



# MICRO SWITCHES

MA Series  
MB Series



# Micro Switches MA & MB Series

## MB Series

Dimensions: 50x20x17 mm

13 Models



## MA Series

Dimensions: 28x16x10 mm

8 Models

## Micro Swithes(MA Series)

### General features

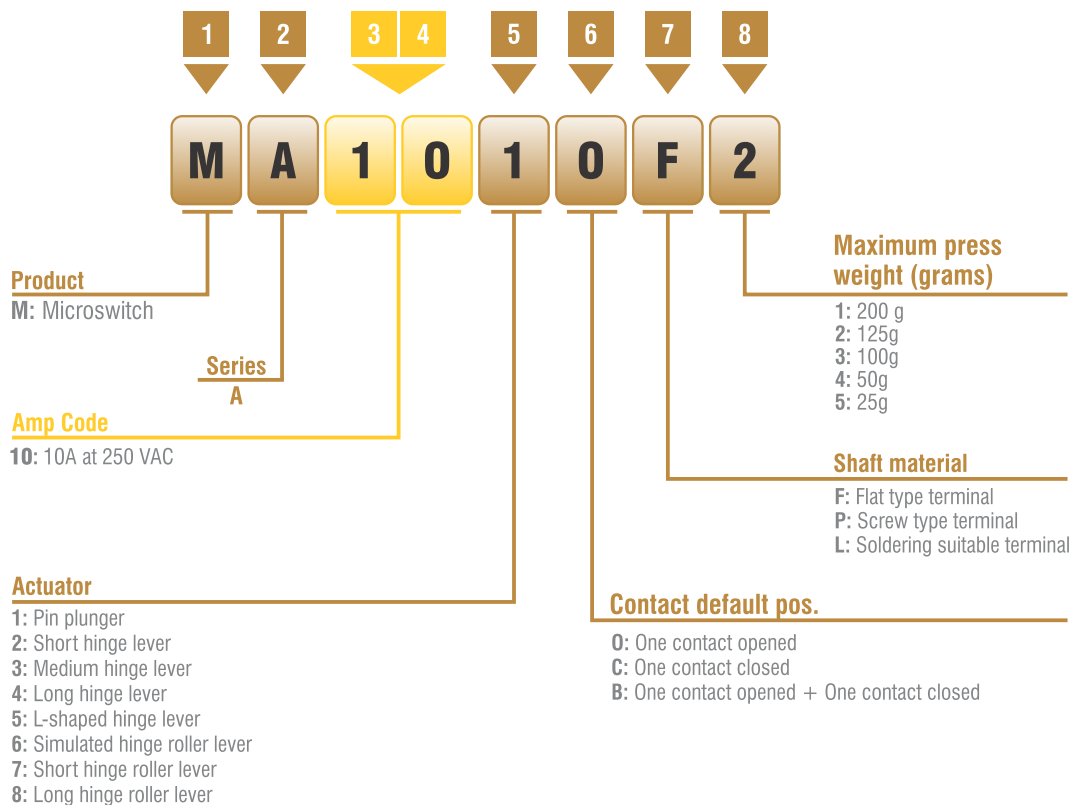
- ▶ Approx. Dimensions: 28x16x10 mm
- ▶ 8 Various models with different actuator models
- ▶ Self cleansing contacts made of Copper-Silver alloy
- ▶ Body made of anti flame polyamide with high electrical, thermal and mechanical resistivity
- ▶ Tin coated brass terminals
- ▶ Two installation possibilities, Side and Top
- ▶ Easy installation, suitable packing, quick delivery

	Technical data
Operating frequency*	0.5 to 1.0 (mm/sec)
Breaking capacity	600 ops. per min. without load. 30 ops. Per min. with load.
Contacts resistance (Initial value)	Max 50 mΩ (125gr operation press weight) (Resistance increases with lower operation press weight in models.)
Dielectric Strength	1000VAC, 50 Hz, between terminals of same polarity 200VAC, 50Hz, Between current carrying metal parts and ground 200VAC, Between each terminal and non-current carrying metal part
Shock resistance	Destruction at 400 m/sec <sup>2</sup> Malfunction at 100 m/sec <sup>2</sup> Correct operation at lower shock acceleration
Electrical shock protection	Class A
Life	10,000,000 breakings without load 100,000 breakings with load
Degree of Protection	Ip40
Ambient operating temperature	-28 to +85 degrees Celsius degrees
Ambient operation humidity	Max 85% (+5 to +35 degrees Celsius degrees)
Weight* (Gram)	6.2

\*. For models with pin plunger actuator




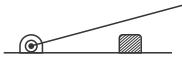

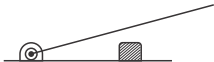

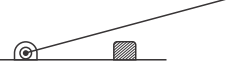








In order to understand the product model numbers, please view the bellow guide.

