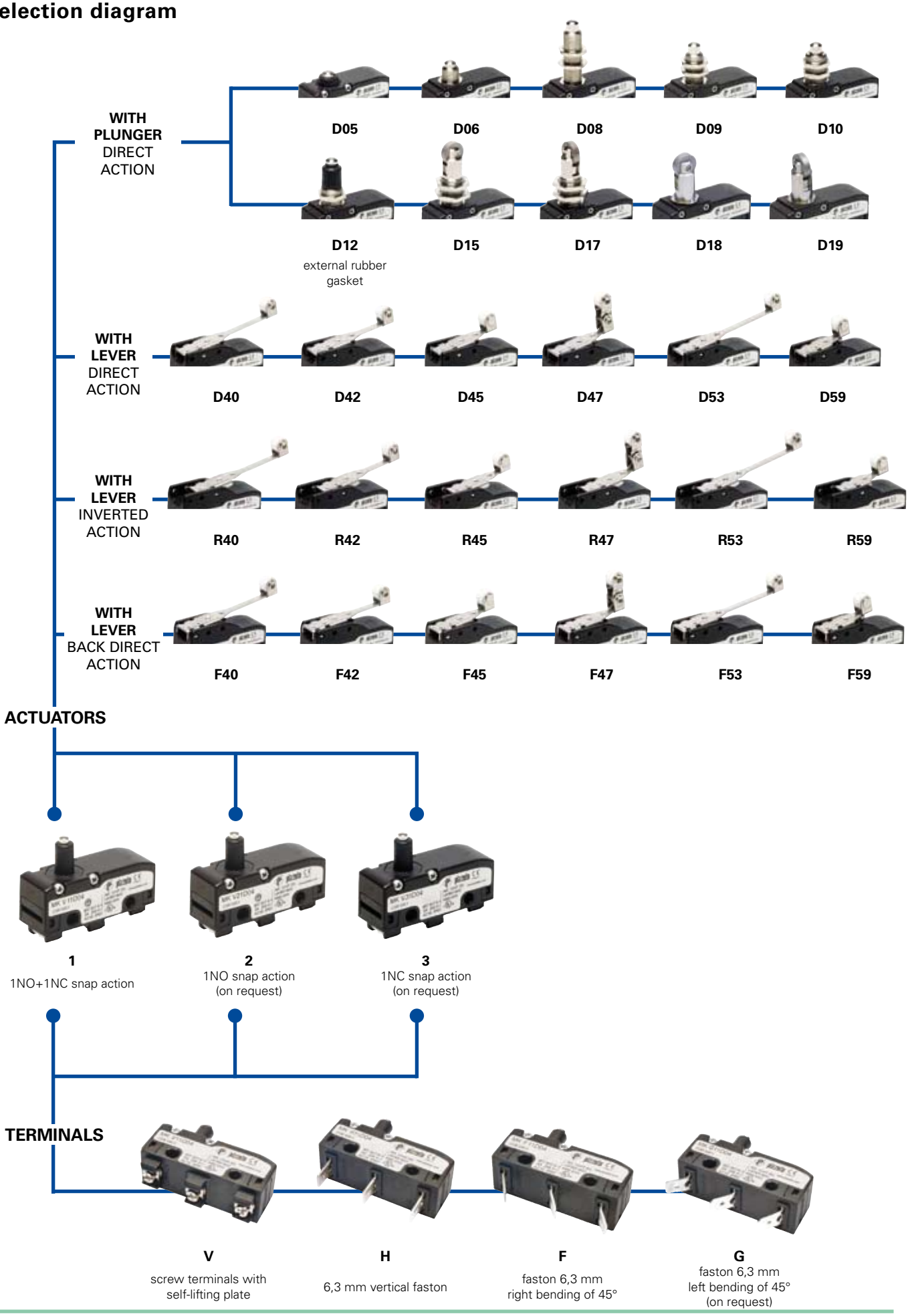
Selection diagram



Code structure

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

article | options

MK V12D40-GR16T6

Terminals type	
V	screw terminals with self-lifting late
H	vertical faston terminals
F	with faston, right bending of 45°
G	with faston, left bending of 45° (on request)

Contact block	
1	1NO+1NC, snap action
2	1NO, snap action (on request)
3	1NC, snap action (on request)

Max protection degree	
1	IP40 (with protection)
2	IP65 (with protection)

Actuation type	
D	direct action
R	inverted action
F	back direct action

Actuator	
01	with pin
02	with pin
03	with small push button
..	.....

