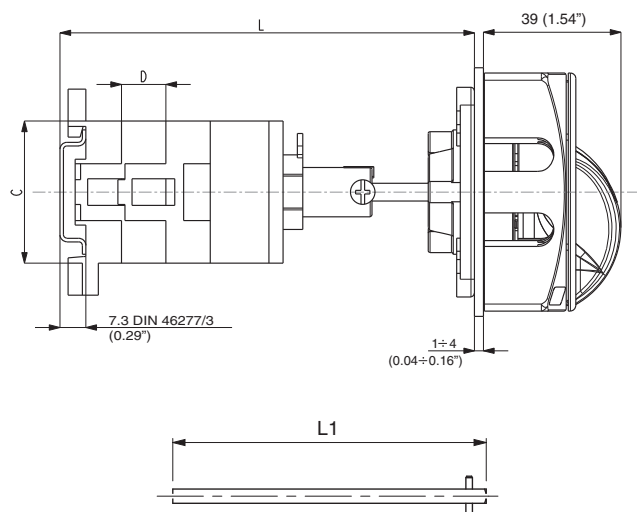


Stages no		2
CQ 012-016		
D = 12,5	L (mm)	60,5
0.49		
C = 40x40		2.38
1.57x1.57	L (in)	
CQ 025-032		
D = 12,5	L (mm)	63,0
0.49		
C = 63X62		2.48
2.42x2.40	L (in)	

■ Rear mounting - BL6/BK6 Handles

Switching angle 90°, padlockable (max 3 padlocks)

Measures in mm (in)



Overall length (min-max)** for different shaft lengths (L1):

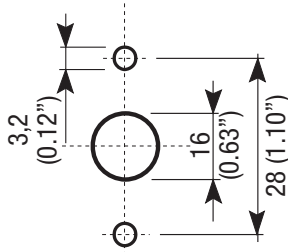
Stages no		2	Stages no		2
	L1			L1	
CQ 012-016	175*	(mm) 118 - 262	CQ 025-032	175*	(mm) 121 - 265
	6.89*	(in) 4.65 - 10.31		6.89*	(in) 4.76 - 10.43
	300	(mm) 118 - 387		300	(mm) 121 - 390
	11.81	(in) 4.65 - 15.24		11.81	(in) 4.76 - 15.35
	500	(mm) 118 - 587		500	(mm) 121 - 590
	19.68	(in) 4.65 - 23.11		19.68	(in) 4.76 - 23.23

* Standard shaft, bundled
** Minimum length obtainable by cutting the shaft.

Drilling templates

■ Drilling templates

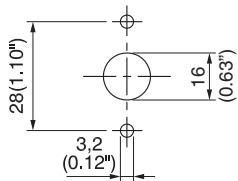
Rear mounting - Measures in mm (in)



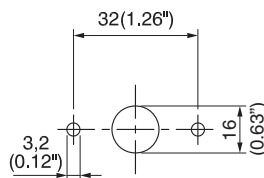
Base mounting

Escutcheon plate mounting options:

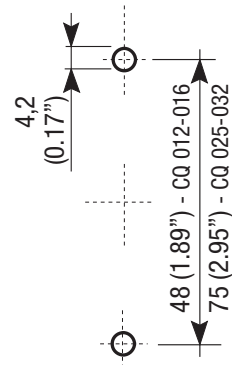
1) 2 holes with vertical distance 28mm (1.10")



2) 2 holes with horizontal distance 32mm (1.26")



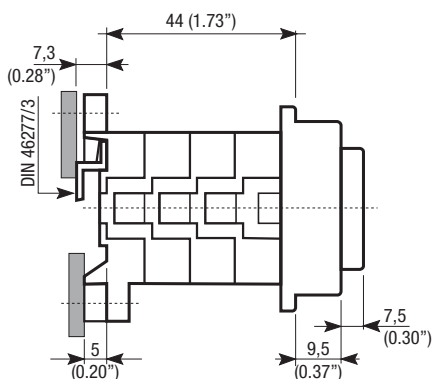
Switch



For fixing with screws in alternative to snap mount on DIN rail

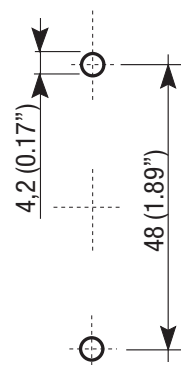
■ Base mounting - DDN

Measures in mm (in)

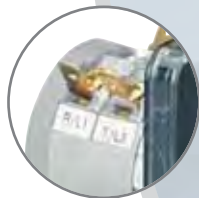


■ Drilling templates - DDN

Measures in mm (in)



Fixing with screws in alternative to snap mount on DIN rail



■ Customized solutions

In our archive are available **upon request** more than 10,000 diagrams to tailor every customers' needs.



■ Special versions

On request, special versions can be supplied with faston connections, customized shaft or diagrams, etc.

In over 50 years of experience, **BREMAS** has specialized in the design of products able to satisfy every customer's need through customized solutions, assuring quality and reliability.

BREMAS is the brand which better satisfies the needs of the different market segments, offering customer tailored solutions.

(see next page for some examples)

Special versions

Some examples of special versions, available on request.



Quick connection terminals (faston connections)

Flat terminal. at 90°, at 120° and other possibilities.
Suitable for series CA012, CA016, CA020, CA025, CA032



Coaxial

Obtained by coupling different series:
CA100 + CA032/CA025/CA020/CA016/CA012
CA063 + CA032/CA025/CA020/CA016/CA012
CA040 + CA020/CA016/CA012



Cable coupling

Available for rear and base mounting devices. These connections protrude from the switch and are suitable for CA012, CA016, CA020, CA032, CA040, CA063, CA100 series.



Key selector switch

Device for mounting on single hole \varnothing 22 mm (0.87") with key.
Suitable for CA012, CA016, CA020, CA025 and CA032 series.



Switch
disconnectors

DS Series
XNA Series
TS Series

BREMAS

DS series
XNA series
TS series
TSC/TSD series

Switch-disconnectors

DS Series page 105

20 – 32 – 40A
3-4 poles
Rear mount and Base mount
Auxiliary contacts and / or additional pole
Protection degree of terminals: IP20
Protection degree of handles: IP66

XNA Series page 123

50 – 63 – 100A
3-4 poles
Auxiliary contacts and / ore additional pole
Protection degree of terminals: IP20
Protection degree of handles: IP66
Base mount

TS Series page 131

Current ratings from 125A to 2500A
3 - 4 - 6 - 8 poles
Base mount or rear mount
Auxiliary contacts
Protection degree of handles: up to IP55

TSC/TSD Series page 139

250 - 400 - 630 - 800 – 1000 – 1250 - 1600A
3 - 4 - 6 - 8 poles
Base mount
Auxiliary contacts
Protection degree of handles: up to IP54

Overview




The range of Bremas switch disconnectors includes **DS, XNA, TS and TSC/TSD series** with current ratings from 16A to 2500A.

The double break contacts have positive opening to guarantee high electrical efficiency and safety. The terminals of the DS and XNA series have IP20 protection degree and are provided with captive screws in open position to reduce the wiring time.

The new DS series have contact blocks designed to facilitate wiring: rear access to terminal connections for rear mounting versions and front access for base mounting versions.

TS and TSC/TSD series have bolt connection (screw terminals are available for TS rated 125A).

Terminal covers and additional accessories are optionally available.

	DS	20A 32A 40A	<ul style="list-style-type: none"> • Ui/Ue 800V • 3 - 4 pole • Screw cage terminals with captive screws • Max 10/16 mm² (flex/solid wire) • Max AWG 8 • Rear mount with screws or Ø22mm (0,87") singl-hole and nut • Base mounting with screws or on DIN rail
	XNA	50A 63A 100A	<ul style="list-style-type: none"> • Ui/Ue 690V • 3 - 4 pole • Screw cage terminals with captive screws • Max 35/50 mm² (flex/solid wire) • Max AWG 1 • Base mount with screws or on DIN rail
	TS	125A 160A 200A 250A	<ul style="list-style-type: none"> • Ui/Ue 1000V/690V • 690V AC 23A IEC 60947-3 • 600V DC 23A IEC 60947-3 • 3 - 4 pole • Bolt connection for ring lugs (also screw terminals for the 125A only) • Base mount
		400A 630A 800A 1000A	On request <ul style="list-style-type: none"> • Current ratings up to 2500A • 6 and 8 pole • Rear mount
	TSC TSD	250A 400A 630A 800A 1000A 1250A 1600A	<ul style="list-style-type: none"> • Ui/Ue 1000V/600V • 500V AC 23A • 690 AC 22A IEC 60947-3 • 600V DC 22A IEC 60947-3 • 3 - 4 pole • Bolt connection for ring lugs • Base mount On request 6 and 8 pole










Switch
disconnectors

DS Series

BREMAS

Switch disconnectors

International Standards and approvals

Country	USA / Canada	Germany	Switzerland	Denmark	Norway	Sweden	Finland	Austria	Great Britain	IEC International electrical Commission
Authority	UL investigated according to CSA	Verband Deutscher Elektrotechniker	Schweizerischer Elektrotechnischer Verein	Danmarks Elektriske Materielkontrol	Norges Elektriske Materielkontrol	Svenska Elektriske Materielkontroll-anstalten	Sähkötar-kastuskeskus	Österreichischer Verband für Elektrotechnik	British Standards Institution	
Mark of standard		⁽¹⁾ VDE 0660							⁽¹⁾ BS EN 60947	⁽²⁾ IEC 60947
DS020	•	+	+	+	+	+	+	+	+	+
DS032	•	+	+	+	+	+	+	+	+	+
DS040	*	+	+	+	+	+	+	+	+	+

- Approved
- + Conforms to requirements
- * UL pending for DS040

UL Approval File E101686

Notes:

- 1) It is not required to bear a symbol but switches must conform to requirements.
- 2) IEC does not operate an approval scheme

Technical data IEC 947-3 EN 60947-3

			DS020	DS032	DS040
Main characteristics					
Rated operating voltage	Ue	V	800	800	800
Rated insulation voltage	Ui	V	800	800	800
Rated impulse withstand voltage	Uimp	kV	8	8	8
Rated thermal current for open switch	Ith	A	25	32	40
Rated thermal current for enclosed switch	Ithe	A	25	32	40
Rated operation frequency	Hz		50/60	50/60	50/60
Power dissipation for each pole	W		0,6	1,3	2,5
Rated operating current Ie					
AC-21A Switching resistive loads, including moderate overloads	690V	A	20	32	40
AC-22A Switching of mixed resistive and inductive loads, including moderate overloads	690V	A	20	32	40
Rated operating power					
AC-23A Switching of motor loads or other highly inductive loads	400V	Kw (A)	9 (18)	11 (22)	15(28)
	690V	Kw (A)	9(13)	11 (16)	15(18)
AC-3 Squirrel cage motors: starting, switching off motors during running	400V	Kw (A)	5,5 (10)	7,5 (14)	11(21)
	690V	Kw (A)	5,5 (6)	7,5 (8)	11(12)
Rated breaking capability in category AC-23A (cos φ= 0.45)	400V	A	144	176	228
	690V	A	104	128	144
Short circuit protection					
Rated short time withstand	Icw	A	300	400	500
Rated short-circuit make	Icm	A	750	750	750
Rated conditional short-circuit		kA	10	10	10
With fuses class gG	500V	A	20	32	40
Mechanical life (120 cycles/hour)	Mil.Man				
Connecting capability with flexible wires	Min-Max	mm²	1,5-10	1,5-10	1,5-10
Connecting capability with solid wires	Min-Max	mm²	1,5-16	1,5-16	1,5-16
Connection terminal screw dimensions			M4	M4	M4
Screw tightening torque		Nm	1,7	1,7	1,7

Technical data UL/CSA

General use Voltage	Ue	V	600	600	(*)
General Use Current	600Vac	A	20	30	(*)
Rated operating power					
1 phase - 2 pole	120V	HP/FLA	1 / -	1,5 / -	(*)
	240V	HP/FLA	2 / -	3 / -	(*)
3 phase - 3 pole	200V	HP/FLA	- / -	- / -	(*)
	240V	HP/FLA	5/ -	7,5 / -	(*)
	480V	HP/FLA	10/ -	15 / -	(*)
	600V	HP/FLA	15/ -	20 / -	(*)
Line protection fuse (Class RK5, 600Vac, 200kA A.I.C.)		A	20	30	(*)
Line protection fuse (Class J, 600Vac)		A	-	-	-
		KA	5	5	(*)
Auxiliary contacts designation			AC Voltage, "Heavy Pilot Duty" (A600)		

Mechanical characteristics

Connecting capability with flexible wires	Min-Max	AWG	16/08	16/08	16/08
Connecting capability with solid wires	Min-Max	AWG	16/06	16/06	16/06
Screw tightening torque		ib.in.	12	12	12
Protection degree IEC 529 EN 60529					
Terminals		IP20			
Handle		IP66			
Ambient conditions					
Operating ambient temperature		°C		-25 /+ 55	
Storage ambient temperature		°C		-25 /+ 55	
Withstand to constant humid according to IEC 60068				2-78	
Withstand to cyclic humid according to IEC 60068				2-30	
Auxiliary contacts				DSC040NO_ DSC040NC_	
Rated insulation voltage	Ui	V		800	
Rated thermal current for open switch	Ith	A		10	
AC-15 Control of a.c. electromagnetic loads	230V	A		3	

Main features



The new series of **DS switch-disconnectors** offers high performance and is targeted to the installation in distribution circuits and panel boards or directly on tooling machines, with ratings of 20-32-40 A in alternated current. The DS switch-disconnectors have external dimensions amongst the most compact on the market and have a full range of IP66 handles, making it possible to install the switches even in narrow spaces and severe ambient conditions. All the most common fixing options are available: rear mounting, base mounting, direct command, with screws or on single hole Ø22 mm. A reliable wiring is guaranteed from the screw cage terminals with captive plus/minus screws with IP20 protection. A full range of accessories is also available, including shafts, terminal covers and a padlocking adapter for the direct command version.



Maximum installation flexibility

The DDN version will soon be available for mounting in panel boards with 46mm knock-out



Complete fixing option

All the most common fixing options are available.

For rear mounting:

- 2 holes with 28mm vertical interaxis
- 4 holes with 36mm / 48mm interaxis
- Single hole ø 22 mm with fixing nut

For base mounting:

- Snap mount on DIN rail
- Screws
- Plate fixed on panel with 4 holes with 36mm / 48mm interaxis

Time and cost saving for shaft cutting

Adjustable depth for the smart shaft insertion

The base mounting version includes an ergonomic handle for direct command of the switch which incorporates a housing for the shaft with a fixing screw. The height of the shaft can be adjusted within an excursion of 20 mm, therefore the need of cutting the shaft can be reduced. Base mounting switches are provided with 175 mm shafts.



Practical and reliable wiring

The access to the terminals is differentiated depending on the fixing option.

- Rear mounting: rear access to terminals
- Base mounting: front access to terminals

Screw cage terminals for 10 mm² flexible conductor or 16 mm² solid conductor. The clamps are provided with captive plus/minus terminal screws and are supplied open. Protection against direct contact is guaranteed even when the panel is opened. Optional covers for the terminals are available.



Plates and knobs for every application

A complete IP66 range

All the most common plates and knobs are available, for base and rear mounting, with or without padlocking. For all these plates and knobs the IP66 degree of protection is guaranteed, allowing the installation even in difficult environments.



Solutions for saving installation time

Single hole Ø22 mm (0.87") versions are available for rear and base mounting: they reduce the installation time up to 70%.



Safety for the operator

The base mounting plates and knobs are provided with door interlock mechanism in "I/ON" position to avoid door opening when the board is connected to the supply.

4th pole and auxiliary contacts

Space and wiring flexibility

The 4th pole and auxiliary contact can be mounted without tools on the right or left side.



Rear-mount switches



Base mount switches



■ IP66 handles with screw fixing

Padlockable handles		poles	le AC21	Two-screw fixing	Pack	Four-screw fixing 48x48mm	Pack	Two-screw fixing	Pack
	Grey plate 67x67mm padlockable, black knob	3 pole	20A	DS0203RRK6	1	DS0203PRK6	R	DS0203BAK6	1
			32A	DS0323RRK6	1	DS0323PRK6	R	DS0323BAK6	1
			40A	DS0403RRK6	1	DS0403PRK6	R	DS0403BAK6	1
		4 pole	20A	DS0204RRK6	1	DS0204PRK6	R	DS0204BAK6	1
			32A	DS0324RRK6	1	DS0324PRK6	R	DS0324BAK6	1
			40A	DS0404RRK6	1	DS0404PRK6	R	DS0404BAK6	1
	Yellow plate 67x67mm padlockable, red knob	3 pole	20A	DS0203RRL6	1	DS0203PRL6	R	DS0203BAL6	1
			32A	DS0323RRL6	1	DS0323PRL6	R	DS0323BAL6	1
			40A	DS0403RRL6	1	DS0403PRL6	R	DS0403BAL6	1
		4 pole	20A	DS0204RRL6	1	DS0204PRL6	R	DS0204BAL6	1
			32A	DS0324RRL6	1	DS0324PRL6	R	DS0324BAL6	1
			40A	DS0404RRL6	1	DS0404PRL6	R	DS0404BAL6	1
	Grey plate 67x67 mm, black knob padlockable	3 pole	20A	DS0203RQT6L	R	DS0203PQT6L	R	DS0203BAT6L	R
			32A	DS0323RQT6L	R	DS0323PQT6L	R	DS0323BAT6L	R
			40A	DS0403RQT6L	R	DS0403PQT6L	R	DS0403BAT6L	R
		4 pole	20A	DS0204RQT6L	R	DS0204PQT6L	R	DS0204BAT6L	R
			32A	DS0324RQT6L	R	DS0324PQT6L	R	DS0324BAT6L	R
			40A	DS0404RQT6L	R	DS0404PQT6L	R	DS0404BAT6L	R
	Yellow plate 67x67 mm, red knob padlockable	3 pole	20A	DS0203RQY6L	R	DS0203PQY6L	R	DS0203BAY6L	R
			32A	DS0323RQY6L	R	DS0323PQY6L	R	DS0323BAY6L	R
			40A	DS0403RQY6L	R	DS0403PQY6L	R	DS0403BAY6L	R
		4 pole	20A	DS0204RQY6L	R	DS0204PQY6L	R	DS0204BAY6L	R
			32A	DS0324RQY6L	R	DS0324PQY6L	R	DS0324BAY6L	R
			40A	DS0404RQY6L	R	DS0404PQY6L	R	DS0404BAY6L	R
	Grey plate 48x48 mm, black knob padlockable Only for two-screw fixing	3 pole	20A	DS0203RQT4L	1	/	/	DS0203BAT4L	R
			32A	DS0323RQT4L	1	/	/	DS0323BAT4L	R
			40A	DS0403RQT4L	1	/	/	DS0403BAT4L	R
		4 pole	20A	DS0204RQT4L	1	/	/	DS0204BAT4L	R
			32A	DS0324RQT4L	1	/	/	DS0324BAT4L	R
			40A	DS0404RQT4L	1	/	/	DS0404BAT4L	R
	Yellow plate 48x48 mm, red knob padlockable Only for two-screw fixing	3 pole	20A	DS0203RQY4L	1	/	/	DS0203BAY4L	R
			32A	DS0323RQY4L	1	/	/	DS0323BAY4L	R
			40A	DS0403RQY4L	1	/	/	DS0403BAY4L	R
		4 pole	20A	DS0204RQY4L	1	/	/	DS0204BAY4L	R
			32A	DS0324RQY4L	1	/	/	DS0324BAY4L	R
			40A	DS0404RQY4L	1	/	/	DS0404BAY4L	R

standard article

R = on Request

Two-screw fixing, distance between holes: 28mm (1.10") Vertical or 32mm (1.26") Horizontal
Four-screw fixing, distance between holes: 48x48mm (1.89"x1.89")

Rear-mount
switchesBase mount
switches

■ IP66 handles with screw fixing

Non padlockable handles		poles	le AC21	Two-screw fixing	Pack	Four-screw fixing 36x36mm or 48x48mm	Pack	Two-screw fixing	Pack
	Grey plate 64x64 mm, black knob	3 pole	20A	DS0203RQV6	R	DS0203PQV6	R	DS0203BAV6	R
			32A	DS0323RQV6	R	DS0323PQV6	R	DS0323BAV6	R
			40A	DS0403RQV6	R	DS0403PQV6	R	DS0403BAV6	R
		4 pole	20A	DS0204RQV6	R	DS0204PQV6	R	DS0204BAV6	R
			32A	DS0324RQV6	R	DS0324PQV6	R	DS0324BAV6	R
			40A	DS0404RQV6	R	DS0404PQV6	R	DS0404BAV6	R
	Grey plate 48x48 mm, black knob Four-screw fixing at 36x36mm only	3 pole	20A	DS0203RQV4	R	DS0203PQV4	R	DS0203BAV4	R
			32A	DS0323RQV4	R	DS0323PQV4	R	DS0323BAV4	R
			40A	DS0403RQV4	R	DS0403PQV4	R	DS0403BAV4	R
		4 pole	20A	DS0204RQV4	R	DS0204PQV4	R	DS0204BAV4	R
			32A	DS0324RQV4	R	DS0324PQV4	R	DS0324BAV4	R
			40A	DS0404RQV4	R	DS0404PQV4	R	DS0404BAV4	R
	Yellow plate 64x64 mm, red knob	3 pole	20A	DS0203RQW6	R	DS0203PQW6	R	DS0203BAW6	R
			32A	DS0323RQW6	R	DS0323PQW6	R	DS0323BAW6	R
			40A	DS0403RQW6	R	DS0403PQW6	R	DS0403BAW6	R
		4 pole	20A	DS0204RQW6	R	DS0204PQW6	R	DS0204BAW6	R
			32A	DS0324RQW6	R	DS0324PQW6	R	DS0324BAW6	R
			40A	DS0404RQW6	R	DS0404PQW6	R	DS0404BAW6	R
	Yellow plate 48x48 mm, red knob Four-screw fixing at 36x36mm only	3 pole	20A	DS0203RQW4	R	DS0203PQW4	R	DS0203BAW4	R
			32A	DS0323RQW4	R	DS0323PQW4	R	DS0323BAW4	R
			40A	DS0403RQW4	R	DS0403PQW4	R	DS0403BAW4	R
		4 pole	20A	DS0204RQW4	R	DS0204PQW4	R	DS0204BAW4	R
			32A	DS0324RQW4	R	DS0324PQW4	R	DS0324BAW4	R
			40A	DS0404RQW4	R	DS0404PQW4	R	DS0404BAW4	R
Padlockable handles		poles	le AC21	Two-screw fixing	Pack	Four-screw fixing 36x36mm or 48x48mm	Pack	Two-screw fixing	Pack
	Grey plate 67x67 mm padlockable, black knob	3 pole	20A	DS0203RRK5	R	DS0203PRK5	R	DS0203BAK5	R
			32A	DS0323RRK5	R	DS0323PRK5	R	DS0323BAK5	R
			40A	DS0403RRK5	R	DS0403PRK5	R	DS0403BAK5	R
		4 pole	20A	DS0204RRK5	R	DS0204PRK5	R	DS0204BAK5	R
			32A	DS0324RRK5	R	DS0324PRK5	R	DS0324BAK5	R
			40A	DS0404RRK5	R	DS0404PRK5	R	DS0404BAK5	R
	Yellow plate 67x67 mm padlockable, red knob	3 pole	20A	DS0203RRL5	R	DS0203PRL5	R	DS0203BAL5	R
			32A	DS0323RRL5	R	DS0323PRL5	R	DS0323BAL5	R
			40A	DS0403RRL5	R	DS0403PRL5	R	DS0403BAL5	R
		4 pole	20A	DS0204RRL5	R	DS0204PRL5	R	DS0204BAL5	R
			32A	DS0324RRL5	R	DS0324PRL5	R	DS0324BAL5	R
			40A	DS0404RRL5	R	DS0404PRL5	R	DS0404BAL5	R

standard article

R = on Request





Rear-mount switches



Base mount switches



■ IP66 handles with screw fixing

Non padlockable handles		poles	Ie AC21	Two-screw fixing	Pack	Four-screw fixing 48x48mm	Pack	Two-screw fixing	Pack
	Grey plate 67x67 mm, black knob	3 pole	20A	DS0203RQT6	R	DS0203PQT6	R	DS0203BAT6	R
			32A	DS0323RQT6	R	DS0323PQT6	R	DS0323BAT6	R
			40A	DS0403RQT6	R	DS0403PQT6	R	DS0403BAT6	R
		4 pole	20A	DS0204RQT6	R	DS0204PQT6	R	DS0204BAT6	R
			32A	DS0324RQT6	R	DS0324PQT6	R	DS0324BAT6	R
			40A	DS0404RQT6	R	DS0404PQT6	R	DS0404BAT6	R
	Yellow plate 67x67 mm, red knob	3 pole	20A	DS0203RQY6	R	DS0203PQY6	R	DS0203BAY6	R
			32A	DS0323RQY6	R	DS0323PQY6	R	DS0323BAY6	R
			40A	DS0403RQY6	R	DS0403PQY6	R	DS0403BAY6	R
		4 pole	20A	DS0204RQY6	R	DS0204PQY6	R	DS0204BAY6	R
			32A	DS0324RQY6	R	DS0324PQY6	R	DS0324BAY6	R
			40A	DS0404RQY6	R	DS0404PQY6	R	DS0404BAY6	R
	Grey plate 48x48 mm, black knob Only for two-screw fixing	3 pole	20A	DS0203RQT4	R	/	/	DS0203BAT4	R
			32A	DS0323RQT4	R	/	/	DS0323BAT4	R
			40A	DS0403RQT4	R	/	/	DS0403BAT4	R
		4 pole	20A	DS0204RQT4	R	/	/	DS0204BAT4	R
			32A	DS0324RQT4	R	/	/	DS0324BAT4	R
			40A	DS0404RQT4	R	/	/	DS0404BAT4	R
	Yellow plate 48x48 mm, red knob Only for two-screw fixing	3 pole	20A	DS0203RQY4	R	/	/	DS0203BAY4	R
			32A	DS0323RQY4	R	/	/	DS0323BAY4	R
			40A	DS0403RQY4	R	/	/	DS0403BAY4	R
		4 pole	20A	DS0204RQY4	R	/	/	DS0204BAY4	R
			32A	DS0324RQY4	R	/	/	DS0324BAY4	R
			40A	DS0404RQY4	R	/	/	DS0404BAY4	R

 standard article

R = on Request

Two-screw fixing, distance between holes: 28mm (1.10") Vertical or 32mm (1.26") Horizontal
Four-screw fixing, distance between holes: 48x48mm (1.89"x1.89")







Rear mount switches



Base mount switches



■ IP66 handles with Ø22mm (0,87") single-hole and nut fixing

Padlockable handles		poles	le AC21	Ø22mm (0,87") single-hole and nut fixing	Pack	Ø22mm (0,87") single-hole and nut fixing	Pack
	Grey plate 67x67mm padlockable, black knob	3 pole	20A	DS0203GDK6	R	DS0203BFK6	R
			32A	DS0323GDK6	R	DS0323BFK6	R
			40A	DS0403GDK6	R	DS0403BFK6	R
		4 pole	20A	DS0204GDK6	R	DS0204BFK6	R
			32A	DS0324GDK6	R	DS0324BFK6	R
			40A	DS0404GDK6	R	DS0404BFK6	R
	Yellow plate 67x67mm padlockable, red knob	3 pole	20A	DS0203GDL6	1	DS0203BFL6	1
			32A	DS0323GDL6	1	DS0323BFL6	1
			40A	DS0403GDL6	1	DS0403BFL6	1
		4 pole	20A	DS0204GDL6	1	DS0204BFL6	1
			32A	DS0324GDL6	1	DS0324BFL6	1
			40A	DS0404GDL6	1	DS0404BFL6	1
	Grey plate 67x67 mm, black knob padlockable	3 pole	20A	DS0203GDT6L	R	DS0203BFT6L	R
			32A	DS0323GDT6L	R	DS0323BFT6L	R
			40A	DS0403GDT6L	R	DS0403BFT6L	R
		4 pole	20A	DS0204GDT6L	R	DS0204BFT6L	R
			32A	DS0324GDT6L	R	DS0324BFT6L	R
			40A	DS0404GDT6L	R	DS0404BFT6L	R
	Yellow plate 67x67 mm, red knob padlockable	3 pole	20A	DS0203GDY6L	R	DS0203BFY6L	R
			32A	DS0323GDY6L	R	DS0323BFY6L	R
			40A	DS0403GDY6L	R	DS0403BFY6L	R
		4 pole	20A	DS0204GDY6L	R	DS0204BFY6L	R
			32A	DS0324GDY6L	R	DS0324BFY6L	R
			40A	DS0404GDY6L	R	DS0404BFY6L	R
	Grey plate 48x48 mm, black knob padlockable	3 pole	20A	DS0203GDT4L	1	DS0203BFT4L	R
			32A	DS0323GDT4L	1	DS0323BFT4L	R
			40A	DS0403GDT4L	1	DS0403BFT4L	R
		4 pole	20A	DS0204GDT4L	1	DS0204BFT4L	R
			32A	DS0324GDT4L	1	DS0324BFT4L	R
			40A	DS0404GDT4L	1	DS0404BFT4L	R
	Yellow plate 48x48 mm, red knob padlockable	3 pole	20A	DS0203GDY4L	1	DS0203BFY4L	R
			32A	DS0323GDY4L	1	DS0323BFY4L	R
			40A	DS0403GDY4L	1	DS0403BFY4L	R
		4 pole	20A	DS0204GDY4L	1	DS0204BFY4L	R
			32A	DS0324GDY4L	1	DS0324BFY4L	R
			40A	DS0404GDY4L	1	DS0404BFY4L	R

 standard article

R = on Request

Rear mount switches



Base mount switches



■ IP66 handles with Ø22mm (0,87") single-hole and nut fixing

Non padlockable handles		poles	Ie AC21	Ø22mm (0,87") single-hole and nut fixing	Pack	Ø22mm (0,87") single-hole and nut fixing	Pack
	Grey plate 67x67 mm, black knob	3 pole	20A	DS0203GDT6	R	DS0203BFT6	R
			32A	DS0323GDT6	R	DS0323BFT6	R
			40A	DS0403GDT6	R	DS0403BFT6	R
		4 pole	20A	DS0204GDT6	R	DS0204BFT6	R
			32A	DS0324GDT6	R	DS0324BFT6	R
			40A	DS0404GDT6	R	DS0404BFT6	R
	Yellow plate 67x67 mm, red knob	3 pole	20A	DS0203GDY6	R	DS0203BFY6	R
			32A	DS0323GDY6	R	DS0323BFY6	R
			40A	DS0403GDY6	R	DS0403BFY6	R
		4 pole	20A	DS0204GDY6	R	DS0204BFY6	R
			32A	DS0324GDY6	R	DS0324BFY6	R
			40A	DS0404GDY6	R	DS0404BFY6	R
	Grey plate 48x48 mm, black knob	3 pole	20A	DS0203GDT4	R	DS0203BFT4	R
			32A	DS0323GDT4	R	DS0323BFT4	R
			40A	DS0403GDT4	R	DS0403BFT4	R
		4 pole	20A	DS0204GDT4	R	DS0204BFT4	R
			32A	DS0324GDT4	R	DS0324BFT4	R
			40A	DS0404GDT4	R	DS0404BFT4	R
	Yellow plate 48x48 mm, red knob	3 pole	20A	DS0203GDY4	R	DS0203BFY4	R
			32A	DS0323GDY4	R	DS0323BFY4	R
			40A	DS0403GDY4	R	DS0403BFY4	R
		4 pole	20A	DS0204GDY4	R	DS0204BFY4	R
			32A	DS0324GDY4	R	DS0324BFY4	R
			40A	DS0404GDY4	R	DS0404BFY4	R

standard article

R = on Request

Rear mount switches



Base mount switches



■ IP66 handles with Ø22mm (0,87") single-hole and nut fixing

Non padlockable handles		poles	Ie AC21	Ø22mm (0,87") single-hole and nut fixing	Pack	Ø22mm (0,87") single-hole and nut fixing	Pack
	Grey plate 64x64 mm, black knob	3 pole	20A	DS0203GDV6	R	DS0203BFV6	R
			32A	DS0323GDV6	R	DS0323BFV6	R
			40A	DS0403GDV6	R	DS0403BFV6	R
		4 pole	20A	DS0204GDV6	R	DS0204BFV6	R
			32A	DS0324GDV6	R	DS0324BFV6	R
			40A	DS0404GDV6	R	DS0404BFV6	R
	Grey plate 48x48 mm, black knob	3 pole	20A	DS0203GDV4	R	DS0203BFV4	R
			32A	DS0323GDV4	R	DS0323BFV4	R
			40A	DS0403GDV4	R	DS0403BFV4	R
		4 pole	20A	DS0204GDV4	R	DS0204BFV4	R
			32A	DS0324GDV4	R	DS0324BFV4	R
			40A	DS0404GDV4	R	DS0404BFV4	R
	Yellow plate 64x64 mm, red knob	3 pole	20A	DS0203GDW6	R	DS0203BFW6	R
			32A	DS0323GDW6	R	DS0323BFW6	R
			40A	DS0403GDW6	R	DS0403BFW6	R
		4 pole	20A	DS0204GDW6	R	DS0204BFW6	R
			32A	DS0324GDW6	R	DS0324BFW6	R
			40A	DS0404GDW6	R	DS0404BFW6	R
	Yellow plate 48x48 mm, red knob	3 pole	20A	DS0203GDW4	R	DS0203BFW4	R
			32A	DS0323GDW4	R	DS0323BFW4	R
			40A	DS0403GDW4	R	DS0403BFW4	R
		4 pole	20A	DS0204GDW4	R	DS0204BFW4	R
			32A	DS0324GDW4	R	DS0324BFW4	R
			40A	DS0404GDW4	R	DS0404BFW4	R
Padlockable handles		poles	Ie AC21	Ø22mm (0,87") single-hole and nut fixing	Pack	Ø22mm (0,87") single-hole and nut fixing	Pack
	Grey plate 67x67 mm padlockable, black knob	3 pole	20A	DS0203GDK5	R	DS0203BFK5	R
			32A	DS0323GDK5	R	DS0323BFK5	R
			40A	DS0403GDK5	R	DS0403BFK5	R
		4 pole	20A	DS0204GDK5	R	DS0204BFK5	R
			32A	DS0324GDK5	R	DS0324BFK5	R
			40A	DS0404GDK5	R	DS0404BFK5	R
	Yellow plate 67x67 mm padlockable, red knob	3 pole	20A	DS0203GDL5	R	DS0203BFL5	R
			32A	DS0323GDL5	R	DS0323BFL5	R
			40A	DS0403GDL5	R	DS0403BFL5	R
		4 pole	20A	DS0204GDL5	R	DS0204BFL5	R
			32A	DS0324GDL5	R	DS0324BFL5	R
			40A	DS0404GDL5	R	DS0404BFL5	R

 standard article

R = on Request

Base mounting



Direct operation
Black knob



For standard cabinets
45mm (1.77") slots
Black knob

Rear mounting



2 screw fixing
at 28mm
vertical distance



4 screw fixing
36x36mm (1.42"x1.42")
or 48x48mm (1.89"x1.89")



ø 22mm (ø 0.87")
single hole
and nut fixing

Direct operation

poles	Ie AC21	Code	Pack	Code	Pack	Code	Pack	Code	Pack	Code	Pack
3 pole	20A	DS0203BFCD	1	DS0203BDDN	R	DS0203R	R	DS0203P	R	DS0203G	R
	32A	DS0323BFCD	1	DS0323BDDN	R	DS0323R	R	DS0323P	R	DS0323G	R
	40A	DS0403BFCD	1	DS0403BDDN	R	DS0403R	R	DS0403P	R	DS0403G	R
4 pole	20A	DS0204BFCD	1	DS0204BDDN	R	DS0204R	R	DS0204P	R	DS0204G	R
	32A	DS0324BFCD	1	DS0324BDDN	R	DS0324R	R	DS0324P	R	DS0324G	R
	40A	DS0404BFCD	1	DS0404BDDN	R	DS0404R	R	DS0404P	R	DS0404G	R


Accessories and spare parts

	Code	Description	Pack
<p>Additional poles</p>	DSC040PAR	DS020/040 4th pole early make/late break (for Neutral) rear mounting	5
	DSC040PSR	DS020/040 4th pole rear mounting	5
	DSC040PAB	DS020/040 4th pole early make/late break (for Neutral) base mounting	5
	DSC040PSB	DS020/040 4th pole base mounting	5
	DSC040PENR	DS020/040 4th pole poleEN rear mounting	5
	DSC040PENB	DS020/040 4th pole poleEN base mounting	5
	DSC040NOR	DS020/040 auxiliary contact NO rear mounting	5
	DSC040NOB	DS020/040 auxiliary contact NO base mounting	5
	DSC040NCR	DS020/040 auxiliary contact NC rear mounting	5
	DSC040NCB	DS020/040 auxiliary contact NC base mounting	5


■ Accessories and spare parts

	Code	Description	Pack
	DS040PAD	DS020/040 Transparent Padlockable plate for DS_FC	5

Padlockable plate for DS_FCD

	Code	Description	Pack
	DS040PR1	DS020/040 Pair of one-pole terminal covers	5
	DS040PR3	DS020/040 Pair of three-pole terminal covers	5

Terminal covers

	Code	Description	Pack
	PALBL300	Shaft L=300mm Q5	5
	PALBL500	Shaft L=500mm Q5	5
	PALBL055	Shaft L=55mm Q5	R
	PALBL075	Shaft L=75mm Q5	R
	PALBL095	Shaft L=95mm Q5	R
	PALBL115	Shaft L=115mm Q5	R
	PALBL135	Shaft L=135mm Q5	R
	PALBL155	Shaft L=155mm Q5	R
	PALBL175	Shaft L=175mm Q5	5

Shafts

Padlockable handles



Grey plate
67x67 mm
Black knob



Yellow plate
67x67 mm
Red knob



Grey plate
67x67 mm
Black knob



Grey plate
48x48 mm
Black knob



Yellow plate
67x67 mm
Red knob



Yellow plate
48x48 mm
Red knob

Plates and knobs

Instal. type	Fixing method	Code	Pack	Code	Pack	Code	Pack	Code	Pack	Code	Pack	Code	Pack
Rear mount	Screws	FINRRK6Q5 ⁽¹⁾	5	FINRRL6Q5	5	FINRQT6LQ5 ⁽¹⁾	R	FINQT4LQ5 ⁽¹⁾	5	FINRQY6LQ5 ⁽¹⁾	R	FINQY4LQ5 ⁽¹⁾	5
		FINPRK6Q5 ⁽²⁾	R	FINPRL6Q5 ⁽²⁾	R	FINPQT6LQ5 ⁽²⁾	R			FINPQY6LQ5 ⁽²⁾	R		
	Ø 22mm hole	FINDK6Q5	5	FINDL6Q5	5	FINDT6LQ5	R	FINDT4LQ5	5	FINDY6LQ5	R	FINDY4LQ5	5
Base mount	Screws	FINAK6Q5	5	FINAL6Q5	5	FINAT6LQ5	R	FINAT4LQ5	R	FINAY6LQ5	R	FINAY4LQ5	R
	Ø 22mm hole	FINFK6Q5	5	FINFL6Q5	5	FINFT6LQ5	R	FINFT4LQ5	R	FINFY6LQ5	R	FINFY4LQ5	R

Note: ⁽¹⁾ Two-screw fixing, distance between holes: 28mm (1.10") Vertical

Note: ⁽²⁾ Four-screw fixing, distance between holes: 48x48mm (1.89"x1.89")

Padlockable handles



Grey plate
67x67 mm
Black knob



Yellow plate
67x67 mm,
red knob

Plates and knobs

Instal. type	Fixing method	Code	Pack	Code	Pack
Rear mount	Screws	FINRRK5Q5 ⁽¹⁾	R	FINRRL5Q5 ⁽¹⁾	R
		FINPRK5Q5 ⁽²⁾	R	FINPRL5Q5 ⁽²⁾	R
	Ø 22mm hole	FINDK5Q5	R	FINDL5Q5	R
Base mount	Screws	FINAK5Q5 ⁽²⁾	R	FINAL5Q5 ⁽²⁾	R
	Ø 22mm hole	FINFK5Q5	R	FINFL5Q5	R

Note: ⁽¹⁾ Two-screw fixing, distance between holes: 28mm (1.10") Vertical

Note: ⁽²⁾ Four-screw fixing, distance between holes: 36x36mm (1.42"x1.42") or 48x48mm (1.89"x1.89")

Non padlockable handles



Grey plate
67x67 mm
Black knob



Grey plate
48x48 mm
Black knob



Yellow plate
67x67 mm,
red knob



Yellow plate
48x48 mm,
red knob

Plates and knobs

Instal. type	Fixing method	Code	Pack	Code	Pack	Code	Pack	Code	Pack
Rear mount	Screws	FINRQT6Q5 ⁽¹⁾	R	FINQT4Q5 ⁽¹⁾	R	FINRQY6Q5 ⁽¹⁾	R	FINQY4Q5 ⁽¹⁾	R
		FINPQY6Q5 ⁽²⁾	R			FINQV6Q5 ⁽²⁾	R		
	Ø 22mm hole	FINDT6Q5	R	FINDT4Q5	R	FINDY6Q5	R	FINDY4Q5	R
Base mount	Screws	FINAT6Q5	R	FINAT4Q5	R	FINAY6Q5	R	FINAY4Q5	R
	Ø 22mm hole	FINFT6Q5	R	FINFT4Q5	R	FINFY6Q5	R	FINFY4Q5	R

Note: ⁽¹⁾ Two-screw fixing, distance between holes: 28mm (1.10") Vertical

Note: ⁽²⁾ Four-screw fixing, distance between holes: 36x36mm (1.42"x1.42")

Non padlockable handles



Grey plate
64x64 mm,
black knob



Grey plate
48x48 mm,
black knob



Yellow plate
64x64 mm,
red knob



Yellow plate
48x48 mm,
red knob

Plates and knobs

Instal. type	Fixing method	Code	Pack	Code	Pack	Code	Pack	Code	Pack
Rear mount	Screws	FINRQV6Q5 ⁽¹⁾	R	FINRQV4Q5 ⁽¹⁾	R	FINRQW6Q5 ⁽¹⁾	R	FINRQW4Q5 ⁽¹⁾	R
		FINPQY6Q5 ⁽²⁾	R	FINPQV4Q5 ⁽²⁾	R	FINPQW6Q5 ⁽²⁾	R	FINPQW4Q5 ⁽²⁾	R
	Ø 22mm hole	FINDV6Q5	R	FINDV4Q5	R	FINDV6Q5	R	FINDW4Q5	R
Base mount	Screws	FINAV6Q5 ⁽³⁾	R	FINAV4Q5 ⁽²⁾	R	FINAW6Q5 ⁽³⁾	R	FINAW4Q5 ⁽²⁾	R
	Ø 22mm hole	FINDV6Q5	R	FINDV4Q5	R	FINDW6Q5	R	FINDW4Q5	R

Note: ⁽¹⁾ Two-screw fixing, distance between holes: 28mm (1.10") Vertical

Note: ⁽²⁾ Four-screw fixing, distance between holes: 36x36mm (1.42"x1.42")

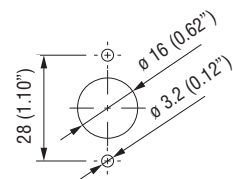
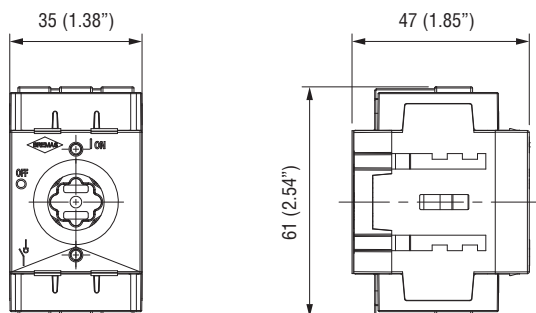
Note: ⁽³⁾ Four-screw fixing, distance between holes: 36x36mm (1.42"x1.42") or 48x48mm (1.89"x1.89")

■ Rear mounting

Measures in mm (in)

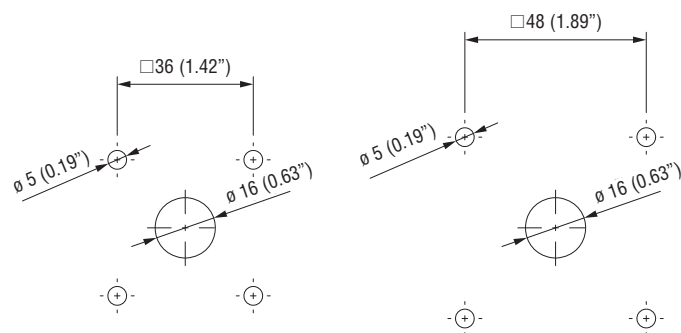
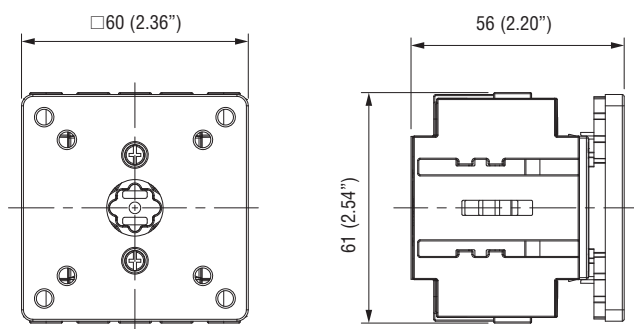
2 holes with screws

Drilling templates



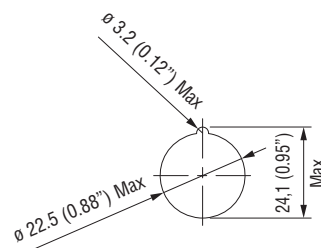
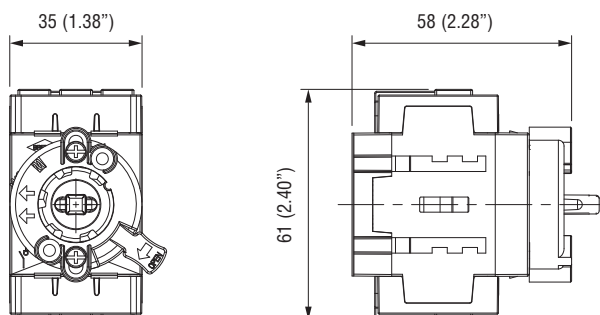
Two-screws fixing

4 holes with screws



Four-screws fixing

Ø 22mm (0,87") single hole with locking nut

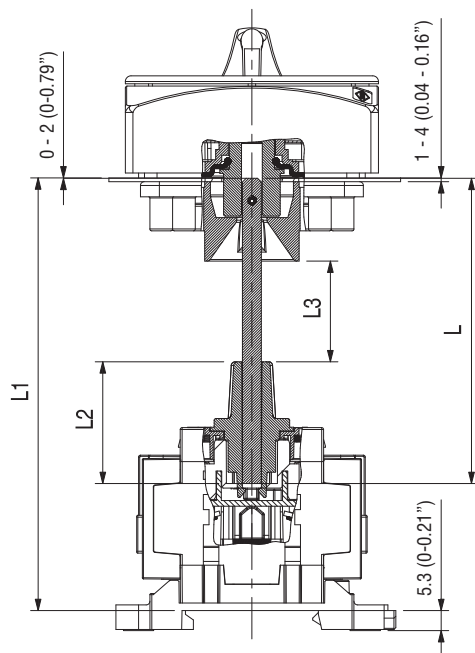


Handles fixing with
Ø 22mm (0,87") single hole
and locking nut

■ Base mounting

Measures in mm (in)

Screw-fixed handles



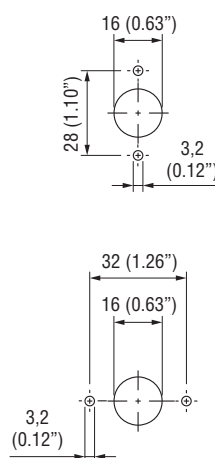
Cutting length of the extension shaft

The base mounting execution is provided with integrated control knob and includes the housing for the shaft and the fixing screw. The depth of insertion of the shaft in the housing has a tolerance of about 20mm, this allows to reduce the need and the precision of the cutting to size (dimension L) of the shaft.

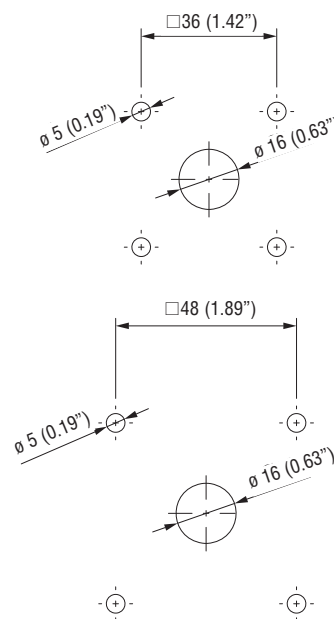
To determine the cut length L of the shaft, consider the following guidelines:

$L3 \geq 1\text{mm}$
 $12\text{mm} \leq L2 \leq 32\text{mm}$

In practice: $L1 - 53\text{mm} \leq L \leq L1 - 33\text{mm}$

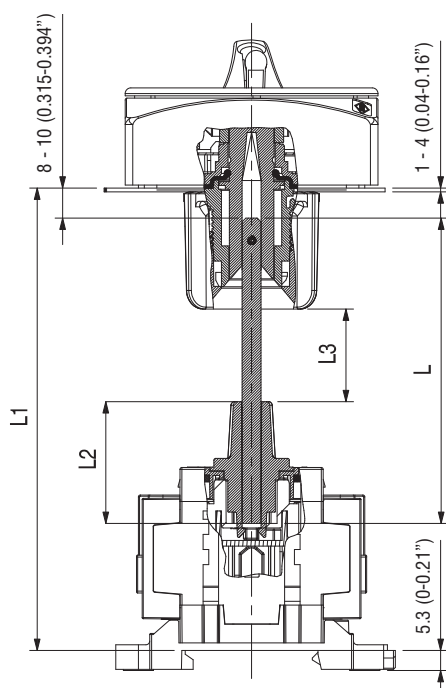


Two-screw handle fixing



Four-screw handle fixing

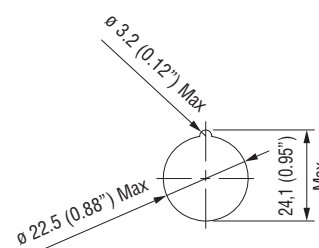
Ø 22mm (0,87") single-hole handle fixing



To determine the cut length L of the shaft, consider the following guidelines:

$L3 \geq 1\text{mm}$
 $12\text{mm} \leq L2 \leq 32\text{mm}$

In practice: $L1 - 61\text{mm} \leq L \leq L1 - 41\text{mm}$

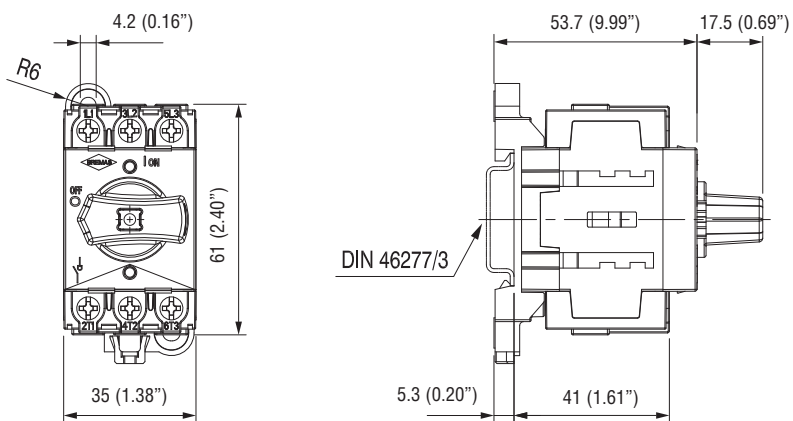


Ø 22mm (0,87")
 single-hole handle fixing

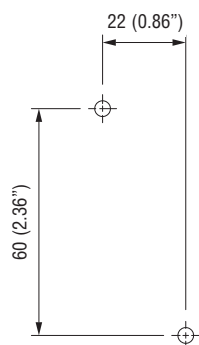
■ Base mounting

Measures in mm (in)

Direct command

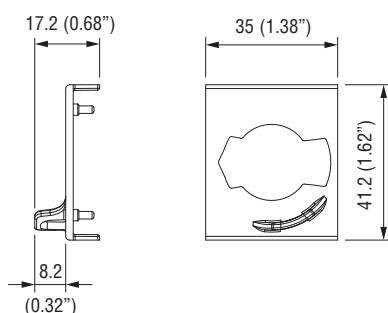


Drilling templates - Base mount

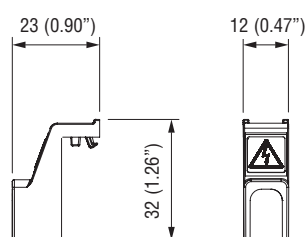


Fixing of the switch on the base plate

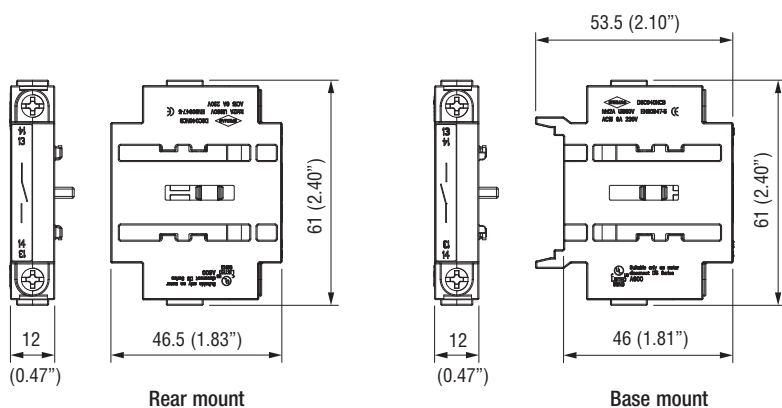
Transparent flange, OFF lock



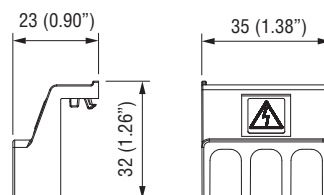
Terminal cover, 4th pole



Fourth pole (additional/auxiliary)



Terminal cover, three poles





Switch
disconnectors

XNA Series

BREMAS

Main features


The **XNA switch-disconnectors** are very compact – only 60mm wide in the 3 pole version – despite the rated currents of 50A, 63A and 100A. The double break contacts, have positive opening to guarantee high electrical efficiency and security. The terminals of the XNA series have IP20 protection degree and are provided with captive screws in open position to reduce the wiring time.



- Max 2 additional pole (1 on each side)
- Max 2 auxiliary contact (1 on each side)









Plates and knobs

3 or 4 pole, base mounting with screws or snap mounting on DIN rail

	Screw fixing	Ø22mm (0,87") single-hole and nut fixing	
	BL6	HL6	Yellow plate 67x67mm (2.64x2.64"), red padlockable knob (max 3 padlocks), door interlock in "ON" position, IP66
	BK6	HK6	Grey plate 67x67mm (2.64x2.64"), black padlockable knob (max 3 padlocks), door interlock in "ON" position, IP66

Switch disconnectors

International Standards and approvals

Country	USA / Canada	Canada	Germany	Switzerland	Denmark	Norway	Sweden	Finland	Austria	Great Britain	IEC International electrical Commission
Authority	UL investigated according to CSA	CSA International	Verband Deutscher Elektrotechniker	Schweizerischer Elektrotechnischer Verein	Danmarks Elektriske Materielkontroll	Norges Elektriske Materielkontroll	Svenska Elektriske Materielkontroll-anstalten	Sähkötar-kastuskeskus	Österreichischer Verband für Elektrotechnik	British Standards Institution	
Mark of standard			⁽¹⁾ VDE 0660							⁽¹⁾ BS EN 60947	⁽²⁾ IEC 60947
XNA050	•	+	+	+	+	+	+	+	+	+	+
XNA063	•	+	+	+	+	+	+	+	+	+	+
XNA100	•	+	+	+	+	+	+	+	+	+	+

- Approved
- + Conforms to requirements

UL Approval File E101686
CSA Approval File 039540-0-000

Notes:

- 1) It is not required to bear a symbol but switches must conform to requirements.
2) IEC does not operate an approval scheme

Technical data IEC 947-3 EN 60947-3

			DS020	DS032	DS040
Main characteristics					
Rated operating voltage	Ue	V	690	690	690
Rated insulation voltage	Ui	V	690	690	690
Rated impulse withstand voltage	Uimp	kV	6	6	6
Rated thermal current for open switch	Ith	A	50	63	100
Rated thermal current for enclosed switch	Ithe	A	50	63	80
Rated operation frequency	Hz		50	50	50
Power dissipation for each pole	W		-	-	-
Rated operating current Ie					
AC-21A Switching resistive loads, including moderate overloads	690V	A	50	63	100
AC-22A Switching of mixed resistive and inductive loads, including moderate overloads	690V	A	50	63	100
Rated operating power					
AC-23A Switching of motor loads or other highly inductive loads	400V	Kw (A)	22 (40)	25 (47)	35 (63)
	690V	Kw (A)	18,5 (19)	18,5 (19)	30 (31)
AC-3 Squirrel cage motors: starting, switching off motors during running	400V	Kw (A)	18,5 (33)	18,5 (33)	30 (54)
	690V	Kw (A)	15 (16)	15 (16)	22 (23)
Rated breaking capability in category AC-23A (cos φ = 0.45)	400V	A	320	376	504
	690V	A	-	-	-
Short circuit protection					
Rated short time withstand	Icw	A	1500	1500	1500
Rated short-circuit make	Icm	A	2000	2000	2500
Rated conditional short-circuit		kA	15	15	15
With fuses class gG	500V	A	63	63	100
Mechanical life (120 cycles/hour)	Mil.Man		2	2	2
Connecting capability with flexible wires	Min-Max	mm ²	6-35	6-35	6-35
Connecting capability with solid wires	Min-Max	mm ²	10-50	10-50	10-50
Connection terminal screw dimensions			M5	M5	M5
Screw tightening torque		Nm	2,8	2,8	2,8

Technical data UL/CSA

General use Voltage	Ue	V	600	600	600
General Use Current	600Vac	A	80	80	100
Rated operating power					
1 phase - 2 pole	120V	HP/FLA	3 / 34	3 / 34	5 / 56
	240V	HP/FLA	3 / 17	5 / 28	10 / 50
3 phase - 3 pole	200V	HP/FLA	7,5 / 25,3	10 / 32	20 / 62
	240V	HP/FLA	15 / 42	20 / 54	25 / 68
	480V	HP/FLA	20 / 27	25 / 34	50 / 65
	600V	HP/FLA	30 / 32	30 / 32	50 / 52
Line protection fuse (Class RK5, 600Vac, 200kA A.I.C.)		A	-	-	-
Line protection fuse (Class J, 600Vac)		A	225	225	225
		KA	10	10	10
Auxiliary contacts designation		-	-	-	-

Mechanical characteristics

Connecting capability with flexible wires	Min-Max	AWG	10/01	10/01	10/01
Connecting capability with solid wires	Min-Max	AWG	08/01	08/01	08/01
Screw tightening torque		ib.in.	24	24	24

Protection degree IEC 529 EN 60529

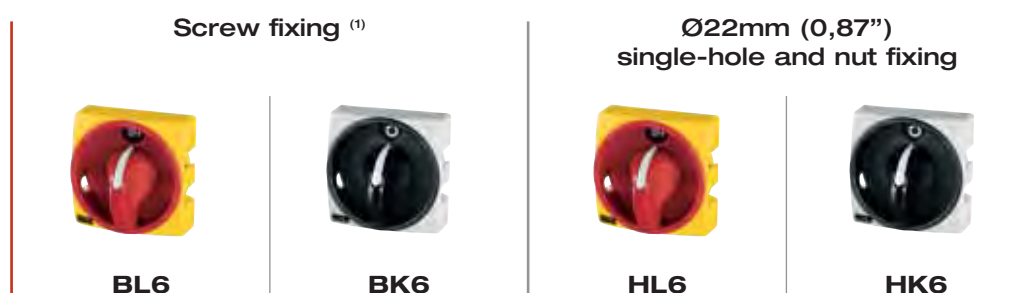
Terminals		IP20
Handle		IP66

Ambient conditions

Operating ambient temperature	°C	-25 / + 55
Storage ambient temperature	°C	-30 / +70
Withstand to constant humid according to IEC 60068		2-78
Withstand to cyclic humid according to IEC 60068		2-30

Auxiliary contacts

			XC012AB XC012CB		
Rated insulation voltage	Ui	V		690	
Rated thermal current for open switch	Ith	A		12	
AC-15 Control of a.c. electromagnetic loads	230V	A		6	




■ XNA 50 - 63 - 100A

Ie AC21	Pole	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
50A	3	XNA0503BL6	1	XNA0503BK6	1	XNA0503HL6	R	XNA0503HK6	R
	4	XNA0504BL6	1	XNA0504BK6	1	XNA0504HL6	R	XNA0504HK6	R
63A	3	XNA0633BL6	1	XNA0633BK6	1	XNA0633HL6	R	XNA0633HK6	R
	4	XNA0634BL6	1	XNA0634BK6	1	XNA0634HL6	R	XNA0634HK6	R
100A	3	XNA1003BL6	1	XNA1003BK6	1	XNA1003HL6	R	XNA1003HK6	R
	4	XNA1004BL6	1	XNA1004BK6	1	XNA1004HL6	R	XNA1004HK6	R

Note: ⁽¹⁾ Two-screw fixing, distance between holes: 28mm (1.10") Vertical or 32mm (1.26") Horizontal.

■ Additional poles for XNA 50-63-100A

	Part no.	Description	Pack
	XC012AB	NO auxiliary contact for 50-63-100A	5
	XC012CB	NC auxiliary contact for 50-63-100A	5
	XC050PB	4th pole for 50A	5
	XC063PB	4th pole for 63A	5
	XC100PB	4th pole for 100A	5
	XC100GB	Earth pole for 50-63-100A	5

Optional extension shafts



Code	Description	Pack
PALBL300	Shaft L=300mm Q5	5
PALBL500	Shaft L=500mm Q5	5
PALBL055	Shaft L=55mm Q5	R
PALBL075	Shaft L=75mm Q5	R
PALBL095	Shaft L=95mm Q5	R
PALBL115	Shaft L=115mm Q5	R
PALBL135	Shaft L=135mm Q5	R
PALBL155	Shaft L=155mm Q5	R
PALBL175	Shaft L=175mm Q5	5

Terminal covers



XNA G1304

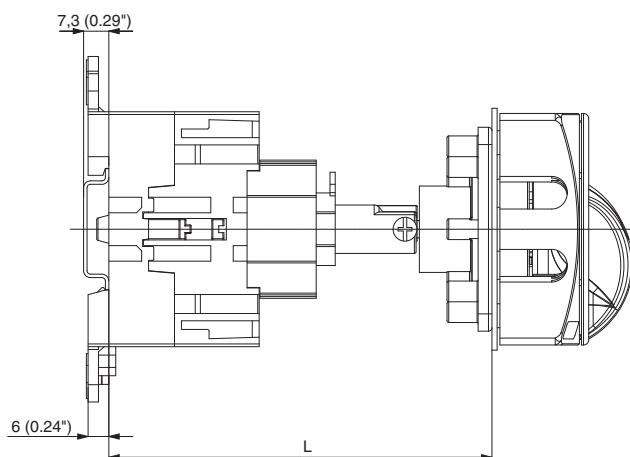
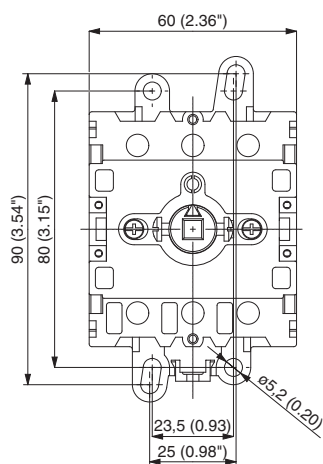


XNA G1305

Part no.	Description	Pack
XNAG1305	Couple of terminal covers for XNA 50-100A 3 pole	5
XNAG1304	Couple of terminal covers for for additional pole XNA 50-100A	5

■ Base mounting

(XNA 50-63-100A) - Measures in mm (in)



Overall length (min-max)**
for different shaft length (L1):

L1		
175*	L (mm)	111 - 255
6.89*	L (in)	4.37 - 10.04
300	L (mm)	111 - 380
11.81	L (in)	4.37 - 14.96
500	L (mm)	111 - 580
19.68	L (in)	4.37 - 22.83

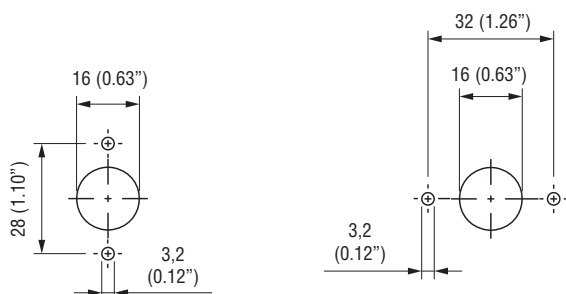
* Standard shaft, bundled

** Minimum length obtainable by cutting the shaft.

■ Base mounting

(BL6 - BK6) - Measures in mm (in)

Escutcheon plate



Escutcheon plate mounting options:

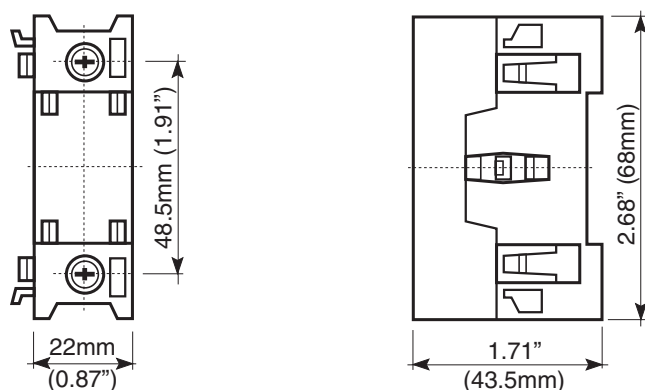
- 1) 2 holes with vertical distance 28mm (1.10")
- 2) 2 holes with horizontal distance 32mm (1.26")
- 3) 4 holes with distance 48 mm (1.89")

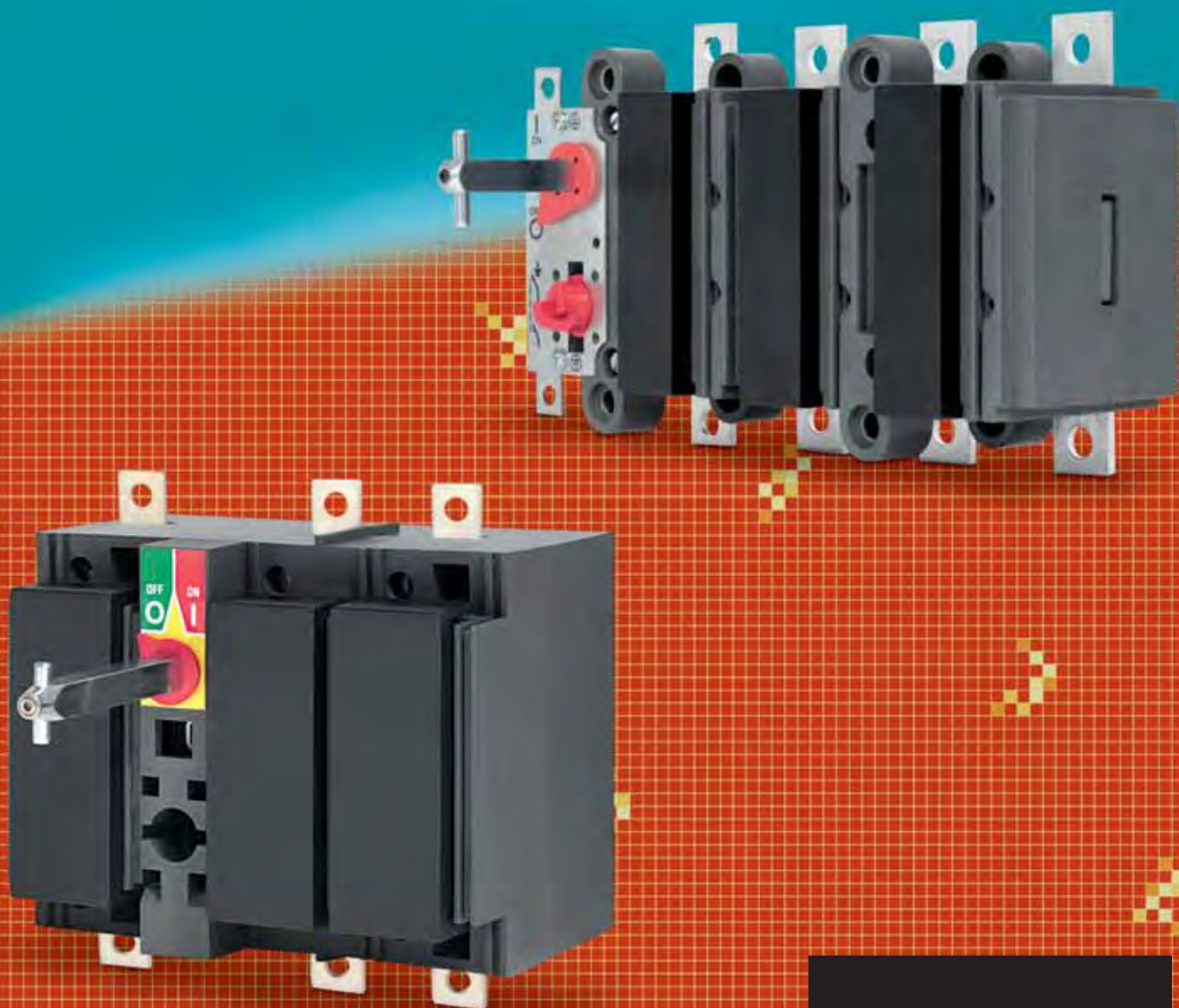
Switch mounting options:

- 1) 4 holes with distance 58x18mm (2.28x0.71")

■ Additional poles for XNA 50-63-100A

Measures in mm (in)





Switch
disconnectors

TS Series



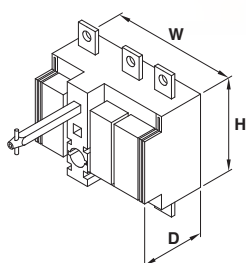
Overview

The switches **series TS** have the following main design features:

- Polyester self-extinguishing and anti-trace insulating housing
- Silver plated electrolytic copper fix and moving contacts
- Double breaking for pole.
- High closing and opening speed, independent from the operator
- Feeder connection is possible either in the upper in on the lower side

■ Size S1 (125A) and
Size S2 (160A; 200A; 250A)

■ Size S3 (400A; 630A) and
Size S4 (800A; 1000A)



Measures * in mm (in)		H	W	D
Size S1	3 pole	100	129 (5.08")	88
	4 pole	(3.94")	160 (3.30")	(3.46")
Size S2	3 pole	125	174 (6.85")	105
	4 pole	(4.92")	204 (8.03")	(4.13")

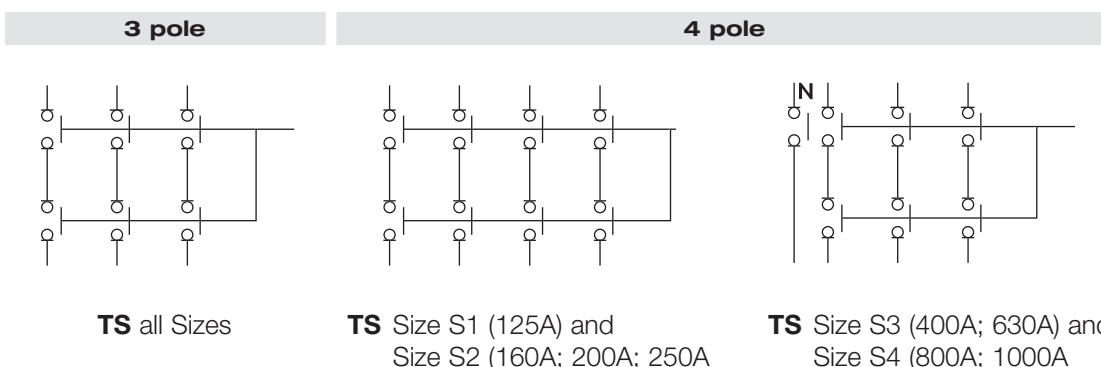
Measures * in mm (in)		H *	W	D
Size S3	3-4 pole	161 ÷ 187 (6.34" ÷ 7.36")	251 (9.88")	125 (4.92")
Size S4	3-4 pole	238 (9.37")	325 (12.79")	145 (5.71")

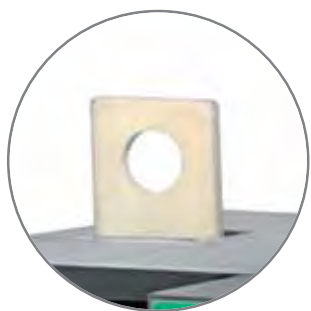
Note: * dimension H depends on the extension of the current bars, which may change with the rating.
Shaft or other installed accessories are not considered.

- The actuator always respects the real position of the contacts. This type of control is called "positive operation". The auxiliary contacts are directly acted from the operating mechanism.
- 4 pole switch-disconnectors are suitable for all-phase breaking (the Neutral contact closes before and opens after the phases)
- **TS** series switch-disconnectors are suitable for polluted ambient and tropical climates according to IEC 68-2 Standards



Two contact blocks in series result in 4 breaking for phase





Bolt connection
is standard on
all the TS range



Screw connection
available with 125A
rating (TS_S execution)



Visible isolation
available
(TS_V execution)

A complete range of optional accessories allows the use of TS switch-disconnectors in several installations.

Standard bundle handle with door interlock in closed position and possibility to install a legend with 0-1 positions (IEC Standard) or ON-OFF positions (BS Standard).

Standard handle is IP54 (IP55 using an optional handle washer) and can be locked in open position with max 3 padlocks. Optional handles are available that are padlockable both in open and closed position (door interlock override optional as well).



Handle M801 for TS switches in Size S1 and Size S2.



Handle M1201 for TS switches in Size S3.



Handle M1301 for TS switches in Size S4.

Note: several additional current ratings are available on request up to 2500A.

TS switch-disconnectors are also available on request in 6-8 pole versions, with the same dimensions of the 3-4 pole executions.

Technical data IEC 947-3 EN 60947-3

SIZE

Rated insulation voltage	Ui	V
Rated impulse withstand voltage	Uimp	kV
Rated thermal current for open switch	Ith	A
Rated thermal current for enclosed switches	Ithe	A
Number of poles		
Power dissipation each pole	W	

Rated operating current Ie

AC-22A Switching of mixed resistive loads, including moderate overloads	Ie	690V	A
		1000V	A

Rated operating power

AC-23A Switching of motor loads or other highly inductive loads 3 phase - 3 pole	Ie	415V	Kw (A)
		500V	Kw (A)
		690V	Kw (A)
DC-23A Switching of motor loads or other highly inductive loads	Ie	220V	Kw (A)
		440V	Kw (A)
		600V	Kw (A)
Reactive power ²		380V	kVAr
Rated short time withstand current (1s)	Icw		kA
Rated short-circuit make capacity	Icm		kA
Mechanical life	operations		no.
Electrical life	operations		no.

Weigth

3 pole with link bar covers	Kg
4 pole with link bar covers (4° leaning pole)	Kg
3 pole with visible isolation	Kg
4 pole with visible isolation (4° leaning pole)	Kg
3 pole	Kg
4 pole	Kg

Note:

1 = due to the presence of harmonics and to the tollerances of capacitors, nominal values must be reduced by 33%

2= data about the 6 and 8 pole versions are available on request

Normal service, mounting and transportation conditions

- storage and transport ambient temperature -25° C + 55° C
- operative ambient temperature -5° C + 45° C
- relative humidity max 95%
- rated frequency 50-60 Hz
- altitude max 2000 m a.s.l.
- mounting in enclosure:

In case of utilisation at full load and without adequate ventilation, ensure a volume of about 5 time the volume of the switch.

Performances shall be derated up to 40% according to the environmental temperature.

For other operating conditions please contact Bremas Ersce.

TS125 S1	TS160 S2	TS200 S2	TS250 S2	TS400 S3	TS630 S3	TS800 S4	TS1000 S4
1000	1000	1000	1000	1000	1000	1000	1000
6	6	6	6	8	8	8	8
125	160	200	250	400	630	800	1000
100	125	160	200	340	550	630	800
3-4 ²	3-4 ²	3-4 ²	3-4 ²	3-4 ²	3-4 ²	3-4 ²	3-4 ²
6	6	7,5	16	20	50	50	55
125	-	-	250	-	-		
	160	200		400	630	800	1000
55 (125)	75 (160)	96 (200)	132 (250)	200 (400)	355 (630)	400 (800)	500 (1000)
75 (125)	100 (125)	120 (200)	150 (220)	280 (400)	425 (630)	560 (800)	670 (1000)
90 (125)	140 (125)	175 (200)	200 (210)	375 (400)	375 (400)	710 (800)	710 (800)
28 (125)	35 (160)	44 (200)	55 (250)	88 (400)	139 (630)	176 (800)	220 (1000)
55 (125)	70 (160)	88 (200)	97 (220)	176 (400)	277 (630)	352 (800)	440 (1000)
75 (125)	96 (125)	96 (160)	150 (210)	240 (400)	378 (630)	480 (800)	600 (1000)
55	70	80	110	250	315	350	400
6	10	10	10	18	20	25	40
15	25	25	25	44	50	63	84
8000	8000	8000	8000	5000	5000	3000	3000
1000	1000	1000	1000	1000	1000	500	500
-	-	-	-	4,7	5,1	9,5	10,6
-	-	-	-	4,9	5,6	10	11,2
-	-	-	-	4,5	-	8,4	9,8
-	-	-	-	4,7	-	8,9	10,4
1,3	2,1	2,1	2,1	-	-	-	-
1,4	2,5	2,5	2,5	-	-	-	-



with bar cover




with visible isolation



Switch-disconnectors

	Size	Ie AC21	poles	Code	Model	Pack	Code	Model	Pack.
	S1	125	3	VC522100	TS1253M801	1	-	-	R
			4	VC523900	TS1254M801	R	-	-	R
	S2	160	3	VC524700	TS1603M801	1	-	-	R
			4	VC525400	TS1604M801	R	-	-	R
		200	3	VC853800	TS2003M801	R	-	-	R
			4	VC854600	TS2004M801	R	-	-	R
		250	3	VC855400	TS2503M801	R	-	-	R
			4	VC856200	TS2504M801	R	-	-	R
	S3	400	3	VC416600	TS4003M1201	R	VC437200	TS4003VM1201	R
			4	VC417400	TS4004M1201	R	VC438000	TS4004VM1201	R
		630	3	VC418200	TS6303M1201	R	VC439800	TS6303VM1201	R
			4	VC419000	TS6304M1201	R	VC440600	TS6304VM1201	R
	S4	800	3	VC420800	TS8003M1201	R	VC441400	TS8003VM1201	R
			4	VC421600	TS8004M1201	R	VC442200	TS8004VM1201	R
		1000	3	VC422400	TS10003M1301	R	VC443000	TS10003VM1301	R
			4	VC423200	TS10004M1301	R	VC444800	TS10004VM1301	R

Switch-disconnectors with screw terminals

	Size	Ie AC21	poles	Code	Model	Pack
	S1	125	3	VC526200	TS1253SM801	R
			4	VC527000	TS1254SM801	R



Code	Model	Description	Pack
VC822500	S55	protection shield 3 pole o 4 pole add. for TS / TF Size S3	R
VC824100	S555	protection shield 3 pole o 4 pole add. for TS / TF Size S4	R
VC723500	S31	upper terminal cover 3 pole for TF / TS Size S1	1
VD692100	I31	lower terminal cover 3 pole for TF / TS Size S1	1
VC724300	S41	upper terminal cover 4 pole for TF / TS Size S1	R
VD693900	I41	lower terminal cover 4 pole for TF / TS Size S1	R
VD696200	I32	lower terminal cover 3 pole for TS Size S2	R
VD697000	I42	lower terminal cover 4 pole for TS Size S2	R
VD694700	S32	upper terminal cover 3 pole for TS Size S2	R
VD695400	S42	upper terminal cover 4 pole for TS Size S2	R
VC804300	S123	upper terminal cover 3 pole and 4 pole add. for TF / TS Size S3	1
VC805000	I123	lower terminal cover 3 pole and 4 pole add. for TF / TS Size S3	1
VC806800	S203	upper terminal cover 3 pole and 4 pole add. for TF / TS Size S4	R
VC807600	I203	lower terminal cover 3 pole and 4 pole add. for TF / TS Size S4	R



Code	Model	Description	Pack
VC727600	T6	standard extension shaft L=180mm Q6 for TF Size S0	1
VD699600	T6/1	extension shaft L=280mm Q6 for TF Size S0	R
VC728400	T8	standard extension shaft L=180mm Q8 for TF / TS Sizes S1-S2	1
VD700200	T8/1	extension shaft L=280mm Q8 for TF / TS Sizes S1-S2	1
VC797900	T12	standard extension shaft L=180mm Q12 for TF / TS Sizes S3-S4 and TSC / TSD Size S2	1
VC798700	T12/1	standard extension shaft L=280mm Q12 for TF / TS Sizes S3-S4 and TSC / TSD Size S2	1

	Code	Model	Description	Pack
	VC733400	M801	long black handle 0-1 standard for TF/ TS Size S1- S2	R
	VC735900	M801DS	long black handle 0-1 with door-interlock override for TF / TS Size S1 - S2	R
	VC742500	M801R	long red handle 0-1 standard for TF / TS Size S1 - S2	R
	VC744100	M801RDS	long red handle 0-1 with door-interlock override for TF / TS Size S1 - S2	R
	VC756500	M1201	short black handle 0-1 standard for TF / TS Size S3	1
	VC757300	M12C01	short black handle 0-1 with key lock for TF / TS Size S3	R
	VC758100	M12DS01	short black handle 0-1 with door-interlock override for TF / TS Size S3	1
	VC768000	M12R01	short red handle 0-1 standard for TF / TS Size S3	R
	VC770600	M12RDS01	short red handle 0-1 with door-interlock override for TF / TS Size S3	R
	VC771400	M1301	long black handle 0-I standard for TF / TS Size S4	R
	VC772200	M13C01	short black handle 0-I with key lock for TF / TS Size S4	1
	VC773000	M13DS01	short black handle 0-I with door-interlock override for TF / TS Size S4	R
	VC783900	M13R01	short red handle 0-I standard for TF / TS Size S4	R
	VC785400	M13RDS01	long red handle 0-I with door-interlock override for TF / TS Size S4	R

	Code	Model	Description	Pack
	VC792000	G12	handle washer IP55 for TF / TS / TSC / TSD	1
	VC748200	G8	handle washer IP55 for TF / TS / TSC / TSD	R

	Code	Model	Description	Pack
	VC846400	AU1	auxiliary contacts 1NO for TF / TS / TSC / TSD	R
	VC847200	AU2	auxiliary contacts 1NC for TF / TS / TSC / TSD	R
	VC848000	AU3	auxiliary contacts 1NO+1NC for TF / TS / TSC / TSD	1
	VC849800	AU4	auxiliary contacts 1NO+1NO for TF / TS / TSC / TSD	R
	VC851400	AU6	auxiliary contacts 2NO+2NC for TF / TS / TSC / TSD	1
	VC852200	AU7	auxiliary contacts 2NO+2NO for TF / TS / TSC / TSD	R
	VC853000	AU8	auxiliary contacts 2NC+2NC for TF / TS / TSC / TSD	R



Change-over
and Deviator
Switches

TSC series
TSD series

BREMAS

Main features

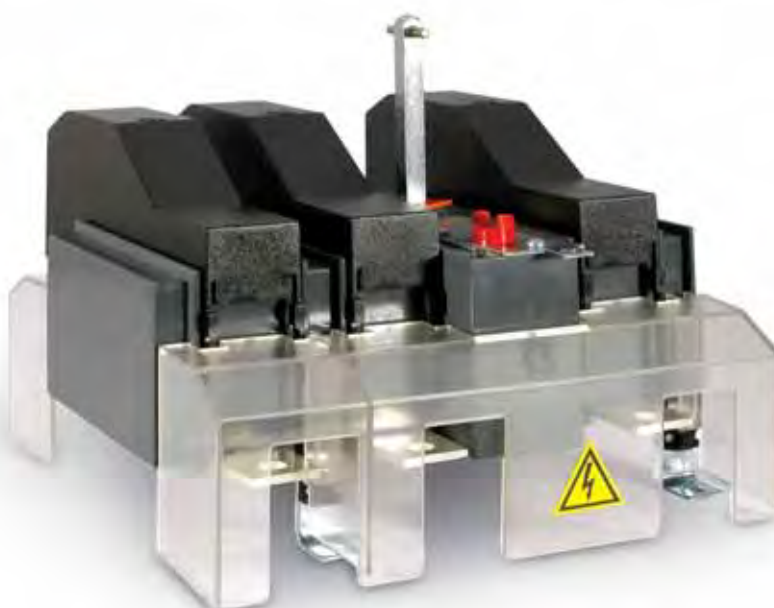
TSC / TSD are respectively change-over switches (II-0-I POSITIONS) and deviator switches (II-I POSITIONS) with manual operation.