**Each model is defined by an eight letter code described below:**



# MA Series Most common models



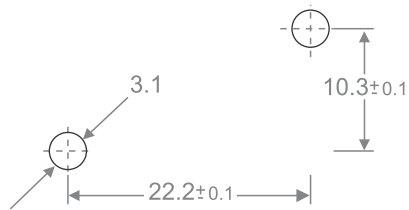
Picture	Model number	Product Description				Model Symbol
		Contacts no.	Actuator	Terminal type	Current (A)	
	MA-10 1-OF2	1 NO	Pin plunger	Flat	1 0	
	MA-10 1-CF2	1 NC				
	MA-10 1-BF2	1 NO + 1 NC				
	MA-10 2-OF2	1 NO	Short hinge lever	Flat	1 0	
	MA-10 2-CF2	1 NC				
	MA-10 2-BF2	1 NO + 1 NC				
	MA-10 3-OF2	1 NO	Medium hinge lever	Flat	1 0	
	MA-10 3-CF2	1 NC				
	MA-10 3-BF2	1 NO + 1 NC				
	MA-10 4-OF2	1 NO	Long hinge lever	Flat	1 0	
	MA-10 4-CF2	1 NC				
	MA-10 4-BF2	1 NO + 1 NC				
	MA-10 5-OF2	1 NO	L-shaped hinge lever	Flat	1 0	
	MA-10 5-CF2	1 NC				
	MA-10 5-BF2	1 NO + 1 NC				
	MA-10 6-OF2	1 NO	Simulated hinge roller lever	Flat	1 0	
	MA-10 6-CF2	1 NC				
	MA-10 6-BF2	1 NO + 1 NC				
	MA-10 7-OF2	1 NO	Short hinge roller lever	Flat	1 0	
	MA-10 7-CF2	1 NC				
	MA-10 7-BF2	1 NO + 1 NC				
	MA-10 8-OF2	1 NO	Long hinge roller lever	Flat	1 0	
	MA-10 8-CF2	1 NC				
	MA-10 8-BF2	1 NO + 1 NC				

Models introduced above have 16A contacts and 125 g press weight which is the most commonly used configuration. If you desire a special design, please contact us.

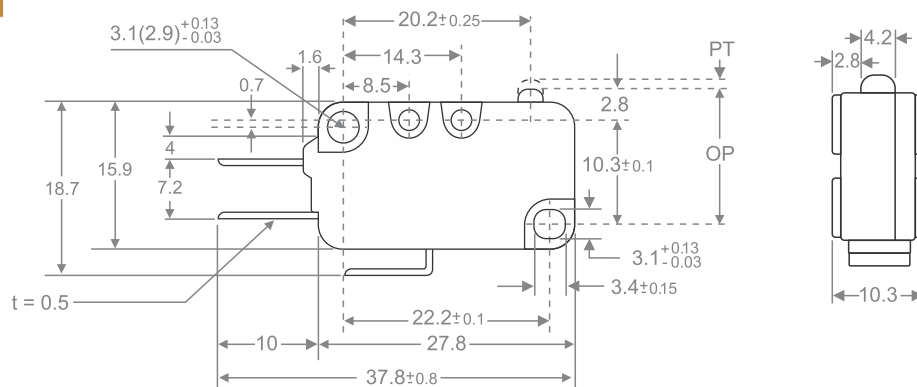
Micro Switches  
(MA Series)

## ■ Drilling Guide

Two 3.1mm holes suitable for M3 size screw.  
**(For all MA series)**  
 Screw tightening torque is approx. 4 to 6 N/m.