Ambient temperature	
	-25°C ... +85°C (standard)
T6	-40°C ... +85°C

Suffix	
	no suffix (standard)
R16	Ø 9,5x4 mm metal roller (for actuator 40, 42 ,45 47, 53, 59)
R10	Ø 9,8x8,4 mm polymer roller (for actuator 40, 42 ,45, 53)

Contacts type	
	silver contacts (standard)
G	silver contacts gold plated 1 µm

Main data

- Polymer housing
- Protection degree IP20, IP40 or IP65
- 4 terminal types available
- Versions with positive opening ⊖
- Silver contacts gold plated versions
- Terminal covers with wire trap cable gland

Technical data

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin.

Protection degree: IP20 (with protection VF C01 - VF C03)
IP40 (with protection VF MKC•1• - VF C02)
IP65 (with protection VF MKC•22 - VF MKC•23)
according to EN 60529

General data

Ambient temperature:	-25°C ... +85°C
Max operating frequency:	3600 operations cycles[1]/hour
Mechanical endurance:	10 million operations cycles[1]
Driving torque for installation:	see page 116

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

Cross section of the conductors (flexible copper wire)

MK series:	min.	1 x 0,34 mm²	(1 x AWG 22)
	max	2 x 1,5 mm²	(2 x AWG 16)

In conformity with standards:
IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 60529, EN 60529.
Approvals:
UL 508

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, EN 60947-1, VDE 0660-206.

Markings and quality marks:

Approval UL: E131787
Approval GOST: POCC IT.AB24.B04512

Installation for safety applications:
Use only switches marked with the symbol ⊖. The safety circuit must always be connected with the **NC contacts** (normally closed contacts) as stated in the **standard EN 60947-5-1, encl. K, par. 2**. The switch must be actuated with **at least up to the positive opening travel (FAP)** near the code article. The switch must be actuated **at least with the positive opening force (CAP)**, near the code article.

Electrical data

Thermal current (Ith):	16 A
Rated insulation voltage (Ui):	250 Vac 300 Vdc
Rated impulse withstand voltage (U_{imp}):	4 kV
Conditional shot circuit current:	1000 A according to EN 60947-5-1
Protection against short circuits:	fuse 10 A 500 V type gG
Pollution degree:	3
Dielectric strength	2000 Vac/min.

Utilization categories

Alternate current: AC15 (50 ... 60 Hz)

Ue (V)	250	120
Ie (A)	6	6

Direct current: DC13

Ue (V)	24	125	250
Ie (A)	5	0,6	0,3

Data type approved by UL

Utilization categories: Q300 (69 VA, 125-250 Vdc)
A300 (720 VA, 120-300 Vac)

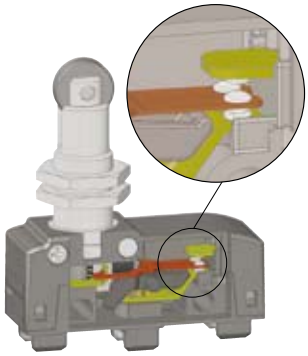
In conformity with standard: UL 508

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

Microswitches MK series

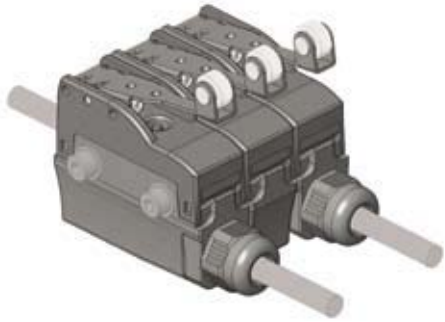
Microswitches of MK series have been developed in order to add new features to traditional and tested microswitches of Pizzato Elettrica (cross-reference at page 79). These new products have been designed with shapes and fixing perfectly interchangeable with the previous ones and with various additional functions useful to extend the applicatory field.

