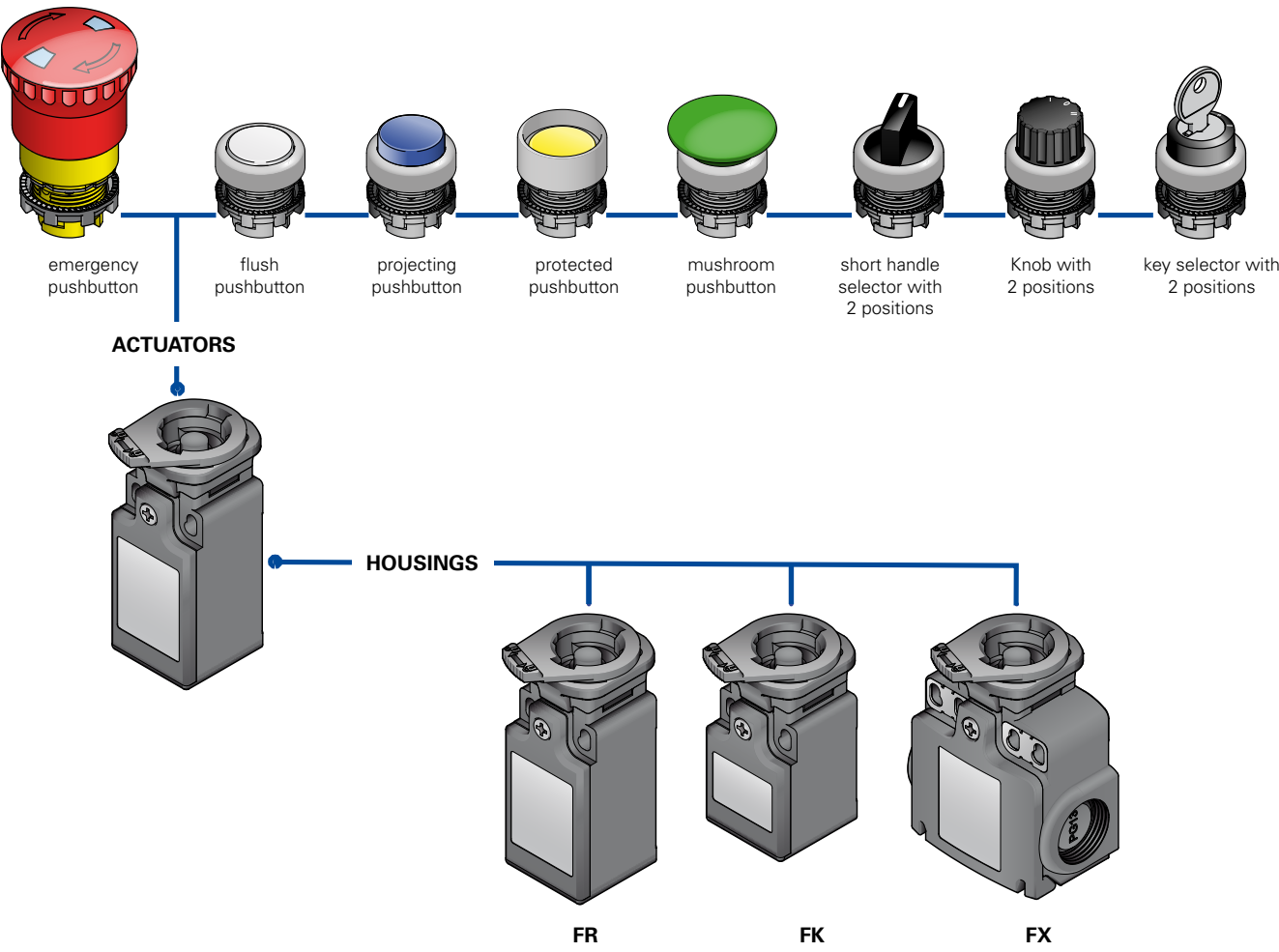
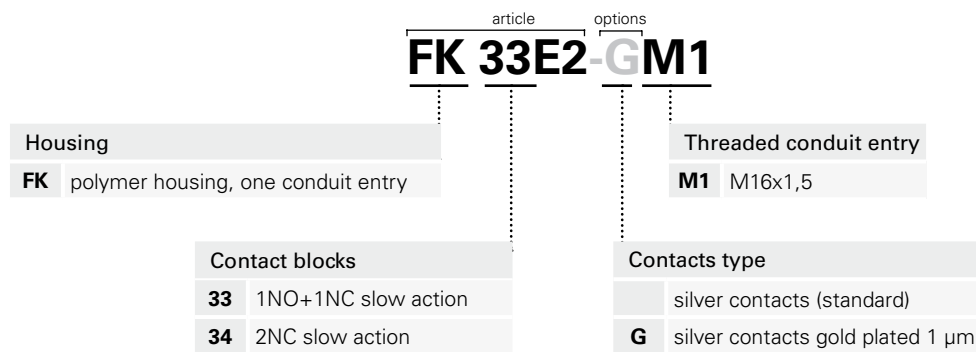
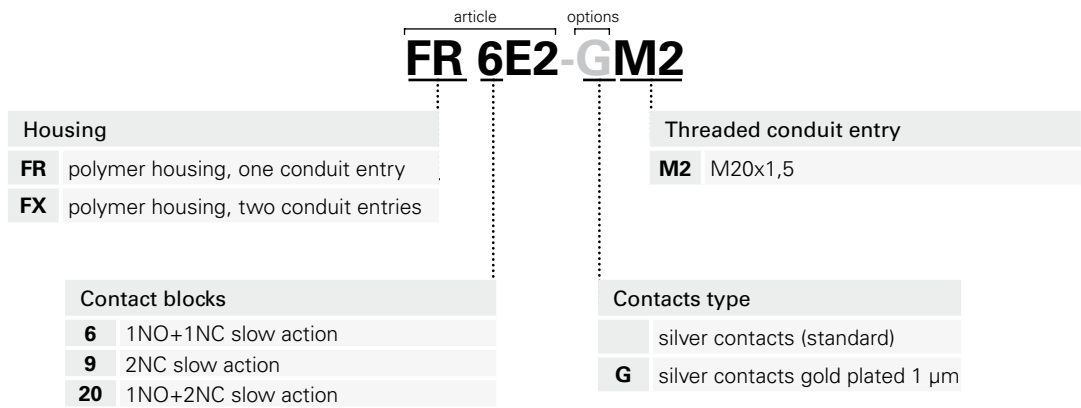


