PLUNGER
DIRECT
ACTUATION

05 **08** **09** **10** **15** **17** **20**

LEVER
DIRECT
ACTUATION

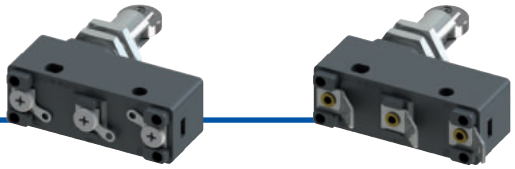
30 **40** **42** **45** **49**

LEVER
INVERTED
ACTUATION

55 **60**

ACTUATORS

TERMINALS



S
Solder connection

F
Faston 6.3 mm

Product options

Sold separately as accessory

Code structure

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

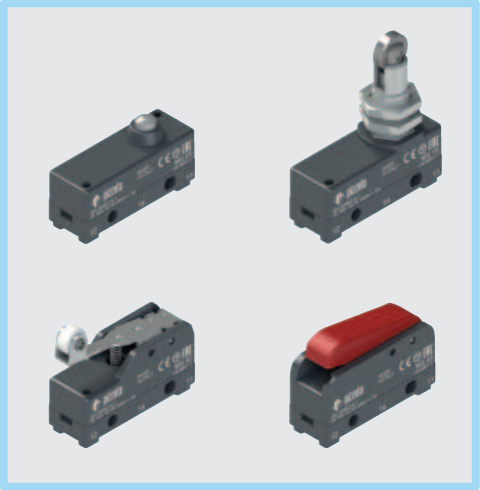
article | options

MS 40-R16

Type of terminal and contact block	
MS	solder terminals 1NO+1NC, snap action, change-over
MF	faston terminals 1NO+1NC, snap action, change-over

Rollers	
R16	metal roller Ø 9.5x4 mm (for actuators 40, 42, 45, 55 only)

Actuator	
05	low plunger
08	threaded plunger M10 x 0.75
09	threaded plunger M10 x 0.75
...	...



Main features

- Technopolymer housing
- Protection degree IP20 or IP40
- 2 terminal types available
- 13 actuators available

Quality marks:

IMQ approval: CA02.05772
EAC approval: RU Д-IT.PA07.B.37848/24

Technical data

Housing
Housing made of glass fibre reinforced technopolymer, self-extinguishing and shock-proof.

Protection degree acc. to EN 60529:	IP00 (without terminal cover) IP20 (with terminal covers VF C01, VF C03) IP40 (with terminal cover VF C02)

General data

Ambient temperature:	-25°C ... +85°C
Max. operating frequency:	3600 operating cycles/hour
Mechanical endurance:	10 million operating cycles
Tightening torques for installation:	see page 230

In compliance with standards:
IEC 60947-5-1, EN 60947-5-1, IEC 60947-1, EN 60947-1, IEC 60528, EN 60529, EN IEC 63000
Approvals:
EN 60947-5-1

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/EU.

⚠ **If not expressly indicated in this chapter, for correct installation and utilization of all articles see chapter Utilization requirements from page 217 to page 232.**

Electrical data

Thermal current (I_{th}):	16 A
Rated insulation voltage (U_i):	250 Vac 300 Vdc
Rated impulse withstand voltage (U_{imp}):	4 kV
Conditional short circuit current:	1000 A acc. to EN 60947-5-1
Protection against short circuits:	type gG fuse 16 A 250 V
Pollution degree:	3
Dielectric strength:	2000 V~ (between terminals and other metal parts to ground)

Utilization category

Alternating current: AC15 (50÷60 Hz)

Ue (V)	250		
Ie (A)	5		

Direct current: DC13

Ue (V)	24	125	250
Ie (A)	5	0.5	0.3

Features approved by IMQ

Rated insulation voltage (U_i):	250 Vac
Conventional free air thermal current (I_{th}):	16 A
Protection against short circuits:	type gG fuse 16 A 250 V
Rated impulse withstand voltage (U_{imp}):	4 kV
Conditional short circuit current:	1000 A
Terminals:	solder terminals / faston terminals
Pollution degree:	3
Utilization category:	AC15
Operating voltage (Ue):	250 Vac (50 Hz)
Operating current (Ie):	5 A