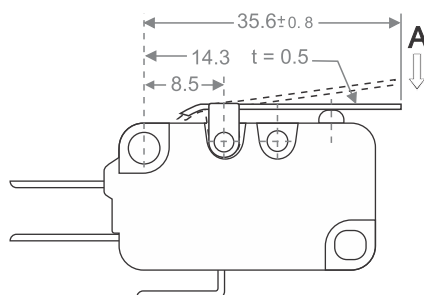


### MA 10 1 xxx

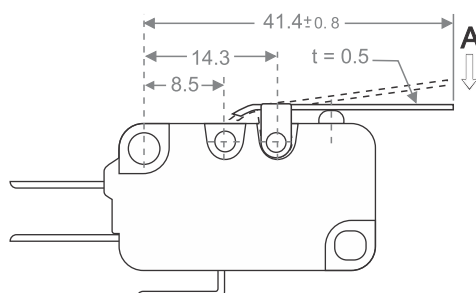


For the rest of the models the switch body dimensions are the same and only the actuator dimensions are shown.

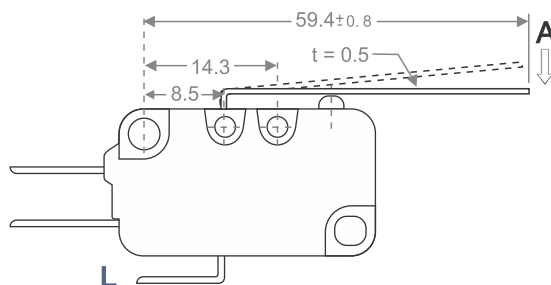
### MA 10 2 xxx



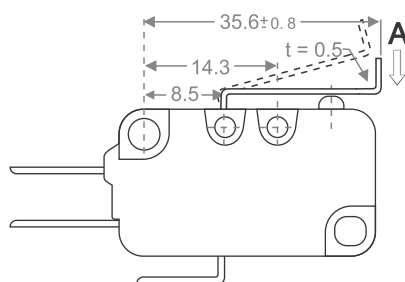
### MA 10 3 xxx



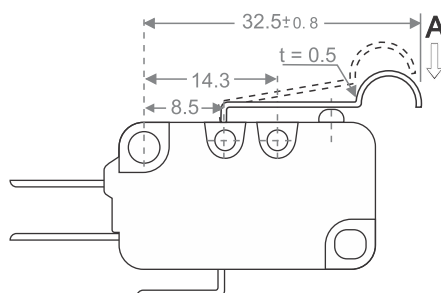
**MA 10 4 xxx**



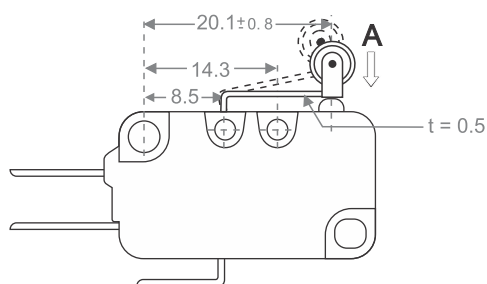
**MA 10 5 xxx**



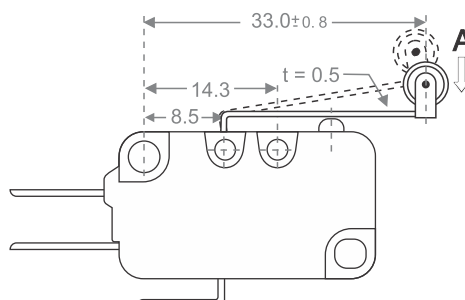
**MA 10 6 xxx**



**MA 10 7 xxx**



**MA 10 8 xxx**



## Micro Swithes(MB Series)

### General features

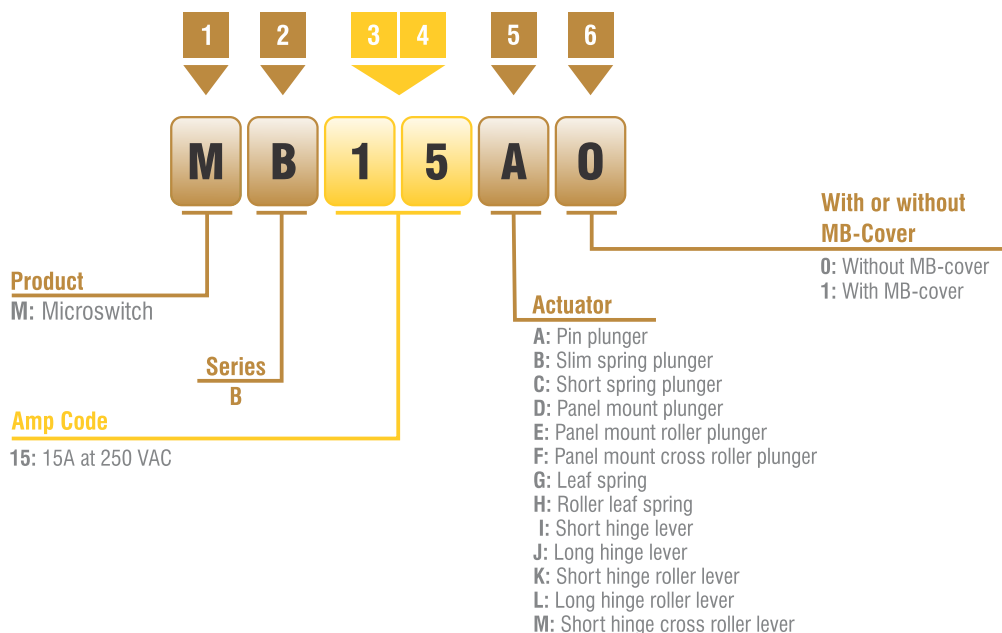
- ▶ Approx. Dimensions: 50x20x17 mm
- ▶ 13 Various models witch different actuator models
- ▶ Copper-Silver alloy contacts. Can also be delivered witch Gold coated contacts.
- ▶ Body made of Thermoset material (Bakelite) with high electrical, thermal and mechanical resistivity
- ▶ Screw-type terminals
- ▶ Two installation possibilities, Side and Top (suitable for panel mounting)
- ▶ Easy installation, suitable packing, quick delivery
- ▶ Optional Terminal Cover (MB-Cover, Ref. to page 104) to raise protection degree to IP62

	Technical data
Operating frequency*	1 to 1000 (mm/sec)
Breaking capacity	120 ops. per min. without load. 20 ops. Per min. with load.
Contacts resistance (Initial value)	Max 15 m $\Omega$ (125gr operation press weight) (Resistance increases with lower operation press weight in models.)
Dielectric Strength	1000VAC, 50 Hz, between terminals of same polarity
Shock resistance	Destruction at 1000 m/sec <sup>2</sup> Malfuction at 50 m/sec <sup>2</sup> Correct operation at lower shock acceleration
Electrical shock protection	Class A
Life	1,000,000 breakings without load 100,000 breakings with load
Degree of Protection	IP00 IP62 (with MB-Cover)
Ambient operating temperature	-25 to 80 Celsius degrees -15 to 80 Celsius degrees (with MB-cover)
Ambient operation humidity	max 85% (-25 to 80 Celsius degrees) max 95% (-15 to 80 Celsius degrees) (with MB-cover)
Weight* (Gram)	42-48

\*. For models with pin plunger actuator

In order to understand the product model numbers, please view the bellow guide.