Typical applications are:

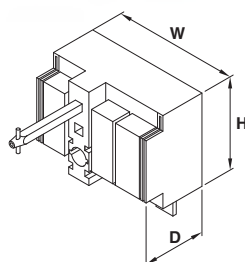
- change-over
- network inversion
- on-load change over of two circuits
- safety isolation

Main features and characteristics are:

- Reduced dimensions
- Polyester self-extinguishing and anti-trace insulating housing
- Fix and moving contacts in silver-plated electrolytic copper
- Manual operating device fitted in the insulating case in central position
- High thermal and dynamic performances
- Padlocking facility up to 3 padlocks
- 3 and 4 pole versions
- 4 pole switch-disconnectors suitable for all-phase breaking (the Neutral contact closes before and opens after the phases)



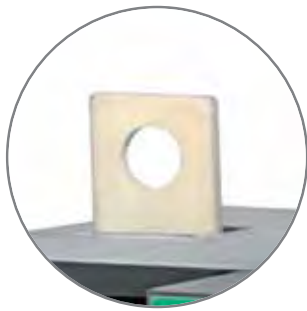
Two contact block in series result in 4 breaking per phase



Measures * in mm (in)		H	W	D
Size S1	3 pole	218	260 (10.24")	121 ÷ 123
	4 pole	(8.58")	307 (12.09")	(4.76" ÷ 4.84")
Size S2	3 pole	292	320 (12.60")	137 ÷ 139
	4 pole	(11.5")	392 (15.43")	(5.39" ÷ 5.47")

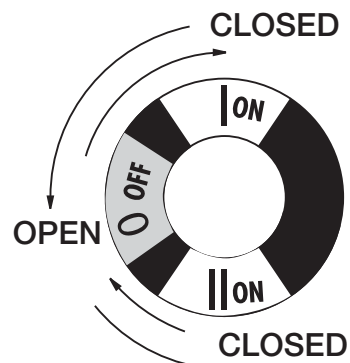
Note: * dimensions H and D depend on the extension and position of the current bars. They may change with the rating.
Shaft or other installed accessories are not considered.

- The actuator always respects the real position of the contacts. This type of control is called "positive operation". The auxiliary contacts are directly acted from the operating mechanism.
- Suitable for polluted ambient and tropical climates according to IEC 68-2 Standards



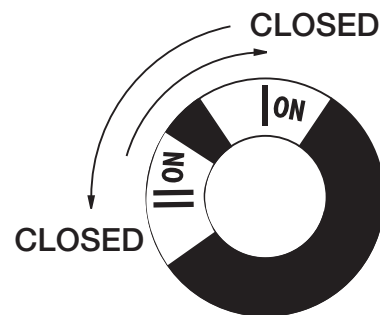
■ **TSC / TSD**
Bolt connection

**TSC
change-over**



■ II-0-I

**TSD
deviator**



■ II-I

A complete range of optional accessories allows the use of TSC / TSD in several installations.
Standard bundle handle with door interlock in closed position.
Standard handle is IP54 (IP55 using an optional handle washer) and can be locked in open position with max 3 padlocks.



Handle M1203
for TSC in Size S1



Handle size M1205
for TSD in Size S1



Handle size M1303
for TSC in Size S2



Handle size M1305
for TSD in Size S2

Note: 6-8 pole versions are available on request.

Technical data IEC 947-3 EN 60947-3

SIZE

Rated insulation voltage	Ui	V
Rated impulse withstand voltage	Uimp	kV
Rated thermal current for open switch	Ie	A
Number of poles		
Power dissipation each pole	W	
Rated operating current Ie		
AC-21A Switching of resistive loads, including moderate overloads	690V	A
AC-22A Switching of mixed resistive loads, including moderate overloads	690V	A
AC-23A Switching of motor loads or other highly inductive loads 3 phase - 3 pole	415V	A
	690V	A
DC-21A Switching of resistive loads, including moderate overloads	500V	A
DC-22A Switching of mixed resistive loads, including moderate overloads	500V	A
DC-23A Switching of motor loads or other highly inductive loads	400V	A
Reactive power 1	380V	kVAr
Rated short time withstand current (1s)	Icw	kA
Rated short-circuit make capacity	Icm	kA
Mechanical life (no. of operations)		operazioni
Electrical life (no. of operations)		operazioni
Switching time I-O-II or II-O-I (for TSC series)		s
Weight		
3 pole with link bar covers		Kg
4 pole with link bar covers (4° leaning pole)		Kg

Note:

1 = due to the presence of harmonics and to the tolerances of capacitors, nominal values must be reduced by 33%
2 = data about the 6 and 8 pole versions are available on request

Normal service, mounting and transportation conditions

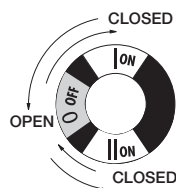
- storage and transport ambient temperature -25° C + 55° C
- operative ambient temperature -5° C + 45° C
- relative humidity max 95%
- rated frequency 50-60 Hz
- altitude max 2000 m a.s.l.
- mounting in enclosure:
In case of utilisation at full load and without adequate ventilation, ensure a volume of about 5 time the volume of the switch.
Performances shall be derated up to 40% according to the environmental temperature.
For other operating conditions please contact Bremas Ersce.

Reference Standards

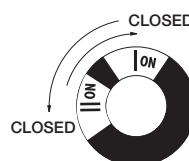
Change-over switches, deviators and by-pass are designed manufactured and tested in compliance with **EN 60947-6-1**.

TSC0250 TSD0250	TSC0400 TSD0400	TSC0630 TSD0630	TSC0800 TSD0800	TSC1000 TSD1000	TSC1250 TSD1250	TSC1600 TSD1600
S1	S1	S1	S2	S2	S2	S2
1000	1000	1000	1000	1000	1000	1000
8	8	8	12	12	12	12
250	400	630	800	1000	1250	1600
3-4 ²	3-4 ²	3-4 ²	3-4 ²	3-4 ²	3-4 ²	3-4 ²
4,7	11	25	22,5	34	53	65
250	400	630	800	1000	1250	1600
250	400	630	800	1000	1250	1600
250	400	630	800	1000	1250	1600
125	160	200	250	315	400	500
250	400	630	800	1000	1250	1600
250	400	630	800	1000	1250	1600
200	250	400	630	800	1000	1000
100	150	250	300	375	450	550
12,5	15	16	30	32	35	35
25	30	32	60	70	73,5	73,5
8000	5000	5000	3000	3000	3000	3000
1000	1000	1000	500	500	500	500
2,5	2,5	2,5	2,5	2,5	2,5	2,5
7	7	7,5	11	15	19	19
7,8	7,8	8,3	17	18,5	20,5	20,5

Change-over switches




Deviator switches

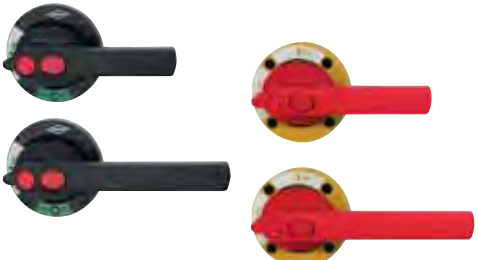



Switch-disconnectors


	Size	Ie AC21	poles	Code	Model	Pack	Code	Model	Pack
	S1	250	3	VC540300	TSC02503M1203	R	VD555000	TSD02503M1205	R
			4	VC541100	TSC02504M1203	R	VD556800	TSD02504M1205	R
		400	3	VC542900	TSC04003M1203	R	VD559200	TSD04003M1205	R
			4	VC543700	TSC04004M1203	R	VD560000	TSD04004M1205	R
		630	3	VC544500	TSC06303M1203	R	VD563400	TSD06303M1205	R
			4	VC545200	TSC06304M1203	R	VD564200	TSD06304M1205	R
	S2	800	3	VC546000	TSC08003M1303	R	VD567500	TSD08003M1305	R
			4	VC547800	TSC08004M1303	R	VD568300	TSD08004M1305	R
		1000	3	VC548600	TSC10003M1303	R	VD571700	TSD10003M1305	R
			4	VC549400	TSC10004M1303	R	VD572500	TSD10004M1305	R
		1250	3	VC550200	TSC12503M1303	R	VD575800	TSD12503M1305	R
			4	VC551000	TSC12504M1303	R	VD576600	TSD12504M1305	R
		1600	3	VC857000	TSC16003M1303	R	VC858600	TSD16003M1305	R
			4	VC857800	TSC16004M1303	R	VC859400	TSD16004M1305	R

Code	Model	Description	Pack
VC844900	K4	link bar cover for TSC / TSD Size S1	R
VC845600	K5	link bar cover for TSC / TSD Size S2	R
VD718400	S09	upper terminal cover 3 pole for TSC / TSD Size S1	R
VD719200	I09	lower terminal cover 3 pole for TSC / TSD Size S1	R
VD720000	S09NL	upper terminal cover 4 pole for TSC / TSD Size S1	R
VD721800	I09NL	lower terminal cover 4 pole for TSC / TSD Size S1	R
VD722600	S99	upper terminal cover 3 pole for TSC / TSD Size S2	R
VD723400	I99	lower terminal cover 3 pole for TSC / TSD Size S2	R
VD724200	S99NL	upper terminal cover 4 pole for TSC / TSD Size S2	R
VD725900	I99NL	lower terminal cover 4 pole for TSC / TSD Size S2	R

	Code	Model	Description	Pack
	VC727600	T6	standard extension shaft L=180mm Q6 for TF Size S0	1
	VD699600	T6/1	extension shaft L=280mm Q6 for TF Size S0	R
	VC728400	T8	standard extension shaft L=180mm Q8 for TF / TS Sizes S1-S2	1
	VD700200	T8/1	extension shaft L=280mm Q8 for TF / TS Sizes S1-S2	1
	VC794600	T10	standard extension shaft L=180mm Q10 for TSC / TSD Size S1	1
	VC795300	T10/1	standard extension shaft L=280mm Q10 for TSC / TSD Size S1	1
	VC797900	T12	standard extension shaft L=180mm Q12 for TF / TS Sizes S3-S4 and TSC / TSD Size S2	1
	VC798700	T12/1	standard extension shaft L=280mm Q12 for TF / TS Sizes S3-S4 and TSC / TSD Size S2	1

	Code	Model	Description	Pack
	VC762300	M1203	short black handle II-0-I standard for TSC / TSD Size S1-S2	R
	VC763100	M12C03	short black handle II-0-I with key lock for TSC / TSD Size S1-S2	R
	VC764900	M12DS03	short black handle II-0-I with door-interlock override for TSC / TSD Size S1-S2	R
	VC777100	M1303	long black handle II-0-I standard for TSC / TSD Size S2	R
	VC778900	M13C03	short black handle II-0-I with key lock for TSC / TSD Size S2	R
	VC779700	M13DS03	long black handle II-0-I with door-interlock override for TSC / TSD Size S2	R

	Code	Model	Description	Pack
	VC792000	G12	handle washer IP55 for TF / TS / TSC / TSD	1
	VC748200	G8	handle washer IP55 for TF / TS / TSC / TSD	R

	Code	Model	Description	Pack
	VC846400	AU1	auxiliary contacts 1NO for TF / TS / TSC / TSD	R
	VC847200	AU2	auxiliary contacts 1NC for TF / TS / TSC / TSD	R
	VC848000	AU3	auxiliary contacts 1NO+1NC for TF / TS / TSC / TSD	1
	VC849800	AU4	auxiliary contacts 1NO+1NO for TF / TS / TSC / TSD	R
	VC851400	AU6	auxiliary contacts 2NO+2NC for TF / TS / TSC / TSD	1
	VC852200	AU7	auxiliary contacts 2NO+2NO for TF / TS / TSC / TSD	R
	VC853000	AU8	auxiliary contacts 2NC+2NC for TF / TS / TSC / TSD	R

 standard article

R = on Request

On request

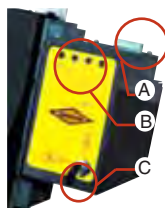
Motor driven change-overs and deviators



Range: 125A ÷ 1600A
 3-4 pole
 Operation directions: II-0-I or II-I
 500V AC 23A 690V AC 22A CEI EN 60947-6-1
 600V DC 22A CEI EN 60947-6-1
 Isolation voltage U_i 1000 V

Electronic control unit

Remotely controls the switch and warnings about possible faults through a local visible signalisation and a remote output.



- Abnormal condition signalling LED
- LED to indicate the Main / generator position
- Manual-automatic selector key
- 220V a.c. or 24V d.c. supply voltage

A – Terminal block
 B – Signalling LED
 C – Manual-automatic selector key

Microprocessor unit MNS

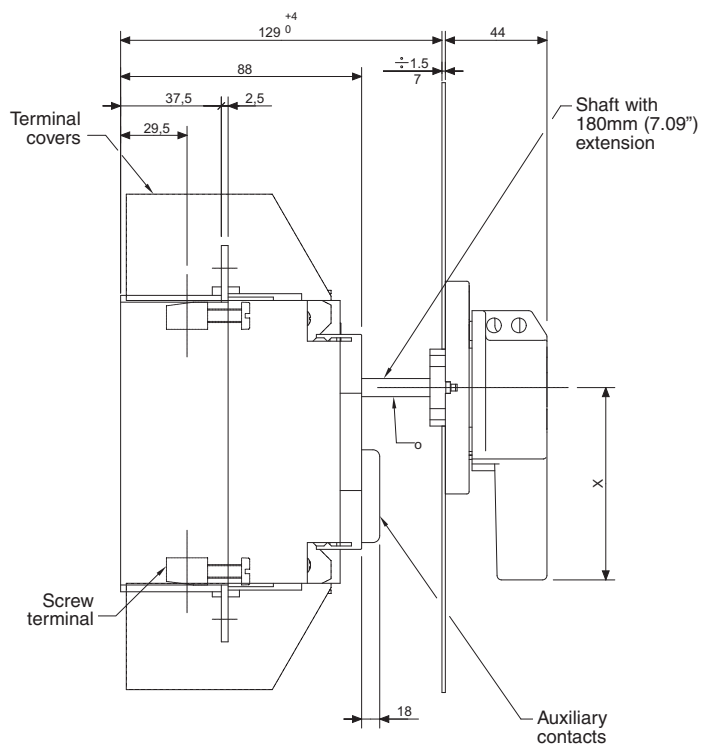
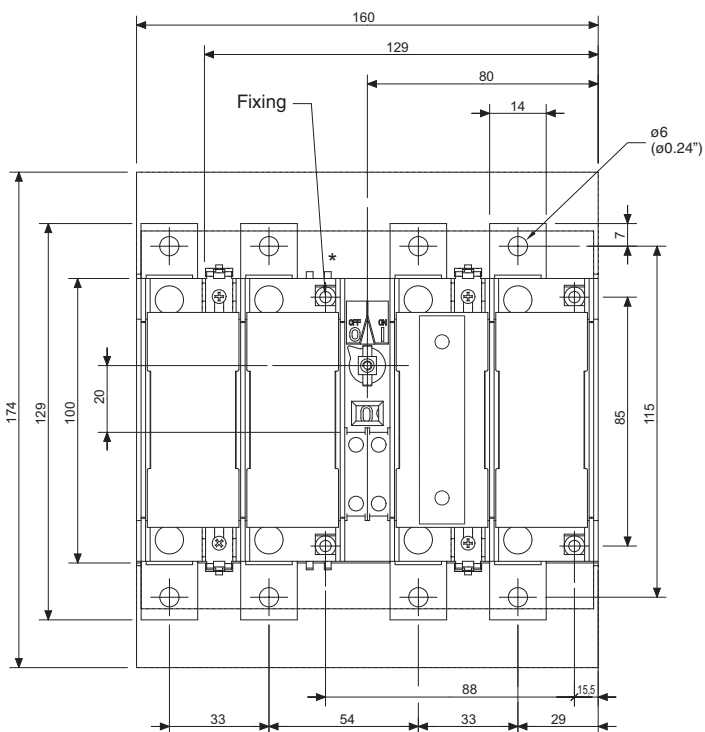
This unit continuously monitors the Main line and automatically switches to the auxiliary generator when the line voltage drops low. It also switches back to the line when its voltage rises back to a normal value.



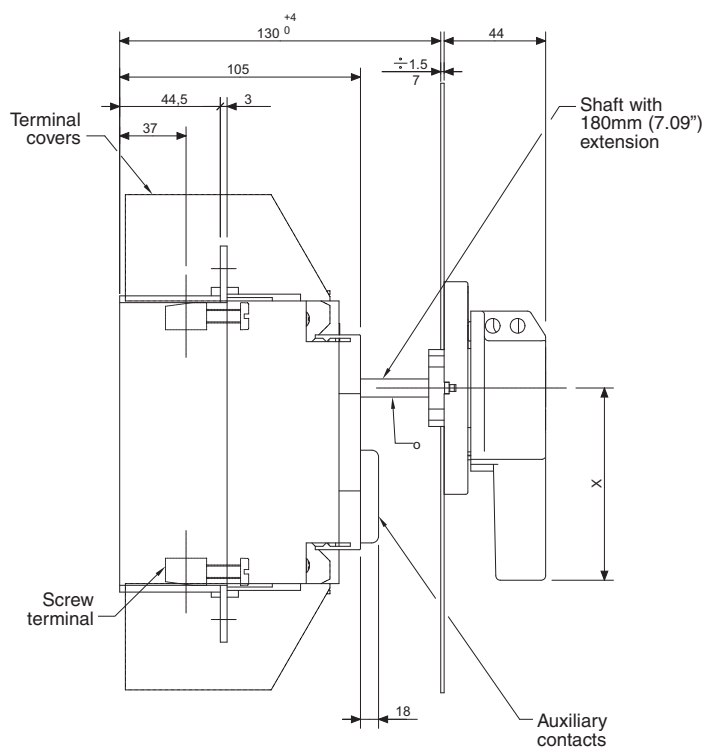
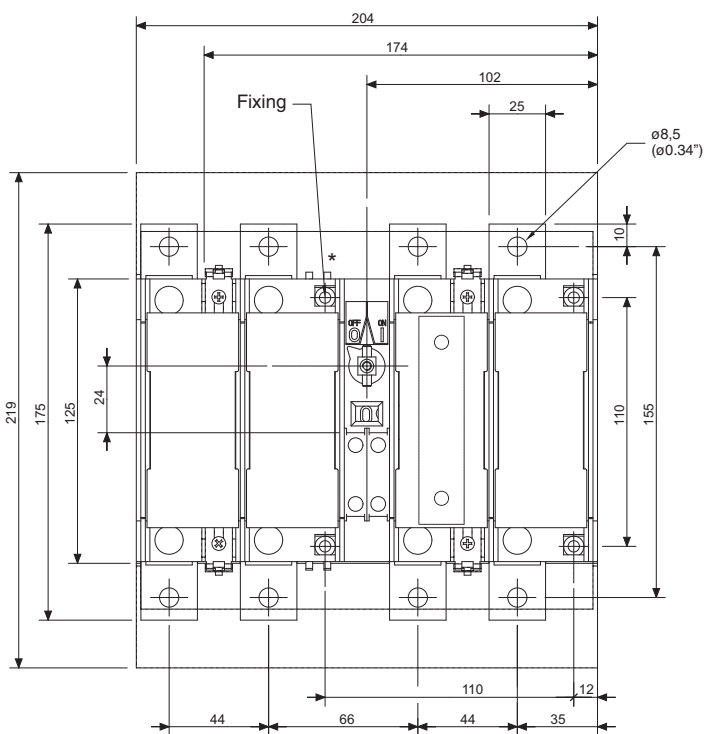
- Abnormal condition signalling LED
- LED to indicate the Main / generator position
- Manual-automatic selector key
- 220V a.c. or 24V d.c. supply voltage

A – Terminal block
 B – Signalling LED
 C – Manual-automatic selector key

TS 125A - Measures in mm (in)
TS Size S1



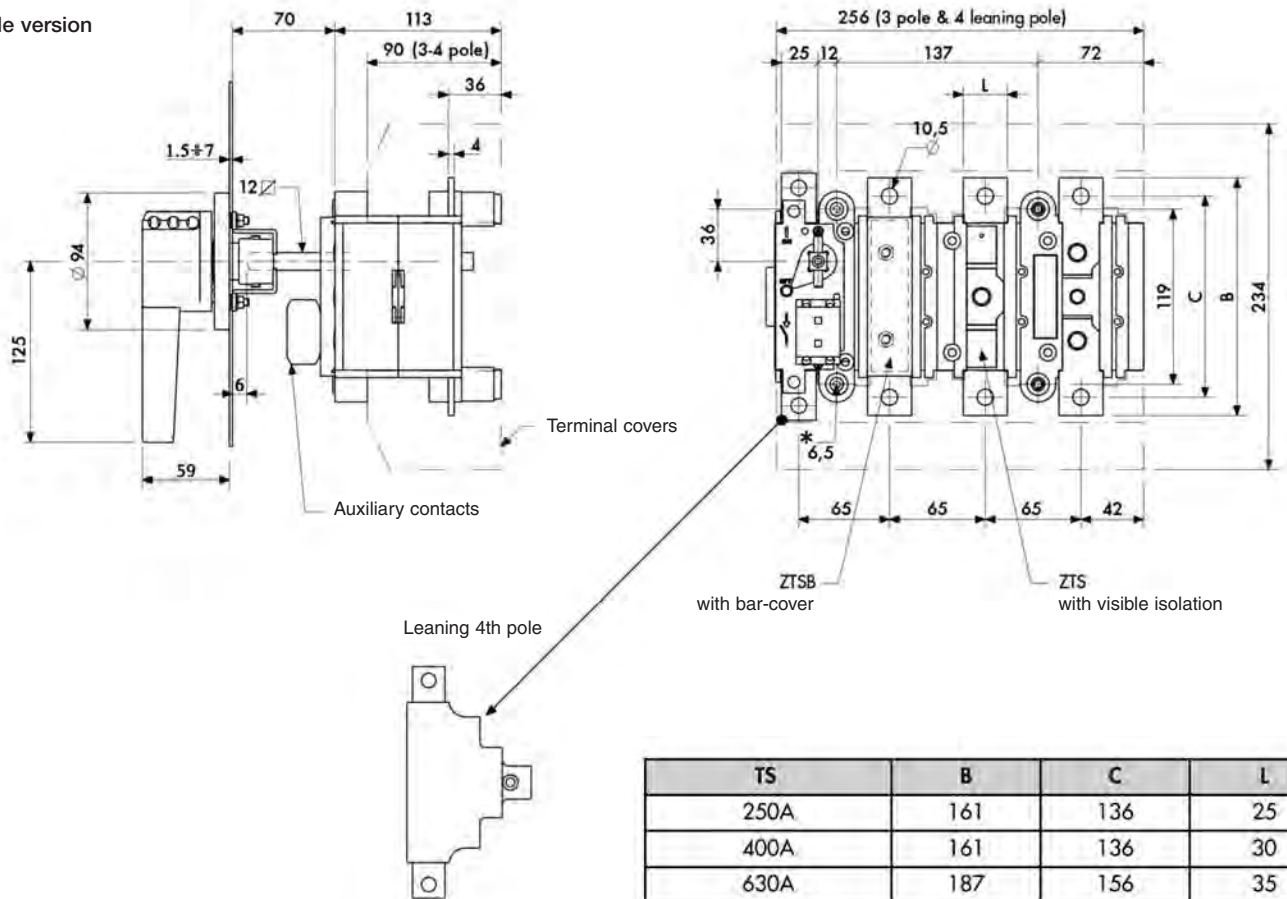
TS 160A÷250A - Measures in mm (in)
TS Size S2



TS 400A÷630A 3-4 pole - Measures in mm (in)

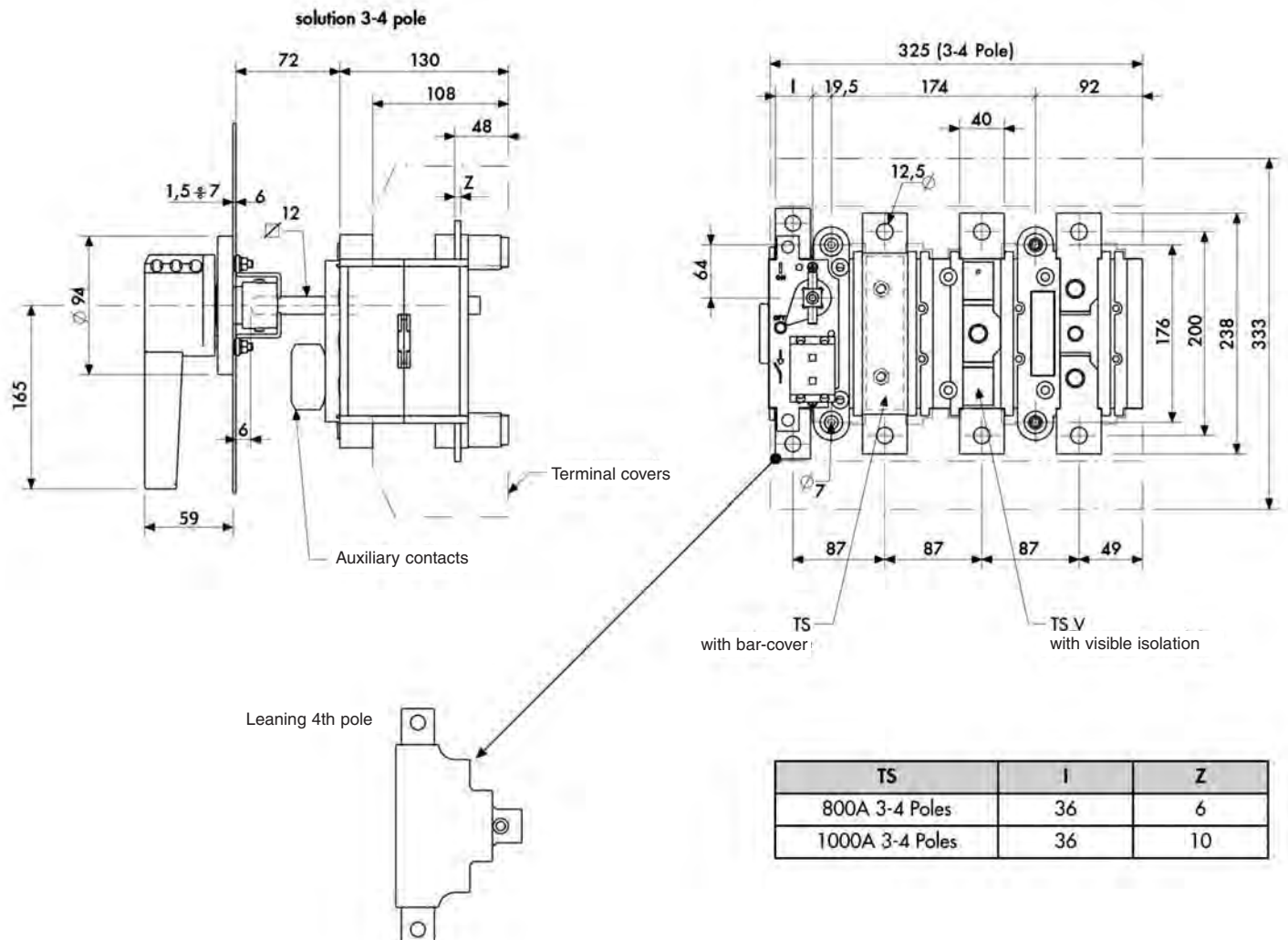
TS Size S3

3-4 pole version



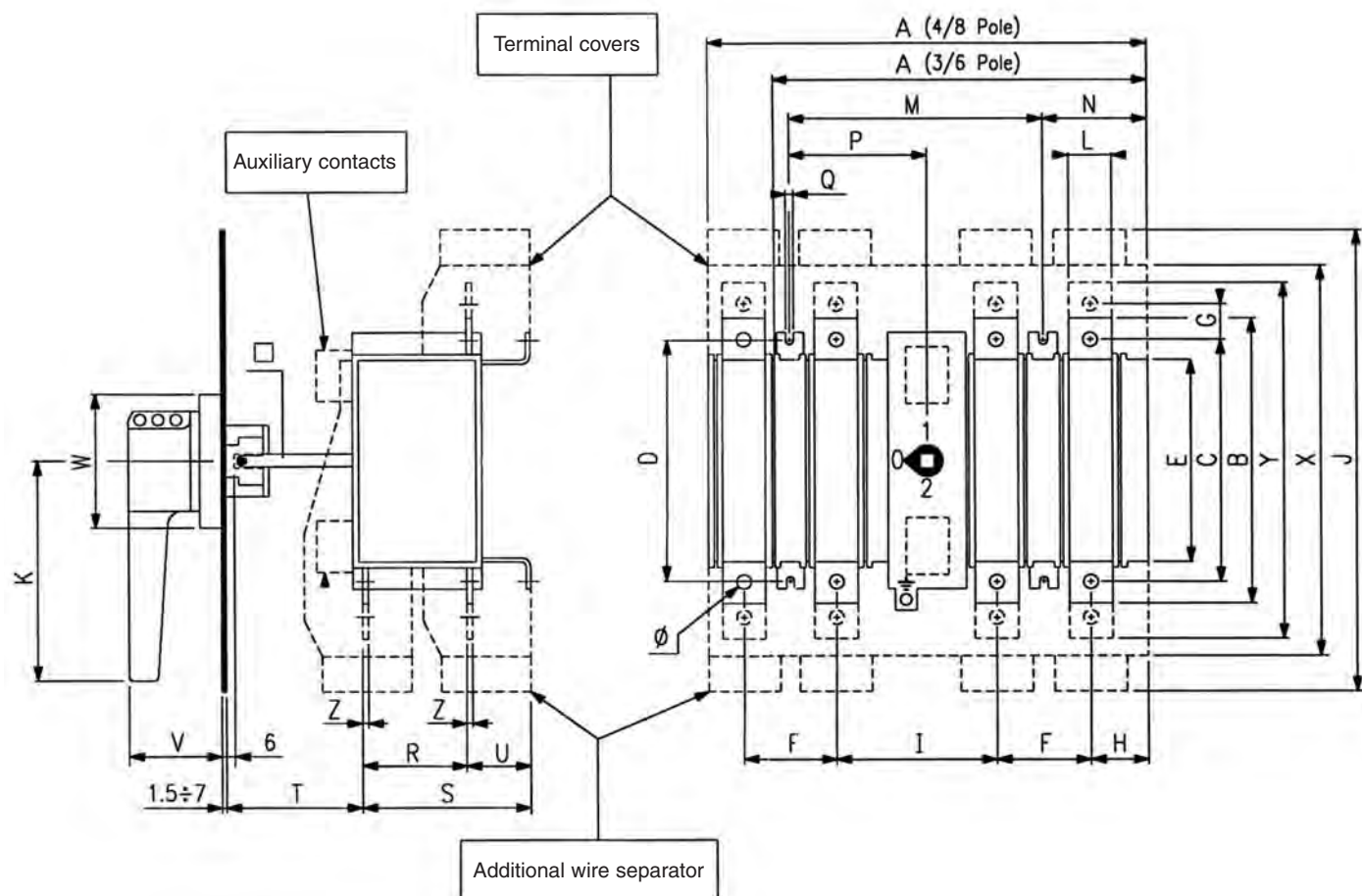
TS 800A÷1000A 3-4 pole - Measures in mm (in)

TS Size S4



Change-over and deviator switches

TSC / TSD - Measures in mm (in)



	TYPE	A 3 pole	A 4 pole	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	☐	Ø
Size S1	250A													25					77	121							4		
	400A	260	307	218	193	168	142	65	-	39.5	112.3	320	125	30	177	72	96	6.5	78	122	115	43	59	94	274	-	5	10	10.5
	630A													35					79	123						6			
Size S2	800A								-										86	137						-	8		
	1000A	320	392	292	252	230	208	87	—	49	134	435	165	40	221	89	112	6.5			107	48	59	94	384	—	10	12	13
	1250A								30										88	139						352	12		
	1600A																												



Switches
disconnectors
with fuse-holders

XNF series
TF series

BREMAS

XNF series
TF series

■ Switch-disconnectors with fuse-holders

■ XNF Series

page 155

16 – 32A with fuse holders

3 – 4 Pole

Auxiliary contacts and / ore additional pole

Protection degree of terminals: IP20

Protection degree of handles: IP66

Base mount with screws or on DIN rail

■ TF Series

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63 - 80 - 100 - 125 - 160 - 250 - 400 - 630A

3 – 4 Poles

Auxiliary contacts

Protection degree of handles: up to IP55




Base mount with screws

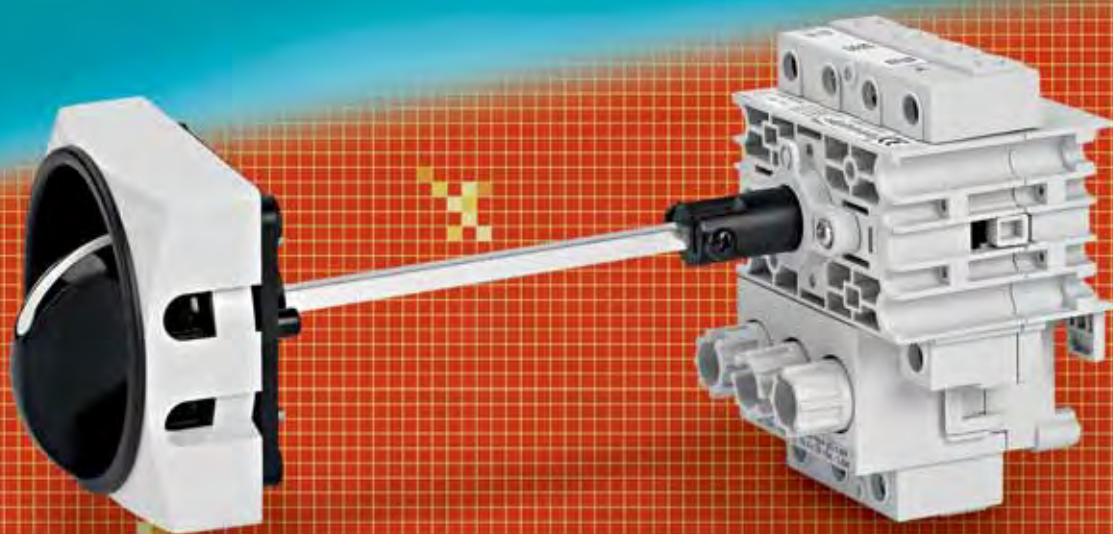
Overview

The range of Bremas switch disconnectors with fuse holders includes the **XNF and TF series** with current ratings from 16A to 630A.

The double break contacts, have positive opening to guarantee high electrical efficiency and security. The terminals of the XNF series have IP20 protection degree and are provided with captive screws in open position to reduce wiring time.

TF have bolt connection for ring lugs, but a specific version TF_S is available with screw terminals. Terminal covers and additional accessories are optionally available.

	XNF	16A 32A	<ul style="list-style-type: none"> • Ui/Ue 690V • 3 - 4 pole • Max 10/16 mm² (flex/solid wire) • Screw cage terminals with captive screws • Base mount • 1 additional pole and/or 1 auxiliary contact can be added • For cylindrical fuses type gG or aM <ul style="list-style-type: none"> - size 10,3x38 for series XNF16 - size 14x51 for series XNF32
	TF	63A 80A 100A 125A	<ul style="list-style-type: none"> • Ui/Ue 1000V/690V • 690V AC 23A IEC 60947-3 • 600V DC 23A IEC 60947-3 • 3 - 4 pole • bolt connection for ring lugs or screw terminals • Base mount
		160A 250A 400A 630A	



Switches
disconnectors
with fuse-holders

XNF series

BREMAS

Main features

The **XNF series** allows to add the protection of fuses to the operative functionality of a switch disconnecter. The double break contacts, have positive opening to guarantee high electrical efficiency and security. The terminals of the XNF series are provided with captive screws in open position to reduce wiring time. The terminals have IP20 protection degree.



■ 1 additional pole and/or 1 auxiliary contact can be added

Fuses are not included

The fuse holders are suitable for cylindrical fuses type gG or aM:

- size 10,3x38mm for series XNF16
- size 14x51mm for series XNF32

Plates and knobs



BL6

Yellow plate 67x67mm (2.64x2.64"), red padlockable knob (max 3 padlocks), door interlock in "ON" position, IP66



BK6

Grey plate 67x67mm (2.64x2.64"), black padlockable knob (max 3 padlocks), door interlock in "ON" position, IP66

International Standards and approvals

Country	Germany	Switzerland	Denmark	Norway	Sweden	Finland	Austria	Great Britain	IEC International electrical Commission
Authority	Verband Deutscher Elektrotechniker	Schweizerischer Elektrotechnischer Verein	Danmarks Elektriske Materielkontrol	Norges Elektriske Materielkontrol	Svenska Elektriske Materielkontroll-anstalten	Sähötär-kastuskeskus	Österreichischer Verband für Elektrotechnik	British Standards Institution	
Mark of standard	VDE 0660 ⁽¹⁾							BS EN 60947 ⁽¹⁾	IEC 60947 ⁽²⁾
XNF016	+	+	+	+	+	+	+	+	+
XNF032	+	+	+	+	+	+	+	+	+

+ Conforms to requirements

Notes:

- 1) It is not required to bear a symbol but switches must conform to requirements.
- 2) IEC does not operate an approval scheme

Technical data

			XNF16	XNF32
Main characteristics				
Rated operating voltage	Ue	V	690	690
Rated insulation voltage	Ui	V	690	690
Rated impulse withstand voltage	Uimp	kV	6	6
Rated thermal current for open switch	Ith	A	16	32
Rated thermal current for enclosed switch	Ithe	A	16	32
Rated operation frequency	Hz		50	50
Power dissipation for each pole	W		1,8*	3,5*
Rated operating current Ie				
AC-21A Switching resistive loads, including moderate overloads	690V	A	16	32
AC-22A Switching of mixed resistive and inductive loads, including moderate overloads	690V	A	16	32
Rated operating power				
AC-23A Switching of motor loads or other highly inductive loads	230V	Kw (A)	7,5 (24)	10 (33)
	400V	Kw (A)	13 (24)	18,5 (33)
	500V	Kw (A)	13 (16)	18,5 (32)
	690V	Kw (A)	15 (16)	22 (23)
AC-3 Squirrel cage motors: starting, switching off motors during running	230V	Kw (A)	16 (19)	9 (28)
	400V	Kw (A)	10 (18)	15 (27)
	500V	Kw (A)	10 (14)	15 (27)
	690V	Kw (A)	12 (13)	18,5 (23)
Rated breaking capability in category AC-23A (cos φ = 0.45)	230V	A	192	256
	400V	A	240	330
Short circuit protection				
Rated short time withstand	Icw	A	400	800
Rated conditional short-circuit		kA	10	10
With fuses class gG	500V	A	16	32
Mechanical characteristics				
Mechanical life (120 cycles/hour)	Mil.Man		2	2
Connecting capability with flexible wires	Min-Max	mm ²	1,5-10	1,5-10
Connecting capability with solid wires	Min-Max	mm ²	1,5-16	1,5-16
Connection terminal screw type			M4	M4
Screw tightening torque		Nm	1,4	1,4
Protection degree IEC 529 EN 60529				
Terminals			IP20	
Handle			IP66	
Ambient conditions				
Operating ambient temperature		°C	-25 /+ 55	
Storage ambient temperature		°C	-30 /+70	
Withstand to constant humid according to IEC 60068			sec. IEC 60068 2-78	
Withstand to cyclic humid according to IEC 60068			sec. IEC 60068 2-30	
Auxiliary contacts			XC16AN XC16CN	XC32AN XC32CN
Rated insulation voltage	Ui	V	690	
Rated thermal current for open switch	Ith	A	20	40
AC-21A Switching resistive loads, including moderate overloads	690V	A	6	6
AC-15 Control of a.c. electromagnetic loads	230V	A	20	40

* power dissipated from each fuse

Base mounting *



BL6



BK6

XNF

Rated nom. current	Pole	Part no.	Conf.	Part no.	Conf.
16A	3	XNF0163BL6	1	XNF0163BK6	1
	4	XNF0164BL6	1	XNF0164BK6	1
32A	3	XNF0323BL6	1	XNF0323BK6	1
	4	XNF0324BL6	1	XNF0324BK6	1

* Base mounting switches are supplied with standard 175mm (6.89") shaft.

Additional pole and auxiliary contacts for XNF 16-32A



Part no.	Description	Pack
XC16AN	4th pole / NO auxiliary contact for 16A base mounting NC auxiliary contact for 16A rear mounting	5
XC16CN	NC auxiliary contact for 16A base mounting 4th pole / NO auxiliary contact for 16A rear mounting	5
XC32AN	4th pole / NO auxiliary contact for 32A base mounting NC auxiliary contact for 32A rear mounting	5
XC32CN	NC auxiliary contact for 32A base mounting 4th pole / NO auxiliary contact for 32A rear mounting	5
XC32GN	Earth pole for 16-32A base mounting	5

Optional extension shafts



Shafts

Code	Description	Pack
PALBL300	Shaft L=300mm Q5	5
PALBL500	Shaft L=500mm Q5	5
PALBL055	Shaft L=55mm Q5	R
PALBL075	Shaft L=75mm Q5	R
PALBL095	Shaft L=95mm Q5	R
PALBL115	Shaft L=115mm Q5	R
PALBL135	Shaft L=135mm Q5	R
PALBL155	Shaft L=155mm Q5	R
PALBL175	Shaft L=175mm Q5	5

Terminal covers

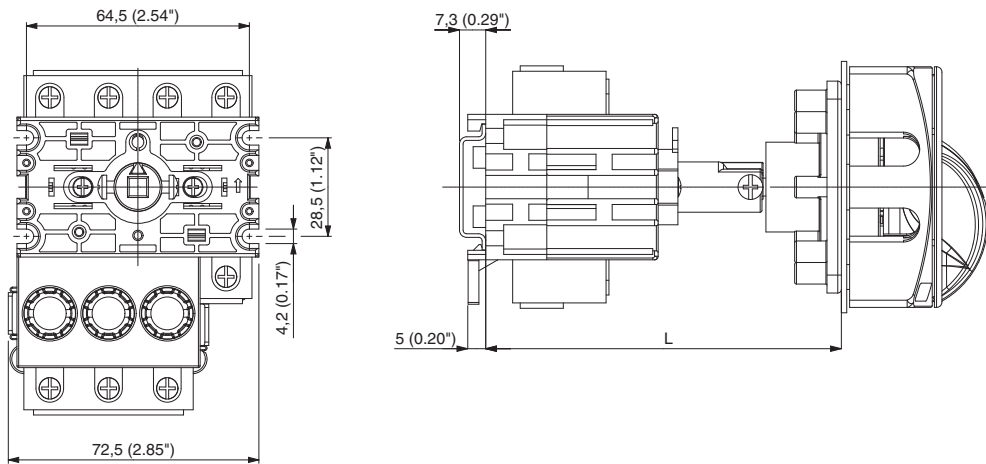


XNF G813

Part no.	Description	Pack.
XNAG813	Couple of terminal covers for XNF 16-40A 3 or 4 pole	5

■ Base mounting

(XNF 16A) - Measures in mm (in)



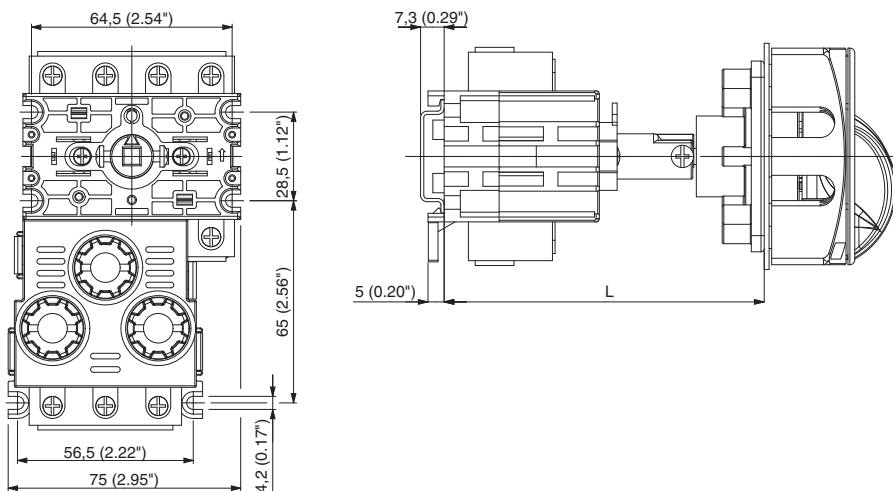
Overall length (min-max)**
for different shaft length (L1):

L1		
175*	L (mm)	99 - 243
6.89*	L (in)	3.90 - 9.57
300	L (mm)	99 - 368
11.81	L (in)	3.90 - 14.49
500	L (mm)	99 - 568
19.68	L (in)	3.90 - 22.36

* Standard shaft, bundled

** Minimum length obtainable
by cutting the shaft.

(XNF 32A)



Overall length (min-max)**
for different shaft length (L1):

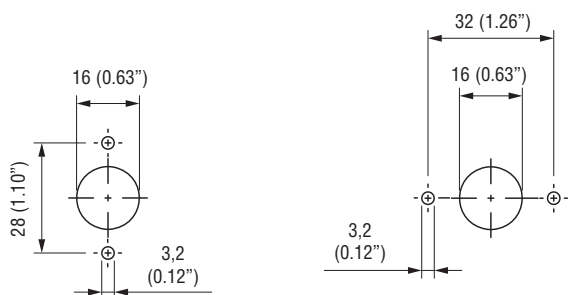
L1		
175*	L (mm)	99 - 243
6.89*	L (in)	3.90 - 9.57
300	L (mm)	99 - 368
11.81	L (in)	3.90 - 14.49
500	L (mm)	99 - 568
19.68	L (in)	3.90 - 22.36

* Standard shaft, bundled

** Minimum length obtainable
by cutting the shaft.

(BL6 - BK6) - Measures in mm (in)

Escutcheon plate



Escutcheon plate mounting options:

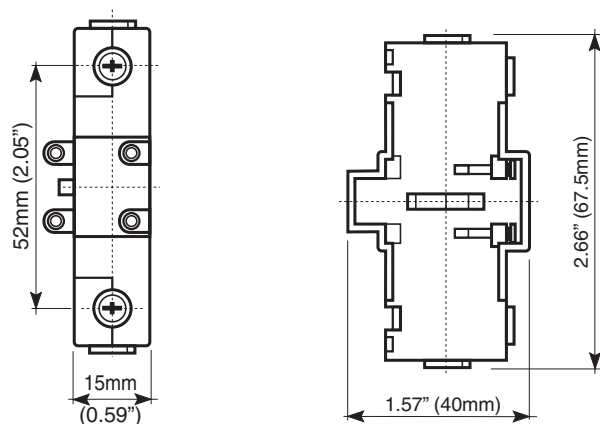
- 1) 2 holes with vertical distance 28mm (1.10")
- 2) 2 holes with horizontal distance 32mm (1.26")
- 3) 4 holes with distance 48 mm (1.89")

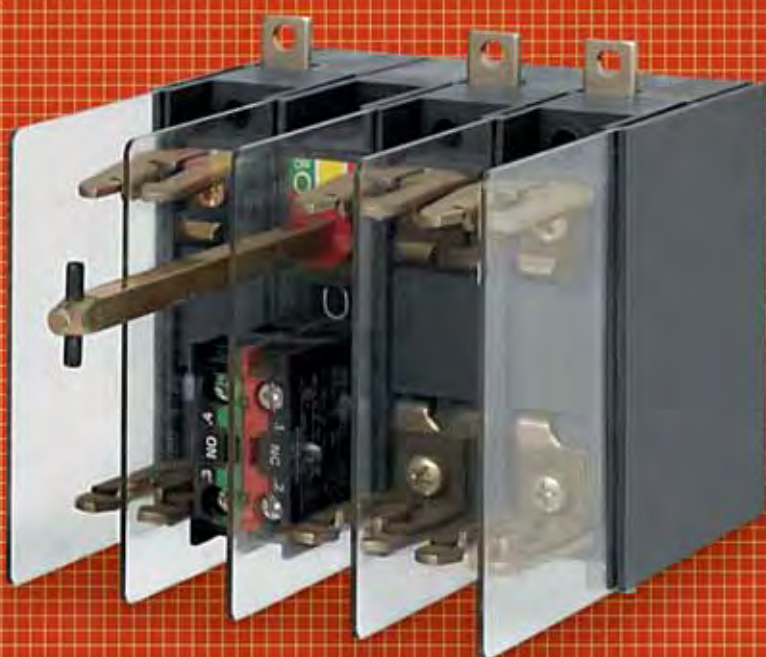
Switch mounting options:

- 1) 4 holes with distance 58x18mm (2.28x0.71")

■ Additional pole and auxiliary contacts for XNF 16-32A

Measures in mm (in)





Switches
disconnectors
with fuse-holders

TF series

BREMAS

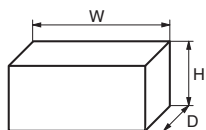
Overview

The switches **series TF** have the following main design features:

- Polyester self-extinguishing and anti-trace insulating housing
- Silver plated electrolytic copper fix and moving contacts
- Double breaking for pole.
- High closing and opening speed, independent from the operator
- Feeder connection is possible either in the upper in on the lower side

Size S0 (63A), Size S1 (80A; 100A)
and Size S2 (125A; 160A)

Size S3 (250; 400A) and
Size S4 (630A)



Measures * in mm (in)	H	W	D
Size S0	3 pole 86 (3.39")	100 (3.94") 126 (4.96")	103 (4.06")
Size S1	3 pole 100 (3.94")	129 (5.08") 160 (6.30")	136 (5.35")
Size S2	3 pole 125 (4.92")	174 (6.85") 204 (8.03")	157 (6.18")

Measures * in mm (in)	H	W	D
Size S3	3 - 4 pole 161 (6.34")	251 (9.88")	197 (7.76")
Size S3	3 - 4 pole 238 (9.37")	325 (12.79")	230 (9.05")

Note: * dimension D is comprehensive of the fuse separators, does not consider the shaft or other installed accessories

Fuses are not included

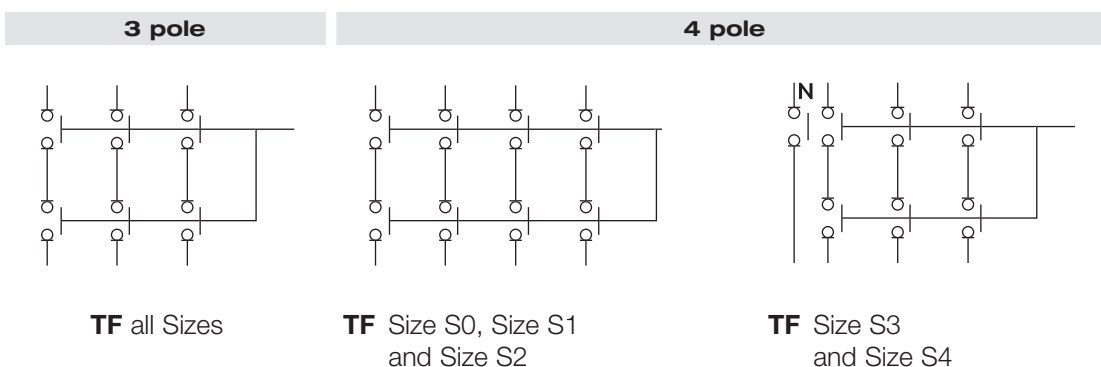
Suitable DIN type fuses* for the different ratings:

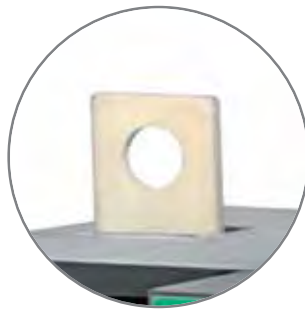
- 63A: DIN/NH00C
- 80A, 100A, 125A, 160A : DIN/NH00
- 250A: size DIN/NH1-2
- 400A: size DIN/NH1-2
- 630A: size DIN/NH3

Versions for BS and NFC type fuses are available on request.



Two contact blocks in series result in 4 breaking for phase





Bolt connection
is standard on
all the TS range



Screw connection
available up to 100A
rating (TS_S execution)

A complete range of optional accessories allows the use of TF switch-disconnectors with fuse-holders in several installations.

Standard bundle handle with door interlock in closed position and possibility to install a legend with 0-1 positions (IEC Standard) or ON-OFF positions (BS Standard).

Standard handle is IP54 (IP55 using an optional handle washer) and can be locked in open position with max 3 padlocks. Optional handles are available that are padlockable both in open and closed position (door interlock override optional as well).



Handle M601 for TS switches in Size S0.



Handle M801 for TS switches in Size S1 and Size S2.



Handle M1201 for TS switches in Size S3.



Handle M1301 for TS switches in Size S4.

Technical data

SIZE

Rated insulation voltage	Ui	V (a.c.)
	Ui	V (d.c.)
Rated impulse withstand voltage	Uimp	kV
Rated thermal current for open switch	Ith	A
Rated thermal current for enclosed switches	Ithe	A
Number of poles		
Power dissipation each pole	W	
Rated operating current Ie		
AC-22A Switching of mixed resistive loads, including moderate overloads	690V	A
	1000V	A
Rated operating power		
AC-23A Switching of motor loads or other highly inductive loads 3 phase - 3 pole	415V	Kw (A)
	500V	Kw (A)
	690V	Kw (A)
DC-23A Switching of motor loads or other highly inductive loads	220V	Kw (A)
	440V	Kw (A)
	600V	Kw (A)
Reactive power ¹	380V	kVAr
Rated short-circuit make capacity	Icw	kA
Mechanical life (no. of operations)		
Electrical life (no. of operations)		
Fuse type	DIN 43620	
Weight		
3 pole	DIN 43620	Kg
4 pole	DIN 43620	Kg

Note:

¹ = due to the presence of harmonics and to the tolerances of capacitors, nominal values must be reduced by 33%

Normal service, mounting and transportation conditions

- storage and transport ambient temperature -25° C + 55° C
- operative ambient temperature -5° C + 45° C
- relative humidity max 95%
- rated frequency 50-60 Hz
- altitude max 2000 m a.s.l.
- mounting in enclosure:

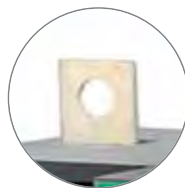
In case of utilisation at full load and without adequate ventilation, ensure a volume of about 5 time the volume of the switch.

Performances shall be derated up to 40% according to the environmental temperature.

For other operating conditions please contact Brema Ersce.

TF063	TF080	TF100	TF125	TF160	TF250	TF400	TF630
S0	S1	S1	S2	S2	S3	S3	S4
1000	1000	1000	1000	1000	1000	1000	1000
600	600	600	1000	1000	1000	1000	1000
6	6	6	8	9	10	11	12
63	80	100	125	160	250	400	630
50	80	80	110	150	200	340	550
3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4
2,2	3,5	5,5	4,8	6,6	12	28	40
63	80	100	-	-	-	-	-
-	-	-	125	160	250	400	630
30 (63)	35 (80)	45 (100)	55 (125)	75 (160)	132 (250)	200 (400)	355 (630)
40 (63)	40 (80)	63 (100)	75 (125)	100 (160)	160 (250)	280 (400)	425 (630)
45 (63)	55 (80)	80 (100)	90 (125)	140 (160)	220 (250)	375 (400)	560 (630)
14(63)	18(80)	22(100)	28(125)	35(160)	55(250)	88(400)	139(630)
28(63)	35(80)	44(100)	55(125)	70(160)	110(250)	176(400)	277(630)
30(50)	48(80)	48(80)	75(125)	96(160)	150(250)	240(400)	378(630)
31	40	50	60	75	125	250	315
100	100	100	100	100	100	100	100
10000	10000	10000	8000	8000	8000	5000	5000
1500	1500	1500	1000	1000	1000	1000	1000
00-C	0	0	00-0	00-0	1-2	1-2	3
0,8	1,4	1,4	2,1	2,1	5	5,2	9,5
0,9	1,5	1,5	2,8	2,8	5,2	5,4	10,2

with bolt connections



with bolt connections



Switch-disconnectors with fuse-holders

	Size	Ie AC21	poles	Code	Model	Pack.	Code	Model	Pack.
	S0	63	3	VC307700	TF0633M6010C	R	VC315000	TF0633SM6010C	1
			4	VC308500	TF0634M6010C	R	VC316800	TF0634SM6010C	R
	S1	80	3	VC309300	TF0803M80102	R	VC317600	TF0803SM80102	R
			4	VC310100	TF0804M80102	R	VC318400	TF0804SM80102	R
		100	3	VC311900	TF1003M80102	1	VC319200	TF1003SM80102	R
			4	VC312700	TF1004M80102	1	VC320000	TF1004SM80102	R
	S2	125	3	VD500600	TF1253M80102	1	-	-	-
			4	VD501400	TF1254M80102	1	-	-	-
		160	3	VD502200	TF1603M80101	1	-	-	-
			4	VD503000	TF1604M80101	1	-	-	-
	S3	250	3	VC357200	TF2503M120102	1	-	-	-
			4	VC358000	TF2504M120102	1	-	-	-
		400	3	VC359800	TF4003M120103	1	-	-	-
			4	VC360600	TF4004M120103	R	-	-	-
	S4	630	3	VC361400	TF6303M120104	R	-	-	-
			4	VC362200	TF6304M120104	R	-	-	-

Code	Model	Description	Pack
VC714400	SD3F	fuse protection shield DIN 3 pole for TF Size S0	1
VC715100	SD4F	fuse protection shield DIN 4 pole for TF Size S0	R
VC718500	SD31	fuse protection shield DIN 3 pole for TF Size S1	1
VD689700	SD41	fuse protection shield DIN 4 pole for TF Size S1	R
VD690500	SD32	fuse protection shield DIN 3 pole for TF Size S2	1
VD691300	SD42	fuse protection shield DIN 4 pole for TF Size S2	R
VC815900	S33	fuse protection shield 3 pole o 4 pole add. for TF Size S3	1
VC816700	S333	fuse protection shield 3 pole o 4 pole add. for TF Size S4	R





Code	Model	Description	Pack
VC719300	S03	upper terminal cover 3 pole for TF Size S0	1
VC720100	S04	upper terminal cover 4 pole for TF Size S0	R
VC721900	I03	lower terminal cover 3 pole for TF Size S0	1
VC722700	I04	lower terminal cover 4 pole for TF Size S0	R
VC723500	S31	upper terminal cover 3 pole for TF / TS Size S1	1
VD692100	I31	lower terminal cover 3 pole for TF / TS Size S1	1
VC724300	S41	upper terminal cover 4 pole for TF / TS Size S1	R
VD693900	I41	lower terminal cover 4 pole for TF / TS Size S1	R
VD694700	S32	upper terminal cover 3 pole for TF / TS Size S2	1
VD696200	I32	lower terminal cover 3 pole for TF / TS Size S2	1
VD695400	S42	upper terminal cover 4 pole for TF / TS Size S2	R
VD697000	I42	lower terminal cover 4 pole for TF / TS Size S2	R
VC804300	S123	upper terminal cover 3 pole and 4 pole add. for TF / TS Size S3	1
VC805000	I123	lower terminal cover 3 pole and 4 pole add. for TF / TS Size S3	1
VC806800	S203	upper terminal cover 3 pole and 4 pole add. for TF / TS Size S4	R
VC807600	I203	lower terminal cover 3 pole and 4 pole add. for TF / TS Size S4	R



Code	Model	Description	Pack
VC727600	T6	standard extension shaft L=180mm Q6 for TF Size S0	1
VD699600	T6/1	extension shaft L=280mm Q6 for TF Size S0	R
VC728400	T8	standard extension shaft L=180mm Q8 for TF / TS Sizes S1-S2	1
VD700200	T8/1	extension shaft L=280mm Q8 for TF / TS Sizes S1-S2	1
VC797900	T12	standard extension shaft L=180mm Q12 for TF / TS Sizes S3-S4 and TSC / TSD Size S2	1
VC798700	T12/1	standard extension shaft L=280mm Q12 for TF / TS Sizes S3-S4 and TSC / TSD Size S2	1



Code	Model	Description	Pack
VC730000	M601	short black handle 0-1 standard for TF Size S0	R
VC732600	M601DS	short black handle 0-1 with door-interlock override for TF Size S0	1
VC741700	M601RDS	short red handle 0-1 with door-interlock override for TF Size S0	R
VC733400	M801	long black handle 0-1 standard for TF/ TS Size S1	R
VC735900	M801DS	long black handle 0-1 with door-interlock override for TF / TS Size S1	R
VC739100	M601R	short red handle 0-1 standard for TF Size S0	R
VC742500	M801R	long red handle 0-1 standard for TF / TS Size S1	R
VC744100	M801RDS	long red handle 0-1 with door-interlock override for TF / TS Size S1	R
VC756500	M1201	short black handle 0-1 standard for TF / TS Size S3	1
VC757300	M12C01	short black handle 0-1 with key lock for TF / TS Size S3	R
VC758100	M12DS01	short black handle 0-1 with door-interlock override for TF / TS Size S3	1
VC768000	M12R01	short red handle 0-1 standard for TF / TS Size S3	R
VC770600	M12RDS01	short red handle 0-1 with door-interlock override for TF / TS Size S3	R
VC771400	M1301	long black handle 0-1 standard for TF / TS Size S4	R
VC772200	M13C01	short black handle 0-1 with key lock for TF / TS Size S4	1
VC773000	M13DS01	short black handle 0-1 with door-interlock override for TF / TS Size S4	R
VC783900	M13R01	short red handle 0-1 standard for TF / TS Size S4	R
VC785400	M13RDS01	long red handle 0-1 with door-interlock override for TF / TS Size S4	R



Code	Model	Description	Pack
VC822500	S55	protection shield 3 pole o 4 pole add. for TS / TF Size S3	R
VC824100	S555	protection shield 3 pole o 4 pole add. for TS / TF Size S4	R



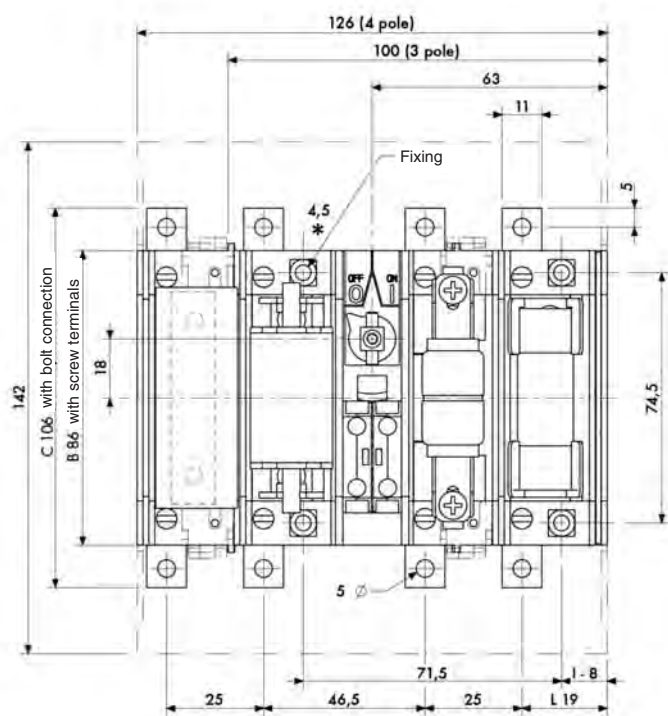
Code	Model	Description	Pack
VC792000	G12	handle washer IP55 for TF / TS / TSC / TSD	1
VC748200	G8	handle washer IP55 for TF / TS / TSC / TSD	R



Code	Model	Description	Pack
VC846400	AU1	auxiliary contacts 1NO for TF / TS / TSC / TSD	R
VC847200	AU2	auxiliary contacts 1NC for TF / TS / TSC / TSD	R
VC848000	AU3	auxiliary contacts 1NO+1NC for TF / TS / TSC / TSD	1
VC849800	AU4	auxiliary contacts 1NO+1NO for TF / TS / TSC / TSD	R
VC851400	AU6	auxiliary contacts 2NO+2NC for TF / TS / TSC / TSD	1
VC852200	AU7	auxiliary contacts 2NO+2NO for TF / TS / TSC / TSD	R
VC853000	AU8	auxiliary contacts 2NC+2NC for TF / TS / TSC / TSD	R

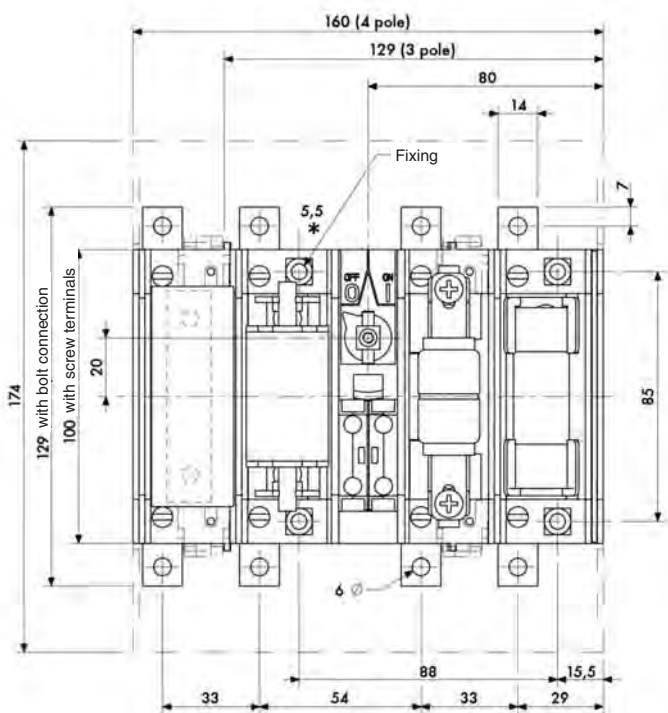
TF 63A - Measures in mm (in)

TF Size S0



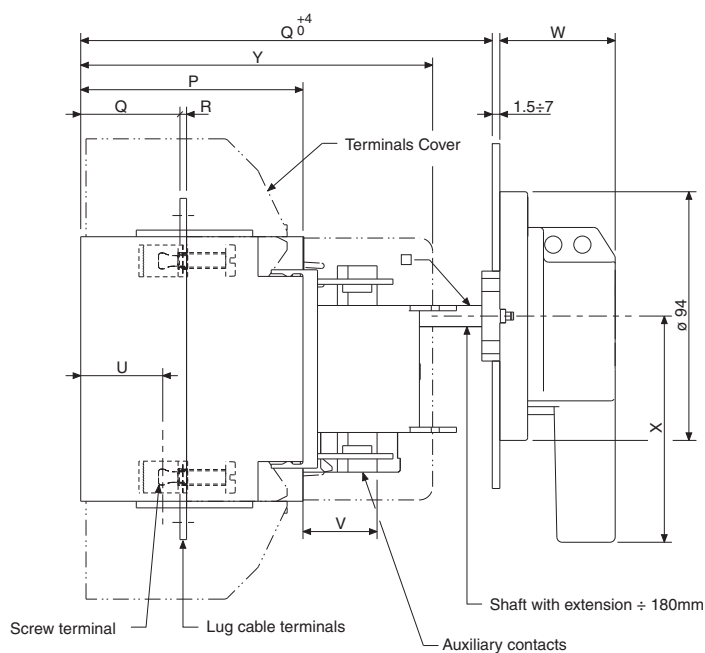
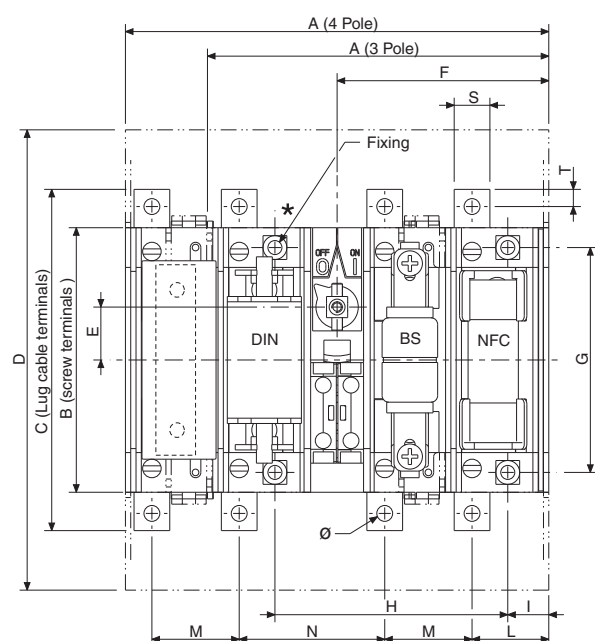
TF 80A ÷ 100A - Measures in mm (in)

TF Size S1



TF 125A ÷ 160A - Measures in mm (in)

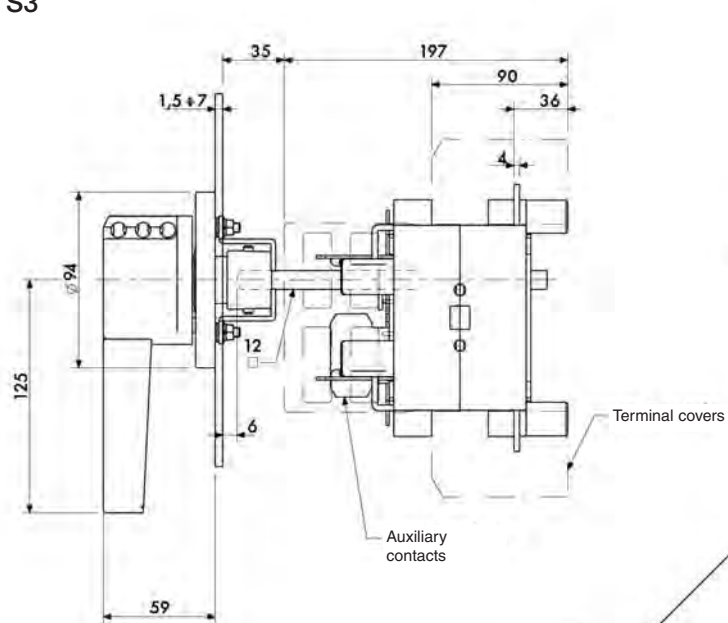
TF Size S2



A 3 pole	A 4 pole	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	*	Ø	∇
174	204	125	175	219	24	102	110	110	12	35	44	66	186	105	44.5	3	25	10	37	18	44	85	157	5.5	8.5	8

TF 250A ÷ 400A - Measures in mm (in)

TF Size S3

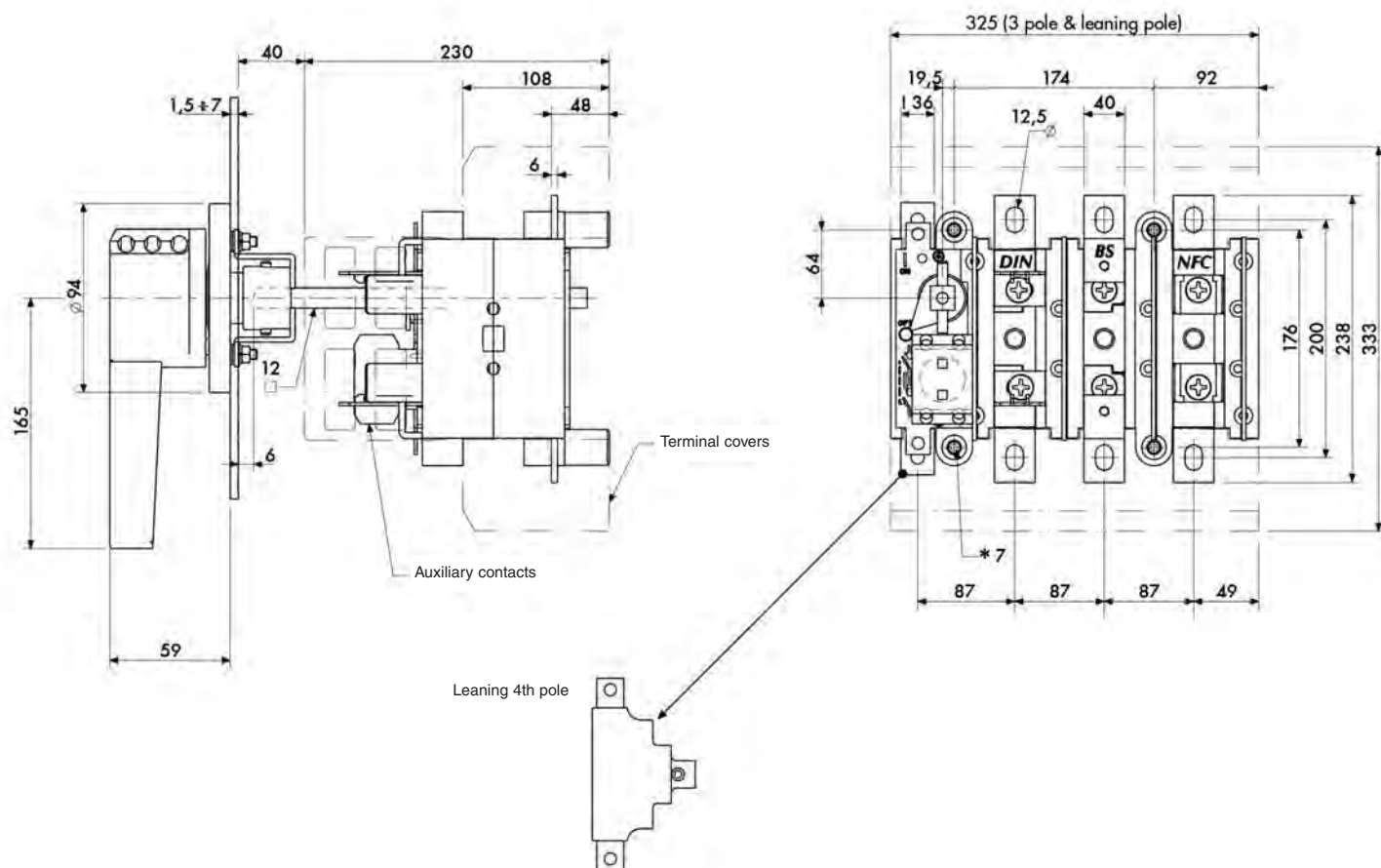


TF	L
250A	25
400A	30

Leaning 4th pole



TF 630A - Measures in mm (in)
TF Size S4





Enclosed
solutions

BREMAS

BREMAS offers a complete range of enclosed solutions, whose structural details, according to the highest market standards, make these products suitable for the most different applications: motor-control schemes, ON-OFF switches, change-over switches. The enclosures are made of ABS for sizes up to 63A, sizes 100-200A are made of metal-sheet. Versions with front drive or lateral lever drive are available.