Forms of the contact element: C

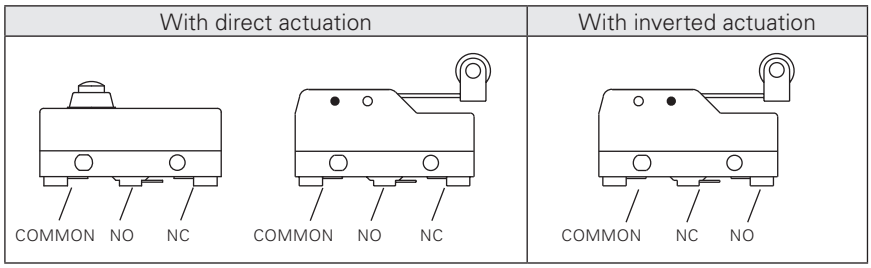
In compliance with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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

Orientable roller

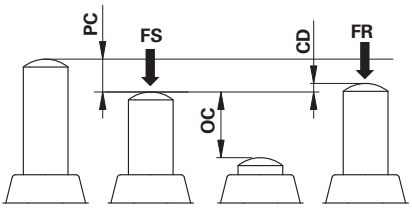
It is possible to rotate the roller of the M• 20 microswitch in 90° steps.

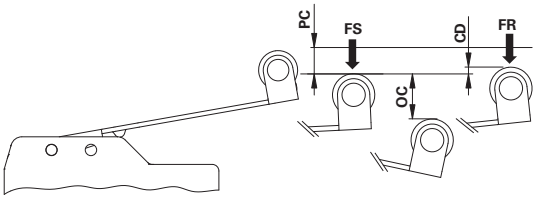
Circuit diagram



Change-over contact element with single interruption and three terminals.

Actuation forces and travels

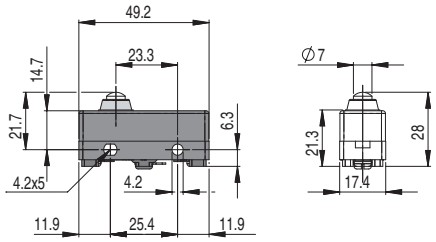




PC pre-travel
OC over-travel
FR release force
CD differential travel
FS trigger force

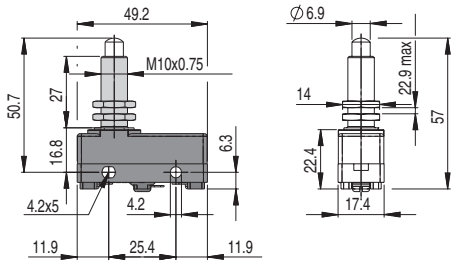
Microswitches with direct actuation

All values in the drawings are in mm



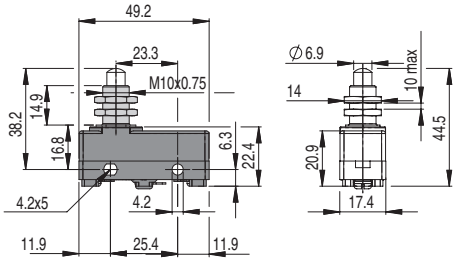
MS 05				
	PC	0.5 mm	FS	3.9 N
	OC	2 mm	FR	2.7 N
	CD	0.05 mm		

Maximum and minimum speed see page 230 - type 1



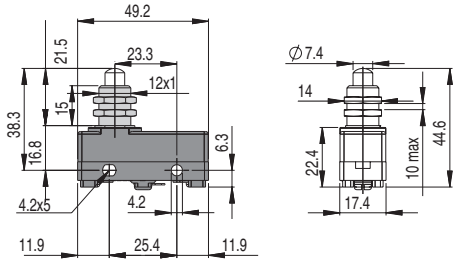
MS 08				
	PC	0.5 mm	FS	3.9 N
	OC	5.5 mm	FR	2.7 N
	CD	0.05 mm		

Maximum and minimum speed see page 230 - type 1



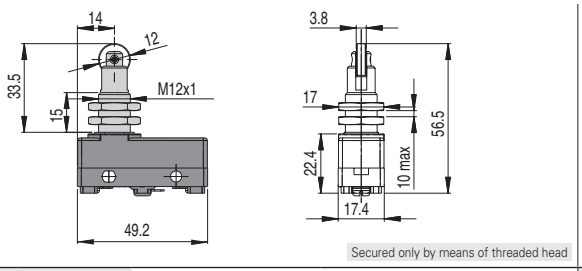
MS 09				
	PC	0.5 mm	FS	3.9 N
	OC	5.5 mm	FR	2.7 N
	CD	0.05 mm		

