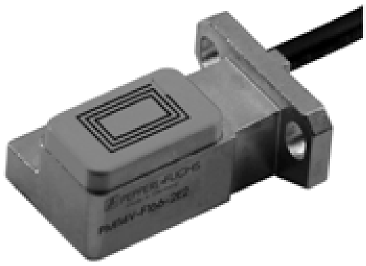


CE

Model Number

PMI14V-F166-2E2-1M-V15

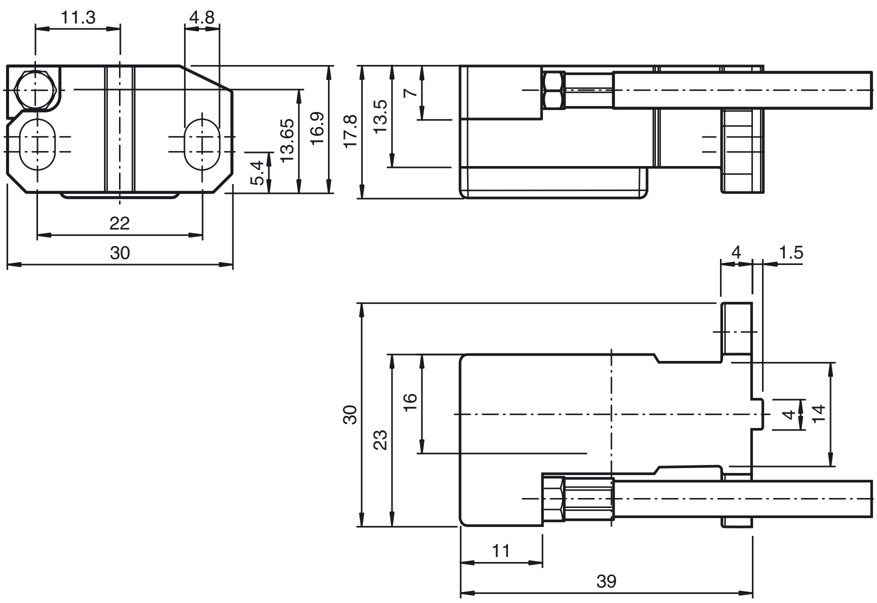
Features

- **Measuring range 0 ... 14 mm**
- **2 programmable switch outputs**

Technical data

General specifications	
Switching element function	PNPDual NO
Object distance	0.5 ... 2 mm
Measurement range	0 ... 14 mm
Nominal ratings	
Operating voltage U_B	18 ... 30 V DC
Reverse polarity protection	reverse polarity protected
Voltage drop U_d	≤ 3 V
Linearity error	± 0.3 mm
Repeat accuracy R	± 0.05 mm
Resolution	33 µm
Temperature drift	± 0.3 mm (With a target distance of 0.5 mm)
No-load supply current I_0	≤ 20 mA
Functional safety related parameters	
$MTTF_d$	880 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %
Switching output	
Output type	PNP (2 Channels)
Operating current I_L	per channel 50 mA , Combined max. 80 mA
Switching window	position programmable, width 2 mm
Switching hysteresis	0.4 mm
Short-circuit protection	pulsing
Ambient conditions	
Ambient temperature	-10 ... 70 °C (14 ... 158 °F)
Storage temperature	-20 ... 70 °C (-4 ... 158 °F)
Mechanical specifications	
Connection type	Male cordset, M12 , 5-pin 1 m, PUR cable, shielded
Degree of protection	IP65
Material	
Housing	Zinc die-casting, nickel-plated cover , PBT
Target	mild steel, e. g. 1.0037, SR235JR (formerly St37-2)
Mass	75 g
Compliance with standards and directives	
Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007 EN 60947-5-7:2003

Dimensions



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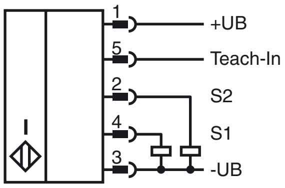
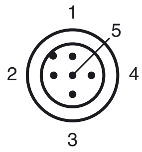
Electrical Connection



Pinout



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

Accessories

BT-F90-W
Damping element for sensors of type F90, F112, and F166; side hole

BT-F90-G
Damping element for sensors of type F90, F112, and F166; front hole

PMI14V-Teach
Programming unit

Information on Operation

Safety Information

STOP
Warnung

This product must not be used in applications in which the safety of persons depends on the function of the device.

This product is not a safety component as specified in the EU Machinery Directive.

Actuator

The linear position measurement system is optimally aligned to the geometry of Pepperl+Fuchs actuators.

Using Your Own Actuators

Generally speaking, it is possible for you to use your own actuators. The specified measurement accuracy of the sensor will be achieved only if the actuator has the following properties:

- Material: construction steel such as S235JR+AR (previously St37)
- Dimensions (L x W x H): ≥ 18 mm x 8 mm x ≥ 2 mm
- The active surface of the actuator must protrude across the entire sensor width.

Note:

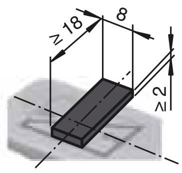
The width of the actuator must be precisely 8 mm. If the width of the actuator deviates from this value, the position values will differ.

Programming the Switching Windows

The two switching windows can be taught in using the PMI14V-Teach programming unit. The

Additional Information

dimensions for the target object:



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programming unit is connected directly between the sensor and the power supply. The Teach-in process is generally only possible in the first 6 minutes of the sensor being switched on. After that point, programming is blocked and is only possible again once the power supply has been interrupted.

The relevant positions of the switching windows that are taught in are stored in the nonvolatile memory. The switching windows are positioned symmetrically around the configured position in each case. The measured position is based on half of the width (center) of the damping element.

Teach-In Process

Switching the Sensor to Programming Mode

1. Connect the programming unit between the sensor and the power supply.
2. Press and hold the key on the programming unit for approx. 1.5 seconds.

>> The LED S1 on the programming unit flashes (2 Hz).

Switching window 1: width 2 mm (± 1 mm), switching output S1

Prerequisite: LED S1 is flashing.

1. Position the damping element in the required switching position.
2. Press the button again.

>> The sensor teaches in position 1. If the Teach-in process was successful, LED S1 lights up for approx. 1.5 seconds.

Switching window 2: width 2 mm (± 1 mm), switching output S2

Prerequisite: LED S2 is flashing.

1. Position the damping element in the required switching position.
2. Press the button again.

>> The sensor teaches in position 2. If the Teach-in process was successful, LED S2 lights up for approx. 1.5 seconds. LED S2 goes out briefly. Afterwards the sensor returns to its normal operating state. The LEDs now follow the switching status of the respective output. If the damping element is still at the teaching position LED S2 lights up.

Reset to Default Settings

1. Press and hold the button for approx. 6.5 seconds.

>> The sensor is reset to its default settings. The programming unit confirms this by flashing quickly (8 Hz).

Faults during Teach-in

If a Teach-in process fails for any reason, LED S1 flashes quickly (16 Hz) for approx. 1.5 seconds. The cause for this may be that the Teach-in attempt was conducted outside the measuring range.
The Teach-in process is canceled when the power supply is interrupted or if no button is pressed for approx. 410 s.

In both cases, the existing switching limits remain saved.

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