The main innovation of this series is the tripping mechanism evolved and modern, with qualitative features superior than solutions present on the market.
The electrical contact on new microswitch has been made with higher reliability technology, thanks to the double and redundant shape, and has the possibility to carry out operations with positive opening.
The housing of the new microswitch provides the possibility to seat gaskets in order to seal the device against fine dusts or liquids up to IP65 degree.
Fastening terminals of conductors are more practical and allow the fixing of different diameter cables or the possibility to choice different bends of faston contacts. For high quantity it's possible to supply the microswitch only with the contact NO or NC, in order to minimize purchase costs.

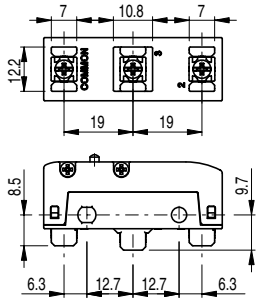


Terminal covers with wire trap cable gland, side by side installable

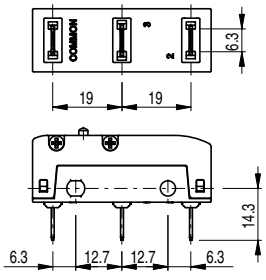
New terminal covers supplied with wire trap cable gland are provided for the protection degree up to IP65.
These terminal covers are snap-in assembled and they have small dimensions in the microswitch profile, it's possible to install them also on microswitches fixed side by side.
See page 55.



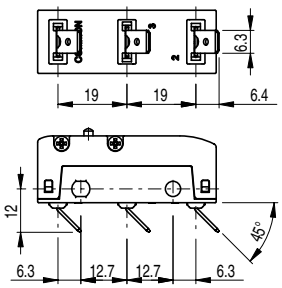
Terminals outline dimension



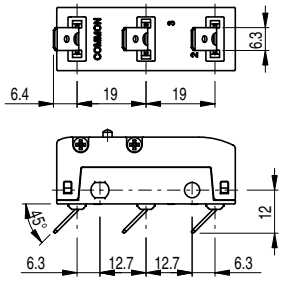
Screw terminals **V** with plate



Vertical faston **H** terminals



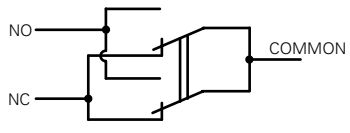
faston terminals **F**, right bending



faston terminals **G**, left bending (on request)

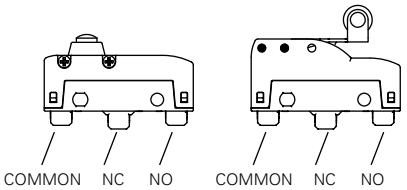
Note: H vertical faston terminals can be bent according to one's installation requirements.
We recommend to bend the faston with an angle not higher than 45° and to carry out this operation no more than 5 times.

Wire diagram

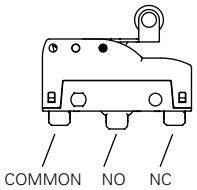


Contacts with single interruption and double contacts

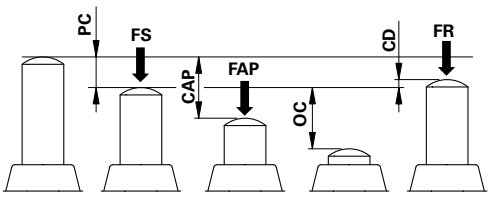
With direct and back direct action (F, D)



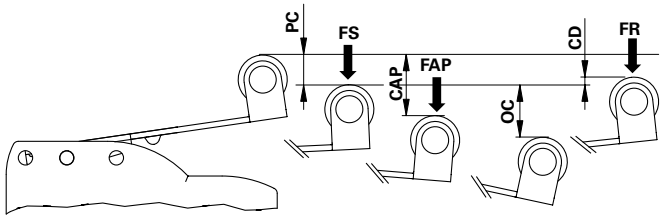
With inverted action (R)



Legend



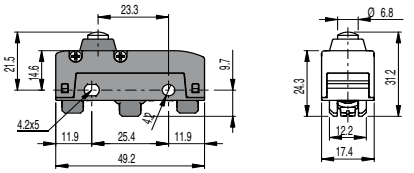
CD differential travel
PC pretravel
OC over-travel
CAP positive opening travel