- Protection degree up to IP65
- Front or Lateral lever drive
- Double insulated thermoplastic enclosures
- Terminals for 5 wires systems (3 phase+N+PE)
- Padlockable handle in "OFF" position and Cover interlock in "ON" position for the Front drive operated versions
- Trace and knock-outs to easy the wiring in the installation

Thermoplastic enclosures

	Type	Dimensions	Handle type	Additional Characteristics			
	B95	120 x 95 x 78 mm 4.72 x 3.74 x 3.07 in	Front drive. Padlockable handle in "OFF" position	ABS IP65 Double insulated	Cover interlock in "ON" position	Terminals for 5 wires systems (3 phase + N + PE)	2xM20 knock-outs on two sides, 2xPg16 on one side and on the base of the enclosure
	B110	125 x 110 x 78 mm 4.92 x 4.33 x 3.07 in	Front drive. Padlockable handle in "OFF" position	ABS IP65 Double insulated	Cover interlock in "ON" position	Terminals for 5 wires systems (3 phase + N + PE)	2xM20 knock-outs on two sides, 2xPg16/M20 on the lower and upper sides of the enclosure
	B140	140x165x80,5 mm 5.51 x 6.50 x 3.17 in	Front drive. Padlockable handle in "OFF" position	ABS IP65 Double insulated	Cover interlock in "ON" position	Terminals for 5 wires systems (3 phase + N + PE)	2xPg 16 /21 traces on each side of the enclosure
	S31	120 x 95 x 78 mm 4.72 x 3.74 x 3.07 in	Lateral lever drive	ABS IP65 Double insulated	-	Terminals for 5 wires systems (3 phase + N + PE)	2xM20 knock-outs on two sides, 2xPg16 on one side and on the base of the enclosure
	S40	152 x 113 x 104 mm 5.98 x 4.45 x 4.09 in	Lateral lever drive	ABS, IP40	-	-	3 holes Ø 19 mm (0.75") with rubber grommet
	S90	190 x 135 x 115 mm 7.48 x 5.31 x 4.53 in	Lateral lever drive	ABS, IP40	-	-	6 holes Ø 19 mm (0.75") with rubber grommet
	S10	300 x 300 x 150 mm 11.81 x 11.81 x 5.90 in	Lateral lever drive	Metal-sheet IP54	-	-	-
	S20	400 x 300 x 200 mm 15.75 x 11.81 x 7.87 in	Lateral lever drive	Metal-sheet IP54	-	-	-



B95

120 x 95 x 78 mm
4.72 x 3.74 x 3.07 in

Plate type



BL6

Yellow plate 67x67mm (2.64x2.64"),
red padlockable knob (max 3 padlocks)

■ IP65, ABS enclosures with front drive, padlockable handle


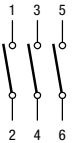



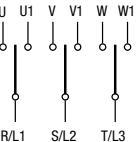

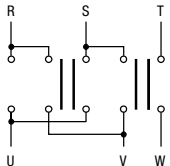
	Circuit diagram	Function	Rated nom. current	Part no.	Pack
 00G3		ON-OFF switch 3 pole with padlockable handle	12A	CA01200G3B95RL6	R
			16A	CA01600G3B95RL6	1
			20A	CA02000G3B95RL6	R
			25A	CA02500G3B95RL6	R
			32A	CA03200G3B95RL6	R
 00G4		ON-OFF switch 4 pole with padlockable handle	12A	-	-
			16A	CA01600G4B95RL6	1
			20A	CA02000G4B95RL6	R
			25A	-	-
			32A	CA03200G4B95RL6	R
 0007		Change-over switch with padlockable handle	12A	CA0120007B95RL6	R
			16A	CA0160007B95RL6	1
			20A	CA0200007B95RL6	R
			25A	-	-
			32A	-	-
 0008		Reversing switch with padlockable handle	12A	CA0120008B95RL6	R
			16A	CA0160008B95RL6	1
			20A	CA0200008B95RL6	R
			25A	CA0250008B95RL6	1
			32A	CA0320008B95RL6	R

Plate type

**B95**

120 x 95 x 78 mm
4.72 x 3.74 x 3.07 in

**BL6**

Yellow plate 67x67mm (2.64x2.64"),
red padlockable knob (max 3 padlocks)

**BK6**

Grey plate 67x67mm (2.64x2.64"),
black padlockable knob (max 3 padlocks)

■ IP65, ABS enclosures with front drive, padlockable handle and interlocked cover

	Circuit diagram	Function	Rated nom. current	Part no.	Pack	Part no.	Pack
 00G3		ON-OFF switch 3 pole with padlockable handle	16A	KNZ0163B95BL6	1	KNZ0163B95BK6	1
			32A	KNZ0303B95BL6	1	KNZ0303B95BK6	1
			40A	KNZ0403B95BL6	1	KNZ0403B95BK6	1
 00G4		ON-OFF switch 4 pole with padlockable handle	16A	KNZ0164B95BL6	1	KNZ0164B95BK6	1
			32A	KNZ0304B95BL6	1	KNZ0304B95BK6	1
			40A	KNZ0404B95BL6	1	KNZ0404B95BK6	1

Plate type



B110
125 x 110 x 78 mm
4.92 x 4.33 x 3.07 in



AL6
Yellow plate 67x67mm
(2.64x2.64"),
red padlockable knob
(max 3 padlocks)



AK6
Grey plate 67x67mm
(2.64x2.64"),
black padlockable knob
(max 3 padlocks)



AY6L
Yellow plate 67x67mm
(2.64x2.64"),
red padlockable knob
(max 3 padlocks)



AK6L
Grey plate 67x67mm
(2.64x2.64"),
black padlockable knob
(max 3 padlocks)

■ IP65, ABS enclosures with front drive, padlockable handle and cover interlock

	Circuit diagram	Function	Rated nom. current	Part no.	Pack	Part no.	Pack	Part no.	Pack	Part no.	Pack
 00F3		ON-OFF switch 3 pole	20A	DS0203B110AL6	1	DS0203B110AK6	R	DS0203B110AY6L	R	DS0203B110AT6L	R
			32A	DS0323B110AL6	1	DS0323B110AK6	R	DS0323B110AY6L	R	DS0323B110AT6L	R
			40A	DS0403B110AL6	1	DS0403B110AK6	R	DS0403B110AY6L	R	DS0403B110AT6L	R
 00F4		ON-OFF switch 4 pole	20A	DS0204B110AL6	1	DS0204B110AK6	R	DS0204B110AY6L	R	DS0204B110AT6L	R
			32A	DS0324B110AL6	1	DS0324B110AK6	R	DS0324B110AY6L	R	DS0324B110AT6L	R
			40A	DS0404B110AL6	1	DS0404B110AK6	R	DS0404B110AY6L	R	DS0404B110AT6L	R

Plate type



B140
140x165x80,5mm
5.51 x 6.50 x 3.17 in



BL6
Yellow plate 67x67mm (2.64x2.64"),
red padlockable knob (max 3 padlocks)



BK6
Grey plate 67x67mm (2.64x2.64"),
black padlockable knob (max 3 padlocks)

■ IP65, ABS enclosures with front drive, padlockable handle and cover interlock

	Circuit diagram	Function	Rated nom. current	Part no.	Pack	Part no.	Pack
 00G3		ON-OFF switch 3 pole	20A	XNA0163B140BL6	1	XNA0163B140BK6	1
			32A	XNA0323B140BL6	1	XNA0323B140BK6	1
 00G4		ON-OFF switch 4 pole	20A	XNA0164B140BL6	1	XNA0164B140BK6	1
			32A	XNA0324B140BL6	1	XNA0324B140BK6	1

standard article

R = on Request

**S31**

120 x 95 x 78 mm
4.72 x 3.74 x 3.07 in

■ IP40, ABS enclosures with lateral lever drive


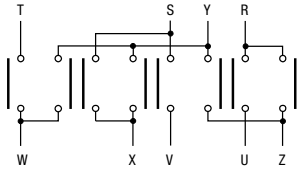

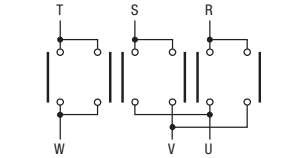

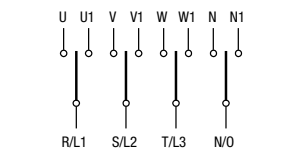
	Circuit diagram	Function	Rated nom. current	Part no.	Pack
 0003		ON-OFF switch 3 pole	12A	CA0120003S31	R
			16A	CA0160003S31	1
			20A	CA0200003S31	1
			25A	CA0250003S31	R
			32A	CA0320003S31	R
			40A	CA0400003S31	R
 0007		Change-over switch 3 pole	12A	CA0120007S31	R
			16A	CA0160007S31	1
			20A	CA0200007S31	R
			25A	CA0250007S31	1
			32A	CA0320007S31	R
 0008		Reversing switch 3 pole	12A	CA0120008S31	R
			16A	CA0160008S31	1
			20A	CA0200008S31	R
			25A	CA0250008S31	1
			32A	CA0320008S31	R
 0009		Changing switch Dahlander pole	12A	CA0120009S31	R
			16A	CA0160009S31	R
			20A	CA0200009S31	R
			25A	CA0250009S31	R
			32A	CA0320009S31	R



S31

120 x 95 x 78 mm
4.72 x 3.74 x 3.07 in

■ IP40, ABS enclosures with lateral lever drive

	Circuit diagram	Function	Rated nom. current	Part no.	Pack
 0010		STAR-DELTA Starter	12A	CA0120010S31	R
			16A	CA0160010S31	R
			20A	CA0200010S31	R
			25A	CA0250010S31	R
			32A	CA0320010S31	R
 0036		Reversing switch 3 pole with spring return to "off"	16A	CA0160036S31	R
			20A	CA0200036S31	R
			25A	CA0250036S31	R
 0039		Change-over switch 4 pole	12A	CA0120039S31	R
			16A	CA0160039S31	R
			20A	CA0200039S31	R
			25A	CA0250039S31	R
			32A	CA0320039S31	R


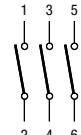

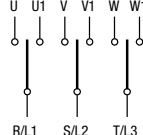

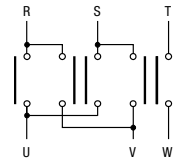

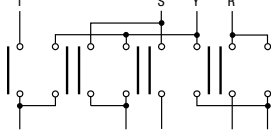

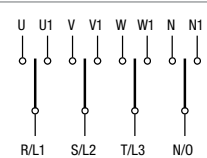

S40

152 x 113 x 104 mm
5.98 x 4.45 x 4.09 in

S90

190 x 135 x 115 mm
7.48 x 5.31 x 4.53 in

■ IP40, ABS enclosures with lateral lever drive

	Circuit diagram	Function	Rated nom. current	Part no.	Pack	Part no.	Pack
 0003		ON-OFF switch 3 pole	50A	CA0500003S40	R	-	-
			63A	-	-	CA0630003S90	R
 0007		Change-over switch 3 pole	50A	CA0500007S40	R	-	-
			63A	-	-	CA0630007S90	R
 0008		Reversing switch 3 pole	50A	CA0500008S40	R	-	-
			63A	-	-	CA0630008S90	R
 0010		STAR-DELTA Starter	50A	CA0500010S40	R	-	-
			63A	-	-	CA0630010S90	R
 0039		Change-over switch 4 pole	50A	CA0500039S40	R	-	-
			63A	-	-	CA0630039S90	R



S10

300 x 300 x 150 mm
11.81 x 11.81 x 5.90 in



S20

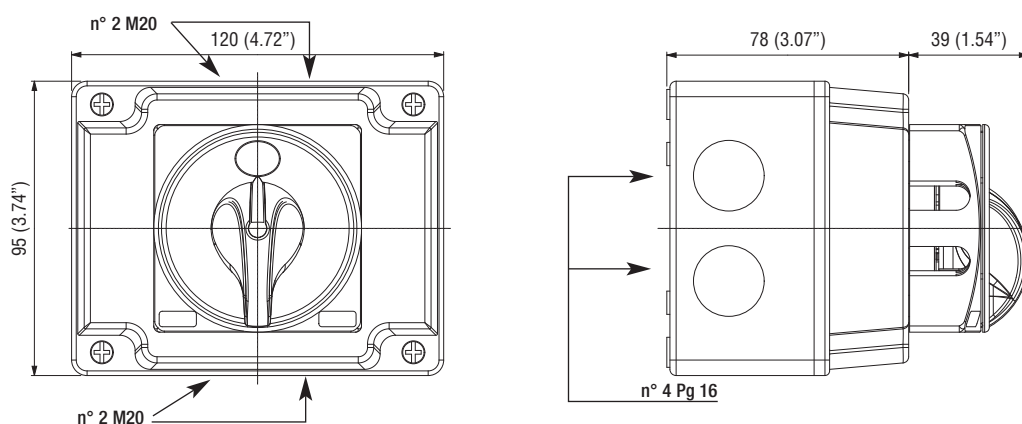
400 x 300 x 200 mm
15.75 x 11.81 x 7.87 in

■ IP54, Metal-sheet enclosures with lateral lever drive

	Circuit diagram	Function	Rated nom. current	Part no.	Pack	Part no.	Pack
 0010		STAR-DELTA Starter	50A	CA1000010S10	R	-	-
 0039		Change-over switch 4 pole	50A	CA1000039S10	R	-	-
			63A	-	-	CA2000039S20	R

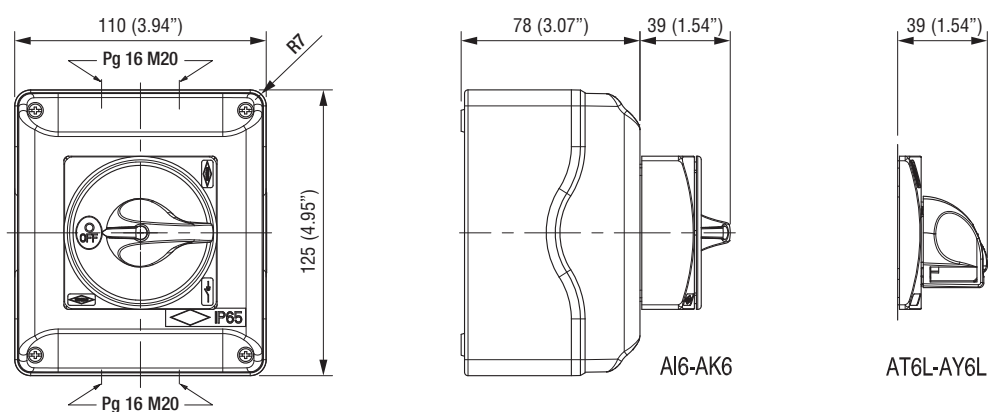
■ B95

Measures in mm (in)



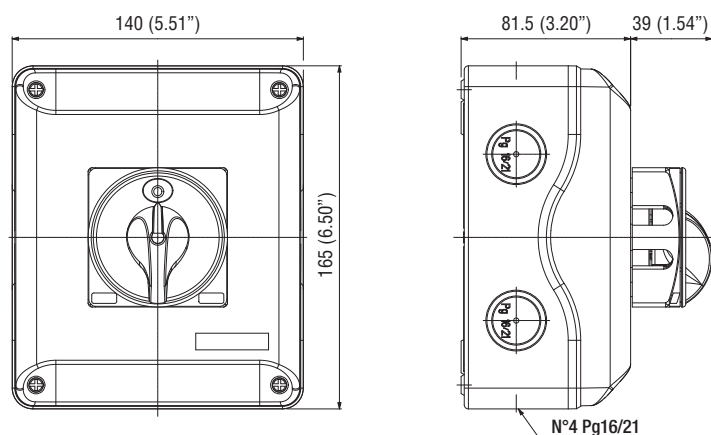
■ B110

Measures in mm (in)



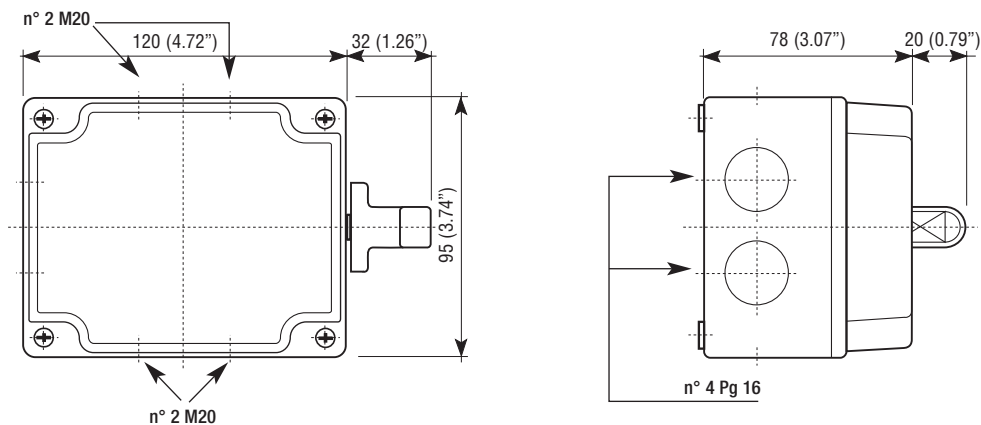
■ B140

Measures in mm (in)



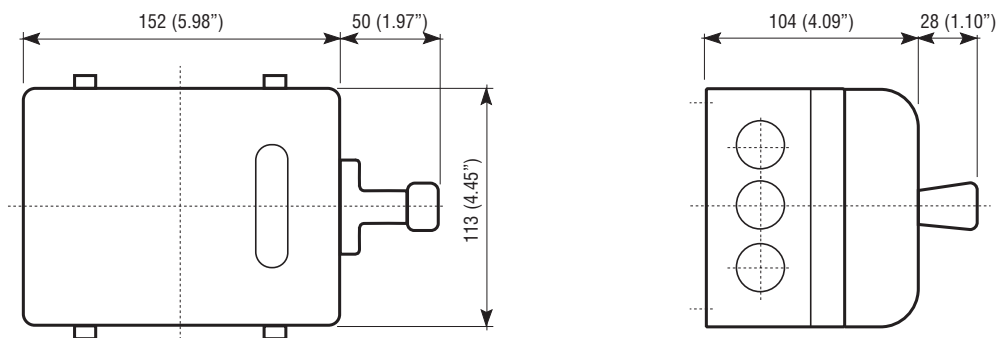
■ S31

Measures in mm (in)



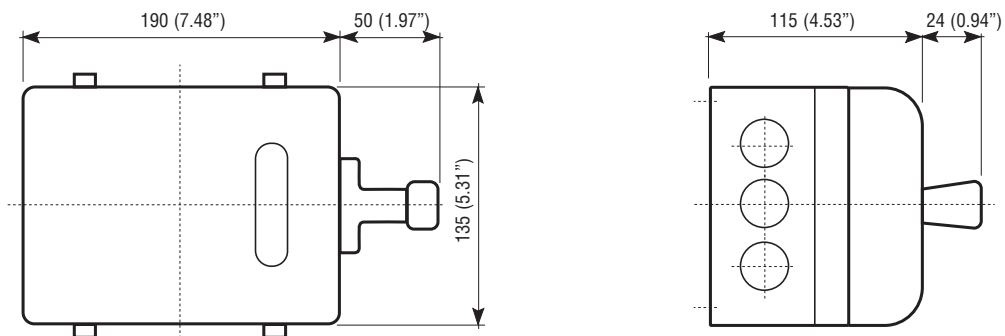
■ S40

Measures in mm (in)



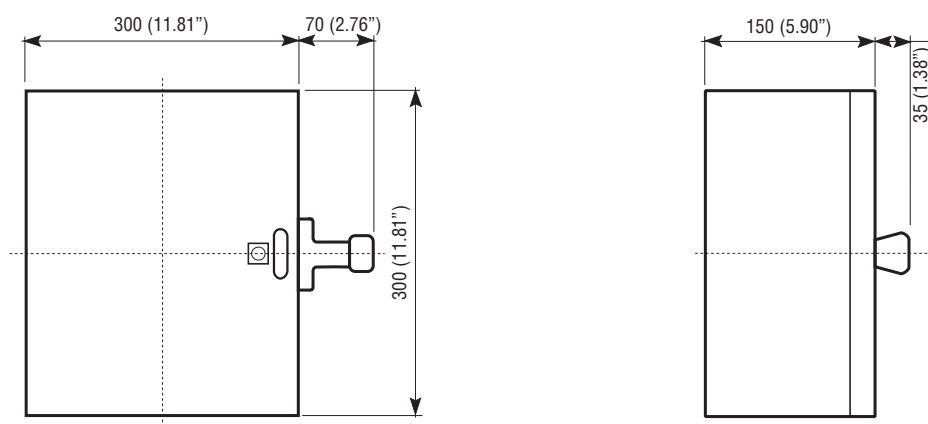
■ S90

Measures in mm (in)



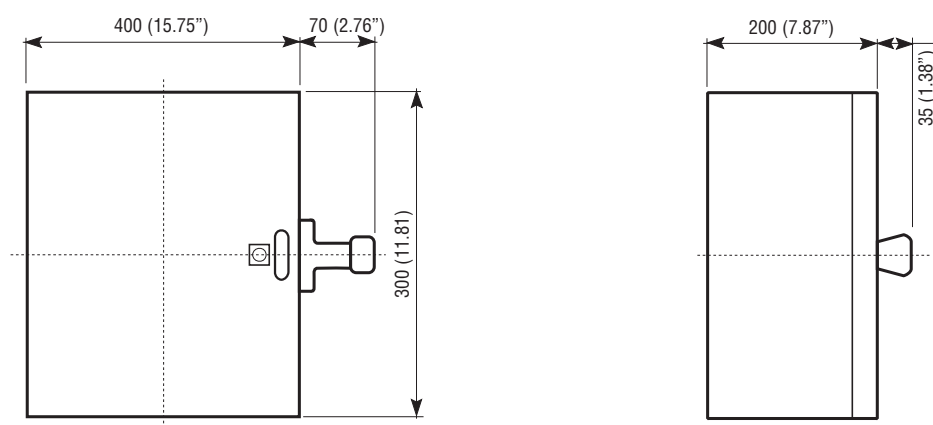
■ S10

Measures in mm (in)



■ S20

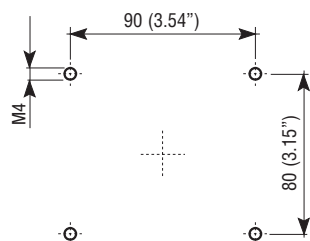
Measures in mm (in)



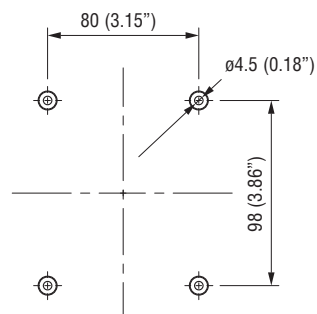
■ Drilling templates

Measures in mm (in)

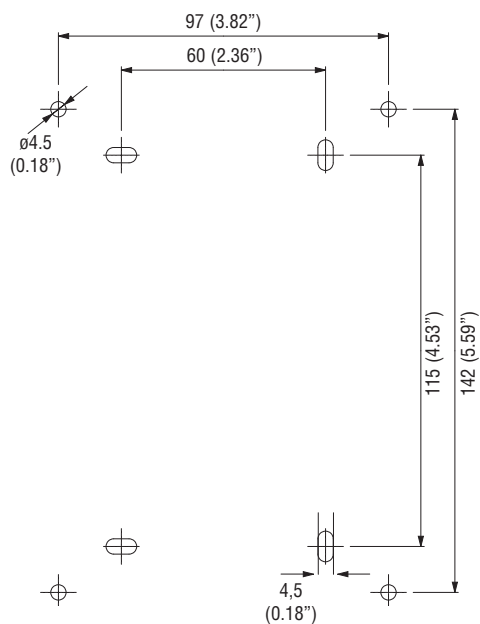
S31 - B95



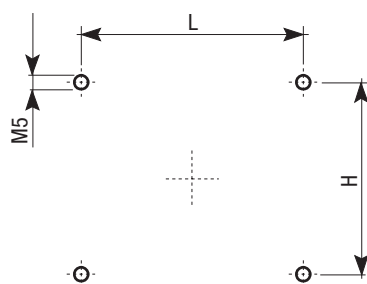
B110



B140



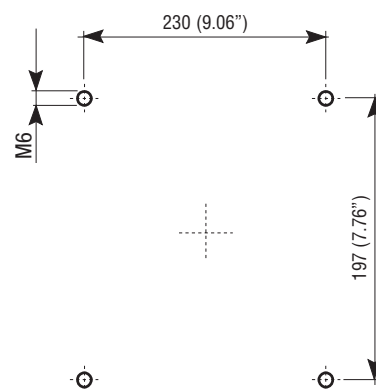
S40 - S90



Measures in mm (in)

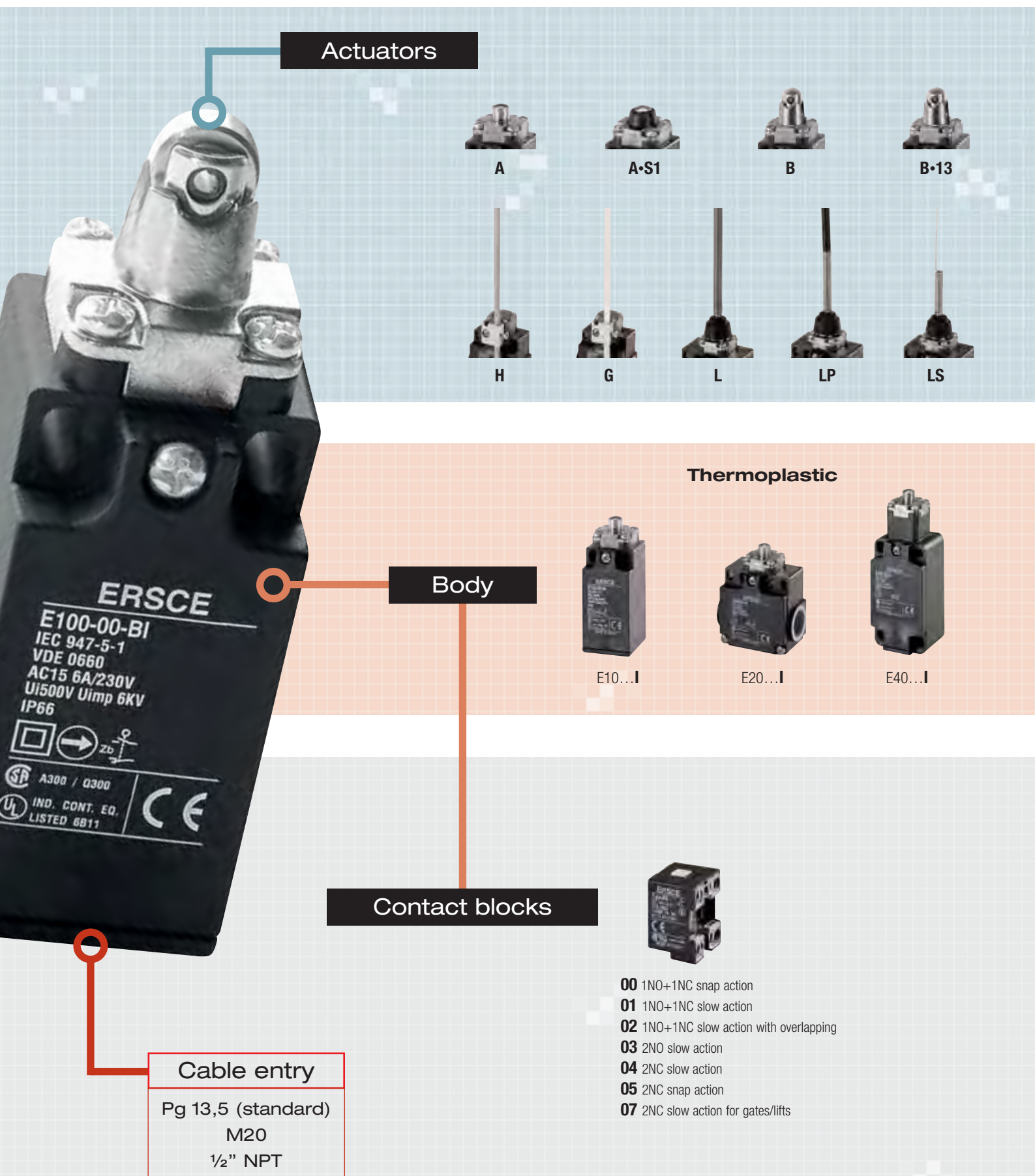
Series	H	L
CA040	95 3.74	129 5.08
CA063	111 4.37	4.37 6.54

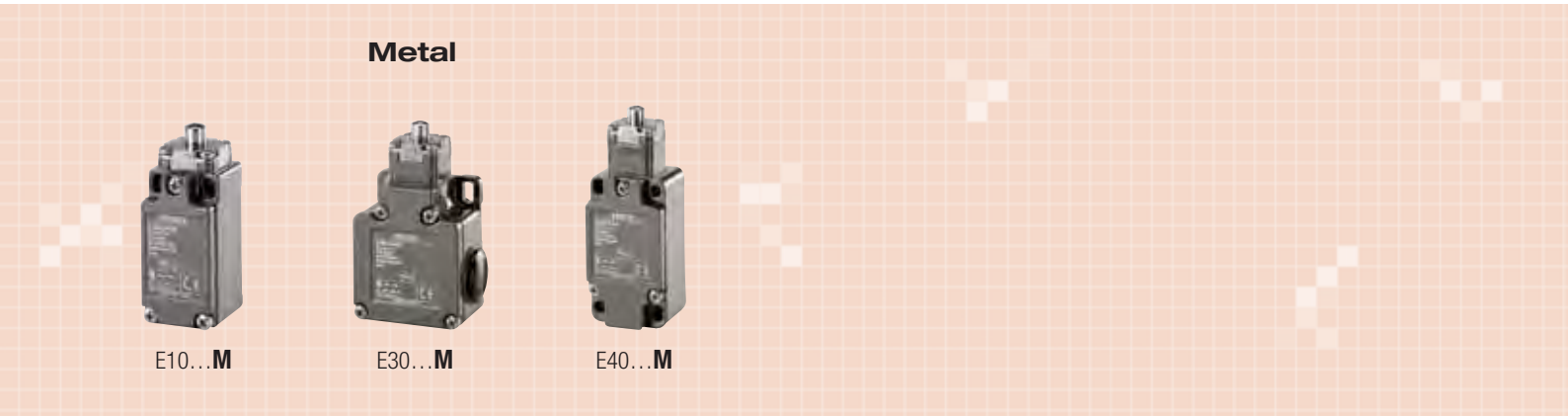
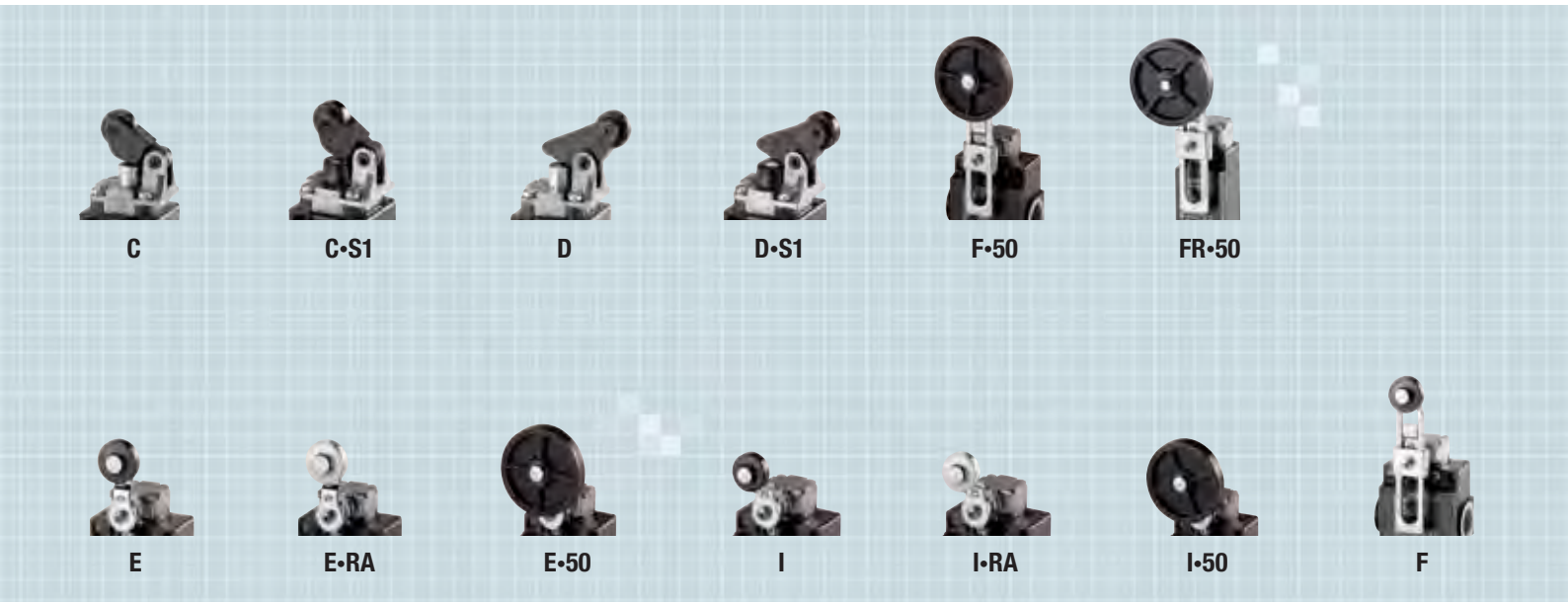
S10 - S20



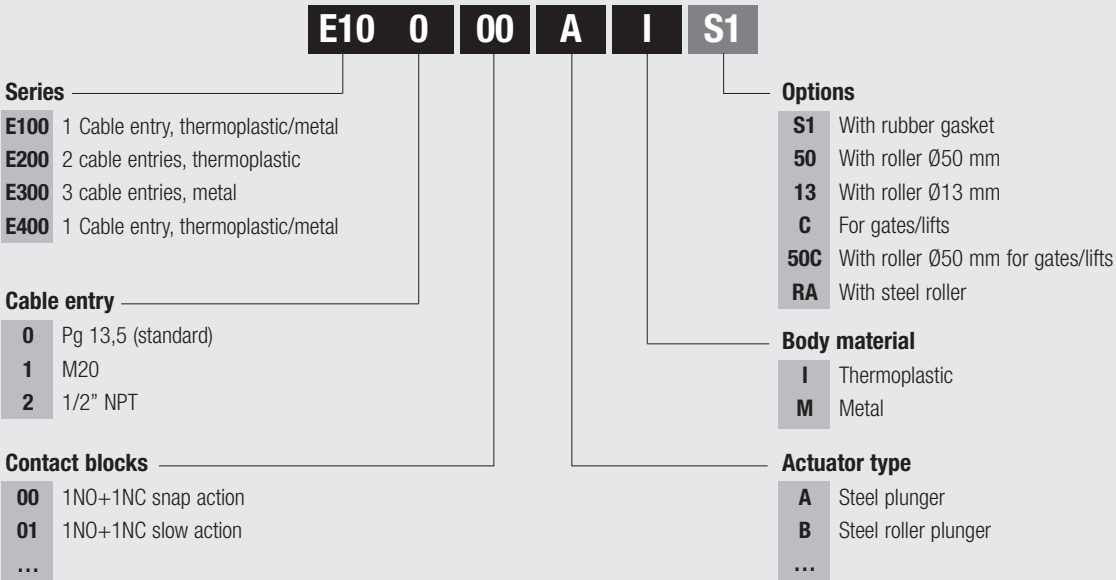


Limit switches





Part no. structure



Note: Please verify the effective availability of a product before ordering.

General characteristics

The position switches are ERSCE's main product, and are the result of more than 40 years of experience in industrial automation.

They are suitable for use in the most different environmental conditions, thanks to their solid construction, IP66 certified, and proven reliability over decades of fieldwork.



- thermoplastic or metal body
- IP66
- contact blocks with positive opening of the NC contact according to IEC EN 60947-5-1 e VDE 0660-200
- form conforming to EN 50047 (E100 series) and to EN 50041 (E400 series))

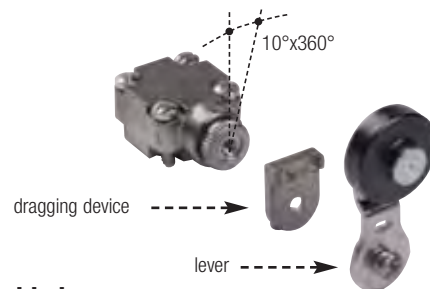
Metal heads

All the heads are made of metal, to ensure maximum performance and lifetime of the switch.



Rotating heads

Possibility to supply, on request, the limit switch lever rotated by 180° steps, and the actuator by 90° steps.



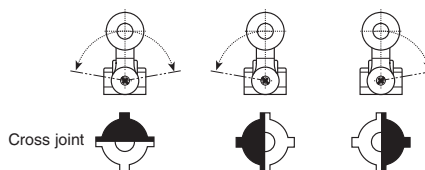
Adjustable levers

Possibility to adjust the lever every 10°, for 360°, by moving the lever and the dragging device.



Overturning levers

Possibility to fasten the lever on the straight or reverse side, maintaining the positive opening of the NC contact.



Unidirectional heads



The lever can be activated to the left or right only or in both directions by adjusting the cross joint.

Technical data

Insulation resistance			500 V DC	MΩ	100	
Dielectric strength			50/60 Hz per 1' *	V AC	2500	
Rated insulation voltage		Ui	IEC947-5-1	V AC	500	
Rated thermal current		Ithe	IEC947-5-1	A	10	
Rated operating current			IEC947-5-1/EN60947-5-1			
Category AC15 A300	Ie	24 V		A	10	
		125 V		A	6	
		230 V		A	6	
		400 V		A	3	
Category DC13 Q300	Ie	24 V		A	6	
		48 V		A	4	
		120 V		A	1	
		250 V		A	0,4	
Contact resistance		IEC255-7 cat.3	initial value	mΩ	25	
Short circuit protective devices		IEC269 (IEC947-5-1) gI or gG type fuse		A	10	
Rated conditionals short circuit current		IEC947-5-1		A	1000	
Pollution degree		IEC947-5-1			3	
Protection degree		EN 60529			IP66	
Protection against electric shock		plastic	class		II	
		metal	class		I	
Vibration resistance		IEC68-2-6	mm		0,35 ± 15% (10 ÷ 55 Hz ± 1 Hz)	
Shock resistance		IEC68-2-27	11 ms	g	30	
Mechanical life				cycles	15.000.000	
Electrical life		at 250 V AC 6A with resistance load cos ϕ=1		cycles	500.000	
		at 250 V AC 6A with inductive load cos ϕ=0,4		cycles	500.000	
				cycles	500.000	
Distance between contacts		snap action type		mm	2x1,25	
		low action type		mm	2x2	
Terminals		type			Screw with combined notch and retravtable plate (notch Ph. size 1)	
		screw		M	3,5	
		protection degree			IP20	
		material			Steel class 8,8/ Galvanized	
		max. screw tightening torque		cNm (Kg cm)	120 (12,24)	
		max connecting capacity		rigid cable	mm²	2x1,5
				flexible cable	mm²	2x1,5
		with prod terminal				In accordance with EN50013
Air ambient temperature		operational	°C	-35 ÷ +85 (without formation of ice)		
Relative humidity		operational		95% max		

* between terminals of the same polarity; between terminals with different polarity; between live mechanical parts and ground;
between live mechanical parts and non-current-carrying metal parts

Approvals

			IEC EN 60947
E100	•	•	+
E200	•	•	+
E300	•	•	+
E400	•	•	+

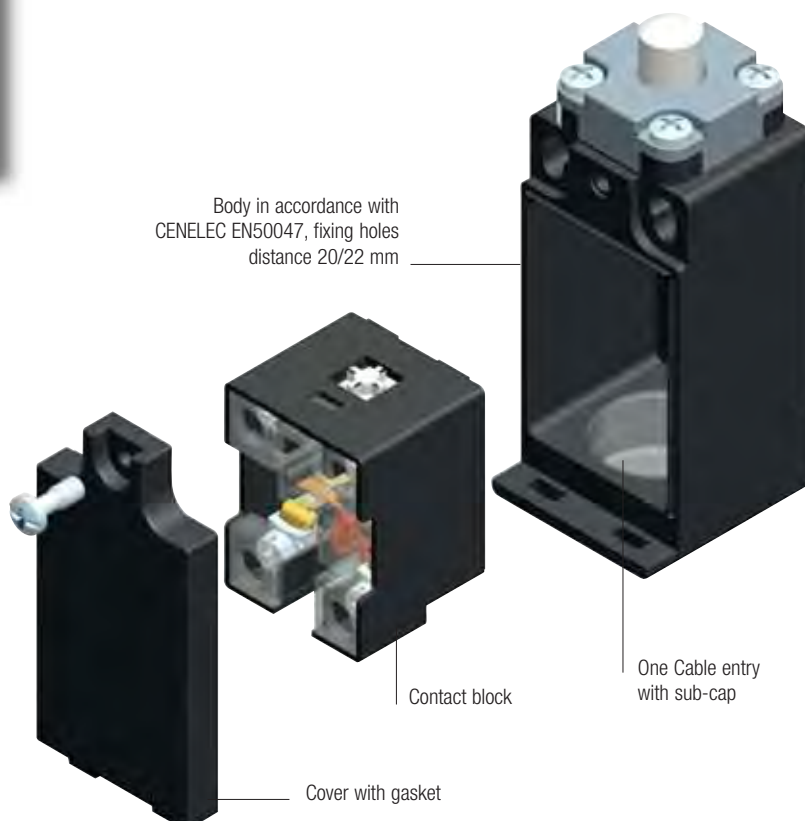
- UL approval file E72861
- CSA approval file 026716-0-000
• Approved
+ Conforms to requirements



The **E100** series is the most compact of ERSCE position switches. Dimensions are in accordance with CENELEC EN50047 that provides two fixing holes with distance 20 or 22mm. There is one hole for Cable entry on the bottom of the switch. Available with thermoplastic or diecast metal alloy body.

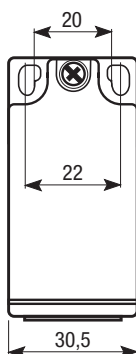
In conformity with standards:

IEC EN 60947-5-1 • EN 60947-1 • EN 50047 • UNI EN 1088 • EN ISO 12100-1
EN ISO 12100-2 • IEC 529 • EN 60529 • VDE 0660-200 • VDE 0113



Fixing

Body in accordance with CENELEC EN50047, fixing holes distance 20/22 mm



Cable entry

One Cable entry on the bottom of the switch with thread:



Thread

Pg 13,5
M20 (on request)
1/2" NPT (on request)

series part no.

E100...
E101...
E102...

A

A•S1



Steel plunger



Steel plunger with rubber gasket

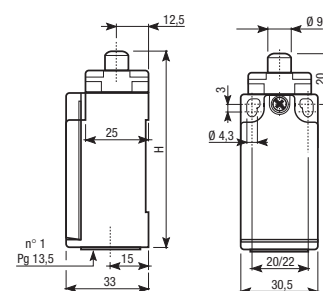
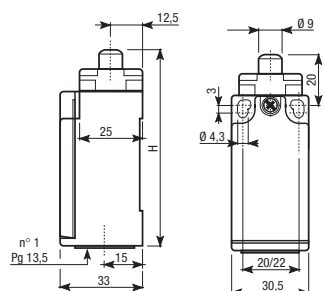
Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10000AI *	E10000AM *	0 2,2 4,5F 6 mm 21-22 13-14 21-22 13-14 1
E10001AI *	E10001AM *	0 2,2 2,9 4,5F 6 mm 21-22 13-14
E10002AI	E10002AM	0 3,3 3,8 4,5F 6 mm 25-26 17-18
E10003AI	E10003AM	0 4 6 mm 13-14 23-24
E10004AI	E10004AM	0 2,7 4,5F 6 mm 11-12 21-22
E10005AI	E10005AM	0 2,3 4,5F 6 mm 11-12 21-22 11-12 21-22 1,2
0,095	0,185	
1		
Pg 13,5		
77,5	75	

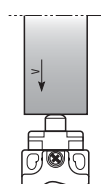
Thermoplastic	Metal	Contact travel
E10000AIS1 *	E10000AMS1 *	0 2,2 4,5F 6 mm 21-22 13-14 21-22 13-14 1
E10001AIS1 *	E10001AMS1 *	0 2,2 2,9 4,5F 6 mm 21-22 13-14
E10002AIS1	E10002AMS1	0 3,3 3,8 4,5F 6 mm 25-26 17-18
E10003AIS1	E10003AMS1	0 4 6 mm 13-14 23-24
E10004AIS1	E10004AMS1	0 2,7 4,5F 6 mm 11-12 21-22
E10005AIS1	E10005AMS1	0 2,3 4,5F 6 mm 11-12 21-22 11-12 21-22 1,2
0,095	0,185	
1		
Pg 13,5		
77,5	75	

standard article
 article on request

* form conforming to EN 50047



Drive cam operating parameters



V max (m/s)	0,5
Min. force (N)	
for tripping	9
for positive opening	28




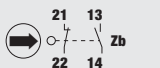
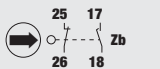
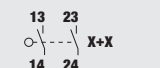
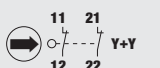
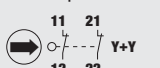
Steel roller plunger

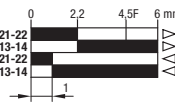
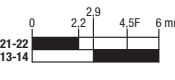
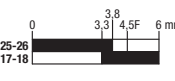
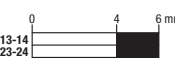
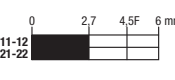
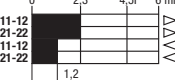
B

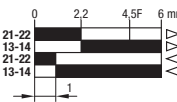
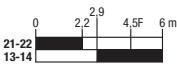
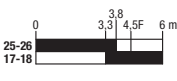
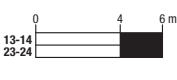
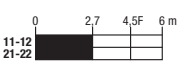



Ø13 mm steel roller plunger

B•13

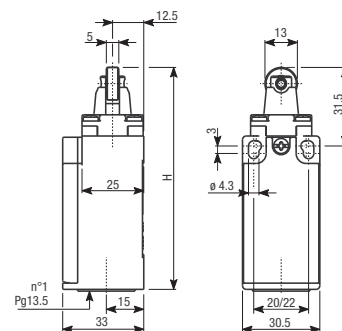
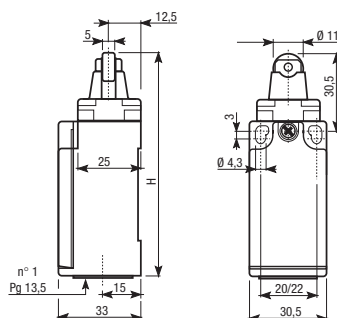
Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10000BI *	E10000BM *	
E10001BI *	E10001BM *	
E10002BI	E10002BM	
E10003BI	E10003BM	
E10004BI	E10004BM	
E10005BI	E10005BM	
0,105	0,195	
1		
Pg 13,5		
88	85,5	

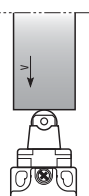
Thermoplastic	Metal	Contact travel
E10000BI13	E10000BM13	
E10001BI13	E10001BM13	
E10002BI13	E10002BM13	
E10003BI13	E10003BM13	
E10004BI13	E10004BM13	
E10005BI13	E10005BM13	
0,105	0,195	
1		
Pg 13,5		
89	86,5	

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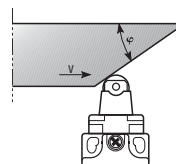
* form conforming to EN 50047



Drive cam operating parameters



V max (m/s)	0,5
Min. force (N)	
for tripping	9
for positive opening	28


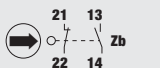
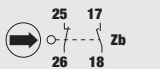
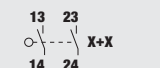
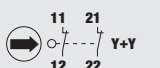
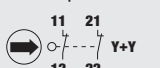


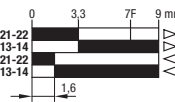
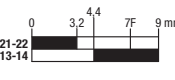
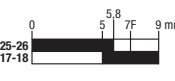
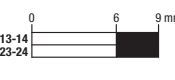
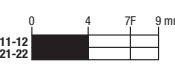

φ	V max (m/s)
20°	1
30°	0,5
Min. force (N)	
for tripping	9
for positive opening	28



C

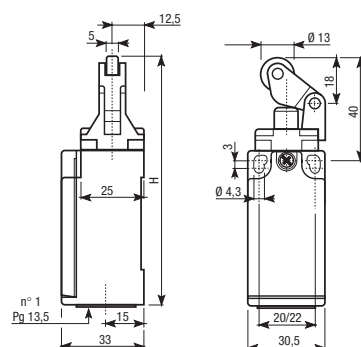
Thermoplastic roller lever, side actuation

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10000CI *	E10000CM *	
E10001CI *	E10001CM *	
E10002CI	E10002CM	
E10003CI	E10003CM	
E10004CI	E10004CM	
E10005CI	E10005CM	
0,105	0,195	
1		
Pg 13,5		
97,5	95	

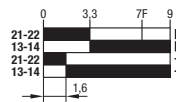
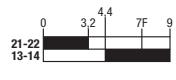
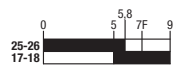

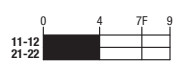

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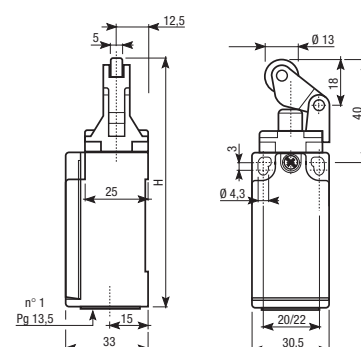
* form conforming to EN 50047



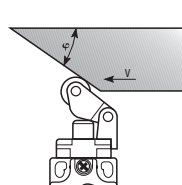
C•S1

Thermoplastic roller lever with rubber gasket, side actuation

Thermoplastic	Metal	Contact travel
E10000CIS1 *	E10000CMS1 *	
E10001CIS1 *	E10001CMS1 *	
E10002CIS1	E10002CMS1	
E10003CIS1	E10003CMS1	
E10004CIS1	E10004CMS1	
E10005CIS1	E10005CMS1	
0,105	0,195	
1		
Pg 13,5		
97,5	95	



Drive cam operating parameters



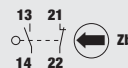
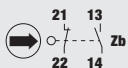
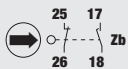
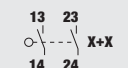
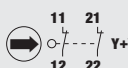
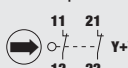
φ	V max (m/s)
20°	1
30°	0,5

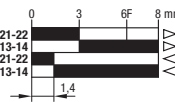
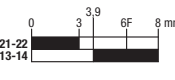
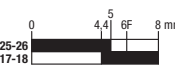
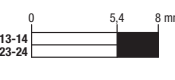
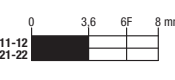
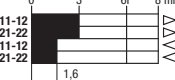
Min. force (N)	
for tripping	9
for positive opening	26



D

Thermoplastic roller lever, vertical actuation

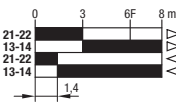
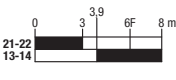
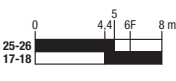
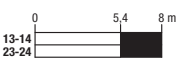
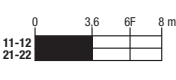

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	
H	mm



Thermoplastic	Metal	Contact travel
E10000DI	E10000DM	
E10001DI	E10001DM	
E10002DI	E10002DM	
E10003DI	E10003DM	
E10004DI	E10004DM	
E10005DI	E10005DM	
0,105	0,195	
1		
Pg 13,5		
98,5	96	

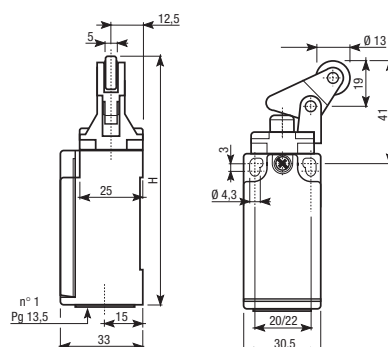
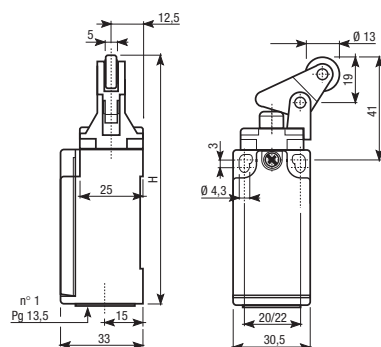


D•S1

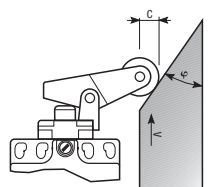
Thermoplastic roller lever with rubber gasket, vertical actuation

Thermoplastic	Metal	Contact travel
E10000DIS1	E10000DMS1	
E10001DIS1	E10001DMS1	
E10002DIS1	E10002DMS1	
E10003DIS1	E10003DMS1	
E10004DIS1	E10004DMS1	
E10005DIS1	E10005DMS1	
0,105	0,195	
1		
Pg 13,5		
98,5	96	

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Drive cam operating parameters



φ	V max (m/s)
20°	1
30°	0,5

Min. force (N)	
for tripping	9
for positive opening	26



Thermoplastic roller lever

E



Steel roller lever

E•RA

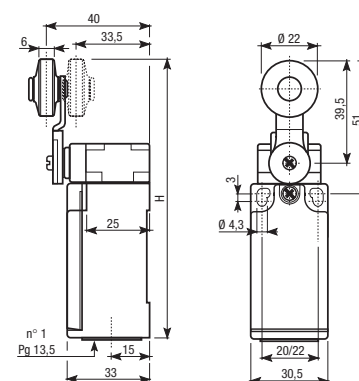
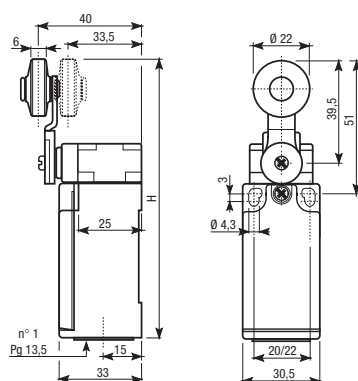
Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10000EI *	E10000EM *	0 27 50F 75° 21-22 13-14 13-14 15°
E10001EI *	E10001EM *	0 25 32 46F 75° 21-22 13-14 13-14
E10002EI	E10002EM	0 38 45 66F 75° 25-26 17-18
E10003EI	E10003EM	0 45 75° 13-14 23-24
E10004EI	E10004EM	0 34 54F 75° 11-12 21-22
E10005EI	E10005EM	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,135	0,225	
1		
Pg 13,5		
108,5	106	

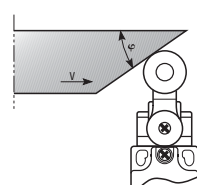
Thermoplastic	Metal	Contact travel
E10000EIRA	E10000EMRA	0 27 50F 75° 21-22 13-14 13-14 15°
E10001EIRA	E10001EMRA	0 25 32 46F 75° 21-22 13-14 13-14
E10002EIRA	E10002EMRA	0 38 45 66F 75° 25-26 17-18
E10003EIRA	E10003EMRA	0 45 75° 13-14 23-24
E10004EIRA	E10004EMRA	0 34 54F 75° 11-12 21-22
E10005EIRA	E10005EMRA	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,135	0,225	
1		
Pg 13,5		
108,5	106	

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* form conforming to EN 50047



Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)
for tripping
for positive opening

15

35



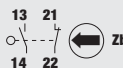
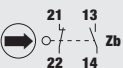
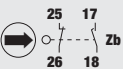
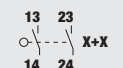
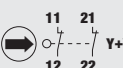
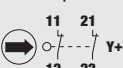
Ø50 mm rubber roller lever

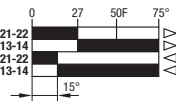
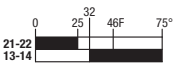
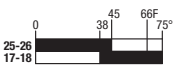
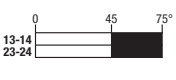
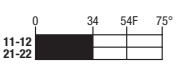
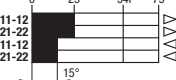
E•50

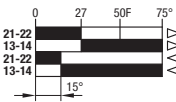
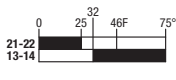
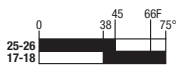
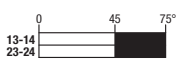
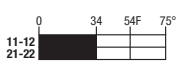
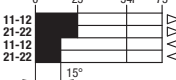


Thermoplastic roller lever

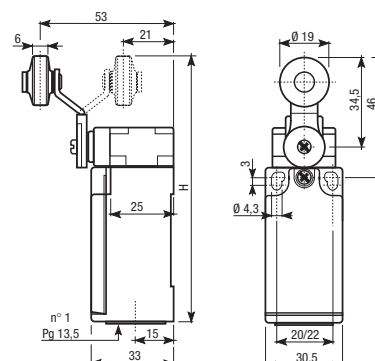
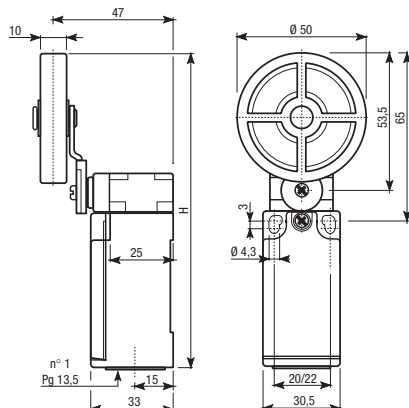
I

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	
H	mm

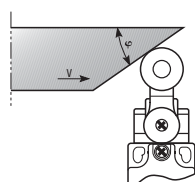
Thermoplastic	Metal	Contact travel
E10000EI50	E10000EM50	
E10001EI50	E10001EM50	
E10002EI50	E10002EM50	
E10003EI50	E10003EM50	
E10004EI50	E10004EM50	
E10005EI50	E10005EM50	
0,150	0,240	
1		
Pg 13,5		
122,5	120	

Thermoplastic	Metal	Contact travel
E10000II	E10000IM	
E10001II	E10001IM	
E10002II	E10002IM	
E10003II	E10003IM	
E10004II	E10004IM	
E10005II	E10005IM	
0,130	0,225	
1		
Pg 13,5		
103,5	101	

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Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	15
for positive opening	35



Steel roller lever

I•RA



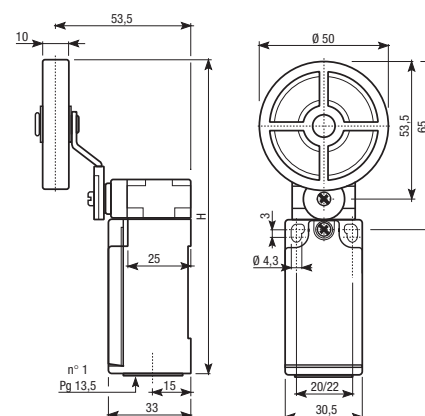
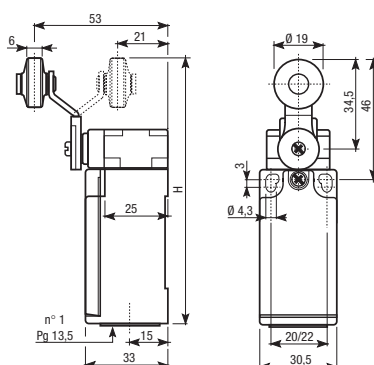
Ø50 mm rubber roller lever

I•50

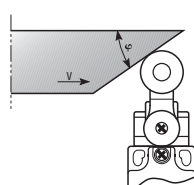
Contact block	
1NO+1NC snap action 13 21 14 22 Zb 00	
1NO+1NC slow action 21 13 22 14 Zb 01	
1NO+1NC slow overlap. 25 17 26 18 Zb 02	
2NO slow action 13 23 14 24 X+X 03	
2NC slow action 11 21 12 22 Y+Y 04	
2NC snap action 11 21 12 22 Y+Y 05	
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10000IIRA	E10000IMRA	0 27 50F 75° 21-22 13-14 13-14 15°
E10001IIRA	E10001IMRA	0 25 32 46F 75° 21-22 13-14
E10002IIRA	E10002IMRA	0 38 45 66F 75° 25-26 17-18
E10003IIRA	E10003IMRA	0 45 75° 13-14 23-24
E10004IIRA	E10004IMRA	0 34 54F 75° 11-12 21-22
E10005IIRA	E10005IMRA	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,130	0,225	
1		
Pg 13,5		
103,5	101	

Thermoplastic	Metal	Contact travel
E10000I50	E10000IM50	0 27 50F 75° 21-22 13-14 13-14 15°
E10001I50	E10001IM50	0 25 32 46F 75° 21-22 13-14
E10002I50	E10002IM50	0 38 45 66F 75° 25-26 17-18
E10003I50	E10003IM50	0 45 75° 13-14 23-24
E10004I50	E10004IM50	0 34 54F 75° 11-12 21-22
E10005I50	E10005IM50	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,145	0,240	
1		
Pg 13,5		
122,5	120	

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Drive cam operating parameters




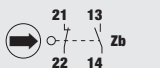
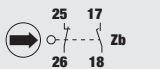
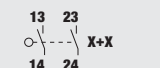
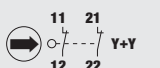
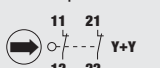
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

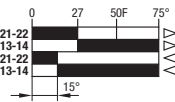
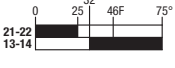
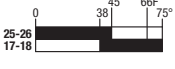
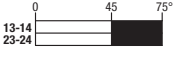
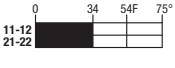

Min. force (cNm)	
for tripping	15
for positive opening	35



F

Thermoplastic roller variable length lever

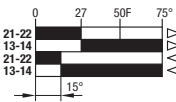
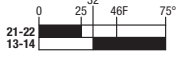
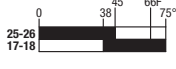
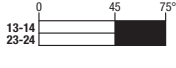
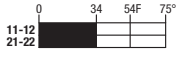

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10000FI	E10000FM	
E10001FI	E10001FM	
E10002FI	E10002FM	
E10003FI	E10003FM	
E10004FI	E10004FM	
E10005FI	E10005FM	
0,150	0,240	
1		
Pg 13,5		
116÷156	113,5÷153,5	

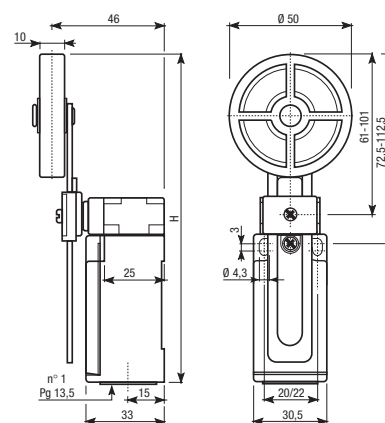
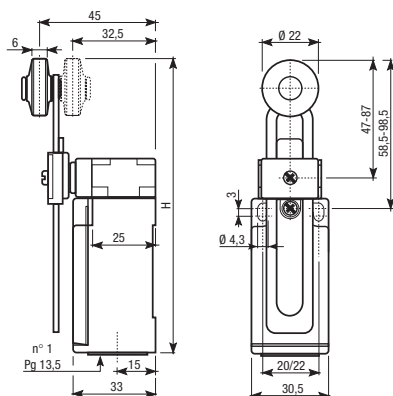


F•50

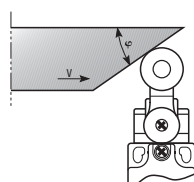
Ø50 mm rubber roller variable length lever

Thermoplastic	Metal	Contact travel
E10000FI50	E10000FM50	
E10001FI50	E10001FM50	
E10002FI50	E10002FM50	
E10003FI50	E10003FM50	
E10004FI50	E10004FM50	
E10005FI50	E10005FM50	
0,160	0,250	
1		
Pg 13,5		
130÷170	127,5÷167,5	

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Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	15
for positive opening	35




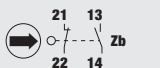
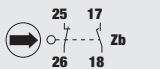
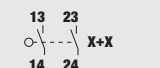
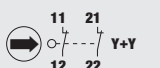
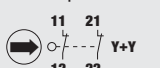
FR•50

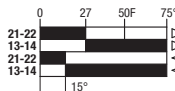
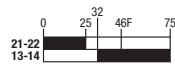
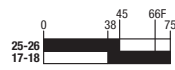
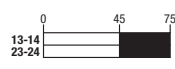
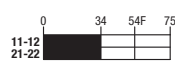

Ø50 mm rubber roller adjustable lever

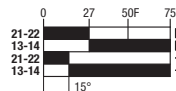
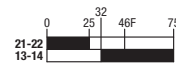
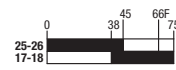
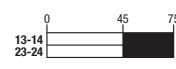
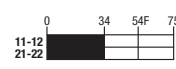



G

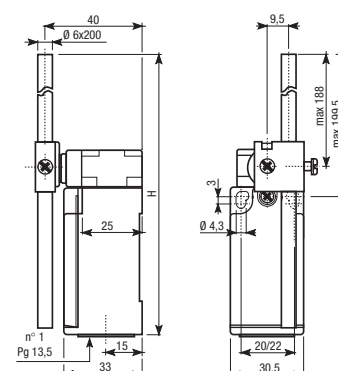
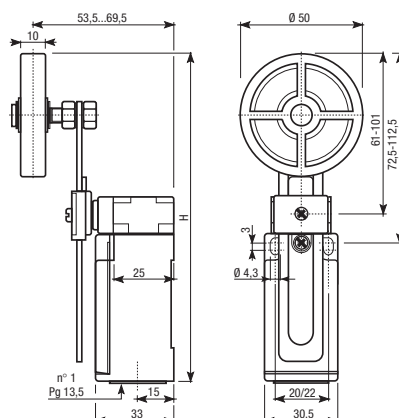
Side rotary adjustable Ø6 mm glass fiber rod

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	
H	mm

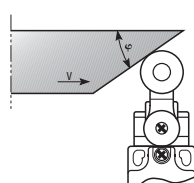
Thermoplastic	Metal	Contact travel
E10000FRI50	E10000FRM50	
E10001FRI50	E10001FRM50	
E10002FRI50	E10002FRM50	
E10003FRI50	E10003FRM50	
E10004FRI50	E10004FRM50	
E10005FRI50	E10005FRM50	
0,170	0,250	
1		
Pg 13,5		
130÷170	127,5÷167,5	

Thermoplastic	Metal	Contact travel
E10000GI	E10000GM	
E10001GI	E10001GM	
E10002GI	E10002GM	
E10003GI	E10003GM	
E10004GI	E10004GM	
E10005GI	E10005GM	
0,170	0,270	
1		
Pg 13,5		
97,5÷257,5	95÷255	

 standard article  article on request



Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	15
for positive opening	35



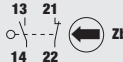
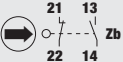
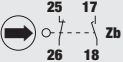
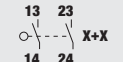
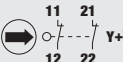
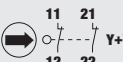
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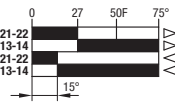
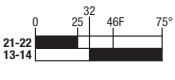
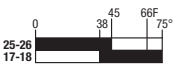
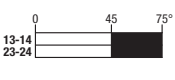
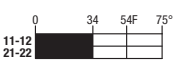

Side rotary adjustable Ø6 mm aluminium rod

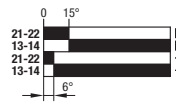
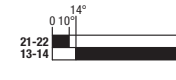
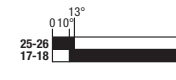
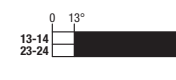
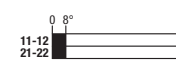
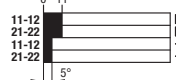


L

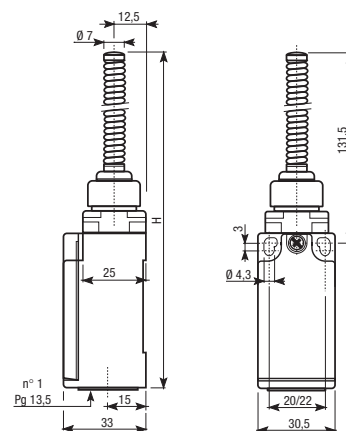
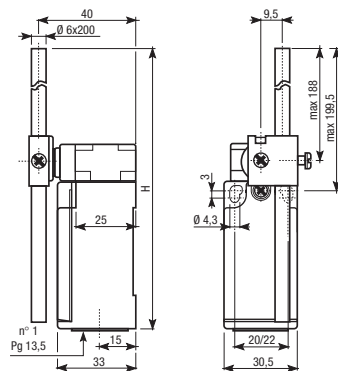
Flexible rod

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10000HI	E10000HM	
E10001HI	E10001HM	
E10002HI	E10002HM	
E10003HI	E10003HM	
E10004HI	E10004HM	
E10005HI	E10005HM	
0,180	0,270	
1		
Pg 13,5		
97,5÷257,5	95÷255	

Thermoplastic	Metal	Contact travel
E10000LI	E10000LM	
E10001LI	E10001LM	
E10002LI	E10002LM	
E10003LI	E10003LM	
E10004LI	E10004LM	
E10005LI	E10005LM	
0,145	0,235	
1		
Pg 13,5		
189	186,5	

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LP

Flexible rod with plastic terminal



LS

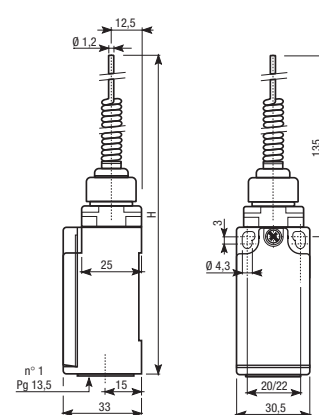
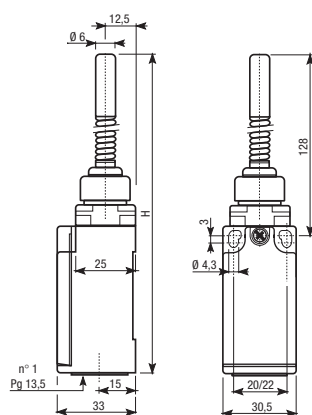
Cat's whisker

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10000LPI	E10000LPM	0 15° 21-22 13-14 21-22 13-14 6°
E10001LPI	E10001LPM	0 10° 21-22 13-14
E10002LPI	E10002LPM	0 10° 25-26 17-18
E10003LPI	E10003LPM	0 13° 13-14 23-24
E10004LPI	E10004LPM	0 8° 11-12 21-22
E10005LPI	E10005LPM	0 11° 11-12 21-22 11-12 21-22 11-12 21-22 5°
0,145	0,235	
1		
Pg 13,5		
185,5	183	

Thermoplastic	Metal	Contact travel
E10000LSI	E10000LSM	0 15° 21-22 13-14 21-22 13-14 6°
E10001LSI	E10001LSM	0 10° 21-22 13-14
E10002LSI	E10002LSM	0 10° 25-26 17-18
E10003LSI	E10003LSM	0 13° 13-14 23-24
E10004LSI	E10004LSM	0 8° 11-12 21-22
E10005LSI	E10005LSM	0 11° 11-12 21-22 11-12 21-22 11-12 21-22 5°
0,145	0,235	
1		
Pg 13,5		
192,5	190	

standard article
 article on request

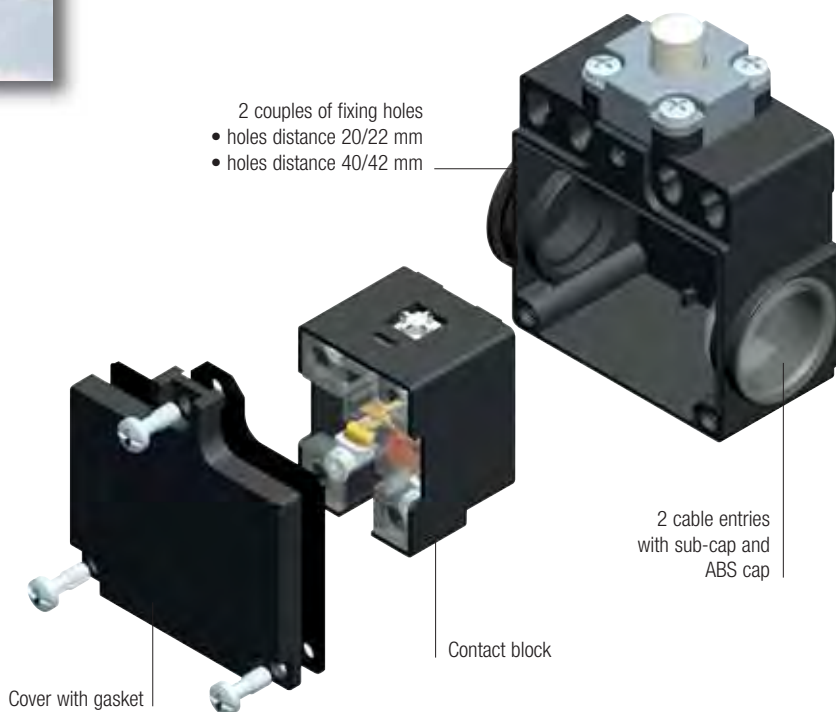




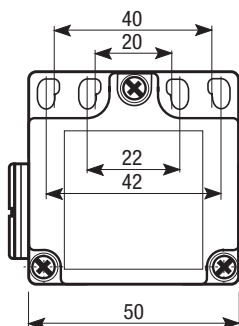
The **E200** series is designed for maximum installation flexibility, it has two different fixing templates to maintain compatibility with both E100 series (fixing holes distance 20-22mm) and E300 series (fixing holes distance 40-42 mm). E200 series provides 2 cable entries on both sides of the switch and is available with metal actuators and thermoplastic body.

In conformity with standards:

IEC EN 60947-5-1 • EN 60947-1 • UNI EN 1088 • EN ISO 12100-1
EN ISO 12100-2 • IEC 529 • EN 60529 • VDE 0660-200 • VDE 0113



Fixing
Double fixing option:
20-22 mm
40-42 mm



Cable entry
2 cable entries on
the sides of the
switch with
thread:



Thread

Pg 13,5
M20 (on request)
1/2" NPT (on request)

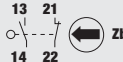
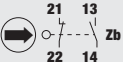
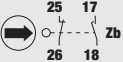
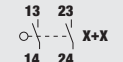
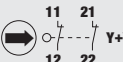
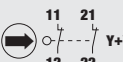
Series part no.


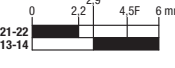
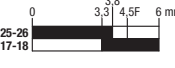
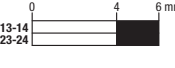
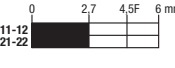

E200...
E201...
E202...

A

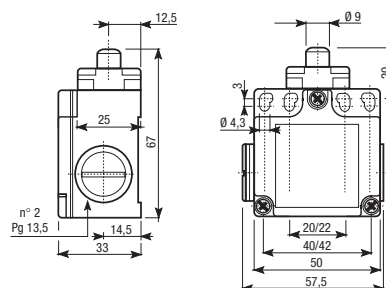


Steel plunger

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Contact travel
E20000AI	
E20001AI	
E20002AI	
E20003AI	
E20004AI	
E20005AI	
0,110	
1	
Pg 13,5	


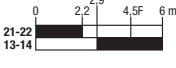
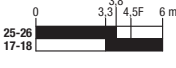
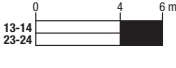
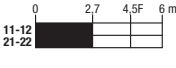

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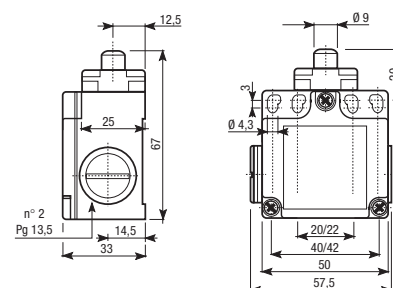


A•S1

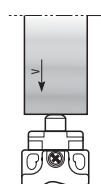


Steel plunger with rubber gasket

Thermoplastic	Contact travel
E20000AIS1	
E20001AIS1	
E20002AIS1	
E20003AIS1	
E20004AIS1	
E20005AIS1	
0,110	
1	
Pg 13,5	



Drive cam operating parameters



V max (m/s)	0,5
Min. force (N)	
for tripping	9
for positive opening	28



Steel roller plunger

B



Ø13 mm steel roller plunger

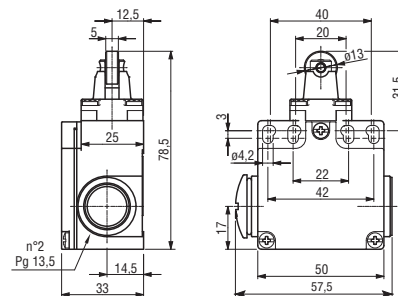
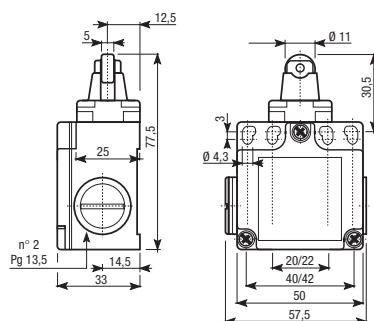
B•13

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

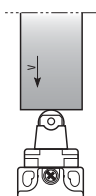
Thermoplastic	Contact travel
E20000BI	0 2.2 4.5F 6 mm 21-22 13-14 21-22 13-14 1
E20001BI	0 2.2 2.9 4.5F 6 mm 21-22 13-14
E20002BI	0 3.3 4.5F 6 mm 25-26 17-18
E20003BI	0 4 6 mm 13-14 23-24
E20004BI	0 2.7 4.5F 6 mm 11-12 21-22
E20005BI	0 2.3 4.5F 6 mm 11-12 21-22 11-12 21-22 1.2
0,125	
1	
Pg 13,5	

Thermoplastic	Contact travel
E20000BI13	0 2.2 4.5F 6 mm 21-22 13-14 21-22 13-14 1
E20001BI13	0 2.2 2.9 4.5F 6 mm 21-22 13-14
E20002BI13	0 3.3 4.5F 6 mm 25-26 17-18
E20003BI13	0 4 6 mm 13-14 23-24
E20004BI13	0 2.7 4.5F 6 mm 11-12 21-22
E20005BI13	0 2.3 4.5F 6 mm 11-12 21-22 11-12 21-22 1.2
0,125	
1	
Pg 13,5	

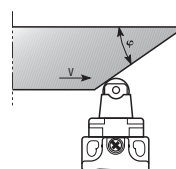
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Drive cam operating parameters



V max (m/s)	0.5
Min. force (N)	
for tripping	9
for positive opening	28



φ	V max (m/s)
20°	1
30°	0.5
Min. force (N)	
for tripping	9
for positive opening	28



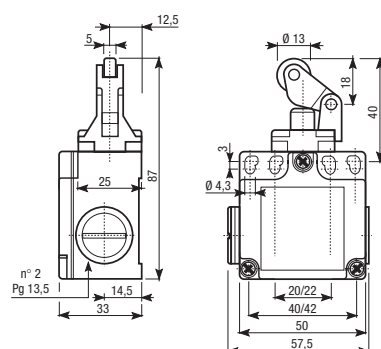
C

Thermoplastic roller lever, side actuation

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Contact travel
E20000CI	0 3.3 7F 9 mm 21-22 13-14 21-22 13-14 1.6
E20001CI	0 3.2 4.4 7F 9 mm 21-22 13-14
E20002CI	0 5 5.8 7F 9 mm 25-26 17-18
E20003CI	0 6 9 mm 13-14 23-24
E20004CI	0 4 7F 9 mm 11-12 21-22
E20005CI	0 3.3 7F 9 mm 11-12 21-22 11-12 21-22 1.7
0,130	
1	
Pg 13,5	

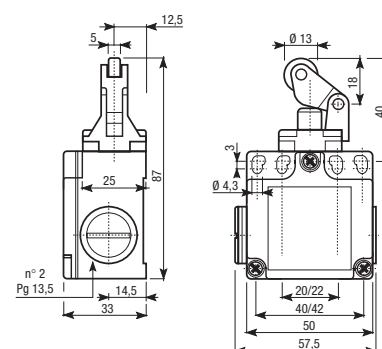
standard article article on request



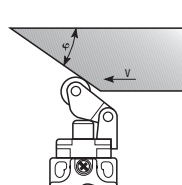
C•S1

Thermoplastic roller lever with rubber gasket, side actuation

Thermoplastic	Contact travel
E20000CIS1	0 3.3 7F 9 mm 21-22 13-14 21-22 13-14 1.6
E20001CIS1	0 3.2 4.4 7F 9 mm 21-22 13-14
E20002CIS1	0 5 5.8 7F 9 mm 25-26 17-18
E20003CIS1	0 6 9 mm 13-14 23-24
E20004CIS1	0 4 7F 9 mm 11-12 21-22
E20005CIS1	0 3.3 7F 9 mm 11-12 21-22 11-12 21-22 1.7
0,130	
1	
Pg 13,5	



Drive cam operating parameters



φ	V max (m/s)
20°	1
30°	0,5

Min. force (N)	
for tripping	9
for positive opening	26



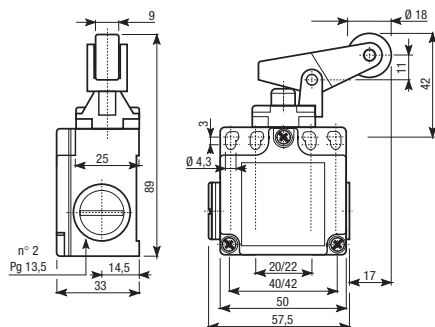
Thermoplastic roller lever, vertical actuation

D

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Contact travel
E20000DI	0 3 6F 8 mm 21-22 13-14 21-22 13-14 1.4
E20001DI	0 3 3.9 6F 8 mm 21-22 13-14
E20002DI	0 4.4 5 8 mm 25-26 17-18
E20003DI	0 5.4 8 mm 13-14 23-24
E20004DI	0 3.6 6F 8 mm 11-12 21-22
E20005DI	0 3 6F 8 mm 11-12 21-22 11-12 21-22 1.6
0,130	
1	
Pg 13,5	

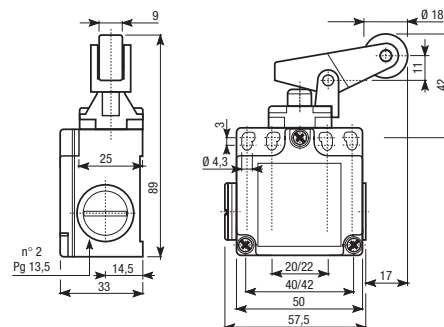
standard article article on request



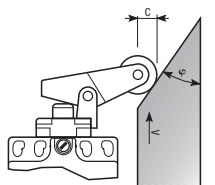
Thermoplastic roller lever with rubber gasket, vertical actuation

D•S1

Thermoplastic	Contact travel
E20000DIS1	0 3 6F 8 mm 21-22 13-14 21-22 13-14 1.4
E20001DIS1	0 3 3.9 6F 8 mm 21-22 13-14
E20002DIS1	0 4.4 5 8 mm 25-26 17-18
E20003DIS1	0 5.4 8 mm 13-14 23-24
E20004DIS1	0 3.6 6F 8 mm 11-12 21-22
E20005DIS1	0 3 6F 8 mm 11-12 21-22 11-12 21-22 1.6
0,130	
1	
Pg 13,5	



Drive cam operating parameters



φ	V max (m/s)
20°	1
30°	0,5

Min. force (N)	
for tripping	9
for positive opening	26



Thermoplastic roller lever

E



Steel roller lever

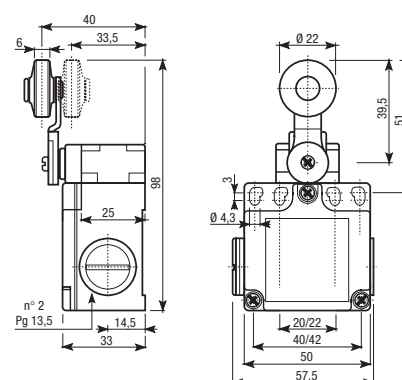
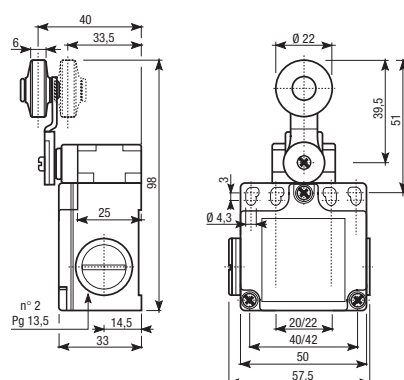
E•RA

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

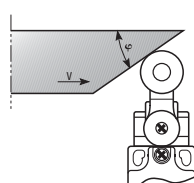
Thermoplastic	Contact travel
E20000EI	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E20001EI	0 25 32 46F 75° 21-22 13-14
E20002EI	0 38 45 66F 75° 25-26 17-18
E20003EI	0 45 75° 13-14 23-24
E20004EI	0 34 54F 75° 11-12 21-22
E20005EI	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,160	
1	
Pg 13,5	

Thermoplastic	Contact travel
E20000EIRA	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E20001EIRA	0 25 32 46F 75° 21-22 13-14
E20002EIRA	0 38 45 66F 75° 25-26 17-18
E20003EIRA	0 45 75° 13-14 23-24
E20004EIRA	0 34 54F 75° 11-12 21-22
E20005EIRA	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,160	
1	
Pg 13,5	

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Drive cam operating parameters



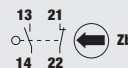
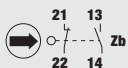
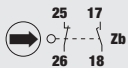
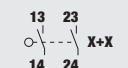
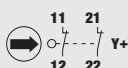
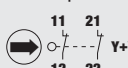
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

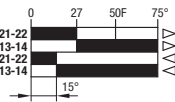
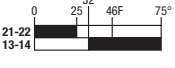
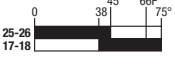
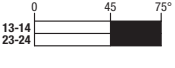
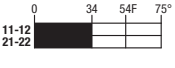

Min. force (cNm)	
for tripping	15
for positive opening	35



E•50

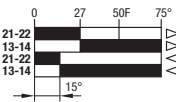
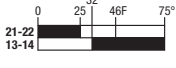
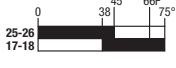
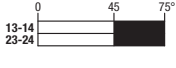
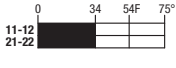

Ø50 mm rubber roller lever

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

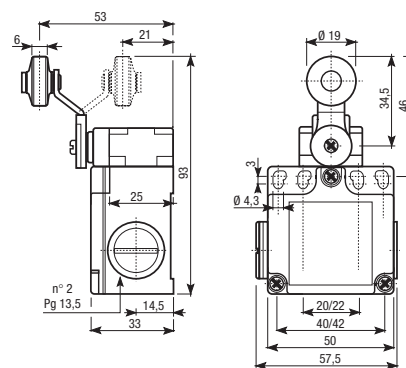
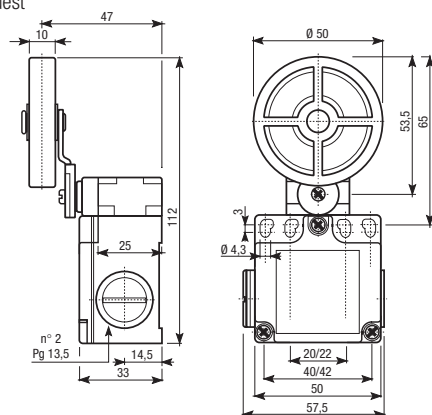
Thermoplastic	Contact travel
E20000EI50	
E20001EI50	
E20002EI50	
E20003EI50	
E20004EI50	
E20005EI50	
0,175	
1	
Pg 13,5	



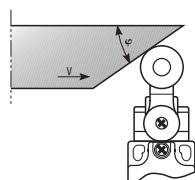
Thermoplastic roller lever

Thermoplastic	Contact travel
E20000II	
E20001II	
E20002II	
E20003II	
E20004II	
E20005II	
0,160	
1	
Pg 13,5	

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Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	15
for positive opening	35



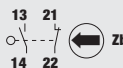
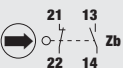
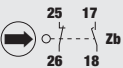
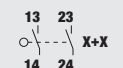
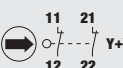
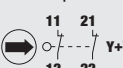
Steel roller lever

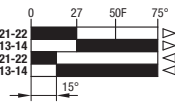
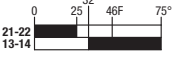
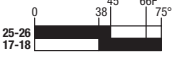
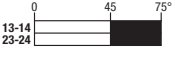
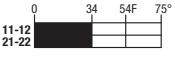

I•RA

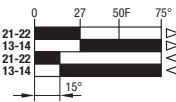
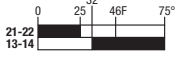
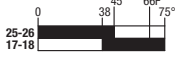
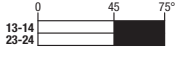
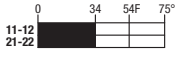



Ø50 mm rubber roller lever

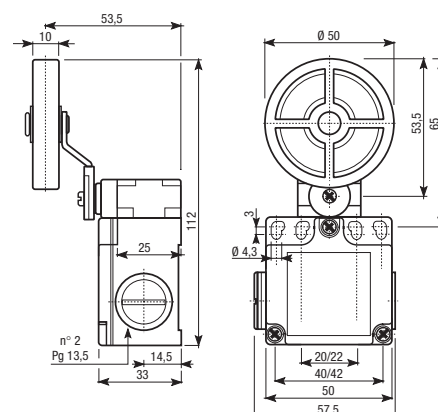
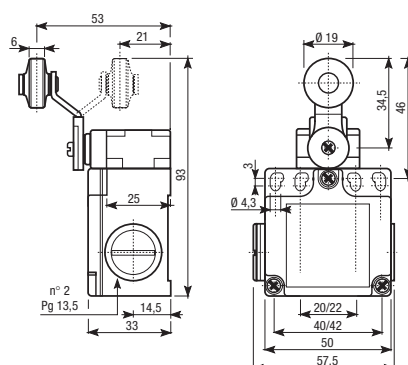
I•50

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

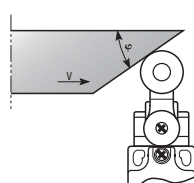
Thermoplastic	Contact travel
E20000IIRA	
E20001IIRA	
E20002IIRA	
E20003IIRA	
E20004IIRA	
E20005IIRA	
0,160	
1	
Pg 13,5	

Thermoplastic	Contact travel
E20000II50	
E20001II50	
E20002II50	
E20003II50	
E20004II50	
E20005II50	
0,170	
1	
Pg 13,5	

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Drive cam operating parameters




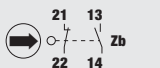
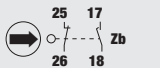
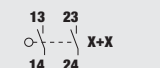
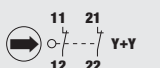
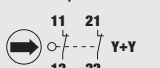
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

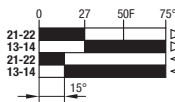
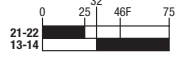

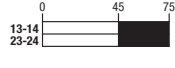
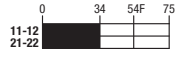

Min. force (cNm)	
for tripping	15
for positive opening	35



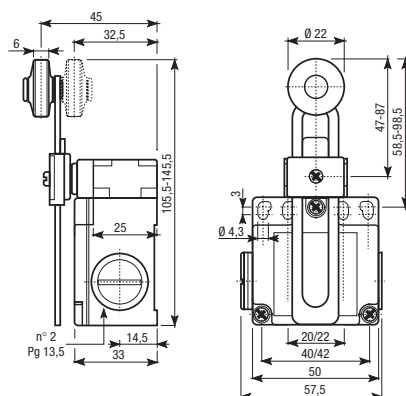
F

Thermoplastic roller variable length lever

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

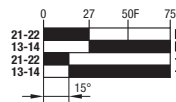
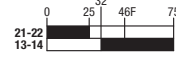
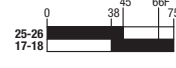
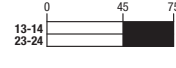
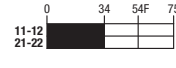

Thermoplastic	Contact travel
E20000FI	
E20001FI	
E20002FI	
E20003FI	
E20004FI	
E20005FI	
0,175	
1	
Pg 13,5	

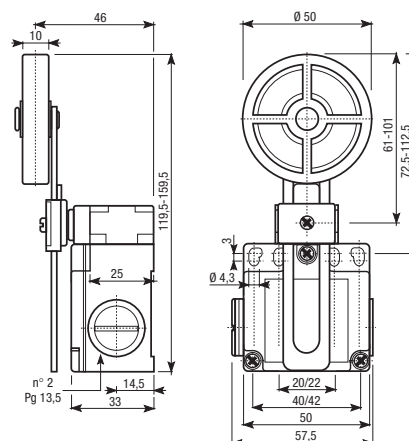
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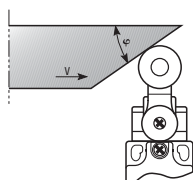
F•50

Ø50 mm rubber roller variable length lever

Thermoplastic	Contact travel
E20000FI50	
E20001FI50	
E20002FI50	
E20003FI50	
E20004FI50	
E20005FI50	
0,195	
1	
Pg 13,5	



Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	15
for positive opening	35



FR•50

Ø50 mm rubber roller adjustable lever

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Contact travel
E20000FRI50	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E20001FRI50	0 25 32 46F 75° 21-22 13-14
E20002FRI50	0 38 45 66F 75° 25-26 17-18
E20003FRI50	0 45 75° 13-14 23-24
E20004FRI50	0 34 54F 75° 11-12 21-22
E20005FRI50	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,210	
1	
Pg 13,5	

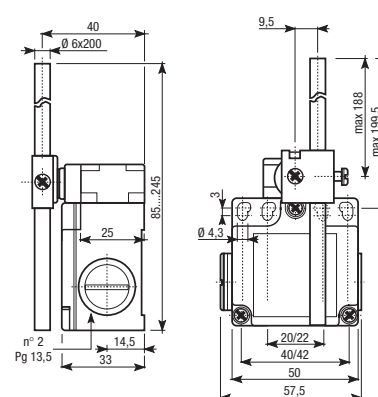
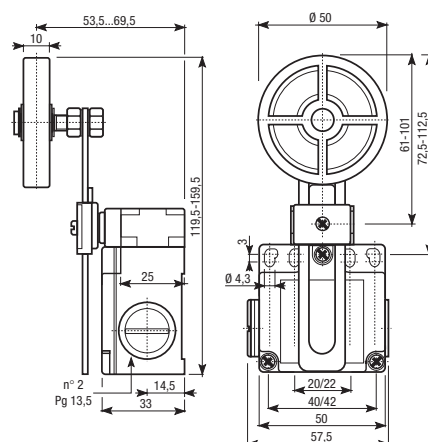


G

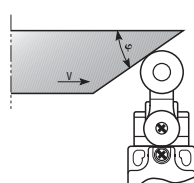
Side rotary adjustable Ø6 mm glass fiber rod

Thermoplastic	Contact travel
E20000GI	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E20001GI	0 25 32 46F 75° 21-22 13-14
E20002GI	0 38 45 66F 75° 25-26 17-18
E20003GI	0 45 75° 13-14 23-24
E20004GI	0 34 54F 75° 11-12 21-22
E20005GI	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,190	
1	
Pg 13,5	

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Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	15
for positive opening	35



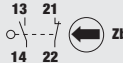
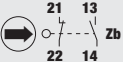
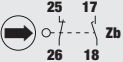
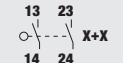
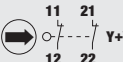
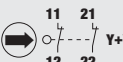
H

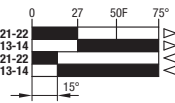
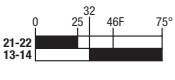
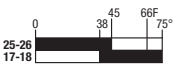
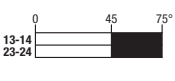
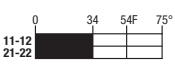

Side rotary adjustable Ø6 mm aluminium rod

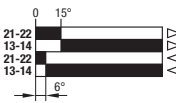
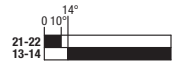
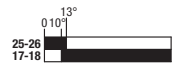
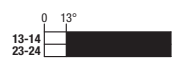
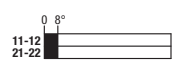
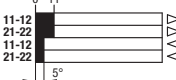


L

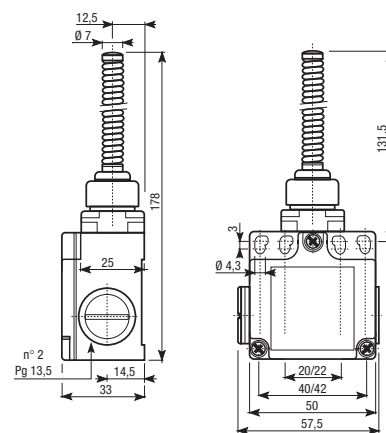
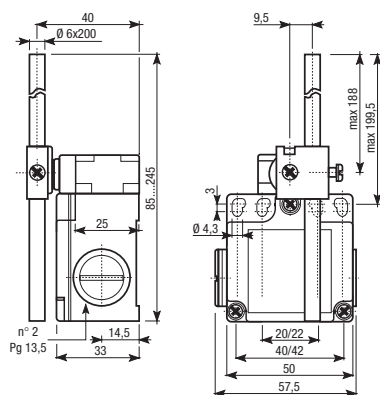
Flexible rod

Contact block	
1NO+1NC snap action  Zb	00
1NO+1NC slow action  Zb	01
1NO+1NC slow overlap.  Zb	02
2NO slow action action  X+X	03
2NC slow action action  Y+Y	04
2NC snap action  Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Contact travel
E20000HI	
E20001HI	
E20002HI	
E20003HI	
E20004HI	
E20005HI	
0,190	
1	
Pg 13,5	

Thermoplastic	Contact travel
E20000LI	
E20001LI	
E20002LI	
E20003LI	
E20004LI	
E20005LI	
0,160	
1	
Pg 13,5	

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LP

Flexible rod with plastic terminal



LS

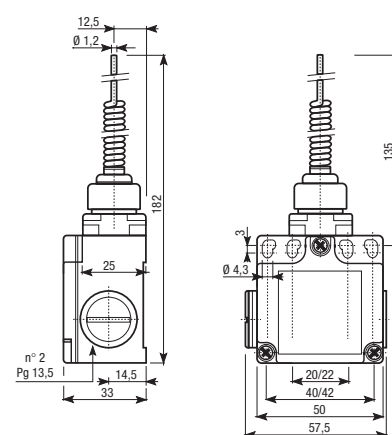
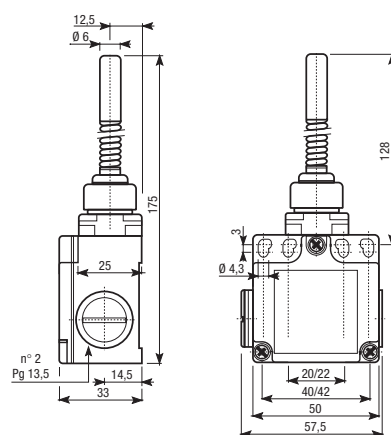
Cat's whisker

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Contact travel
E20000LPI	0 15° 21-22 13-14 21-22 13-14 6°
E20001LPI	0 14° 21-22 13-14 10°
E20002LPI	0 13° 25-26 17-18 10°
E20003LPI	0 13° 13-14 23-24
E20004LPI	0 8° 11-12 21-22
E20005LPI	0 11° 11-12 21-22 11-12 21-22 5°
0,160	
1	
Pg 13,5	

Thermoplastic	Contact travel
E20000LSI	0 15° 21-22 13-14 21-22 13-14 6°
E20001LSI	0 14° 21-22 13-14 10°
E20002LSI	0 13° 25-26 17-18 10°
E20003LSI	0 13° 13-14 23-24
E20004LSI	0 8° 11-12 21-22
E20005LSI	0 11° 11-12 21-22 11-12 21-22 5°
0,160	
1	
Pg 13,5	

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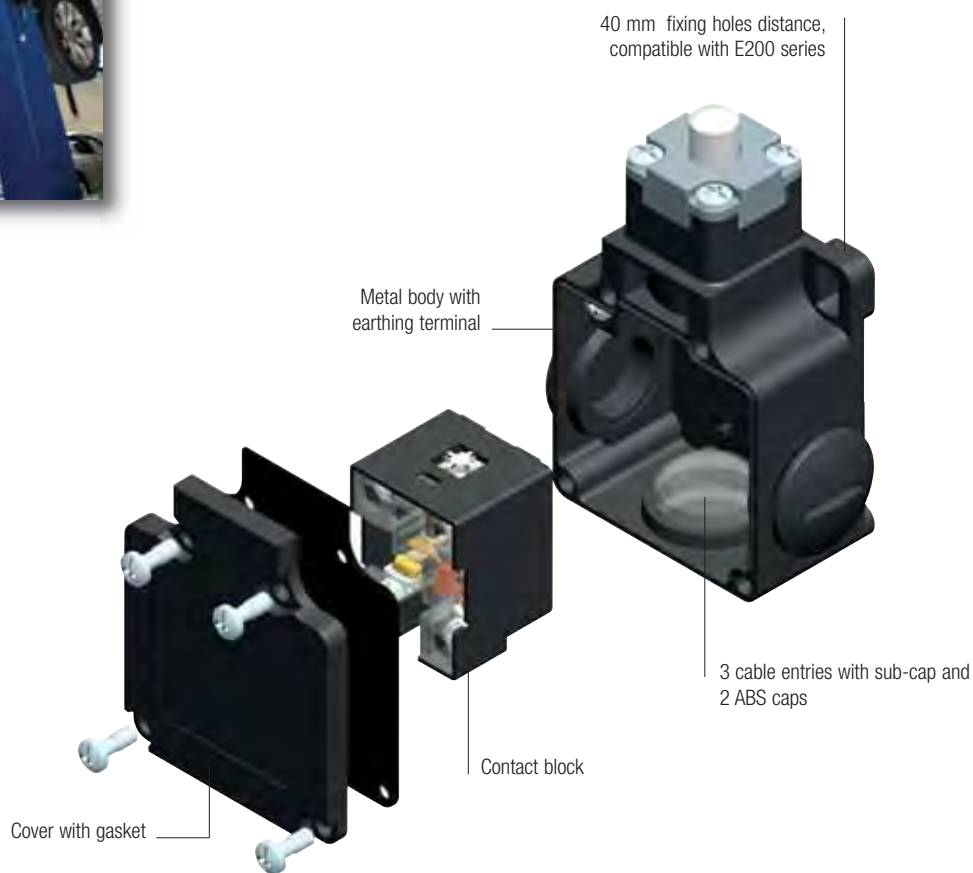




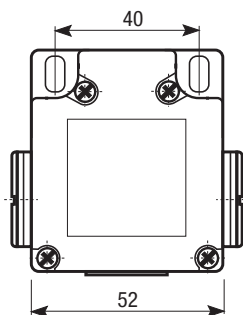
The **E300** series is designed to withstand to the most severe conditions. It has two fixing holes with distance 40mm. Each switch has three cable entries, two on each side and one on the bottom, for maximum wiring flexibility. Available with metal body and actuators.

