

# Inductive positioning system

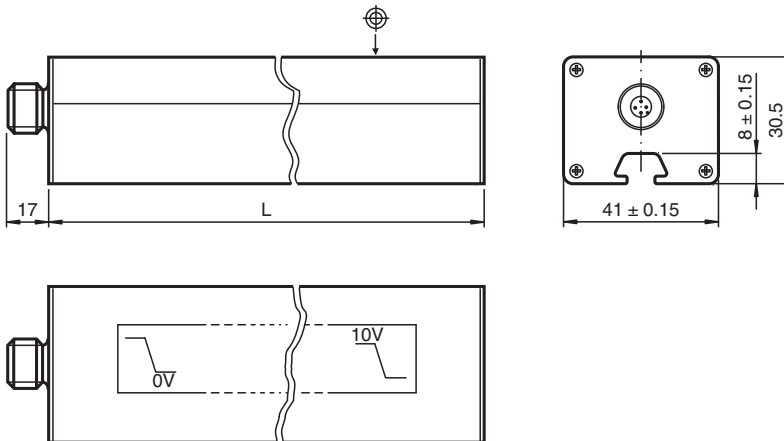
## PMI210-F110-2U-V1-Y70137901



- Measuring range 0 ... 210 mm
- Analog output 0 ... 10 V DC
- Analog output signal duplicated on Pin 2 and 4



### Dimensions



### Technical Data

#### General specifications

Switching element function	Analog voltage output
Object distance	max. 6 mm
Measurement range	0 ... 210 mm

#### Nominal ratings

Operating voltage	$U_B$	18 ... 30 V DC
Reverse polarity protection		reverse polarity protected
Linearity error		$\pm 0.4$ mm
Repeat accuracy	$R$	$\pm 0.2$ mm
Resolution		210 $\mu$ m
Temperature drift		$\pm 0.5$ mm (-25 °C ... 70 °C)
No-load supply current	$I_0$	$\leq 40$ mA
Operating voltage indicator		LED green

#### Functional safety related parameters

MTTF <sub>d</sub>	337 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

#### Analog output

Release date: 2024-06-27 Date of issue: 2024-06-27 Filename: 70137901\_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

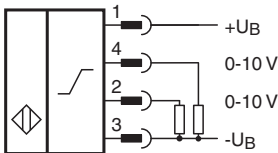
Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

 **PEPPERL+FUCHS**

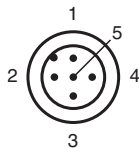
Technical Data

Output type	1 voltage output: 0 ... 10 V signal duplicated on Pin 2 and 4
Load resistor	voltage output: $\geq 1000 \Omega$
Short-circuit protection	voltage output: pulsing
<b>Compliance with standards and directives</b>	
Standard conformity	
Standards	EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012
<b>Approvals and certificates</b>	
UL approval	cULus Listed, General Purpose, Class 2 Power Source
CCC approval	CCC approval / marking not required for products rated $\leq 36 \text{ V}$
<b>Ambient conditions</b>	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
<b>Mechanical specifications</b>	
Connection type	4-pin, M12 x 1 connector
Housing length L	250 mm
Degree of protection	IP65
Material	
Housing	PA 6 / AL
Target	mild steel, e. g. 1.0037, SR235JR (formerly St37-2)
Dimensions	
Height	30 mm
Width	41 mm
Length	267 mm
Note	The data relating to accuracy only apply to a distance to the object to be detected of 1 ... 6 mm.

Connection



Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

## Installation

### Installation and operating notes

- Security advice



This product must not be used in applications, where safety of persons depend on the correct device function.  
This product is not a safety device according to EC machinery directive.

- Sensor Properties

The inductive positioning system F110 provides a voltage signal which is proportional to the position of the attenuating element. The output signal is equally output on Pins 2 and 4 (internally bridged).  
Output signal: 0 V ... 10 V

- Attenuating element

The inductive position encoding system F110 is optimally adjusted to the geometry of the attenuating elements we offer (see accessories, below).



Note

When using your own attenuating elements, you must ensure that the active surface of the attenuating element has a width of exactly 13 mm and overlaps the entire sensor width (41 mm).

A different width has a direct impact on the achievable resolution and accuracy of the system.

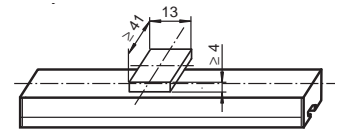
Spacing between sensor and attenuating element is from 0 ... 6 mm.

Sensing accuracy is guaranteed between 1 ... 6 mm.

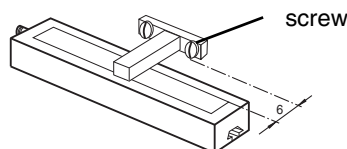
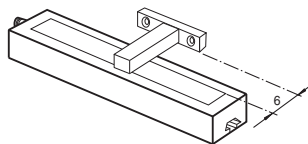
- Installation and operation

#### Notes on installation

- A flush installation is possible.
- Fixation and installation of the positioning system F110 is carried out by the use of t-slides. This provides a flexible adaptation to the field situation.



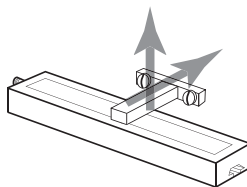
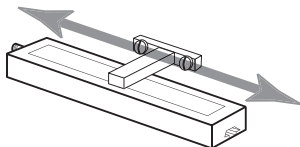
- The distance between the measuring field (bordered area at the front of the sensor) and the fixing base or fixing element of the attenuating element must at least be 6 mm.



- Notes on operation

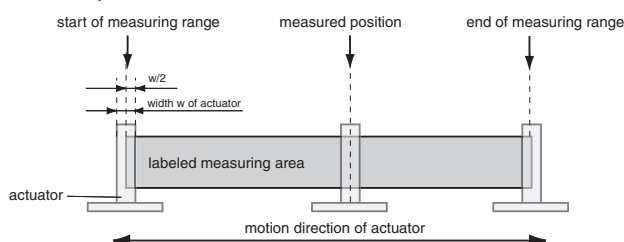
The sensor accuracy can be guaranteed, when the spacing between attenuating element and sensor is within an interval of 1 ... 6 mm.

When the attenuating element leaves the measurement range (figures below) the last valid value is maintained at the voltage output (Pin 2 and 4) until the attenuating element re-enters the valid range.



- Definition of measuring range / of measured position

The measured attenuating elements (actuators) position refers to half its width (middle of the actuator). The measuring range starts and ends when the attenuating element overlaps the labeled measuring area on the sensor at transversal motion (see left figure above).



- Accessories

## Attenuating elements

BT-F110-G



BT-F110-W



## Mounting brackets

MH-F110



**Straight cables:**V1-G-2M-PVC (4 wire)

**Angled cables:**V1-W-2M-PVC (4 wire)