Selection diagram



Contact block code structure



Attention! The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.



Main data

- Protection degree IP67
- Made of glass-reinforced polymer
- Silver contacts gold plated versions

Markings and quality marks:



Approval UL: E131787

Approval GOST: POCC IT.AB24.B04512

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and Electromagnetic Compatibility 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, VDE 0660-206.

The protected contact block only prevents dust and water from the switchboard to enter inside the electrical contacts.

The protected contact block can be combined only to the following devices:

- pushbutton E2 1PU.....
- emergency pushbuttons E2 1PE.....
- two-position selectors E2 1SE•2.....
- two-position key selectors E2 1SC2.....

Technical data

General data

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation

FR and FK series one conduit entry

FX series two conduit entries

Protection degree:

IP67 according to IEC 60529 with cable gland having equal or higher protection degree (electrical contacts)

from -25°C to +80°C

Ambient temperature:

Max actuation frequency:

Mechanical endurance:

Utilization requirements:

3600 operations cycles¹/hour

20 million operations cycles¹

see page 3/98

(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.

Contact block

Contacts commutation force FR, FX series

1NO+1NC:

3,3 N (NC) / 6 N (NO)

2NC:

6,5 N

1NO+2NC:

5,8 N (NC) / 6,5 N (NO)

Contacts commutation force FK series

1NO+1NC:

4,5 N (NC) / 5,3 N (NO)

2NC:

4,4 N

End travel force FR, FX series

1NO+1NC:

9 N

2NC:

8,5 N

1NO+2NC:

10,3 N

End travel force FK series

1NO+1NC:

9,3 N

2NC:

8 N

Positive opening force:

25 N

Activating speed:

min 1 mm/s

max 0,5 m/s

Contacts material:

silver contacts (standard)

Contacts for weak current in silver, 1µm thick gold-plating (on request)

Contact blocks 20, 33, 34:

min. 1 x 0,34 mm² (1 x AWG 22)

max. 2 x 1,5 mm² (2 x AWG 16)

Contact blocks 6, 9:

min. 1 x 0,5 mm² (1 x AWG 20)

max. 2 x 2,5 mm² (2 x AWG 14)



Screw terminal driving torque:

0,6 ... 0,8 Nm

In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50047, IEC 60204-1, EN 60204-1, EN 1088, EN ISO 12100-1, EN ISO 12100-2, IEC 60529, EN 60529, NFC 63-140, VDE 0660-200, VDE 0113.