In conformity with standards:

IEC EN 60947-5-1 • EN 60947-1 • UNI EN 1088 • EN ISO 12100-1
EN ISO 12100-2 • IEC 529 • EN 60529 • VDE 0660-200 • VDE 0113



Fixing
2 fixing holes
with 40 mm
distance



Cable entry
3 cable entries,
2 on the sides and
one the bottom
of the switch with
thread:



Thread

Pg 13,5
M20 (on request)
1/2" NPT (on request)

Series part no.

E300...
E301...
E302...



Steel plunger

A



Steel plunger with rubber gasket

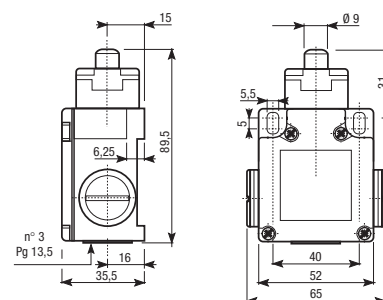
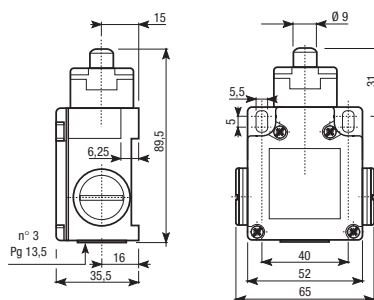
A•S1

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

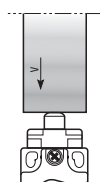
Metal	Contact travel
E30000AM	0 2.2 4.5F 6 mm 21-22 13-14 21-22 13-14 1
E30001AM	0 2.2 2.9 4.5F 6 mm 21-22 13-14
E30002AM	0 3.3 3.8 4.5F 6 mm 25-26 17-18
E30003AM	0 4 6 mm 13-14 23-24
E30004AM	0 2.7 4.5F 6 mm 11-12 21-22
E30005AM	0 2.3 4.5F 6 mm 11-12 21-22 11-12 21-22 1.2
0,320	
1	
Pg 13,5	

Metal	Contact travel
E30000AMS1	0 2.2 4.5F 6 mm 21-22 13-14 21-22 13-14 1
E30001AMS1	0 2.2 2.9 4.5F 6 mm 21-22 13-14
E30002AMS1	0 3.3 3.8 4.5F 6 mm 25-26 17-18
E30003AMS1	0 4 6 mm 13-14 23-24
E30004AMS1	0 2.7 4.5F 6 mm 11-12 21-22
E30005AMS1	0 2.3 4.5F 6 mm 11-12 21-22 11-12 21-22 1.2
0,320	
1	
Pg 13,5	

standard article article on request



Drive cam operating parameters


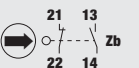
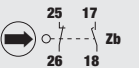
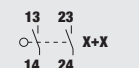
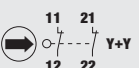
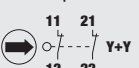


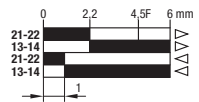
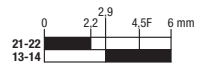
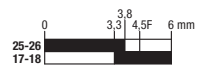
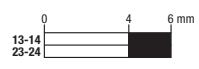
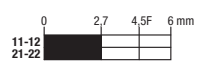
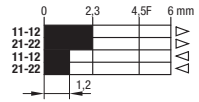
V max (m/s)	0.5
Min. force (N)	
for tripping	9
for positive opening	28



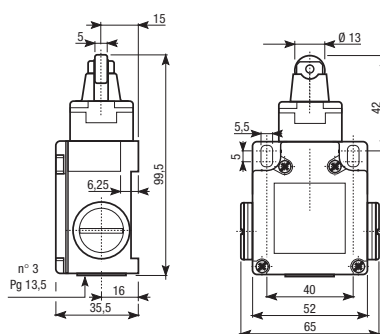
Steel roller plunger

B

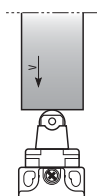
Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

Metal	Contact travel
E30000BM	
E30001BM	
E30002BM	
E30003BM	
E30004BM	
E30005BM	
0,320	
1	
Pg 13,5	

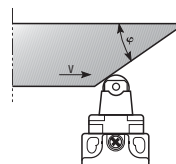
 standard article  article on request



Drive cam operating parameters



V max (m/s)	0,5
Min. force (N)	
for tripping	9
for positive opening	28



φ	V max (m/s)
20°	1
30°	0,5
Min. force (N)	
for tripping	9
for positive opening	28



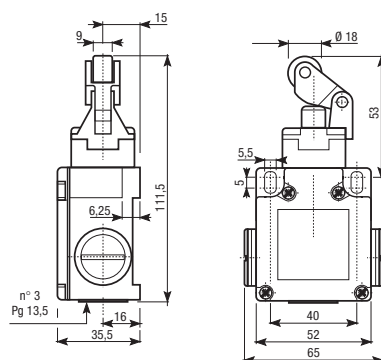
C

Thermoplastic roller lever, side actuation

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

Metal	Contact travel
E30000CM	0 3.3 7F 9 mm 21-22 13-14 21-22 13-14 1.6
E30001CM	0 3.2 4.4 7F 9 mm 21-22 13-14
E30002CM	0 5 5.8 7F 9 mm 25-26 17-18
E30003CM	0 6 9 mm 13-14 23-24
E30004CM	0 4 7F 9 mm 11-12 21-22
E30005CM	0 3.3 7F 9 mm 11-12 21-22 11-12 21-22 1.7
0,325	
1	
Pg 13,5	

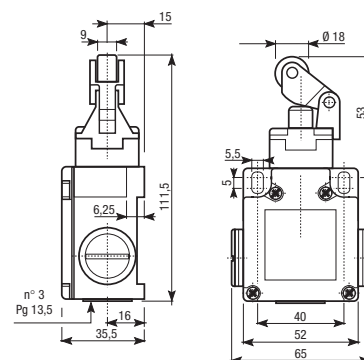
standard article article on request



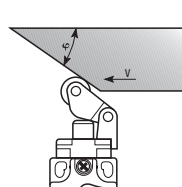
C•S1

Thermoplastic roller lever with rubber gasket, side actuation

Metal	Contact travel
E30000CMS1	0 3.3 7F 9 mm 21-22 13-14 21-22 13-14 1.6
E30001CMS1	0 3.2 4.4 7F 9 mm 21-22 13-14
E30002CMS1	0 5 5.8 7F 9 mm 25-26 17-18
E30003CMS1	0 6 9 mm 13-14 23-24
E30004CMS1	0 4 7F 9 mm 11-12 21-22
E30005CMS1	0 3.3 7F 9 mm 11-12 21-22 11-12 21-22 1.7
0,325	
1	
Pg 13,5	



Drive cam operating parameters



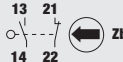
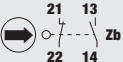
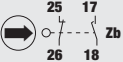
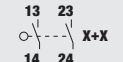
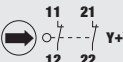
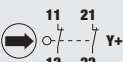
φ	V max (m/s)
20°	1
30°	0,5



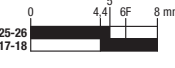
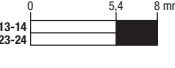
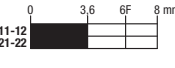

Min. force (N)	
for tripping	9
for positive opening	26



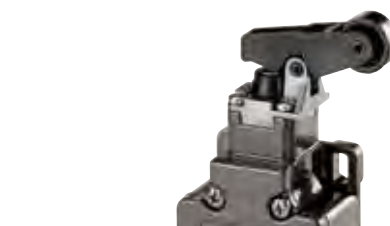
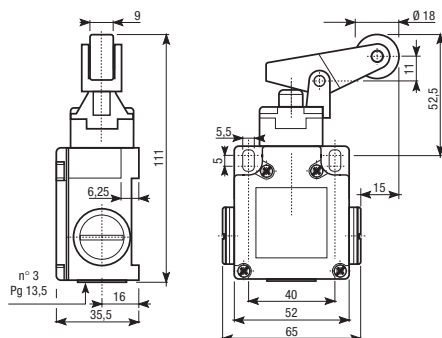
D

Thermoplastic roller lever, vertical actuation

Contact block	
1NO+1NC snap action  Zb	00
1NO+1NC slow action  Zb	01
1NO+1NC slow overlap.  Zb	02
2NO slow action  X+X	03
2NC slow action  Y+Y	04
2NC snap action  Y+Y	05
Weight	kg
Pack	pcs
Cable entry	



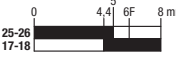
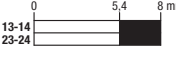
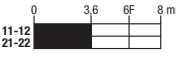

Metal	Contact travel
E30000DM	
E30001DM	
E30002DM	
E30003DM	
E30004DM	
E30005DM	
0,325	
1	
Pg 13,5	

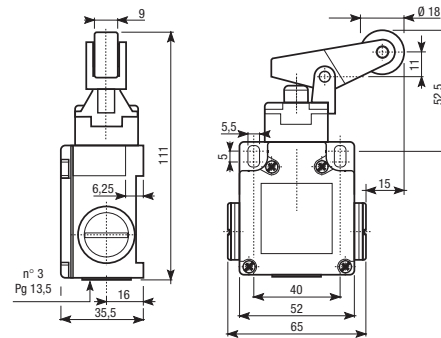
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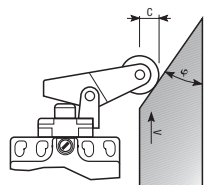
D•S1

Thermoplastic roller lever with rubber gasket, vertical actuation

Metal	Contact travel
E30000DMS1	
E30001DMS1	
E30002DMS1	
E30003DMS1	
E30004DMS1	
E30005DMS1	
0,325	
1	
Pg 13,5	



Drive cam operating parameters



φ	V max (m/s)
20°	1
30°	0,5

Min. force (N)	
for tripping	9
for positive opening	26



Thermoplastic roller lever

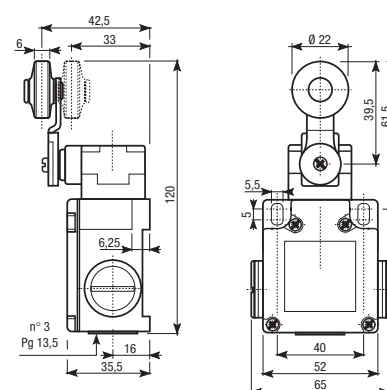
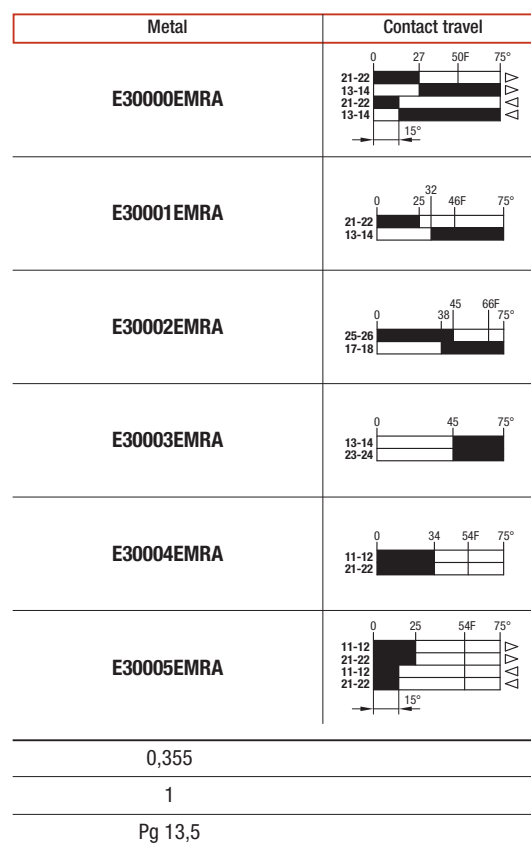
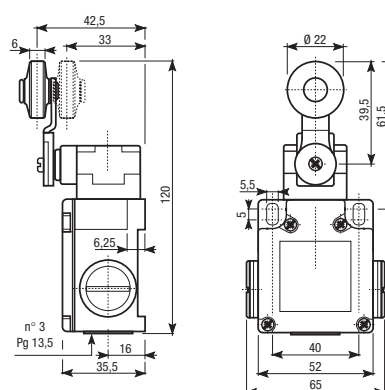


Steel roller lever

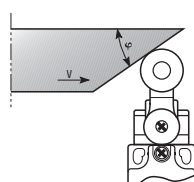
Contact block		
1NO+1NC snap action 	00	
1NO+1NC slow action 	01	
1NO+1NC slow overlap. 	02	
2NO slow action 	03	
2NC slow action 	04	
2NC snap action 	05	
Weight		kg
Pack		pcs
Cable entry		

Metal	Contact travel
E30000EM	
E30001EM	
E30002EM	
E30003EM	
E30004EM	
E30005EM	
0,355	
1	
Pg 13,5	

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Drive cam operating parameters



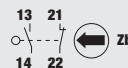
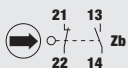
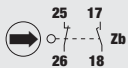
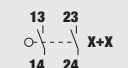
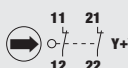
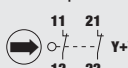
φ	V_{\max} (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

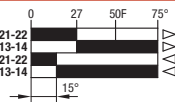
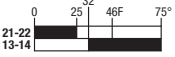
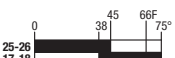
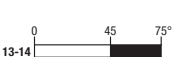

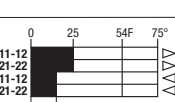
Min. force (cNm)	
for tripping	15
for positive opening	35



E•50

Ø50 mm rubber roller lever

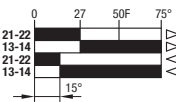
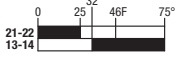
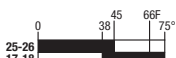
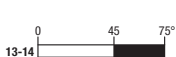
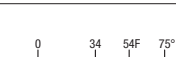
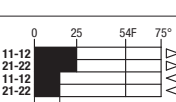
Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

Metal	Contact travel
E30000EM50	
E30001EM50	
E30002EM50	
E30003EM50	
E30004EM50	
E30005EM50	
0,365	
1	
Pg 13,5	

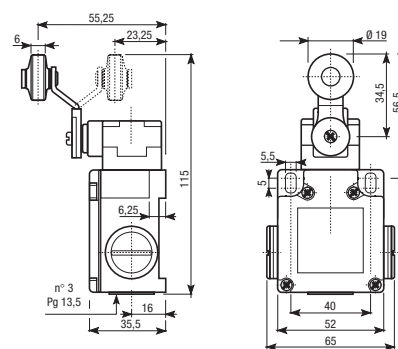
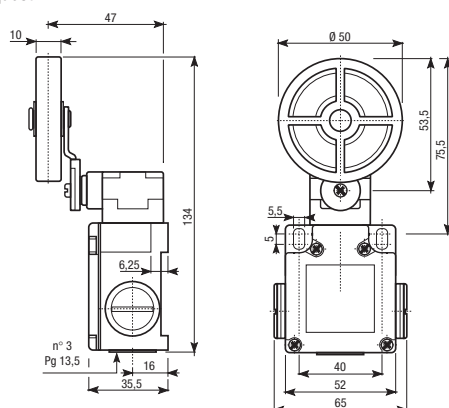


I

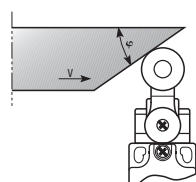
Thermoplastic roller lever

Metal	Contact travel
E30000IM	
E30001IM	
E30002IM	
E30003IM	
E30004IM	
E30005IM	
0,355	
1	
Pg 13,5	

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Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	15
for positive opening	35



I•RA

Steel roller lever



I•50

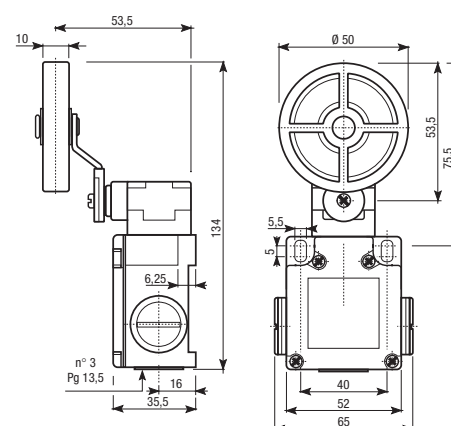
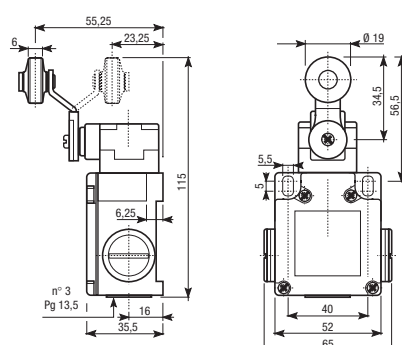
Ø50 mm rubber roller lever

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

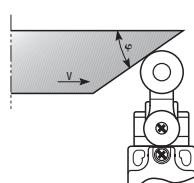
Metal	Contact travel
E30000IMRA	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E30001IMRA	0 25 32 46F 75° 21-22 13-14
E30002IMRA	0 38 45 66F 75° 25-26 17-18
E30003IMRA	0 45 75° 13-14 23-24
E30004IMRA	0 34 54F 75° 11-12 21-22
E30005IMRA	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,355	
1	
Pg 13,5	

Metal	Contact travel
E30000IM50	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E30001IM50	0 25 32 46F 75° 21-22 13-14
E30002IM50	0 38 45 66F 75° 25-26 17-18
E30003IM50	0 45 75° 13-14 23-24
E30004IM50	0 34 54F 75° 11-12 21-22
E30005IM50	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,365	
1	
Pg 13,5	

standard article article on request



Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	15
for positive opening	35



F

Thermoplastic roller variable length lever

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

Metal	Contact travel
E30000FM	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E30001FM	0 25 32 46F 75° 21-22 13-14
E30002FM	0 38 45 66F 75° 25-26 17-18
E30003FM	0 45 75° 13-14 23-24
E30004FM	0 34 54F 75° 11-12 21-22
E30005FM	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,375	
1	
Pg 13,5	

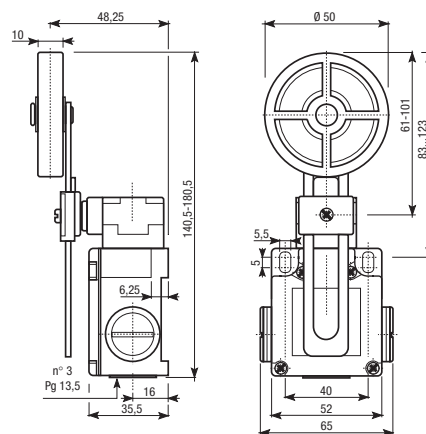
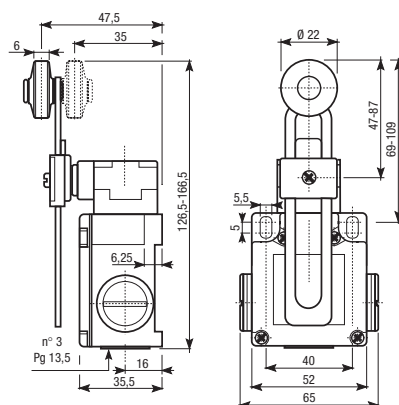


F•50

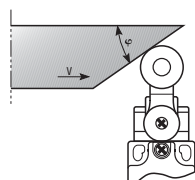
Ø50 mm rubber roller variable length lever

Metal	Contact travel
E30000FM50	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E30001FM50	0 25 32 46F 75° 21-22 13-14
E30002FM50	0 38 45 66F 75° 25-26 17-18
E30003FM50	0 45 75° 13-14 23-24
E30004FM50	0 34 54F 75° 11-12 21-22
E30005FM50	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,385	
1	
Pg 13,5	

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Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	15
for positive opening	35



FR•50

Ø50 mm rubber roller adjustable lever



G

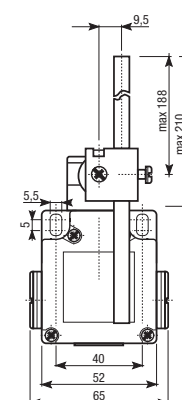
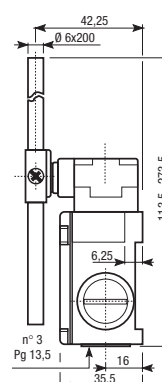
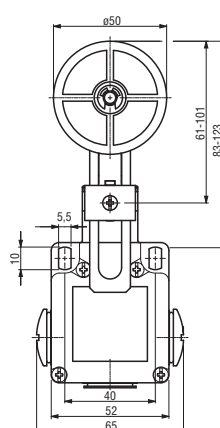
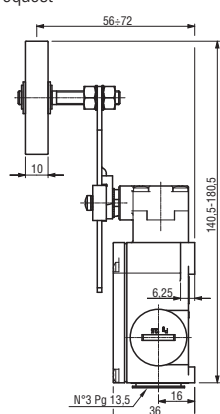
Side rotary adjustable Ø6 mm glass fiber rod

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

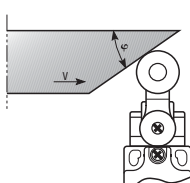
Metal	Contact travel
E30000FRM50	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E30001FRM50	0 32 46F 75° 21-22 13-14
E30002FRM50	0 38 45 66F 75° 25-26 17-18
E30003FRM50	0 45 75° 13-14 23-24
E30004FRM50	0 34 54F 75° 11-12 21-22
E30005FRM50	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,395	
1	
Pg 13,5	

Metal	Contact travel
E30000GM	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E30001GM	0 32 46F 75° 21-22 13-14
E30002GM	0 38 45 66F 75° 25-26 17-18
E30003GM	0 45 75° 13-14 23-24
E30004GM	0 34 54F 75° 11-12 21-22
E30005GM	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,385	
1	
Pg 13,5	

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Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	15
for positive opening	35



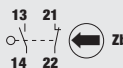
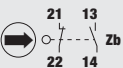
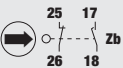
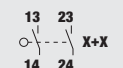
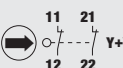
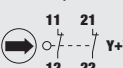
H

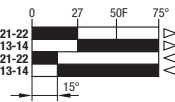
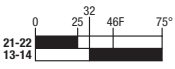
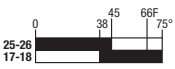
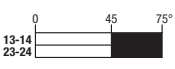
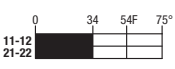
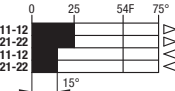
Side rotary adjustable Ø6 mm aluminium rod

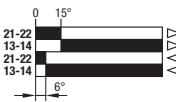
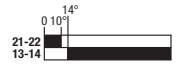
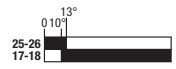
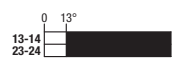
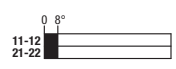
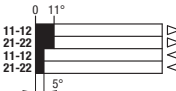


L

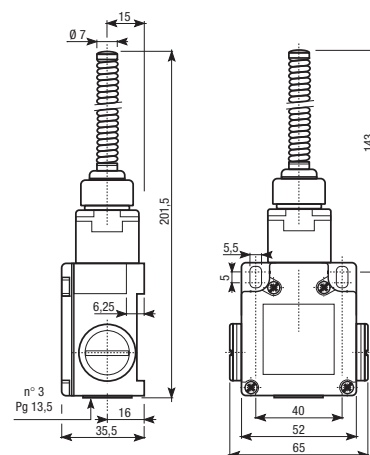
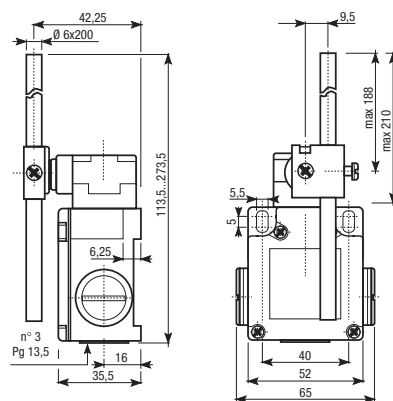
Flexible rod

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

Metal	Contact travel
E30000HM	
E30001HM	
E30002HM	
E30003HM	
E30004HM	
E30005HM	
0,385	
1	
Pg 13,5	

Metal	Contact travel
E30000LM	
E30001LM	
E30002LM	
E30003LM	
E30004LM	
E30005LM	
0,350	
1	
Pg 13,5	

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LP

Flexible rod with plastic terminal



LS

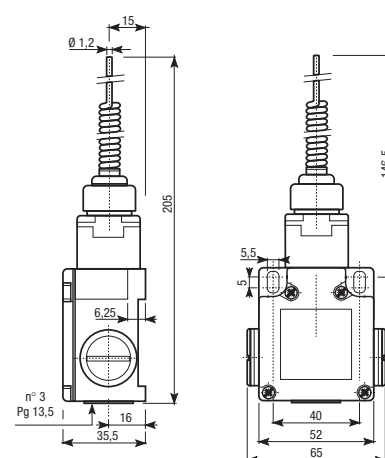
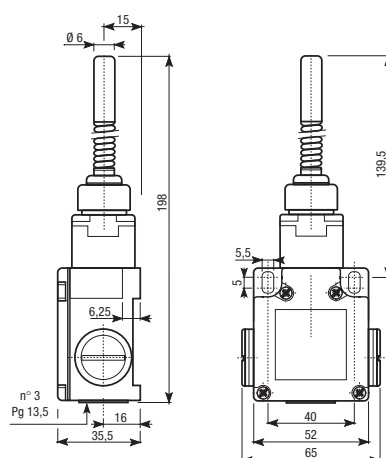
Cat's whisker

Contact block		
1NO+1NC snap action 	00	
1NO+1NC slow action 	01	
1NO+1NC slow overlap. 	02	
2NO slow action 	03	
2NC slow action 	04	
2NC snap action 	05	
Weight		kg
Pack		pcs
Cable entry		

Metal	Contact travel
E30000LPM	
E30001LPM	
E30002LPM	
E30003LPM	
E30004LPM	
E30005LPM	
0,350	
1	
Pg 13,5	

Metal	Contact travel
E30000LSM	
E30001LSM	
E30002LSM	
E30003LSM	
E30004LSM	
E30005LSM	
0,350	
1	
Pg 13,5	

☒ standard article ☐ article on request

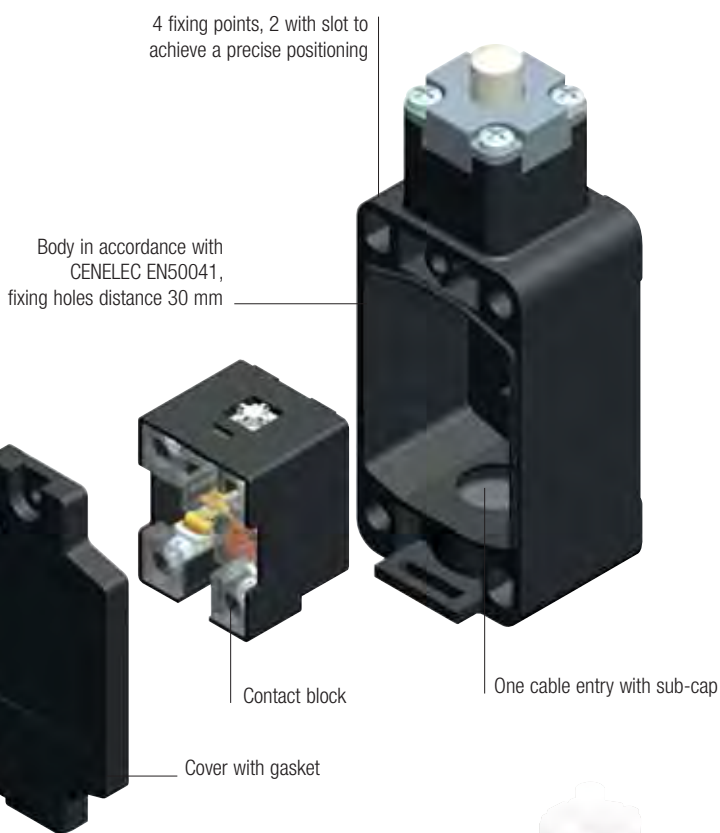




The **E400** series is the most robust of ERSCE position switches. Dimensions are in accordance with CENELEC EN 50041, 4 fixing holes with distance 30 mm. It is equipped with one hole for cable entry on the bottom of the switch. Available with metal actuators and thermoplastic or metal body.

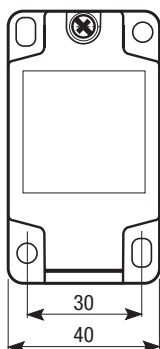
In conformity with standards:

IEC EN 60947-5-1 • EN 60947-1 • EN 500041 • UNI EN 1088 • EN ISO 12100-1
EN ISO 12100-2 • IEC 529 • EN 60529 • VDE 0660-200 • VDE 0113



Fixing

body in accordance with CENELEC EN50041, with 4 fixing holes with 30 mm horizontal distance.



Cable entry

1 cable entry on the bottom of the switch with thread:



Thread

Pg 13,5
M20 (on request)
1/2" NPT (on request)

Series part no.

E300...
E301...
E302...




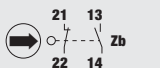
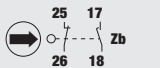
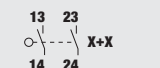
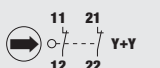
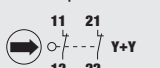
Steel plunger

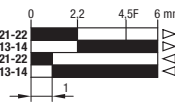
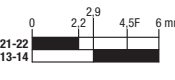
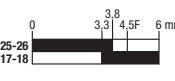
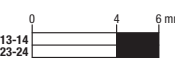
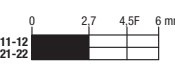
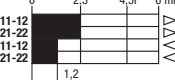
A

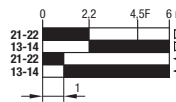
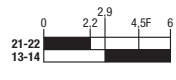
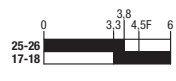
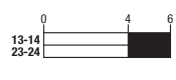
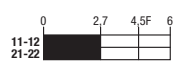



Steel plunger with rubber gasket

A•S1

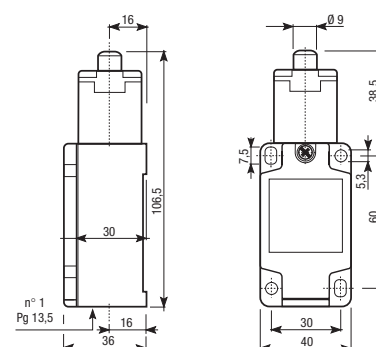
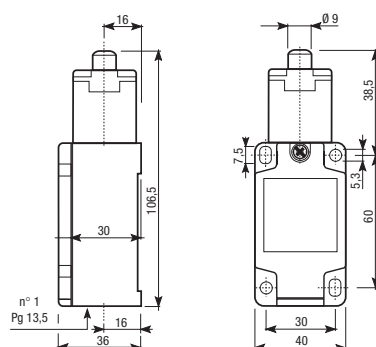
Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Metal	Contact travel
E40000AI *	E40000AM *	
E40001AI *	E40001AM *	
E40002AI	E40002AM	
E40003AI	E40003AM	
E40004AI	E40004AM	
E40005AI	E40005AM	
0,245	0,360	
1		
Pg 13,5		

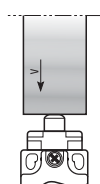
Thermoplastic	Metal	Contact travel
E40000AIS1 *	E40000AMS1 *	
E40001AIS1 *	E40001AMS1 *	
E40002AIS1	E40002AMS1	
E40003AIS1	E40003AMS1	
E40004AIS1	E40004AMS1	
E40005AIS1	E40005AMS1	
0,245	0,360	
1		
Pg 13,5		

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* form conforming to EN 50041



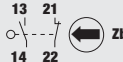
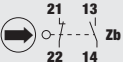
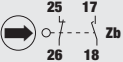
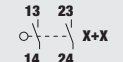
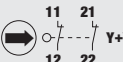
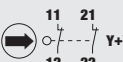
Drive cam operating parameters

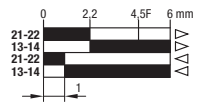
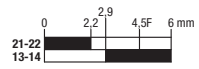
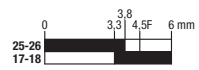
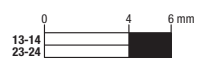
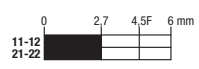
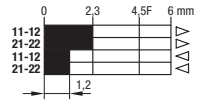


V max (m/s)	0,5
Min. force (N)	
for tripping	9
for positive opening	28



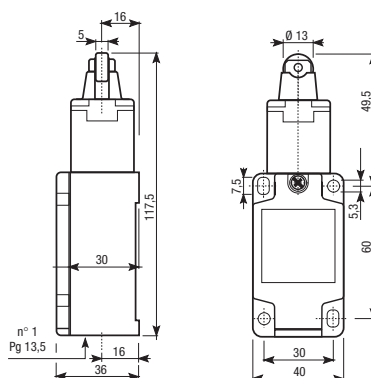
Steel roller plunger

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

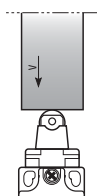
Thermoplastic	Metal	Contact travel
E40000BI *	E40000BM *	
E40001BI *	E40001BM *	
E40002BI	E40002BM	
E40003BI	E40003BM	
E40004BI	E40004BM	
E40005BI	E40005BM	
0,255	0,370	
1		
Pg 13,5		

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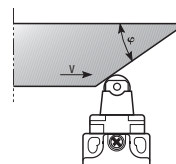
* form conforming to EN 50041



Drive cam operating parameters



V max (m/s)	0,5
Min. force (N)	
for tripping	9
for positive opening	28



φ	V max (m/s)
20°	1
30°	0,5
Min. force (N)	
for tripping	9
for positive opening	28



C

Thermoplastic roller lever, side actuation

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

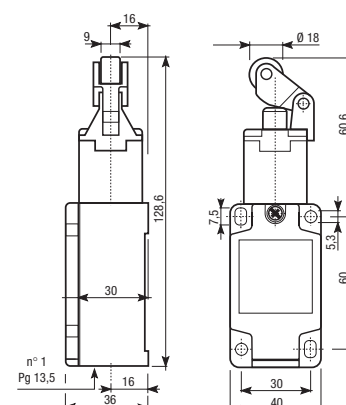
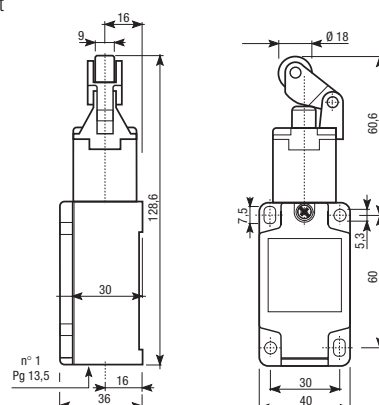
Thermoplastic	Metal	Contact travel
E40000CI	E40000CM	0 3,3 7F 9 mm 21-22 13-14 21-22 13-14 1,6
E40001CI	E40001CM	0 3,2 4,4 7F 9 mm 21-22 13-14
E40002CI	E40002CM	0 5,8 7F 9 mm 25-26 17-18
E40003CI	E40003CM	0 6 9 mm 13-14 23-24
E40004CI	E40004CM	0 4 7F 9 mm 11-12 21-22
E40005CI	E40005CM	0 3,3 7F 9 mm 11-12 21-22 11-12 21-22 1,7
0,255	0,370	
1		
Pg 13,5		



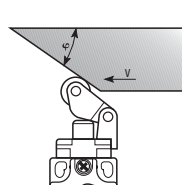
C•S1

Thermoplastic roller lever with rubber gasket, side actuation

Thermoplastic	Metal	Contact travel
E40000CIS1	E40000CMS1	0 3,3 7F 9 mm 21-22 13-14 21-22 13-14 1,6
E40001CIS1	E40001CMS1	0 3,2 4,4 7F 9 mm 21-22 13-14
E40002CIS1	E40002CMS1	0 5,8 7F 9 mm 25-26 17-18
E40003CIS1	E40003CMS1	0 6 9 mm 13-14 23-24
E40004CIS1	E40004CMS1	0 4 7F 9 mm 11-12 21-22
E40005CIS1	E40005CMS1	0 3,3 7F 9 mm 11-12 21-22 11-12 21-22 1,7
0,255	0,370	
1		
Pg 13,5		

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Drive cam operating parameters



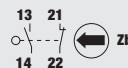
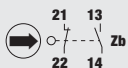
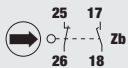
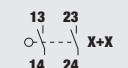
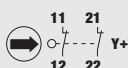
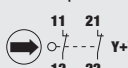
φ	V max (m/s)
20°	1
30°	0,5

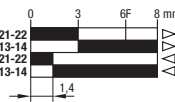
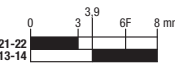
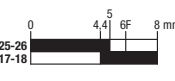
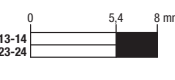
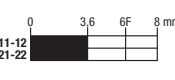
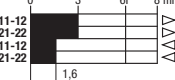
Min. force (N)	
for tripping	9
for positive opening	26



D

Thermoplastic roller lever, vertical actuation

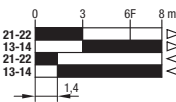
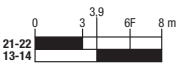
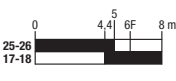
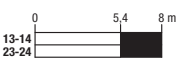
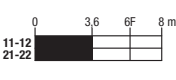

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Metal	Contact travel
E40000DI	E40000DM	
E40001DI	E40001DM	
E40002DI	E40002DM	
E40003DI	E40003DM	
E40004DI	E40004DM	
E40005DI	E40005DM	
0,255	0,370	
1		
Pg 13,5		

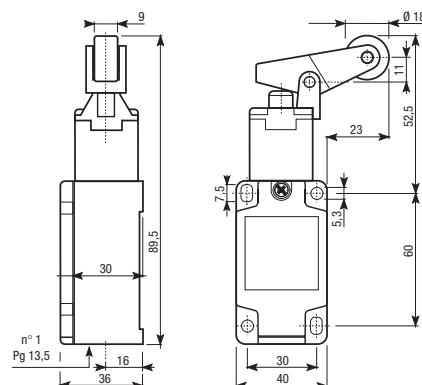
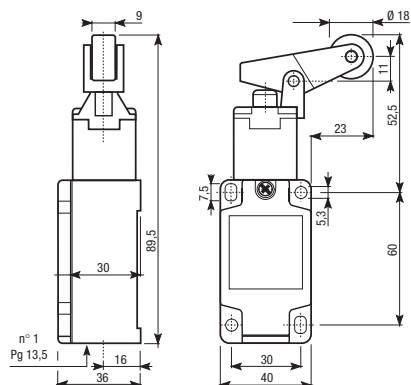


D•S1

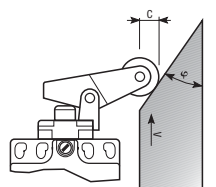
Thermoplastic roller lever with rubber gasket, vertical actuation

Thermoplastic	Metal	Contact travel
E40000DIS1	E40000DMS1	
E40001DIS1	E40001DMS1	
E40002DIS1	E40002DMS1	
E40003DIS1	E40003DMS1	
E40004DIS1	E40004DMS1	
E40005DIS1	E40005DMS1	
0,255	0,370	
1		
Pg 13,5		

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Drive cam operating parameters



φ	V max (m/s)
20°	1
30°	0,5

Min. force (N)	
for tripping	9
for positive opening	26



Thermoplastic roller lever

E



Steel roller lever

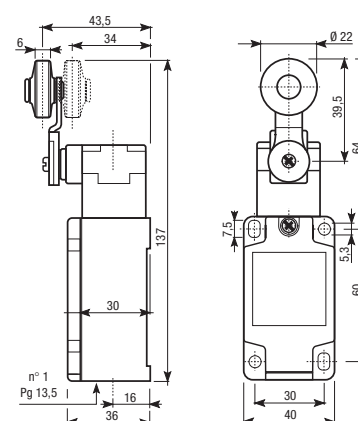
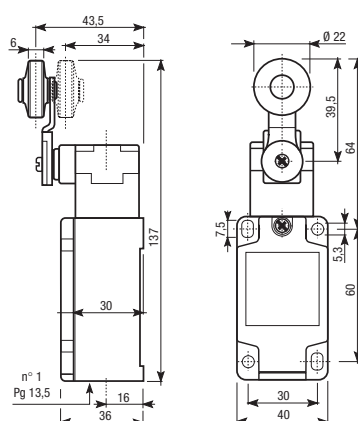
E•RA

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

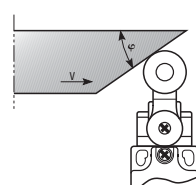
Thermoplastic	Metal	Contact travel
E40000EI	E40000EM	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E40001EI	E40001EM	0 25 32 46F 75° 21-22 13-14 15°
E40002EI	E40002EM	0 38 45 66F 75° 25-26 17-18 15°
E40003EI	E40003EM	0 45 75° 13-14 23-24 15°
E40004EI	E40004EM	0 34 54F 75° 11-12 21-22 15°
E40005EI	E40005EM	0 25 54F 75° 11-12 21-22 15°
0,285	0,400	
1		
Pg 13,5		

Thermoplastic	Metal	Contact travel
E40000EIRA	E40000EMRA	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E40001EIRA	E40001EMRA	0 25 32 46F 75° 21-22 13-14 15°
E40002EIRA	E40002EMRA	0 38 45 66F 75° 25-26 17-18 15°
E40003EIRA	E40003EMRA	0 45 75° 13-14 23-24 15°
E40004EIRA	E40004EMRA	0 34 54F 75° 11-12 21-22 15°
E40005EIRA	E40005EMRA	0 25 54F 75° 11-12 21-22 15°
0,285	0,400	
1		
Pg 13,5		

standard article
 article on request



Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)
for tripping
for positive opening

25
45




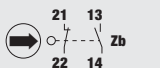
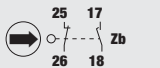
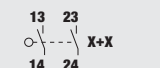
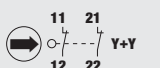
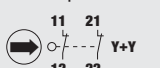
E•50

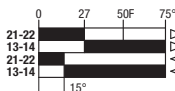
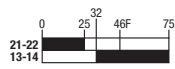
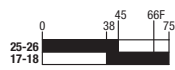
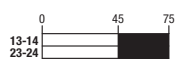
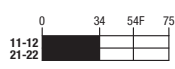

Ø50 mm rubber roller lever

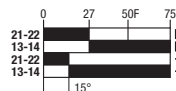
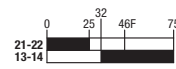
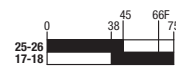
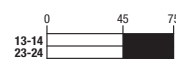
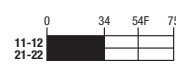



I

Thermoplastic roller lever

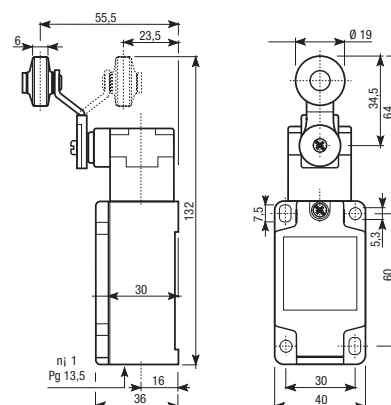
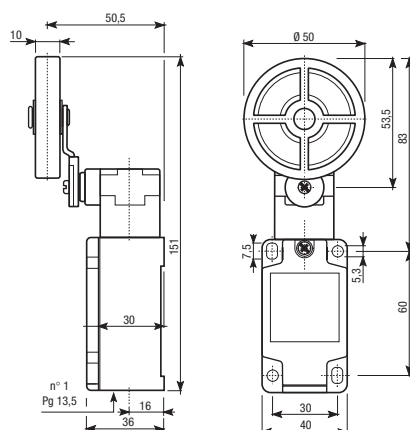
Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Metal	Contact travel
E40000EI50	E40000EM50	
E40001EI50	E40001EM50	
E40002EI50	E40002EM50	
E40003EI50	E40003EM50	
E40004EI50	E40004EM50	
E40005EI50	E40005EM50	
0,295	0,410	
1		
Pg 13,5		

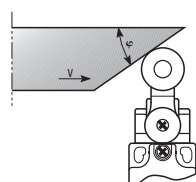
Thermoplastic	Metal	Contact travel
E40000II *	E40000IM *	
E40001II *	E40001IM *	
E40002II	E40002IM	
E40003II	E40003IM	
E40004II	E40004IM	
E40005II	E40005IM	
0,285	0,400	
1		
Pg 13,5		

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Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	25
for positive opening	45



I•RA

Steel roller lever



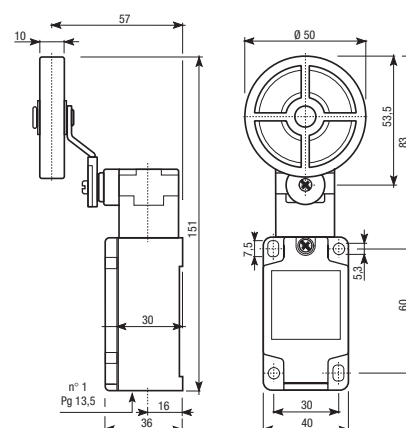
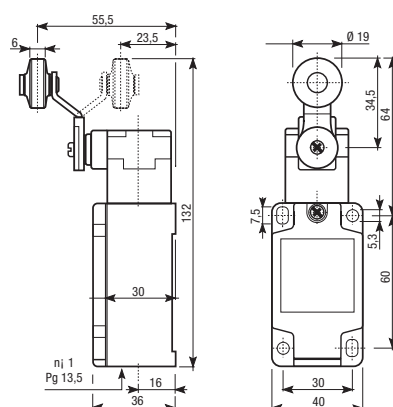
I•50

Ø50 mm rubber roller lever

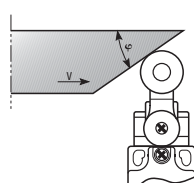
Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Metal	Contact travel
E40000IIRA	E40000IMRA	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E40001IIRA	E40001IMRA	0 25 32 46F 75° 21-22 13-14
E40002IIRA	E40002IMRA	0 38 45 66F 75° 25-26 17-18
E40003IIRA	E40003IMRA	0 45 75° 13-14 23-24
E40004IIRA	E40004IMRA	0 34 54F 75° 11-12 21-22
E40005IIRA	E40005IMRA	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,285	0,400	
1		
Pg 13,5		

Thermoplastic	Metal	Contact travel
E40000I150	E40000IM50	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E40001I150	E40001IM50	0 25 32 46F 75° 21-22 13-14
E40002I150	E40002IM50	0 38 45 66F 75° 25-26 17-18
E40003I150	E40003IM50	0 45 75° 13-14 23-24
E40004I150	E40004IM50	0 34 54F 75° 11-12 21-22
E40005I150	E40005IM50	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,295	0,410	
1		
Pg 13,5		

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Drive cam operating parameters




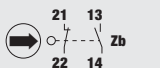
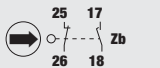
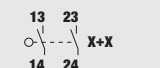
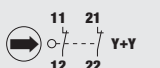
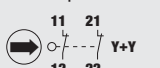
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

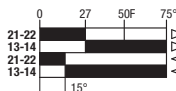
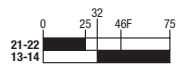
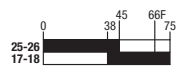
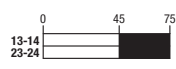
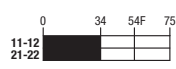

Min. force (cNm)	
for tripping	25
for positive opening	45



F

Thermoplastic roller variable length lever

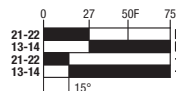
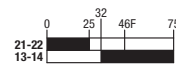
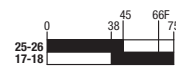
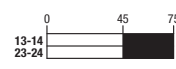
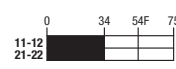

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Metal	Contact travel
E40000FI	E40000FM	
E40001FI	E40001FM	
E40002FI	E40002FM	
E40003FI	E40003FM	
E40004FI	E40004FM	
E40005FI	E40005FM	
0,305	0,420	
1		
Pg 13,5		

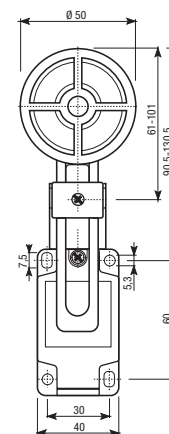
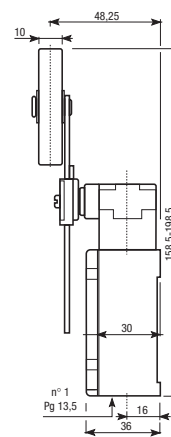
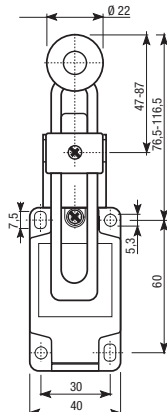
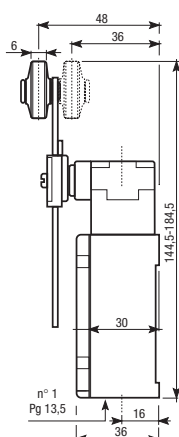


F•50

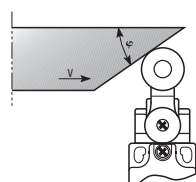
Ø50 mm rubber roller variable length lever

Thermoplastic	Metal	Contact travel
E40000FI50	E40000FM50	
E40001FI50	E40001FM50	
E40002FI50	E40002FM50	
E40003FI50	E40003FM50	
E40004FI50	E40004FM50	
E40005FI50	E40005FM50	
0,315	0,430	
1		
Pg 13,5		

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Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	25
for positive opening	45



FR•50

Ø50 mm rubber roller adjustable lever

Contact block	
1NO+1NC snap action 13 21 14 22 Zb	00
1NO+1NC slow action 21 13 22 14 Zb	01
1NO+1NC slow overlap. 25 17 26 18 Zb	02
2NO slow action 13 23 14 24 X+X	03
2NC slow action 11 21 12 22 Y+Y	04
2NC snap action 11 21 12 22 Y+Y	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Metal	Contact travel
E40000FRI50	E40000FRM50	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E40001FRI50	E40001FRM50	0 25 32 46F 75° 21-22 13-14
E40002FRI50	E40002FRM50	0 38 45 66F 75° 25-26 17-18
E40003FRI50	E40003FRM50	0 45 75° 13-14 23-24
E40004FRI50	E40004FRM50	0 34 54F 75° 11-12 21-22
E40005FRI50	E40005FRM50	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,325	0,440	
1		
Pg 13,5		



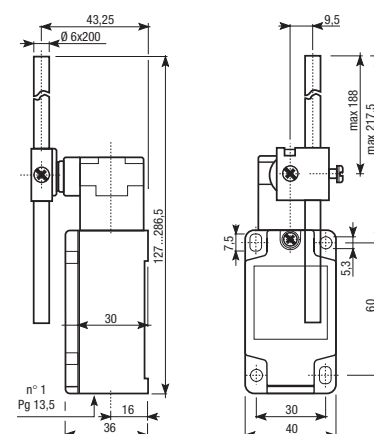
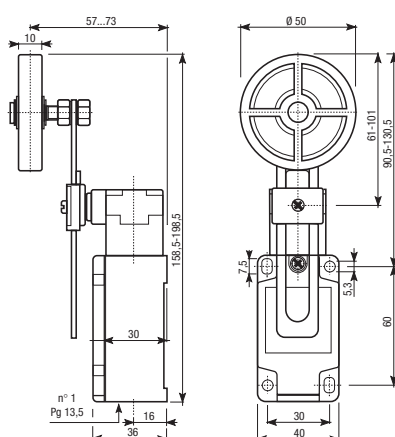
G

Side rotary adjustable Ø6 mm glass fiber rod

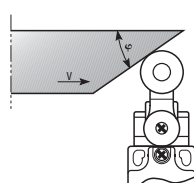
Thermoplastic	Metal	Contact travel
E40000GI *	E40000GM *	0 27 50F 75° 21-22 13-14 21-22 13-14 15°
E40001GI *	E40001GM *	0 25 32 46F 75° 21-22 13-14
E40002GI	E40002GM	0 38 45 66F 75° 25-26 17-18
E40003GI	E40003GM	0 45 75° 13-14 23-24
E40004GI	E40004GM	0 34 54F 75° 11-12 21-22
E40005GI	E40005GM	0 25 54F 75° 11-12 21-22 11-12 21-22 15°
0,210	0,425	
1		
Pg 13,5		

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Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	25
for positive opening	45



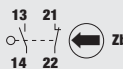
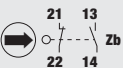
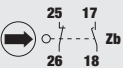
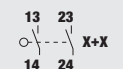
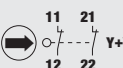
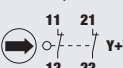
H

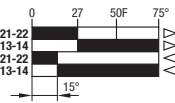
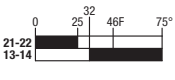
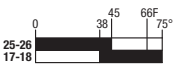
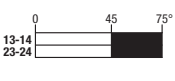
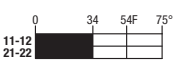

Side rotary adjustable Ø6 mm aluminium rod

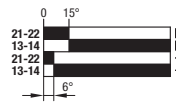
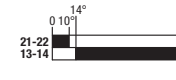
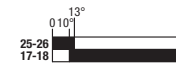
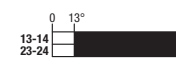
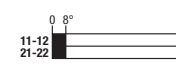
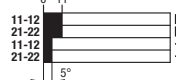


L

Flexible rod

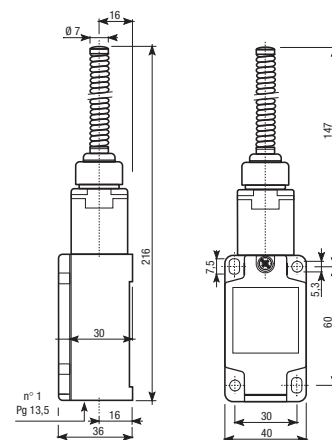
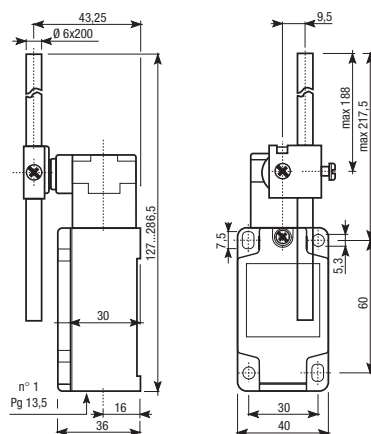
Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Metal	Contact travel
E40000HI *	E40000HM *	
E40001HI *	E40001HM *	
E40002HI	E40002HM	
E40003HI	E40003HM	
E40004HI	E40004HM	
E40005HI	E40005HM	
0,210	0,425	
1		
Pg 13,5		

Thermoplastic	Metal	Contact travel
E40000LI	E40000LM	
E40001LI	E40001LM	
E40002LI	E40002LM	
E40003LI	E40003LM	
E40004LI	E40004LM	
E40005LI	E40005LM	
0,280	0,395	
1		
Pg 13,5		

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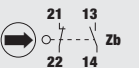
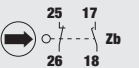
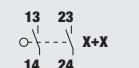
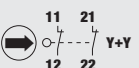
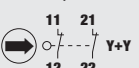
LP

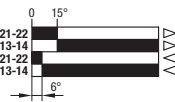
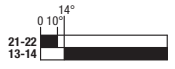
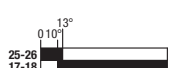
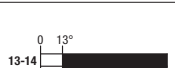
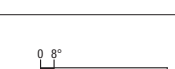
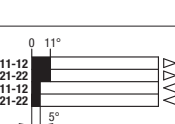
Flexible rod with plastic terminal

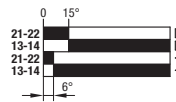
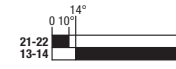
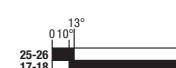
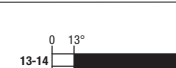

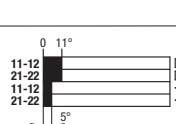


LS

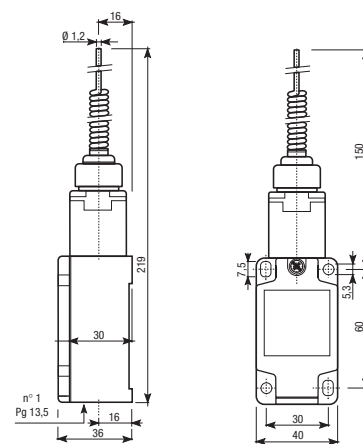
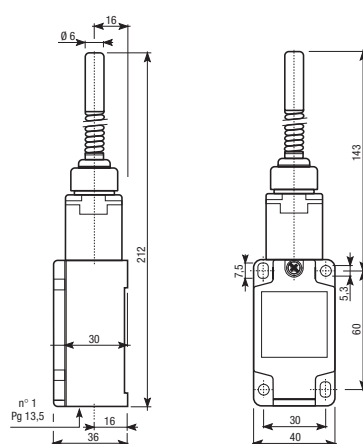
Cat's whisker

Contact block	
1NO+1NC snap action 	00
1NO+1NC slow action 	01
1NO+1NC slow overlap. 	02
2NO slow action 	03
2NC slow action 	04
2NC snap action 	05
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Metal	Contact travel
E40000LPI	E40000LPM	
E40001LPI	E40001LPM	
E40002LPI	E40002LPM	
E40003LPI	E40003LPM	
E40004LPI	E40004LPM	
E40005LPI	E40005LPM	
0,280	0,395	
1		
Pg 13,5		

Thermoplastic	Metal	Contact travel
E40000LSI	E40000LSM	
E40001LSI	E40001LSM	
E40002LSI	E40002LSM	
E40003LSI	E40003LSM	
E40004LSI	E40004LSM	
E40005LSI	E40005LSM	
0,280	0,395	
1		
Pg 13,5		

 standard article  article on request

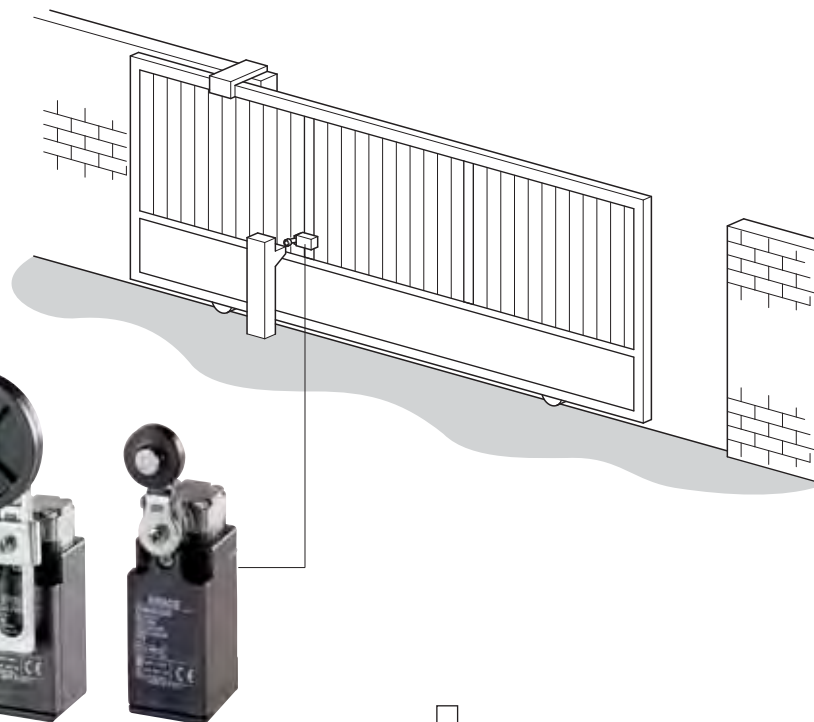
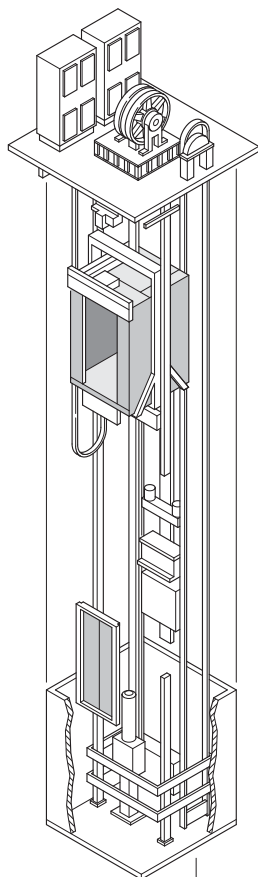


Products for gates and lifts

For gates and lifts applications ERSCE provides a dedicated contact block, 2NC slow action with asymmetric working, to allow the detection of position and direction of the moving part. It is available for E100 and E200 series with metal actuators and thermoplastic or metal body.

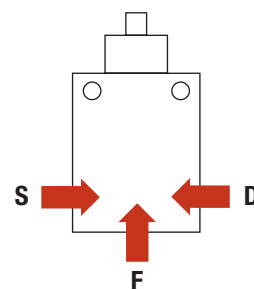
In conformity with standards:

IEC EN 60947-5-1 • EN 60947-1 • UNI EN 1088 • EN ISO 12100-1
EN ISO 12100-2 • IEC 529 • EN 60529 • VDE 0660-200 • VDE 0113



Dedicated contact block

Dedicated contact block 07 for gates/lifts



Cable entry

	F	S	D
E100	•		
E200		•	•

Fixing

E100	20/22 mm
E200	20/22 and 40/42 mm

Thread

Pg 13,5
M20 (on request)
1/2" NPT (on request)

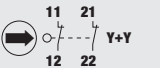
Series part no.


E100...	E200...
E101...	E201...
E102...	E202...



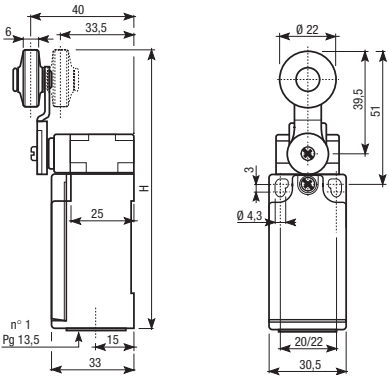
E•C

Thermoplastic roller lever

Contact block	
2NC slow action	
	07
Weight	kg
Pack	pcs
Cable entry	
H	mm


Thermoplastic	Metal	Contact travel
E10007EIC	E10007EMC	
0,135	0,225	
1		
Pg 13,5		
108,5	106	

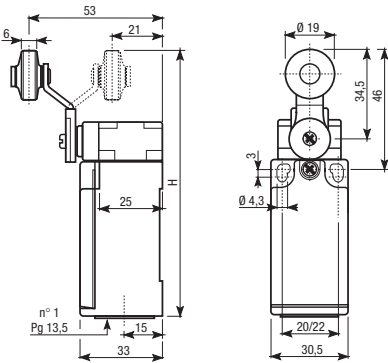
 standard article  article on request



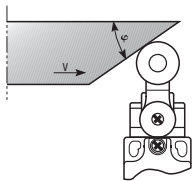
I•C

Thermoplastic roller lever

Thermoplastic	Metal	Contact travel
E10007IIC	E10007IMC	
0,130	0,225	
1		
Pg 13,5		
103,5	101	



Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	15
for positive opening	35



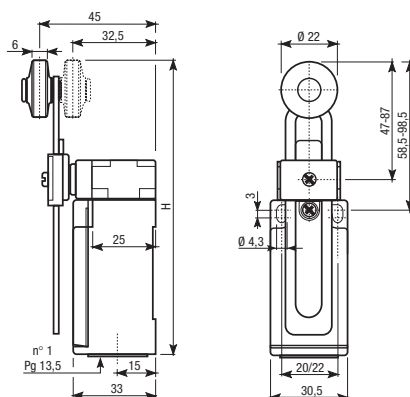
F•C

Thermoplastic roller variable length lever

Contact block	
2NC slow action	
	07
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10007FIC	E10007FMC	
0,150	0,240	
1		
Pg 13,5		
116÷156	113,5÷153,5	

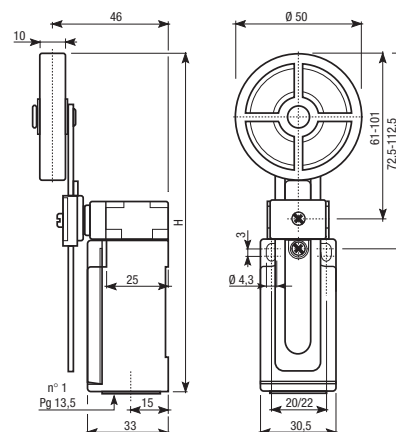
standard article article on request



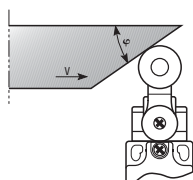
F•50C

Ø50 mm rubber roller variable length lever

Thermoplastic	Metal	Contact travel
E10007FI50C	E10007FM50C	
0,160	0,250	
1		
Pg 13,5		
130÷170	127,5÷167,5	



Drive cam operating parameters



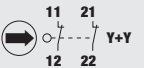
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

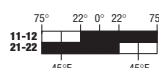
Min. force (cNm)	
for tripping	15
for positive opening	35



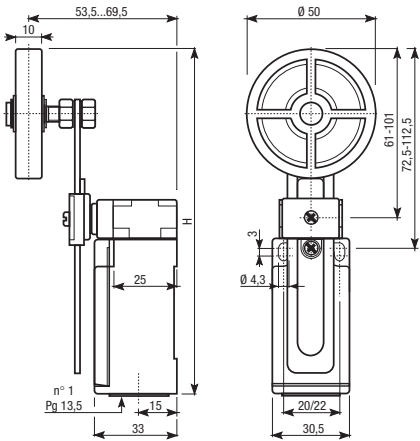
FR•50C

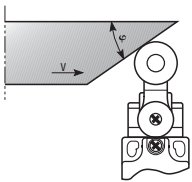
Ø50 mm rubber roller adjustable lever

Contact block	
2NC slow action	07
	
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10007FRI50C	E10007FRM50C	
0,170	0,250	
1		
Pg 13,5		
130÷170	127,5÷167,5	

 standard article  article on request



Drive cam operating parameters		
	φ	V max (m/s)
	30°	1,5
	45°	1
	60°	0,75
	60-90°	0,25
		Min. force (cNm)
		for tripping
		15
		for positive opening
		35

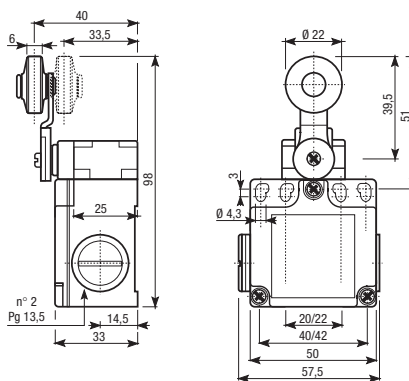


Thermoplastic roller lever

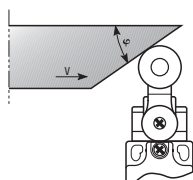
Contact block	
2NC slow action	
	07
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Contact travel
E20007EIC	
0,160	
1	
Pg 13,5	

☒ standard article ☐ article on request



Drive cam operating parameters



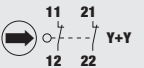
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

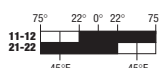
Min. force (cNm)	
for tripping	15
for positive opening	35

I•C

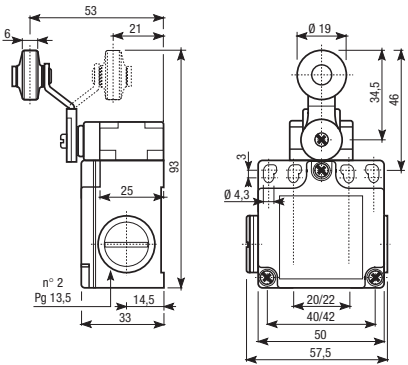


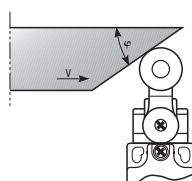
Thermoplastic roller lever

Contact block	
2NC slow action	07
	
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Contact travel
E20007IIC	
0,160	
1	
Pg 13,5	

 standard article  article on request



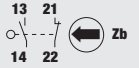
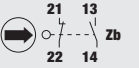
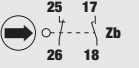
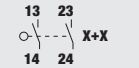
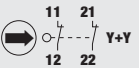
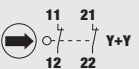
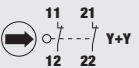
Drive cam operating parameters		
	φ	V max (m/s)
	30°	1,5
	45°	1
	60°	0,75
	60-90°	0,25
		Min. force (cNm)
		for tripping
		15
		for positive opening
		35



Available for series: E100
E200
E300
E400

In conformity with standards:
IEC/EN 60947-1
IEC/EN 60947-5-1

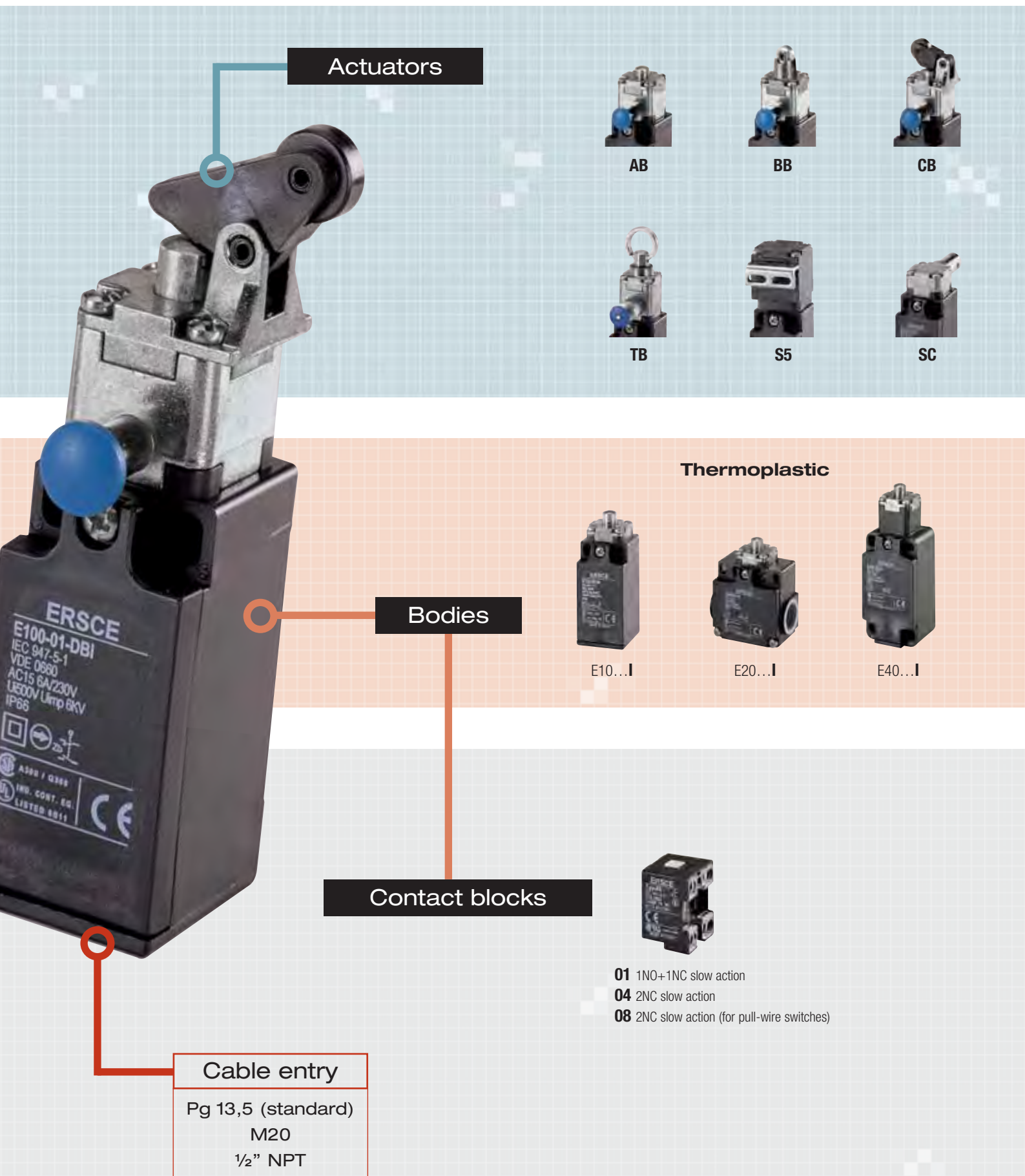
Contact blocks

Contact block		Code	Description	Pack	Weight conf. (kg)
1NO+1NC snap action 	00	ELEM00	Snap action 1NO+1NC	5	0,495
1NO+1NC slow action 	01	ELEM01	Slow action 1NO+1NC	5	0,485
1NO+1NC slow overlap. 	02	ELEM02	Slow action overlap 1NO+1NC	5	0,485
2NO slow action 	03	ELEM03	Slow action 2NO	5	0,485
2NC slow action 	04	ELEM04	Slow action 2NC	5	0,485
2NC snap action 	05	ELEM05	Snap action 2NC	5	0,485
2NC slow action 	07	ELEM07	Slow action 2NC	5	0,485

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Safety
switches





DB



EB



IB



FB



FB-50



FBR-50

Metal



E10...M

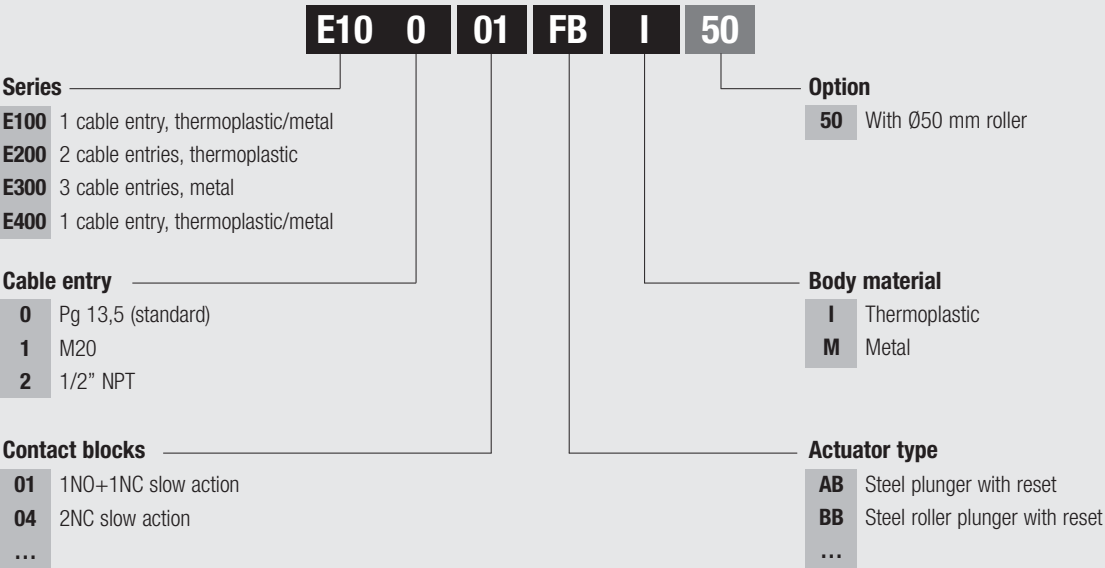


E30...M



E40...M

Part no. structure



General characteristics

Safety switches are conceived for applications related to the protection of automated installations and are available in 4 different product families: with reset, pull-wire, 5 way key and for hinge actuation.

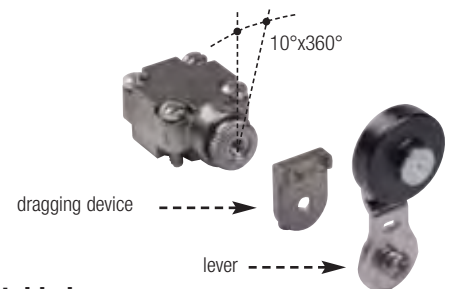


- thermoplastic or metal body
- IP66
- contact blocks with positive opening of the NC contact according to IEC EN 60947-5-1 e VD 0660-200



Rotating heads

Possibility to supply, on request, the limit switch lever rotated by 180° steps, and the actuator by 90° steps.



