



Main data

- Polymer housing
- Protection degree IP20 o IP40
- 4 terminal types available
- 32 actuators available

Markings and quality marks:



Approval IMQ: EL285

Technical data

Housing

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

Protection degree: IP40 (with protection art. VF C02)
IP20 (with protection art. VF C01, VF C03)

General data

Ambient temperature: from -25°C to +85°C

Max operating frequency: 3600 operations cycles¹/hour

Mechanical endurance: 10 million operations cycles¹

(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by IEC 947-5-1 standard.

Electrical data

Dielectric strength: 2000 VAC/min between terminals and other metallic parts towards

Cross section of the conductors (flexible copper wire)

MV, MM series: min. 1 x 0,34 mm² (1 x AWG 22)
max. 1 x 2,5 mm² (1 x AWG 14)

In conformity with standards:

IEC 947-5-1, IEC 337-1, EN 60947-5-1, CEI EN 60947-5-1, CEI 17-45, CEI 23-11, IEC 529, EN 60529, CEI 70-1, CENELEC EN 50013

Approvals:

IEC 947-5-1

In conformity with requirements requested by:

Low Voltage Directive 73/23/EEC and subsequent modifications and completions. Machinery Directive 98/37/EEC.

Electromagnetic Compatibility 89/336/EEC and subsequent modifications and completions.

Electrical data

Thermal current (I_{th}): 16 A
Rated insulation voltage (U_i): 250 VAC 300 VDC
Protection against short circuits: fuse 10 A 500 V type gG
Pollution degree: 3

Utilization categories

Alternate current: AC15 (50÷60 Hz)
U_e (V) 250
I_e (A) 6
Direct current: DC13
U_e (V) 24 125 250
I_e (A) 6 1,1 0,4

Data type approved by IMQ

Rated insulation voltage (Ui): 250 VAC
 Thermal current (Ith): 16 A
 Protection against short circuits: fuse 16 A 250 V type gG
 MV, MF, MS terminals
 Pollution degree 3
 Utilization category: AC15
 Operation voltage (Ue): 250 VAC (50 Hz)
 Operation current (Ie): 5 A
 Forms of the contact element: C
 In conformity with standards: EN60947-1, EN 60947-5-1 and subsequent modifications and completions, fundamental requirements of the Low Voltage Directive 73/23 EEC and subsequent modifications and completions.

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

Code structure

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

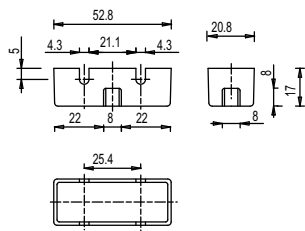
MS 40-1

Terminals type		Suffix	
MS	solder terminals		no suffix (standard)
MV	screw terminals	1	Ø 9,5x4 mm metal roller (for actuator 40, 42, 45, 47, 53, 54, 55, 57, 58, 59 only)
MF	faston terminals	2	Ø 9,5x7,8 mm polymer roller (for actuator 40, 42, 53, 54, 55 only)
MM	mantle terminals		

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

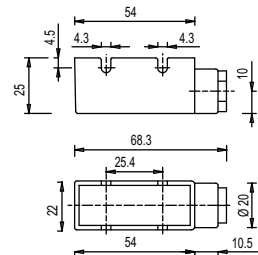
Accessories

Article	Description	Pack
VF C01	Protections (terminals covers)	10 pcs



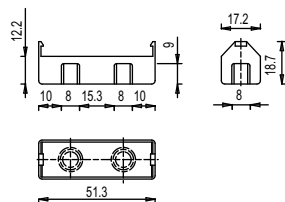
Protection made of self-extinguishing shock-proof material for MS series microswitches.

Article	Description	Pack
VF C02	Protections (terminals covers)	10 pcs



Protection with cable gland PG 9, (multipolar cables Ø min 5 mm, Ø max 7 mm) made of shock-proof glass-reinforced material for MS, MV, MM microswitches.