Installation for safety applications:

Use only contact blocks marked with the symbol . The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as stated in the **standard EN 60947-5-1, encl. K, par. 2**. The switch must be actuated **at least up to the positive opening travel** shown in the travels diagrams with the symbol . The switch must be actuated at least with the positive opening force, shown in the general data.

Electrical data

Utilization categories

without connector	Thermal current (I _{th}):	10 A
	Rated insulation voltage (U _i):	500 Vac 600 Vdc
		400 Vac 500 Vdc (contact blocks 20, 33, 34)
	Rated impulse withstand voltage (U _{imp}):	6 kV
		4 kV (contact blocks 20, 33, 34)
	Conditional short circuit current:	1000 A according to EN 60947-5-1
	Protection against short circuits:	fuse 10 A 500 V type aM
	Pollution degree:	3

Alternate current: AC15 (50...60 Hz)			
U _e (V)	250	400	500
I _e (A)	6	4	1
Direct current: DC13			
U _e (V)	24	125	250
I _e (A)	6	1,1	0,4

Data type approved by UL

Utilization categories Q300 (69 VA, 125-250 Vdc)
A600 (720 VA, 120-600 Vac)

Data of the housing type 1, 4X "indoor use only", 12, 13

For all contact blocks except 2 and 3 use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7,1 lb in (0,8 Nm).
For contact blocks 2 and 3 use 60 or 75 °C copper (Cu) conductor and wire size No. 14 AWG. Terminal tightening torque of 12 lb in (1,4 Nm).

In conformity with standard: UL 508

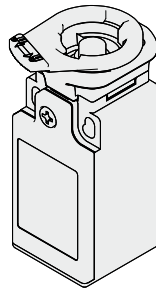
Applications


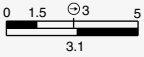

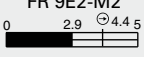

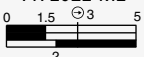


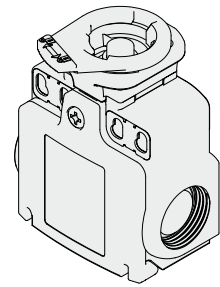
Protected contact block for control devices on switchboards with presence of dust. This contact block allows all its electrical contacts to be IP67.


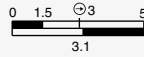

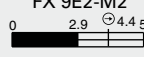

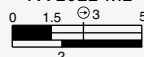
Please contact our technical service for the list of approved products.

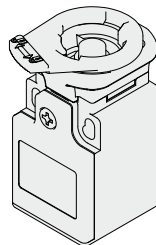
Contact block selection table


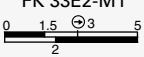

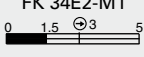


Contact blocks	Article
1NO+1NC slow action 	FR 6E2-M2 
2NC slow action 	FR 9E2-M2 
1NO+2NC slow action 	FR 20E2-M2 



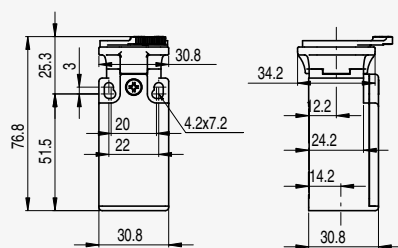
Contact blocks	Article
1NO+1NC slow action 	FX 6E2-M2 
2NC slow action 	FX 9E2-M2 
1NO+2NC slow action 	FX 20E2-M2 



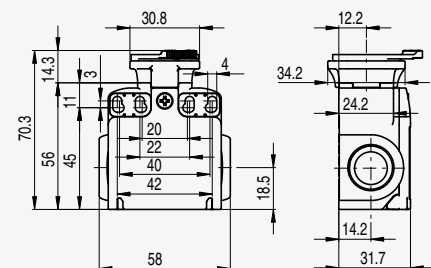
Contact blocks	Article
1NO+1NC slow action 	FK 33E2-M1 
2NC slow action 	FK 34E2-M1 

Dimensions

FR series



FX series



FK series