Maximum and minimum speed see page 230 - type 1



MS 10				
	PC	0.5 mm	FS	3.9 N
	OC	5.5 mm	FR	2.7 N
	CD	0.05 mm		

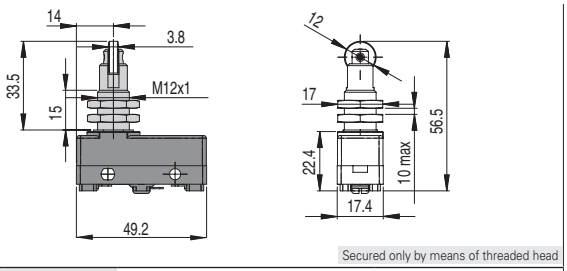
Maximum and minimum speed see page 230 - type 1



MS 15

PC 0.5 mm
OC 5.5 mm
CD 0.05 mm
FS 3.9 N
FR 2.7 N

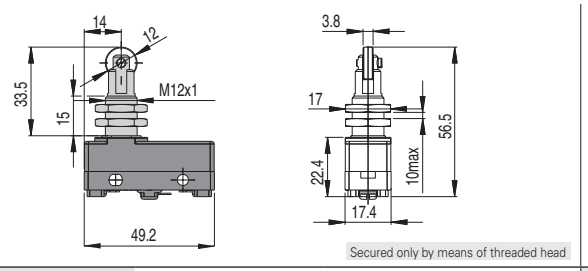
Maximum and minimum speed see page 230 - type 2



MS 17

PC 0.5 mm
OC 5.5 mm
CD 0.05 mm
FS 3.9 N
FR 2.7 N

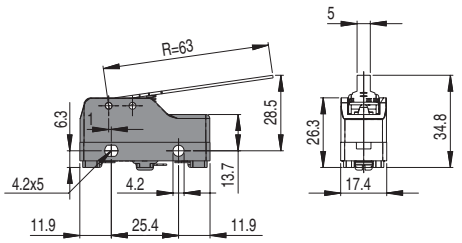
Maximum and minimum speed see page 230 - type 2



MS 20

PC 0.5 mm
OC 5.5 mm
CD 0.05 mm
FS 3.9 N
FR 2.7 N

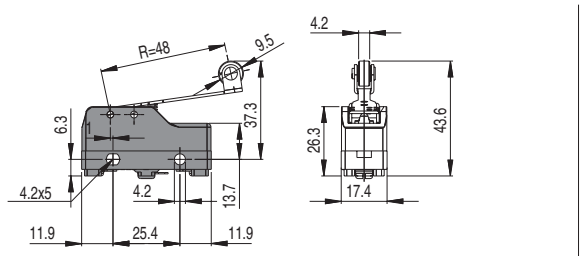
Maximum and minimum speed see page 230 - type 2



MS 30

PC 11.6 mm
OC 6.2 mm
CD 1 mm
FS 0.6 N
FR 0.5 N

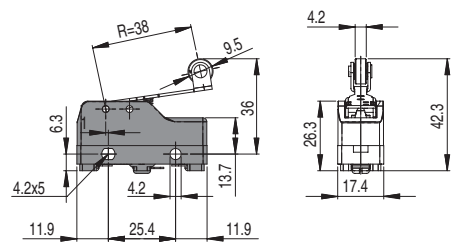
Maximum and minimum speed see page 230 - type 3



MS 40

PC 8.9 mm
OC 4.3 mm
CD 0.6 mm
FS 0.7 N
FR 0.6 N

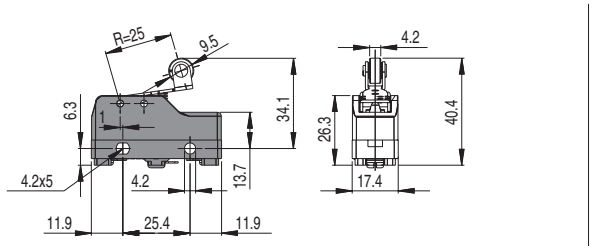
Maximum and minimum speed see page 230 - type 6



MS 42

PC 7.2 mm
OC 3.1 mm
CD 0.6 mm
FS 0.9 N
FR 0.8 N

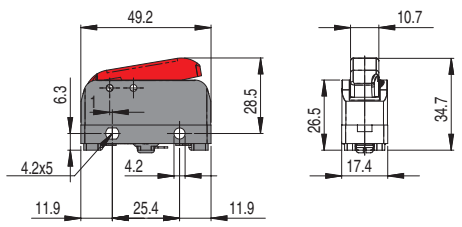
Maximum and minimum speed see page 230 - type 6