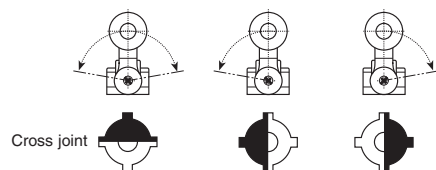
Adjustable levers

Possibility to adjust the lever in 10° steps for 360° by moving the lever and the dragging device



Overturning levers

all the levers can be fastened on switches on straight or reverse side, to obtain two different work plans of the lever.



Unidirectional actuation

The lever can be moved to the left or right only or in both directions by adjusting the cross joint

Technical data

Insulation resistance		500 V DC	MΩ	100
Dielectric strength		50/60 Hz for 1' *	V AC	2500
Rated insulation voltage	Ui	IEC947-5-1	V AC	500
Rated thermal current	Ithe	IEC947-5-1	A	10
Rated operating current		IEC947-5-1/EN60947-5-1		
Category AC15 A300	le	24 V	A	10
		125 V	A	6
		230 V	A	6
		400 V	A	3
Category DC13 Q300	le	24 V	A	6
		48 V	A	4
		120 V	A	1
		250 V	A	0,4
Contact resistance	IEC255-7 cat.3	initial value	mΩ	25
Short circuit protective devices		IEC269 (IEC947-5-1)		
		gl or gG type fuse	A	10
Rated conditionals short circuit current	IEC947-5-1		A	1000
Pollution degree	IEC947-5-1			3
Protection degree	EN 60529			IP66
Protection against electric shock		plastic	cycles	II
		metal	cycles	I
Vibration resistance	IEC68-2-6	mm		0,35 ± 15% (10 ÷ 55 Hz ± 1 Hz)
Shock resistance	IEC68-2-27	11 ms	g	30
Mechanical life			cycles	15.000.000
Electrical life	at 250 V AC 6A with resistance load cos φ=1		cycles	500.000
	at 250 V AC 6A with inductive load cos φ=0,4		cycles	500.000
Distance between contacts	snap action type		mm	2x1,25
	low action type		mm	2x2
Terminals	type			Screw with combined notch and retravtable plate (notch Ph. size 1)
	screw		M	3,5
	protection degree			IP20
	material			Steel class 8,8/ Galvanized
	max. screw tightening torque		cNm (Kg cm)	120 (12,24)
	max connecting capacity	rigid cable	mm²	2x1,5
		flexible cable	mm²	2x1,5
	with prod terminal			In accordance with EN50013
Air ambient temperature	operational	°C		-35 ÷ +85 (without formation of ice)
Relative humidity	operational			95% max

* between terminals of the same polarity; between terminals with different polarity; between live mechanical parts and ground; between live mechanical parts and non-current-carrying metal parts

Approvals



IEC EN 60947

E100	•	•	+
E200	•	•	+
E300	•	•	+
E400	•	•	+

- UL approval file E72861
 - CSA approval file 026716-0-000
 • Approved
 + Conforms to requirements

Switches **with reset**



Switches **with reset** are safety appliances that guarantee the opening of the NC contact upon a single manoeuvre and its retention in that position with the locking head. This means that the activation of the switch will have no effect on the contact element until the reset button is pressed manually (the release or reset take place by pressing the blue reset button). The range is available for the **E100-200** series in both the thermoplastic and metal bodies, with metal head and **IP66** protection degree. Both versions are available with two types of contact blocks, 1NO + 1NC and 2NC, with slow action and positive opening of the NC contact

In conformity with standards

IEC EN 60947-5-1 • EN 60947-1 • UNI EN 1088 • EN ISO 12100-1
EN ISO 12100-2 • IEC 529 • EN 60529 • VDE 0660-200 • VDE 0113

Applications



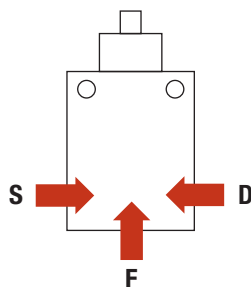
Escalators



Lifts



Lifting machines



Cable entry

	F	S	D
E100	•		
E200		•	•

Fixing

E100	20/22 mm
E200	20/22 and 40/42 mm

Thread

Thread	Series part no.	
Pg 13,5	E100...	E200...
M20 (on request)	E101...	E201...
1/2" NPT (on request)	E102...	E202...



Steel plunger

A



Steel roller plunger

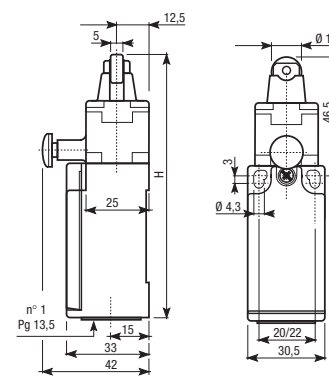
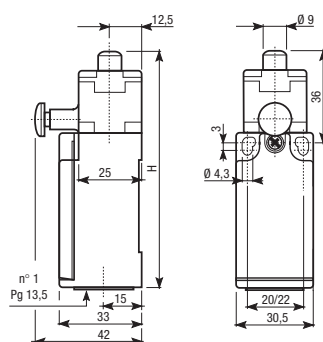
B

Contact block	
1NO+1NC slow action	01
2NC slow action	04
Weight	kg
Pack	pcs
Cable entry	
H	mm

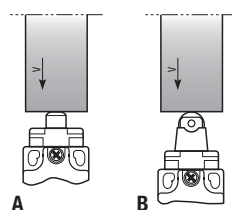
Thermoplastic	Metal	Contact travel
E10001ABI	E10001ABM	
E10004ABI	E10004ABM	
0,160	0,245	
1		
Pg 13,5		
93,5	91	

Thermoplastic	Metal	Contact travel
E10001BBI	E10001BBM	
E10004BBI	E10004BBM	
0,165	0,255	
1		
Pg 13,5		
104	101,5	

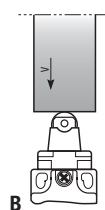
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Drive cam operating parameters

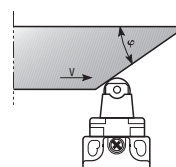


A



B

	V max (m/s)
Actuator A	0,5
Actuator B	0,5
Min. force (N)	
for tripping	9
for positive opening	28

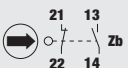
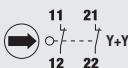


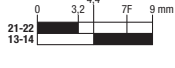
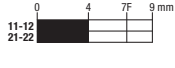
φ	V max (m/s)
20°	1
30°	0,5
Min. force (N)	
for tripping	9
for positive opening	28



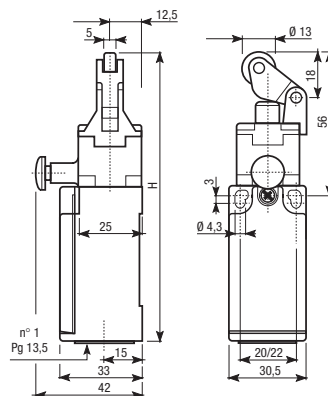
C

Thermoplastic roller lever, side actuation

Contact block	
1NO+1NC slow action	01
	
2NC slow action	04
	
Weight	kg
Pack	pcs
Cable entry	
H	mm


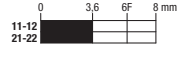
Thermoplastic	Metal	Contact travel
E10001CBI	E10001CBM	
E10004CBI	E10004CBM	
0,165	0,255	
1		
Pg 13,5		
113,5	111	

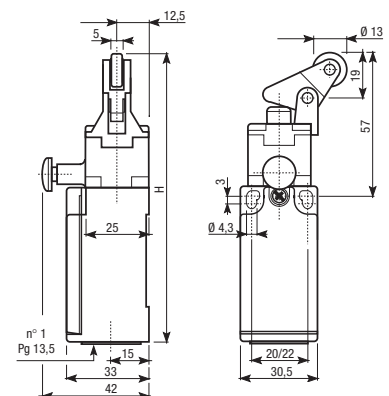
 standard article  article on request



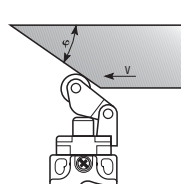
D

Thermoplastic roller lever, vertical actuation

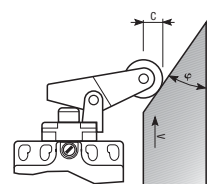
Thermoplastic	Metal	Contact travel
E10001DBI	E10001DBM	
E10004DBI	E10004DBM	
0,165	0,255	
1		
Pg 13,5		
114,5	112	



Drive cam operating parameters



φ	V max (m/s)
20°	1
30°	0,5
Min. force (N)	
for tripping	9
for positive opening	26



φ	V max (m/s)
20°	1
30°	0,5
Min. force (N)	
for tripping	8
for positive opening	26



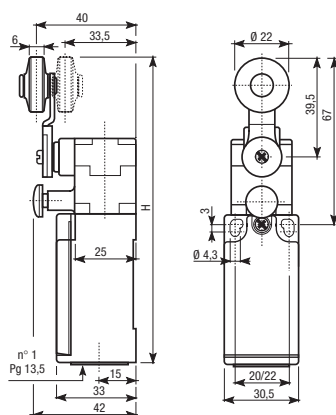
Thermoplastic roller lever

E

Contact block	
1NO+1NC slow action	01
2NC slow action	04
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10001EBI	E10001EBM	
E10004EBI	E10004EBM	
0,195	0,285	
1		
Pg 13,5		
124,5	122	

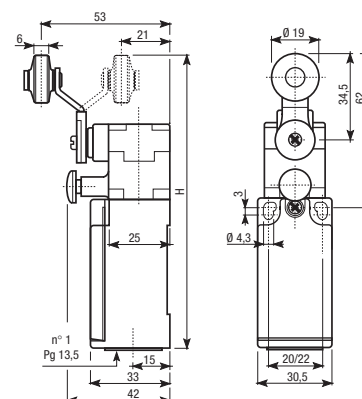
standard article article on request



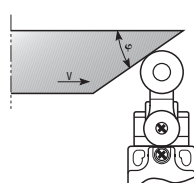
thermoplastic roller lever

I

Thermoplastic	Metal	Contact travel
E10001IBI	E10001IBM	
E10004IBI	E10004IBM	
0,205	0,295	
1		
Pg 13,5		
119,5	117	



Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)
for tripping
for positive opening

15
35



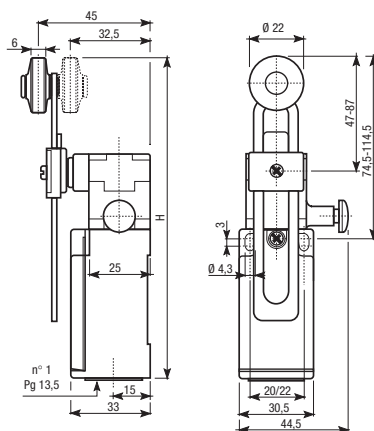
F

Thermoplastic roller variable length lever

Contact block	
1NO+1NC slow action	01
2NC slow action	04
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10001FBI	E10001FBM	
E10004FBI	E10004FBM	
0,220	0,305	
1		
Pg 13,5		
132÷172	129,5÷169,5	

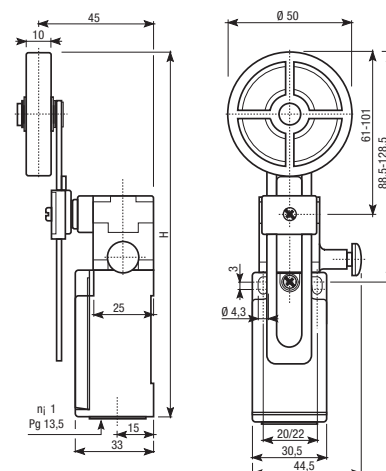
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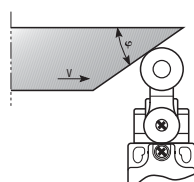
F•50

Ø50 mm rubber roller variable length lever

Thermoplastic	Metal	Contact travel
E10001FBI50	E10001FBM50	
E10004FBI50	E10004FBM50	
0,240	0,325	
1		
Pg 13,5		
146÷186	143,5÷183,5	



Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)
for tripping
for positive opening

15
35



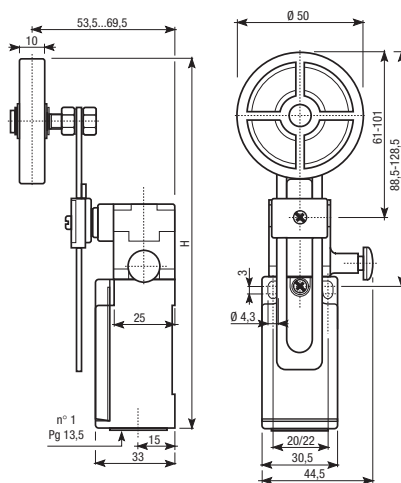
FBR•50

Ø50 mm rubber roller adjustable lever

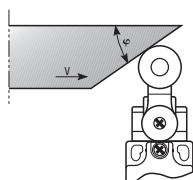
Contact block	
1NO+1NC slow action 01	
2NC slow action 04	
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10001FBR150	E10001FBRM50	
E10004FBR150	E10004FBRM50	
0,240	0,330	
1		
Pg 13,5		
146÷186	143,5÷183,5	

standard article article on request



Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	15
for positive opening	35



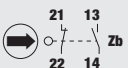
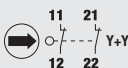
Steel plunger

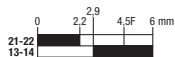
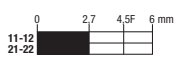
A

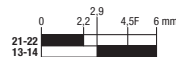
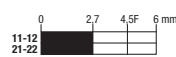


Steel roller plunger

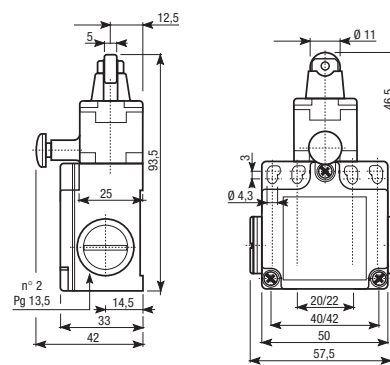
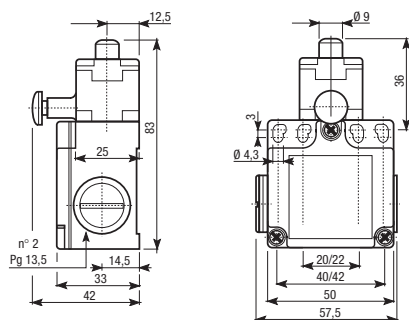
B

Contact block	
1NO+1NC slow action 	01
2NC slow action 	04
Weight	kg
Pack	pcs
Cable entry	

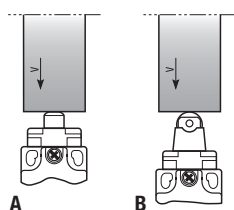
Thermoplastic	Contact travel
E20001ABI	
E20004ABI	
0,180	0,290
1	
Pg 13,5	

Thermoplastic	Contact travel
E20001BBI	
E20004BBI	
0,185	0,300
1	
Pg 13,5	

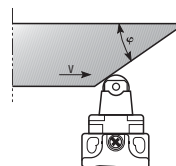
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Drive cam operating parameters



	V max (m/s)
Actuator A	0,5
Actuator B	0,5
Min. force (N)	
for tripping	9
for positive opening	28

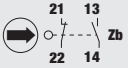
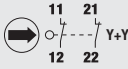



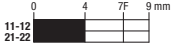
	V max (m/s)
20°	1
30°	0,5
Min. force (N)	
for tripping	9
for positive opening	28

C

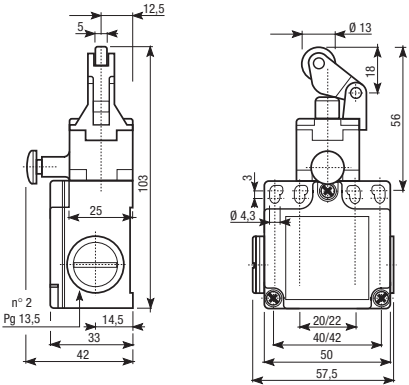


Thermoplastic roller lever, side actuation

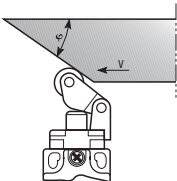
Contact block	
1NO+1NC slow action	01
	
2NC slow action	04
	
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Contact travel
E20001CBI	
E20004CBI	
0,190	
1	
Pg 13,5	

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Drive cam operating parameters



φ	V max (m/s)	Min. force (N)
20°	1	for tripping 9
30°	0,5	for positive opening 26



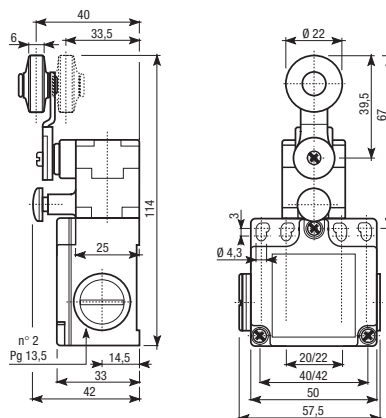
E

Thermoplastic roller lever

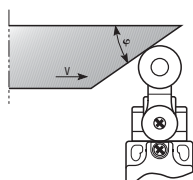
Contact block	
1NO+1NC slow action	01
2NC slow action	04
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Contact travel
E20001EBI	
E20004EBI	
0,215	
1	
Pg 13,5	

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Drive cam operating parameters

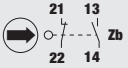
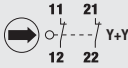



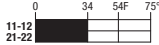
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)
for tripping 15
for positive opening 35

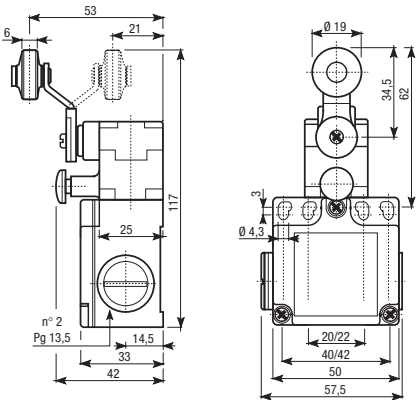


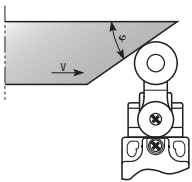
Thermoplastic roller lever

Contact block	
1NO+1NC slow action	01
	
2NC slow action	04
	
Weight	kg
Pack	pcs
Cable entry	

Thermoplastic	Contact travel
E20001BI	
E20004BI	
0,215	
1	
Pg 13,5	

 standard article  article on request



Drive cam operating parameters		
	φ	V max (m/s)
	30°	1,5
	45°	1
	60°	0,75
	60-90°	0,25
		Min. force (cNm)
		for tripping 15
		for positive opening 35

Key actuated switches



The **5 way key** actuated safety switches are used on gates, sliding doors and other devices to protect the access to dangerous parts of machines. The key is applied to the moving protection barrier so it has to be removed from the switch on every opening thus operating a positive opening of the NC contact.

This kind of actuator is available on the **E100-E200** series with thermoplastic or metal body and thermoplastic head, with **IP66** protection degree.

In conformity with standards

IEC EN 60947-5-1 • EN 60947-1 • UNI EN 1088
EN ISO 12100-1 • EN ISO 12100-2 • IEC 529 •
EN 60529 • VDE 0660-200 • VDE 0113 • UNI EN 13850

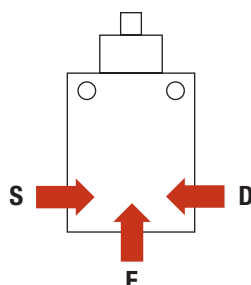
Applications



Machines with
safety barriers

Safety for the operator

The command circuit authorizing the start-up of the process is closed only by the complete insertion of the safety key, and the circuit is opened when this is removed. This prevents intentional tampering with the machine by the operator until the safety protection device is opened.



Cable entry

	F	S	D
E100	•		
E200		•	•
E300	•	•	•
E400	•		

Fixing

E100	20/22 mm
E200	20/22 and 40/42 mm
E300	40 mm
E400	30 mm

Thread

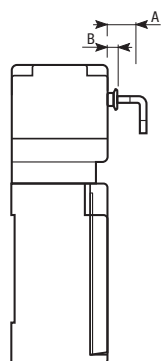
Series part no.

Pg 13,5	E100...	E200...	E300...	E400...
M20 (on request)	E101...	E201...	E301...	E401...
1/2" NPT (on request)	E102...	E202...	E302...	E402...

Instructions for correct installation

Assembly of the driver on a rotating protective device (allow space for the pivot radius).

Key type	Horizontal mouting	Vertical mounting
Z5 Z5-1 Z5-3 Z5-4		
Z52		



Recommended position for correct operation:

A (contact switching point) = 4 mm

B (actuator limit switch point) = 0 ÷ 1 mm max

The contacts remain closed from point A to point B (4 mm max travel)

Never use the safety switch as a mechanical travel stop

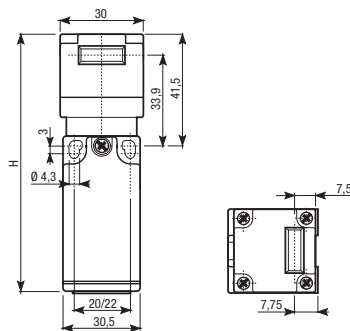


E100 5 way key

Contact block	
1NO+1NC slow action 	01
2NC slow action 	04
Weight	kg
Pack	pcs
Cable entry	
H	mm

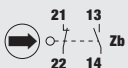
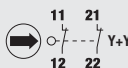
Thermoplastic	Metal	Contact travel
E10001S5I	E10001S5M	
E10004S5I	E10004S5M	
0,115	0,210	
1		
Pg 13,5		
99	96,5	

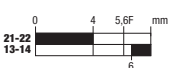
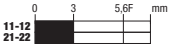
standard article article on request



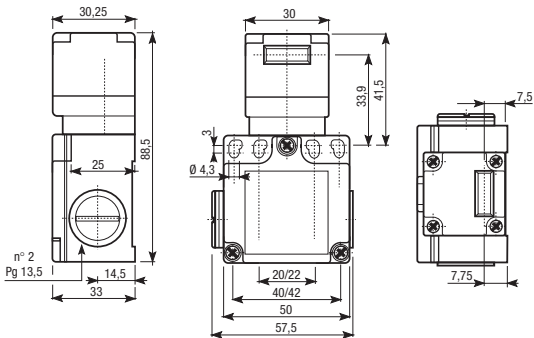


E200 5 way key

Contact block	
1NO+1NC slow action	01
	
2NC slow action	04
	
Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Contact travel
E20001S5I	
E20004S5I	
0,140	
1	
Pg 13,5	

 standard article  article on request



Pull wire switches



Pull wire safety switches are essential for the continuous control of a long line of machines or parts extending over a considerable length. They guarantee the safety of the operator, who is able to control the immediate stop of the machinery from any point in the operating zone when no or few automatic systems to cut off the power supply are present. This kind of actuator is available on the series **E100-E200-E400** with thermoplastic or metal body and metal head, with **IP66** protection degree.

In conformity with standards

IEC EN 60947-5-1 • EN 60947-1 • UNI EN 1088
EN ISO 12100-1 • EN ISO 12100-2 • IEC 529
EN 60529 • VDE 0660-200 • VDE 0113 • UNI EN 13850

Applications



Long lines of machines: conveyor belts, textile machines, printing machines, etc...

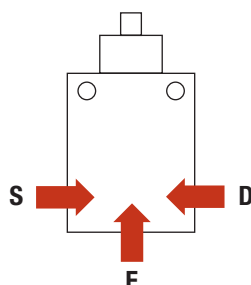
Wire tension indicator

For the exact cable tension, check that the notch on the drive shaft is in line with the head.



Reset button

Block reset that guarantees the locking of the NC head in the open position after a single operation.



Cable entry

	F	S	D
E100	•		
E200		•	•
E300	•	•	•
E400	•		

Fixing

E100	20/22 mm
E200	20/22 and 40/42 mm
E300	40 mm
E400	30 mm

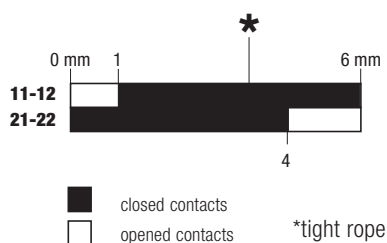
Thread

Series part no.

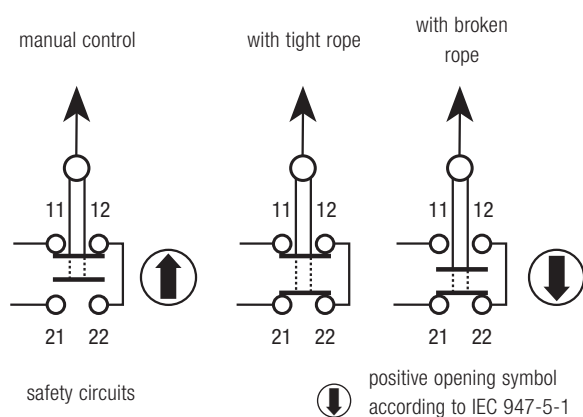
Pg 13,5	E100...	E200...	E300...	E400...
M20 (on request)	E101...	E201...	E301...	E401...
1/2" NPT (on request)	E102...	E202...	E302...	E402...

Dedicated contact block

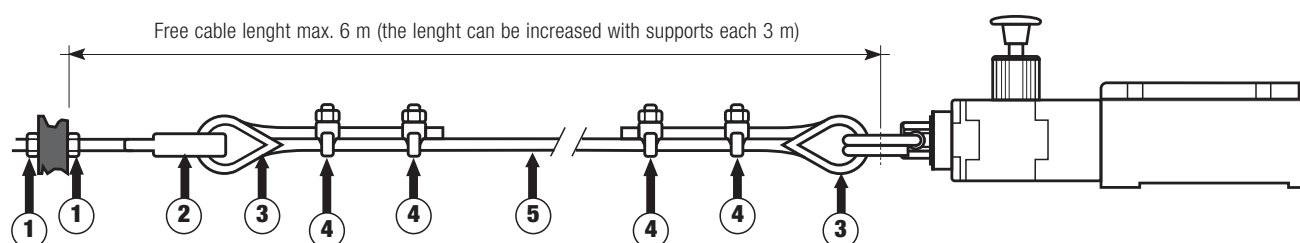
Dedicated contact block 08 with longer travel for pull-wire switches: cable vibrations will have no influence on the correct operation of the limit switch.



Contacts position during operation for contact block 08



NOTE: the contacts 11-12 and 21-22 have to be connected in series



Examples of connection

Free cable length max. 6 m (increase the length with supports each 3 m).

Notes

- ① BM 10 DIN 439 hexagonal nut
- ② part no. 005 - BM 10 DIN 439 ring with thread
- ③ part no. R05 - B - 5 mm DIN 6899 noose
- ④ part no. M05 - 5 mm DIN 1480 clamp
- ⑤ part no. F05 - PVC steel cable, Ø 5 mm



E100



E200

Contact block

2NC slow action

11 21

12 22

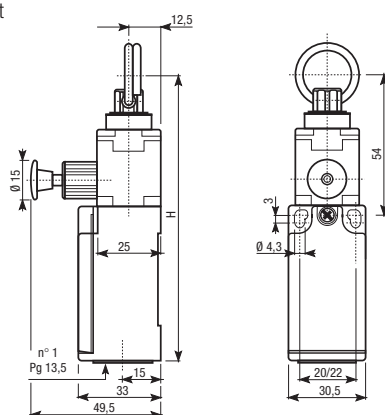
08

Weight	kg
Pack	pcs
Cable entry	
H	mm

Thermoplastic	Metal	Contact travel
E10008TBI	E10008TBM	<p>mm 6</p> <p>4</p> <p>*</p> <p>1</p> <p>mm 0</p> <p>11-12 21-22</p>

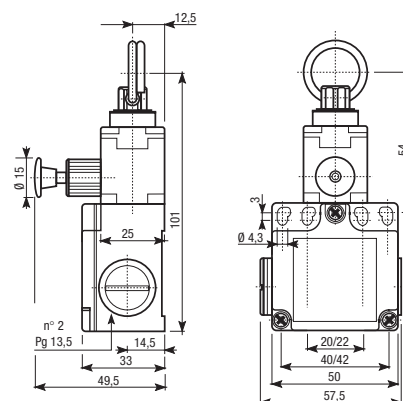
0,195	0,290
1	
Pg 13,5	
111,5	109

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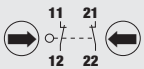

Thermoplastic	Contact travel
E20008TBI	<p>mm 6</p> <p>4</p> <p>*</p> <p>1</p> <p>mm 0</p> <p>11-12 21-22</p>

0,220
1
Pg 13,5

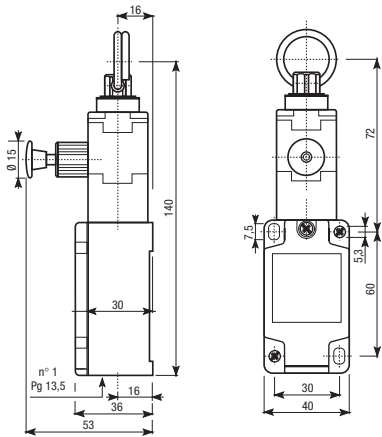




E400

Contact block		Thermoplastic	Metal	Contact travel
<div>2NC slow action</div> <div></div> <div>08</div>		E40008TBI	E40008TBM	<div></div> <div>mm 6</div> <div>4</div> <div>※</div> <div>1</div> <div>mm 0</div> <div>11-12 21-22</div>
Weight	kg	0,240	0,465	
Pack	pcs	1		
Cable entry		Pg 13,5		

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Switches for hinges



Safety switches for hinges are devices used to guarantee operator safety, applied to machines fitted with protection barriers. Metal shaft switches are ideal for the control of doors and gates, with application directly to the hinge. This kind of actuator is available on the series **E100** with thermoplastic or metal body and metal head, with **IP66** protection degree.

In conformity with standards

IEC EN 60947-5-1 • EN 60947-1 • UNI EN 1088 • EN ISO 12100-1
EN ISO 12100-2 • IEC 529 • EN 60529 • VDE 0660-200 • VDE 0113 • UNI EN 13850

Applications



Machines with
safety barriers

Reduced angle of operation

they guarantee stopping of dangerous movement when
the lever reaches an angle of 4° 30'.

Cable entry

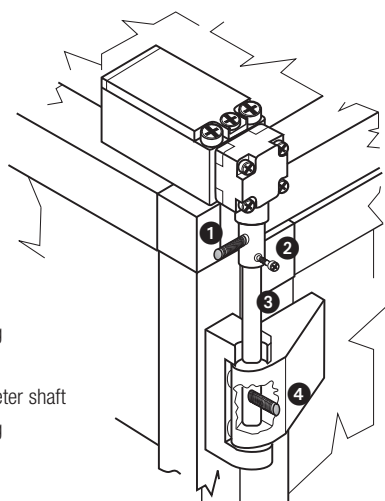
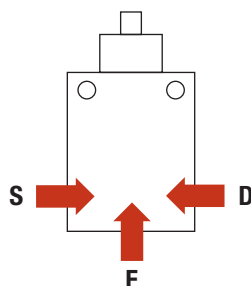
	F	S	D
E100	•		

Fixing

E100	20/22 mm
------	----------

Thread

Thread	Series part no.
Pg 13,5	E100...
M20 (on request)	E101...
1/2" NPT (on request)	E102...



- ① Locking plug
- ② M4 screw
- ③ 8 mm diameter shaft
- ④ Locking plug

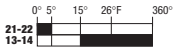
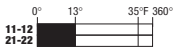
Notes for installation

Instructions for correct installation:

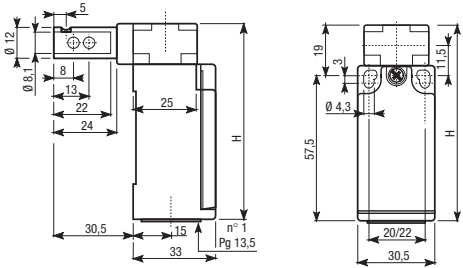
- Fix the switch in place to the door frame with two screws
Connect the safety circuit to the NC contact (21-22, 01/11-12, 04)
- Insert an 8 mm diameter shaft ③ protruding from the door hinge, in the shaft of the switch and fix it in place temporarily with the M4 screw ②
- Adjust the opening point of the NC contact by rotating the shaft to reduce the standard opening angle (5°)
- Drill the pin ③ through one of the two holes in the shaft and fix it in place with the locking plug ①


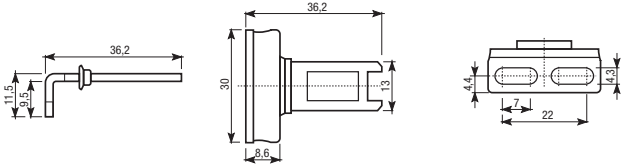

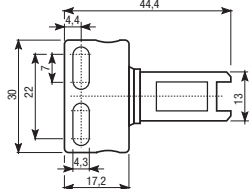

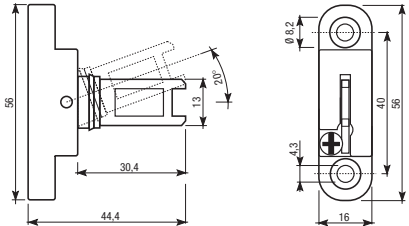

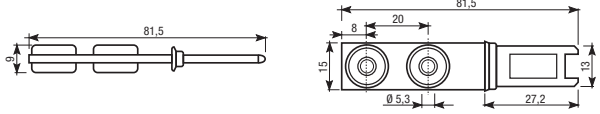

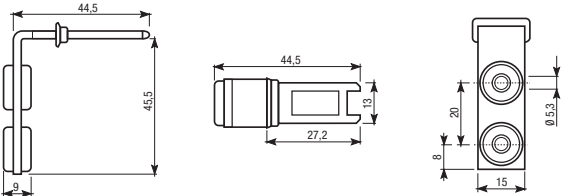








E100

Contact block		Thermoplastic	Metal	Contact travel
1NO+1NC slow action	01	E10001SCI	E10001SCM	
2NC slow action				
	04	E10004SCI	E10004SCM	
Weight	kg	0,125		
Pack	pcs	1		
Cable entry		Pg 13,5		
H	mm	76,5	74	

 standard article  article on request

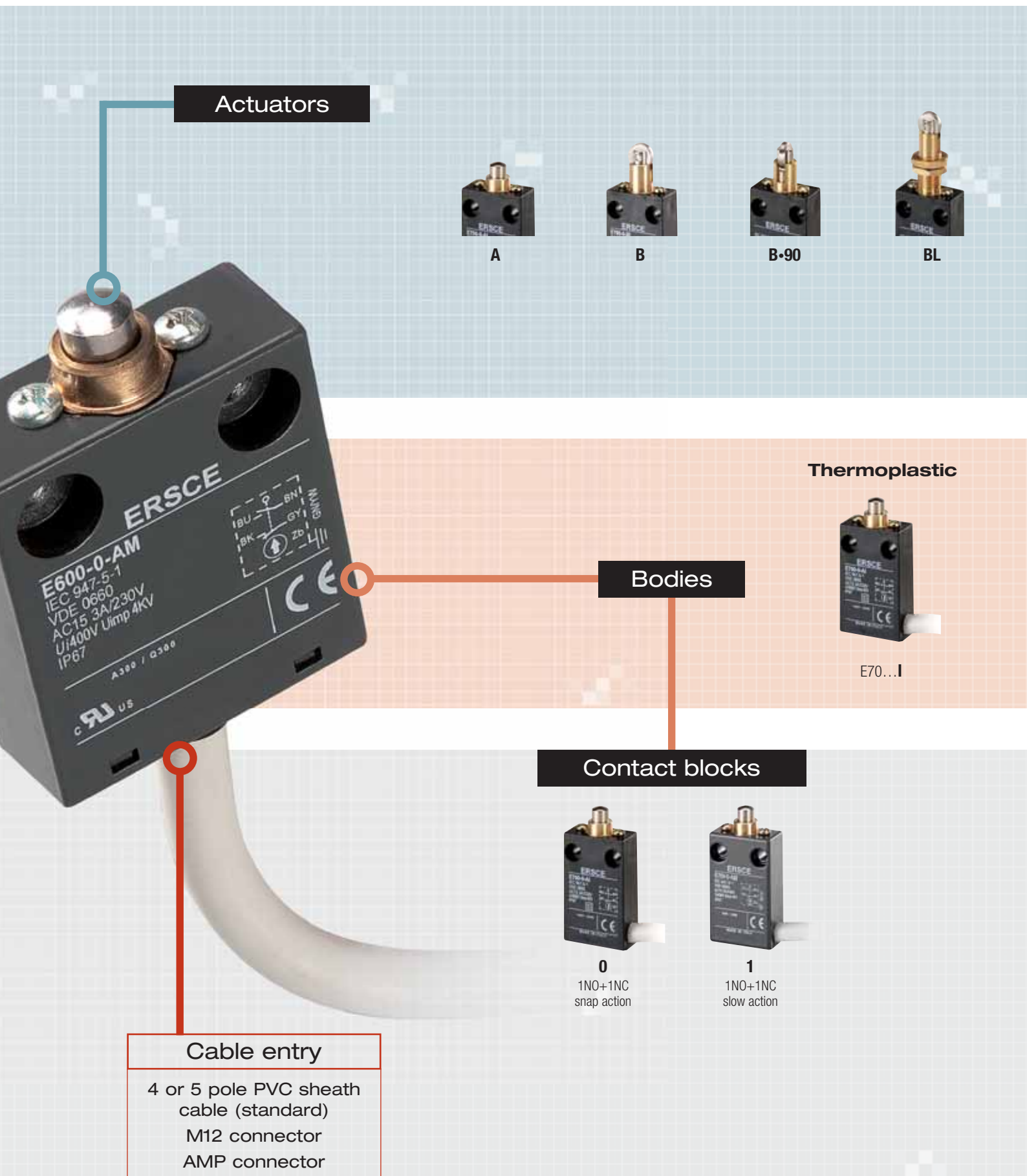


	Part no.	Description	Pack	Weight conf. (kg)	Dimensions
	Z5	Angle key mounting perpendicular to operating direction (key provided with the switch)	5	0,128	
	Z51	Straight key	5	0,128	
	Z52	Adjustable key	5	0,153	
	Z53	Straight key	5	0,128	
	Z54	Angle key mounting perpendicular to operating direction	5	0,128	
	M05	Clamp for Ø 5mm cable	5	0,140	
	R05	Wire rope thimble, shape A, for rope Ø5 mm - DIN 6899	5	0,050	
	T05	Wrought iron tension screw M6 x 60	5	0,320	
	O05	M8 eyelet with thread	5	0,155	
	F05	Ø 5mm Red safety cable	1	21,025	
	ELEM01	Slow action 1NO+1NC	5	0,485	
	ELEM04	Slow action 2NC	5	0,485	
	ELEM08	Slow action 2NC	5	0,485	

 standard article  article on request



Pre wired limit
switches





BL-90



E

Metal

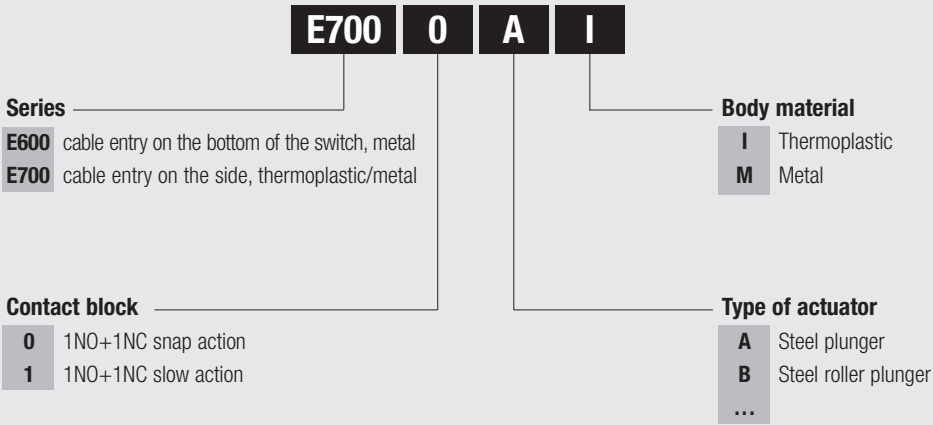


E70...M



E60...M

Part no. structure



Note: Please verify the effective availability of a product before ordering

General characteristics

The E700-E600 series pre-wired limit switches are suitable for use on machines where space is restricted and working environment is difficult. The product range includes the E600 and E700 series with thermoplastic or metal body.



- body material: thermoplastic/metal (E700) or metal (E600)
- IP67
- contact blocks with positive opening of the NC contact according to IEC EN 60947-5-1 e VD 0660-200

Overturning levers

All the levers can be fastened on switches on straight or reverse side, to obtain two different work plans of the lever.

Technical information

Insulation resistance			500 V DC	mΩ	100	
Dielectric strength			50/60 Hz per 1' *	V AC	2500	
Rated insulation voltage	Ui	IEC947-5-1		V AC	500	
Rated thermal current	Ithe	IEC947-5-1		A	10	
Rated operating current		IEC947-5-1/EN60947-5-1				
Category AC15 A300	Ie	24 V	A	6		
		125 V	A	5		
		230 V	A	3		
		400 V	A	1,8		
Category DC13 Q300	Ie	24 V	A	3		
		48 V	A	1,5		
		120 V	A	0,55		
		250 V	A	0,27		
Contact resistance (without cable)		IEC255-7 cat.3	initial value	mΩ	25	
Short circuit protective devices		IEC269 (IEC947-5-1) gl or gG type fuse		A	6	
Rated conditionals short circuit current		IEC947-5-1		A	1000	
Pollution degree		IEC947-5-1			3	
Protection degree		EN 60529			IP67	
Protection against electric shock		plastic	class	II		
		metal	class	I		
Vibration resistance		IEC68-2-6		mm	0,35 ± 15% (10 ÷ 55 Hz ± 1 Hz)	
Shock resistance		IEC68-2-27	11 ms	g	30	
Mechanical life				cycles	10.000.000	
Electrical life		a 250 V AC 3A with resistance load cosφ=1		cycles	500.000	
		a 250 V AC 3A with inductive load cosφ=0,4		cycles	500.000	
Distance between contacts		snap action type		mm	2x2	
		low action type		mm	2x1,25	
Cable		model/section		mm²	V4 o 5F - 4 o 5x0,75 (19 AWG)	
		colors				brown-blue(NO); black -grey(NC); yellow/green(GND)
		sheath color				Grey RAL 7035
		length **		m		2
		traslation speed		m/min		60
		operating voltage		V		300/500
Air ambient temperature		operational		°C	-35 ÷ +85 (without formation of ice)	

* between terminals of the same polarity; between terminals with different polarity; between live mechanical parts and ground;
between live mechanical parts and non-current-carrying metal parts

Approvals

		IEC EN 60947	- UL approval file E72861
E600	•	+	• Approved
E700	•	+	+ Conforms to requirements



E600 series

- Metal body
- Cable entry on the bottom of the switch
- Cable with PVC sheath (other cable types or connectors are on request)
- Cable length 2 m (other lengths on request)



E700 series

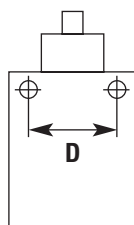
- Thermoplastic or metal body
- Cable entry on the side of the switch
- Cable with PVC sheath (other cable types or connectors are on request)
- Cable length 2 m (other lengths on request)

In conformity with standards:

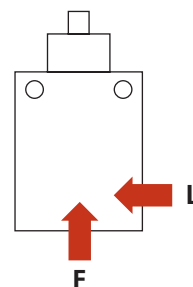
IEC EN 60947-5-1 • EN 60947-1 • UNI EN 1088 • EN ISO 12100-1
EN ISO 12100-2 • IEC 529 • EN 60529 • VDE 0660-200 • VDE 0113



Cable entry/connector



Fixing	D
E600	25 mm
E700	20 mm



	F	L
E600	•	
E700		•

Thread	Series part no.	
PVC sheath cable according to CEI 20-22	E600...	E700...
M12 connector (on request)	E601...	E701...
AMP connector (on request)	E602...	E702...

A

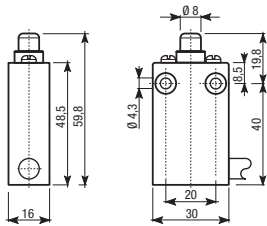


Steel plunger

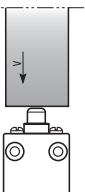
Contact block	
1NO+1NC snap action	0
1NO+1NC slow action	1
Weight	kg
Pack	pcs
Cable length	m

Thermoplastic	Metal	Contact travel
E7000AI	E7000AM	
E7001AI	E7001AM	
0,288	0,327	
1		
2		

standard article article on request



Drive cam operating parameters



V max (m/s)

0,5



Steel roller plunger

B



Steel roller plunger turned 90°

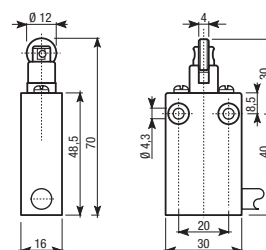
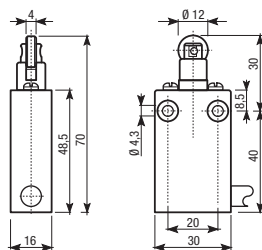
B•90

Contact block	
1NO+1NC snap action	0
1NO+1NC slow action	1
Weight	kg
Pack	pcs
Cable length	m

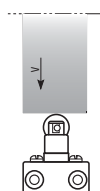
Thermoplastic	Metal	Contact travel
E7000BI	E7000BM	0 2,4 4F 5 mm BK-GY BN-BU BK-GY BN-BU 0,9
E7001BI	E7001BM	0 1,4 3,2F 5 mm BK-GY BN-BU BK-GY BN-BU
0,296	0,331	
1		
2		

Thermoplastic	Metal	Contact travel
E7000BI90	E7000BM90	0 2,4 4F 5 mm BK-GY BN-BU BK-GY BN-BU 0,9
E7001BI90	E7001BM90	0 1,4 3,2F 5 mm BK-GY BN-BU BK-GY BN-BU
0,296	0,331	
1		
2		

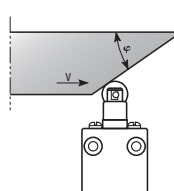
standard article article on request



Drive cam operating parameters



V max (m/s) 0,5



φ V max (m/s)
20° 0,3
30° 0,1

Min. force (N)
for tripping 8
for positive opening 18



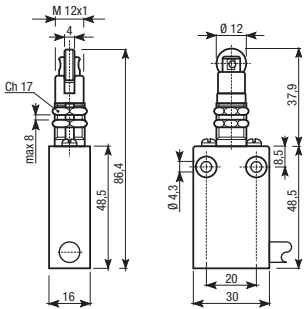
BL

Steel roller plunger, vertical actuation

Contact block	
1NO+1NC snap action	0
1NO+1NC slow action	1
Weight	kg
Pack	pcs
Cable length	m

Thermoplastic	Metal	Contact travel
E7000BLI	E7000BLM	
E7001BLI	E7001BLM	
0,306	0,348	
1		
2		

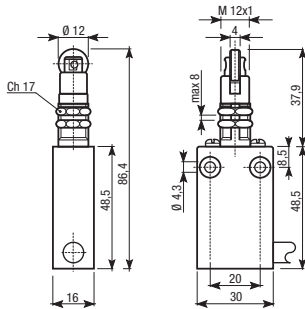
standard article article on request



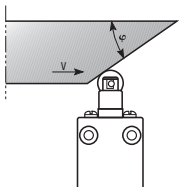
BL•90

Steel roller plunger turned 90°

Thermoplastic	Metal	Contact travel
E7000BLI90	E7000BLM90	
E7001BLI90	E7001BLM90	
0,306	0,348	
1		
2		



Drive cam operating parameters

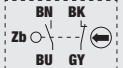



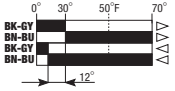
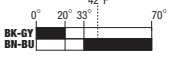
φ	V max (m/s)
20°	0,3
30°	0,1

Min. force (N)	
for tripping	8
for positive opening	18

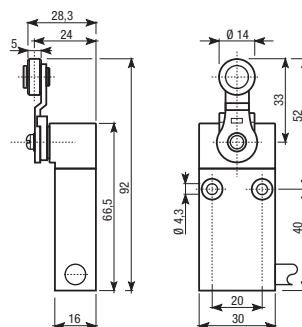


Thermoplastic roller lever

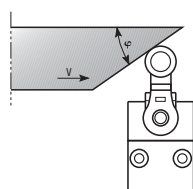
Contact block	
1NO+1NC snap action 	0
1NO+1NC slow action 	1
Weight	kg
Pack	pcs
Cable length	m

Thermoplastic	Metal	Contact travel
E7000EI	E7000EM	
E7001EI	E7001EM	
0,342	0,381	
	1	
	2	

 standard article  article on request



Drive cam operating parameters



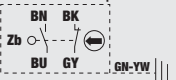
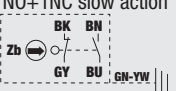
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

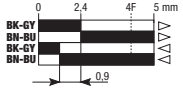

Min. force (cNm)	
for tripping	4
for positive opening	8

A

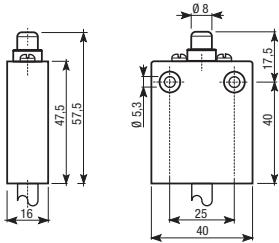


Steel plunger

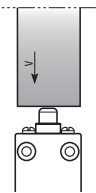
Contact block	
1NO+1NC snap action 	0
1NO+1NC slow action 	1
Weight	kg
Pack	pcs
Cable length	m

Metal	Contact travel
E6000AM	
E6001AM	
0,350	
1	
2	

 standard article  article on request



Drive cam operating parameters



V max (m/s)

0.5

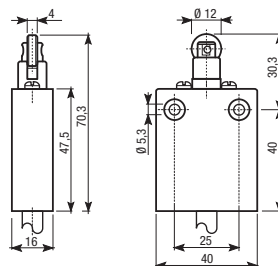


Steel roller plunger

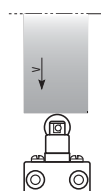
Contact block	
1NO+1NC snap action 	0
1NO+1NC slow action 	1
Weight	kg
Pack	pcs
Cable length	m

Metal	Contact travel
E6000BM	
E6001BM	
0,361	
1	
2	

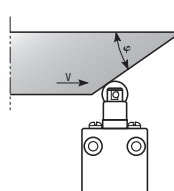
standard article article on request



Drive cam operating parameters



V max (m/s) 0,5



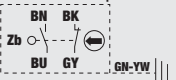

φ	V max (m/s)
20°	0,3
30°	0,1

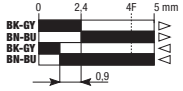
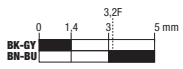
Min. force (N)	
for tripping	8
for positive opening	18

B•90

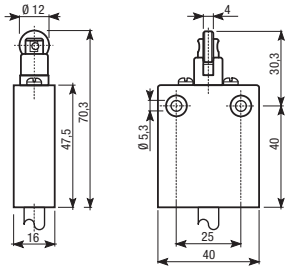


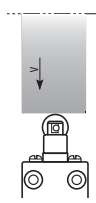
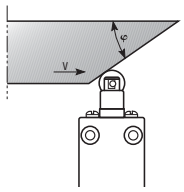
Steel roller plunger turned 90°

Contact block	
1NO+1NC snap action 	0
1NO+1NC slow action 	1
Weight	kg
Pack	pcs
Cable length	m

Metal	Contact travel
E6000BM90	
E6001BM90	
0,361	
1	
2	

☒ standard article ☐ article on request



Drive cam operating parameters		
	V max (m/s)	0,5
	φ	V max (m/s)
	20°	0,3
	30°	0,1
	Min. force (N)	
	for tripping	8
	for positive opening	18



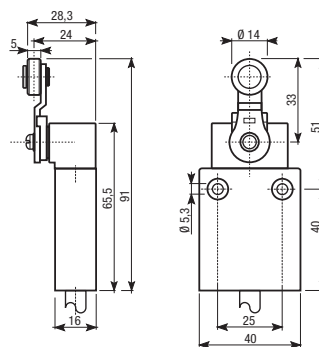
E

Thermoplastic roller lever

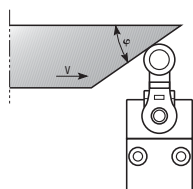
Contact block	
1NO+1NC snap action 	0
1NO+1NC slow action 	1
Weight	kg
Pack	pcs
Cable length	m

Metal	Contact travel
E6000EM	
E6001EM	
0,408	
1	
2	

standard article article on request



Drive cam operating parameters

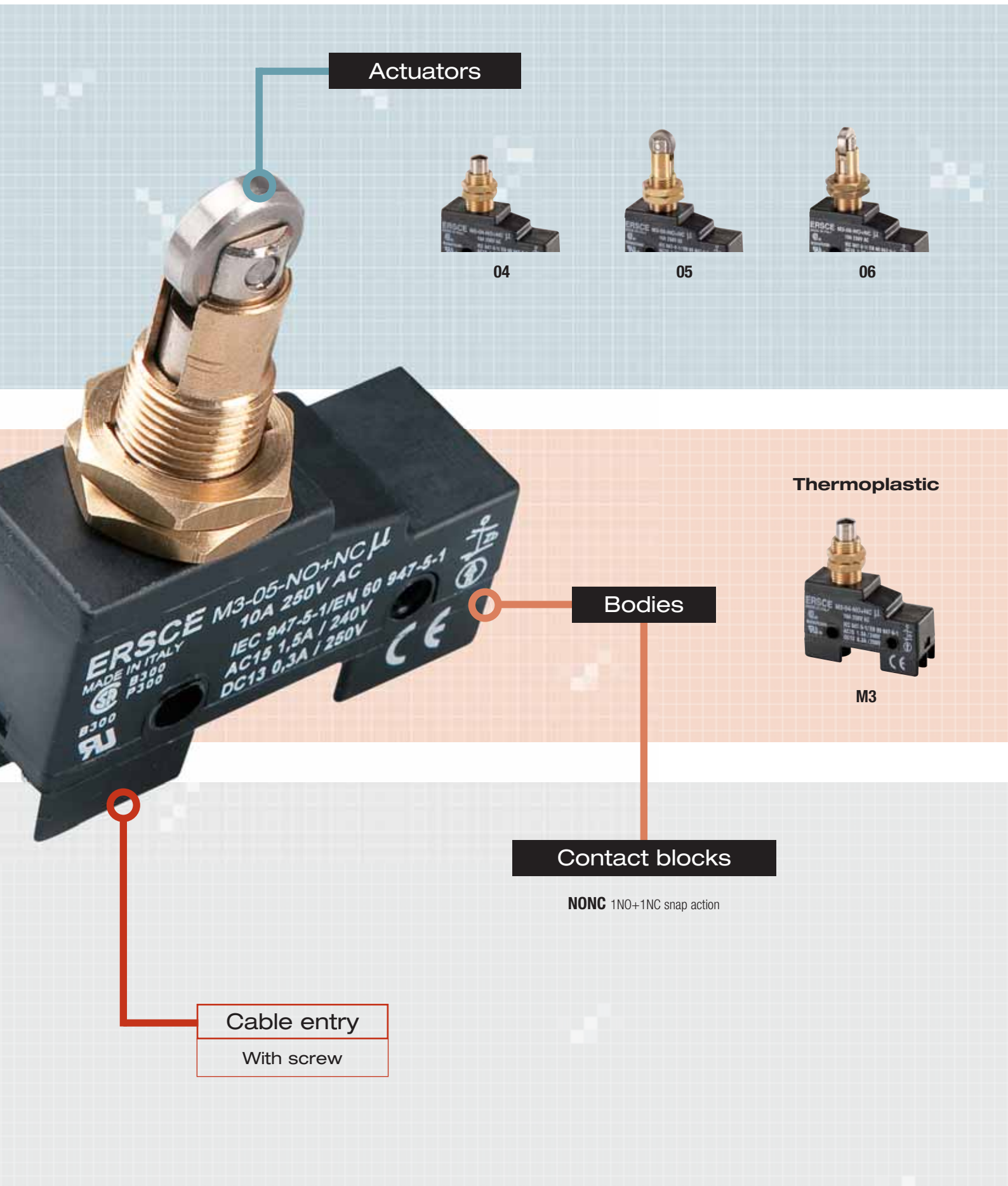


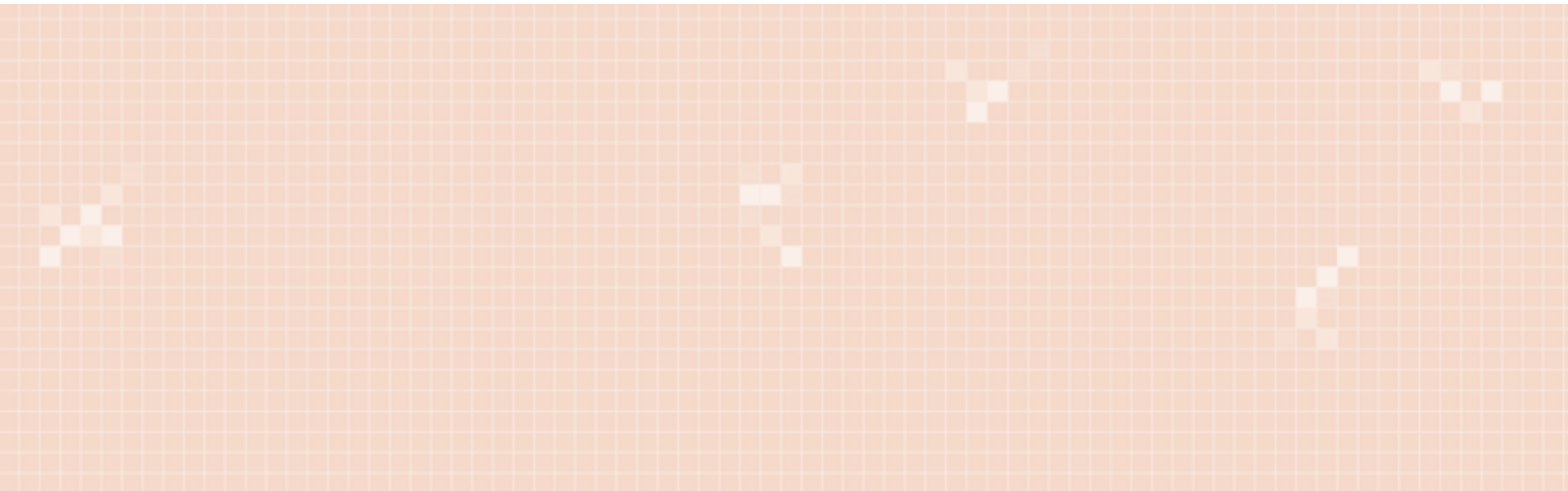
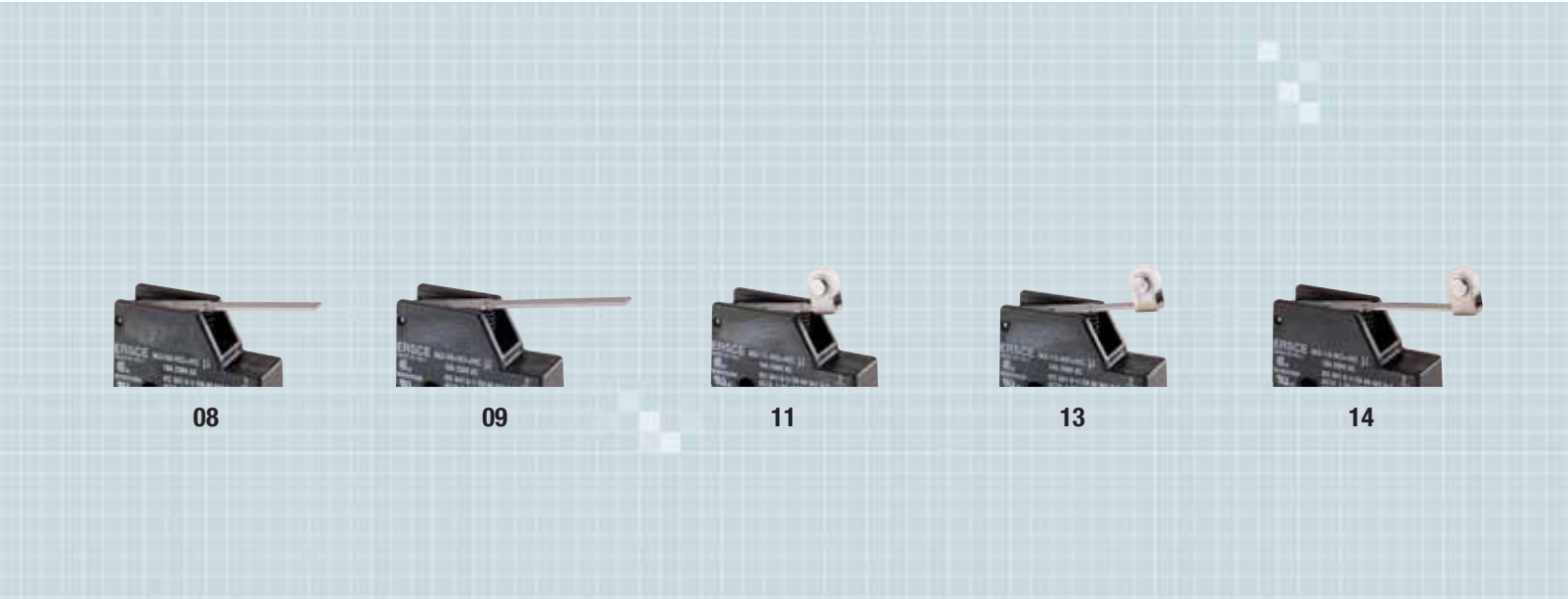
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Min. force (cNm)	
for tripping	4
for positive opening	8

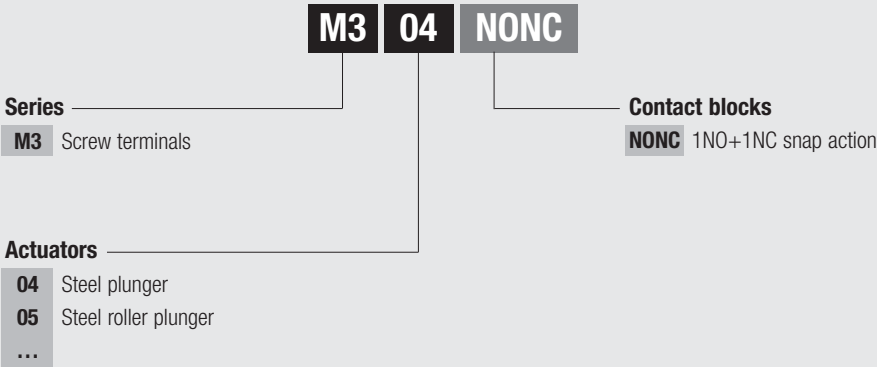


Miniaturized
limit switches





Part no. structure



Note: Please verify the effective availability of a product before ordering.

General characteristics

The M3 series miniaturized limit switches are among the most compact on the market. Contact blocks are 1NO+1NC snap action, with positive opening of the NC contact. The switches are made of PA6 double insulated thermoplastic reinforced with fiberglass, class V2. The M3 series is equipped with M3,5 screw terminals.



- thermoplastic body
- metal actuators
- contacts type Zb
- gold plated contacts (on request)
- contact blocks with positive opening of the NC contact according to IEC EN 60947-5-1 e VD 0660-2000

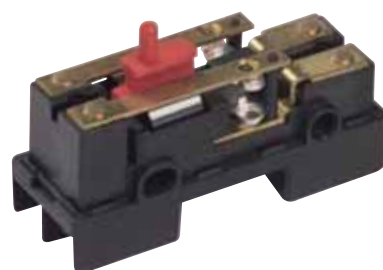
Galvanically separated contacts type Zb

The NO and NC contacts are galvanically separated with positive opening: it is possible to use the contacts independently.



High performance contacts

Ag/Ni.



Technical information

Technical information					
Operating speed			mm/s	1...1000	
Operating frequency			operat./sec (Hz)	0,5	
Insulation resistance		500 V DC	MΩ	100	
Dielectric strength		50/60 Hz per 1' *	V AC	2500	
Rated insulation voltage		Ui IEC947-5-1	V AC	250	
Rated thermal current		Ithe IEC947-5-1	A	10	
Rated operating current		IEC947-5-1/EN60947-5-1			
Category AC15 B300	le	24 V	A	5	
		125 V	A	3	
		230 V	A	1,5	
Category DC13 Q300	le	24 V	A	2	
		120 V	A	0,6	
		230 V	A	0,2	
Contact resistance		IEC255-7 cat.3	initial value	mΩ	25 max
Short circuit protective devices		IEC269 (IEC947-5-1)			
		gl or gG type fuse		A	3
Pollution degree		IEC947-5-1			3
Actuator protection degree		EN 60529			IP40
Vibration resistance		IEC68-2-6	mm		0,35 ± 15% (10 ÷ 55 Hz ± 1 Hz)
Shock resistance		IEC68-2-27	11 ms	g	30
Mechanical life				cycles	15.000.000
Electrical life		a 250 V AC 1,5A with resistance load cosφ=1		cycles	500.000
		a 250 V AC 1,5A with inductive load cosφ=0,4		cycles	500.000
Terminals		Type			Screw with combined notch and retractable plate (notch Ph. Size 1)
Protection degree		EN60529			IP00
					IP40 with terminal covers
Material					Steel class 8,8/ Galvanized
Max. screw tightening torque			cNm (Kg cm)		120 (12,24)
Max connecting capacity		rigid cable	mm²		2x1,5
		flexible cable	mm²		2x1,5
Max. screw tightening torque			mm²		1x1,5
Max connecting capacity					In accordance with EN50013
Air ambient temperature		operational	°C		-25 ÷ +85 without formation of ice)
Relative humidity		operational			95% max

* between terminals of the same polarity; between terminals with different polarity; between live mechanical parts and ground;
between live mechanical parts and non-current-carrying metal parts

Approvals



IEC EN 60947

M3

•

•

+

- UL approval file E72861
- CSA approval file 026716-0-000
- Approved
- + Conforms to requirements

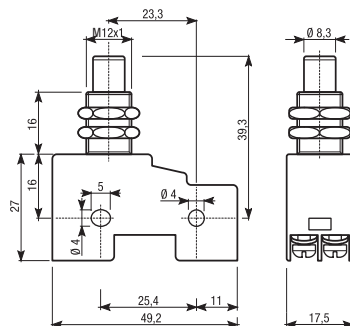


Steel plunger Ø8,3 mm

Contact block	
1NO+1NC snap action	
Weight pack	kg
Pack	pcs

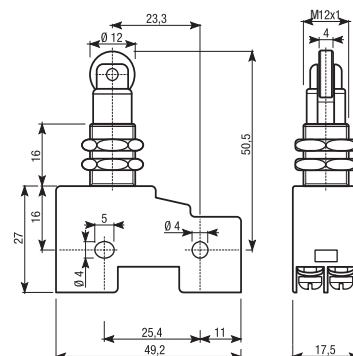
Part no. / Type	Contact travel
ER200380 M304NONC	
0,925	
5	

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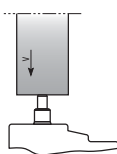


Steel roller plunger

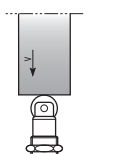
Part no. / Type	Contact travel
ER200390 M305NONC	
1,105	
5	



Drive cam operating parameters



04



05

Min. force (N)	
for tripping	4
for positive opening	16

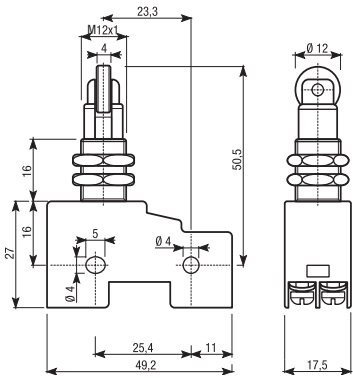


Steel roller plunger turned 90°

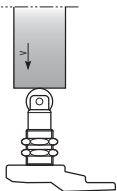
Contact block	
1NO+1NC snap action	
<div><div>1321</div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div>Zb</div><div>1422</div></div>	<div><div></div><div></div></div>
Weight pack	kg
Pack	pcs

Part no. / Type	Contact travel
ER200400 M306NONC	<div><div>01.52.8F7 mm</div><div><div>21-22</div><div>13-14</div><div>21-22</div><div>13-14</div></div><div><div></div><div></div></div><div>0.9</div></div>
1,105	
5	

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Drive cam operating parameters



Min. force (N)	
for tripping	4
for positive opening	16

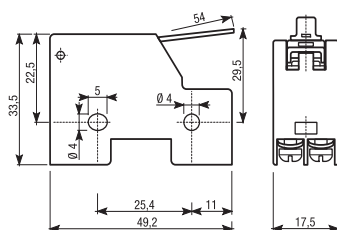


Lever length 54 mm

Contact block	
1NO+1NC snap action	
Weight pack	kg
Pack	pcs

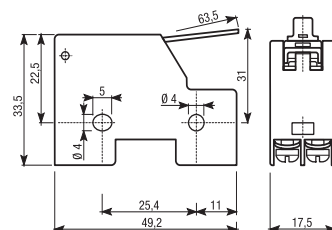
Part no. / Type	Contact travel
ER200420 <i>M308NONC</i>	
0,360	
5	

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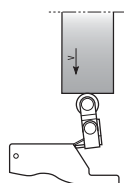


Lever length 63,5 mm

Part no. / Type	Contact travel
ER200430 <i>M309NONC</i>	
0,365	
5	



Drive cam operating parameters



Min. force (cNm)	
for tripping	1,6
for positive opening	12



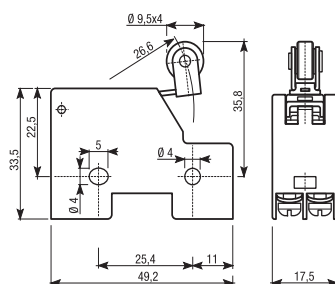
Thermoplastic roller lever length 26,6 mm

Contact block	
1NO+1NC snap action	
<div> <div>13</div> <div>21</div> <div>14</div> <div>22</div> </div> <div> <div>z</div> <div>b</div> </div> <div> <div>→</div> </div>	
Weight pack	kg
Pack	pcs

Part no. / Type	Contact travel
ER200450 M311N0NC	<div> <div>0</div> <div>5</div> <div>9,5F</div> <div>12 mm</div> </div> <div> <div>21-22</div> <div>13-14</div> <div>21-22</div> <div>13-14</div> </div> <div> <div>→</div> <div>2</div> </div>
0,735	
5	

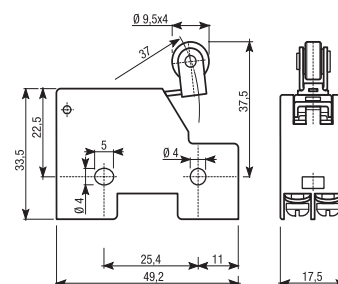
standard article

article on request

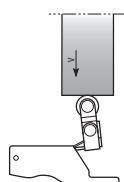


Thermoplastic roller lever length 37 mm

Part no. / Type	Contact travel
ER200470 M313N0NC	<div> <div>0</div> <div>7</div> <div>11,5F</div> <div>14 mm</div> </div> <div> <div>21-22</div> <div>13-14</div> <div>21-22</div> <div>13-14</div> </div> <div> <div>→</div> <div>2,5</div> </div>
0,745	
5	



Drive cam operating parameters



Min. force (cNm)	
for tripping	2
for positive opening	13

Min. force (cNm)	
for tripping	1,6
for positive opening	12

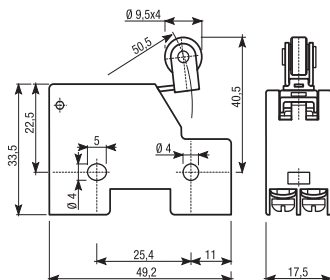


Thermoplastic roller lever length 50,5 mm

Contact block	
1NO+1NC snap action	
Weight pack	kg
Pack	pcs

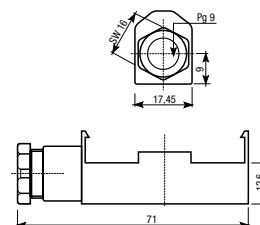
Part no. / Type	Contact travel
ER200480 <i>M314NONC</i>	
0,755	
5	

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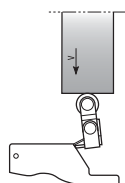


Accessory: terminal cover for M3 series

Part no. / Type
ER200690 <i>M3PROTA</i>
0,195
5



Drive cam operating parameters



Min. force (cNm)	
for tripping	1,3
for positive opening	11



Multiple
position
switches FMV

General characteristics

The **FMV** series vertical mounting multiple position switches, are an important accessory in the automatic production process for monitoring the moving parts of a machine. Due to their limited dimensions in proportion to the functions performed, the multiple position switches offer the ideal solution to command automatic machines. The body of the multiple position switches is made of die cast metal alloy, while the roller plunger actuators are made of tempered steel.

Roller plunger actuators

Steel roller plunger actuators to guarantee maximum performance and reliability



■ Contact blocks with positive opening of the NC contact according to IEC EN 60947-5-1 e VD 0660-206

Cable entry

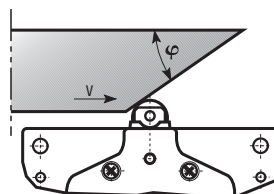
Cable entries with Pg thread, Pg 11 or Pg 13,5 depending on the number of actuators.