Article	Description	Pack
VF C03	Protections (terminals covers)	10 pcs





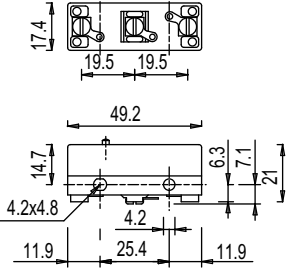
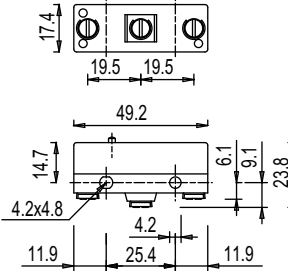
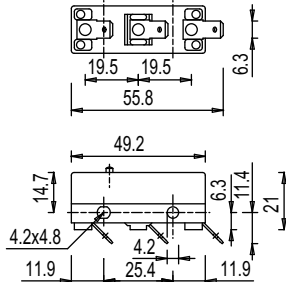
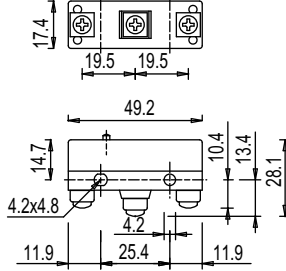


Protection with snap in assembly, made of self-extinguishing shock-proof material. For MS, MV, MM microswitches. It allows the installation of many switches side by side.

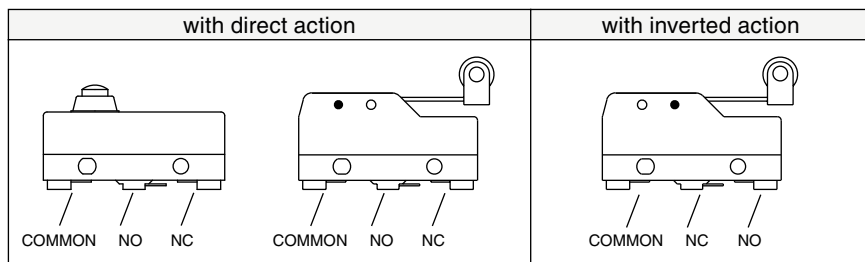
Items with code on the **green** background are available in stock

Terminals type

All measures in the drawings are in mm

MS solder terminals	MV screw terminals	MF faston terminals	MM mantle terminals
			
			

Wire diagram



Change-over contact switch having simple gap with three terminals

Driving torques



Tighten the nut **1** M10 x0,75 with a driving torque **2 ÷ 3** Nm.



Tighten the nut **2** M12 x 1 with a driving torque **2 ÷ 3** Nm.
Tighten the screw **3** with a driving torque **0,3 ÷ 0,4** Nm.

Rotating heads

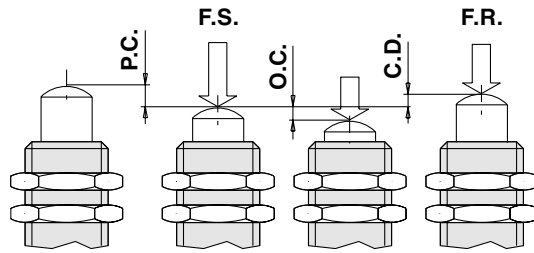
It's possible to rotate the M• 20 microswitch roller in 90° steps.



Tighten the screws **4** M4 with a driving torque **1 ÷ 1,5** Nm.



Tighten the screws **5** with a driving torque **0,6 ÷ 1** Nm.