MS 45

PC 4.9 mm
OC 3.2 mm
CD 0.2 mm
FS 1.5 N
FR 1.2 N

Maximum and minimum speed see page 230 - type 6



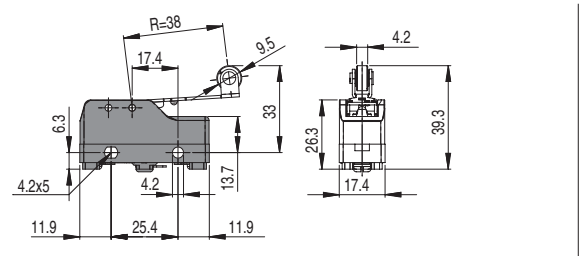
MS 49

PC 3.7 mm
OC 3.3 mm
CD 0.4 mm
FS 1.2 N
FR 0.9 N

Maximum and minimum speed see page 230 - type 1

Microswitches with inverted actuation

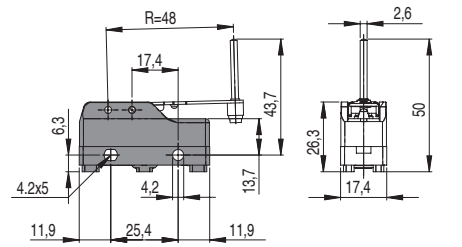
All values in the drawings are in mm



MS 55 1NO+1NC

PC 2 mm
OC 7.7 mm
CD 0.3 mm
FS 1.1 N
FR 0.8 N

Maximum and minimum speed see page 230 - type 7



MS 60 1NO+1NC

PC 1.3 mm
OC 7.9 mm
CD 0.2 mm
FS 1 N
FR 0.7 N

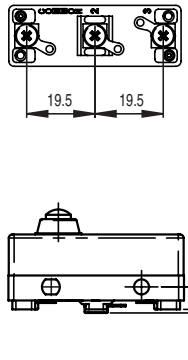
Maximum and minimum speed see page 230 - type 7

To order a product with faston terminals
replace MS with MF in the article codes. Example: **MS**15 → **MF**15

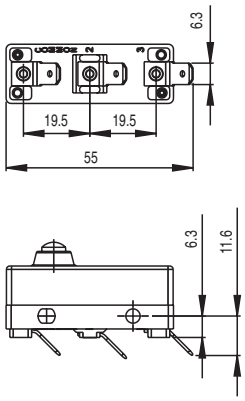
Terminal dimensions

All values in the drawings are in mm

Solder terminals

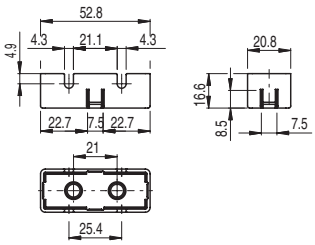


Faston terminals

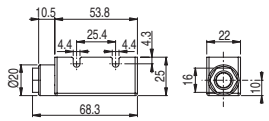


Protective terminal covers

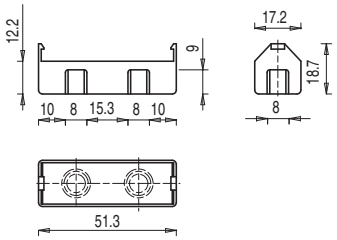
Packs of **10 pcs.**



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



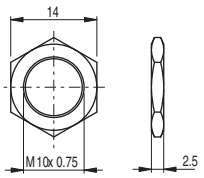
Article	Description	Protection degree
VF C02	Protective terminal cover for screw terminals with PG9 cable gland for multipolar cables Ø 5 … 7 mm	IP40



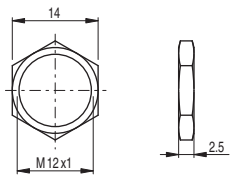
Article	Description	Protection degree
VF C03	Protective terminal cover for screw terminals, snap-in mounting. It allows installation of multiple switches side-by-side	IP20

Accessories

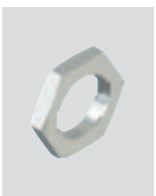
Packs of **10 pcs.**

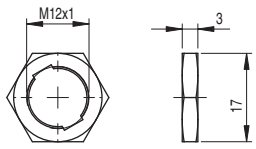


Article	Description
VF AC83	Hex threaded nut for microswitches with actuators D06, D08, D09



Article	Description
VF AC72	Hex threaded nut for microswitches with actuators D10, D12, D13





Article	Description
AC 35	Hex threaded nut, notched, for microswitches with actuators D15, D17