**Each model is defined by a six letter code described below:**



# MB Series Model Selection Table



Picture	Model number	Product Description				Model Symbol
		Contacts no.	Actuator	Terminal type	Current (A)	
	<b>MB15A0</b>	1 NO + 1 NC	Pin plunger	Flat	<b>1 5</b>	
	<b>MB15A1</b>					
	<b>MB15B0</b>	1 NO + 1 NC	Slim spring plunger	Flat	<b>1 5</b>	
	<b>MB15B1</b>					
	<b>MB15C0</b>	1 NO + 1 NC	Short spring plunger	Flat	<b>1 5</b>	
	<b>MB15C1</b>					
	<b>MB15D0</b>	1 NO + 1 NC	Panel mount plunger	Flat	<b>1 5</b>	
	<b>MB15D1</b>					
	<b>MB15E0</b>	1 NO + 1 NC	Panel mount roller plunger	Flat	<b>1 5</b>	
	<b>MB15E1</b>					
	<b>MB15F0</b>	1 NO + 1 NC	Panel mount cross roller plunger	Flat	<b>1 5</b>	
	<b>MB15F1</b>					
	<b>MB15G0</b>	1 NO + 1 NC	Leaf spring	Flat	<b>1 5</b>	
	<b>MB15G1</b>					
	<b>MB15H0</b>	1 NO + 1 NC	Roller leaf spring	Flat	<b>1 5</b>	
	<b>MB15H1</b>					
	<b>MB15I0</b>	1 NO + 1 NC	Short hinge lever	Flat	<b>1 5</b>	
	<b>MB15I1</b>					
	<b>MB15J0</b>	1 NO + 1 NC	Long hinge lever	Flat	<b>1 5</b>	
	<b>MB15J1</b>					
	<b>MB15K0</b>	1 NO + 1 NC	Short hinge roller lever	Flat	<b>1 5</b>	
	<b>MB15K1</b>					
	<b>MB15L0</b>	1 NO + 1 NC	Long hinge roller lever	Flat	<b>1 5</b>	
	<b>MB15L1</b>					
	<b>MB15M0</b>	1 NO + 1 NC	Short hinge cross roller lever	Flat	<b>1 5</b>	
	<b>MB15M1</b>					

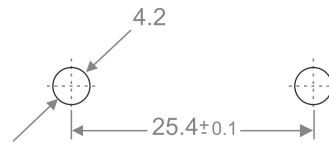
Micro Switches  
(MB Series)



## ■ Drilling Guide

### A. Side Mount (all models)

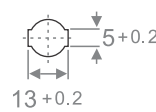
Two 4.2 mm holes suitable for M4 size screw.  
Screw tightening torque is approx. 1.18 to 1.47 N/m.



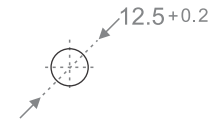
M4

### B. Top Mount (below types only) For panel mounting.

Tightening torque is approx. 2.94 to 4.9 N/m.



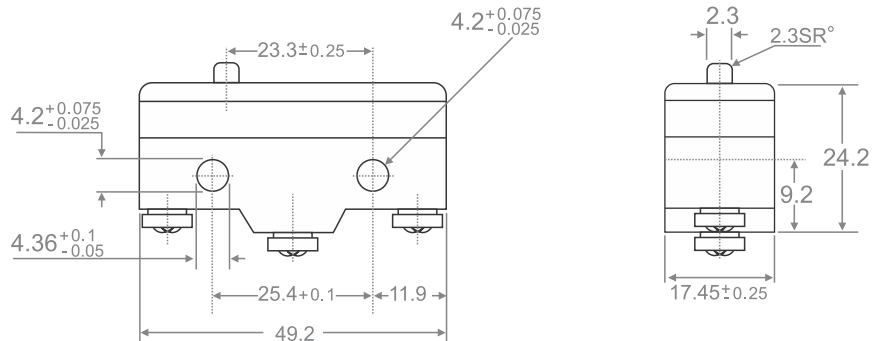
**MB15Ex**  
**MB15Fx**



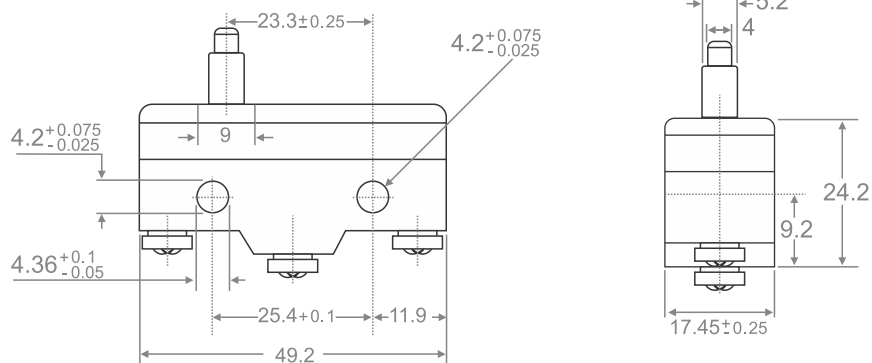
**MB15Dx**

**Attention:** Please do not install the switch using both above methods at the same time, as it will result in switch damage.