FS operating force
FR releasing force
FAP positive opening force

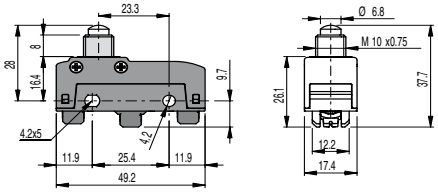
Microswitches with direct action (All measures in the drawings are in mm)

10 pcs packs



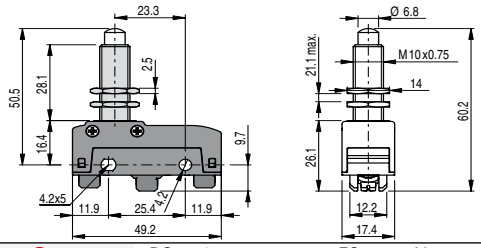
MK V11D05 1NO+1NC — PC 0,5 mm; OC 2 mm; CD 0,05 mm; CAP 2,2 mm; FS 4 N; FR 3 N; FAP 20 N

Max and min. speed page 116 - type 1



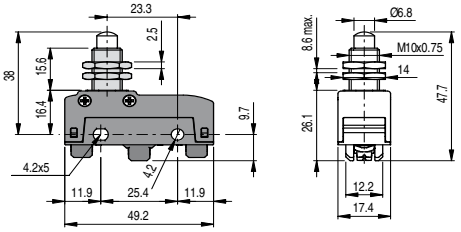
MK V11D06 1NO+1NC — PC 0,5 mm; OC 3 mm; CD 0,05 mm; CAP 2,2 mm; FS 4 N; FR 3 N; FAP 20 N

Max and min. speed page 116 - type 1



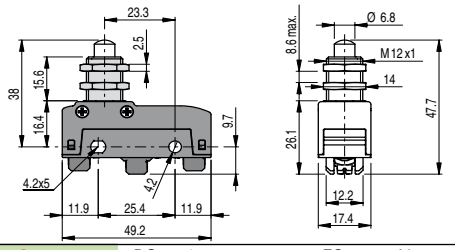
MK V11D08 1NO+1NC — PC 0,5 mm; OC 5,5 mm; CD 0,05 mm; CAP 2,2 mm; FS 4 N; FR 3 N; FAP 20 N

Max and min. speed page 116 - type 1



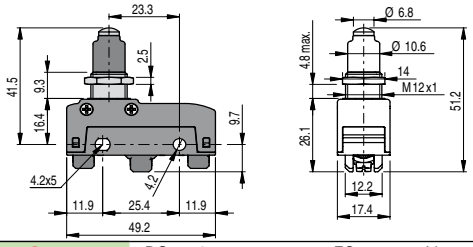
MK V11D09 1NO+1NC — PC 0,5 mm; OC 5,5 mm; CD 0,05 mm; CAP 2,2 mm; FS 4 N; FR 3 N; FAP 20 N

Max and min. speed page 116 - type 1



MK V11D10 1NO+1NC — PC 0,5 mm; OC 5,5 mm; CD 0,05 mm; CAP 2,2 mm; FS 4 N; FR 3 N; FAP 20 N

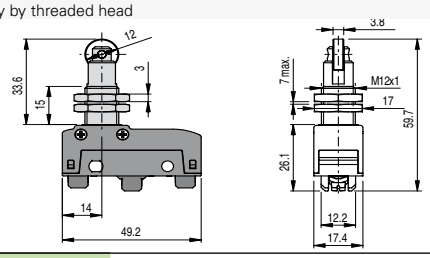
Max and min. speed page 116 - type 1



MK V11D12 1NO+1NC — PC 0,5 mm; OC 5,5 mm; CD 0,05 mm; CAP 2,2 mm; FS 4,5 N; FR 3 N .; FAP 20 N