Forces and travels symbols

- F.S.** = operating force
- F.R.** = releasing force
- P.C.** = pretravel
- O.C.** = over-travel
- C.D.** = differential travel

Microswitches with direct action (All measures in the drawings are in mm) 10 pcs packs

Dimensions	Article	Forces and travels
	MS 01	F.S. = 350 gr max. F.R. = 200 gr min. P.C. = 0,5 mm max. O.C. = 0,2 mm min. C.D. = 0,05 mm max.
	MV 01	
	MF 01	
	MM 01	
	MS 02	F.S. = 350 gr max. F.R. = 200 gr min. P.C. = 0,5 mm max. O.C. = 0,2 mm min. C.D. = 0,05 mm max.
	MV 02	
	MF 02	
	MM 02	
	MS 03	F.S. = 350 gr max. F.R. = 200 gr min. P.C. = 0,5 mm max. O.C. = 1,5 mm min. C.D. = 0,05 mm max.
	MV 03	
	MF 03	
	MM 03	
	MS 04	F.S. = 350 gr max. F.R. = 200 gr min. P.C. = 0,5 mm max. O.C. = 1,5 mm min. C.D. = 0,05 mm max.
	MV 04	
	MF 04	
	MM 04	
	MS 05	F.S. = 350 gr max. F.R. = 200 gr min. P.C. = 0,5 mm max. O.C. = 2 mm min. C.D. = 0,05 mm max.
	MV 05	
	MF 05	
	MM 05	
	MS 06	F.S. = 350 gr max. F.R. = 200 gr min. P.C. = 0,5 mm max. O.C. = 2 mm min. C.D. = 0,05 mm max.
	MV 06	
	MF 06	
	MM 06	

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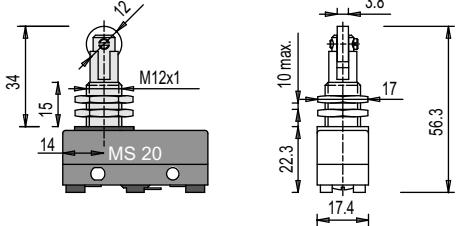
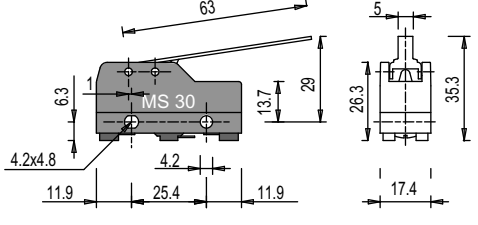
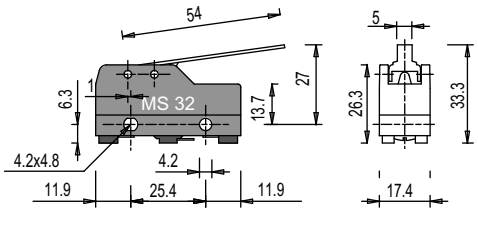
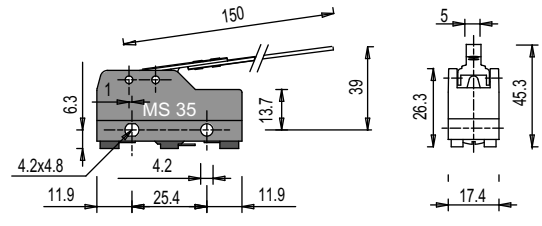
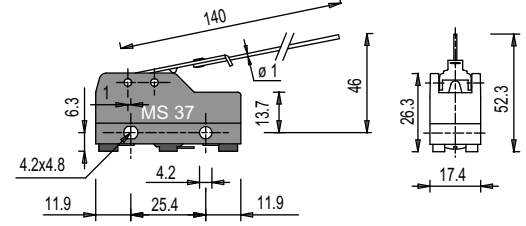
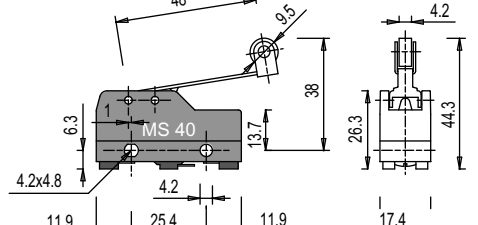
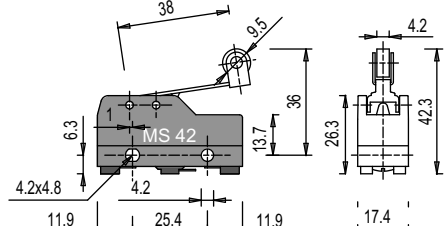
Items with code on the **green** background are available in stock Only orders for multiple quantities of the packs are accepted.