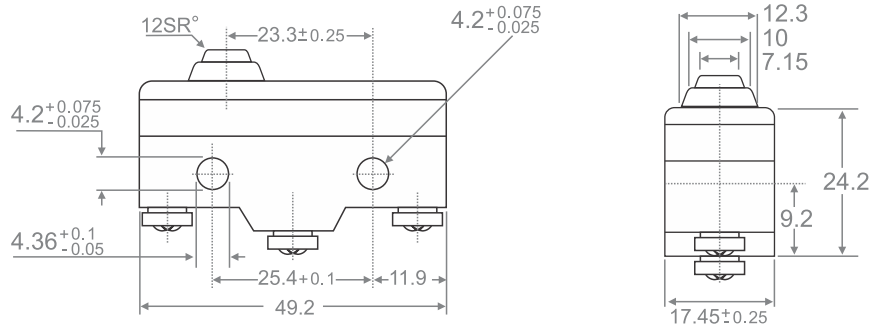
### MB 15 A xx



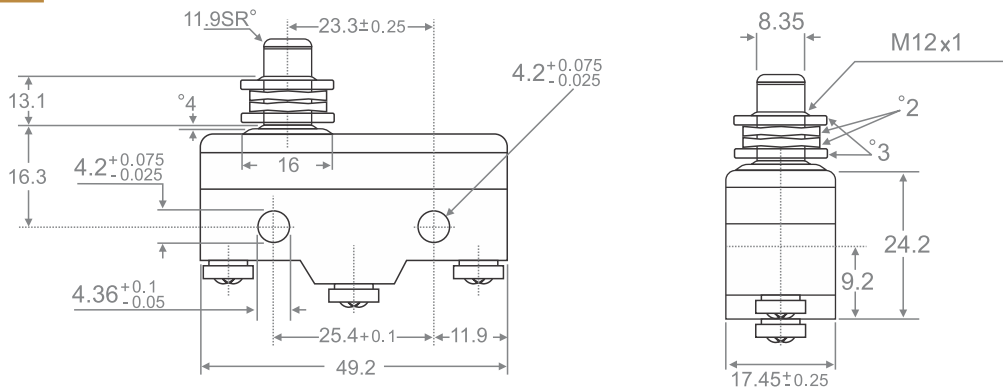
### MB 15 B xx



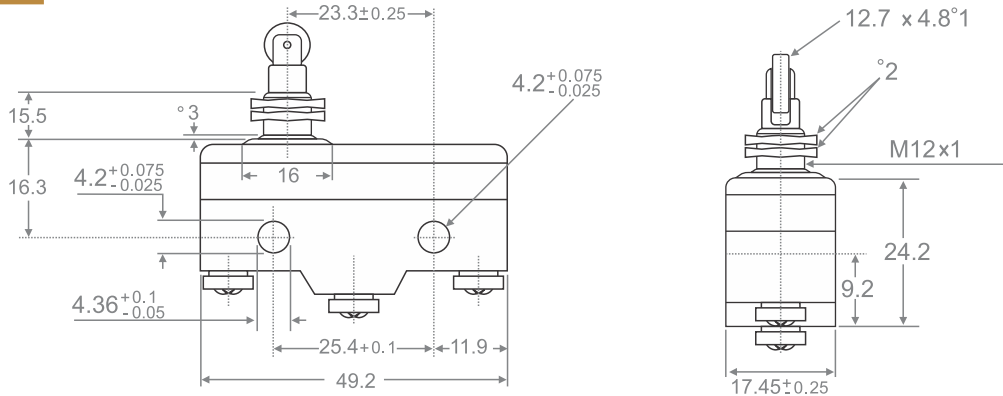
## MB 15 C xx



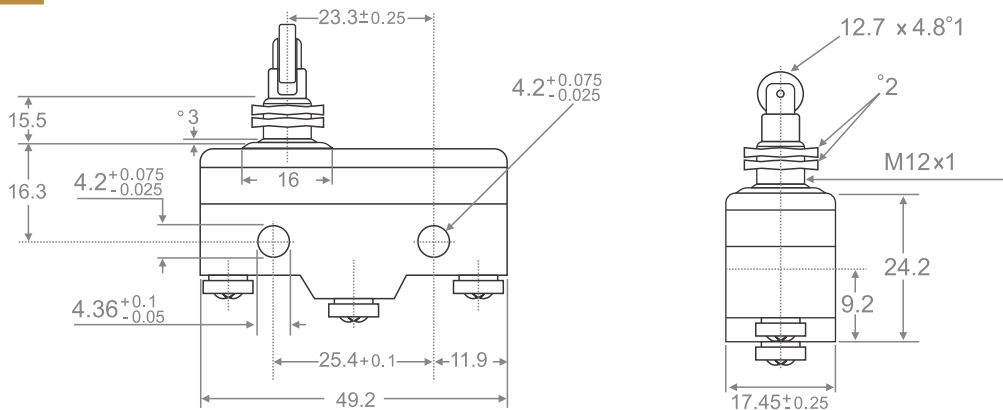