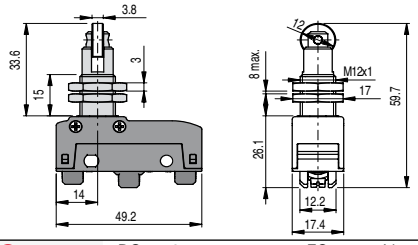
Max and min. speed page 116 - type 1

Fixed only by threaded head



MK V11D15 1NO+1NC — PC 0,5 mm; OC 5,5 mm; CD 0,05 mm; CAP 2,2 mm; FS 4 N; FR 3 N .; FAP 20 N

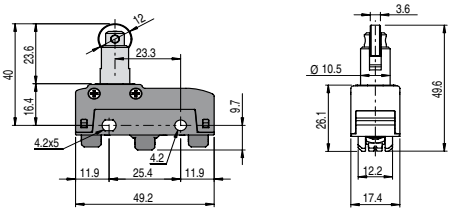
Max and min. speed page 116 - type 2



MK V11D17 1NO+1NC — PC 0,5 mm; OC 5,5 mm; CD 0,05 mm; CAP 2,2 mm; FS 4 N; FR 3 N; FAP 20 N

Max and min. speed page 116 - type 2

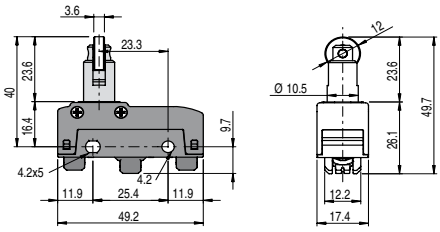
Items with code on the **green** background are available in stock