2 Microswitches M series

Dimensions	Article	Forces and travels
	<p>MS 08</p> <p>MV 08</p> <p>MF 08</p> <p>MM 08</p>	<p>F.S. = 350 gr. max. F.R. = 200 gr. min. P.C. = 0,5 mm max. O.C. = 5,5 mm min. C.D. = 0,05 mm max.</p>
	<p>MS 09</p> <p>MV 09</p> <p>MF 09</p> <p>MM 09</p>	<p>F.S. = 350 gr. max. F.R. = 200 gr. min. P.C. = 0,5 mm max. O.C. = 5,5 mm min. C.D. = 0,05 mm max.</p>
	<p>MS 10</p> <p>MV 10</p> <p>MF 10</p> <p>MM 10</p>	<p>F.S. = 350 gr. max. F.R. = 200 gr. min. P.C. = 0,5 mm max. O.C. = 5,5 mm min. C.D. = 0,05 mm max.</p>
	<p>MS 12</p> <p>MV 12</p> <p>MF 12</p> <p>MM 12</p>	<p>F.S. = 550 gr. max. F.R. = 400 gr. min. P.C. = 1 mm max. O.C. = 5 mm min. C.D. = 0,05 mm max.</p>
	<p>MS 13</p> <p>MV 13</p> <p>MF 13</p> <p>MM 13</p>	<p>F.S. = 800 gr. max. F.R. = 650 gr. min. P.C. = 1 mm max. O.C. = 5 mm min. C.D. = 0,05 mm max.</p>
<p>Fixed only by threaded head</p>	<p>MS 15</p> <p>MV 15</p> <p>MF 15</p> <p>MM 15</p>	<p>F.S. = 350 gr. max. F.R. = 200 gr. min. P.C. = 0,5 mm max. O.C. = 5,5 mm min. C.D. = 0,05 mm max.</p>
<p>Fixed only by threaded head</p>	<p>MS 17</p> <p>MV 17</p> <p>MF 17</p> <p>MM 17</p>	<p>F.S. = 350 gr. max. F.R. = 200 gr. min. P.C. = 0,5 mm max. O.C. = 5,5 mm min. C.D. = 0,05 mm max.</p>

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Dimensions	Article	Forces and travels
<p>Fixed only by threaded head</p> 	<p>MS 20</p> <p>MV 20</p> <p>MF 20</p> <p>MM 20</p>	<p>F.S. = 350 gr. max. F.R. = 200 gr. min. P.C. = 0,5 mm max. O.C. = 5,5 mm min. C.D. = 0,05 mm max.</p>
	<p>MS 30</p> <p>MV 30</p> <p>MF 30</p> <p>MM 30</p>	<p>F.S. = 50 gr. max. F.R. = 30 gr. min. P.C. = 10 mm max. O.C. = 6 mm min. C.D. = 1,5 mm max.</p>
	<p>MS 32</p> <p>MV 32</p> <p>MF 32</p> <p>MM 32</p>	<p>F.S. = 60 gr. max. F.R. = 40 gr. min. P.C. = 8 mm max. O.C. = 5 mm min. C.D. = 1 mm max.</p>
	<p>MS 35</p> <p>MV 35</p> <p>MF 35</p> <p>MM 35</p>	<p>F.S. = 32 gr. max. F.R. = 26 gr. min. P.C. = 20 mm max. O.C. = 15 mm min. C.D. = 4 mm max.</p>
	<p>MS 37</p> <p>MV 37</p> <p>MF 37</p> <p>MM 37</p>	<p>F.S. = 10 gr. max. F.R. = 5 gr. min. P.C. = 20 mm max. O.C. = 10 mm min. C.D. = 4 mm max.</p>
	<p>MS 40</p> <p>MV 40</p> <p>MF 40</p> <p>MM 40</p>	<p>F.S. = 60 gr. max. F.R. = 40 gr. min. P.C. = 8 mm max. O.C. = 5 mm min. C.D. = 1 mm max.</p>
	<p>MS 42</p> <p>MV 42</p> <p>MF 42</p> <p>MM 42</p>	<p>F.S. = 80 gr. max. F.R. = 50 gr. min. P.C. = 6 mm max. O.C. = 3 mm min. C.D. = 0,8 mm max.</p>