Technical information

Operating speed		mm/s	1...1500
Operating frequency		Hz (operations/s)	0.5 max
Insulation resistance		500 V DC MΩ	100
Dielectric insulation		50/60 Hz for 1' *	V AC 2000
Rated insulation voltage	Ui IEC947-5-1	V AC	500
Rated thermal current	Ithe IEC947-5-1	A	10
Rated operational current	IEC947-5-1/EN60947-5-1		
Category AC15 A300	le	24 V A	10
		125 V A	10
		230 V A	6
		400 V A	4
	Category DC13 Q300	24 V A	10
		48 V A	4
		120 V A	1
		250 V A	0,4
Contact resistance	IEC255-7 cat.3	initial value m	25
Short circuit protective devices	IEC269 (IEC947-5-1) gl or gG type fuse	A	10
Pollution degree	IEC947-5-1		3
Protection degree	EN 60529		IP64
Protection against voltage peaks		Metal Class	I
Vibrations resistance	IEC68-2-6	mm	0,35 ±5% (10 ÷ 55 Hz ±1 Hz)
Shock resistance	IEC68-2-27	11 ms g	30
Mechanical life		cycles	30.000.000
Electrical life	a 250 V AC 6A con with resistance load cosφ=1	min cycles	500.000
	a 250 V AC 6A con with inductive load cosφ=0,4	min cycles	500.000
Terminals	type		Screw with combined notch and removable plate Ph notch, size 1 (M3 series)
	screw	M	3,5
	material		Class 8.8 galvanised steel
	max screw tightening force	cNm (Kg cm)	120 (12,24)
	max connecting sections	rigid cable mm²	2x1,5
		flexible cable mm²	2x1,5
	with prod terminal	mm²	1x1,5
	terminal numbering		in accordance with EN50013
Air ambient temperature	operationals	°C	-10 ÷ +70 (without formation of ice)
Relative operating humidity	operationals		95% max

* between live mechanical parts and mass; between live mechanical parts and unpowered mechanical parts

Side actuated roller plunger



Operating cam parameters

φ	V max (m/s)
20°	1,5
30°	1

Tripping forces

Minimum force for tripping	10 N
Minimum force on lateral travel	18 N

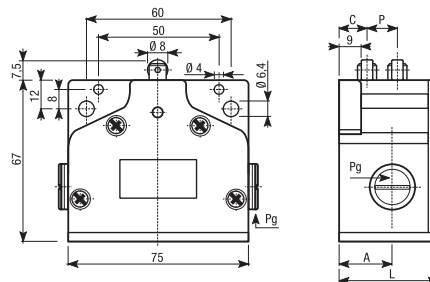
Start 30
Pitch 12



Vertical mounting bracket 100

Contact block	Part no. / Type	No. of roller actuators	Weight (kg)	Pack (pcs)	Travel diagram
snap action 1NO+1NC FM	ER400110 <i>FMV 2R 12 130</i>	2 R	0,421	1	
	ER401310 <i>FMV 3R 12 130</i>	3 R	0,523	1	
	ER402510 <i>FMV 4R 12 130</i>	4 R	0,621	1	

 standard article article on request



Characteristics

Distance between the actuators 12 mm, start 30 mm

Type	No. of actuators	P	C	L	Pg	A
FMV 2R 12 130	2	12	30	54	11	30
FMV 3R 12 130	3	12	30	66	13,5	35
FMV 4R 12 130	4	12	30	78	13,5	35
FMV 3R 12 230	3	12	30	66	13,5	35
FMV 4R 12 230	4	12	30	78	13,5	35

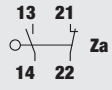
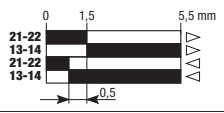
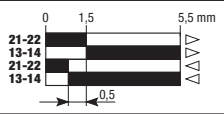
Notes:

- P = Pitch (distance between two actuators)
- C = Distance between bracket and first actuator
- L = Overall dimensions
- A = Distance between bracket and input/output holes

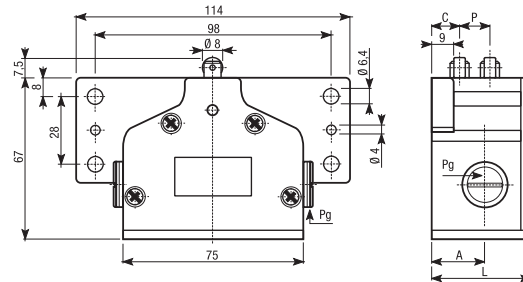
Start 30
Pitch 12



Vertical mounting bracket 200

Contact block	Part no. / Type	No. of roller actuators	Weight (kg)	Pack (pcs)	Travel diagram
snap action 1NO+1NC  FM	ER401410 FMV 3R 12 230	3 R	0,563	1	
	ER402610 FMV 4R 12 230	4 R	0,662	1	

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Characteristics

Distance between the actuators 12 mm, start 30 mm

Type	No. of actuators	P	C	L	Pg	A
FMV 2R 12 130	2	12	30	54	11	30
FMV 3R 12 130	3	12	30	66	13,5	35
FMV 4R 12 130	4	12	30	78	13,5	35
FMV 3R 12 230	3	12	30	66	13,5	35
FMV 4R 12 230	4	12	30	78	13,5	35

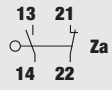
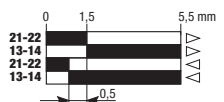
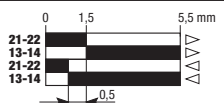
Notes:

P = Pitch (distance between two actuators)
C = Distance between bracket and first actuator
L = Overall dimensions
A = Distance between bracket and input/output holes

Start 30
Pitch 16



Vertical mounting bracket 100

Contact block	Part no. / Type	No. of roller actuators	Weight (kg)	Pack (pcs)	Travel diagram
snap action 1NO+1NC  FM	ER400510 <i>FMV 2R 16 130</i>	2 R	0,470	1	
	ER401710 <i>FMV 3R 16 130</i>	3 R	0,584	1	

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Characteristics

Distance between the actuators 16 mm, start 30 mm

Type	No. of actuators	P	C	L	Pg	A
FMV 2R 16 130	2	16	30	62	11	30
FMV 3R 16 130	3	16	30	78	13,5	35
FMV 3R 16 230	3	16	30	78	13,5	35
FMV 4R 16 230	4	16	30	94	13,5	35

Notes:

P = Pitch (distance between two actuators)

C = Distance between bracket and first actuator

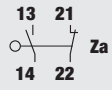
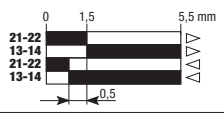
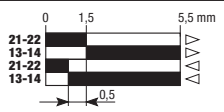
L = Overall dimensions



A = Distance between bracket and input/output holes

Start 30
Pitch 16



Vertical mounting bracket 200

Contact block	Part no. / Type	No. of roller actuators	Weight (kg)	Pack (pcs)	Travel diagram
snap action 1NO+1NC  FM	ER401810 <i>FMV 3R 16 230</i>	3 R	0,629	1	
	ER403010 <i>FMV 4R 16 230</i>	4 R	0,748	1	

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Characteristics

Distance between the actuators 16 mm, start 30 mm

Type	No. of actuators	P	C	L	Pg	A
FMV 2R 16 130	2	16	30	62	11	30
FMV 3R 16 130	3	16	30	78	13,5	35
FMV 3R 16 230	3	16	30	78	13,5	35
FMV 4R 16 230	4	16	30	94	13,5	35

Notes:

P = Pitch (distance between two actuators)

C = Distance between bracket and first actuator


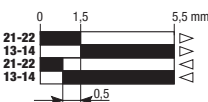
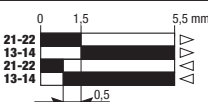
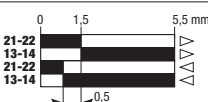
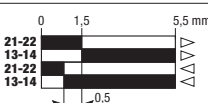
L = Overall dimensions

A = Distance between bracket and input/output holes

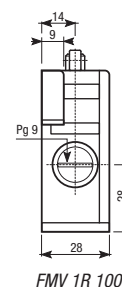
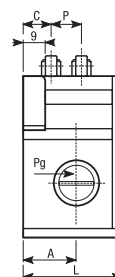
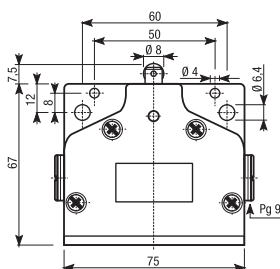
Start 12
Pitch 12



Vertical mounting bracket 100

Contact block	Part no. / Type	No. of roller actuators	Weight (kg)	Pack (pcs)	Travel diagram
snap action 1NO+1NC  FM	ER400090 <i>FMV 1R 100</i>	1 R	0,266	1	
	ER400910 <i>FMV 2R 12 100</i>	2 R	0,363	1	
	ER402110 <i>FMV 3R 12 100</i>	3 R	0,455	1	
	ER403310 <i>FMV 4R 12 100</i>	4 R	0,528	1	

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Characteristics

Distance between the actuators 12 mm, start 12 mm

Type	No. of actuators	P	C	L	Pg	A
FMV 2R 12 100	2	12	12	41	11	22
FMV 3R 12 100	3	12	12	53	13,5	30
FMV 4R 12 100	4	12	12	60	13,5	30

Notes:

P = Pitch (distance between two actuators)

C = Distance between bracket and first actuator


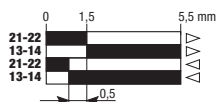
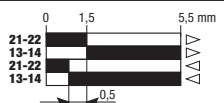
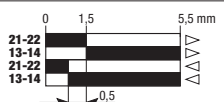
L = Overall dimensions

A = Distance between bracket and input/output holes

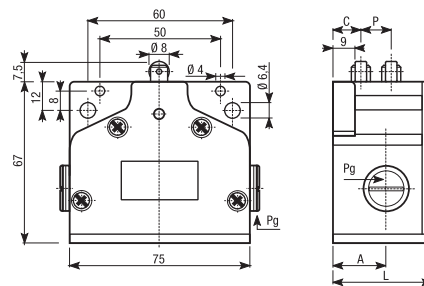
Start 16
Pitch 16



Vertical mounting bracket 100

Contact block	Part no. / Type	No. of roller actuators	Weight (kg)	Pack (pcs)	Travel diagram
snap action 1NO+1NC 	ER401110 <i>FMV 2R 16 100</i>	2 R	0,405	1	
	ER402310 <i>FMV 3R 16 100</i>	3 R	0,521	1	
	ER403510 <i>FMV 4R 16 100</i>	4 R	0,642	1	

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Characteristics

Distance between the actuators 16 mm, start 16 mm

Type	No. of actuators	P	C	L	Pg	A
FMV 2R 16 130	2	16	16	48	11	22
FMV 3R 16 130	3	16	16	64	13,5	30
FMV 4R 16 130	4	16	16	80	13,5	30

Notes:

P = Pitch (distance between two actuators)

C = Distance between bracket and first actuator

L = Overall dimensions

A = Distance between bracket and input/output holes



Contact block

Contact block	Part no. / Type	Description	Weight (kg)	Pack (pcs)		
<div><div>13 21</div><div>14 22</div><div>Za</div></div>	ER409200 FM	Mechanical Contact block	0,025	1		

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Cams

Part no. / Type	Description	Form	Weight (kg)	Pack (pcs)	
ERCN0210 <i>C1N</i>	Tempered grinded steel cam according to DIN 69639	UA	0,025	1	<p>Side view</p> <p>C1N</p> <p>C2N-C3N-C4N-C5N</p> <p>C6N-C7N-C8N-C9N-C10N</p>
ERCN0220 <i>C2N</i>	Tempered grinded steel cam according to DIN 69639	UA	0,030	1	
ERCN0230 <i>C3N</i>	Tempered grinded steel cam		0,033	1	
ERCN0240 <i>C4N</i>	Tempered grinded steel cam	UA	0,033	1	
ERCN0250 <i>C5N</i>	Tempered grinded steel cam	UA	0,044	1	
ERCN0260 <i>C6N</i>	Tempered grinded steel cam	UB	0,062	1	
ERCN0270 <i>C7N</i>	Tempered grinded steel cam according to DIN 69639	UB	0,081	1	
ERCN0280 <i>C8N</i>	Tempered grinded steel cam according to DIN 69639	UB	0,127	1	
ERCN0290 <i>C9N</i>	Tempered grinded steel cam according to DIN 69639	UB	0,150	1	
ERCN0300 <i>C10N</i>	Tempered grinded steel cam according to DIN 69639		0,179	1	

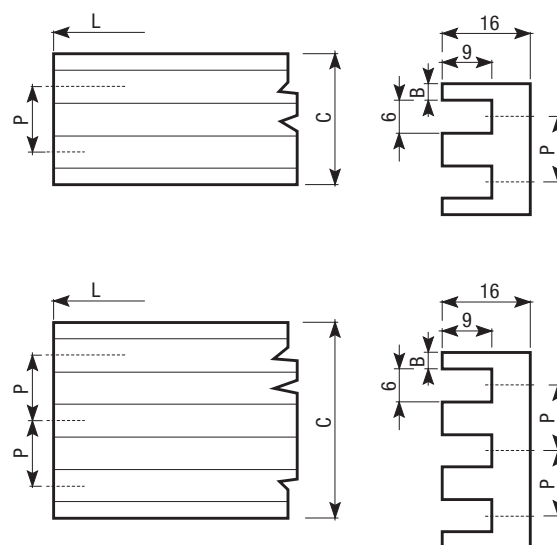
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Characteristics							
Type	L1	L2	Form	Type	L1	L2	Form
C1N	0	25	UA	C6N	25	59,5	UB
C2N	4	29	UA	C7N	40	74	UB
C3N	6,3	31		C8N	63	114,5	UB
C4N	10	35	UA	C9N	100	134	UB
C5N	16	41	UA	C10N	125	147,5	



Assembly profile

Part no. / Type	Description	Weight (kg)	Pack (pcs)	
ERC00010 G2.12.1	Assembly profile in accordance with DIN 69368	0,713	1	
ERC00020 G2.12.2	Assembly profile in accordance with DIN 69368	1,428	1	
ERC00030 G2.16.1	Assembly profile in accordance with DIN 69368	1,080	1	
ERC00040 G2.16.2	Assembly profile in accordance with DIN 69368	2,149	1	
ERC00050 G3.12.1	Assembly profile in accordance with DIN 69368	1,080	1	
ERC00060 G3.12.2	Assembly profile in accordance with DIN 69368	2,147	1	
ERC00070 G3.16.1	Assembly profile in accordance with DIN 69368	1,613	1	
ERC00080 G3.16.2	Assembly profile in accordance with DIN 69368	3,220	1	



☒ standard article ☐ article on request

Characteristics

Type	P	B	C	L
G2.12.1	12	3	24	1000
G2.12.2	12	3	24	2000
G2.16.1	16	5	32	1000
G2.16.2	16	5	32	2000
G3.12.1	12	3	36	1000
G3.12.2	12	3	36	2000
G3.16.1	16	5	48	1000
G3.16.2	16	5	48	2000

Notes:

P = Pitch, distance between two channels
L = Overall rail length
C = Overall rail width
B = Lateral thickness
G2 = Linear cam tray with 2 channels
G3 = Linear cam tray with 3 channels













Power tool
switches

BREMAS

Power tool switches

International standards and approvals

Country	Canada	Germany	Switzerland	Denmark	Norway	Sweden	Finland	Austria	Great Britain	IEC International Electrical Commission
Authority	CSA International	Verband Deutscher Elektrotechniker	Schweizerischer Elektrotechnischer Verein	Danmarks Elektriske Materielkontroll	Norges Elektriske Materielkontroll	Svenska Elektriske Materielkontroll-anstalten	Sähkötekniikan keskus	Österreichischer Verband für Elektrotechnik	British Standards Institution	
Mark of standard	 ⁽¹⁾	 ⁽²⁾							 ⁽²⁾	 ⁽³⁾
LEA202		+	+	+	+	+	+	+	+	+
LFA203		+	+	+	+	+	+	+	+	+
LLA42	•	+	+	+	+	+	+	+	+	+
LLA43	•	+	+	+	+	+	+	+	+	+
LNA45		+	+	+	+	+	+	+	+	+
LAA65		+	+	+	+	+	+	+	+	+
LAA88		+	+	+	+	+	+	+	+	+

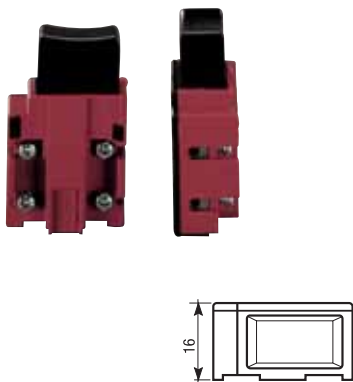
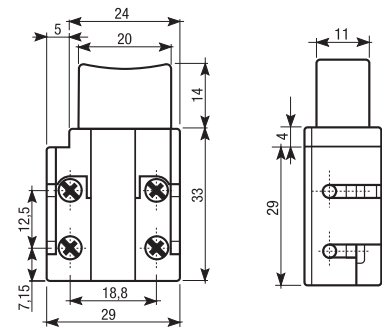
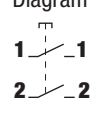
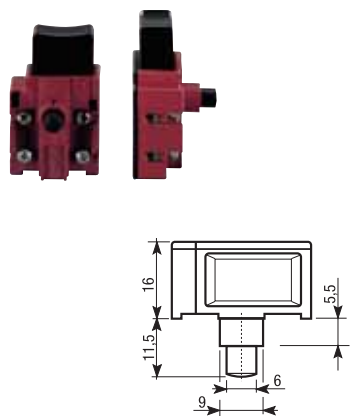
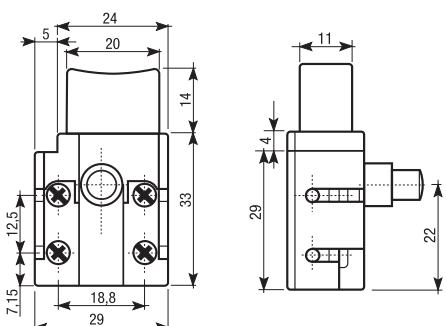
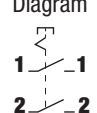
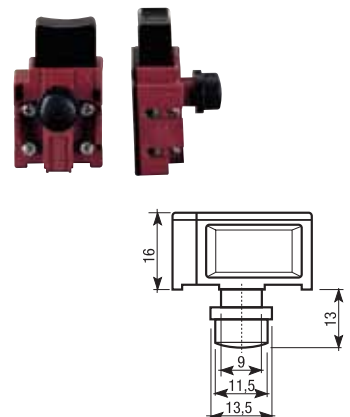
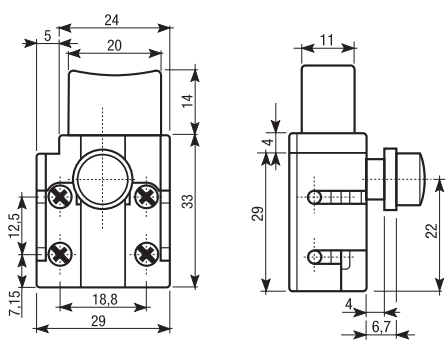
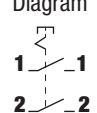
- Approved
- + Conforms to requirements

Notes:

- 1) CSA Approval File 0282121-0-000
- 2) It is not required to bear a symbol but switches must conform to requirements.
- 3) IEC does not operate an approval scheme


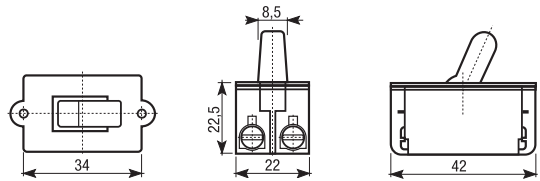
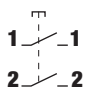
2 pole trigger switches

■ Serie LAA65-LAA88


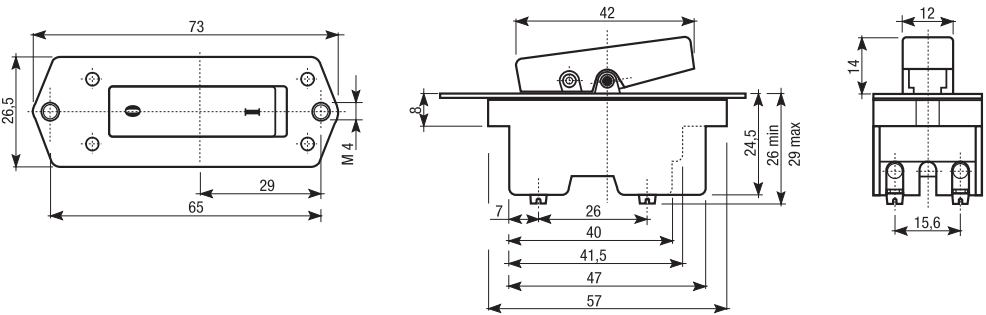

	Part no.	Type	Description	Pack
	VG811400	LAA65301	2 pole switch, command button without lock, 4 screw terminals	10
				Diagram 
	VG813000	LAA65311	2 pole switch, command button with lock in ON Ø 6mm, 4 screw terminals	10
	VG827000	LAA88311	2 pole switch, command button with lock in ON Ø 6mm, 4 silver screw terminals	10
				Diagram 
	VG815500	LAA65331	2 pole switch, command button with lock in ON Ø 11,5mm, 4 screw terminals	10
				Diagram 

2 pole switch with lever

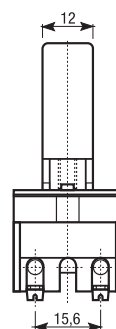
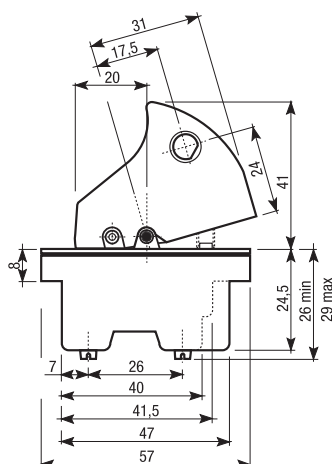
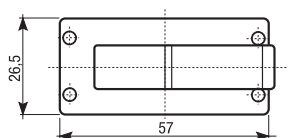
LEA202-LEA202A Series

	Part no.	Type	Description	Pack
	VG842900	LEA202R	2 pole switch with stable lever	10
				
	<p>Diagram</p> 			

LLA42 Series

	Part no.	Type	Description	Pack
	VG859300	LLA422N1	2 pole switch with black lever, fixing holes distance 55mm	10
	VD794500	LLA422A1	2 pole switch with orange lever, fixing holes distance 55mm	10
	VG861900	LLA422N3	2 pole switch with black lever, fixing holes distance 65mm	10
				
	<p>Diagram</p> 			

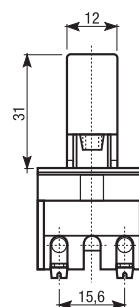
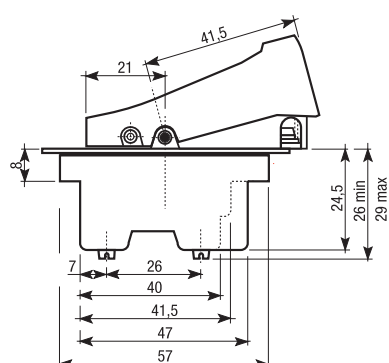
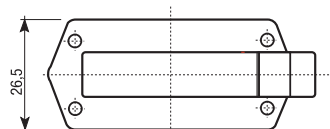
Part no.	Type	Description	Pack
VG862700	LLA423N0	2 pole switch with black unstable lever, without fixing holes, L=31 mm	10



Diagram



VG865000	LLA424N0	2 pole switch with black unstable lever, without fixing holes, L=41,5 mm	10
VG866899	LLA424N0A	2 pole switch with special lever	10


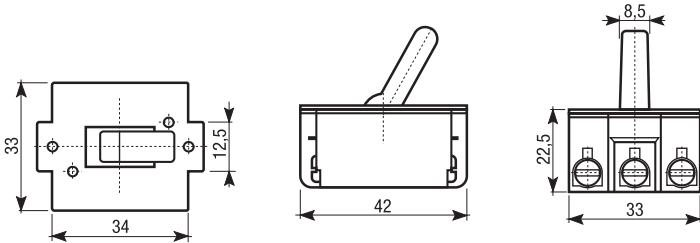

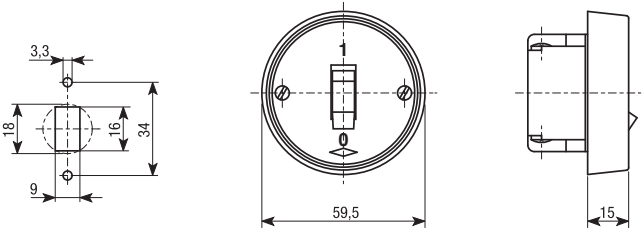


Diagram

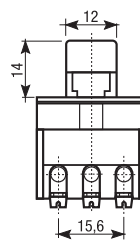
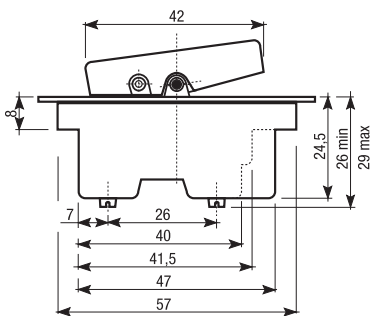
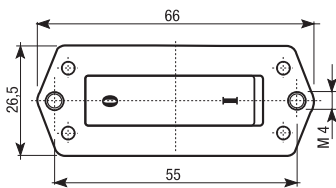


3 pole switch with lever

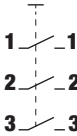
LFA203 Series

	Part no.	Type	Description	Pack
	VG848600	LFA203R	3 pole switch with stable lever	10
	<div>  <div> <p>Diagram</p> <p>1 - 1</p> <p>2 - 2</p> <p>3 - 3</p> </div> </div>			
	VI086100	LFA203RPT	3 pole switch with guarded round grey plate, rear mounting	5
	<div>  <div> <p>Diagram</p> <p>1 - 1</p> <p>2 - 2</p> <p>3 - 3</p> </div> </div>			

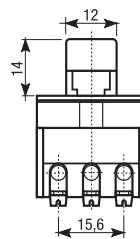
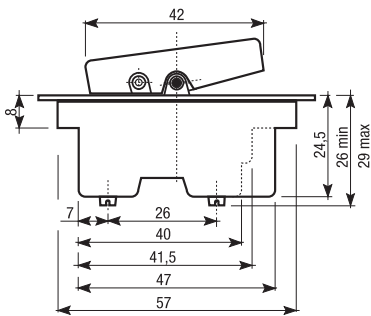
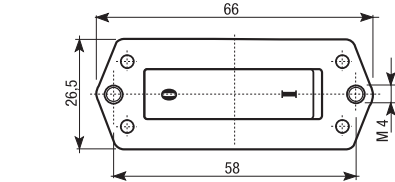
■ LLA43 Series



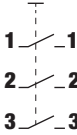
Diagram



Part no.	Type	Description	Pack
VG874200	LLA432N1	3 pole switch with black stable lever, fixing holes distance 55mm, L=26,5 mm	10



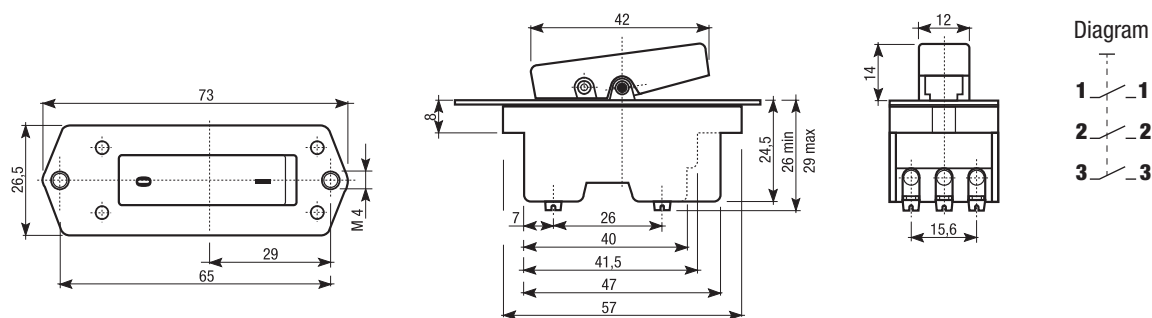
Diagram



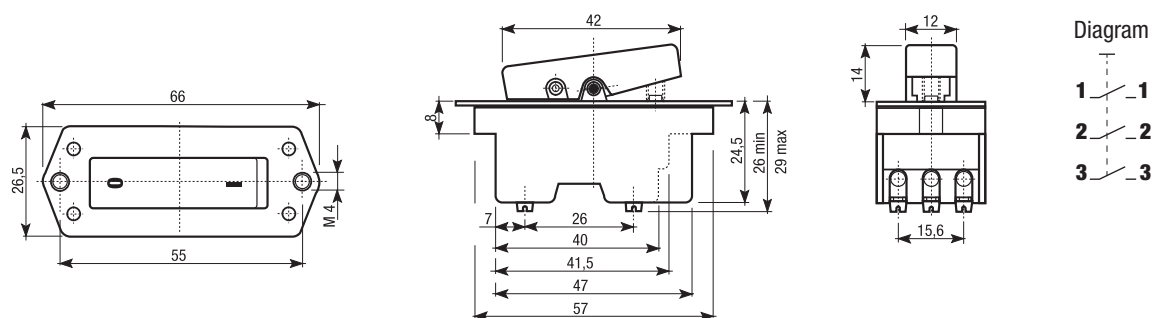
VG875900	LLA432N2	3 pole switch with black stable lever, fixing holes distance 58mm, L=26,5 mm	10
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Serie LLA43

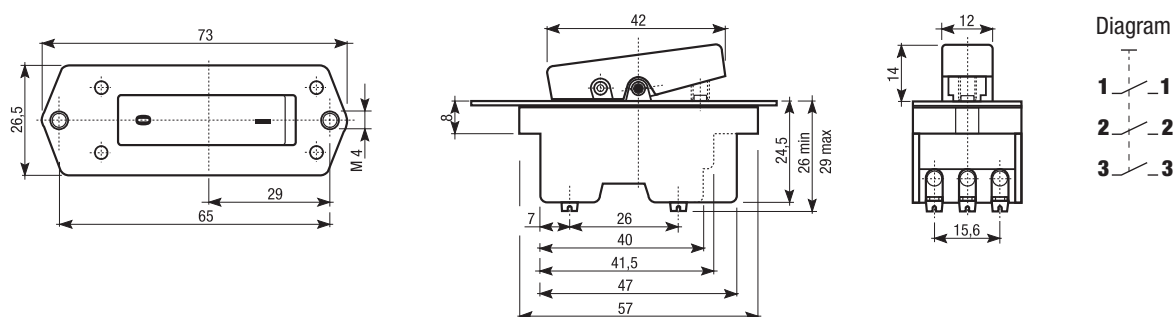
Part no.	Type	Description	Pack
VG876700	LLA432N3	3 pole switch with black stable lever, fixing holes distance 65mm	10

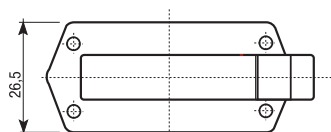


VG943500	LLA438N1	3 pole switch with black unstable lever, fixing holes distance 55mm	10
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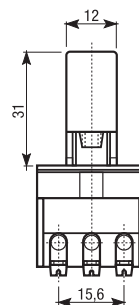
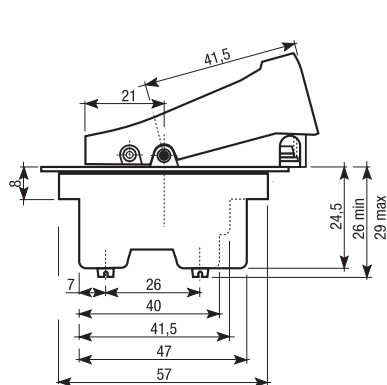
VD877800	LLA438N3	3 pole switch with black unstable lever, fixing holes distance 65mm	10
VD894300	LLA438A3	3 pole switch with orange unstable lever, fixing holes distance 65mm	10





VG882500 LLA439A0 3 pole switch with orange unstable lever, without fixing holes

10



Diagram

1 - 1
2 - 2
3 - 3

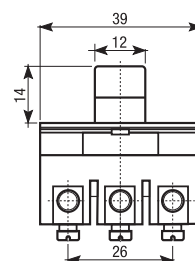
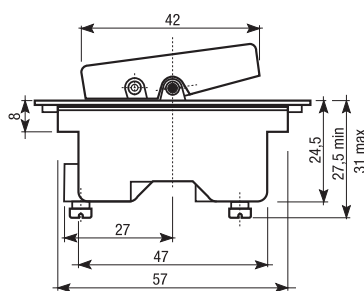
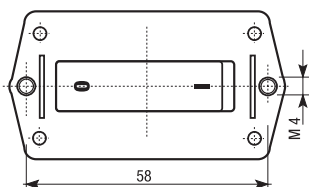
■ Serie LNA45

Part no. Type Description

Pack

VG888200 LNA452N2B 3 pole switch with black stable lever, fixing holes distance 58mm, L=39mm

10


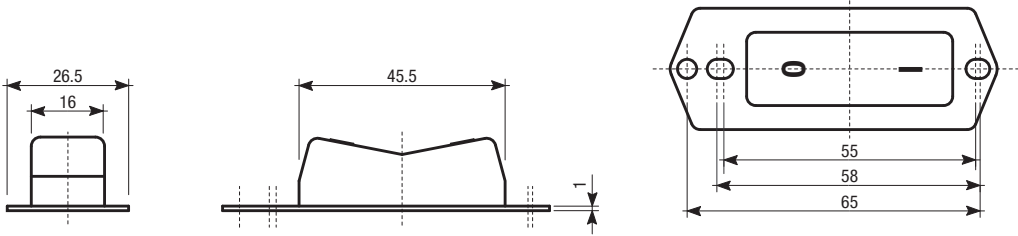


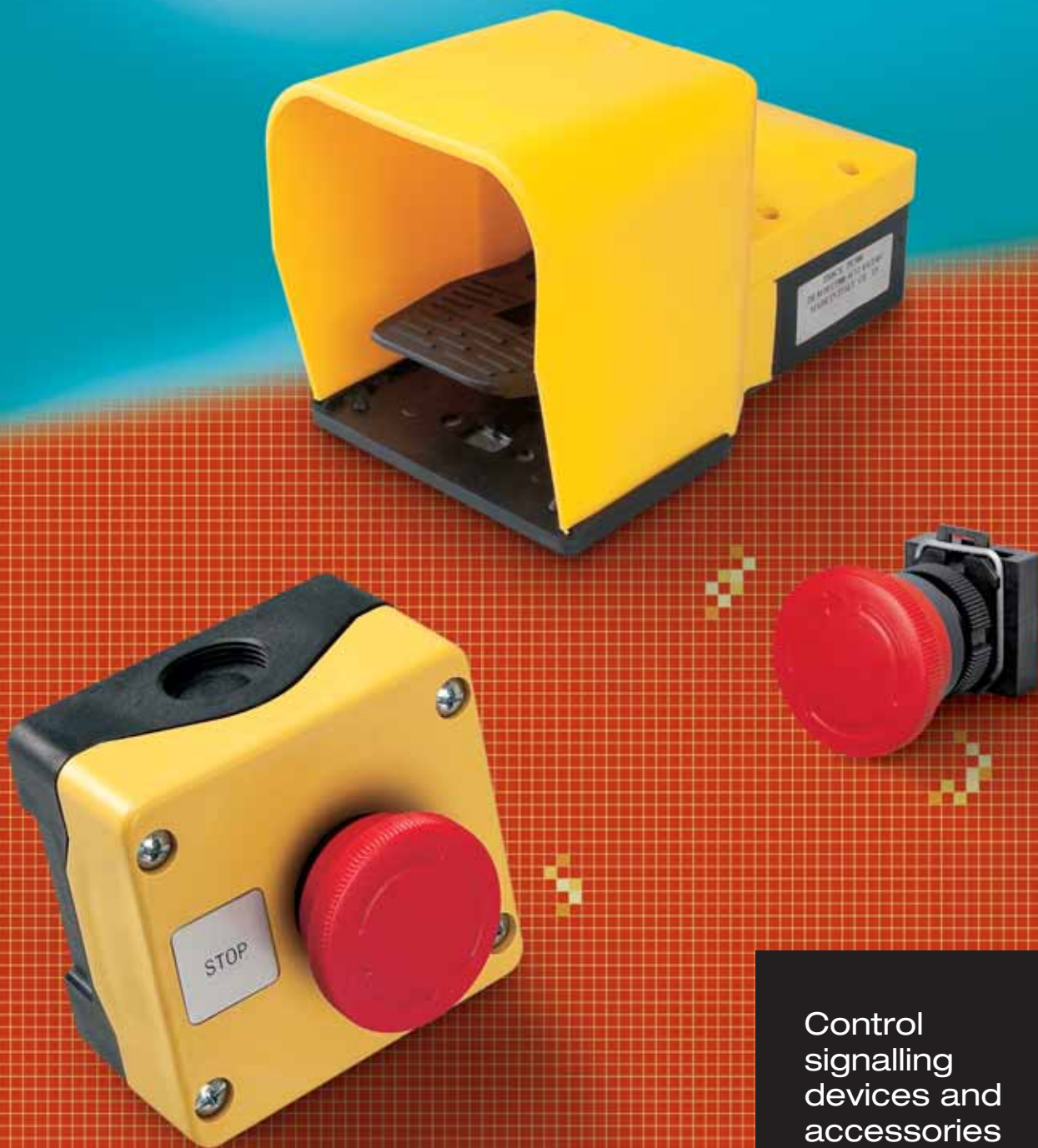
Diagram

1 - 1
2 - 2
3 - 3

Accessories

Dustproof cover

	Part no.	Type	Description	Pack
	PROTG4198	PROTG4198	Dustproof cover	10
				



Control
signalling
devices and
accessories

**General
characteristics**

Our control and signalling units are designed to ensure accuracy, reliability, high mechanical and electrical life. All pushbuttons are certified IP65 (IP66 with optional dustproof cover), while foot switches are IP54. The contact blocks are equipped with maximum 4 contacts with rating up to 10 A each. The NC contacts are made to guarantee positive opening for safety function. The terminal screws with self-raising plate are supplied in open position for an easier and quicker wiring operation.



Technical information

Rated insulation voltage	Ui	IEC947-5-1	V	600	
Rated thermal current	Ithe	IEC947-5-1	A	10	
Rated operational current	IEC947-5-1/EN60947-5-1				
	Category AC15	Ie	230 V	A	6
			400 V	A	4
			500 V	A	3
	Category DC13	Ie	24 V	A	6
			250 V	A	0,4
Insulation resistance	500 V DC			MΩ	100
Contact resistance	IEC255-7 cat. 3		Initial value	mΩ	25
Dielectric insulation	50/60 Hz per 1' *			Vca	2500
Short circuit protective devices	IEC269 (IEC947-5-1)				
	Gl or gG fuse			A	10
Conditional short circuit current	IEC947-5-1			A	100
Pollution degree	IEC947-5-1				3
Command protection degree (EN 60529)	Non-illuminated/illuminated				IP65
	Dual pushbuttons				IP40
	Joystick				IP65
Vibration resistance	IEC68-2-6			mm	0,35 ± 15% (10÷55 Hz ± 1 Hz)
Shock resistance	IEC68-2-27		11 ms	g	30
Mechanical life	Mushroom and coupling pushbuttons and controllers			cycles	500000
	Selector switches			cycles	1000000
	Illuminated pushbuttons			cycles	3000000
Electrical life	at 250 V AC 6 A with resistance load cosφ=1			min cycles	500000
	a 250 V AC 6 A with inductive load cosφ=0,4			min cycles	500000
Distance between contacts	Sow action models			mm	2x2
Terminals	Type				Screw with combined notch and removable plate
	Screw			M	3,5
	Protection degree				IP20
	Material				Steel class 8.8 / 6-8 micron
	Max screw tightening Torque			cNm (kg cm)	120 (12,24)
	Max connection	rigid cable		mm²	2x1,5
		flexible cable		mm²	2x1,5
	With prod terminal			mm²	1x1,5
	Terminal numbering				In accordance with EN50013
	Terminal colouring				Red for NC contacts, green for NO contacts
Air ambient temperature	operationals			°C	-25 ÷ +70
Relative humidity	operationals				95% max
Weather resistance	temperate in accordance with DIN 50014:				23/50
	damp in accordance with DIN 50015:				23/83
	hot humid in accordance with DIN 50015:				40-92
	variable humid in accordance with DIN 50016:				FW24

* between terminals of the same polarity; between terminals of different polarity; between live metal parts and ground; between live and unpowered metal parts.

Approvals



IEC EN 60947

IPFB	•	+
PFB	•	+
C01B-C10B	•	+
C02-C20-C11	•	+

- UL approval file E72861
- CSA approval file 026716-0-000
- Approved
- + Conforms to requirements

- Pull to release Ø40 emergency mushroom



Plastic Ø22 fixing with thermoplastic ring, IP65

Part no. / Type	Description		Pack	Weight pack (kg)
ER502320 IPFB240	Pull to release Ø40 mm red mushroom for rear mounting, fixing with thermoplastic ring		5	0,395

☒ standard article ☐ article on request

when ordering please indicate both the code of the switch and of the contact, because the two products are handled separately



Ø22 fixing with metal screws, IP65

Part no. / Type	Description		Pack	Weight pack (kg)
ER506320 PFB240V	Pull to release Ø40 mm red mushroom for rear mounting, fixing with metal screws		5	0,705

☒ standard article ☐ article on request


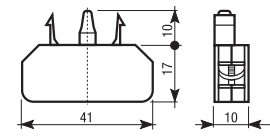

when ordering please indicate both the code of the switch and of the contact, because the two products are handled separately

Contact blocks

Rear mounting



Slow action

Contact block	Part no. / Type	Description		Pack	Weight pack (kg)
	ER520810 <i>C01B</i>	Slow action single Contact block 1NC		5	0,545
	ER520800 <i>C10B</i>	Slow action single Contact block 1NO		5	0,545


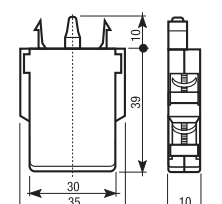


 standard article  article on request

Twin contact blocks

Rear mounting



Slow action


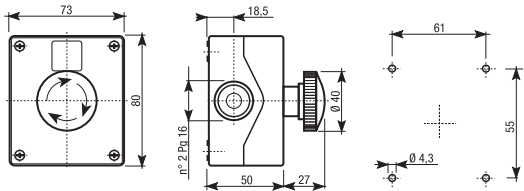
Contact block	Part no. / Type	Description		Pack	Weight pack (kg)
	ER520840 <i>C02</i>	Slow action twin Contact block 2NC		5	0,415
	ER520830 <i>C20</i>	Slow action twin Contact block 2NO		5	0,395
	ER520820 <i>C11</i>	Slow action twin Contact block 1NO+1NC		5	0,405

 standard article  article on request

Thermoplastic control stations




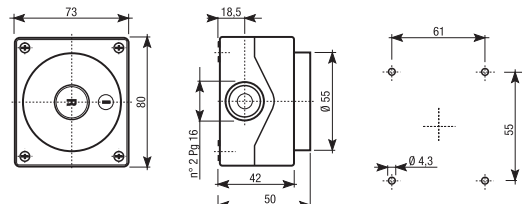
Double insulation control stations

Contact block	Part no. / Type	Description		Pack	Weight (kg)
	ER103550 <i>SC150</i>	Enclosure IP65 with yellow cover, "stop" lever, and rotate to release red mushroom, 1NC Contact block		1	0,194

☒ standard article ☐ article on request



Double insulation stations with control unit

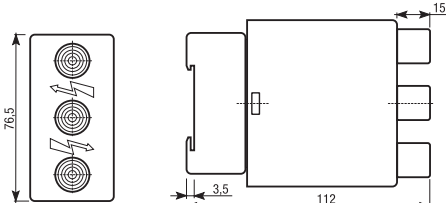
Contact block	Part no. / Type	Description		Pack	Weight (kg)
	ER103010 <i>SC190</i>	Enclosure IP50 for elevator shaft (EN81) with red emergency button, indication of 0 or 1 position and blue reset button		1	0,164

☒ standard article ☐ article on request

Flashing devices



Double insulation enclosures

Part no. / Type	Description		Pack	Weight (kg)
ERC00420 <i>D91</i>	Flashing device 190-500V AC		1	0,184

☒ standard article ☐ article on request



Double insulation enclosures

Part no. / Type	Description		Pack	Weight (kg)
ER100010 SD1	Thermoplastic enclosure for base mounting units, 1 hole, grey cover		1	0,122
ER100060 SD1G	Thermoplastic enclosure for base mounting units, 1 hole, yellow cover		1	0,122
ER100020 SD2	Thermoplastic enclosure for base mounting units, 2 holes, grey cover		1	0,152
ER100030 SD3	Thermoplastic enclosure for base mounting units, 3 holes, grey cover		1	0,172
ER100040 SD4	Thermoplastic enclosure for base mounting units, 4 holes, grey cover		1	0,218

☒ standard article ☐ article on request

50 mm version for base mounting electrical units

(includes contact blocks and lamp holders fixing plate)

Part no.	Cover color
SD1	<input checked="" type="checkbox"/>
SD1G	<input checked="" type="checkbox"/>
SD2	<input checked="" type="checkbox"/>
SD3	<input checked="" type="checkbox"/>
SD4	<input checked="" type="checkbox"/>

Color grey RAL 7031 - color yellow RAL 1012

Dimensions			Drilling template		no. of Ø22 holes
A	B	C	D	E	
73	80	50	61	55	1
73	80	50	61	55	1
106	80	50	94	55	2
139	80	50	127	55	3
172	80	50	160	55	4



Aluminium enclosures

Part no. / Type	Description		Pack	Weight (kg)
ER104000 SM1V	Aluminium enclosure, 1 hole, length 82 mm		1	0,431
ER104010 SM2V	Aluminium enclosure, 2 vertical holes, length 141 mm		1	0,555
ER104020 SM3V	Aluminium enclosure, 3 vertical holes, length 193 mm		1	0,795
ER104030 SM4O	Aluminium enclosure, 4 horizontal holes, length 141 mm		1	0,561
ER104040 SM6O	Aluminium enclosure, 6 horizontal holes, length 193 mm		1	0,786
ER105000 SV1SF	Aluminium enclosure w/o holes length 82 mm		1	0,434
ER105010 SV2SF	Aluminium enclosure w/o holes length 141 mm		1	0,572
ER105020 SV3SF	Aluminium enclosure w/o holes length 193 mm		1	0,811

☒ standard article ☐ article on request

Cover with Ø22 mm holes

Part no.	Type	Color	No. of holes	Dimensions							Drilling template		No. of holes	
				A	B	C	D	E	F	G	H	I	O	V
ER104000	SM 1 V		1	82	82	75	24	1" GAS	-	-	49	67	-	1
ER104010	SM 2 V		2	141	82	75	24	1" GAS	52,5	-	108	67	-	2
ER104020	SM 3 V		3	193	82	75	24	1" GAS	52,5	-	157	64	-	3
ER104030	SM 4 O		4	141	82	75	24	1" GAS	52,5	32	108	67	2	2
ER104040	SM 6 O		6	193	82	75	24	1" GAS	52,5	32	157	64	2	3

Color grey RAL 7031

O = Number of holes for horizontal line

V = Number of holes for vertical line

Cover without holes

Type	Type	Color	Dimensions					Drilling template	
			A	B	C	D	E	H	I
ER105000	SV 1 SF		82	82	75	24	1" GAS	49	67
ER105010	SV 2 SF		141	82	75	24	1" GAS	108	67
ER105020	SV 3 SF		193	82	75	24	1" GAS	157	64

Color grey RAL 7031

Thermoplastic foot switches

(IP54)



Without protection

Contact block

Part no.	Description		Pack	Weight (kg)
PSI00M20	thermoplastic foot switches without protection		1	0,749

☒ standard article ☐ article on request



With protection

(IP54)

Contact block

Part no.	Description		Pack	Weight (kg)
PCI00M20	Thermoplastic foot switches with protection w/o lock		1	1,034
PCI00PIM20	Thermoplastic foot switches with protection with lock		1	1,024

☒ standard article ☐ article on request

Metal foot switches

(IP54)



Without protection

Contact block

Part no.	Description		Pack	Weight (kg)
PSA00M20	Metal foot switches w/o protection and w/o lock		1	1,328

☒ standard article ☐ article on request



With protection

(IP54)

Contact block

Part no.	Description		Pack	Weight (kg)
PCA00M20	Metal foot switches with protection and w/o lock		1	1,969
PCA00PIM20	Metal foot switches with protection and with lock		1	1,981

☒ standard article ☐ article on request

Contact block

Part no.	Description	Pack	Weight pack (kg)
KIT00	Kit second Contact block 00 for foot switches	5	0,343
ELEM00	Contact block 1NO+1NC snap action	5	0,495
ELEM01	Contact block 1NO+1NC slow action	5	0,485

☒ standard article ☐ article on request



Relay
sockets

Relay sockets product family

BREMAS ERSCE socket relays range includes DIN rail sockets, plug-in input/interference suppression modules, securing springs, and the matching marking labels.

The modules are largely compatible with the usual standards on the market and have the major international approvals.

Easy, fast and flexible wiring is guaranteed by different options for cable management and connections: besides

the screw connection method, relay sockets with the spring-cage connection are also available for PCB relays with one or two PDT contacts and for industrial relays with two or four PDT contacts.

Double spring-cage connections guarantee easy operations for bridging of different contacts. Sockets with coil terminals and contact terminals on different sides to keep supply and signal wires separated are also available.





■ Socket for octal and undecal relays

Series ES8÷12

Sockets for octal relays with 2 PDT contacts and for undecal relays with 3 PDT contacts. This family is characterized by large cross section terminals arranged on one level for good accessibility.

■ Socket for industrial relays

Series ES15

Sockets for plug-in industrial relays with 2, 3 or 4 PDT contacts. These sockets are also available with the spring-cage connection method for 2 or 4 PDT versions. Besides traditional 2/2-level sockets there is also a choice of modern "logical" 1/3-level versions with fully opposite coil and contact connections.

■ Socket for PCB relays

Series ES25÷50 and EC25÷50

Narrow 16 mm sockets for PCB relays with one or two contacts. The spring-cage connection technology is available for socket relays with 5 mm pinning for DIN rails. Two options for terminals arrangement: 2/2-level and modern "logical" 1/3-level versions.

■ Slim socket for miniature relays

Series ES62

Ultra slim 6,2 mm sockets for miniature relays, available versions with input voltage from 12 to 230 V AC/DC. All these sockets are available with screw and spring-cage connection methods.

Socket model ES 8

Relay socket type ES 8, for octal REL-OR with 2 PDT, screw connections, for mounting on NS 35/7,5.

Rated current / Rated voltage	12 A / 300 VAC (CSA)
	10 A / 300 VAC (UL)
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 26
Conductor cross section AWG	max 20
Stripping length	7 mm
Screw thread	M3

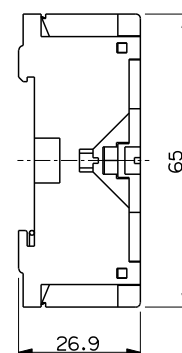
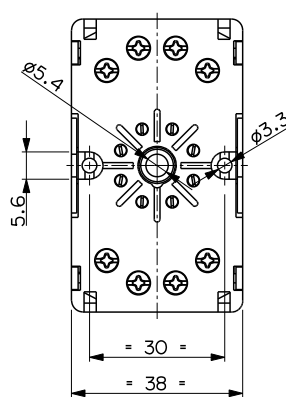
General data

Width	38 mm
Height	65 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES8CNER

Pack. 220 pcs



Socket model ES 11

Relay socket type ES 11, for undecal REL-OR with 3 PDT, screw connections, for mounting on NS 35/7,5.

Rated current / Rated voltage	12 A / 300 VAC (CSA)
	10 A / 300 VAC (UL)
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

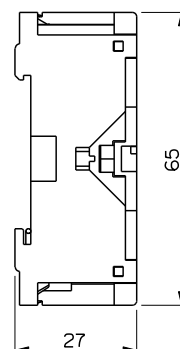
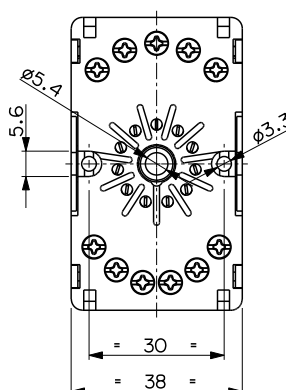
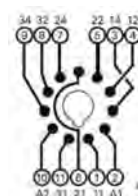
General data

Width	38 mm
Height	65 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES11CNER

Pack. 220 pcs



Socket model ES 11X

Relay socket type ES 11X, for undecal REL-OR with 3 PDT, screw connections, for mounting on NS 35/7,5.

Rated current / Rated voltage	12 A / 300 VAC (CSA)
	10 A / 300 VAC (UL)
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

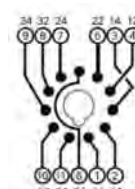
General data

Width	38 mm
Height	70 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES11XCNER

Pack. 220 pcs
MOQ 1100 pcs



Socket model ES 12

Relay socket type ES 12, for undecal REL-OR with 3 PDT and double A2 contact, screw connections, connection facility for input interference suppression modules, for mounting on NS 35/7,5.

Rated current / Rated voltage	12 A / 300 VAC (CSA)
	10 A / 300 VAC (UL)
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

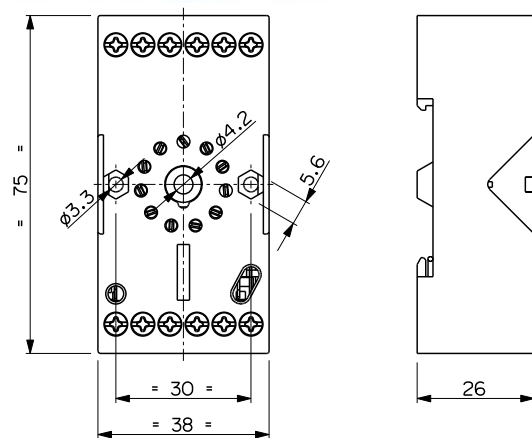
Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

General data

Width	38 mm
Height	75 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES12CNER
Pack. 220 pcs





Sockets for
industrial
relays

Socket model ES 15/2B

Relay socket model ES 15/2B for industrial relay with 2 PDT, screw clamp terminals, connection facility for input interference suppression modules.

Rated voltage	300 VAC
Rated current	10 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

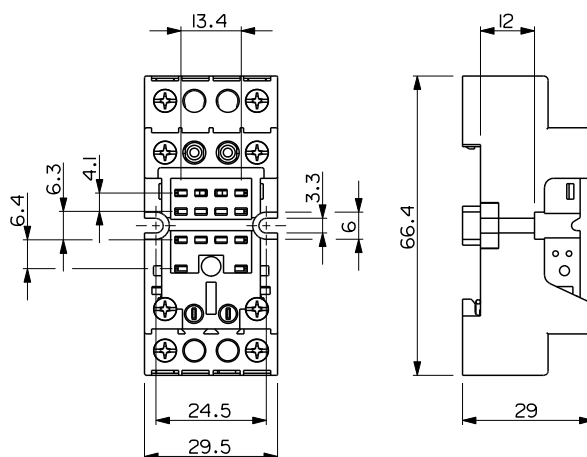
Conductor cross section solid and stranded	1,5 mm ²
Conductor cross section AWG	16
Screw thread	M3

General data

Width	29 mm
Height	66,4 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES152BCNER
Pack. 240 pcs



Socket model ES 15/4B

Relay socket model ES 15/4B for industrial relay with 4 PDT, screw clamp terminals, connection facility for input interference suppression modules.

Rated voltage	300 VAC
Rated current	10 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

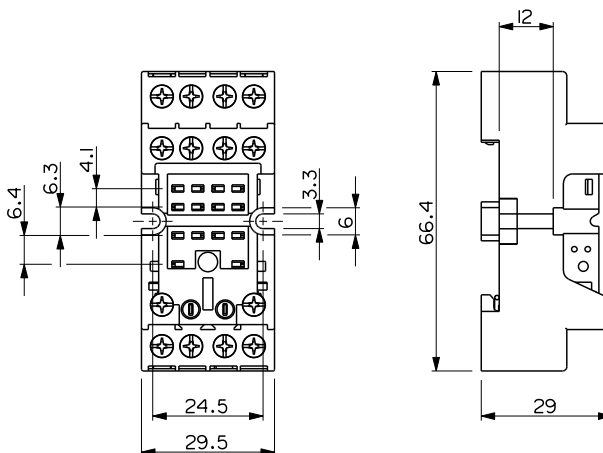
Conductor cross section solid and stranded	1,5 mm ²
Conductor cross section AWG	16
Screw thread	M3

General data

Width	29 mm
Height	66,4 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES154BCNER
Pack. 240 pcs



Socket model ES 15/2N

Relay socket model ES 15/2N for industrial relay with 2 PDT, 2/2 - level, screw connections, connection facility for input interference suppression modules.

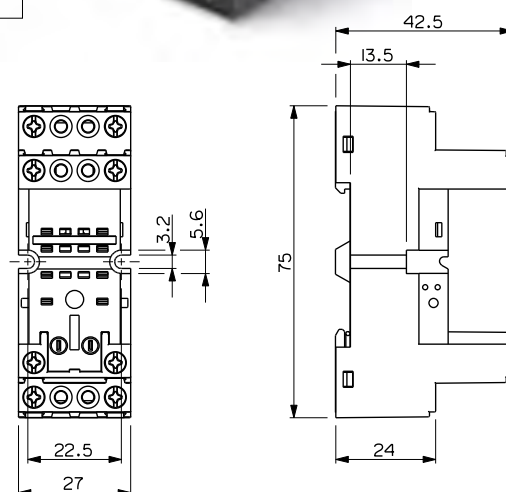
Rated current / Rated voltage	12 A / 300V (CSA)
	10 A / 300V (UL)
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

General data

Width	27 mm
Height	75 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES152NCNER

Pack. 220 pcs
MOQ 1100 pcs

Socket model ES 15/3N

Relay socket model ES 15/3N for industrial relay with 3 PDT, 2/2 - level, screw connections, connection facility for input/interference suppression modules.

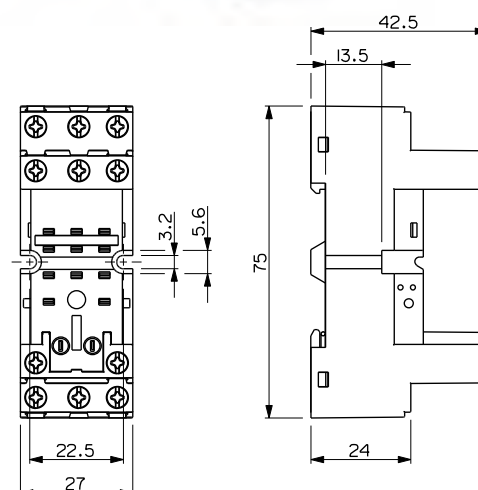
Rated current / Rated voltage	12 A / 300V (CSA)
	10 A / 300V (UL)
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

General data

Width	27 mm
Height	75 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES153NCNER

Pack. 220 pcs
MOQ 1100 pcs

Socket model ES 15/4N

Relay socket model ES 15/4N for industrial relay with 4 PDT, 2/2 level, screw connections, connection facility for input interference suppression modules.

Rated current / Rated voltage	12 A / 300 VAC (CSA)
	10 A / 300 VAC (UL)
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

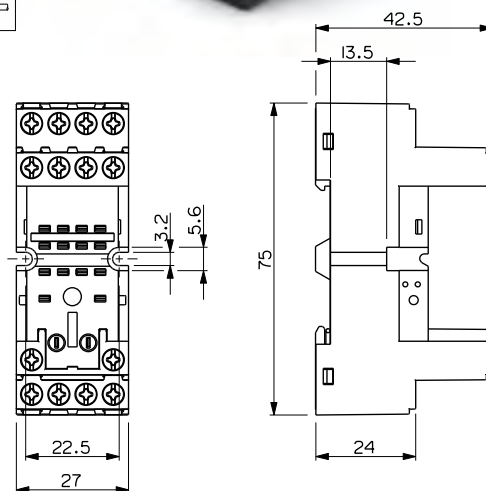
Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

General data

Width	27 mm
Height	75 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES154NCNER
Pack. 220 pcs



Socket model ES 15/2S

Relay socket model ES 15/2S for industrial relay with 2 PDT, 1/3 level, screw connections, connection facility for input interference suppression modules.

Rated voltage	300 VAC
Rated current	12 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

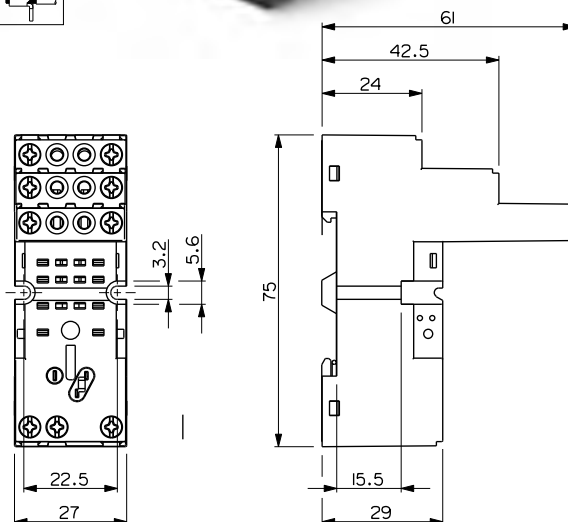
Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

General data

Width	27 mm
Height	75 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES152SCNER
Pack. 220 pcs
MOQ 1100 pcs



Socket model ES 15/3S

Relay socket model ES 15/3S for industrial relay with 3 PDT, 1/3 level, screw connections, connection facility for input interference suppression modules.

Rated voltage	300 VAC
Rated current	12 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

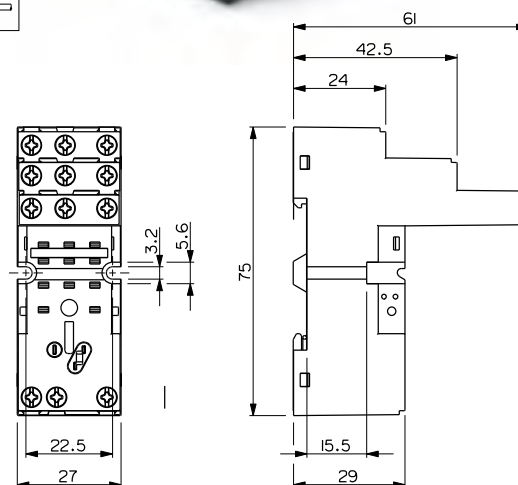
General data

Width	27 mm
Height	75 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES153SCNER

Pack. 220 pcs
MOQ 1100 pcs



Socket model ES 15/4S

Relay socket model ES 15/4S for industrial relay with 4 PDT, 1/3 level, screw connections, connection facility for input interference suppression modules.

Rated voltage	300 VAC
Rated current	12 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

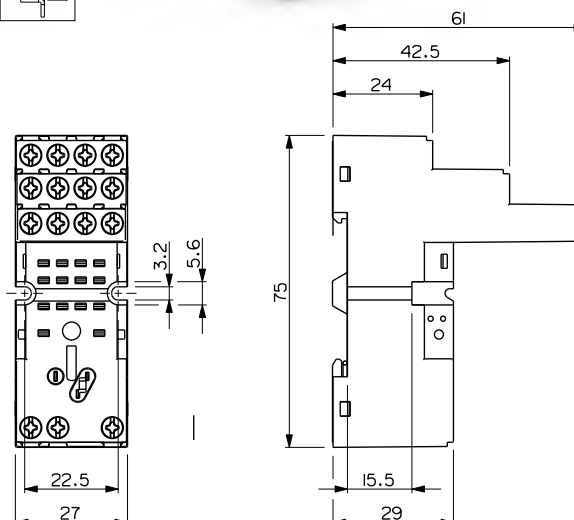
General data

Width	27 mm
Height	75 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES154SCNER

Pack. 220 pcs
MOQ 1100 pcs



Standard article Article on request MOQ: minimum quantity order

Socket model ES 15/2G

Relay socket model ES 15/2G for industrial relay with 2 PDT, 1/3 level, spring-cage connections, connection facility for input interference suppression modules.

Rated voltage	300 VAC
Rated current	10 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 1,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 16
Stripping length	10 mm

General data

Width	31 mm
Height	95 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



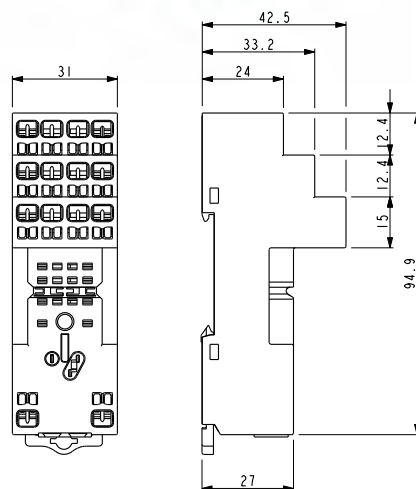
Order code:

ER607480

ES152GCNER

Pack. 150 pcs

MOQ 1500 pcs



Socket model ES 15/4G

Relay socket model ES 15/4G for industrial relay with 4 PDT, 1/3 level, spring-cage connections, connection facility for input interference suppression modules.

Rated voltage	300 VAC
Rated current	10 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ² two wires for terminal
Conductor cross section solid and stranded	max. 1,5 mm ² two wires for terminal
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 16
Stripping length	10 mm

General data

Width	31 mm
Height	95 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



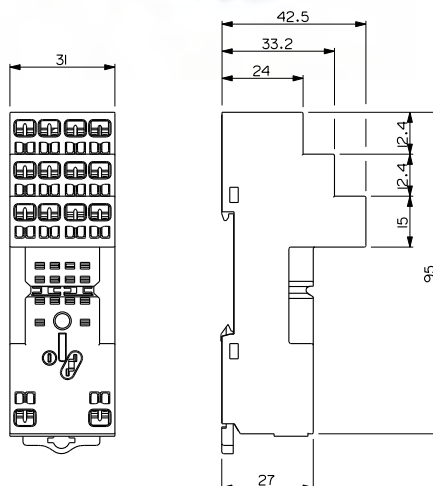
Order code:

ER607400

ES154GCNER

Pack. 150 pcs

MOQ 750 pcs



Standard article

Article on request

MOQ: minimum quantity order



Sockets for
PCB relays

Socket model ES 25

Relay socket Model ES 25, for miniature power relay, miniature switching relay or solid-state relay with 1 PDT and 2,5 mm pinning, 2/2 level design, screw connections, connection facility for input interference suppression modules.

Rated current / Rated voltage	12 A / 300 VAC (CSA)
	10 A / 300 VAC (UL)
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

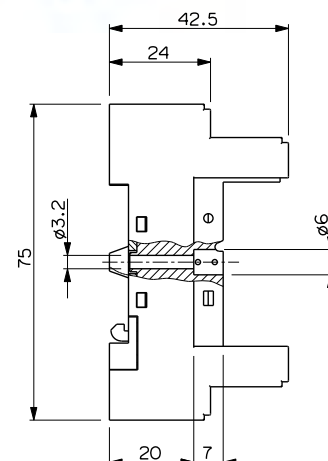
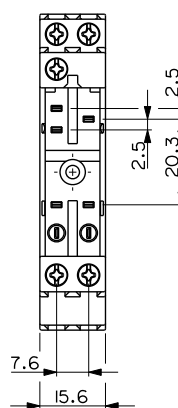
General data

Width	15,6 mm
Height	75,5 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES25CNER

Pack. 240 pcs
MOQ 1080 pcs



Socket model ES 32

Relay socket Model ES 32, for miniature power relay, miniature switching relay or solid-state relay with 1 PDT and 3,2 mm pinning, 2/2 level design, screw connections, connection facility for input interference suppression modules.

Rated current / Rated voltage	12 A / 300 VAC (CSA)
	10 A / 300 VAC (UL)
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

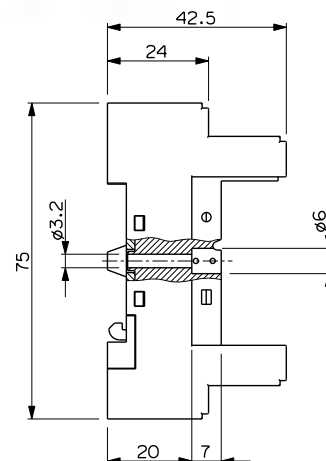
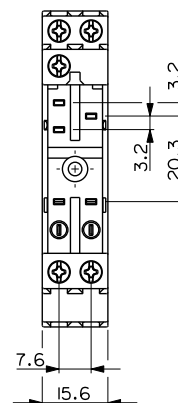
General data

Width	15,6 mm
Height	75,5 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES32CNER

Pack. 240 pcs
MOQ 1680 pcs



Socket model ES 35

Relay socket Model ES 35, for miniature power relay or miniature switching relay or solid-state relay with 1 PDT and 3,5 mm pinning, 2/2 level design, screw connections, connection facility for input interference suppression modules.

Rated current / Rated voltage	12 A / 300 VAC (CSA)
	10 A / 300 VAC (UL)
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

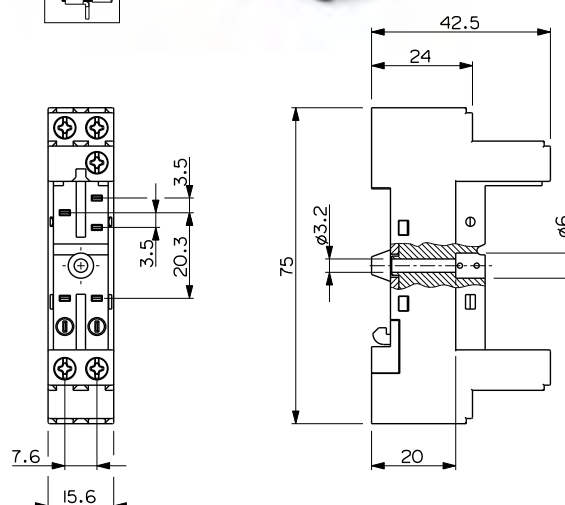
Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

General data

Width	15,6 mm
Height	75,5 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES35CNER
Pack. 240 pcs



Socket model ES 35/3S

Relay socket Model ES 35/3 S, for miniature power relay or miniature switching relay or solid-state relay with 1 PDT and 3,5 mm pinning, 1/3 level design, screw connections, connection facility for input interference suppression modules.

Rated voltage	300 VAC
Rated current	12 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

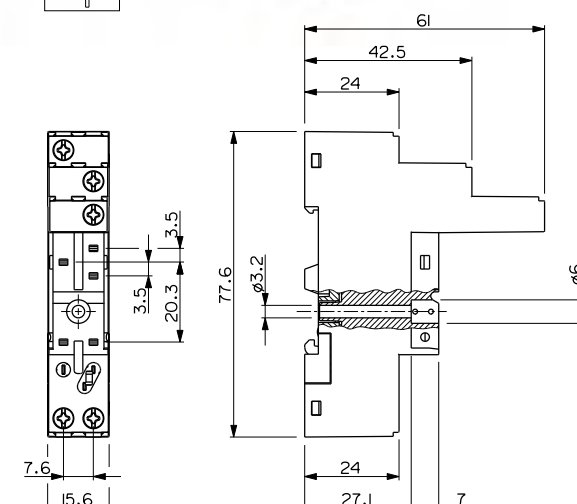
Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

General data

Width	15,6 mm
Height	77,6 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES353SCNER
Pack. 240 pcs
MOQ 1680 pcs



Standard article Article on request MOQ: minimum quantity order

Socket model ES 50

Relay socket Model ES 50, for miniature power relay or miniature switching relay or solid-state relay with 1 or 2 PDT and 5 mm pinning, 2/2 level design, screw connections, connection facility for input interference suppression modules.

Rated current / Rated voltage	12 A / 300 V (CSA) 10 A / 300 V (UL)
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

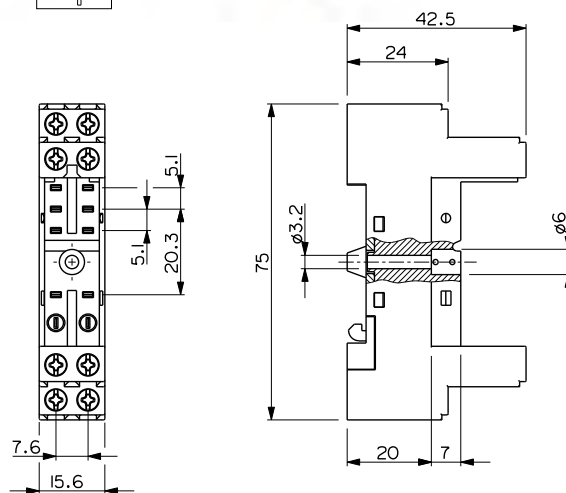
General data

Width	15,6 mm
Height	75,5 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES50CNER

Pack. 240 pcs



Socket model ES 50/3

Relay socket Model ES 50/3, for miniature power relay or miniature switching relay or solid-state relay with 2 PDT and 5 mm pinning, safety isolation among coil contacts and power contacts, 1/3 level design, screw connections, connection facility for input interference suppression modules.

Rated voltage	300 VAC
Rated current	12 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

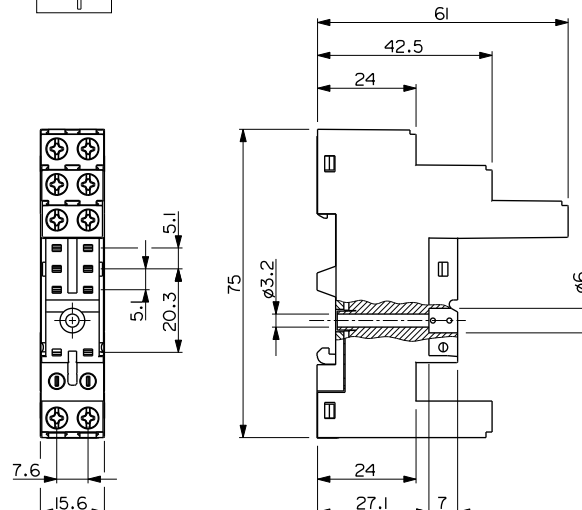
General data

Width	15,6 mm
Height	75,6 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES503CNER

Pack. 240 pcs



Socket model ES 50/3S

Relay socket Model ES 50/3 S, for miniature power relay or miniature switching relay or solid-state relay with 2 PDT and 5 mm pinning, 1/3 level design, screw connections, connection facility for input interference suppression modules.

Rated voltage	300 VAC
Rated current	12 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,5 mm ²
Conductor cross section solid and stranded	max. 2,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 14
Stripping length	7 mm
Screw thread	M3

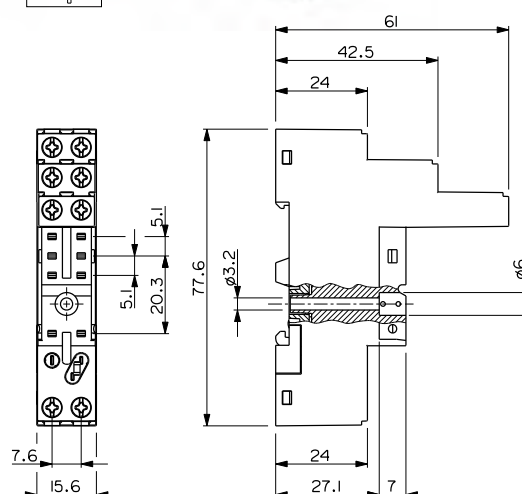
General data

Width	15,6 mm
Height	77,6 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES503SCNER

Pack. 240 pcs
MOQ 1200 pcs



Socket model ES 50/3G

Relay socket Model ES 50/3 G, for miniature power relay or miniature switching relay with or solid-state relay, 2 PDT and 5 mm pinning, 1/3 level design, spring-cage connections, connection facility for input interference suppression modules.

Rated voltage	300 VAC
Rated current	10 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	min. 0,2 mm ²
Conductor cross section solid and stranded	max. 1,5 mm ²
Conductor cross section AWG	min. 20
Conductor cross section AWG	max 16
Stripping length	11 mm

General data

Width	16 mm
Height	97 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C

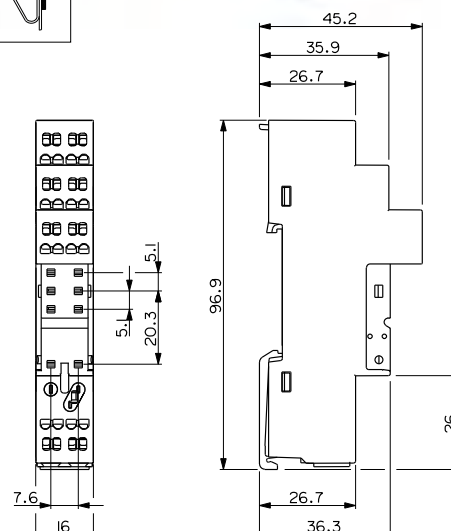


Order code:

ER608000

ES503GCNER

Pack. 270 pcs
MOQ 810 pcs



Standard article Article on request MOQ: minimum quantity order

Socket model EC 50

Relay socket model EC 50, for miniature power relay or miniature switching relay with 2 PDT and 5mm pinning.



EC50CNER

Pack. 600 pcs
MOQ 2400 pcs

Socket model EC 35

Relay socket model EC 35, for miniature power relay or miniature switching relay with 1 PDT and 3,5mm pinning.



EC35CNER

Pack. 600 pcs
MOQ 2400 pcs

Socket model EC 32

Relay socket model EC 32, for miniature power relay or miniature switching relay with 1 PDT and 3,2mm pinning.



EC32CNER

Pack. 600 pcs
MOQ 2400 pcs

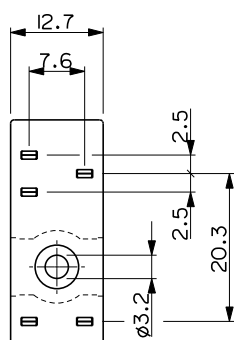
Socket model EC 25

Relay socket model EC 25, for miniature power relay or miniature switching relay with 1 PDT and 2,5mm pinning.

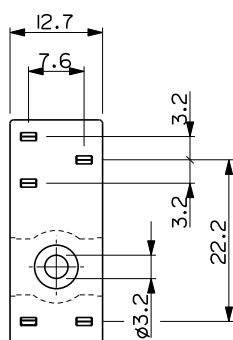


EC25CNER

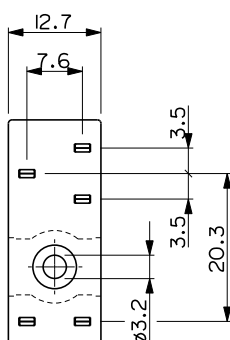
Pack. 600 pcs
MOQ 2400 pcs



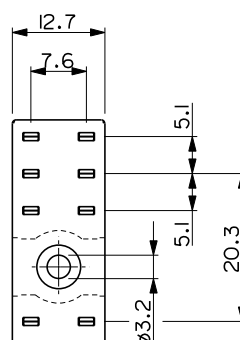
EC 25



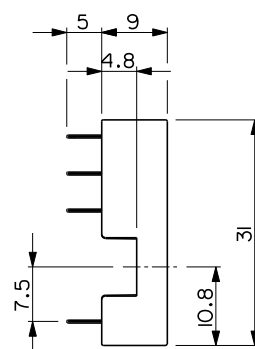
EC 32



EC 35



EC 50





Sockets for
miniature
relays

Socket model ES 62/AS

Relay socket model ES 62/AS for miniature relay with protection and indication circuit, screw connections.

Input voltage	12 VAC/VDC - 24 VAC/VDC
Coil voltage	12 VDC - 24 VDC
Rated current	6 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

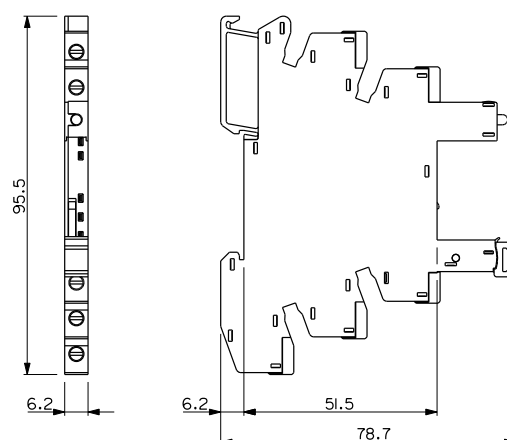
Conductor cross section solid and stranded	max. 2,5 mm ² (AWG 14)
Stripping length	9 mm
Screw thread	M 2,5

General data

Width	6,2 mm
Height	101 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES62ASCNER
Pack. 270 pcs



Socket model ES 62/BS

Relay socket model ES 62/BS for miniature relay with protection and indication circuit, screw connections.

Input voltage	48 VAC/VDC - 60 VAC/VDC
Coil voltage	48 VDC - 60 VDC
Rated current	6 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

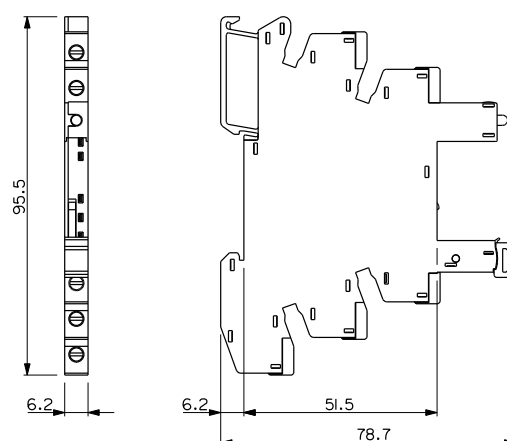
Conductor cross section solid and stranded	max. 2,5 mm ² (AWG 14)
Stripping length	9 mm
Screw thread	M 2,5

General data

Width	6,2 mm
Height	101 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES62BSCNER
Pack. 270 pcs
MOQ 1350 pcs



Socket model ES 62/CS

Relay socket model ES 62/CS for miniature relay with protection and indication circuit, screw connections.

Input voltage	110 VAC/VDC
Coil voltage	60 VDC
Rated current	6 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	max. 2,5 mm ² (AWG 14)
Stripping length	9 mm
Screw thread	M 2,5

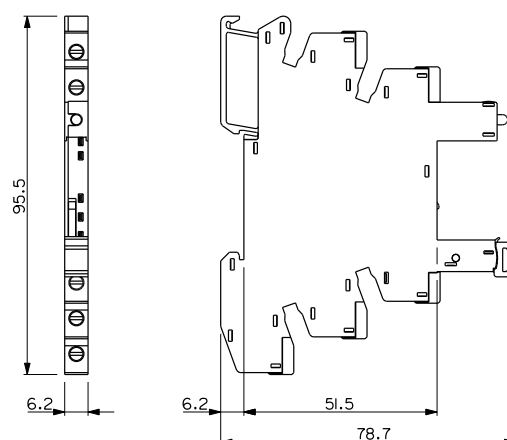
General data

Width	6,2 mm
Height	101 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES62CSCNER

Pack. 270 pcs
MOQ 1350 pcs



Socket model ES 62/DS

Relay socket model ES 62/DS for miniature relay with protection and indication circuit, screw connections.

Input voltage	230 VAC/VDC
Coil voltage	60 VDC
Rated current	6 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	max. 2,5 mm ² (AWG 14)
Stripping length	9 mm
Screw thread	M 2,5

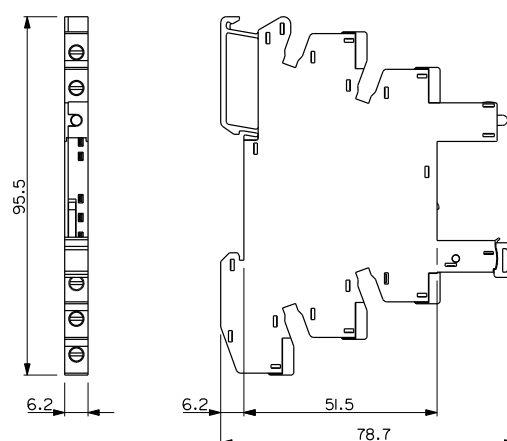
General data

Width	6,2 mm
Height	101 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES62DSCNER

Pack. 270 pcs



Standard article Article on request MOQ: minimum quantity order

Socket model ES 62/AG

Relay socket model ES 62/AG for miniature relay with protection and indication circuit, spring-cage connections.

Input voltage	12 VAC/VDC - 24 VAC/VDC
Coil voltage	12 VDC - 24 VDC
Rated current	6 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

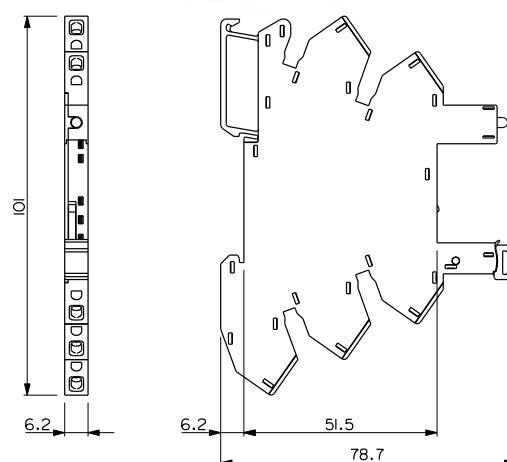
Conductor cross section solid and stranded	max. 1,5 mm ² (AWG 16)
Stripping length	10 mm
Screw thread	M 2,5

General data

Width	6,2 mm
Height	101 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES62AGCNER
Pack. 270 pcs



Socket model ES 62/BG

Relay socket model ES 62/BG for miniature relay with protection and indication circuit, spring-cage connections.

Input voltage	48 VAC/VDC - 60 VAC/VDC
Coil voltage	48VDC - 60VDC
Rated current	6 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

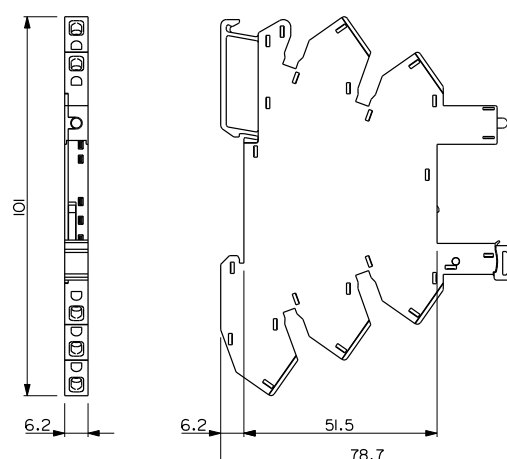
Conductor cross section solid and stranded	max. 1,5 mm ² (AWG 16)
Stripping length	10 mm

General data

Width	6,2 mm
Height	101 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES62BGCNER
Pack. 270 pcs
MOQ 1350 pcs



Socket model ES 62/CG

Relay socket model ES 62/CG for miniature relay with protection and indication circuit, spring-cage connections.

Input voltage	110 VAC/VDC
Coil voltage	60 VDC
Rated current	6 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

Conductor cross section solid and stranded	max. 1,5 mm ² (AWG 16)
Stripping length	10 mm

General data

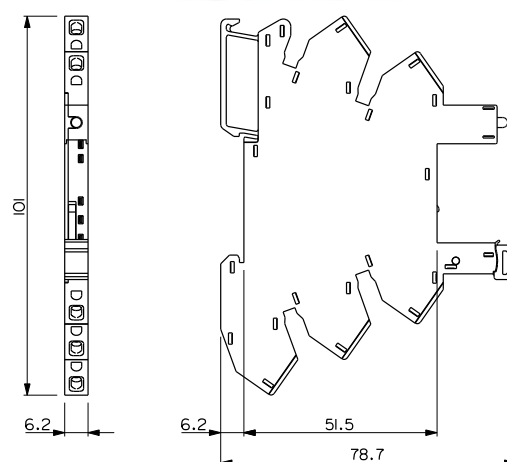
Width	6,2 mm
Height	101 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES62CGCNER

Pack. 270 pcs

MOQ 1350 pcs



Socket model ES 62/DG

Relay socket model ES 62/DG for miniature relay with protection and indication circuit, spring-cage connections.

Input voltage	230 VAC/VDC
Coil voltage	60 VDC
Rated current	6 A
Dielectric strength adjacent contact circuits	2500V
Dielectric strength coil contact circuits	2500V

Connection data

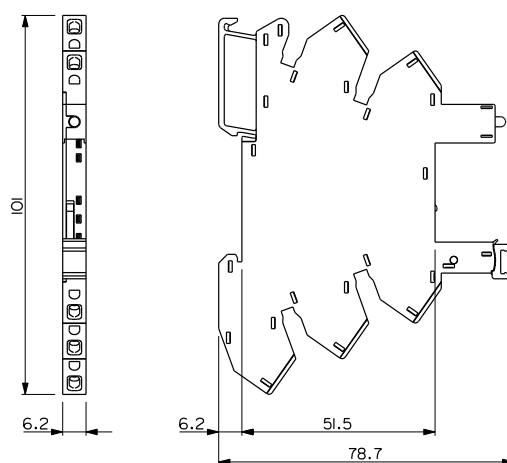
Conductor cross section solid and stranded	max. 1,5 mm ² (AWG 16)
Stripping length	10 mm

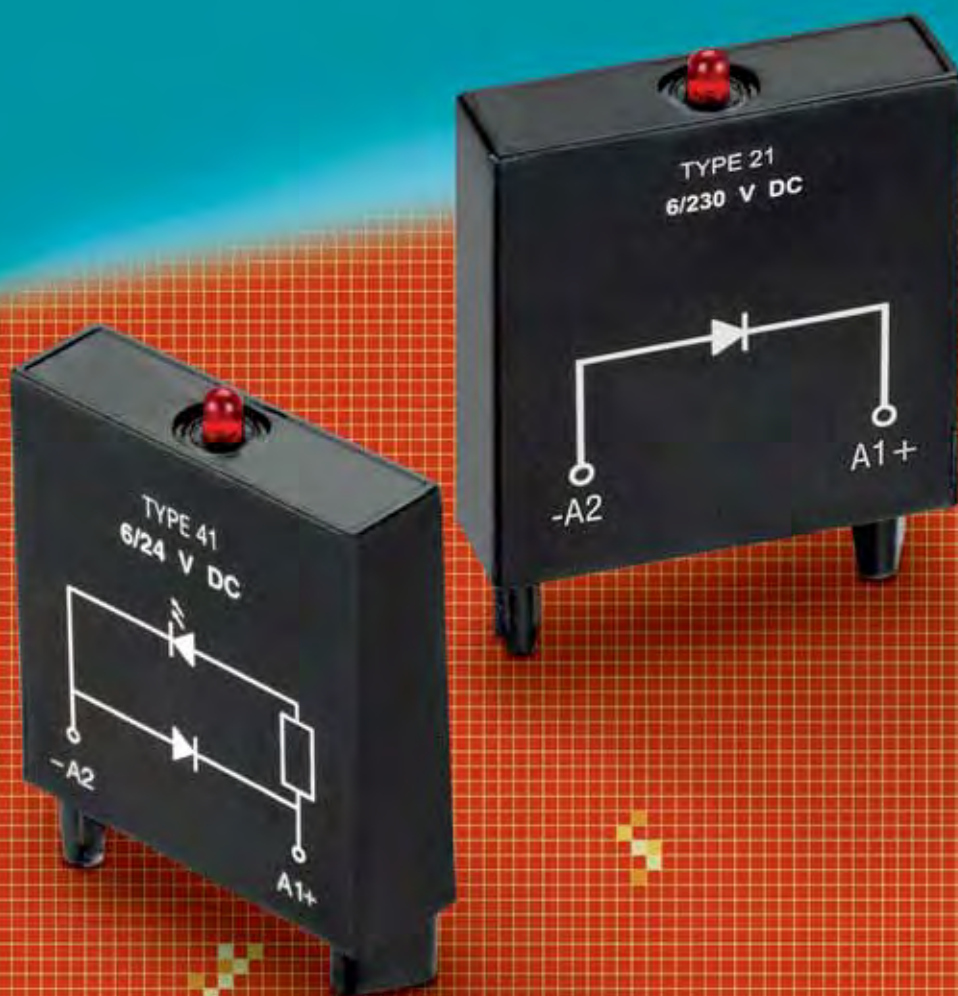
General data

Width	6,2 mm
Height	101 mm
Color	Black
Ambient temperature (operation)	-25 °C ... 85 °C



ES62DGCNER
Pack. 270 pcs





Modules
for octal
and undecal
relay sockets

Modules with protection against polarity inversion

model Type 21

Plug-in module, for mounting on ES9 - ES12 with damping diode.

Electrical data

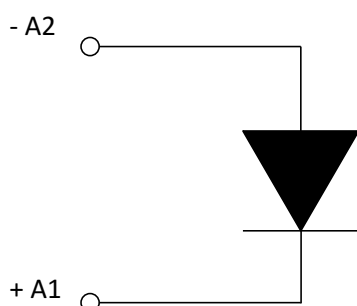
Polarity	A1+ / A2-
Input voltage	6/230 VDC



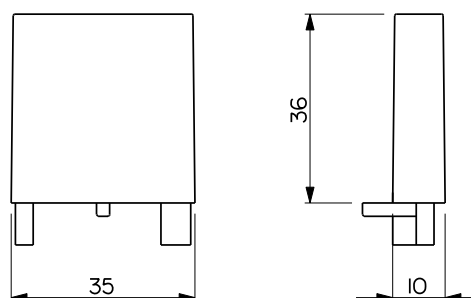
ER702510

Pack. 100 pcs
MOQ 1000 pcs

circuit diagram



dimension



model Type 41

Plug-in module, for mounting on ES9 - ES12 with damping diode and red LED.

Electrical data

Polarity	A1+ / A2-
Input voltage	6/24 VDC



ER702530

Pack. 100 pcs
MOQ 1000 pcs

model Type 41V

Plug-in module, for mounting on ES9 - ES12 with damping diode and green LED.

Electrical data

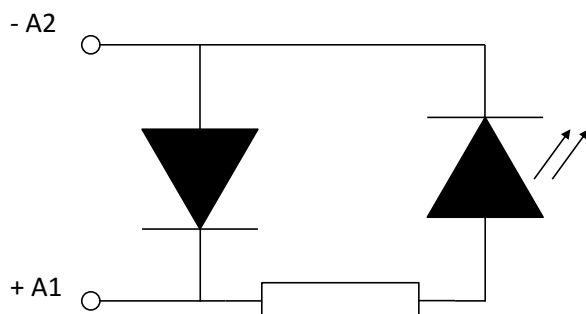
Polarity	A1+ / A2-
Input voltage	6/24 VDC



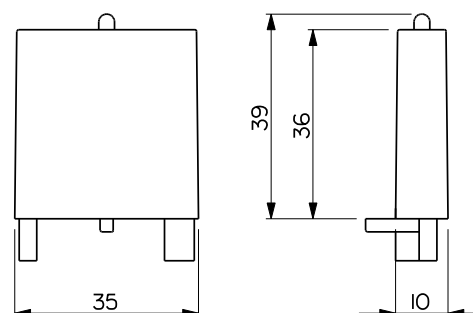
ER705550

Pack. 200 pcs
MOQ 1000 pcs

circuit diagram



dimension



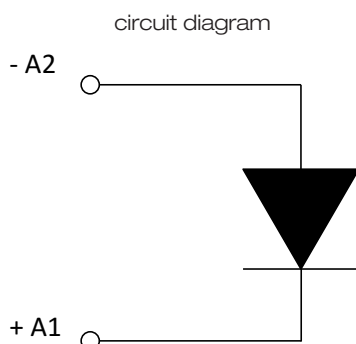


Modules
for industrial
and PCB
relay sockets

Modules with protection against polarity inversion

model Type 22

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with damping diode.



Electrical data

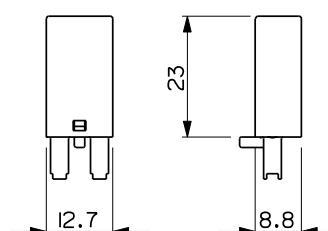
Polarity	A1+ / A2-
Input voltage	6/230 VDC



ER900210

Pack. 200 pcs
MOQ 1000 pcs

dimension



model Type 42

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with damping diode and red LED.

