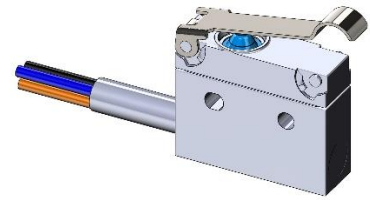




# SUBMINIATURE MICROSWITCH (SPDT) ROBUST – SEALED – HIGH PRECISION

## MP 500 SERIES

- High precision snap-action spring mechanism
- Electrical Ratings (resistive load): 0,1A/24VDC, 5A/250VAC
- Reliable operation, even at extremely slow actuating speed
- Very low differential travel: down to 0,02 mm max (0,0008 in)
- Operating temperatures: -40°C to +125°C
- Degree of protection: IP67/IP69
- Choice of terminals and cable configurations
- Wide range of actuators on 2 fixing positions (A & B)



### Main specifications

#### Termination Options

Solder terminals

PCB terminals

Cable materials: PVC/PUR/SI up to 0.5 mm<sup>2</sup> (5A)

#### EN /UL Certifications

Electrical Rating max (resistive load) 5RA 250 VAC

Electrical Rating max (resistive load) for gold plated terminals 0.1RA 24 VDC

Number of cycles certified 50 000

#### Mechanical characteristics

Operating force max 2.5 N – optional 1.2 N

Release force min 0.5 N

Free position 9.2 ± 0.2 mm

Operating position 8.8 ± 0.2 mm

Differential travel max 0.05 mm – optional 0.02 mm

Overtravel min 0.5 mm

Operating temperature -40 °C to 125 °C

Mechanical life 10 000 0000

B<sub>10d</sub> (24VDC – 10mA, 100 cycles/min) < 5 Mio

Contact gap Min 0.25 mm

### Additional specifications

Conformity/ certification EN/UL 61058-1-1 UL file E314075



Degree of protection IP67 / IP69

Housing & button PBT + 30% fiberglass UL94-V0

Dimensions DIN 41 635, form B (20x16x6.5 mm)  
(0.7874 x 0.6299 x 0.2559 in)

Moving blade Beryllium copper

Contacts Silver alloy

Terminals material brass

Pollution degree 3

Proof tracking index PTI 250V

Rated Impulse Withstand Voltage 2.5 kV

Glow-wire temp. 850°C

Micro-disconnection μ

Electric shock class II / U imp. 2500 V

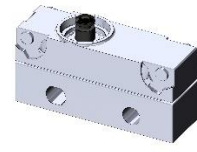
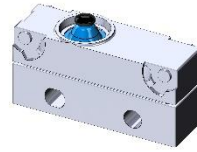
### Product adaptations

- Special actuators: special shapes and lengths
- Special cable exit, length and material
- Increased or reduced differential travel.
- Low actuating force
- Gold plated contacts
- Other adaptations on demand

## Housing

IP67 /69

IP40



Operating force **Fa** max 2.5 (N) *standard*  
 Operating force **Fa** max 1.2 (N)

**MP500**  
**MP520**

**MP550**  
**MP570**

## Actuator

L70

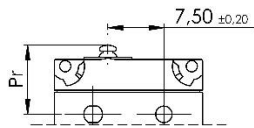
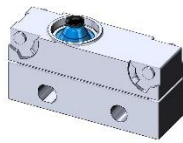
L80

L85



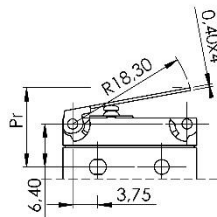
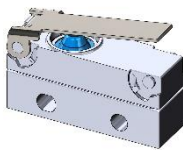
## Specifications

Type **L00** : Pin button



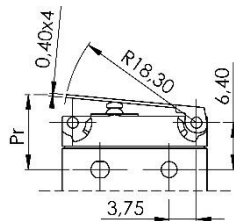
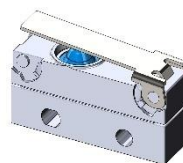
	<b>MP500</b> <b>MP550</b>	<b>MP520</b> <b>MP570</b>
Actuating Force <b>Fa</b> max. (N)	2.5	1.2
Release Force <b>Fr</b> min (N)	0.5	0.2
Free Position <b>Pr</b> (mm)	9.2 ± 0.2	9.2 ± 0.2
Operating Position <b>Pa</b> (mm)	8.8 ± 0.2	8.8 ± 0.2
Over-travel <b>sr</b> min. (mm)	0.5	0.5
Differential movement <b>sd</b> max. (mm)	0.05	0.05

Type **A70** : Straight lever L70 - position A



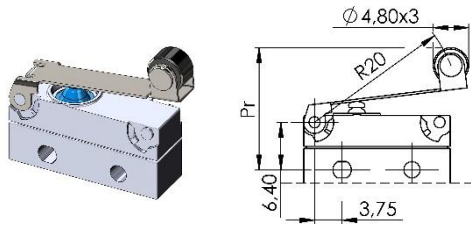
	<b>MP500</b> <b>MP550</b>	<b>MP520</b> <b>MP570</b>
Actuating Force <b>Fa</b> max. (N)	1.0	0.6
Release Force <b>Fr</b> min (N)	0.3	0.2
Free Position <b>Pr</b> (mm)	12.0 ± 0.4	12.0 ± 0.4
Operating Position <b>Pa</b> (mm)	10.1 ± 0.4	10.1 ± 0.4
Over-travel <b>sr</b> min. (mm)	1.2	1.2
Differential movement <b>sd</b> max. (mm)	0.40	0.40