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2 Microswitches M series

Dimensions	Article	Forces and travels
	MS 45	F.S. = 110 gr. max. F.R. = 70 gr. min. P.C. = 3,5 mm max. O.C. = 2,5 mm min. C.D. = 0,6 mm max.
	MV 45	
	MF 45	
	MM 45	
	MS 47	F.S. = 110 gr. max. F.R. = 70 gr. min. P.C. = 3,5 mm max. O.C. = 2,5 mm min. C.D. = 0,6 mm max.
	MV 47	
	MF 47	
	MM 47	
	MS 49	Hand operated
	MV 49	
	MF 49	
	MM 49	
Microswitches with inverted action 📦 10 pcs packs		
	MS 50	F.S. = 80 gr. max. F.R. = 60 gr. min. P.C. = 4 mm max. O.C. = 6 mm min. C.D. = 0,6 mm max.
	MV 50	
	MF 50	
	MM 50	
	MS 52	F.S. = 70 gr. max. F.R. = 50 gr. min. P.C. = 5 mm max. O.C. = 8 mm min. C.D. = 0,6 mm max.
	MV 52	
	MF 52	
	MM 52	
	MS 53	F.S. = 80 gr. max. F.R. = 60 gr. min. P.C. = 4 mm max. O.C. = 8 mm min. C.D. = 0,6 mm max.
	MV 53	
	MF 53	
	MM 53	
	MS 54	F.S. = 100 gr. max. F.R. = 60 gr. min. P.C. = 4 mm max. O.C. = 6 mm min. C.D. = 0,6 mm max.
	MV 54	
	MF 54	
	MM 54	

Items with code on the green background are available in stock

📦 Only orders for multiple quantities of the packs are accepted.

Dimensions	Article	Forces and travels
	<p>MS 55</p> <p>MV 55</p> <p>MF 55</p> <p>MM 55</p>	<p>F.S. = 120 gr. max. F.R. = 70 gr. min. P.C. = 3 mm max. O.C. = 5 mm min. C.D. = 0,5 mm max.</p>
	<p>MS 57</p> <p>MV 57</p> <p>MF 57</p> <p>MM 57</p>	<p>F.S. = 140 gr. max. F.R. = 80 gr. min. P.C. = 2 mm max. O.C. = 2,5 mm min. C.D. = 0,3 mm max.</p>
	<p>MS 58</p> <p>MV 58</p> <p>MF 58</p> <p>MM 58</p>	<p>F.S. = 140 gr. max. F.R. = 80 gr. min. P.C. = 2 mm max. O.C. = 2,5 mm min. C.D. = 0,3 mm max.</p>
	<p>MS 59</p> <p>MV 59</p> <p>MF 59</p> <p>MM 59</p>	<p>F.S. = 240 gr. max. F.R. = 150 gr. min. P.C. = 1,5 mm max. O.C. = 3 mm min. C.D. = 0,2 mm max.</p>
<p>Adjustable operating point</p>	<p>MS 60</p> <p>MV 60</p> <p>MF 60</p> <p>MM 60</p>	<p>F.S. = 120 gr. max. F.R. = 70 gr. min. P.C. = 21 ÷ 43 mm O.C. = 5 mm min. C.D. = 0,5 mm max.</p>