

Installation instructions

The **MAC-I** safety switches are devices designed and manufactured according to IEC international standards and EN European regulations.

They are suitable for monitoring and protection of industrial machinery without inertia and they can be used for the construction of safety systems according to ISO 13849-1.

Performing the role of worker protection, improper installation or tampering with safety devices can cause serious injury to persons.

The installation must therefore be performed in accordance with local legislation and only by authorized personnel; we also recommend to check the switch before starting the machine and periodically to ensure proper operation.

Installation Precautions

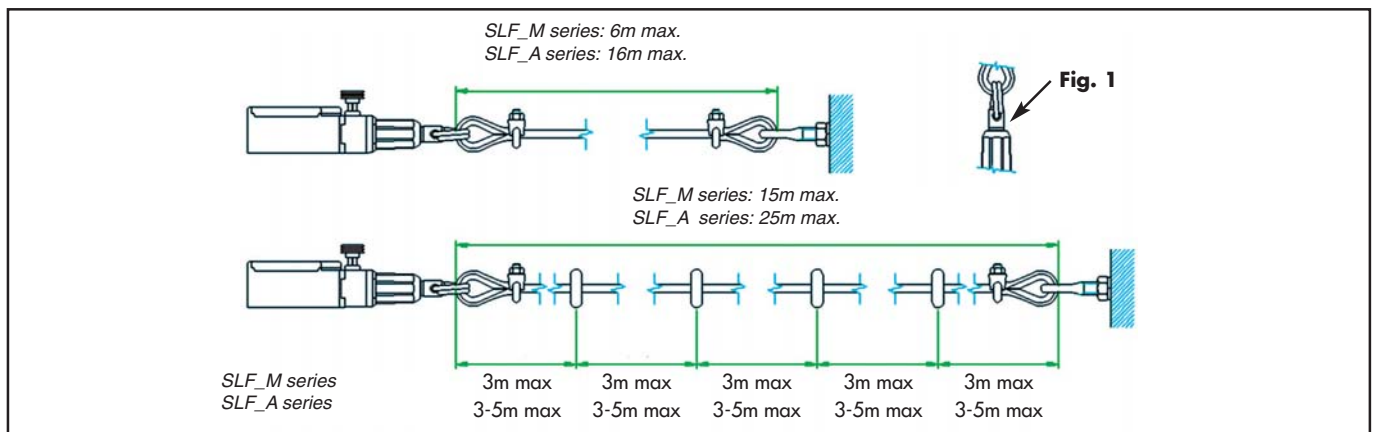
In order to obtain the correct operation of the device, please follow the following instructions. Any question about CE declaration of conformity or for any information and assistance, please contact our technical department.

1. If it is necessary to change the position of the reset pommel, unscrew the 4 corner screws just enough to allow removal of the lower housing from the switch body, while keeping the spring intact in the upper housing. Rotate to the desired position and fasten the 4 screws with a tightening torque of 0.8 Nm / 7 lb. in. (max. 0.9 Nm).
2. Install the switch and secure the fixed end of the rope. Apply tension to the extent the green O-ring is visible and the bottom is flush with the end of the red housing. (Fig. 1)

3. Pull the reset pommel in order to close the safety contacts of the limit switch.
4. The contacts inside the limit switch will change their position whenever the rope is pulled or loose its tension.
5. Check the correct operation of the rope switch before you start the machine and periodically.

Technical Data

Temperature Range	-25°C +70°C
Mounting position	All positions are authorized
Protection against electrical shock	Classe I (MAM, MA150M, MA160M, SLC_M, SLZ_M, SLF_M, MDM)
Protection degree	IP66(MAM, MA150M, MA160M, SLC_M, SLZ_M, SLF_M, MDM)
Pollution degree	2
Rated insulation voltage	U _i =500V U _i =400V (MDM, SLF_M)
Rated impulse withstand voltage	U _{imp} =6kV
Short-circuit protection	Fuse 10A Type gG
Electrically separated contacts (Zb) with positive opening on NC contacts.	
Power category	A600, Q600 (MAP, MDP, SLZ, SLC, MA150, MA160) A300, Q300 (MAM, MA150M, MA160M, SLC_M, SLZ_M, SLF_M, MDM)
Rated operational current	AC-15: 24V-10A; 230V-3,1A; 380V-1,9A DC-13: 24V-2,8A; 250V-0,27A
Mechanical durability	25.000 operations



You can find further information on our homepage: www.panasonic-electric-works.com

Panasonic Electric Works Europe AG • Rudolf-Diesel-Ring 2 • 83607 Holzkirchen • Tel.: +49 (0) 8024 648-0

Installation instructions

The **MAC-I** safety switches are devices designed and manufactured according to IEC international standards and EN European regulations. They are suitable for monitoring and protection of industrial machinery without inertia and they can be used for the construction of safety systems according to ISO 13849-1. Performing the role of worker protection, improper installation or tampering with safety devices can cause serious injury to persons. The installation must therefore be performed in accordance with local legislation and only by authorized personnel; we also recommend to check the switch before starting the machine and periodically to ensure proper operation.