MK V11D18 1NO+1NC

PC	0,5 mm	FS	4 N
OC	5,5 mm	FR	3 N .
CD	0,05 mm	FAP	20 N
CAP	2,2 mm		

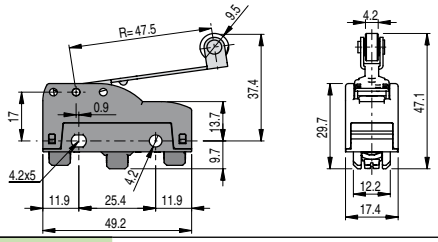
Max and min. speed page 116 - type 2



MK V11D19 1NO+1NC

PC	0,5 mm	FS	4 N
OC	5,5 mm	FR	3 N
CD	0,05 mm	FAP	20 N
CAP	2,2 mm		

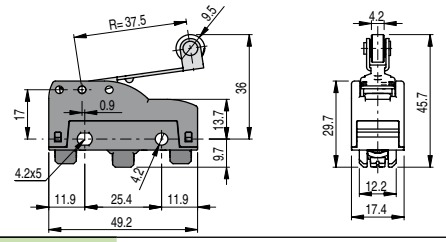
Max and min. speed page 116 - type 2



MK V11D40 1NO+1NC

PC	6,7 mm	FS	0,86 N
OC	7,8 mm	FR	0,66 N
CD	0,8 mm		

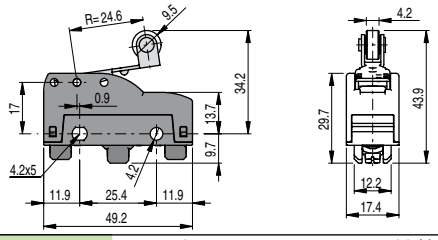
Max and min. speed page 116 - type 6



MK V11D42 1NO+1NC

PC	5,3 mm	FS	1,09 N
OC	5,7 mm	FR	0,84 N
CD	0,6 mm		

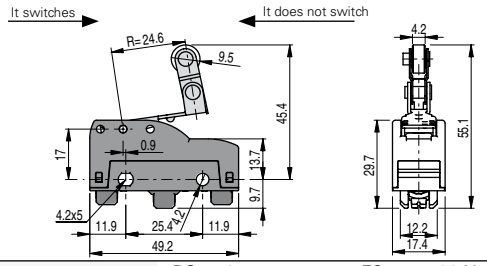
Max and min. speed page 116 - type 6



MK V11D45 1NO+1NC

PC	3,5 mm	FS	1,66 N
OC	4,5 mm	FR	1,28 N
CD	0,4 mm		

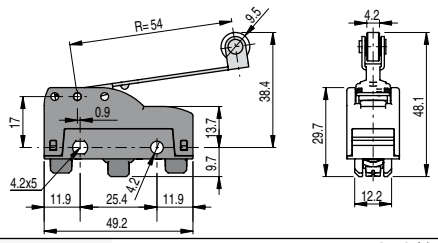
Max and min. speed page 116 - type 6



MK V11D47 1NO+1NC

PC	3,5 mm	FS	1,66 N
OC	4 mm	FR	1,28 N
CD	0,4 mm		

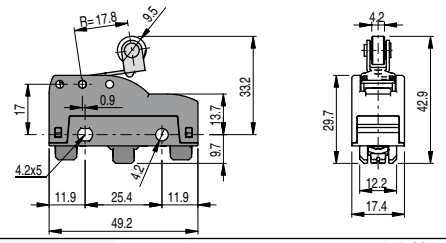
Max and min. speed page 116 - type 6



MK V11D53 1NO+1NC

PC	7,7 mm	FS	0,76 N
OC	8,9 mm	FR	0,58 N
CD	0,9 mm		

Max and min. speed page 116 - type 6

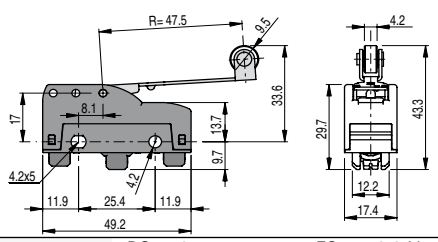


MK V11D59 1NO+1NC

PC	2,5 mm	FS	2,3 N
OC	4,5 mm	FR	1,77 N
CD	0,2 mm		

Max and min. speed page 116 - type 6

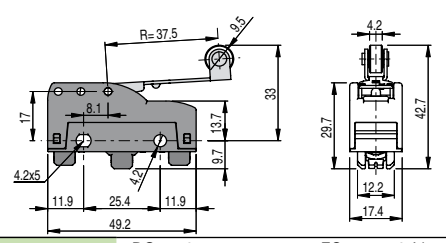
Microswitches with inverted action (All measures in the drawings are in mm)



MK V11R40 1NO+1NC

PC	3,4 mm	FS	0,8 N
OC	10,3 mm	FR	0,5 N
CD	0,7 mm		

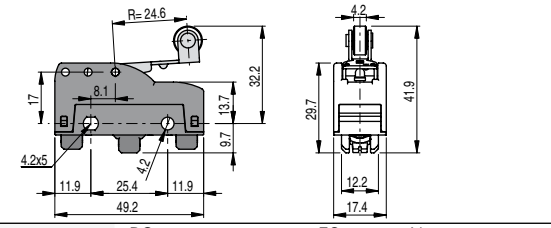
Max and min. speed page 116 - type 7



MK V11R42 1NO+1NC

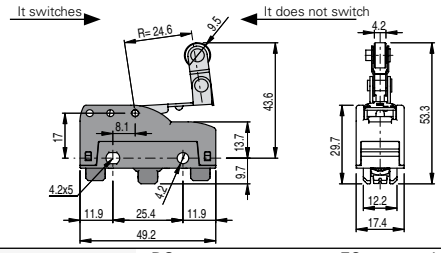
PC	2,7 mm	FS	1,2 N
OC	7,9 mm	FR	1,7 N
CD	0,5 mm		

Max and min. speed page 116 - type 7



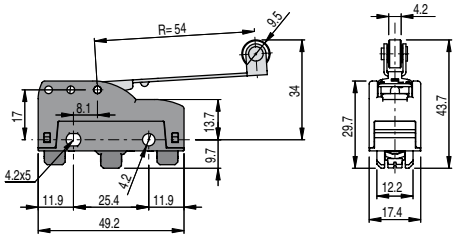
MK V11R45 1NO+1NC PC 1,5 mm FS 1,7 N
OC 5,5 mm FR 1 N
CD 0,3 mm