Electrical data

Polarity	A1+ / A2-
Input voltage	6/24 VDC



ER900230

Pack. 200 pcs
MOQ 1000 pcs

model Type 42V

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with damping diode and green LED.

Electrical data

Polarity	A1+ / A2-
Input voltage	6/24 VDC



ER901950

Pack. 200 pcs
MOQ 1000 pcs

model Type 42B

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with damping diode and red LED.

Electrical data

Polarity	A1+ / A2-
Input voltage	24/60 VDC



ER901960

Pack. 200 pcs
MOQ 1000 pcs

model Type 42BV

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with damping diode and green LED.

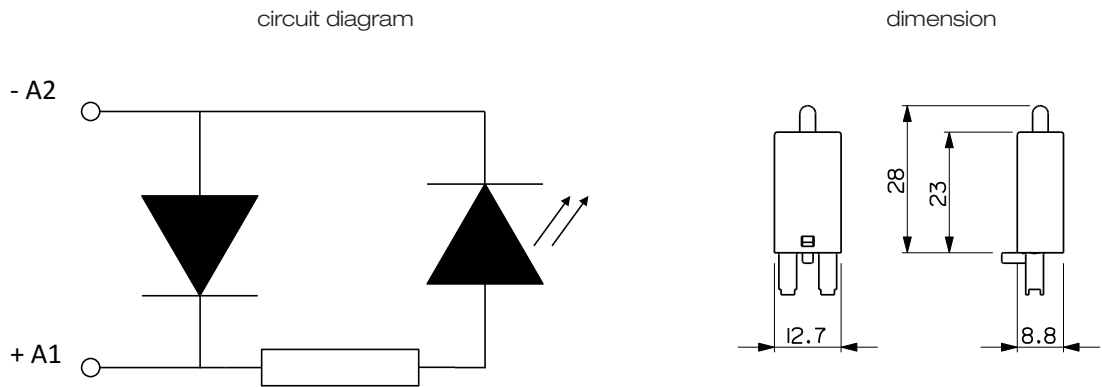
Electrical data

Polarity	A1+ / A2-
Input voltage	24/60 VDC



ER901970

Pack. 200 pcs
MOQ 1000 pcs



Modules with **RC Circuit**

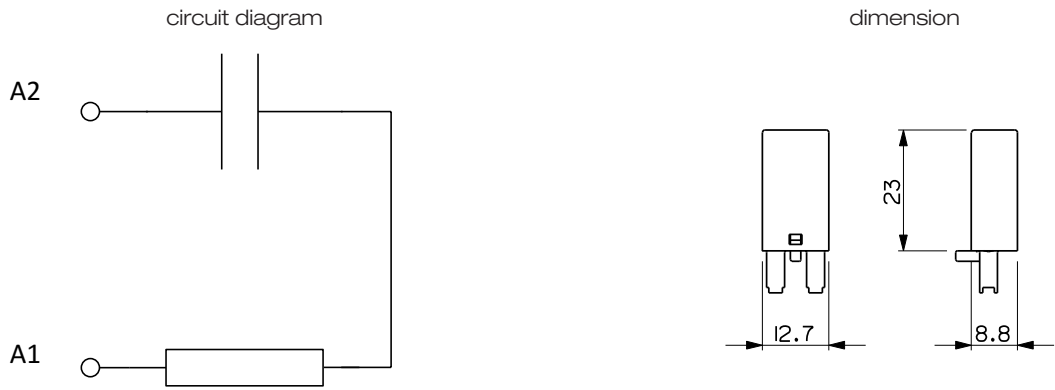
■ model Type 52C

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with RC circuit.

Electrical data	
Polarity	A1+ / A2-
Input voltage	110/230 VAC



ER902020
Pack. 200 pcs
MOQ 1000 pcs



Modules with signaling circuits

model Type 62

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with red LED and without protections against polarity inversion.

model Type 62V

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with green LED and without protections against polarity inversion.

model Type 62B

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with red LED and without protections against polarity inversion.

model Type 62E


Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with red LED and without protections against polarity inversion.

model Type 92


Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with red LED and without protections against polarity inversion.

model Type 92V


Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with green LED and without protections against polarity inversion.

Electrical data	
Polarity	A1+ / A2-
Input voltage	6/24 VACVDC
	


ER900250
Pack. 200 pcs
MOQ 1000 pcs

Electrical data	
Polarity	A1+ / A2-
Input voltage	6/24 VACVDC
	


ER902030
Pack. 200 pcs
MOQ 1000 pcs

Electrical data	
Polarity	A1+ / A2-
Input voltage	24/60 VDC
	


ER900670
Pack. 200 pcs
MOQ 1000 pcs

Electrical data	
Polarity	A1+ / A2-
Input voltage	24/60 VACVDC
	

ER902040
Pack. 200 pcs
MOQ 1000 pcs

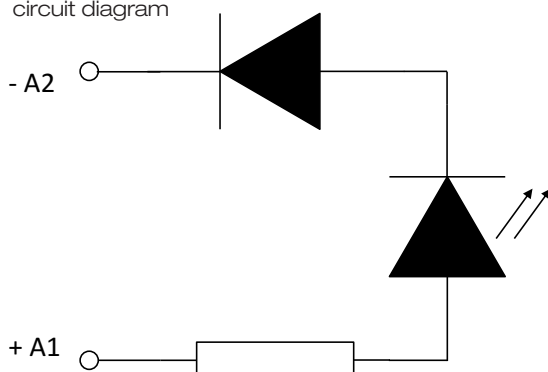
Electrical data	
Polarity	A1+ / A2-
Input voltage	110/230 VACVDC
	

ER900280
Pack. 200 pcs
MOQ 1000 pcs

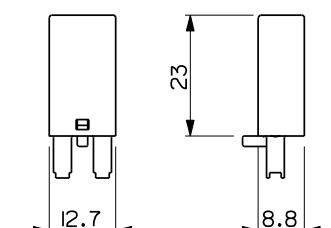
Electrical data	
Polarity	A1+ / A2-
Input voltage	110/230 VACVDC
	

ER902100
Pack. 200 pcs
MOQ 1000 pcs

circuit diagram



dimension



Modules with signaling circuits and varistor

model Type 62C

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with varistor and red LED.

Electrical data

Polarity	A1+ / A2-
Input voltage	6/24 VAC/VDC



ER902060

Pack. 200 pcs
MOQ 1000 pcs

model Type 62CV

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with varistor and green LED.

Electrical data

Polarity	A1+ / A2-
Input voltage	6/24 VAC/VDC



ER902070

Pack. 200 pcs
MOQ 1000 pcs

model Type 62DV

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with varistor and green LED.

Electrical data

Polarity	A1+ / A2-
Input voltage	24/60 VAC/VDC



ER902090

Pack. 200 pcs
MOQ 1000 pcs

model Type 92C

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with varistor and red LED.

Electrical data

Polarity	A1+ / A2-
Input voltage	110/230 VAC/VDC



ER902110

Pack. 200 pcs
MOQ 1000 pcs

model Type 92CV

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with varistor and green LED.

Electrical data

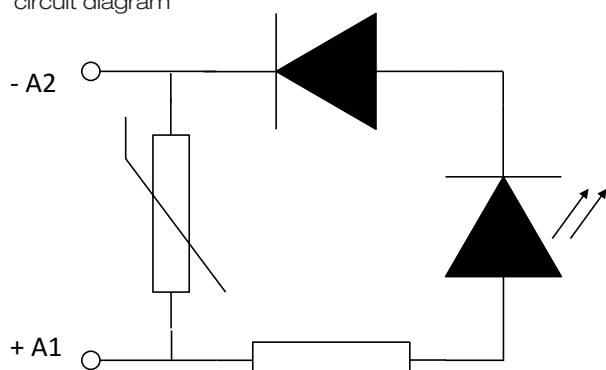
Polarity	A1+ / A2-
Input voltage	110/230 VAC/VDC



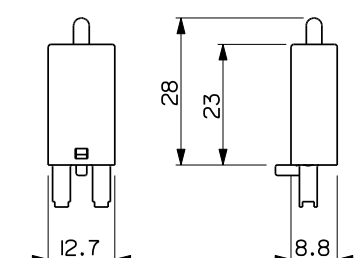
ER902120

Pack. 200 pcs
MOQ 1000 pcs

circuit diagram



dimension



Standard article

Article on request

MOQ: minimum quantity order

Modules with varistor

model Type 72

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with varistor.

Electrical data

Polarity	A1+ / A2-
Input voltage	24 VAC



ER900260

Pack. 200 pcs
MOQ 1000 pcs

model Type 82

Plug-in module, for mounting on ES15/4/2B - ES15/4/2G - ES15/4/3/2N - ES15/4/3/2S ES50 - ES35 - ES32 - ES25 - ES50/3 - ES50/3S - ES35/3S - ES-50/3G with varistor.

Electrical data

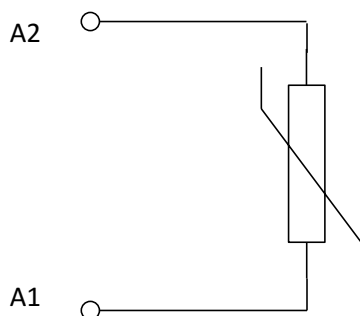
Polarity	A1+ / A2-
Input voltage	230 VAC



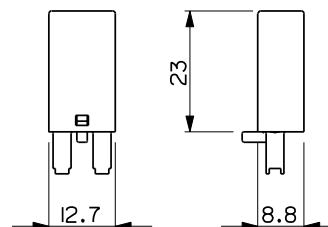
ER900270

Pack. 200 pcs
MOQ 1000 pcs

circuit diagram



dimension





Accessories

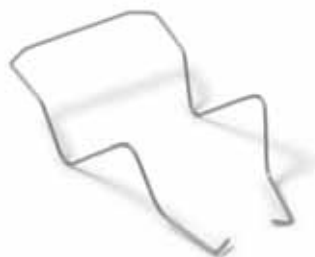
■ model MH 1

Spring for relay securing

Material: X Cr Ni Steel

Relay height: 58-60 mm

Supported sockets: ES8 - ES11 - ES9 - ES12 - ES11/X



ER600180

Pack. 200 pcs

MOQ 1000 pcs

■ model MH 3

Spring for relay securing

Material: X Cr Ni Steel

Relay height: 53-55 mm

Supported sockets: ES8 - ES11 - ES9 - ES12 - ES11/X



ER600870

Pack. 200 pcs

MOQ 1000 pcs

■ model MH 0

Spring for relay securing

Material: X Cr Ni Steel

Relay height: 33,5-35,5 mm

Supported sockets: ES 15 SERIES



ER600220

Pack. 1000 pcs

MOQ 1000 pcs

■ model MH 2

Spring for relay securing

Material: X Cr Ni Steel

Relay height: 28-30 mm

Supported sockets: ES 15 SERIES



ER600860

Pack. 1000 pcs

MOQ 1000 pcs

■ model MP 12-2

Spring for relay securing and releasing

Material: Thermoplastic

Relay height: 25-25,5 mm

Supported sockets: EC 50-35-32-25



ER902250

Pack. 2000 pcs

MOQ 2000 pcs

■ model MP 16-2

Spring for relay securing and releasing

Material: Thermoplastic

Relay height: 15-16,5 mm

Supported sockets: EC 50-35-32-25



ER902260

Pack. 2000 pcs

MOQ 2000 pcs

■ model MP 25-2

Spring for relay securing and releasing

Material: Thermoplastic

Relay height: 25-25,5 mm

Supported sockets: EC 50-35-32-25



ER902270

Pack. 1500 pcs

MOQ 1500 pcs

■ model MH 16-2

Spring for relay securing

Material: X Cr Ni Steel

Relay height: 15-16,5mm

Supported sockets: EC 50-35-32-25



ER902290

Pack. 1000 pcs

MOQ 1000 pcs

■ model MH 25-2

Spring for relay securing

Material: X Cr Ni Steel

Relay height: 25-25,5mm

Supported sockets: EC 50-35-32-25



ER902300

Pack. 1000 pcs

MOQ 1000 pcs

I model MS 28 B

Spring for relay securing and releasing

Material: Thermoplastic

Relay height: 28-30 mm

Supported sockets:

ES15/4-2B, ES 15/4-3-2N, ES15/4-3-2S, ES15/4-5G



ER600240

Pack. 100 pcs

MOQ 1000 pcs

I model MS 28 C

Spring for relay securing and releasing

Material: Thermoplastic

Relay height: 28-30 mm

Supported sockets:

ES15/4-2B, ES 15/4-3-2N, ES15/4-3-2S, ES15/4-5G



ER600690

Pack. 100 pcs

MOQ 1000 pcs

I model MS 35 B

Spring for relay securing and releasing

Material: Thermoplastic

Relay height: 33,5-35,5 mm

Supported sockets:

ES15/4-2B, ES 15/4-3-2N, ES15/4-3-2S, ES15/4-5G



ER600420

Pack. 100 pcs

MOQ 1000 pcs

I model MS 35 C

Spring for relay securing and releasing

Material: Thermoplastic

Relay height: 33,5-35,5 mm

Supported sockets:

ES15/4-2B, ES 15/4-3-2N, ES15/4-3-2S, ES15/4-5G



ER600700

Pack. 100 pcs

MOQ 1000 pcs

■ model MS 16

Spring for relay securing and releasing

Material: Thermoplastic

Relay height: 15-16,5 mm

Supported sockets:

ES50-35-32-25, ES50/3, ES50/3S, ES35/3S, ES50/3G



ER902210

Pack. 200 pcs

MOQ 1000 pcs

■ model MS 16 C

Spring for relay securing and releasing

Material: Thermoplastic

Relay height: 15-16,5 mm

Supported sockets:

ES50-35-32-25, ES50/3, ES50/3S, ES35/3S, ES50/3G



ER903410

Pack. 200 pcs

MOQ 5000 pcs

■ model MS 25

Spring for relay securing and releasing

Material: Thermoplastic

Relay height: 25-25,5 mm

Supported sockets:

ES50-35-32-25, ES50/3, ES50/3S, ES35/3S, ES50/3G



ER902220

Pack. 200 pcs

MOQ 1000 pcs

■ model TR1

Plate for ES15/4-3-2N, ES15/4-3-2S



ER600210

Pack. 1000 pcs
MOQ 1000 pcs

■ model TR

Plate for ES50, ES35, ES32, ES25, ES50/3G, ES50/3S, ES35/3S,
ES15/4-2B, ES15/4-2G



ER902230

Pack. 1000 pcs
MOQ 1000 pcs

■ model PL-64

Print label for ES 62 series



ER629100

Pack. 96 pcs
MOQ 288 pcs

■ model BB-20

Bus bar 20 poles for ES 62 series



ER629200

Pack. 300 pcs
MOQ 300 pcs

■ model BTF-2

Butterfly isolator for ES 62 series



ER629300

Pack. 1000 pcs
MOQ 1000 pcs

All our products are designed, manufactured and tested in accordance with the requirements laid down in the most important national and international specifications and standards.

In most countries, the use of electrical devices is permitted if the manufacturer, upon his own responsibility, guarantees the conformity to the requirements. In other countries, the law lays down compulsory approval procedures.

For better understanding of the subject, the information set out below deals with requirement, conformity, approval.

REQUIREMENTS

This refers to the definitions contained in a standard relating to normal operating conditions, constructional and performance requirements, test procedures, etc. Requirements can be subdivided into:

International Requirements

These are the requirements issued by the following Authorities:

IEC International Electrotechnical Commission
This international commission contains members from the most important industrialised countries. It issues recommendations that are taken as the basis for the single national standards.

CENELEC Comité Européen de Normalisation Electrotechnique
This committee issues the EN standards to which the European countries refer.

National Provisions

These include the standards issued by the following approval bodies:

CEI Comitato Elettrotecnico Italiano, Italy
VDE Verband Deutscher Elektrotechniker, Germany
NF Normes Francaises, France
CSA Canadian Standards Association, Canada
UL Underwriter's Laboratories, USA
BIA-BG Berufsgenossenschaften, Germany
GOST Gosudarstvennyj Standart, Russia

CONFORMITY

Conformity to a standard consists of a declaration made by the manufacturer under his own responsibility to the effect that a specific product comply with all the requirements of the relevant standard.

Recently, the **CE Mark** has been introduced, for which the manufacturer declares that the products comply with the EEC Directives applicable. For the electrical material the EEC Directives applicable are: Low Voltage Directive (**72/23/EEC**, modified to **93/68/EEC**) for the safety of electric products and E.M.C. Directive (**89/339/EEC**, modified to **92/31/EEC** and to **93/68/EEC**) and Electromagnetic Compatibility.

APPROVAL

In some countries, approval of electric materials is compulsory by law.

This consists of a certificate of conformity with the requirements issued not by the manufacturer, but by an independent Testing Laboratory legally recognized. Each approved item has to carry the mark of approval, such as **CSA** or **UL**. For this last, two different levels of acceptance are required:

RECOGNIZED = The device should be marked with the letters **UR** only, and can be used in electrical equipment only by qualified personnel who are fully aware of the limits of use of the product.
The sale of this equipment for general use is not permitted.

LISTED = The device should be marked with the letters **UL** alongside the mark of approval and can be fitted in electrical appliances or sold loose, as it complies with all the requirements in the relevant standard.

Command auxiliaries

A mechanical manoeuvre device which controls the operations of equipment, including signalling, interlocks, and so on. The category therefore includes position and safety switches, microswitches, pushbuttons and pedal switches.

Utilization Category

The standards define a certain number of categories regarding the normal use of switches. Each category of use defines the current and voltage values (expressed as multiples of the rated values) corresponding to the various load closure and switching situations.

Operations cycle

A sequence of two operations with movement from rest to operating position and vice versa.

Auxiliary circuit

All the conductor parts (auxiliary contacts) of a switch designed to be included in a circuit separate from the main one and the switch command circuit. Used for supplementary functions such as signalling, interlocks, measurements, regulation, and so on.

Command circuit

An electrical circuit separate from the main one which handles the closing or opening operations of the switch, or both.

Main circuit

All the conductor parts (main contacts) of a switch included in the circuit that the switch has to open and close.

Admissible short term current

The maximum current the switch is able to support during a specified brief period of time, within the context of the specified conditions of use and behaviour.

Rated operational current I_e

A current that characterises the switch in accordance with the conditions of use, mainly defined on the basis of the rated voltage, category of use and type of service.

Rated thermal current I_{th}

The maximum current that the switch is able to support for a duration of 8 hours without causing the excess temperature of the various parts to exceed the value laid down by the standards.

Time constant or power factor

Ratio between inductance and resistance, that is, $L/R = \text{mH}/\Omega = \text{ms}$.

Clearance

The shortest permitted distance between two conductor parts.

The shortest distance along the surface of an insulating material between two conductive parts.

Creepage distance

The shortest permitted distance between two conductor parts laid on a surface of insulating material. The shortest distance along the surface of an insulating material between two conductive parts.

Electrical durability

The number of manoeuvres under load that the contacts may carry out without maintenance. Depending on the category of use, this is determined by the rated current and voltage. The shortest distance along the surface of an insulating material between two conductive parts.

Mechanical durability

Number of manoeuvres without the movement of current that the switch is able to carry out before the overhaul or replacement of mechanical parts becomes necessary.

Contact element

Fixed or mobile, conductor or insulating, parts of a command auxiliary necessary to close or open a single conductor route of a circuit.

Double switching contact element

A contact element that opens or closes the conductor length of its circuit in two points positioned in series

Electrically separate contact elements

Contacts belonging to the same contact element, but suitably insulated from each other in such a way that they can be connected in electrically separate circuits.

Contact element in exchange

The combination of stabilisation and switching contacts in a contact element.

Position (safety) switches

A command auxiliary whose control system is activated by a moving part of the machine, when this part reaches a predetermined position. Known as a safety switch when the control action switches the power supply circuit of the machine.

Closure or switching power

The highest current that the switch is able to stabilise or switch at a given voltage and in the specific conditions of the circuit and its operation.

Air ambient temperature

This is the air temperature measured around the appliance. For devices installed inside a casing, this is the air temperature outside the casing.

The minimum and maximum values determine the temperature interval within which a device is able to perform in a satisfactory manner.

Rated voltage of the command circuit U_c

The voltage on which the operating and heating characteristics of the command circuit are based.

Rated operational voltage U_e

The voltage that, together with the rated operating current, determines the operating characteristics of the switch, and to which the closure and switching powers refer. The operating voltage cannot be greater than the insulation voltage.

Rated insulation voltage U_i

The voltage to which the insulation strength tests, escape lines and the distances in air typical of the switch refer.

Insulation resistance

The IEC 664 standard lays down four correlation criteria for the impulse voltage. It is important to determine the correct correlation for the user in accordance with the application and select the position switch as a result. The manufacturer indicates the impulse voltage (U_{imp}) that can be supported among the information set out on the product plate.

Connector terminals

Mechanical tests carried out using the maximum connection sections of the terminals to determine the mechanical resistance and safety of the terminal connection holding. The terminals are identified in accordance with the EN 50013 standards.

Contact element diagrams

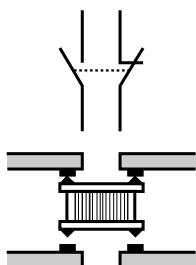
There are various types of contact element classified in accordance with the CEI EN 60947-5-1 standard, with different technical features and consequently different, more or less safe, electrical properties.

Breakage power

This corresponds to the maximum admissible electrical load. A simple name (such as A300) informs the user on the features of the switch depending on its category of use.

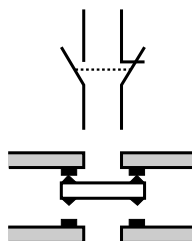
Forced NC contact opening (IEC 947-5-1, section 3)

In the case of switches used in command circuits with safety functions, the safe opening of the NC contacts is required (see IEC 204 and EN 60204). The forced opening of the NC contacts has to be confirmed with an impulse voltage test (2500 V).



Zb Form

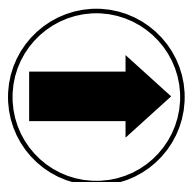
Double switching exchange contact element with four terminals. (The two mobile contacts are electrically separated).



Other 4 terminal forms:

Za Form

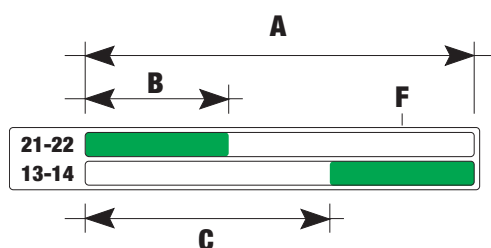
Dual switching exchange contact element with four terminals. (The contacts have the same polarity).



Forced or positive opening symbol

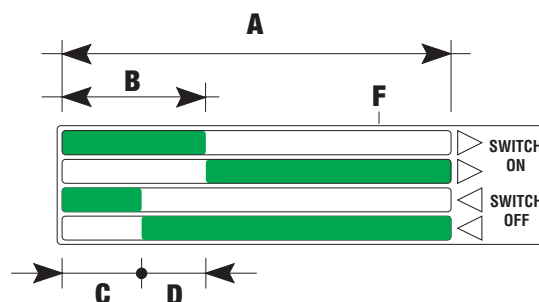
The term positive opening means the complete and safe separation of the closed contacts (NC), as a result of the specific movement of the driver by means of inelastic elements. The positive opening travel is indicated by the manufacturer.

Example of travel diagram, slow action element



A = maximum driver travel in mm or degrees
B = drive travel up to the opening of the NC 21-22 command
C = drive travel up to the closure of the NO 13-14 command
F = total travel necessary for the complete forced opening

Example of travel diagram, fast action element



A = maximum driver travel in mm or degrees
B = drive travel up to the opening of the NC 21-22 command
C = drive travel up to the closure of the NO 13-14 command
D = B-C: differential travel
F = total travel necessary for the complete forced opening

Utilization with alternating current

Power equipment, switchgear and controlgear according to EN 60947-4 and IEC 947-4

(contactors, equipment for starting of motors)

- AC1** Connection or disconnection of non-inductive or slightly inductive loads (e.g. resistance furnaces).
This equipment should have a $\cos\varphi$ no less than 0,95.
- AC2** Starting, counter-current braking and switching off of slip-ring motors. The contactor makes and breaks the starting current, which can reach $1,5 \div 3$ times the rated current of the motor.
- AC3** Starting and switching off of squirrel-cage motors during running. The contactor makes the starting current, which can reach $4 \div 8$ times the rated current of the motor, and breaks the rated current absorbed by the motor.
The switching conditions are easy, as the voltage at the motor terminals is approximately $20 \div 30\%$ of the supply voltage.
- AC4** Starting, plugging and inching of squirrel-cage motors. The contactor makes and breaks the starting current, which can reach $4 \div 88$ times the rated current of the motor.
The switching conditions are severe, as the voltage at the motor terminals can be equal to that of the supply voltage.
- AC5a** Switching of electric discharge lamp controls.
- AC5b** Switching of incandescent lamps.
The peaks of current at the connection of the lighting circuits and the power factor are function of the type of lamp, the wiring system and the presence or not of the compensation.
- AC6a** Switching of transformers.
High peaks of current characterize the commutation of transformers during the connection phase, due to the phenomenon of magnetization.
- AC6b** Switching of capacitor banks.
High peaks of current characterize the commutation of capacitor banks during the connection phase, due to the presence of harmonic currents.

Power equipment, switchgear and controlgear according to EN 60947-3 and IEC 947-3

(switches, disconnectors, switch-disconnectors, fuse-combination units)

- AC20** Connecting and disconnecting under no-load conditions..
- AC21** Switching of resistive loads including moderate overloads.
- AC22** Switching of mixed resistive and inductive loads, including moderate overloads.
- AC23** Switching of motor loads or other highly inductive loads.

Control circuit devices and switching elements according to EN 60947-5 and IEC 947-5

(control relays, auxiliary contacts, units for control and signalling)

- AC12** Control of resistive loads and solid-state loads with isolation by optocouplers.
- AC13** Control of solid state loads with transformer isolation.
- AC14** Control of small electromagnetic loads ($\leq 72\text{VA}$).
- AC15** Control of electromagnetic loads ($> 72\text{VA}$).

Utilization with direct current

Power equipment, switchgear and controlgear according to EN 60947-4 and IEC 947-4

(contactors, equipment for starting of motors)

- DC1** Connection or disconnection of non-inductive or slightly inductive loads (e.g. resistance furnaces).
This equipment should operate with a L/R time-constant less than or equal to 1ms.
- DC3** Starting, plugging and inching of shunt-motors. Dynamic breaking of DC motors.
This equipment should operate with a L/R time-constant less than or equal to 2,5ms.
The contactor makes and breaks the starting current, which is close to 2,5 times the rated current of the motor.
The switching conditions are severe, as the voltage at the motor terminals can be equal to that of the supply voltage.
- DC5** Starting, plugging and inching of series-motors. Dynamic breaking of DC motors.
This equipment should operate with a L/R time-constant less than or equal to 15ms.
The contactor makes and breaks the starting current, which is close to 2,5 times the rated current of the motor.
The switching conditions are severe, as the voltage at the motor terminals can be equal to that of the supply voltage.
- DC6** Switching of incandescent lamps.

Power equipment, switchgear and controlgear according to EN 60947-3 and IEC 947-3

(switches, disconnectors, switch-disconnectors, fuse-combination units)

- DC20** Connecting and disconnecting under no-load conditions.
- DC21** Switching of resistive loads including moderate overloads.
- DC22** Switching of mixed resistive and inductive loads, including moderate overloads (e.g. shunt-motors).
- DC23** Switching of highly inductive loads (e.g. series-motors).

Control circuit devices and switching elements according to EN 60947-5 and IEC 947-5

(control relays, auxiliary contacts, units for control and signalling)

- DC12** Control of resistive loads and solid state loads with isolation by optocouplers.
- DC13** Control of electromagnets without economy resistor in circuit.
- DC14** Control of electromagnetic loads having economy resistor in circuit.

- By plugging is understood stopping or reversing the motor rapidly by reversing motor primary connections while the motor is running.
- By inching (jogging) is understood energizing a motor once or repeatedly for short periods to obtain small movements of the driven mechanism.
- The designation of AC20-AC21-AC22-AC23-DC20-DC21-DC22-DC23 utilization categories is completed by the suffix A or B according to whether the intended applications require frequent or infrequent operations.
Utilization categories with suffix B are appropriate for devices which, due to design or application, are only intended for infrequent operation (e.g. disconnectors normally only operated to provide isolation for maintenance work).

Standard cross-sections of round copper conductors corresponding to the conventional thermal currents

Range of rated thermal current <input type="checkbox"/>		Section of copper conductors/cables	
A		mm ²	AWG/MCM
0	8	1	18
8	12	1,5	16
12	15	2,5	14
15	20	2,5	12
20	25	4	10
25	32	6	10
32	50	10	8
50	65	16	6
65	85	25	4
85	100	35	3
100	115	35	2
115	130	50	1
130	150	50	0
150	175	70	00
175	200	95	000
200	225	95	0000
225	250	120	250
250	275	150	300
275	300	185	350
300	350	185	400
350	400	240	500
400	500	2x150	2x250
500	630	2x185	2x350
630	800	2x240	2x300

Range of rated thermal current <input type="checkbox"/>		Section of copper bars ▲		
A		N°	mm	inches
400	500	2	30x5	1.00x0.250
500	630	2	40x5	1.25x0.250
630	800	2	50x5	1.50x0.250
800	1000	2	60x5	2.00x0.250
1000	1250	2	80x5	2.50x0.250
1250	1600	2	100x5	3.00x0.250
1600	2000	3	100x5	3.00x0.250
2000	2500	4	100x5	3.00x0.250
2500	3150	3	100x10	6.00x0.250

☐ The current value should always be greater than the left-hand value and less than or equal to the right-hand value.

▲ Bars are assumed to be arranged with their long faces vertical. Arrangements with long faces horizontal may be used if specified by the manufacturer.
Where 4 bars are used they shall be in two sets of two bars with not more than 100mm between pair centres.

The International Recommendations IEC 529 to which the single national standards refer, as well as the European Harmonized Standards EN 60529 and EN 50102, classify the degree of protection provided by the enclosures for electrical equipment as regards:

- protection of the persons against access to hazardous parts inside the enclosure (e.g. low-voltage live parts, mechanical parts).
- protection of the equipment inside the enclosure against ingress of solid foreign objects.

c) protection of the equipment inside the enclosure against the harmful effects due to the ingress of water.

d) protection of the enclosure against damage due to harmful external mechanical impacts.

The degrees of protection relating to the first three items are designed by the IP code, followed by a combination of two characteristic numerals, to which a first additional letter and a second supplementary letter, both optional, can be added.

IP Code First characteristic numeral			Second characteristic numeral			IK Code Characteristic group numeral		
Protection against ingress of solid objects. Protection of persons against access to hazardous parts.			Protection against harmful ingress of water.			Protection against harmful external mechanical impacts.		
0		No protection.	0		No protection.	0		No protection.
1		Full penetration of 50 mm diameter sphere not allowed. Protection against access with the back of a hand.	1		Protection against vertically falling drops of water. Limited ingress permitted.	01		Resistance to impact of a mass of 200 g with a striking energy of 0,15 J.
2		Full penetration of 12,5 mm diameter sphere not allowed. Protection against access with a finger.	2		Protected against vertically falling drops of water with enclosure tilted 15° from the vertical. Limited ingress permitted. Dripping up to 15° from the vertical.	02		Resistance to impact of a mass of 200 g with a striking energy of 0,20 J.
3		The access probe of 2,5 mm diameter shall not penetrate. Protection against access with a tool.	3		Protected against sprays to 60° from the vertical. Limited ingress permitted. Limited spraying.	03		Resistance to impact of a mass of 200 g with a striking energy of 0,35 J.
4		The access probe of 1,0 mm diameter shall not penetrate. Protection against access with a wire.	4		Protected against water splashed from all directions. Limited ingress permitted. Splashing from all directions.	04		Resistance to impact of a mass of 200 g with a striking energy of 0,50 J.
5		Limited ingress of dust permitted (no harmful deposit). Protection against access with a wire.	5		Protected against jets of water. Limited ingress permitted. Hosing jets from all directions.	05		Resistance to impact of a mass of 200 g with a striking energy of 0,70 J.
6		Total protection against ingress of dust. Protection against access with a wire.	6		Protected against strong jets of water. Limited ingress permitted. Strong hosing jets from all directions.	06		Resistance to impact of a mass of 500 g with a striking energy of 1 J.
			7		Protected against the effects of immersion between 15 cm and 1 m. Temporary immersion.	07		Resistance to impact of a mass of 500 g with a striking energy of 2 J.
			8		Protected against long periods of immersion under pressure. Continuous immersion.	08		Resistance to impact of a mass of 1,7 kg with a striking energy of 5 J.
						09		Resistance to impact of a mass of 5 kg with a striking energy of 10 J.
						10		Resistance to impact of a mass of 5 kg with a striking energy of 20 J.

When the equipment is classified for one of the two main types of protection only, that is to say with only one numeral, the omitted numeral should be replaced with the letter X (e.g. IPX5 or IP2X).

Type	Part number	Page	Pack
AU1	VC846400	138 / 145 / 171	R
AU2	VC847200	138 / 145 / 171	R
AU3	VC848000	138 / 145 / 171	1
AU4	VC849800	138 / 145 / 171	R
AU6	VC851400	138 / 145 / 171	1
AU7	VC852200	138 / 145 / 171	R
AU8	VC853000	138 / 145 / 171	R
C01B	ER520810	325	5
C02	ER520840	325	5
C10B	ER520800	325	5
C10N	ERCN0300	309	1
C11	ER520820	325	5
C1N	ERCN0210	309	1
C20	ER520830	325	5
C2N	ERCN0220	309	1
C3N	ERCN0230	309	1
C4N	ERCN0240	309	1
C5N	ERCN0250	309	1
C6N	ERCN0260	309	1
C7N	ERCN0270	309	1
C8N	ERCN0280	309	1
C9N	ERCN0290	309	1
CA0120001PL1	CA0120001PL1	61	1
CA0120001PL2	CA0120001PL2	61	R
CA0120002PL1	CA0120002PL1	61	1
CA0120002PL2	CA0120002PL2	61	R
CA0120002R03	CA0120002R03	67	R
CA0120003PL1	CA0120003PL1	61	1
CA0120003PL2	CA0120003PL2	61	R
CA0120003S31	CA0120003S31	181	R
CA0120004PL1	CA0120004PL1	61	1
CA0120004PL2	CA0120004PL2	61	R
CA0120005PL1	CA0120005PL1	62	1
CA0120005PL2	CA0120005PL2	62	R
CA0120006PL1	CA0120006PL1	62	1
CA0120006PL2	CA0120006PL2	62	R
CA0120007B95RL6	CA0120007B95RL6	178	R
CA0120007PL1	CA0120007PL1	62	1
CA0120007PL2	CA0120007PL2	62	R
CA0120007S31	CA0120007S31	181	R
CA0120008B95RL6	CA0120008B95RL6	178	R
CA0120008PL1	CA0120008PL1	63	1
CA0120008PL2	CA0120008PL2	63	R
CA0120008R03	CA0120008R03	67	R
CA0120008S31	CA0120008S31	181	R
CA0120009PL1	CA0120009PL1	63	1
CA0120009PL2	CA0120009PL2	63	R
CA0120009R03	CA0120009R03	67	R
CA0120009S31	CA0120009S31	181	R
CA0120010PL1	CA0120010PL1	63	1
CA0120010PL2	CA0120010PL2	63	R
CA0120010S31	CA0120010S31	182	R
CA0120011PL1	CA0120011PL1	64	1
CA0120011PL2	CA0120011PL2	64	R
CA0120011R03	CA0120011R03	67	R
CA0120016PL1	CA0120016PL1	64	1
CA0120016PL2	CA0120016PL2	64	R
CA0120018PL1	CA0120018PL1	65	1
CA0120018PL2	CA0120018PL2	65	R
CA0120022PL1	CA0120022PL1	65	1
CA0120022PL2	CA0120022PL2	65	R
CA0120031PL1	CA0120031PL1	64	1
CA0120031PL2	CA0120031PL2	64	R
CA0120034PL1	CA0120034PL1	64	1
CA0120034PL2	CA0120034PL2	64	R
CA0120036PL1	CA0120036PL1	63	1
CA0120036PL2	CA0120036PL2	63	R
CA0120039PL1	CA0120039PL1	62	1
CA0120039PL2	CA0120039PL2	62	R
CA0120039S31	CA0120039S31	182	R
CA01200G3B95RL6	CA01200G3B95RL6	178	R
CA01200G3BK6	CA01200G3BK6	66	R
CA01200G3BL6	CA01200G3BL6	66	1

Type	Part number	Page	Pack
CA01200G3RK6	CA01200G3RK6	66	R
CA01200G3RL6	CA01200G3RL6	66	1
CA01200G4BK6	CA01200G4BK6	67	R
CA01200G4BL6	CA01200G4BL6	67	R
CA01200G4RK6	CA01200G4RK6	67	R
CA01200G4RL6	CA01200G4RL6	67	R
CA0160001PL2	CA0160001PL2	61	R
CA0160002PL1	CA0160002PL1	61	R
CA0160002PL2	CA0160002PL2	61	1
CA0160002R03	CA0160002R03	67	R
CA0160003PL1	CA0160003PL1	61	R
CA0160003PL2	CA0160003PL2	61	1
CA0160003R03	CA0160003R03	67	R
CA0160003S31	CA0160003S31	181	1
CA0160004PL1	CA0160004PL1	61	R
CA0160004PL2	CA0160004PL2	61	1
CA0160005PL2	CA0160005PL2	62	1
CA0160006PL1	CA0160006PL1	62	R
CA0160006PL2	CA0160006PL2	62	1
CA0160007B95RL6	CA0160007B95RL6	178	1
CA0160007PL1	CA0160007PL1	62	R
CA0160007PL2	CA0160007PL2	62	1
CA0160007S31	CA0160007S31	181	1
CA0160008B95RL6	CA0160008B95RL6	178	1
CA0160008PL1	CA0160008PL1	63	R
CA0160008PL2	CA0160008PL2	63	1
CA0160008R03	CA0160008R03	67	R
CA0160008S31	CA0160008S31	181	1
CA0160009PL1	CA0160009PL1	63	R
CA0160009PL2	CA0160009PL2	63	1
CA0160009R03	CA0160009R03	67	R
CA0160009S31	CA0160009S31	181	R
CA0160010PL1	CA0160010PL1	63	R
CA0160010PL2	CA0160010PL2	63	1
CA0160010S31	CA0160010S31	182	R
CA0160011PL1	CA0160011PL1	64	R
CA0160011PL2	CA0160011PL2	64	1
CA0160011R03	CA0160011R03	67	R
CA0160016PL2	CA0160016PL2	64	R
CA0160018PL2	CA0160018PL2	65	R
CA0160022PL2	CA0160022PL2	65	R
CA0160031PL2	CA0160031PL2	64	1
CA0160034PL1	CA0160034PL1	64	R
CA0160034PL2	CA0160034PL2	64	1
CA0160035E3PL2	CA0160035E3PL2	68	1
CA0160035E3RL6	CA0160035E3RL6	68	1
CA0160035E3RT6	CA0160035E3RT6	68	R
CA0160035E4PL2	CA0160035E4PL2	68	R
CA0160035E4RT6	CA0160035E4RT6	68	R
CA0160035E5PL2	CA0160035E5PL2	68	R
CA0160035E5RT6	CA0160035E5RT6	68	R
CA0160036PL2	CA0160036PL2	63	1
CA0160036S31	CA0160036S31	182	R
CA0160039PL1	CA0160039PL1	62	R
CA0160039PL2	CA0160039PL2	62	1
CA0160039S31	CA0160039S31	182	R
CA01600G3B95RL6	CA01600G3B95RL6	178	1
CA01600G3BK6	CA01600G3BK6	66	R
CA01600G3BL6	CA01600G3BL6	66	1
CA01600G3RK6	CA01600G3RK6	66	R
CA01600G3RL6	CA01600G3RL6	66	1
CA01600G4B95RL6	CA01600G4B95RL6	178	1
CA01600G4BK6	CA01600G4BK6	67	R
CA01600G4BL6	CA01600G4BL6	67	1
CA01600G4RK6	CA01600G4RK6	67	R
CA01600G4RL6	CA01600G4RL6	67	1
CA0200001PL2	CA0200001PL2	61	R
CA0200002PL1	CA0200002PL1	61	R
CA0200002PL2	CA0200002PL2	61	1
CA0200002R03	CA0200002R03	67	R
CA0200003PL1	CA0200003PL1	61	R
CA0200003PL2	CA0200003PL2	61	1
CA0200003R03	CA0200003R03	67	R

Type	Part number	Page	Pack
CA0200003S31	CA0200003S31	181	1
CA0200004PL2	CA0200004PL2	61	1
CA0200005PL2	CA0200005PL2	62	R
CA0200006PL2	CA0200006PL2	62	1
CA0200007B95RL6	CA0200007B95RL6	178	R
CA0200007PL2	CA0200007PL2	62	1
CA0200007S31	CA0200007S31	181	R
CA0200008B95RL6	CA0200008B95RL6	178	R
CA0200008PL2	CA0200008PL2	63	1
CA0200008R03	CA0200008R03	67	R
CA0200008S31	CA0200008S31	181	R
CA0200009PL2	CA0200009PL2	63	1
CA0200009R03	CA0200009R03	67	R
CA0200009S31	CA0200009S31	181	R
CA0200010PL2	CA0200010PL2	63	1
CA0200010S31	CA0200010S31	182	R
CA0200011PL2	CA0200011PL2	64	1
CA0200011R03	CA0200011R03	67	R
CA0200031PL2	CA0200031PL2	64	1
CA0200034PL2	CA0200034PL2	64	R
CA0200036PL2	CA0200036PL2	63	R
CA0200036S31	CA0200036S31	182	R
CA0200039PL2	CA0200039PL2	62	1
CA0200039S31	CA0200039S31	182	R
CA02000G3B95RL6	CA02000G3B95RL6	178	R
CA02000G3BK6	CA02000G3BK6	66	R
CA02000G3BL6	CA02000G3BL6	66	1
CA02000G3RK6	CA02000G3RK6	66	R
CA02000G3RL6	CA02000G3RL6	66	1
CA02000G4B95RL6	CA02000G4B95RL6	178	R
CA02000G4BK6	CA02000G4BK6	67	R
CA02000G4BL6	CA02000G4BL6	67	1
CA02000G4RK6	CA02000G4RK6	67	R
CA02000G4RL6	CA02000G4RL6	67	1
CA0250001PL2	CA0250001PL2	61	1
CA0250002PL2	CA0250002PL2	61	1
CA0250002R03	CA0250002R03	67	R
CA0250003PL1	CA0250003PL1	61	R
CA0250003PL2	CA0250003PL2	61	1
CA0250003R03	CA0250003R03	67	R
CA0250003S31	CA0250003S31	181	R
CA0250004PL2	CA0250004PL2	61	1
CA0250005PL2	CA0250005PL2	62	R
CA0250006PL2	CA0250006PL2	62	1
CA0250007PL2	CA0250007PL2	62	1
CA0250007S31	CA0250007S31	181	1
CA0250008B95RL6	CA0250008B95RL6	178	1
CA0250008PL2	CA0250008PL2	63	1
CA0250008S31	CA0250008S31	181	1
CA0250009PL2	CA0250009PL2	63	1
CA0250009S31	CA0250009S31	181	R
CA0250010PL2	CA0250010PL2	63	1
CA0250010S31	CA0250010S31	182	R
CA0250011PL2	CA0250011PL2	64	R
CA0250031PL2	CA0250031PL2	64	1
CA0250034PL2	CA0250034PL2	64	R
CA0250035E3RL6	CA0250035E3RL6	68	1
CA0250035E3RT6	CA0250035E3RT6	68	R
CA0250035E4RT6	CA0250035E4RT6	68	R
CA0250035E5RT6	CA0250035E5RT6	68	R
CA0250036S31	CA0250036S31	182	R
CA0250039PL2	CA0250039PL2	62	1
CA0250039S31	CA0250039S31	182	R
CA02500G3B95RL6	CA02500G3B95RL6	178	R
CA02500G3BK6	CA02500G3BK6	66	R
CA02500G3BL6	CA02500G3BL6	66	1
CA02500G3RK6	CA02500G3RK6	66	R
CA02500G3RL6	CA02500G3RL6	66	1
CA02500G4BK6	CA02500G4BK6	67	R
CA02500G4BL6	CA02500G4BL6	67	1
CA02500G4RK6	CA02500G4RK6	67	R
CA02500G4RL6	CA02500G4RL6	67	1
CA0320002PL2	CA0320002PL2	61	1

Type	Part number	Page	Pack
CA0320003PL2	CA0320003PL2	61	1
CA0320003S31	CA0320003S31	181	R
CA0320004PL2	CA0320004PL2	61	1
CA0320006PL2	CA0320006PL2	62	1
CA0320007PL2	CA0320007PL2	62	1
CA0320007S31	CA0320007S31	181	R
CA0320008B95RL6	CA0320008B95RL6	178	R
CA0320008PL2	CA0320008PL2	63	1
CA0320008S31	CA0320008S31	181	R
CA0320009PL2	CA0320009PL2	63	1
CA0320009S31	CA0320009S31	181	R
CA0320010PL2	CA0320010PL2	63	1
CA0320010S31	CA0320010S31	182	R
CA0320039PL2	CA0320039PL2	62	1
CA0320039S31	CA0320039S31	182	R
CA03200G3B95RL6	CA03200G3B95RL6	178	R
CA03200G3BK6	CA03200G3BK6	66	R
CA03200G3BL6	CA03200G3BL6	66	1
CA03200G3RK6	CA03200G3RK6	66	R
CA03200G3RL6	CA03200G3RL6	66	1
CA03200G4B95RL6	CA03200G4B95RL6	178	R
CA03200G4BK6	CA03200G4BK6	67	R
CA03200G4BL6	CA03200G4BL6	67	1
CA03200G4RK6	CA03200G4RK6	67	R
CA03200G4RL6	CA03200G4RL6	67	1
CA0400002PL2	CA0400002PL2	61	R
CA0400003PL2	CA0400003PL2	61	1
CA0400003S31	CA0400003S31	181	R
CA0400004PL2	CA0400004PL2	61	1
CA0400006PL2	CA0400006PL2	62	1
CA0400007PL2	CA0400007PL2	62	1
CA0400008PL2	CA0400008PL2	63	1
CA0400009PL2	CA0400009PL2	63	1
CA0400010PL2	CA0400010PL2	63	1
CA0400039PL2	CA0400039PL2	62	1
CA04000G3BK6	CA04000G3BK6	66	R
CA04000G3BL6	CA04000G3BL6	66	1
CA04000G3RK6	CA04000G3RK6	66	R
CA04000G3RL6	CA04000G3RL6	66	1
CA04000G4BK6	CA04000G4BK6	67	R
CA04000G4BL6	CA04000G4BL6	67	1
CA04000G4RK6	CA04000G4RK6	67	R
CA04000G4RL6	CA04000G4RL6	67	1
CA0500002PL3	CA0500002PL3	75	R
CA0500003PL3	CA0500003PL3	75	1
CA0500003S40	CA0500003S40	183	R
CA0500004PL3	CA0500004PL3	75	1
CA0500006PL3	CA0500006PL3	76	1
CA0500007PL3	CA0500007PL3	76	1
CA0500007S40	CA0500007S40	183	R
CA0500008PL3	CA0500008PL3	77	1
CA0500008S40	CA0500008S40	183	R
CA0500009PL3	CA0500009PL3	77	1
CA0500010PL3	CA0500010PL3	77	1
CA0500010S40	CA0500010S40	183	R
CA0500039PL3	CA0500039PL3	76	1
CA0500039S40	CA0500039S40	183	R
CA05000G33L3	CA05000G33L3	78	1
CA05000G33N3	CA05000G33N3	78	R
CA05000G3LE3	CA05000G3LE3	78	1
CA05000G3LN3	CA05000G3LN3	78	R
CA05000G43L3	CA05000G43L3	78	1
CA05000G43N3	CA05000G43N3	78	R
CA05000G4LE3	CA05000G4LE3	78	1
CA05000G4LN3	CA05000G4LN3	78	R
CA0630002PL3	CA0630002PL3	75	R
CA0630003PL3	CA0630003PL3	75	1
CA0630003S90	CA0630003S90	183	R
CA0630004PL3	CA0630004PL3	75	1
CA0630006PL3	CA0630006PL3	76	1
CA0630007PL3	CA0630007PL3	76	1
CA0630007S90	CA0630007S90	183	R
CA0630008PL3	CA0630008PL3	77	1

Type	Part number	Page	Pack
CA0630008S90	CA0630008S90	183	R
CA0630009PL3	CA0630009PL3	77	1
CA0630010PL3	CA0630010PL3	77	1
CA0630010S90	CA0630010S90	183	R
CA0630039PL3	CA0630039PL3	76	1
CA0630039S90	CA0630039S90	183	R
CA06300G33L3	CA06300G33L3	78	1
CA06300G33N3	CA06300G33N3	78	R
CA06300G3LE3	CA06300G3LE3	78	1
CA06300G3LN3	CA06300G3LN3	78	R
CA06300G43L3	CA06300G43L3	78	1
CA06300G4LE3	CA06300G4LE3	78	1
CA06300G4LN3	CA06300G4LN3	78	R
CA1000003PL4	CA1000003PL4	75	1
CA1000003PL9	CA1000003PL9	75	R
CA1000004PL4	CA1000004PL4	75	1
CA1000004PL9	CA1000004PL9	75	R
CA1000006PL4	CA1000006PL4	76	1
CA1000006PL9	CA1000006PL9	76	R
CA1000007PL4	CA1000007PL4	76	1
CA1000007PL9	CA1000007PL9	76	R
CA1000008PL4	CA1000008PL4	77	1
CA1000008PL9	CA1000008PL9	77	R
CA1000010PL4	CA1000010PL4	77	1
CA1000010PL9	CA1000010PL9	77	R
CA1000010S10	CA1000010S10	184	R
CA1000039PL4	CA1000039PL4	76	1
CA1000039PL9	CA1000039PL9	76	R
CA1000039S10	CA1000039S10	184	R
CA10000G33L4	CA10000G33L4	78	R
CA10000G3LE4	CA10000G3LE4	78	1
CA10000G43L4	CA10000G43L4	78	R
CA10000G4LE4	CA10000G4LE4	78	1
CA2000003PL4	CA2000003PL4	75	1
CA2000003PL9	CA2000003PL9	75	R
CA2000004PL4	CA2000004PL4	75	1
CA2000004PL9	CA2000004PL9	75	R
CA2000006PL4	CA2000006PL4	76	1
CA2000006PL9	CA2000006PL9	76	R
CA2000007PL4	CA2000007PL4	76	1
CA2000007PL9	CA2000007PL9	76	R
CA2000008PL4	CA2000008PL4	77	1
CA2000008PL9	CA2000008PL9	77	R
CA2000010PL4	CA2000010PL4	77	1
CA2000010PL9	CA2000010PL9	77	R
CA2000039PL4	CA2000039PL4	76	1
CA2000039PL9	CA2000039PL9	76	R
CA2000039S20	CA2000039S20	184	R
CA20000G33L4	CA20000G33L4	78	R
CA20000G3LE4	CA20000G3LE4	78	1
CA20000G43L4	CA20000G43L4	78	R
CA20000G4LE4	CA20000G4LE4	78	1
CA4000003PL4	CA4000003PL4	75	R
CA4000003PL9	CA4000003PL9	75	R
CA4000006PL5	CA4000006PL5	76	R
CA4000006PL9	CA4000006PL9	76	R
CA4000007PL5	CA4000007PL5	76	R
CA4000007PL9	CA4000007PL9	76	R
CA4000008PL5	CA4000008PL5	77	R
CA4000008PL9	CA4000008PL9	77	R
CA4000039PL5	CA4000039PL5	76	R
CA6300003PL5	CA6300003PL5	75	R
CA6300006PL5	CA6300006PL5	76	R
CA6300006PL9	CA6300006PL9	76	R
CA6300007PL5	CA6300007PL5	76	R
CA6300008PL5	CA6300008PL5	77	R
CA6300039PL5	CA6300039PL5	76	R
CQ0120002Q01	CQ0120002Q01	88	1
CQ0120003BK6	CQ0120003BK6	93	R
CQ0120003BL6	CQ0120003BL6	92	1
CQ0120003Q01	CQ0120003Q01	88	1
CQ0120003Q06	CQ0120003Q06	88	R
CQ0120003RK6	CQ0120003RK6	93	R

Type	Part number	Page	Pack
CQ0120003RL6	CQ0120003RL6	92	1
CQ0120004BK6	CQ0120004BK6	93	R
CQ0120004BL6	CQ0120004BL6	92	1
CQ0120004Q01	CQ0120004Q01	88	1
CQ0120004Q06	CQ0120004Q06	88	R
CQ0120004RK6	CQ0120004RK6	93	R
CQ0120004RL6	CQ0120004RL6	92	1
CQ0120005Q01	CQ0120005Q01	88	1
CQ0120005Q06	CQ0120005Q06	88	R
CQ0120006Q01	CQ0120006Q01	89	1
CQ0120007Q01	CQ0120007Q01	89	1
CQ0120007Q06	CQ0120007Q06	89	R
CQ0120008Q01	CQ0120008Q01	89	1
CQ0120008Q06	CQ0120008Q06	89	R
CQ0120009Q01	CQ0120009Q01	90	1
CQ0120009Q06	CQ0120009Q06	90	R
CQ0120016Q01	CQ0120016Q01	90	1
CQ0120016Q06	CQ0120016Q06	90	R
CQ0120018Q01	CQ0120018Q01	91	1
CQ0120018Q06	CQ0120018Q06	91	1
CQ0120022Q01	CQ0120022Q01	91	1
CQ0120022Q06	CQ0120022Q06	91	R
CQ0120039Q01	CQ0120039Q01	89	1
CQ012DN07DDN	CQ012DN07DDN	95	R
CQ012DN08DDN	CQ012DN08DDN	95	1
CQ012DN09DDN	CQ012DN09DDN	95	1
CQ012DN10DDN	CQ012DN10DDN	95	R
CQ012DN16DDN	CQ012DN16DDN	95	R
CQ012DN18DDN	CQ012DN18DDN	95	R
CQ012DN22DDN	CQ012DN22DDN	95	R
CQ0160002Q01	CQ0160002Q01	88	1
CQ0160002Q06	CQ0160002Q06	88	R
CQ0160003BK6	CQ0160003BK6	93	R
CQ0160003BL6	CQ0160003BL6	92	1
CQ0160003Q01	CQ0160003Q01	88	1
CQ0160003Q06	CQ0160003Q06	88	R
CQ0160003RK6	CQ0160003RK6	93	R
CQ0160003RL6	CQ0160003RL6	92	1
CQ0160004BK6	CQ0160004BK6	93	R
CQ0160004BL6	CQ0160004BL6	92	1
CQ0160004Q01	CQ0160004Q01	88	1
CQ0160004Q06	CQ0160004Q06	88	R
CQ0160004RK6	CQ0160004RK6	93	R
CQ0160004RL6	CQ0160004RL6	92	1
CQ0160006Q01	CQ0160006Q01	89	1
CQ0160006Q06	CQ0160006Q06	89	R
CQ0160007Q01	CQ0160007Q01	89	1
CQ0160007Q06	CQ0160007Q06	89	R
CQ0160008Q01	CQ0160008Q01	89	1
CQ0160008Q06	CQ0160008Q06	89	R
CQ0160009Q01	CQ0160009Q01	90	1
CQ0160009Q06	CQ0160009Q06	90	R
CQ0160010Q01	CQ0160010Q01	90	1
CQ0160010Q06	CQ0160010Q06	90	R
CQ0160011Q01	CQ0160011Q01	90	1
CQ0160039Q01	CQ0160039Q01	89	1
CQ0160039Q06	CQ0160039Q06	89	R
CQ016DN07DDN	CQ016DN07DDN	95	R
CQ016DN08DDN	CQ016DN08DDN	95	1
CQ016DN09DDN	CQ016DN09DDN	95	1
CQ016DN10DDN	CQ016DN10DDN	95	R
CQ0250002Q06	CQ0250002Q06	88	R
CQ0250003BK6	CQ0250003BK6	93	R
CQ0250003BL6	CQ0250003BL6	92	R
CQ0250003Q06	CQ0250003Q06	88	R
CQ0250003RK6	CQ0250003RK6	93	R
CQ0250003RL6	CQ0250003RL6	92	R
CQ0250004BK6	CQ0250004BK6	93	R
CQ0250004BL6	CQ0250004BL6	92	R
CQ0250004Q06	CQ0250004Q06	88	R
CQ0250004RK6	CQ0250004RK6	93	R
CQ0250004RL6	CQ0250004RL6	92	R
CQ0250006Q06	CQ0250006Q06	89	R

Type	Part number	Page	Pack
CQ0250007Q06	CQ0250007Q06	89	R
CQ0250008Q06	CQ0250008Q06	89	R
CQ0250009Q06	CQ0250009Q06	90	R
CQ0250010Q06	CQ0250010Q06	90	R
CQ0250039Q06	CQ0250039Q06	89	R
CQ0320003BK6	CQ0320003BK6	93	R
CQ0320003BL6	CQ0320003BL6	92	R
CQ0320003Q06	CQ0320003Q06	88	R
CQ0320003RK6	CQ0320003RK6	93	R
CQ0320003RL6	CQ0320003RL6	92	R
CQ0320004BK6	CQ0320004BK6	93	R
CQ0320004BL6	CQ0320004BL6	92	R
CQ0320004Q06	CQ0320004Q06	88	R
CQ0320004RK6	CQ0320004RK6	93	R
CQ0320004RL6	CQ0320004RL6	92	R
CQ0320006Q06	CQ0320006Q06	89	R
CQ0320007Q06	CQ0320007Q06	89	R
CQ0320008Q06	CQ0320008Q06	89	R
CQ0320009Q06	CQ0320009Q06	90	R
CQ0320010Q06	CQ0320010Q06	90	R
CQ0320039Q06	CQ0320039Q06	89	R
CR0120001GT4	CR0120001GT4	24	R
CR0120001GT6	CR0120001GT6	24	R
CR0120001GV4	CR0120001GV4	36	R
CR0120001RT4	CR0120001RT4	24	1
CR0120001RT6	CR0120001RT6	24	1
CR0120001RV4	CR0120001RV4	36	R
CR0120002GT4	CR0120002GT4	24	1
CR0120002GT6	CR0120002GT6	24	R
CR0120002GV4	CR0120002GV4	36	R
CR0120002RT4	CR0120002RT4	24	1
CR0120002RT6	CR0120002RT6	24	1
CR0120002RV4	CR0120002RV4	36	1
CR0120003GT4	CR0120003GT4	24	1
CR0120003GT6	CR0120003GT6	24	R
CR0120003GV4	CR0120003GV4	36	R
CR0120003RT4	CR0120003RT4	24	1
CR0120003RT6	CR0120003RT6	24	1
CR0120003RV4	CR0120003RV4	36	1
CR0120004GT4	CR0120004GT4	25	R
CR0120004GT6	CR0120004GT6	25	R
CR0120004GV4	CR0120004GV4	37	R
CR0120004RT4	CR0120004RT4	25	1
CR0120004RT6	CR0120004RT6	25	1
CR0120004RV4	CR0120004RV4	37	R
CR0120005GT4	CR0120005GT4	25	R
CR0120005GT6	CR0120005GT6	25	R
CR0120005GV4	CR0120005GV4	37	R
CR0120005RT4	CR0120005RT4	25	1
CR0120005RT6	CR0120005RT6	25	1
CR0120005RV4	CR0120005RV4	37	R
CR0120006GT4	CR0120006GT4	26	R
CR0120006GT6	CR0120006GT6	26	R
CR0120006GV4	CR0120006GV4	38	R
CR0120006RT4	CR0120006RT4	26	1
CR0120006RT6	CR0120006RT6	26	1
CR0120006RV4	CR0120006RV4	38	R
CR0120007GT4	CR0120007GT4	26	R
CR0120007GT6	CR0120007GT6	26	R
CR0120007GV4	CR0120007GV4	38	R
CR0120007RT4	CR0120007RT4	26	1
CR0120007RT6	CR0120007RT6	26	1
CR0120007RV4	CR0120007RV4	38	R
CR0120008GT4	CR0120008GT4	27	1
CR0120008GT6	CR0120008GT6	27	R
CR0120008GV4	CR0120008GV4	39	R
CR0120008RT4	CR0120008RT4	27	1
CR0120008RT6	CR0120008RT6	27	1
CR0120008RV4	CR0120008RV4	39	1
CR0120009GT4	CR0120009GT4	27	1
CR0120009GT6	CR0120009GT6	27	R
CR0120009GV4	CR0120009GV4	39	R
CR0120009RT6	CR0120009RT6	27	1

Type	Part number	Page	Pack
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CR0120010GT6	CR0120010GT6	28	R
CR0120010GV4	CR0120010GV4	40	R
CR0120010RT4	CR0120010RT4	28	1
CR0120010RT6	CR0120010RT6	28	1
CR0120010RV4	CR0120010RV4	40	R
CR0120011GT4	CR0120011GT4	28	R
CR0120011GT6	CR0120011GT6	28	R
CR0120011GV4	CR0120011GV4	40	R
CR0120011RT4	CR0120011RT4	28	1
CR0120011RT6	CR0120011RT6	28	1
CR0120011RV4	CR0120011RV4	40	R
CR0120016GT4	CR0120016GT4	29	1
CR0120016GT6	CR0120016GT6	29	R
CR0120016GV4	CR0120016GV4	41	R
CR0120016RT4	CR0120016RT4	29	1
CR0120016RT6	CR0120016RT6	29	1
CR0120016RV4	CR0120016RV4	41	1
CR0120018GT4	CR0120018GT4	30	R
CR0120018GT6	CR0120018GT6	30	R
CR0120018GV4	CR0120018GV4	42	R
CR0120018RT4	CR0120018RT4	30	1
CR0120018RT6	CR0120018RT6	30	1
CR0120018RV4	CR0120018RV4	42	R
CR0120022GT4	CR0120022GT4	30	R
CR0120022GT6	CR0120022GT6	30	R
CR0120022GV4	CR0120022GV4	42	R
CR0120022RT4	CR0120022RT4	30	1
CR0120022RT6	CR0120022RT6	30	1
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CR0120031RT4	CR0120031RT4	28	1
CR0120031RT6	CR0120031RT6	28	1
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CR0120032GT4	CR0120032GT4	29	R
CR0120032GT6	CR0120032GT6	29	R
CR0120032GV4	CR0120032GV4	41	R
CR0120032RT4	CR0120032RT4	29	1
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CR0120034RT6	CR0120034RT6	29	1
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CR0120035GT4	CR0120035GT4	25	R
CR0120035GT6	CR0120035GT6	25	R
CR0120035GV4	CR0120035GV4	37	R
CR0120035RT4	CR0120035RT4	25	1
CR0120035RT6	CR0120035RT6	25	1
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CR0120039GT6	CR0120039GT6	26	R
CR0120039GV4	CR0120039GV4	38	R
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CR01200G3BL5	CR01200G3BL5	46	R
CR01200G3BL6	CR01200G3BL6	34	1
CR01200G3GK5	CR01200G3GK5	47	R
CR01200G3GK6	CR01200G3GK6	35	R
CR01200G3GL5	CR01200G3GL5	47	R

Type	Part number	Page	Pack
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CR01200G3HK6	CR01200G3HK6	35	R
CR01200G3HL5	CR01200G3HL5	47	R
CR01200G3HL6	CR01200G3HL6	35	R
CR01200G3RK5	CR01200G3RK5	46	R
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CR01200G4GL5	CR01200G4GL5	47	R
CR01200G4GL6	CR01200G4GL6	35	R
CR01200G4HK5	CR01200G4HK5	47	R
CR01200G4HK6	CR01200G4HK6	35	R
CR01200G4HL5	CR01200G4HL5	47	R
CR01200G4HL6	CR01200G4HL6	35	R
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CR012M013RT6	CR012M013RT6	32	1
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CR012M014GT4	CR012M014GT4	33	R
CR012M014GT6	CR012M014GT6	33	R
CR012M014GV4	CR012M014GV4	45	R
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CR012M014RT6	CR012M014RT6	33	1
CR012M014RV4	CR012M014RV4	45	R
CR012M015GT4	CR012M015GT4	33	R
CR012M015GT6	CR012M015GT6	33	R
CR012M015GV4	CR012M015GV4	45	R
CR012M015RT4	CR012M015RT4	33	1
CR012M015RT6	CR012M015RT6	33	1
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CR012MZ23GT4	CR012MZ23GT4	31	R
CR012MZ23GT6	CR012MZ23GT6	31	R
CR012MZ23GV4	CR012MZ23GV4	43	R
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CR012MZ23RT6	CR012MZ23RT6	31	1
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CR012MZ33RT6	CR012MZ33RT6	32	1
CR012MZ33RV4	CR012MZ33RV4	44	R

Type	Part number	Page	Pack
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CR0160001GT6	CR0160001GT6	24	R
CR0160001GV4	CR0160001GV4	36	R
CR0160001RT4	CR0160001RT4	24	1
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CR0160003RT6	CR0160003RT6	24	1
CR0160003RV4	CR0160003RV4	36	1
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CR0160004GT6	CR0160004GT6	25	1
CR0160004GV4	CR0160004GV4	37	R
CR0160004RT4	CR0160004RT4	25	1
CR0160004RT6	CR0160004RT6	25	1
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CR0160008GT6	CR0160008GT6	27	1
CR0160008GV4	CR0160008GV4	39	R
CR0160008RT4	CR0160008RT4	27	1
CR0160008RT6	CR0160008RT6	27	1
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CR0160009GT6	CR0160009GT6	27	1
CR0160009GV4	CR0160009GV4	39	R
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CR0160010GT6	CR0160010GT6	28	R
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CR0160031RV4	CR0160031RV4	40	R
CR0160032GT4	CR0160032GT4	29	R

Type	Part number	Page	Pack
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CR0160032RT4	CR0160032RT4	29	1
CR0160032RT6	CR0160032RT6	29	1
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CR0160034GT4	CR0160034GT4	29	R
CR0160034GT6	CR0160034GT6	29	R
CR0160034GV4	CR0160034GV4	41	R
CR0160034RT4	CR0160034RT4	29	1
CR0160034RV4	CR0160034RV4	41	R
CR0160035GT4	CR0160035GT4	25	R
CR0160035GT6	CR0160035GT6	25	R
CR0160035GV4	CR0160035GV4	37	R
CR0160035RT4	CR0160035RT4	25	1
CR0160035RT6	CR0160035RT6	25	1
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CR0160036RT6	CR0160036RT6	27	1
CR0160036RV4	CR0160036RV4	39	R
CR0160039GT4	CR0160039GT4	26	R
CR0160039GT6	CR0160039GT6	26	1
CR0160039GV4	CR0160039GV4	38	R
CR0160039RT4	CR0160039RT4	26	1
CR0160039RT6	CR0160039RT6	26	1
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CR01600G3BL5	CR01600G3BL5	46	1
CR01600G3BL6	CR01600G3BL6	34	1
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CR01600G3GL5	CR01600G3GL5	47	R
CR01600G3GL6	CR01600G3GL6	35	1
CR01600G3HK5	CR01600G3HK5	47	R
CR01600G3HK6	CR01600G3HK6	35	R
CR01600G3HL5	CR01600G3HL5	47	R
CR01600G3HL6	CR01600G3HL6	35	1
CR01600G3RK5	CR01600G3RK5	46	R
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CR01600G4HK6	CR01600G4HK6	35	R
CR01600G4HL5	CR01600G4HL5	47	R
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CR01600G4RK5	CR01600G4RK5	46	R
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CR016M013GT6	CR016M013GT6	32	R
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CR016M013RT6	CR016M013RT6	32	1
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CR016M014GT4	CR016M014GT4	33	R
CR016M014GT6	CR016M014GT6	33	R
CR016M014GV4	CR016M014GV4	45	R
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CR016M014RT6	CR016M014RT6	33	1
CR016M014RV4	CR016M014RV4	45	R
CR016M015GT4	CR016M015GT4	33	R

Type	Part number	Page	Pack
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CR016M015GV4	CR016M015GV4	45	R
CR016M015RT4	CR016M015RT4	33	1
CR016M015RT6	CR016M015RT6	33	1
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CR016MZ13GT6	CR016MZ13GT6	30	R
CR016MZ13GV4	CR016MZ13GV4	42	R
CR016MZ13RT4	CR016MZ13RT4	30	1
CR016MZ13RT6	CR016MZ13RT6	30	1
CR016MZ13RV4	CR016MZ13RV4	42	R
CR016MZ14GT4	CR016MZ14GT4	31	R
CR016MZ14GT6	CR016MZ14GT6	31	R
CR016MZ14GV4	CR016MZ14GV4	43	R
CR016MZ14RT4	CR016MZ14RT4	31	1
CR016MZ14RT6	CR016MZ14RT6	31	1
CR016MZ14RV4	CR016MZ14RV4	43	R
CR016MZ23GT4	CR016MZ23GT4	31	R
CR016MZ23GT6	CR016MZ23GT6	31	R
CR016MZ23GV4	CR016MZ23GV4	43	R
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CR016MZ23RT6	CR016MZ23RT6	31	1
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CR016MZ33GT6	CR016MZ33GT6	32	R
CR016MZ33GV4	CR016MZ33GV4	44	R
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CR0200001GT6	CR0200001GT6	24	R
CR0200001GV4	CR0200001GV4	36	R
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CR0200003GT4	CR0200003GT4	24	R
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CR0200004GT6	CR0200004GT6	25	R
CR0200004GV4	CR0200004GV4	37	R
CR0200004RT4	CR0200004RT4	25	1
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CR0200005RT4	CR0200005RT4	25	1
CR0200005RT6	CR0200005RT6	25	1
CR0200005RV4	CR0200005RV4	37	R
CR0200006GT4	CR0200006GT4	26	R
CR0200006GT6	CR0200006GT6	26	R
CR0200006GV4	CR0200006GV4	38	R
CR0200006RT4	CR0200006RT4	26	1
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CR0200007GT4	CR0200007GT4	26	R
CR0200007GT6	CR0200007GT6	26	R

Type	Part number	Page	Pack
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CR0200007RT6	CR0200007RT6	26	1
CR0200007RV4	CR0200007RV4	38	R
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CR0200009RT4	CR0200009RT4	27	1
CR0200009RT6	CR0200009RT6	27	1
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CR0200010GT4	CR0200010GT4	28	R
CR0200010GT6	CR0200010GT6	28	R
CR0200010GV4	CR0200010GV4	40	R
CR0200010RT4	CR0200010RT4	28	1
CR0200010RT6	CR0200010RT6	28	1
CR0200010RV4	CR0200010RV4	40	R
CR0200011GT4	CR0200011GT4	28	R
CR0200011GT6	CR0200011GT6	28	R
CR0200011GV4	CR0200011GV4	40	R
CR0200011RT4	CR0200011RT4	28	1
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CR0200031RT6	CR0200031RT6	28	1
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CR0200034GT4	CR0200034GT4	29	R
CR0200034GT6	CR0200034GT6	29	R
CR0200034GV4	CR0200034GV4	41	R
CR0200034RT4	CR0200034RT4	29	1
CR0200034RT6	CR0200034RT6	29	1
CR0200034RV4	CR0200034RV4	41	R
CR0200036GT4	CR0200036GT4	27	R
CR0200036GT6	CR0200036GT6	27	R
CR0200036GV4	CR0200036GV4	39	R
CR0200036RT4	CR0200036RT4	27	1
CR0200036RT6	CR0200036RT6	27	1
CR0200036RV4	CR0200036RV4	39	R
CR0200039GT4	CR0200039GT4	26	R
CR0200039GT6	CR0200039GT6	26	R
CR0200039GV4	CR0200039GV4	38	R
CR0200039RT4	CR0200039RT4	26	1
CR0200039RT6	CR0200039RT6	26	1
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CR02000G3BK5	CR02000G3BK5	46	R
CR02000G3BK6	CR02000G3BK6	34	1
CR02000G3BL5	CR02000G3BL5	46	R
CR02000G3BL6	CR02000G3BL6	34	1
CR02000G3GK5	CR02000G3GK5	47	R
CR02000G3GK6	CR02000G3GK6	35	R
CR02000G3GL5	CR02000G3GL5	47	R
CR02000G3GL6	CR02000G3GL6	35	R
CR02000G3HK5	CR02000G3HK5	47	R
CR02000G3HK6	CR02000G3HK6	35	R
CR02000G3HL5	CR02000G3HL5	47	R
CR02000G3HL6	CR02000G3HL6	35	R
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CR02000G3RK6	CR02000G3RK6	34	1
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CR02000G4BK6	CR02000G4BK6	34	1
CR02000G4BL5	CR02000G4BL5	46	R
CR02000G4BL6	CR02000G4BL6	34	1
CR02000G4GK5	CR02000G4GK5	47	R

Type	Part number	Page	Pack
CR02000G4GK6	CR02000G4GK6	35	R
CR02000G4GL5	CR02000G4GL5	47	R
CR02000G4GL6	CR02000G4GL6	35	R
CR02000G4HK5	CR02000G4HK5	47	R
CR02000G4HK6	CR02000G4HK6	35	R
CR02000G4HL5	CR02000G4HL5	47	R
CR02000G4HL6	CR02000G4HL6	35	R
CR02000G4RK5	CR02000G4RK5	46	R
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CR02000G4RL5	CR02000G4RL5	46	R
CR02000G4RL6	CR02000G4RL6	34	1
CR020MZ13GT4	CR020MZ13GT4	30	R
CR020MZ13GT6	CR020MZ13GT6	30	R
CR020MZ13GV4	CR020MZ13GV4	42	R
CR020MZ13RT4	CR020MZ13RT4	30	1
CR020MZ13RT6	CR020MZ13RT6	30	1
CR020MZ13RV4	CR020MZ13RV4	42	R
CR020MZ23GT4	CR020MZ23GT4	31	R
CR020MZ23GT6	CR020MZ23GT6	31	R
CR020MZ23GV4	CR020MZ23GV4	43	R
CR020MZ23RT4	CR020MZ23RT4	31	1
CR020MZ23RT6	CR020MZ23RT6	31	1
CR020MZ23RV4	CR020MZ23RV4	43	R
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CR0250002GT6	CR0250002GT6	24	R
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CR0250003RT6	CR0250003RT6	24	1
CR0250003RV6	CR0250003RV6	36	1
CR0250004GT4	CR0250004GT4	25	R
CR0250004GT6	CR0250004GT6	25	R
CR0250004GV6	CR0250004GV6	37	R
CR0250004RT4	CR0250004RT4	25	1
CR0250004RT6	CR0250004RT6	25	1
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CR0250005GT6	CR0250005GT6	25	R
CR0250005GV6	CR0250005GV6	37	R
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CR0250008RT4	CR0250008RT4	27	1
CR0250008RT6	CR0250008RT6	27	1
CR0250008RV6	CR0250008RV6	39	1
CR0250009GT4	CR0250009GT4	27	R
CR0250009GT6	CR0250009GT6	27	1

Type	Part number	Page	Pack
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CR025009RT4	CR025009RT4	27	1
CR025009RT6	CR025009RT6	27	1
CR025009RV6	CR025009RV6	39	R
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CR0250010GT6	CR0250010GT6	28	1
CR0250010GV6	CR0250010GV6	40	R
CR0250010RT4	CR0250010RT4	28	1
CR0250010RT6	CR0250010RT6	28	1
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CR0250034RT6	CR0250034RT6	29	1
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CR0250036GT4	CR0250036GT4	27	R
CR0250036GT6	CR0250036GT6	27	R
CR0250036GV6	CR0250036GV6	39	R
CR0250036RT4	CR0250036RT4	27	1
CR0250036RT6	CR0250036RT6	27	1
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CR0250039GT6	CR0250039GT6	26	1
CR0250039GV6	CR0250039GV6	38	R
CR0250039RT6	CR0250039RT6	26	1
CR0250039RV6	CR0250039RV6	38	1
CR02500G3BK5	CR02500G3BK5	46	R
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CR02500G3BL5	CR02500G3BL5	46	1
CR02500G3BL6	CR02500G3BL6	34	1
CR02500G3GK5	CR02500G3GK5	47	R
CR02500G3GK6	CR02500G3GK6	35	R
CR02500G3GL5	CR02500G3GL5	47	R
CR02500G3GL6	CR02500G3GL6	35	1
CR02500G3HK5	CR02500G3HK5	47	R
CR02500G3HK6	CR02500G3HK6	35	R
CR02500G3HL5	CR02500G3HL5	47	R
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CR02500G4GL5	CR02500G4GL5	47	R
CR02500G4GL6	CR02500G4GL6	35	1
CR02500G4HK5	CR02500G4HK5	47	R
CR02500G4HK6	CR02500G4HK6	35	R
CR02500G4HL5	CR02500G4HL5	47	R
CR02500G4HL6	CR02500G4HL6	35	1

Type	Part number	Page	Pack
CR02500G4RK5	CR02500G4RK5	46	R
CR02500G4RK6	CR02500G4RK6	34	1
CR02500G4RL5	CR02500G4RL5	46	R
CR02500G4RL6	CR02500G4RL6	34	1
CR025MZ13GT4	CR025MZ13GT4	30	R
CR025MZ13GT6	CR025MZ13GT6	30	R
CR025MZ13GV6	CR025MZ13GV6	42	R
CR025MZ13RT4	CR025MZ13RT4	30	1
CR025MZ13RT6	CR025MZ13RT6	30	1
CR025MZ13RV6	CR025MZ13RV6	42	R
CR025MZ23GT4	CR025MZ23GT4	31	R
CR025MZ23GT6	CR025MZ23GT6	31	R
CR025MZ23GV6	CR025MZ23GV6	43	R
CR025MZ23RT4	CR025MZ23RT4	31	1
CR025MZ23RT6	CR025MZ23RT6	31	1
CR025MZ23RV6	CR025MZ23RV6	43	R
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CR0320002GT6	CR0320002GT6	24	R
CR0320002GV6	CR0320002GV6	36	R
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CR0320007RT6	CR0320007RT6	26	1
CR0320007RV6	CR0320007RV6	38	R
CR0320008GT4	CR0320008GT4	27	R
CR0320008GT6	CR0320008GT6	27	1
CR0320008GV6	CR0320008GV6	39	R
CR0320008RT4	CR0320008RT4	27	1
CR0320008RT6	CR0320008RT6	27	1
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CR0320010RT6	CR0320010RT6	28	1
CR0320010RV6	CR0320010RV6	40	R
CR0320039GT4	CR0320039GT4	26	R
CR0320039GT6	CR0320039GT6	26	R
CR0320039GV6	CR0320039GV6	38	R
CR0320039RT4	CR0320039RT4	26	1
CR0320039RT6	CR0320039RT6	26	1
CR0320039RV6	CR0320039RV6	38	R
CR03200G3BK5	CR03200G3BK5	46	R
CR03200G3BK6	CR03200G3BK6	34	1
CR03200G3BL5	CR03200G3BL5	46	R

Type	Part number	Page	Pack
CR03200G3BL6	CR03200G3BL6	34	1
CR03200G3GK5	CR03200G3GK5	47	R
CR03200G3GK6	CR03200G3GK6	35	R
CR03200G3GL5	CR03200G3GL5	47	R
CR03200G3GL6	CR03200G3GL6	35	R
CR03200G3HK5	CR03200G3HK5	47	R
CR03200G3HK6	CR03200G3HK6	35	R
CR03200G3HL5	CR03200G3HL5	47	R
CR03200G3HL6	CR03200G3HL6	35	1
CR03200G3RK5	CR03200G3RK5	46	R
CR03200G3RK6	CR03200G3RK6	34	1
CR03200G3RL5	CR03200G3RL5	46	R
CR03200G3RL6	CR03200G3RL6	34	1
CR03200G4BK5	CR03200G4BK5	46	R
CR03200G4BK6	CR03200G4BK6	34	1
CR03200G4BL5	CR03200G4BL5	46	1
CR03200G4BL6	CR03200G4BL6	34	1
CR03200G4GK5	CR03200G4GK5	47	R
CR03200G4GK6	CR03200G4GK6	35	R
CR03200G4GL5	CR03200G4GL5	47	R
CR03200G4GL6	CR03200G4GL6	35	R
CR03200G4HK5	CR03200G4HK5	47	R
CR03200G4HK6	CR03200G4HK6	35	R
CR03200G4HL5	CR03200G4HL5	47	R
CR03200G4HL6	CR03200G4HL6	35	1
CR03200G4RK5	CR03200G4RK5	46	R
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CR03200G4RL6	CR03200G4RL6	34	1
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CR0400002GV6	CR0400002GV6	36	R
CR0400002RT4	CR0400002RT4	24	1
CR0400002RT6	CR0400002RT6	24	1
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CR0400003GT4	CR0400003GT4	24	R
CR0400003GT6	CR0400003GT6	24	R
CR0400003GV6	CR0400003GV6	36	R
CR0400003RT4	CR0400003RT4	24	1
CR0400003RT6	CR0400003RT6	24	1
CR0400003RV6	CR0400003RV6	36	R
CR0400004GT4	CR0400004GT4	25	R
CR0400004GT6	CR0400004GT6	25	R
CR0400004GV6	CR0400004GV6	37	R
CR0400004RT4	CR0400004RT4	25	1
CR0400004RT6	CR0400004RT6	25	1
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CR0400006GV6	CR0400006GV6	38	R
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CR0400006RT6	CR0400006RT6	26	1
CR0400006RV6	CR0400006RV6	38	R
CR0400007GT4	CR0400007GT4	26	R
CR0400007GT6	CR0400007GT6	26	R
CR0400007GV6	CR0400007GV6	38	R
CR0400007RT4	CR0400007RT4	26	1
CR0400007RT6	CR0400007RT6	26	1
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CR0400009GT6	CR0400009GT6	27	R
CR0400009GV6	CR0400009GV6	39	R
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CR0400009RT6	CR0400009RT6	27	1
CR0400009RV6	CR0400009RV6	39	R
CR0400010GT6	CR0400010GT6	28	R
CR0400010GV6	CR0400010GV6	40	R
CR0400010RT4	CR0400010RT4	28	1
CR0400010RT6	CR0400010RT6	28	1

Type	Part number	Page	Pack
CR0400010RV6	CR0400010RV6	40	R
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CR0400039GT6	CR0400039GT6	26	R
CR0400039GV6	CR0400039GV6	38	R
CR0400039RT4	CR0400039RT4	26	1
CR0400039RT6	CR0400039RT6	26	1
CR0400039RV6	CR0400039RV6	38	R
CR04000G3BK5	CR04000G3BK5	46	R
CR04000G3BK6	CR04000G3BK6	34	1
CR04000G3BL5	CR04000G3BL5	46	R
CR04000G3BL6	CR04000G3BL6	34	1
CR04000G3GK5	CR04000G3GK5	47	R
CR04000G3GK6	CR04000G3GK6	35	R
CR04000G3GL5	CR04000G3GL5	47	R
CR04000G3GL6	CR04000G3GL6	35	R
CR04000G3HK5	CR04000G3HK5	47	R
CR04000G3HK6	CR04000G3HK6	35	R
CR04000G3HL5	CR04000G3HL5	47	R
CR04000G3HL6	CR04000G3HL6	35	R
CR04000G3RK5	CR04000G3RK5	46	R
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CR04000G4GL5	CR04000G4GL5	47	R
CR04000G4GL6	CR04000G4GL6	35	R
CR04000G4HK5	CR04000G4HK5	47	R
CR04000G4HK6	CR04000G4HK6	35	R
CR04000G4HL5	CR04000G4HL5	47	R
CR04000G4HL6	CR04000G4HL6	35	R
CR04000G4RK5	CR04000G4RK5	46	R
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CR04000G4RL5	CR04000G4RL5	46	R
CR04000G4RL6	CR04000G4RL6	34	1
CS012MZ13PL1	CS012MZ13PL1	65	1
CS012MZ13PL2	CS012MZ13PL2	65	R
CS012MZ14PL1	CS012MZ14PL1	65	1
CS012MZ14PL2	CS012MZ14PL2	65	R
CS012MZ23PL1	CS012MZ23PL1	66	1
CS012MZ23PL2	CS012MZ23PL2	66	R
CS016MZ13PL1	CS016MZ13PL1	65	R
CS016MZ13PL2	CS016MZ13PL2	65	R
CS016MZ14PL1	CS016MZ14PL1	65	R
CS016MZ14PL2	CS016MZ14PL2	65	R
CS016MZ23PL2	CS016MZ23PL2	66	R
CS020MZ13PL2	CS020MZ13PL2	65	R
D91	ERC00420	326	1
DS0203B110AK6	DS0203B110AK6	180	R
DS0203B110AL6	DS0203B110AL6	180	1
DS0203B110AT6L	DS0203B110AT6L	180	R
DS0203B110AY6L	DS0203B110AY6L	180	R
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DS0203BAW4	DS0203BAW4	111	R
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DS0203BAY4L	DS0203BAY4L	110	R
DS0203BAY6	DS0203BAY6	112	R
DS0203BAY6L	DS0203BAY6L	110	R
DS0203BDDN	DS0203BDDN	116	R