## MB 15 D xx



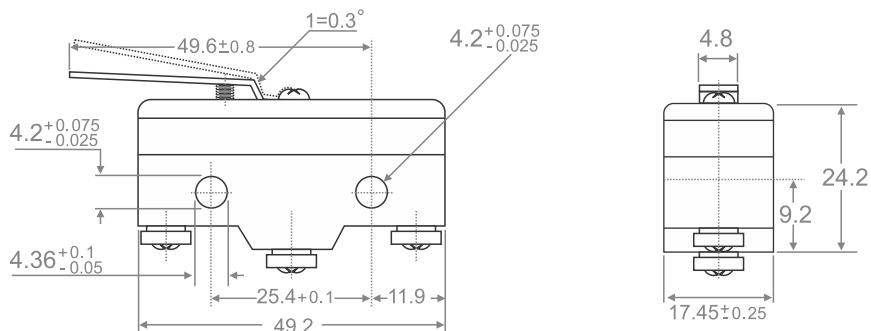
## MB 15 E xx



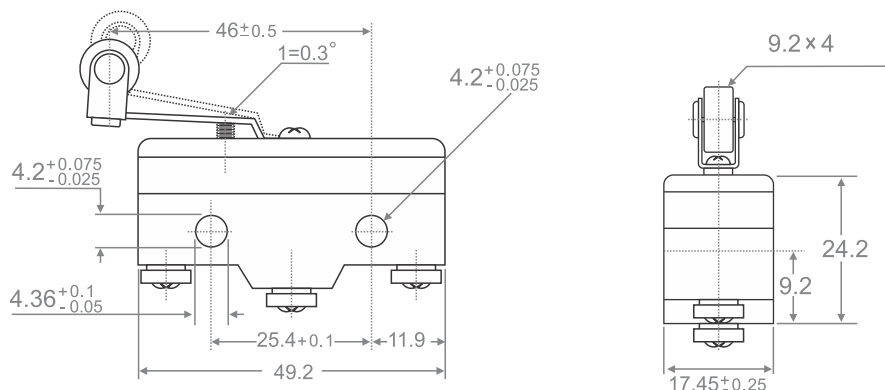
## MB 15 F xx



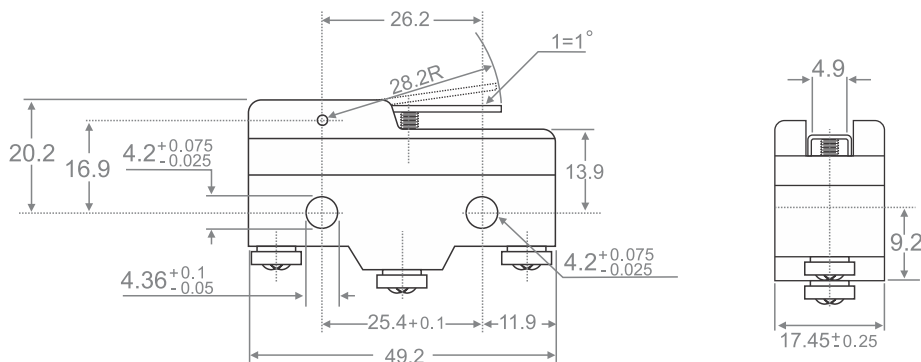
## MB 15 G xx



## MB 15 H xx



## MB 15 I xx



## MB 15 J xx