Max and min. speed page 116 - type 7



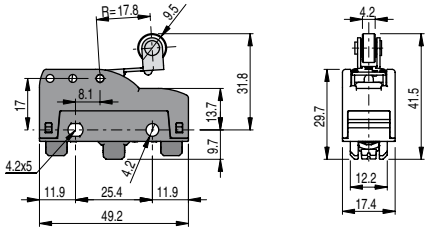
MK V11R47 1NO+1NC PC 1,7 mm FS 1,7 N
OC 5,3 mm FR 1 N
CD 0,3 mm

Max and min. speed page 116 - type 7



MK V11R53 1NO+1NC PC 4,3 mm FS 0,8 N
OC 11,6 mm FR 0,4 N
CD 0,8 mm

Max and min. speed page 116 - type 7

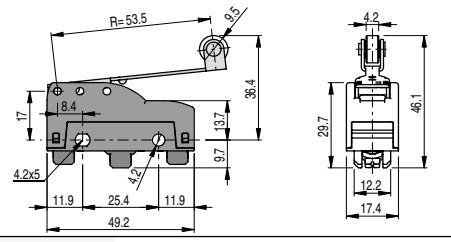


MK V11R59 1NO+1NC PC 1,5 mm FS 2,4 N
OC 3,9 mm FR 1,3 N
CD 0,3 mm

Max and min. speed page 116 - type 7

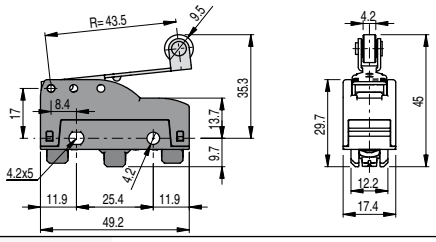
Microswitches with back direct action (All measures in the drawings are in mm)

10 pcs packs



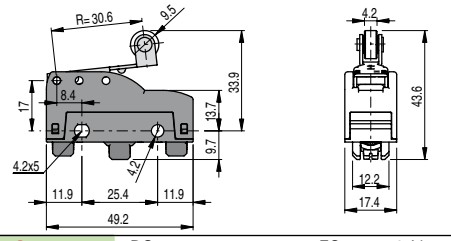
MK V11F40 1NO+1NC PC 2,4 mm FS 0,85 N
OC 10,4 mm FR 0,65 N
CD 0,25 mm

Max and min. speed page 116 - type 8



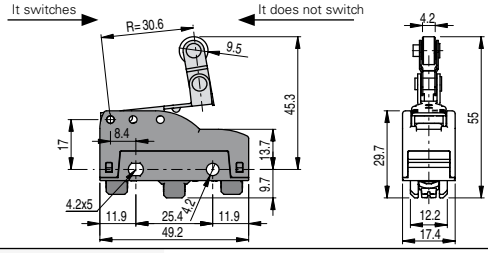
MK V11F42 ⊖ 1NO+1NC PC 1,6 mm FS 1 N
OC 8,4 mm FR 0,7 N
CD 0,2 mm FAP 4,9 N
CAP 9 mm

Max and min. speed page 116 - type 8



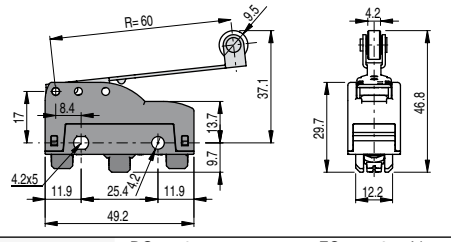
MK V11F45 ⊖ 1NO+1NC PC 1,1 mm FS 1,3 N
OC 6,6 mm FR 0,9 N
CD 0,1 mm FAP 6,9 N
CAP 6,3 mm

Max and min. speed page 116 - type 8



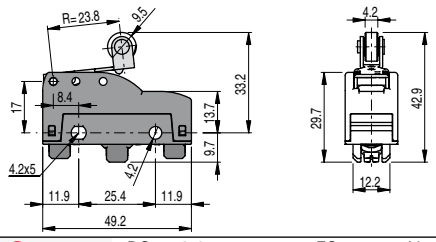
MK V11F47 ⊖ 1NO+1NC PC 1,1 mm FS 1,3 N
OC 5,6 mm FR 0,9 N
CD 0,1 mm FAP 6,9 N
CAP 6,3 mm