Type	Part number	Page	Pack
DS0203BFCD	DS0203BFCD	116	1
DS0203BFK5	DS0203BFK5	115	R
DS0203BFK6	DS0203BFK6	113	R
DS0203BFL5	DS0203BFL5	115	R
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DS0203BFT4L	DS0203BFT4L	113	R
DS0203BFT6	DS0203BFT6	114	R
DS0203BFT6L	DS0203BFT6L	113	R
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DS0203BFV6	DS0203BFV6	115	R
DS0203BFW4	DS0203BFW4	115	R
DS0203BFW6	DS0203BFW6	115	R
DS0203BFY4	DS0203BFY4	114	R
DS0203BFY4L	DS0203BFY4L	113	R
DS0203BFY6	DS0203BFY6	114	R
DS0203BFY6L	DS0203BFY6L	113	R
DS0203G	DS0203G	116	R
DS0203GDK5	DS0203GDK5	115	R
DS0203GDK6	DS0203GDK6	113	R
DS0203GDL5	DS0203GDL5	115	R
DS0203GDL6	DS0203GDL6	113	1
DS0203GDT4	DS0203GDT4	114	R
DS0203GDT4L	DS0203GDT4L	113	1
DS0203GDT6	DS0203GDT6	114	R
DS0203GDT6L	DS0203GDT6L	113	R
DS0203GDV4	DS0203GDV4	115	R
DS0203GDV6	DS0203GDV6	115	R
DS0203GDW4	DS0203GDW4	115	R
DS0203GDW6	DS0203GDW6	115	R
DS0203GDY4	DS0203GDY4	114	R
DS0203GDY4L	DS0203GDY4L	113	1
DS0203GDY6	DS0203GDY6	114	R
DS0203GDY6L	DS0203GDY6L	113	R
DS0203P	DS0203P	116	R
DS0203PQT6	DS0203PQT6	112	R
DS0203PQT6L	DS0203PQT6L	110	R
DS0203PQV4	DS0203PQV4	111	R
DS0203PQV6	DS0203PQV6	111	R
DS0203PQW4	DS0203PQW4	111	R
DS0203PQW6	DS0203PQW6	111	R
DS0203PQY6	DS0203PQY6	112	R
DS0203PQY6L	DS0203PQY6L	110	R
DS0203PRK5	DS0203PRK5	111	R
DS0203PRK6	DS0203PRK6	110	R
DS0203PRL5	DS0203PRL5	111	R
DS0203PRL6	DS0203PRL6	110	R
DS0203R	DS0203R	116	R
DS0203RQT4	DS0203RQT4	112	R
DS0203RQT4L	DS0203RQT4L	110	1
DS0203RQT6	DS0203RQT6	112	R
DS0203RQT6L	DS0203RQT6L	110	R
DS0203RQV4	DS0203RQV4	111	R
DS0203RQV6	DS0203RQV6	111	R
DS0203RQW4	DS0203RQW4	111	R
DS0203RQW6	DS0203RQW6	111	R
DS0203RQY4	DS0203RQY4	112	R
DS0203RQY4L	DS0203RQY4L	110	1
DS0203RQY6	DS0203RQY6	112	R
DS0203RQY6L	DS0203RQY6L	110	R
DS0203RRK5	DS0203RRK5	111	R
DS0203RRK6	DS0203RRK6	110	1
DS0203RRL5	DS0203RRL5	111	R
DS0203RRL6	DS0203RRL6	110	1
DS0204B110AK6	DS0204B110AK6	180	R
DS0204B110AL6	DS0204B110AL6	180	1
DS0204B110AT6L	DS0204B110AT6L	180	R
DS0204B110AY6L	DS0204B110AY6L	180	R
DS0204BAK5	DS0204BAK5	111	R
DS0204BAK6	DS0204BAK6	110	1
DS0204BAL5	DS0204BAL5	111	R
DS0204BAL6	DS0204BAL6	110	1
DS0204BAT4	DS0204BAT4	112	R

Type	Part number	Page	Pack
DS0204BAT4L	DS0204BAT4L	110	R
DS0204BAT6	DS0204BAT6	112	R
DS0204BAT6L	DS0204BAT6L	110	R
DS0204BAV4	DS0204BAV4	111	R
DS0204BAV6	DS0204BAV6	111	R
DS0204BAW4	DS0204BAW4	111	R
DS0204BAW6	DS0204BAW6	111	R
DS0204BAY4	DS0204BAY4	112	R
DS0204BAY4L	DS0204BAY4L	110	R
DS0204BAY6	DS0204BAY6	112	R
DS0204BAY6L	DS0204BAY6L	110	R
DS0204BDDN	DS0204BDDN	116	R
DS0204BFCD	DS0204BFCD	116	1
DS0204BFK5	DS0204BFK5	115	R
DS0204BFK6	DS0204BFK6	113	R
DS0204BFL5	DS0204BFL5	115	R
DS0204BFL6	DS0204BFL6	113	1
DS0204BFT4	DS0204BFT4	114	R
DS0204BFT4L	DS0204BFT4L	113	R
DS0204BFT6	DS0204BFT6	114	R
DS0204BFT6L	DS0204BFT6L	113	R
DS0204BFV4	DS0204BFV4	115	R
DS0204BFV6	DS0204BFV6	115	R
DS0204BFW4	DS0204BFW4	115	R
DS0204BFW6	DS0204BFW6	115	R
DS0204BFY4	DS0204BFY4	114	R
DS0204BFY4L	DS0204BFY4L	113	R
DS0204BFY6	DS0204BFY6	114	R
DS0204BFY6L	DS0204BFY6L	113	R
DS0204G	DS0204G	116	R
DS0204GDK5	DS0204GDK5	115	R
DS0204GDK6	DS0204GDK6	113	R
DS0204GDL5	DS0204GDL5	115	R
DS0204GDL6	DS0204GDL6	113	1
DS0204GDT4	DS0204GDT4	114	R
DS0204GDT4L	DS0204GDT4L	113	1
DS0204GDT6	DS0204GDT6	114	R
DS0204GDT6L	DS0204GDT6L	113	R
DS0204GDV4	DS0204GDV4	115	R
DS0204GDV6	DS0204GDV6	115	R
DS0204GDW4	DS0204GDW4	115	R
DS0204GDW6	DS0204GDW6	115	R
DS0204GDY4	DS0204GDY4	114	R
DS0204GDY4L	DS0204GDY4L	113	1
DS0204GDY6	DS0204GDY6	114	R
DS0204GDY6L	DS0204GDY6L	113	R
DS0204P	DS0204P	116	R
DS0204PQT6	DS0204PQT6	112	R
DS0204PQT6L	DS0204PQT6L	110	R
DS0204PQV4	DS0204PQV4	111	R
DS0204PQV6	DS0204PQV6	111	R
DS0204PQW4	DS0204PQW4	111	R
DS0204PQW6	DS0204PQW6	111	R
DS0204PQY6	DS0204PQY6	112	R
DS0204PQY6L	DS0204PQY6L	110	R
DS0204PRK5	DS0204PRK5	111	R
DS0204PRK6	DS0204PRK6	110	R
DS0204PRL5	DS0204PRL5	111	R
DS0204PRL6	DS0204PRL6	110	R
DS0204R	DS0204R	116	R
DS0204RQT4	DS0204RQT4	112	R
DS0204RQT4L	DS0204RQT4L	110	1
DS0204RQT6	DS0204RQT6	112	R
DS0204RQT6L	DS0204RQT6L	110	R
DS0204RQV4	DS0204RQV4	111	R
DS0204RQV6	DS0204RQV6	111	R
DS0204RQW4	DS0204RQW4	111	R
DS0204RQW6	DS0204RQW6	111	R
DS0204RQY4	DS0204RQY4	112	R
DS0204RQY4L	DS0204RQY4L	110	1
DS0204RQY6	DS0204RQY6	112	R
DS0204RQY6L	DS0204RQY6L	110	R
DS0204RRK5	DS0204RRK5	111	R

Type	Part number	Page	Pack
DS0204RRK6	DS0204RRK6	110	1
DS0204RRL5	DS0204RRL5	111	R
DS0204RRL6	DS0204RRL6	110	1
DS0323B110AK6	DS0323B110AK6	180	R
DS0323B110AL6	DS0323B110AL6	180	1
DS0323B110AT6L	DS0323B110AT6L	180	R
DS0323B110AY6L	DS0323B110AY6L	180	R
DS0323BAK5	DS0323BAK5	111	R
DS0323BAK6	DS0323BAK6	110	1
DS0323BAL5	DS0323BAL5	111	R
DS0323BAL6	DS0323BAL6	110	1
DS0323BAT4	DS0323BAT4	112	R
DS0323BAT4L	DS0323BAT4L	110	R
DS0323BAT6	DS0323BAT6	112	R
DS0323BAT6L	DS0323BAT6L	110	R
DS0323BAV4	DS0323BAV4	111	R
DS0323BAV6	DS0323BAV6	111	R
DS0323BAW4	DS0323BAW4	111	R
DS0323BAW6	DS0323BAW6	111	R
DS0323BAY4	DS0323BAY4	112	R
DS0323BAY4L	DS0323BAY4L	110	R
DS0323BAY6	DS0323BAY6	112	R
DS0323BAY6L	DS0323BAY6L	110	R
DS0323BDDN	DS0323BDDN	116	R
DS0323BFCD	DS0323BFCD	116	1
DS0323BFK5	DS0323BFK5	115	R
DS0323BFK6	DS0323BFK6	113	R
DS0323BFL5	DS0323BFL5	115	R
DS0323BFL6	DS0323BFL6	113	1
DS0323BFT4	DS0323BFT4	114	R
DS0323BFT4L	DS0323BFT4L	113	R
DS0323BFT6	DS0323BFT6	114	R
DS0323BFT6L	DS0323BFT6L	113	R
DS0323BFV4	DS0323BFV4	115	R
DS0323BFV6	DS0323BFV6	115	R
DS0323BFW4	DS0323BFW4	115	R
DS0323BFW6	DS0323BFW6	115	R
DS0323BFY4	DS0323BFY4	114	R
DS0323BFY4L	DS0323BFY4L	113	R
DS0323BFY6	DS0323BFY6	114	R
DS0323BFY6L	DS0323BFY6L	113	R
DS0323G	DS0323G	116	R
DS0323GDK5	DS0323GDK5	115	R
DS0323GDK6	DS0323GDK6	113	R
DS0323GDL5	DS0323GDL5	115	R
DS0323GDL6	DS0323GDL6	113	1
DS0323GDT4	DS0323GDT4	114	R
DS0323GDT4L	DS0323GDT4L	113	1
DS0323GDT6	DS0323GDT6	114	R
DS0323GDT6L	DS0323GDT6L	113	R
DS0323GDV4	DS0323GDV4	115	R
DS0323GDV6	DS0323GDV6	115	R
DS0323GDW4	DS0323GDW4	115	R
DS0323GDW6	DS0323GDW6	115	R
DS0323GDY4	DS0323GDY4	114	R
DS0323GDY4L	DS0323GDY4L	113	1
DS0323GDY6	DS0323GDY6	114	R
DS0323GDY6L	DS0323GDY6L	113	R
DS0323P	DS0323P	116	R
DS0323PQT6	DS0323PQT6	112	R
DS0323PQT6L	DS0323PQT6L	110	R
DS0323PQV4	DS0323PQV4	111	R
DS0323PQV6	DS0323PQV6	111	R
DS0323PQW4	DS0323PQW4	111	R
DS0323PQW6	DS0323PQW6	111	R
DS0323PQY6	DS0323PQY6	112	R
DS0323PQY6L	DS0323PQY6L	110	R
DS0323PRK5	DS0323PRK5	111	R
DS0323PRK6	DS0323PRK6	110	R
DS0323PRL5	DS0323PRL5	111	R
DS0323PRL6	DS0323PRL6	110	R
DS0323R	DS0323R	116	R
DS0323RQT4	DS0323RQT4	112	R

Type	Part number	Page	Pack
DS0323RQT4L	DS0323RQT4L	110	1
DS0323RQT6	DS0323RQT6	112	R
DS0323RQT6L	DS0323RQT6L	110	R
DS0323RQV4	DS0323RQV4	111	R
DS0323RQV6	DS0323RQV6	111	R
DS0323RQW4	DS0323RQW4	111	R
DS0323RQW6	DS0323RQW6	111	R
DS0323RQY4	DS0323RQY4	112	R
DS0323RQY4L	DS0323RQY4L	110	1
DS0323RQY6	DS0323RQY6	112	R
DS0323RQY6L	DS0323RQY6L	110	R
DS0323RRK5	DS0323RRK5	111	R
DS0323RRK6	DS0323RRK6	110	1
DS0323RRL5	DS0323RRL5	111	R
DS0323RRL6	DS0323RRL6	110	1
DS0324B110AK6	DS0324B110AK6	180	R
DS0324B110AL6	DS0324B110AL6	180	1
DS0324B110AT6L	DS0324B110AT6L	180	R
DS0324B110AY6L	DS0324B110AY6L	180	R
DS0324BAK5	DS0324BAK5	111	R
DS0324BAK6	DS0324BAK6	110	1
DS0324BAL5	DS0324BAL5	111	R
DS0324BAL6	DS0324BAL6	110	1
DS0324BAT4	DS0324BAT4	112	R
DS0324BAT4L	DS0324BAT4L	110	R
DS0324BAT6	DS0324BAT6	112	R
DS0324BAT6L	DS0324BAT6L	110	R
DS0324BAV4	DS0324BAV4	111	R
DS0324BAV6	DS0324BAV6	111	R
DS0324BAW4	DS0324BAW4	111	R
DS0324BAW6	DS0324BAW6	111	R
DS0324BAY4	DS0324BAY4	112	R
DS0324BAY4L	DS0324BAY4L	110	R
DS0324BAY6	DS0324BAY6	112	R
DS0324BAY6L	DS0324BAY6L	110	R
DS0324BDDN	DS0324BDDN	116	R
DS0324BFCD	DS0324BFCD	116	1
DS0324BFK5	DS0324BFK5	115	R
DS0324BFK6	DS0324BFK6	113	R
DS0324BFL5	DS0324BFL5	115	R
DS0324BFL6	DS0324BFL6	113	1
DS0324BFT4	DS0324BFT4	114	R
DS0324BFT4L	DS0324BFT4L	113	R
DS0324BFT6	DS0324BFT6	114	R
DS0324BFT6L	DS0324BFT6L	113	R
DS0324BFV4	DS0324BFV4	115	R
DS0324BFV6	DS0324BFV6	115	R
DS0324BFW4	DS0324BFW4	115	R
DS0324BFW6	DS0324BFW6	115	R
DS0324BFY4	DS0324BFY4	114	R
DS0324BFY4L	DS0324BFY4L	113	R
DS0324BFY6	DS0324BFY6	114	R
DS0324BFY6L	DS0324BFY6L	113	R
DS0324G	DS0324G	116	R
DS0324GDK5	DS0324GDK5	115	R
DS0324GDK6	DS0324GDK6	113	R
DS0324GDL5	DS0324GDL5	115	R
DS0324GDL6	DS0324GDL6	113	1
DS0324GDT4	DS0324GDT4	114	R
DS0324GDT4L	DS0324GDT4L	113	1
DS0324GDT6	DS0324GDT6	114	R
DS0324GDT6L	DS0324GDT6L	113	R
DS0324GDV4	DS0324GDV4	115	R
DS0324GDV6	DS0324GDV6	115	R
DS0324GDW4	DS0324GDW4	115	R
DS0324GDW6	DS0324GDW6	115	R
DS0324GDY4	DS0324GDY4	114	R
DS0324GDY4L	DS0324GDY4L	113	1
DS0324GDY6	DS0324GDY6	114	R
DS0324GDY6L	DS0324GDY6L	113	R
DS0324P	DS0324P	116	R
DS0324PQT6	DS0324PQT6	112	R
DS0324PQT6L	DS0324PQT6L	110	R

Type	Part number	Page	Pack
DS0324PQV4	DS0324PQV4	111	R
DS0324PQV6	DS0324PQV6	111	R
DS0324PQW4	DS0324PQW4	111	R
DS0324PQW6	DS0324PQW6	111	R
DS0324PQY6	DS0324PQY6	112	R
DS0324PQY6L	DS0324PQY6L	110	R
DS0324PRK5	DS0324PRK5	111	R
DS0324PRK6	DS0324PRK6	110	R
DS0324PRL5	DS0324PRL5	111	R
DS0324PRL6	DS0324PRL6	110	R
DS0324R	DS0324R	116	R
DS0324RQT4	DS0324RQT4	112	R
DS0324RQT4L	DS0324RQT4L	110	1
DS0324RQT6	DS0324RQT6	112	R
DS0324RQT6L	DS0324RQT6L	110	R
DS0324RQV4	DS0324RQV4	111	R
DS0324RQV6	DS0324RQV6	111	R
DS0324RQW4	DS0324RQW4	111	R
DS0324RQW6	DS0324RQW6	111	R
DS0324RQY4	DS0324RQY4	112	R
DS0324RQY4L	DS0324RQY4L	110	1
DS0324RQY6	DS0324RQY6	112	R
DS0324RQY6L	DS0324RQY6L	110	R
DS0324RRK5	DS0324RRK5	111	R
DS0324RRK6	DS0324RRK6	110	1
DS0324RRL5	DS0324RRL5	111	R
DS0324RRL6	DS0324RRL6	110	1
DS0403B110AK6	DS0403B110AK6	180	R
DS0403B110AL6	DS0403B110AL6	180	1
DS0403B110AT6L	DS0403B110AT6L	180	R
DS0403B110AY6L	DS0403B110AY6L	180	R
DS0403BAK5	DS0403BAK5	111	R
DS0403BAK6	DS0403BAK6	110	1
DS0403BAL5	DS0403BAL5	111	R
DS0403BAL6	DS0403BAL6	110	1
DS0403BAT4	DS0403BAT4	112	R
DS0403BAT4L	DS0403BAT4L	110	R
DS0403BAT6	DS0403BAT6	112	R
DS0403BAT6L	DS0403BAT6L	110	R
DS0403BAV4	DS0403BAV4	111	R
DS0403BAV6	DS0403BAV6	111	R
DS0403BAW4	DS0403BAW4	111	R
DS0403BAW6	DS0403BAW6	111	R
DS0403BAY4	DS0403BAY4	112	R
DS0403BAY4L	DS0403BAY4L	110	R
DS0403BAY6	DS0403BAY6	112	R
DS0403BAY6L	DS0403BAY6L	110	R
DS0403BDDN	DS0403BDDN	116	R
DS0403BFCD	DS0403BFCD	116	1
DS0403BFK5	DS0403BFK5	115	R
DS0403BFK6	DS0403BFK6	113	R
DS0403BFL5	DS0403BFL5	115	R
DS0403BFL6	DS0403BFL6	113	1
DS0403BFT4	DS0403BFT4	114	R
DS0403BFT4L	DS0403BFT4L	113	R
DS0403BFT6	DS0403BFT6	114	R
DS0403BFT6L	DS0403BFT6L	113	R
DS0403BFV4	DS0403BFV4	115	R
DS0403BFV6	DS0403BFV6	115	R
DS0403BFW4	DS0403BFW4	115	R
DS0403BFW6	DS0403BFW6	115	R
DS0403BFY4	DS0403BFY4	114	R
DS0403BFY4L	DS0403BFY4L	113	R
DS0403BFY6	DS0403BFY6	114	R
DS0403BFY6L	DS0403BFY6L	113	R
DS0403G	DS0403G	116	R
DS0403GDK5	DS0403GDK5	115	R
DS0403GDK6	DS0403GDK6	113	R
DS0403GDL5	DS0403GDL5	115	R
DS0403GDL6	DS0403GDL6	113	1
DS0403GDT4	DS0403GDT4	114	R
DS0403GDT4L	DS0403GDT4L	113	1
DS0403GDT6	DS0403GDT6	114	R

Type	Part number	Page	Pack
DS0403GDT6L	DS0403GDT6L	113	R
DS0403GDV4	DS0403GDV4	115	R
DS0403GDV6	DS0403GDV6	115	R
DS0403GDW4	DS0403GDW4	115	R
DS0403GDW6	DS0403GDW6	115	R
DS0403GDY4	DS0403GDY4	114	R
DS0403GDY4L	DS0403GDY4L	113	1
DS0403GDY6	DS0403GDY6	114	R
DS0403GDY6L	DS0403GDY6L	113	R
DS0403P	DS0403P	116	R
DS0403PQT6	DS0403PQT6	112	R
DS0403PQT6L	DS0403PQT6L	110	R
DS0403PQV4	DS0403PQV4	111	R
DS0403PQV6	DS0403PQV6	111	R
DS0403PQW4	DS0403PQW4	111	R
DS0403PQW6	DS0403PQW6	111	R
DS0403PQY6	DS0403PQY6	112	R
DS0403PQY6L	DS0403PQY6L	110	R
DS0403PRK5	DS0403PRK5	111	R
DS0403PRK6	DS0403PRK6	110	R
DS0403PRL5	DS0403PRL5	111	R
DS0403PRL6	DS0403PRL6	110	R
DS0403R	DS0403R	116	R
DS0403RQT4	DS0403RQT4	112	R
DS0403RQT4L	DS0403RQT4L	110	1
DS0403RQT6	DS0403RQT6	112	R
DS0403RQT6L	DS0403RQT6L	110	R
DS0403RQV4	DS0403RQV4	111	R
DS0403RQV6	DS0403RQV6	111	R
DS0403RQW4	DS0403RQW4	111	R
DS0403RQW6	DS0403RQW6	111	R
DS0403RQY4	DS0403RQY4	112	R
DS0403RQY4L	DS0403RQY4L	110	1
DS0403RQY6	DS0403RQY6	112	R
DS0403RQY6L	DS0403RQY6L	110	R
DS0403RRK5	DS0403RRK5	111	R
DS0403RRK6	DS0403RRK6	110	1
DS0403RRL5	DS0403RRL5	111	R
DS0403RRL6	DS0403RRL6	110	1
DS0404B110AK6	DS0404B110AK6	180	R
DS0404B110AL6	DS0404B110AL6	180	1
DS0404B110AT6L	DS0404B110AT6L	180	R
DS0404B110AY6L	DS0404B110AY6L	180	R
DS0404BAK5	DS0404BAK5	111	R
DS0404BAK6	DS0404BAK6	110	1
DS0404BAL5	DS0404BAL5	111	R
DS0404BAL6	DS0404BAL6	110	1
DS0404BAT4	DS0404BAT4	112	R
DS0404BAT4L	DS0404BAT4L	110	R
DS0404BAT6	DS0404BAT6	112	R
DS0404BAT6L	DS0404BAT6L	110	R
DS0404BAV4	DS0404BAV4	111	R
DS0404BAV6	DS0404BAV6	111	R
DS0404BAW4	DS0404BAW4	111	R
DS0404BAW6	DS0404BAW6	111	R
DS0404BAY4	DS0404BAY4	112	R
DS0404BAY4L	DS0404BAY4L	110	R
DS0404BAY6	DS0404BAY6	112	R
DS0404BAY6L	DS0404BAY6L	110	R
DS0404BDDN	DS0404BDDN	116	R
DS0404BFCD	DS0404BFCD	116	1
DS0404BFK5	DS0404BFK5	115	R
DS0404BFK6	DS0404BFK6	113	R
DS0404BFL5	DS0404BFL5	115	R
DS0404BFL6	DS0404BFL6	113	1
DS0404BFT4	DS0404BFT4	114	R
DS0404BFT4L	DS0404BFT4L	113	R
DS0404BFT6	DS0404BFT6	114	R
DS0404BFT6L	DS0404BFT6L	113	R
DS0404BFV4	DS0404BFV4	115	R
DS0404BFV6	DS0404BFV6	115	R
DS0404BFW4	DS0404BFW4	115	R
DS0404BFW6	DS0404BFW6	115	R

Type	Part number	Page	Pack
DS0404BFY4	DS0404BFY4	114	R
DS0404BFY4L	DS0404BFY4L	113	R
DS0404BFY6	DS0404BFY6	114	R
DS0404BFY6L	DS0404BFY6L	113	R
DS0404G	DS0404G	116	R
DS0404GDK5	DS0404GDK5	115	R
DS0404GDK6	DS0404GDK6	113	R
DS0404GDL5	DS0404GDL5	115	R
DS0404GDL6	DS0404GDL6	113	1
DS0404GDT4	DS0404GDT4	114	R
DS0404GDT4L	DS0404GDT4L	113	1
DS0404GDT6	DS0404GDT6	114	R
DS0404GDT6L	DS0404GDT6L	113	R
DS0404GDV4	DS0404GDV4	115	R
DS0404GDV6	DS0404GDV6	115	R
DS0404GDW4	DS0404GDW4	115	R
DS0404GDW6	DS0404GDW6	115	R
DS0404GDY4	DS0404GDY4	114	R
DS0404GDY4L	DS0404GDY4L	113	1
DS0404GDY6	DS0404GDY6	114	R
DS0404GDY6L	DS0404GDY6L	113	R
DS0404P	DS0404P	116	R
DS0404PQT6	DS0404PQT6	112	R
DS0404PQT6L	DS0404PQT6L	110	R
DS0404PQV4	DS0404PQV4	111	R
DS0404PQV6	DS0404PQV6	111	R
DS0404PQW4	DS0404PQW4	111	R
DS0404PQW6	DS0404PQW6	111	R
DS0404PQY6	DS0404PQY6	112	R
DS0404PQY6L	DS0404PQY6L	110	R
DS0404PRK5	DS0404PRK5	111	R
DS0404PRK6	DS0404PRK6	110	R
DS0404PRL5	DS0404PRL5	111	R
DS0404PRL6	DS0404PRL6	110	R
DS0404R	DS0404R	116	R
DS0404RQT4	DS0404RQT4	112	R
DS0404RQT4L	DS0404RQT4L	110	1
DS0404RQT6	DS0404RQT6	112	R
DS0404RQT6L	DS0404RQT6L	110	R
DS0404RQV4	DS0404RQV4	111	R
DS0404RQV6	DS0404RQV6	111	R
DS0404RQW4	DS0404RQW4	111	R
DS0404RQW6	DS0404RQW6	111	R
DS0404RQY4	DS0404RQY4	112	R
DS0404RQY4L	DS0404RQY4L	110	1
DS0404RQY6	DS0404RQY6	112	R
DS0404RQY6L	DS0404RQY6L	110	R
DS0404RRK5	DS0404RRK5	111	R
DS0404RRK6	DS0404RRK6	110	1
DS0404RRL5	DS0404RRL5	111	R
DS0404RRL6	DS0404RRL6	110	1
DS0404PAD	DS0404PAD	117	5
DS0404PR1	DS0404PR1	117	5
DS0404PR3	DS0404PR3	117	5
DSC040NCB	DSC040NCB	116	5
DSC040NCR	DSC040NCR	116	5
DSC040NOB	DSC040NOB	116	5
DSC040NOR	DSC040NOR	116	5
DSC040PAB	DSC040PAB	116	5
DSC040PAR	DSC040PAR	116	5
DSC040PENB	DSC040PENB	116	5
DSC040PENR	DSC040PENR	116	5
DSC040PSB	DSC040PSB	116	5
DSC040PSR	DSC040PSR	116	5
E10000AI	E10000AI	195	1
E10000AIS1	E10000AIS1	195	1
E10000AM	E10000AM	195	1
E10000AMS1	E10000AMS1	195	1
E10000BI	E10000BI	196	1
E10000BI13	E10000BI13	196	1
E10000BM	E10000BM	196	1
E10000BM13	E10000BM13	196	1
E10000CI	E10000CI	197	1

Type	Part number	Page	Pack
E10000CIS1	E10000CIS1	197	1
E10000CM	E10000CM	197	1
E10000CMS1	E10000CMS1	197	1
E10000DI	E10000DI	198	1
E10000DIS1	E10000DIS1	198	1
E10000DM	E10000DM	198	1
E10000DMS1	E10000DMS1	198	1
E10000EI	E10000EI	199	1
E10000EI50	E10000EI50	200	1
E10000EIRA	E10000EIRA	199	1
E10000EM	E10000EM	199	1
E10000EM50	E10000EM50	200	1
E10000EMRA	E10000EMRA	199	1
E10000FI	E10000FI	202	1
E10000FI50	E10000FI50	202	1
E10000FM	E10000FM	202	1
E10000FM50	E10000FM50	202	1
E10000FRI50	E10000FRI50	203	1
E10000FRM50	E10000FRM50	203	1
E10000GI	E10000GI	203	1
E10000GM	E10000GM	203	1
E10000HI	E10000HI	204	1
E10000HM	E10000HM	204	1
E10000II	E10000II	200	1
E10000II50	E10000II50	201	1
E10000IIRA	E10000IIRA	201	1
E10000IIM	E10000IIM	200	1
E10000IM50	E10000IM50	201	1
E10000IMRA	E10000IMRA	201	1
E10000LI	E10000LI	204	1
E10000LM	E10000LM	204	1
E10000LPI	E10000LPI	205	1
E10000LPM	E10000LPM	205	1
E10000LSI	E10000LSI	205	1
E10000LSM	E10000LSM	205	1
E10001ABI	E10001ABI	255	1
E10001ABM	E10001ABM	255	1
E10001AI	E10001AI	195	1
E10001AIS1	E10001AIS1	195	1
E10001AM	E10001AM	195	1
E10001AMS1	E10001AMS1	195	1
E10001BBI	E10001BBI	255	1
E10001BBM	E10001BBM	255	1
E10001BI	E10001BI	196	1
E10001BI13	E10001BI13	196	1
E10001BM	E10001BM	196	1
E10001BM13	E10001BM13	196	1
E10001CBI	E10001CBI	256	1
E10001CBM	E10001CBM	256	1
E10001CI	E10001CI	197	1
E10001CIS1	E10001CIS1	197	1
E10001CM	E10001CM	197	1
E10001CMS1	E10001CMS1	197	1
E10001DBI	E10001DBI	256	1
E10001DBM	E10001DBM	256	1
E10001DI	E10001DI	198	1
E10001DIS1	E10001DIS1	198	1
E10001DM	E10001DM	198	1
E10001DMS1	E10001DMS1	198	1
E10001EBI	E10001EBI	257	1
E10001EBM	E10001EBM	257	1
E10001EI	E10001EI	199	1
E10001EI50	E10001EI50	200	1
E10001EIRA	E10001EIRA	199	1
E10001EM	E10001EM	199	1
E10001EM50	E10001EM50	200	1
E10001EMRA	E10001EMRA	199	1
E10001FBI	E10001FBI	258	1
E10001FBI50	E10001FBI50	258	1
E10001FBM	E10001FBM	258	1
E10001FBM50	E10001FBM50	258	1
E10001FBRI50	E10001FBRI50	259	1
E10001FBRM50	E10001FBRM50	259	1

Type	Part number	Page	Pack
E10001FI	E10001FI	202	1
E10001FI50	E10001FI50	202	1
E10001FM	E10001FM	202	1
E10001FM50	E10001FM50	202	1
E10001FRI50	E10001FRI50	203	1
E10001FRM50	E10001FRM50	203	1
E10001GI	E10001GI	203	1
E10001GM	E10001GM	203	1
E10001HI	E10001HI	204	1
E10001HM	E10001HM	204	1
E10001IBI	E10001IBI	257	1
E10001IBM	E10001IBM	257	1
E10001II	E10001II	200	1
E10001II50	E10001II50	201	1
E10001IIRA	E10001IIRA	201	1
E10001IM	E10001IM	200	1
E10001IM50	E10001IM50	201	1
E10001IMRA	E10001IMRA	201	1
E10001LI	E10001LI	204	1
E10001LM	E10001LM	204	1
E10001LPI	E10001LPI	205	1
E10001LPM	E10001LPM	205	1
E10001LSI	E10001LSI	205	1
E10001LSM	E10001LSM	205	1
E10001SSI	E10001SSI	266	1
E10001SSM	E10001SSM	266	1
E10001SCI	E10001SCI	273	1
E10001SCM	E10001SCM	273	1
E10002AI	E10002AI	195	1
E10002AIS1	E10002AIS1	195	1
E10002AM	E10002AM	195	1
E10002AMS1	E10002AMS1	195	1
E10002BI	E10002BI	196	1
E10002BI13	E10002BI13	196	1
E10002BM	E10002BM	196	1
E10002BM13	E10002BM13	196	1
E10002CI	E10002CI	197	1
E10002CIS1	E10002CIS1	197	1
E10002CM	E10002CM	197	1
E10002CMS1	E10002CMS1	197	1
E10002DI	E10002DI	198	1
E10002DIS1	E10002DIS1	198	1
E10002DM	E10002DM	198	1
E10002DMS1	E10002DMS1	198	1
E10002EI	E10002EI	199	1
E10002EI50	E10002EI50	200	1
E10002EIRA	E10002EIRA	199	1
E10002EM	E10002EM	199	1
E10002EM50	E10002EM50	200	1
E10002EMRA	E10002EMRA	199	1
E10002FI	E10002FI	202	1
E10002FI50	E10002FI50	202	1
E10002FM	E10002FM	202	1
E10002FM50	E10002FM50	202	1
E10002FRI50	E10002FRI50	203	1
E10002FRM50	E10002FRM50	203	1
E10002GI	E10002GI	203	1
E10002GM	E10002GM	203	1
E10002HI	E10002HI	204	1
E10002HM	E10002HM	204	1
E10002II	E10002II	200	1
E10002II50	E10002II50	201	1
E10002IIRA	E10002IIRA	201	1
E10002IM	E10002IM	200	1
E10002IM50	E10002IM50	201	1
E10002IMRA	E10002IMRA	201	1
E10002LI	E10002LI	204	1
E10002LM	E10002LM	204	1
E10002LPI	E10002LPI	205	1
E10002LPM	E10002LPM	205	1
E10002LSI	E10002LSI	205	1
E10002LSM	E10002LSM	205	1
E10003AI	E10003AI	195	1

Type	Part number	Page	Pack
E10003AIS1	E10003AIS1	195	1
E10003AM	E10003AM	195	1
E10003AMS1	E10003AMS1	195	1
E10003BI	E10003BI	196	1
E10003BI13	E10003BI13	196	1
E10003BM	E10003BM	196	1
E10003BM13	E10003BM13	196	1
E10003CI	E10003CI	197	1
E10003CIS1	E10003CIS1	197	1
E10003CM	E10003CM	197	1
E10003CMS1	E10003CMS1	197	1
E10003DI	E10003DI	198	1
E10003DIS1	E10003DIS1	198	1
E10003DM	E10003DM	198	1
E10003DMS1	E10003DMS1	198	1
E10003EI	E10003EI	199	1
E10003EI50	E10003EI50	200	1
E10003EIRA	E10003EIRA	199	1
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E10003EMRA	E10003EMRA	199	1
E10003FI	E10003FI	202	1
E10003FI50	E10003FI50	202	1
E10003FM	E10003FM	202	1
E10003FM50	E10003FM50	202	1
E10003FRI50	E10003FRI50	203	1
E10003FRM50	E10003FRM50	203	1
E10003GI	E10003GI	203	1
E10003GM	E10003GM	203	1
E10003HI	E10003HI	204	1
E10003HM	E10003HM	204	1
E10003II	E10003II	200	1
E10003II50	E10003II50	201	1
E10003IIRA	E10003IIRA	201	1
E10003IM	E10003IM	200	1
E10003IM50	E10003IM50	201	1
E10003IMRA	E10003IMRA	201	1
E10003LI	E10003LI	204	1
E10003LM	E10003LM	204	1
E10003LPI	E10003LPI	205	1
E10003LPM	E10003LPM	205	1
E10003LSI	E10003LSI	205	1
E10003LSM	E10003LSM	205	1
E10004ABI	E10004ABI	255	1
E10004ABM	E10004ABM	255	1
E10004AI	E10004AI	195	1
E10004AIS1	E10004AIS1	195	1
E10004AM	E10004AM	195	1
E10004AMS1	E10004AMS1	195	1
E10004BBI	E10004BBI	255	1
E10004BBM	E10004BBM	255	1
E10004BI	E10004BI	196	1
E10004BI13	E10004BI13	196	1
E10004BM	E10004BM	196	1
E10004BM13	E10004BM13	196	1
E10004CBI	E10004CBI	256	1
E10004CBM	E10004CBM	256	1
E10004CI	E10004CI	197	1
E10004CIS1	E10004CIS1	197	1
E10004CM	E10004CM	197	1
E10004CMS1	E10004CMS1	197	1
E10004DBI	E10004DBI	256	1
E10004DBM	E10004DBM	256	1
E10004DI	E10004DI	198	1
E10004DIS1	E10004DIS1	198	1
E10004DM	E10004DM	198	1
E10004DMS1	E10004DMS1	198	1
E10004EBI	E10004EBI	257	1
E10004EBM	E10004EBM	257	1
E10004EI	E10004EI	199	1
E10004EI50	E10004EI50	200	1
E10004EIRA	E10004EIRA	199	1
E10004EM	E10004EM	199	1

Type	Part number	Page	Pack
E10004EM50	E10004EM50	200	1
E10004EMRA	E10004EMRA	199	1
E10004FBI	E10004FBI	258	1
E10004FBI50	E10004FBI50	258	1
E10004FBM	E10004FBM	258	1
E10004FBM50	E10004FBM50	258	1
E10004FBRI50	E10004FBRI50	259	1
E10004FBRM50	E10004FBRM50	259	1
E10004FI	E10004FI	202	1
E10004FI50	E10004FI50	202	1
E10004FM	E10004FM	202	1
E10004FM50	E10004FM50	202	1
E10004FRI50	E10004FRI50	203	1
E10004FRM50	E10004FRM50	203	1
E10004GI	E10004GI	203	1
E10004GM	E10004GM	203	1
E10004HI	E10004HI	204	1
E10004HM	E10004HM	204	1
E10004IBI	E10004IBI	257	1
E10004IBM	E10004IBM	257	1
E10004II	E10004II	200	1
E10004II50	E10004II50	201	1
E10004IIRA	E10004IIRA	201	1
E10004IM	E10004IM	200	1
E10004IM50	E10004IM50	201	1
E10004IMRA	E10004IMRA	201	1
E10004LI	E10004LI	204	1
E10004LM	E10004LM	204	1
E10004LPI	E10004LPI	205	1
E10004LPM	E10004LPM	205	1
E10004LSI	E10004LSI	205	1
E10004LSM	E10004LSM	205	1
E10004SSI	E10004SSI	266	1
E10004S5M	E10004S5M	266	1
E10004SCI	E10004SCI	273	1
E10004SCM	E10004SCM	273	1
E10005AI	E10005AI	195	1
E10005AIS1	E10005AIS1	195	1
E10005AM	E10005AM	195	1
E10005AMS1	E10005AMS1	195	1
E10005BI	E10005BI	196	1
E10005BI13	E10005BI13	196	1
E10005BM	E10005BM	196	1
E10005BM13	E10005BM13	196	1
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E10005CIS1	E10005CIS1	197	1
E10005CM	E10005CM	197	1
E10005CMS1	E10005CMS1	197	1
E10005DI	E10005DI	198	1
E10005DIS1	E10005DIS1	198	1
E10005DM	E10005DM	198	1
E10005DMS1	E10005DMS1	198	1
E10005EI	E10005EI	199	1
E10005EI50	E10005EI50	200	1
E10005EIRA	E10005EIRA	199	1
E10005EM	E10005EM	199	1
E10005EM50	E10005EM50	200	1
E10005EMRA	E10005EMRA	199	1
E10005FI	E10005FI	202	1
E10005FI50	E10005FI50	202	1
E10005FM	E10005FM	202	1
E10005FM50	E10005FM50	202	1
E10005FRI50	E10005FRI50	203	1
E10005FRM50	E10005FRM50	203	1
E10005GI	E10005GI	203	1
E10005GM	E10005GM	203	1
E10005HI	E10005HI	204	1
E10005HM	E10005HM	204	1
E10005II	E10005II	200	1
E10005II50	E10005II50	201	1
E10005IIRA	E10005IIRA	201	1
E10005IM	E10005IM	200	1
E10005IM50	E10005IM50	201	1

Type	Part number	Page	Pack
E10005IMRA	E10005IMRA	201	1
E10005LI	E10005LI	204	1
E10005LM	E10005LM	204	1
E10005LPI	E10005LPI	205	1
E10005LPM	E10005LPM	205	1
E10005LSI	E10005LSI	205	1
E10005LSM	E10005LSM	205	1
E10007EIC	E10007EIC	243	1
E10007EMC	E10007EMC	243	1
E10007FI50C	E10007FI50C	244	1
E10007FIC	E10007FIC	244	1
E10007FM50C	E10007FM50C	244	1
E10007FMC	E10007FMC	244	1
E10007FRI50C	E10007FRI50C	245	1
E10007FRM50C	E10007FRM50C	245	1
E10007IIC	E10007IIC	243	1
E10007IMC	E10007IMC	243	1
E10008TBI	E10008TBI	270	1
E10008TBM	E10008TBM	270	1
E20000AI	E20000AI	207	1
E20000AIS1	E20000AIS1	207	1
E20000BI	E20000BI	208	1
E20000BI13	E20000BI13	208	1
E20000CI	E20000CI	209	1
E20000CIS1	E20000CIS1	209	1
E20000DI	E20000DI	210	1
E20000DIS1	E20000DIS1	210	1
E20000EI	E20000EI	211	1
E20000EI50	E20000EI50	212	1
E20000EIRA	E20000EIRA	211	1
E20000FI	E20000FI	214	1
E20000FI50	E20000FI50	214	1
E20000FRI50	E20000FRI50	215	1
E20000GI	E20000GI	215	1
E20000HI	E20000HI	216	1
E20000II	E20000II	212	1
E20000II50	E20000II50	213	1
E20000IIRA	E20000IIRA	213	1
E20000LI	E20000LI	216	1
E20000LPI	E20000LPI	217	1
E20000LSI	E20000LSI	217	1
E20001ABI	E20001ABI	260	1
E20001AI	E20001AI	207	1
E20001AIS1	E20001AIS1	207	1
E20001BBI	E20001BBI	260	1
E20001BI	E20001BI	208	1
E20001BI13	E20001BI13	208	1
E20001CBI	E20001CBI	261	1
E20001CI	E20001CI	209	1
E20001CIS1	E20001CIS1	209	1
E20001DI	E20001DI	210	1
E20001DIS1	E20001DIS1	210	1
E20001EBI	E20001EBI	262	1
E20001EI	E20001EI	211	1
E20001EI50	E20001EI50	212	1
E20001EIRA	E20001EIRA	211	1
E20001FI	E20001FI	214	1
E20001FI50	E20001FI50	214	1
E20001FRI50	E20001FRI50	215	1
E20001GI	E20001GI	215	1
E20001HI	E20001HI	216	1
E20001IBI	E20001IBI	263	1
E20001II	E20001II	212	1
E20001II50	E20001II50	213	1
E20001IIRA	E20001IIRA	213	1
E20001LI	E20001LI	216	1
E20001LPI	E20001LPI	217	1
E20001LSI	E20001LSI	217	1
E20001S5I	E20001S5I	267	1
E20002AI	E20002AI	207	1
E20002AIS1	E20002AIS1	207	1
E20002BI	E20002BI	208	1
E20002BI13	E20002BI13	208	1

Type	Part number	Page	Pack
E20002CI	E20002CI	209	1
E20002CIS1	E20002CIS1	209	1
E20002DI	E20002DI	210	1
E20002DIS1	E20002DIS1	210	1
E20002EI	E20002EI	211	1
E20002EI50	E20002EI50	212	1
E20002EIRA	E20002EIRA	211	1
E20002FI	E20002FI	214	1
E20002FI50	E20002FI50	214	1
E20002FRI50	E20002FRI50	215	1
E20002GI	E20002GI	215	1
E20002HI	E20002HI	216	1
E20002II	E20002II	212	1
E20002II50	E20002II50	213	1
E20002IIRA	E20002IIRA	213	1
E20002LI	E20002LI	216	1
E20002LPI	E20002LPI	217	1
E20002LSI	E20002LSI	217	1
E20003AI	E20003AI	207	1
E20003AIS1	E20003AIS1	207	1
E20003BI	E20003BI	208	1
E20003BI13	E20003BI13	208	1
E20003CI	E20003CI	209	1
E20003CIS1	E20003CIS1	209	1
E20003DI	E20003DI	210	1
E20003DIS1	E20003DIS1	210	1
E20003EI	E20003EI	211	1
E20003EI50	E20003EI50	212	1
E20003EIRA	E20003EIRA	211	1
E20003FI	E20003FI	214	1
E20003FI50	E20003FI50	214	1
E20003FRI50	E20003FRI50	215	1
E20003GI	E20003GI	215	1
E20003HI	E20003HI	216	1
E20003II	E20003II	212	1
E20003II50	E20003II50	213	1
E20003IIRA	E20003IIRA	213	1
E20003LI	E20003LI	216	1
E20003LPI	E20003LPI	217	1
E20003LSI	E20003LSI	217	1
E20004ABI	E20004ABI	260	1
E20004AI	E20004AI	207	1
E20004AIS1	E20004AIS1	207	1
E20004BBI	E20004BBI	260	1
E20004BI	E20004BI	208	1
E20004BI13	E20004BI13	208	1
E20004CBI	E20004CBI	261	1
E20004CI	E20004CI	209	1
E20004CIS1	E20004CIS1	209	1
E20004DI	E20004DI	210	1
E20004DIS1	E20004DIS1	210	1
E20004EBI	E20004EBI	262	1
E20004EI	E20004EI	211	1
E20004EI50	E20004EI50	212	1
E20004EIRA	E20004EIRA	211	1
E20004FI	E20004FI	214	1
E20004FI50	E20004FI50	214	1
E20004FRI50	E20004FRI50	215	1
E20004GI	E20004GI	215	1
E20004HI	E20004HI	216	1
E20004IBI	E20004IBI	263	1
E20004II	E20004II	212	1
E20004II50	E20004II50	213	1
E20004IIRA	E20004IIRA	213	1
E20004LI	E20004LI	216	1
E20004LPI	E20004LPI	217	1
E20004LSI	E20004LSI	217	1
E20004SSI	E20004SSI	267	1
E20005AI	E20005AI	207	1
E20005AIS1	E20005AIS1	207	1
E20005BI	E20005BI	208	1
E20005BI13	E20005BI13	208	1
E20005CI	E20005CI	209	1

Type	Part number	Page	Pack
E20005CIS1	E20005CIS1	209	1
E20005DI	E20005DI	210	1
E20005DIS1	E20005DIS1	210	1
E20005EI	E20005EI	211	1
E20005EI50	E20005EI50	212	1
E20005EIRA	E20005EIRA	211	1
E20005FI	E20005FI	214	1
E20005FI50	E20005FI50	214	1
E20005FRI50	E20005FRI50	215	1
E20005GI	E20005GI	215	1
E20005HI	E20005HI	216	1
E20005II	E20005II	212	1
E20005II50	E20005II50	213	1
E20005IIRA	E20005IIRA	213	1
E20005LI	E20005LI	216	1
E20005LPI	E20005LPI	217	1
E20005LSI	E20005LSI	217	1
E20007EIC	E20007EIC	246	1
E20007IIC	E20007IIC	247	1
E20008TBI	E20008TBI	270	1
E30000AM	E30000AM	219	1
E30000AMS1	E30000AMS1	219	1
E30000BM	E30000BM	220	1
E30000CM	E30000CM	221	1
E30000CMS1	E30000CMS1	221	1
E30000DM	E30000DM	222	1
E30000DMS1	E30000DMS1	222	1
E30000EM	E30000EM	223	1
E30000EM50	E30000EM50	224	1
E30000EMRA	E30000EMRA	223	1
E30000FM	E30000FM	226	1
E30000FM50	E30000FM50	226	1
E30000FRM50	E30000FRM50	227	1
E30000GM	E30000GM	227	1
E30000HM	E30000HM	228	1
E30000IM	E30000IM	224	1
E30000IM50	E30000IM50	225	1
E30000IMRA	E30000IMRA	225	1
E30000LM	E30000LM	228	1
E30000LPM	E30000LPM	229	1
E30000LSM	E30000LSM	229	1
E30001AM	E30001AM	219	1
E30001AMS1	E30001AMS1	219	1
E30001BM	E30001BM	220	1
E30001CM	E30001CM	221	1
E30001CMS1	E30001CMS1	221	1
E30001DM	E30001DM	222	1
E30001DMS1	E30001DMS1	222	1
E30001EM	E30001EM	223	1
E30001EM50	E30001EM50	224	1
E30001EMRA	E30001EMRA	223	1
E30001FM	E30001FM	226	1
E30001FM50	E30001FM50	226	1
E30001FRM50	E30001FRM50	227	1
E30001GM	E30001GM	227	1
E30001HM	E30001HM	228	1
E30001IM	E30001IM	224	1
E30001IM50	E30001IM50	225	1
E30001IMRA	E30001IMRA	225	1
E30001LM	E30001LM	228	1
E30001LPM	E30001LPM	229	1
E30001LSM	E30001LSM	229	1
E30002AM	E30002AM	219	1
E30002AMS1	E30002AMS1	219	1
E30002BM	E30002BM	220	1
E30002CM	E30002CM	221	1
E30002CMS1	E30002CMS1	221	1
E30002DM	E30002DM	222	1
E30002DMS1	E30002DMS1	222	1
E30002EM	E30002EM	223	1
E30002EM50	E30002EM50	224	1
E30002EMRA	E30002EMRA	223	1
E30002FM	E30002FM	226	1

Type	Part number	Page	Pack
E30002FM50	E30002FM50	226	1
E30002FRM50	E30002FRM50	227	1
E30002GM	E30002GM	227	1
E30002HM	E30002HM	228	1
E30002IM	E30002IM	224	1
E30002IM50	E30002IM50	225	1
E30002IMRA	E30002IMRA	225	1
E30002LM	E30002LM	228	1
E30002LPM	E30002LPM	229	1
E30002LSM	E30002LSM	229	1
E30003AM	E30003AM	219	1
E30003AMS1	E30003AMS1	219	1
E30003BM	E30003BM	220	1
E30003CM	E30003CM	221	1
E30003CMS1	E30003CMS1	221	1
E30003DM	E30003DM	222	1
E30003DMS1	E30003DMS1	222	1
E30003EM	E30003EM	223	1
E30003EM50	E30003EM50	224	1
E30003EMRA	E30003EMRA	223	1
E30003FM	E30003FM	226	1
E30003FM50	E30003FM50	226	1
E30003FRM50	E30003FRM50	227	1
E30003GM	E30003GM	227	1
E30003HM	E30003HM	228	1
E30003IM	E30003IM	224	1
E30003IM50	E30003IM50	225	1
E30003IMRA	E30003IMRA	225	1
E30003LM	E30003LM	228	1
E30003LPM	E30003LPM	229	1
E30003LSM	E30003LSM	229	1
E30004AM	E30004AM	219	1
E30004AMS1	E30004AMS1	219	1
E30004BM	E30004BM	220	1
E30004CM	E30004CM	221	1
E30004CMS1	E30004CMS1	221	1
E30004DM	E30004DM	222	1
E30004DMS1	E30004DMS1	222	1
E30004EM	E30004EM	223	1
E30004EM50	E30004EM50	224	1
E30004EMRA	E30004EMRA	223	1
E30004FM	E30004FM	226	1
E30004FM50	E30004FM50	226	1
E30004FRM50	E30004FRM50	227	1
E30004GM	E30004GM	227	1
E30004HM	E30004HM	228	1
E30004IM	E30004IM	224	1
E30004IM50	E30004IM50	225	1
E30004IMRA	E30004IMRA	225	1
E30004LM	E30004LM	228	1
E30004LPM	E30004LPM	229	1
E30004LSM	E30004LSM	229	1
E30005AM	E30005AM	219	1
E30005AMS1	E30005AMS1	219	1
E30005BM	E30005BM	220	1
E30005CM	E30005CM	221	1
E30005CMS1	E30005CMS1	221	1
E30005DM	E30005DM	222	1
E30005DMS1	E30005DMS1	222	1
E30005EM	E30005EM	223	1
E30005EM50	E30005EM50	224	1
E30005EMRA	E30005EMRA	223	1
E30005FM	E30005FM	226	1
E30005FM50	E30005FM50	226	1
E30005FRM50	E30005FRM50	227	1
E30005GM	E30005GM	227	1
E30005HM	E30005HM	228	1
E30005IM	E30005IM	224	1
E30005IM50	E30005IM50	225	1
E30005IMRA	E30005IMRA	225	1
E30005LM	E30005LM	228	1
E30005LPM	E30005LPM	229	1
E30005LSM	E30005LSM	229	1

Type	Part number	Page	Pack
E40000AI	E40000AI	231	1
E40000AIS1	E40000AIS1	231	1
E40000AM	E40000AM	231	1
E40000AMS1	E40000AMS1	231	1
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E40000BM	E40000BM	232	1
E40000CI	E40000CI	233	1
E40000CIS1	E40000CIS1	233	1
E40000CM	E40000CM	233	1
E40000CMS1	E40000CMS1	233	1
E40000DI	E40000DI	234	1
E40000DIS1	E40000DIS1	234	1
E40000DM	E40000DM	234	1
E40000DMS1	E40000DMS1	234	1
E40000EI	E40000EI	235	1
E40000EI50	E40000EI50	236	1
E40000EIRA	E40000EIRA	235	1
E40000EM	E40000EM	235	1
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E40000EMRA	E40000EMRA	235	1
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E40000FRM50	E40000FRM50	239	1
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E40000HI	E40000HI	240	1
E40000HM	E40000HM	240	1
E40000II	E40000II	236	1
E40000II50	E40000II50	237	1
E40000IIRA	E40000IIRA	237	1
E40000IIM	E40000IIM	236	1
E40000IIM50	E40000IIM50	237	1
E40000IMRA	E40000IMRA	237	1
E40000LI	E40000LI	240	1
E40000LM	E40000LM	240	1
E40000LPI	E40000LPI	241	1
E40000LPM	E40000LPM	241	1
E40000LSI	E40000LSI	241	1
E40000LSM	E40000LSM	241	1
E40001AI	E40001AI	231	1
E40001AIS1	E40001AIS1	231	1
E40001AM	E40001AM	231	1
E40001AMS1	E40001AMS1	231	1
E40001BI	E40001BI	232	1
E40001BM	E40001BM	232	1
E40001CI	E40001CI	233	1
E40001CIS1	E40001CIS1	233	1
E40001CM	E40001CM	233	1
E40001CMS1	E40001CMS1	233	1
E40001DI	E40001DI	234	1
E40001DIS1	E40001DIS1	234	1
E40001DM	E40001DM	234	1
E40001DMS1	E40001DMS1	234	1
E40001EI	E40001EI	235	1
E40001EI50	E40001EI50	236	1
E40001EIRA	E40001EIRA	235	1
E40001EM	E40001EM	235	1
E40001EM50	E40001EM50	236	1
E40001EMRA	E40001EMRA	235	1
E40001FI	E40001FI	238	1
E40001FI50	E40001FI50	238	1
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E40001FRI50	E40001FRI50	239	1
E40001FRM50	E40001FRM50	239	1
E40001GI	E40001GI	239	1
E40001GM	E40001GM	239	1
E40001HI	E40001HI	240	1
E40001HM	E40001HM	240	1
E40001II	E40001II	236	1

Type	Part number	Page	Pack
E40001IIS0	E40001IIS0	237	1
E40001IIRA	E40001IIRA	237	1
E40001IM	E40001IM	236	1
E40001IM50	E40001IM50	237	1
E40001IMRA	E40001IMRA	237	1
E40001LI	E40001LI	240	1
E40001LM	E40001LM	240	1
E40001LPI	E40001LPI	241	1
E40001LPM	E40001LPM	241	1
E40001LSI	E40001LSI	241	1
E40001LSM	E40001LSM	241	1
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E40002AM	E40002AM	231	1
E40002AMS1	E40002AMS1	231	1
E40002BI	E40002BI	232	1
E40002BM	E40002BM	232	1
E40002CI	E40002CI	233	1
E40002CIS1	E40002CIS1	233	1
E40002CM	E40002CM	233	1
E40002CMS1	E40002CMS1	233	1
E40002DI	E40002DI	234	1
E40002DIS1	E40002DIS1	234	1
E40002DM	E40002DM	234	1
E40002DMS1	E40002DMS1	234	1
E40002EI	E40002EI	235	1
E40002EI50	E40002EI50	236	1
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E40002FRM50	E40002FRM50	239	1
E40002GI	E40002GI	239	1
E40002GM	E40002GM	239	1
E40002HI	E40002HI	240	1
E40002HM	E40002HM	240	1
E40002II	E40002II	236	1
E40002IIS0	E40002IIS0	237	1
E40002IIRA	E40002IIRA	237	1
E40002IM	E40002IM	236	1
E40002IM50	E40002IM50	237	1
E40002IMRA	E40002IMRA	237	1
E40002LI	E40002LI	240	1
E40002LM	E40002LM	240	1
E40002LPI	E40002LPI	241	1
E40002LPM	E40002LPM	241	1
E40002LSI	E40002LSI	241	1
E40002LSM	E40002LSM	241	1
E40003AI	E40003AI	231	1
E40003AIS1	E40003AIS1	231	1
E40003AM	E40003AM	231	1
E40003AMS1	E40003AMS1	231	1
E40003BI	E40003BI	232	1
E40003BM	E40003BM	232	1
E40003CI	E40003CI	233	1
E40003CIS1	E40003CIS1	233	1
E40003CM	E40003CM	233	1
E40003CMS1	E40003CMS1	233	1
E40003DI	E40003DI	234	1
E40003DIS1	E40003DIS1	234	1
E40003DM	E40003DM	234	1
E40003DMS1	E40003DMS1	234	1
E40003EI	E40003EI	235	1
E40003EI50	E40003EI50	236	1
E40003EIRA	E40003EIRA	235	1
E40003EM	E40003EM	235	1
E40003EM50	E40003EM50	236	1
E40003EMRA	E40003EMRA	235	1

Type	Part number	Page	Pack
E40003FI	E40003FI	238	1
E40003FI50	E40003FI50	238	1
E40003FM	E40003FM	238	1
E40003FM50	E40003FM50	238	1
E40003FRI50	E40003FRI50	239	1
E40003FRM50	E40003FRM50	239	1
E40003GI	E40003GI	239	1
E40003GM	E40003GM	239	1
E40003HI	E40003HI	240	1
E40003HM	E40003HM	240	1
E40003II	E40003II	236	1
E40003IIS0	E40003IIS0	237	1
E40003IIRA	E40003IIRA	237	1
E40003IM	E40003IM	236	1
E40003IM50	E40003IM50	237	1
E40003IMRA	E40003IMRA	237	1
E40003LI	E40003LI	240	1
E40003LM	E40003LM	240	1
E40003LPI	E40003LPI	241	1
E40003LPM	E40003LPM	241	1
E40003LSI	E40003LSI	241	1
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E40004AIS1	E40004AIS1	231	1
E40004AM	E40004AM	231	1
E40004AMS1	E40004AMS1	231	1
E40004BI	E40004BI	232	1
E40004BM	E40004BM	232	1
E40004CI	E40004CI	233	1
E40004CIS1	E40004CIS1	233	1
E40004CM	E40004CM	233	1
E40004CMS1	E40004CMS1	233	1
E40004DI	E40004DI	234	1
E40004DIS1	E40004DIS1	234	1
E40004DM	E40004DM	234	1
E40004DMS1	E40004DMS1	234	1
E40004EI	E40004EI	235	1
E40004EI50	E40004EI50	236	1
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E40004GI	E40004GI	239	1
E40004GM	E40004GM	239	1
E40004HI	E40004HI	240	1
E40004HM	E40004HM	240	1
E40004II	E40004II	236	1
E40004IIS0	E40004IIS0	237	1
E40004IIRA	E40004IIRA	237	1
E40004IM	E40004IM	236	1
E40004IM50	E40004IM50	237	1
E40004IMRA	E40004IMRA	237	1
E40004LI	E40004LI	240	1
E40004LM	E40004LM	240	1
E40004LPI	E40004LPI	241	1
E40004LPM	E40004LPM	241	1
E40004LSI	E40004LSI	241	1
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E40005BI	E40005BI	232	1
E40005BM	E40005BM	232	1
E40005CI	E40005CI	233	1
E40005CIS1	E40005CIS1	233	1
E40005CM	E40005CM	233	1

Type	Part number	Page	Pack
E40005CMS1	E40005CMS1	233	1
E40005DI	E40005DI	234	1
E40005DIS1	E40005DIS1	234	1
E40005DM	E40005DM	234	1
E40005DMS1	E40005DMS1	234	1
E40005EI	E40005EI	235	1
E40005EI50	E40005EI50	236	1
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E40005LSI	E40005LSI	241	1
E40005LSM	E40005LSM	241	1
E40008TBI	E40008TBI	271	1
E40008TBM	E40008TBM	271	1
E6000AM	E6000AM	285	1
E6000BM	E6000BM	286	1
E6000BM90	E6000BM90	287	1
E6000EM	E6000EM	288	1
E6001AM	E6001AM	285	1
E6001BM	E6001BM	286	1
E6001BM90	E6001BM90	287	1
E6001EM	E6001EM	288	1
E7000AI	E7000AI	281	1
E7000AM	E7000AM	281	1
E7000BI	E7000BI	282	1
E7000BI90	E7000BI90	282	1
E7000BLI	E7000BLI	283	1
E7000BLI90	E7000BLI90	283	1
E7000BLM	E7000BLM	283	1
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E7000BM	E7000BM	282	1
E7000BM90	E7000BM90	282	1
E7000EI	E7000EI	284	1
E7000EM	E7000EM	284	1
E7001AI	E7001AI	281	1
E7001AM	E7001AM	281	1
E7001BI	E7001BI	282	1
E7001BI90	E7001BI90	282	1
E7001BLI	E7001BLI	283	1
E7001BLI90	E7001BLI90	283	1
E7001BLM	E7001BLM	283	1
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E7001BM	E7001BM	282	1
E7001BM90	E7001BM90	282	1
E7001EI	E7001EI	284	1
E7001EM	E7001EM	284	1
ELEM00	ELEM00	248/330	5
ELEM01	ELEM01	248/274/330	5
ELEM02	ELEM02	248	5
ELEM03	ELEM03	248	5
ELEM04	ELEM04	248/274	5
ELEM05	ELEM05	248	5

Type	Part number	Page	Pack
ELEM07	ELEM07	248	5
ELEM08	ELEM08	274	5
F05	F05	274	1
FIN3L3Q7	FIN3L3Q7	79	5
FINAK5Q5	FINAK5Q5	118	R
FINAK6Q5	FINAK6Q5	118	5
FINAL5Q5	FINAL5Q5	118	R
FINAL6Q5	FINAL6Q5	118	5
FINAT4LQ5	FINAT4LQ5	118	R
FINAT4Q5	FINAT4Q5	119	R
FINAT6LQ5	FINAT6LQ5	118	R
FINAT6Q5	FINAT6Q5	119	R
FINAV4Q5	FINAV4Q5	119	R
FINAV6Q5	FINAV6Q5	119	R
FINAW4Q5	FINAW4Q5	119	R
FINAW6Q5	FINAW6Q5	119	R
FINAY4LQ5	FINAY4LQ5	118	R
FINAY4Q5	FINAY4Q5	119	R
FINAY6LQ5	FINAY6LQ5	118	R
FINAY6Q5	FINAY6Q5	119	R
FINBK5Q5	FINBK5Q5	49	R
FINBK6Q5	FINBK6Q5	48 / 69 / 94	5
FINBL5Q5	FINBL5Q5	49	5
FINBL6Q5	FINBL6Q5	48 / 69 / 94	5
FINBT4Q5	FINBT4Q5	48	R
FINBT6Q5	FINBT6Q5	48	R
FINBV4Q5	FINBV4Q5	49	R
FINBV4-TQ5	FINBV4-TQ5	50	R
FINBV6Q5	FINBV6Q5	49	R
FINBV6-TQ5	FINBV6-TQ5	50	R
FINBW4Q5	FINBW4Q5	49	R
FINBW6Q5	FINBW6Q5	49	R
FINBY4Q5	FINBY4Q5	48	R
FINBY6Q5	FINBY6Q5	48	R
FINDK5Q5	FINDK5Q5	118	R
FINDK6Q5	FINDK6Q5	118	5
FINDL5Q5	FINDL5Q5	118	R
FINDL6Q5	FINDL6Q5	118	5
FINDT4LQ5	FINDT4LQ5	118	5
FINDT4Q5	FINDT4Q5	119	R
FINDT6LQ5	FINDT6LQ5	118	R
FINDT6Q5	FINDT6Q5	119	R
FINDV4Q5	FINDV4Q5	119	R
FINDV6Q5	FINDV6Q5	119	R
FINDW4Q5	FINDW4Q5	119	R
FINDW6Q5	FINDW6Q5	119	R
FINDY4LQ5	FINDY4LQ5	118	5
FINDY4Q5	FINDY4Q5	119	R
FINDY6LQ5	FINDY6LQ5	118	R
FINDY6Q5	FINDY6Q5	119	R
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FINFY6Q5	FINFY6Q5	119	R
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FINGT6Q5	FINGT6Q5	48	5
FINGV4Q5	FINGV4Q5	49	R
FINGV4-TQ5	FINGV4-TQ5	50	R
FINGV6Q5	FINGV6Q5	49	R
FINGV6-TQ5	FINGV6-TQ5	50	R
FINGW4Q5	FINGW4Q5	49	R

Type	Part number	Page	Pack
FINGW6Q5	FINGW6Q5	49	R
FINGY4Q5	FINGY4Q5	48	R
FINGY6Q5	FINGY6Q5	48	R
FINHK5Q5	FINHK5Q5	49	R
FINHK6Q5	FINHK6Q5	48	R
FINHL5Q5	FINHL5Q5	49	R
FINHL6Q5	FINHL6Q5	48	5
FINHT4Q5	FINHT4Q5	48	R
FINHT6Q5	FINHT6Q5	48	R
FINHV4Q5	FINHV4Q5	49	R
FINHV4-TQ5	FINHV4-TQ5	50	R
FINHV6Q5	FINHV6Q5	49	R
FINHV6-TQ5	FINHV6-TQ5	50	R
FINHW4Q5	FINHW4Q5	49	R
FINHW6Q5	FINHW6Q5	49	R
FINHY4Q5	FINHY4Q5	48	R
FINHY6Q5	FINHY6Q5	48	R
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FINPL2Q5	FINPL2Q5	69	5
FINPL3Q7	FINPL3Q7	79	5
FINPL4Q10	FINPL4Q10	79	R
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FINRL5Q5	FINRL5Q5	49	5
FINRL6Q5	FINRL6Q5	48 / 69 / 94	5
FINRQT6LQ5	FINRQT6LQ5	118	R
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FINRQV6Q5	FINRQV6Q5	119	R
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FINRRK6Q5	FINRRK6Q5	118	5
FINRRL5Q5	FINRRL5Q5	118	R
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FMV 2R 12 100	ER400910	306	1
FMV 2R 12 130	ER400110	302	1
FMV 2R 16 100	ER401110	307	1
FMV 2R 16 130	ER400510	304	1
FMV 3R 12 100	ER402110	306	1
FMV 3R 12 130	ER401310	302	1
FMV 3R 12 230	ER401410	303	1

Type	Part number	Page	Pack
FMV 3R 16 100	ER402310	307	1
FMV 3R 16 130	ER401710	304	1
FMV 3R 16 230	ER401810	305	1
FMV 4R 12 100	ER403310	306	1
FMV 4R 12 130	ER402510	302	1
FMV 4R 12 230	ER402610	303	1
FMV 4R 16 100	ER403510	307	1
FMV 4R 16 230	ER403010	305	1
G12	VC792000	138 / 145 / 171	1
G2.12.1	ERC00010	310	1
G2.12.2	ERC00020	310	1
G2.16.1	ERC00030	310	1
G2.16.2	ERC00040	310	1
G3.12.1	ERC00050	310	1
G3.12.2	ERC00060	310	1
G3.16.1	ERC00070	310	1
G3.16.2	ERC00080	310	1
G8	VC748200	138 / 145 / 171	R
I03	VC721900	169	1
I04	VC722700	169	R
I09	VD719200	144	R
I09NL	VD721800	144	R
I123	VC805000	137 / 169	1
I203	VC807600	137 / 169	R
I31	VD692100	137 / 169	1
I32	VD696200	137 / 169	R
I41	VD693900	137 / 169	R
I42	VD697000	137 / 169	R
I99	VD723400	144	R
I99NL	VD725900	144	R
IPFB240	ER502320	324	5
K4	VC844900	144	R
K5	VC845600	144	R
KIT00	KIT00	330	5
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LAA65311	VG813000	313	10
LAA65331	VG815500	313	10
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LFA203R	VG848600	316	10
LFA203RPT	VI086100	316	5
LLA422A1	VD794500	314	10
LLA422N1	VG859300	314	10
LLA422N3	VG861900	314	10
LLA423N0	VG862700	315	10
LLA424N0	VG865000	315	10
LLA424N0A	VG866899	315	10
LLA432N1	VG874200	317	10
LLA432N2	VG875900	317	10
LLA432N3	VG876700	318	10
LLA438A3	VD894300	318	10
LLA438N1	VG943500	318	10
LLA438N3	VD877800	318	10
LLA439A0	VG882500	319	10
LNA452N2B	VG888200	319	10
M05	M05	274	5
M05G028N10	M05G028N10	69	10
M1201	VC756500	138 / 170	1
M1203	VC762300	145	R
M12C01	VC757300	138 / 170	R
M12C03	VC763100	145	R

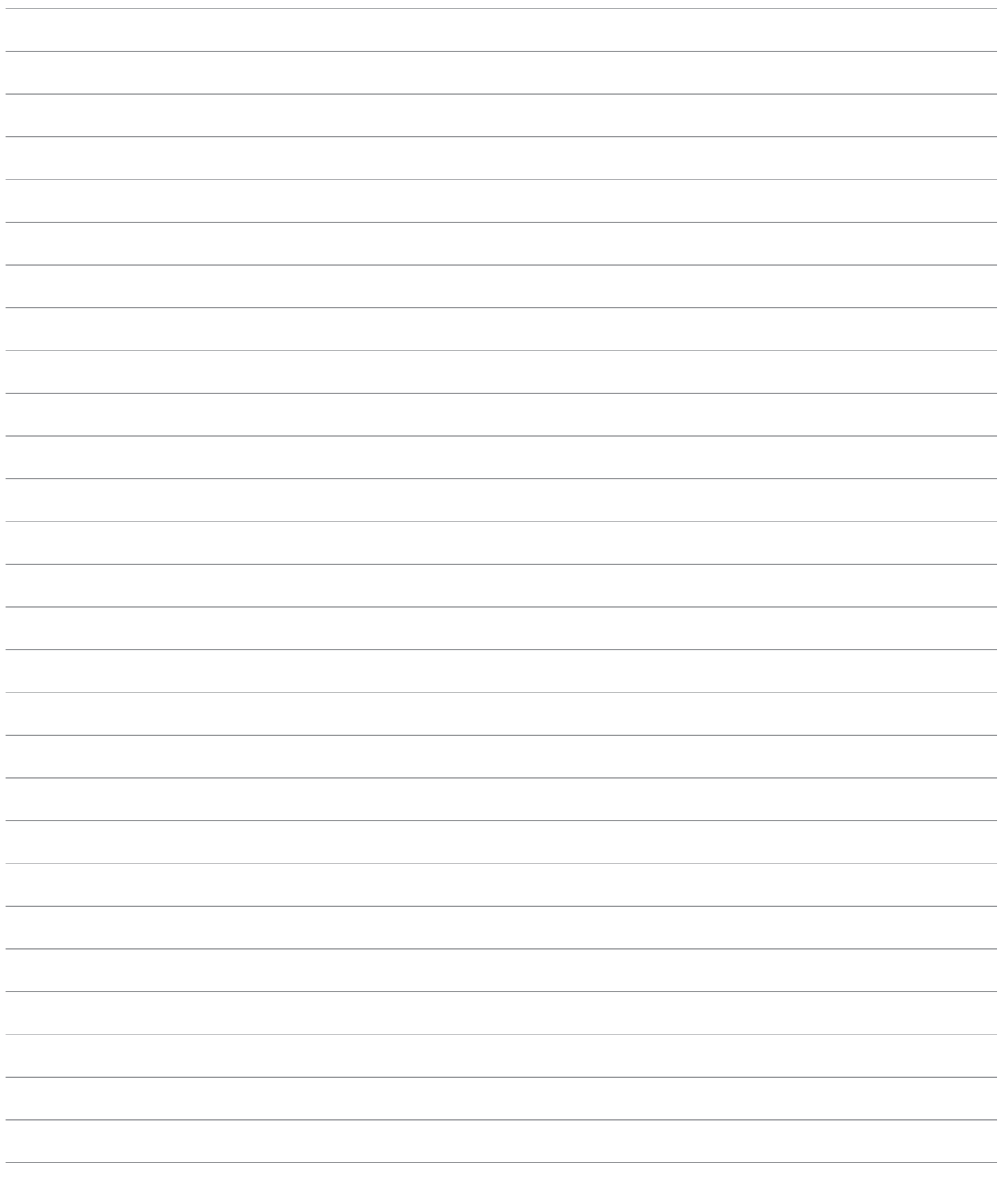
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M12DS01	VC758100	138 / 170	1
M12DS03	VC764900	145	R
M12R01	VC768000	138 / 170	R
M12RDS01	VC770600	138 / 170	R
M1301	VC771400	138 / 170	R
M1303	VC777100	145	R
M13C01	VC772200	138 / 170	1
M13C03	VC778900	145	R
M13DS01	VC773000	138 / 170	R
M13DS03	VC779700	145	R
M13R01	VC783900	138 / 170	R
M13RDS01	VC785400	138 / 170	R
M304NONC	ER200380	294	5
M305NONC	ER200390	294	5
M306NONC	ER200400	295	5
M308NONC	ER200420	296	5
M309NONC	ER200430	296	5
M311NONC	ER200450	297	5
M313NONC	ER200470	297	5
M314NONC	ER200480	298	5
M3PROTA	ER200690	298	10
M4G083N10	M4G083N10	69	10
M5G025N10	M5G025N10	69	10
M601	VC730000	170	R
M601DS	VC732600	170	1
M601R	VC739100	170	R
M601RDS	VC741700	170	R
M6G086N10	M6G086N10	69	10
M801	VC733400	138 / 170	R
M801DS	VC735900	138 / 170	R
M801R	VC742500	138 / 170	R
M801RDS	VC744100	138 / 170	R
M9G034N5	M9G034N5	79	5
MRNON10	MRNON10	69	10
O05	O05	274	5
PALBL055	PALBL055	117 / 128 / 159	R
PALBL065	PALBL065	50 / 70 / 94	R
PALBL075	PALBL075	50 / 70 / 94 / 117 / 128 / 159	R
PALBL095	PALBL095	50 / 70 / 94 / 117 / 128 / 159	R
PALBL115	PALBL115	50 / 70 / 94 / 117 / 128 / 159	R
PALBL135	PALBL135	50 / 70 / 94 / 117 / 128 / 159	R
PALBL155	PALBL155	50 / 70 / 94 / 117 / 128 / 159	R
PALBL175	PALBL175	50 / 70 / 94 / 117 / 128 / 159	5
PALBL180Q10	PALBL180Q10	79	R
PALBL185	PALBL185	79	10
PALBL300	PALBL300	50 / 70 / 94 / 117 / 128 / 159	5
PALBL500	PALBL500	50 / 70 / 94 / 117 / 128 / 159	5
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PCA00PIM20	PCA00PIM20	330	1
PCI00M20	PCI00M20	329	1
PCI00PIM20	PCI00PIM20	329	1
PFB240V	ER506320	324	5
PROT2271003	PROT2271003	79	2
PROTG4198	PROTG4198	320	10
PROTLE6747	PROTLE6747	70	5
PROTLE6748	PROTLE6748	70	5
PROTLEG3229001	PROTLEG3229001	79	2
PROTLEG3229002	PROTLEG3229002	79	2
PROTLEG3942	PROTLEG3942	79	2
PSA00M20	PSA00M20	330	1
PSI00M20	PSI00M20	329	1
R05	R05	274	5
S03	VC719300	169	1
S04	VC720100	169	R
S09	VD718400	144	R
S09NL	VD720000	144	R
S123	VC804300	137 / 169	1
S203	VC806800	137 / 169	R
S31	VC723500	137 / 169	1
S32	VD694700	137 / 169	R
S33	VC815900	168	1
S333	VC816700	168	R
S41	VC724300	137 / 169	R

Type	Part number	Page	Pack
S42	VD695400	137 / 169	R
S55	VC822500	137 / 170	R
S555	VC824100	137 / 170	R
S99	VD722600	144	R
S99NL	VD724200	144	R
SC150	ER103550	326	1
SC190	ER103010	326	1
SD1	ER100010	327	1
SD2	ER100020	327	1
SD1G	ER100060	327	1
SD3	ER100030	327	1
SD3F	VC714400	168	1
SD31	VC718500	168	1
SD32	VD690500	168	1
SD4	ER100040	327	1
SD4F	VC715100	168	R
SD41	VD689700	168	R
SD42	VD691300	168	R
SM1V	ER104000	328	1
SM2V	ER104010	328	1
SM3V	ER104020	328	1
SM40	ER104030	328	1
SM60	ER104040	328	1
SV1SF	ER105000	328	1
SV2SF	ER105010	328	1
SV3SF	ER105020	328	1
T05	T05	274	5
T10	VC794600	145	1
T10/1	VC795300	145	1
T12	VC797900	137 / 145 / 169	1
T12/1	VC798700	137 / 145 / 169	1
T6	VC727600	137 / 145 / 169	1
T6/1	VD699600	137 / 145 / 169	R
T8	VC728400	137 / 145 / 169	1
T8/1	VD700200	137 / 145 / 169	1
TF0633M6010C	VC307700	168	R
TF0633SM6010C	VC315000	168	1
TF0634M6010C	VC308500	168	R
TF0634SM6010C	VC316800	168	R
TF0803M80102	VC309300	168	R
TF0803SM80102	VC317600	168	R
TF0804M80102	VC310100	168	R
TF0804SM80102	VC318400	168	R
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TF1003SM80102	VC319200	168	R
TF1004M80102	VC312700	168	1
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TF4003M120103	VC359800	168	1
TF4004M120103	VC360600	168	R
TF6303M120104	VC361400	168	R
TF6304M120104	VC362200	168	R
TS10003M1301	VC422400	136	R
TS10003VM1301	VC443000	136	R
TS10004M1301	VC423200	136	R
TS10004VM1301	VC444800	136	R
TS1253M801	VC522100	136	1
TS1253SM801	VC526200	136	R
TS1254M801	VC523900	136	R
TS1254SM801	VC527000	136	R
TS1603M801	VC524700	136	1
TS1604M801	VC525400	136	R
TS2003M801	VC853800	136	R
TS2004M801	VC854600	136	R
TS2503M801	VC855400	136	R
TS2504M801	VC856200	136	R
TS4003M1201	VC416600	136	R
TS4003VM1201	VC437200	136	R

Type	Part number	Page	Pack
TS4004M1201	VC417400	136	R
TS4004VM1201	VC438000	136	R
TS6303M1201	VC418200	136	R
TS6303VM1201	VC439800	136	R
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TS8004M1201	VC421600	136	R
TS8004VM1201	VC442200	136	R
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TSC04003M1203	VC542900	144	R
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TSC06303M1203	VC544500	144	R
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Type	Part number	Page	Pack
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XNA1003HK6	XNA1003HK6	127	R
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XNA1004BK6	XNA1004BK6	127	1
XNA1004BL6	XNA1004BL6	127	1
XNA1004HK6	XNA1004HK6	127	R
XNA1004HL6	XNA1004HL6	127	R
XNAG1304	XNAG1304	128	5
XNAG1305	XNAG1305	128	5
XNAG813	XNAG813	159	5
XNF0163BK6	XNF0163BK6	158	1
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XNF0164BK6	XNF0164BK6	158	1
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Z5	Z5	274	5
Z51	Z51	274	5
Z52	Z52	274	5
Z53	Z53	274	5
Z54	Z54	274	5

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1. Subject / sphere of application

1.1 This document constitutes the terms and conditions of sale of Bremas Ersce S.p.A, a single-member company, head office in Cambiago (MI), via Castellazzo,9.

2. Introduction

2.1 The terms and conditions of sale, unless otherwise stated in writing for any exceptions or modifications, are applied to the delivery of products manufactured and purchased by Bremas Ersce S.p.A.. Any different terms of the contract which are submitted, attached, quoted, added or modified by the Client do not apply to without written acceptance by Bremas Ersce S.p.A..

2.2 The terms and conditions of sale refer to all articles currently offered by Bremas Ersce S.p.A. together with all future models and variants which may be included and reported in its catalogues, drawings, data sheets and brochures. Bremas Ersce S.p.A. does hereby reserve the right to modify, add or vary in any time the manufacture of one or more products, without prior notice.

2.3 Every order sent by a Client and confirmed by Bremas Ersce S.p.A. is considered irrevocable and refers to these terms and conditions of sale which are considered tacitly accepted in every respect.

3. Order confirmations

3.1 All the orders shall be accepted by Bremas Ersce S.p.A. sending an order confirmation. These confirms report the codes of ordered products, the prices, the delivery terms, the payments terms and / or other information which can be useful for the definition of the contract.

3.2 No order submitted shall be deemed to be accepted unless and until confirmed by Bremas Ersce S.p.A. with the related order confirmation.

4. Prices and methods of payment

4.1 The quoted prices are those referred to the confirmation order; they can be however modified according to unforeseeable variations of costs and currency exchange.

4.2 Unless otherwise stated between the parties, all prices do not include Value Added Tax, packaging and transport costs which shall be borne by the Client.

4.3 The invoices are to be irrevocably paid in due time according to the indicated terms. In case of non-payment in due time or partial payment, the Seller may suspend further deliveries of the already ordered products. Bremas Ersce S.p.A. shall besides have the right to:

- consider the contract immediately terminated
- charge interests on delayed payments on a day to day basis at the debtor rate
- choose any options to recover the credit, as well any proceedings.

5. Delivery and transport terms

5.1 Unless otherwise agreed in writing, the delivery terms shown in the order confirmation do apply to the goods leaving from Bremas Ersce plant. Value Added Tax, insurance and transport costs are charged to the Client.

5.2 The delivery terms indicated in the order confirmations are binding except for strikes, raw materials lack, moulds breakdown or other inconveniences related to the economic activity. In case of late deliveries, the Seller does not accept any responsibilities for direct or indirect damages to the Client, unless otherwise stated between the parties.

5.3 The goods travel at the Client's risks. At the receipt of the goods, the Client shall immediately control that the delivered products are conform in their weight, number, quantity and typology with the ones described in the delivery note.

5.4 All claims for differences found in the goods must be submitted in writing by the Client to Bremas Ersce S.p.A. within eight days after date of receipt of the goods.

5.5 Bremas Ersce S.p.A. does not assume any responsibilities for transport delays, damages or goods' loss.

6. Warranty

6.1 Bremas Ersce S.p.A. warrants its components for a period of 24 months from the delivery date as for the functional conformity and the technical characteristics indicated in the drawings, data sheets or specifications issued by Bremas Ersce S.p.A..

6.2 The warranty does exclusively apply to products returned within the warranty expiration and considered as defective by Bremas Ersce S.p.A..

6.3 The warranty shall be considered the commitment of Bremas Ersce S.p.A. at its own discretion, to replace free of charge returned products considered as defective, delivering with transport to the Client's costs from the plant in Cambiago (MI). The Seller may as well credit the relevant value. Except as otherwise stated in writing by the management of Bremas Ersce S.p.A., the Client shall indemnify the Seller against any compensations for direct or indirect damages and charges such as:

- costs assumed for the replacement of the components
- costs assumed in the plants of the Client
- costs for "recall" actions
- costs assumed for the selection of materials or replacement of entire instalments

6.4 No warranty is expected for all products which will result defective due to the following circumstances which are not related to manufacture defects: carelessness; Usage non-compliant with the technical specifications; Mistakes in the project or manufacture of the advice in which the components are inserted; Incorrect maintenance; Maintenance made by non-authorized staff; Transport damages.

6.5 No warranty is moreover expected in case of wrong usage of the device.

7. Patent rights

7.1 Bremas Ersce S.p.A. assures that the supplied products do not violate any patent rights of a third party, that they are not given in pawn or mortgaged and are free from any obligations.

7.2 All knowledge and restricted information acquired by the Client and imparted to it by Bremas Ersce S.p.A. shall be treated as confidential.

8. Competent court of jurisdiction

Any disputes shall be referred to the competent court of jurisdiction in Milano.