Installation Precautions

The safety switch must not be used either as a guide or as a mechanical stop. Do not install in places where there is presence of dust and / or flammable gases, and where external objects (such as dust, shavings ...) could damage or obstruct the drive head of the device. For any doubt, CE declaration of conformity or for any information and assistance, please contact our technical department.

Operating head orientation

Fully turnable head models only

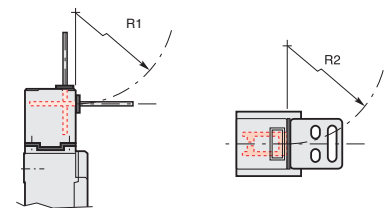
Key adjustment (fully turnable head models only)

The safety switch must not be used either as a guide or as a mechanical stop.

Clearance = 2 to 4 mm
Gasket 1,6 mm thick included

Clearance = 2 to 4 mm
Gasket 1,6 mm thick included

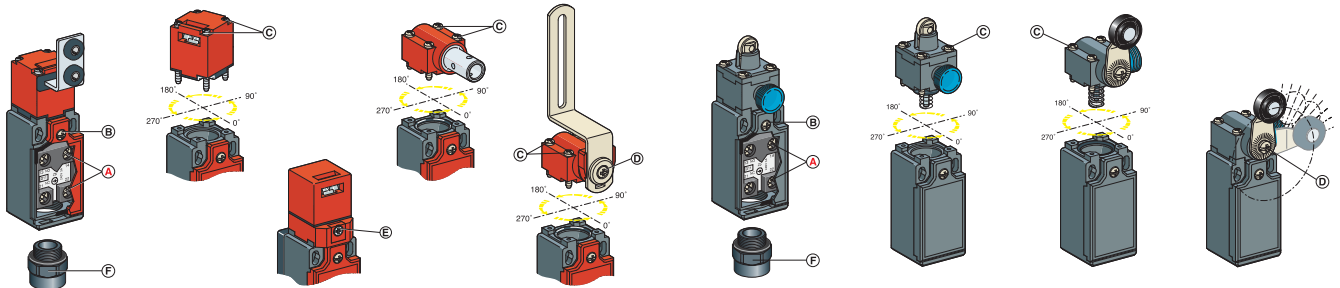
Minimum values [mm]	Key T83	Key T84	Key T85	Key T86	Key T87	Key T88	Key T89
R1	400	400	400	400	250	350	180
R2	400	400	400	400	350	350	200



You can find further information on our homepage: www.panasonic-electric-works.com

Panasonic Electric Works Europe AG • Rudolf-Diesel-Ring 2 • 83607 Holzkirchen • Tel.: +49 (0) 8024 648-0

Tightening torques



	A		B		C		D		E		F	
	Contact block terminals M3.5 ± pozidriv 2		Closing cover ø3 ± pozidriv 1		Assembling head ø3 ± pozidriv 1		Assembling lever M3.5 ± pozidriv 2		120° head adjusting M3 Philips No. 1		1/2" NPT adaptor -	
Tightening torque	Recommended N.m/lb.in		Recommended N.m/lb.in		Recommended N.m/lb.in		Recommended N.m/lb.in		Recommended N.m/lb.in		Recommended N.m/lb.in	
Thermoplastic Limit switches	0.8 / 7	0.9	0.5 / 4.3	0.8	0.5 / 4.3	0.8	0.5 / 4.3	0.8	0.3 / 2.6	0.5	17 / 150	18
Metal Limit switches	0.8 / 7	0.9	0.8 / 7	0.9	0.8 / 7	0.9	0.5 / 4.3	0.8	0.3 / 2.6	0.5	-	-

Technical data

Temperature Range	-25°C +70°C	Pollution degree	3
Mounting position	All positions are authorized	Rated insulation voltage	Ui=500V Ui=500V Ui=400V (MAM, MA150M, MA160M, MDM series)
Protection against electrical shock	Classe II (MAP, MDP, SLZ, SLC, MA150, MA160) Classe I (MAM, MA150M, MA160M, SLC_M, SLZ_M, SLF_M, MDM)	Rated impulse withstand voltage	Uimp=6kV
Protection degree	IP65 (MAP, MDP, SLZ, SLC, MA150, MA160) IP66 (MAM, MA150M, MA160M, SLC_M, SLZ_M, SLF_M, MDM)	Short-circuit protection	Fuse 10A Type gG
		Electrically separated contacts (Zb) with positive opening on NC contacts.	
		Power category	A600, Q600 (MAP, MDP, SLZ, SLC, MA150, MA160) A300, Q300 (MAM, MA150M, MA160M, SLC_M, SLZ_M, SLF_M, MDM)
		Rated operational current	AC-15: 24V-10A; 230V- 3,1A; 380V-1,9A DC-13: 24V-2,8A; 250V- 0,27A
		Mechanical durability	1.000.000 operations

Panasonic Electric Works Europe AG

Rudolf-Diesel-Ring 2 • 83607 Holzkirchen
Tel.: +49 (0) 8024 648-0 • Fax: +49 (0) 8024 648-111
e-mail: machinevision@eu.pewg.panasonic.com
www.panasonic-electric-works.com

Panasonic®