Type **B70** : Straight lever L70 - position B



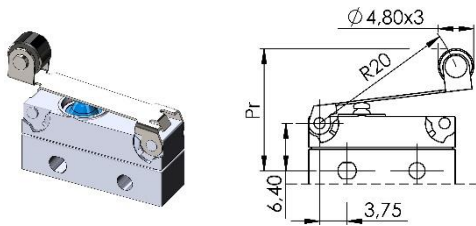
	<b>MP500</b> <b>MP550</b>	<b>MP520</b> <b>MP570</b>
Actuating Force <b>Fa</b> max. (N)	2.0	1.0
Release Force <b>Fr</b> min (N)	0.3	0.2
Free Position <b>Pr</b> (mm)	10.4 ± 0.4	10.4 ± 0.4
Operating Position <b>Pa</b> (mm)	9.4 ± 0.4	9.4 ± 0.4
Over-travel <b>sr</b> min. (mm)	0.5	0.5
Differential movement <b>sd</b> max. (mm)	0.20	0.20

Type **A80** : Straight lever with plastic roller L80 - position A



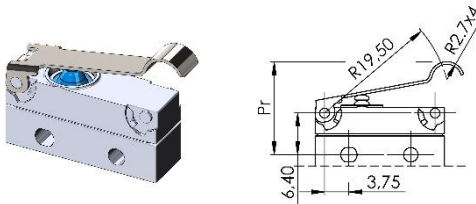
	MP500 MP550	MP520 MP570
Actuating Force Fa max. (N)	1.0	0.6
Release Force Fr min (N)	0.3	0.2
Free Position Pr (mm)	$16.6 \pm 0.4$	$16.6 \pm 0.4$
Operating Position Pa (mm)	$14.2 \pm 0.4$	$14.2 \pm 0.4$
Over-travel sr min. (mm)	1.2	1.2
Differential movement sd max. (mm)	0.40	0.40

Type **B80** : Straight lever with plastic roller L80 - position B



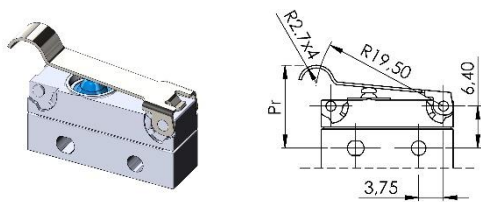
	MP500 MP550	MP520 MP570
Actuating Force Fa max. (N)	2.0	1.0
Release Force Fr min (N)	0.3	0.2
Free Position Pr (mm)	$15.5 \pm 0.4$	$15.5 \pm 0.4$
Operating Position Pa (mm)	$14.2 \pm 0.4$	$14.2 \pm 0.4$
Over-travel sr min. (mm)	0.6	0.6
Differential movement sd max. (mm)	0.20	0.20

Type **A85** : Straight lever with simulated roller L85 - position A



	MP500 MP550	MP520 MP570
Actuating Force Fa max. (N)	1.0	0.6
Release Force Fr min (N)	0.3	0.2
Free Position Pr (mm)	$14.6 \pm 0.4$	$14.6 \pm 0.4$
Operating Position Pa (mm)	$12.6 \pm 0.4$	$12.6 \pm 0.4$
Over-travel sr min. (mm)	1.2	1.2
Differential movement sd max. (mm)	0.40	0.40

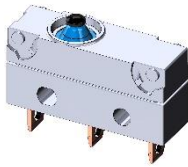
Type **B85** : Straight lever with simulated roller L85 - position A



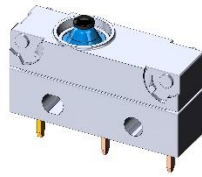
	MP500 MP550	MP520 MP570
Actuating Force Fa max. (N)	2.0	1.0
Release Force Fr min (N)	0.3	0.2
Free Position Pr (mm)	$12.9 \pm 0.4$	$12.9 \pm 0.4$
Operating Position Pa (mm)	$11.8 \pm 0.4$	$11.8 \pm 0.4$
Over-travel sr min. (mm)	0.6	0.6
Differential movement sd max. (mm)	0.20	0.20