Max and min. speed page 116 - type 8



MK V11F53 1NO+1NC PC 2,5 mm FS 0,7 N
OC 11,5 mm FR 0,6 N
CD 0,3 mm

Max and min. speed page 116 - type 8

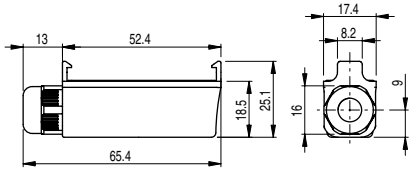


MK V11F59 ⊖ 1NO+1NC PC 0,8 mm FS 1,7 N
OC 5,2 mm FR 1,3 N
CD 0,08 mm FAP 8,9 N
CAP 4,9 mm

Max and min. speed page 116 - type 8

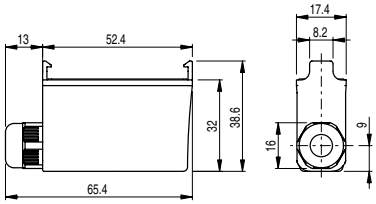
Protections (terminals covers)

10 pcs packs



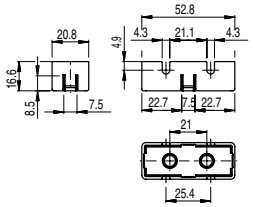
Protection terminal cover for screw terminals snap-in assembled and with wire trap cable gland. It allows the installation of more switches side by side.

Article	Description	Protection degree
VF MKCV11	Protection terminal cover without gasket for multipolar cables from Ø 5 to Ø 7,5 mm	IP40
VF MKCV12	Protection terminal cover without gasket for multipolar cables from Ø 4 to Ø 7,5 mm	IP40
VF MKCV13	Protection terminal cover without gasket for multipolar cables from Ø 2 to Ø 5 mm	IP40
VF MKCV22	Protection terminal cover with gasket for multipolar cables from Ø 4 to Ø 7,5 mm	IP65
VF MKCV23	Protection terminal cover with gasket for multipolar cables from Ø 2 to Ø 5 mm	IP65

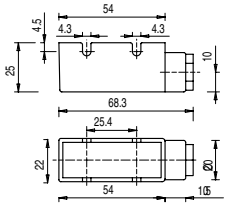


Protection terminal cover for vertical faston terminals snap-in assembled and with wire trap cable gland. It allows the installation of more switches side by side.

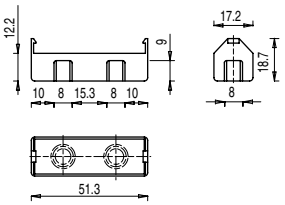
Article	Description	Protection degree
VF MKCH11	Protection terminal cover without gasket for multipolar cables from Ø 5 to Ø 7,5 mm	IP40
VF MKCH12	Protection terminal cover without gasket for multipolar cables from Ø 4 to Ø 7,5 mm	IP40
VF MKCH13	Protection terminal cover without gasket for multipolar cables from Ø 2 to Ø 5 mm	IP40
VF MKCH22	Protection terminal cover with gasket for multipolar cables from Ø 4 to Ø 7,5 mm	IP65
VF MKCH23	Protection terminal cover with gasket for multipolar cables from Ø 2 to Ø 5 mm	IP65



Article	Description	Protection degree
VF C01	Protection terminal cover for screw terminals	IP20



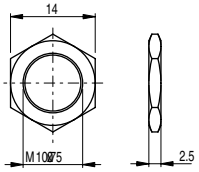
Article	Description	Protection degree
VF C02	Protection terminal cover for screw terminals with cable gland PG9 for multipolar cables from Ø 5 to Ø 7 mm	IP40



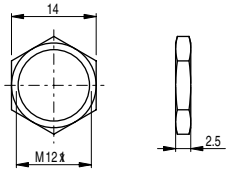
Article	Description	Protection degree
VF C03	Protection terminal cover for screw terminals snap-in assembled. It allows the installation of more switches side by side	IP20

Accessories

10 pcs packs



Article	Description
AC83	Hexagonal threaded nut M10 x 0,75 for microswitches



Article	Description
AC72	Hexagonal threaded nut M12 x 1 for microswitches

Items with code on the **green** background are available in stock