## Terminations

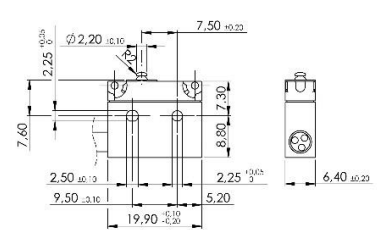
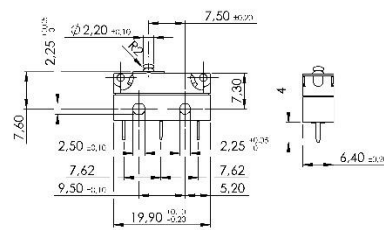
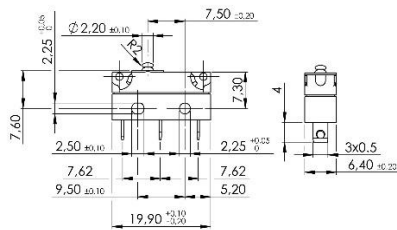
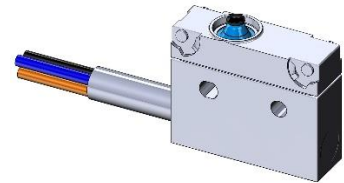
**T000**  
Solder terminals



**T001**  
PCB terminals



**CXXX**  
Cable overmould



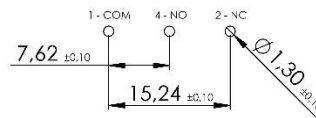
Flexible conductors to be used.

With provisions for securing the conductor by mechanical means and providing circuit continuity by soldering.  
Soldering by hand with a soldering iron.

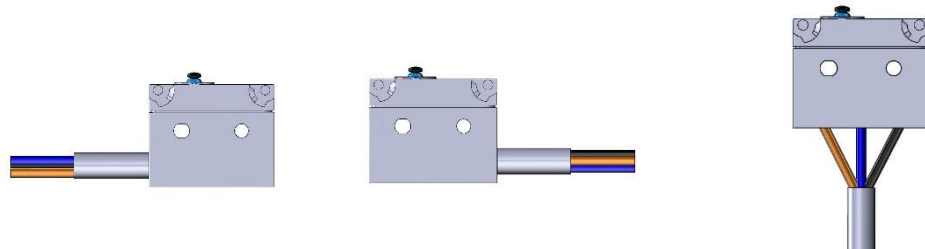
Remark : Avoid overheating as this may damage the switch.

**Recommendation:** Temperature of soldering iron max. 340 ° C for 4 seconds, using a welding wire preferably without Chloro

### Print PCB



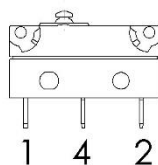
	Cable standard exit	Cable opposite exit	Cable underside exit
<b>Cable</b>	CXXX	DXXX	FXXX
<b>Wires</b>	GXXX	KXXX	NXXX



## Standard wiring diagram

**Solder terminal  
PCB**

**T000  
T001**



**2A - 0.25 mm<sup>2</sup>**

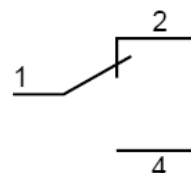
**5A - 0.50 mm<sup>2</sup>**

**PVC**  
EN/UL certified  
-20°C to 105°C

**XXXP**

1 - Brown  
2 - Black  
4 - Blue

1 - Black  
2 - Grey  
4 - Blue



**Cable  
Wires**

**Polyurethane**  
EN certified  
-40°C to 80°C

**XXXU**

1 - Brown  
2 - White  
4 - Green

**Silicon**  
EN certified  
-40°C to 125°C

**XXXS**

1 - Brown  
2 - White  
4 - Green

## Ordering information

	<u>MP5</u>	<u>0</u>	<u>0</u>	<u>A70</u>	<u>C10P</u>
<b>Protection – Force</b> <b>0</b> : IP67/IP69 Standard force <b>2</b> : IP67/IP69 Low force <b>5</b> : IP40 Standard force <b>7</b> : IP40 Low force					
<b>Contact</b> <b>0</b> : Silver Contact 2A - Wire 0,25 mm <sup>2</sup> <b>1</b> : Gold Contact 1μ - Wire 0,25 mm <sup>2</sup> or Solder lugs or PCB <b>5</b> : Silver Contact 5A - Wire 0,50 mm <sup>2</sup> or Solder lugs or PCB					
<b>Actuator</b> <b>L00</b> : Pin button <b>A70</b> : Straight lever L70 - position A <b>B70</b> : Straight lever L70 - position B <b>A80</b> : Straight lever with plastic roller L80 - position A <b>B80</b> : Straight lever with plastic roller L80 - position B <b>A85</b> : Straight lever with simulated roller L85 – position A <b>B85</b> : Straight lever with simulated roller L85 – position B					
<b>Terminals without cable or wires</b> <b>T000</b> : Solder terminals <b>T001</b> : PCB					
<b>Termination with cable / wires</b> <b>C</b> : Cable standard exit <b>D</b> : Cable opposite exit <b>F</b> : Cable underside exit <b>G</b> : Single wires standard exit - only PVC <b>K</b> : Single wires opposite exit - only PVC <b>N</b> : Single wires underside exit - only PVC					
<b>Cable length</b> <b>05</b> : 0.5 m <b>10</b> : 1 m <b>20</b> : 2 m					
<b>Cable material</b> <b>P</b> : PVC <b>U</b> : PUR - only 2A - Section 0,25 mm <sup>2</sup> <b>S</b> : Silicon - only 2A - Section 0,25 mm <sup>2</sup>					