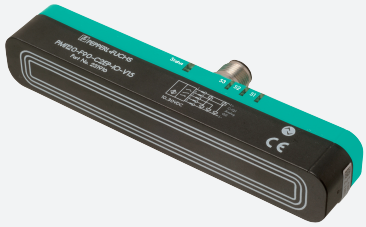
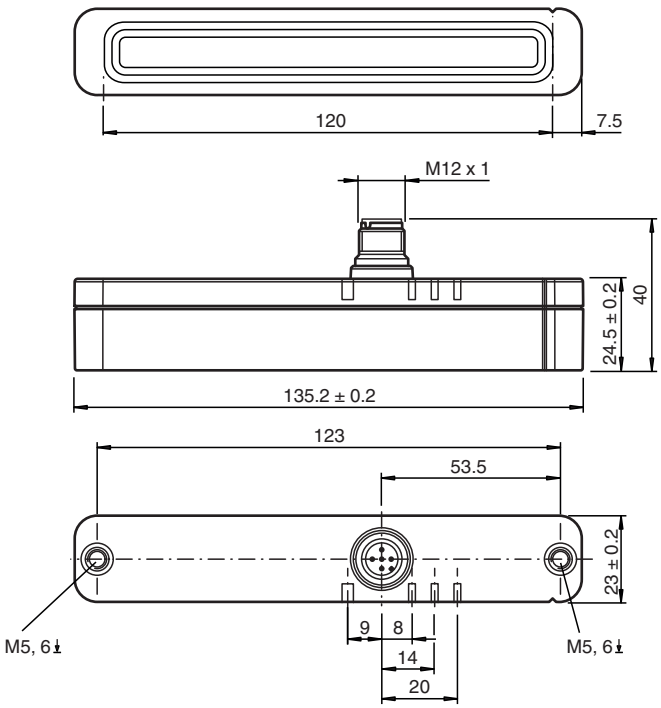
Inductive positioning system

PMI120-F90-IU2EP-IO-V15-3G-3D



- Parameterization and diagnosis via IO-Link
- Measuring range 0 ... 120 mm
- Parameterisable measuring range
- Analog current or voltage output, programmable
- 2 Push-pull outputs
- Switch points programmable via IO-Link

Dimensions



Technical Data

General specifications		
Switching element function		Analog current or voltage output, programmable 2 switch outputs, programmable
Object distance		0.5 ... 3 mm , recommended: 1.5 mm
Measurement range		0 ... 120 mm
Linearity range		1 ... 119 mm
Nominal ratings		
Operating voltage	U_B	12 ... 30 V DC (13 ... 30 V when analog voltage output is parameterized)
Reverse polarity protection		reverse polarity protected

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Linearity error		within measuring range: ± 0.8 mm within linearity range: ± 0.4 mm
Repeat accuracy	R	± 0.1 mm
Resolution		50 µm
Temperature drift		± 0.5 mm (-25 °C ... 70 °C)
No-load supply current	I_0	≤ 40 mA
Operating voltage indicator		LED green
Functional safety related parameters		
$MTTF_d$		278 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
LED S1		switching state Switching output 1
LED S2		switching state Switching output 2
LED S3		Damping element in the configured analog measuring range
LED STATUS		Status display LED, green/red (Power on, communication/error, missing damping element)
Interface		
Interface type		IO-Link (via C/Q = Pin 4)
IO-Link revision		1.1
Device profile		Smart Sensor
Device ID		0x200404 (2098180)
Transfer rate		COM2 (38.4 kBaud)
Value range		0000h ... 9600h
Min. cycle time		2.3 ms
Process data width		Process data input: 16 Bit Process data output: none
SIO mode support		yes
Compatible master port type		A
Switching output		
Output type		2 push-pull outputs (can be parameterized), short-circuit-proof, reverse polarity protection, surge-proof
Operating current	I_L	≤ 100 mA / Output
Switching window		± 1 mm
Switching hysteresis		0.2 mm
Voltage drop		≤ 3 V
Short-circuit protection		pulsing
Analog output		
Output type		1 current output: 4 ... 20 mA or 1 voltage output: 0 ... 10 V , programmable
Load resistor		current output: ≤ 400 Ω voltage output: ≥ 1000 Ω
Short-circuit protection		voltage output: current limit
Compliance with standards and directives		
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 EN 60947-5-7:2003 EN61131-9:2013 IEC 60947-5-7:2003 IEC 61131-9:2013
Approvals and certificates		
IECEx approval		
Equipment protection level Gc (ec)		IECEx TUR 21.0019X
Equipment protection level Dc (tc)		IECEx TUR 21.0020X
ATEX approval		

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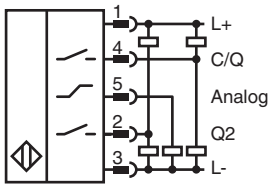
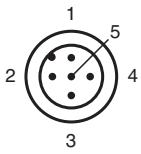
Equipment protection level Gc (ec)	TÜV 20 ATEX 8525 X
Equipment protection level Dc (tc)	TÜV 20 ATEX 8526 X
UL approval	cULus Listed, Class 2 Power Source, Type 1 enclosure
Marine approval	DNVGL TAA00001V2
Ambient conditions	
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Mechanical specifications	
Connection type	5-pin, M12 x 1 connector
Degree of protection	IP67 / IP69K
Material	
Housing	PBT, stainless steel 1.4571 , brass, nickel-plated
Target	mild steel, e. g. 1.0037, SR235JR (formerly St37-2)
Mass	113 g
General information	
Use in the hazardous area	see instruction manuals

Connection



Connection Assignment

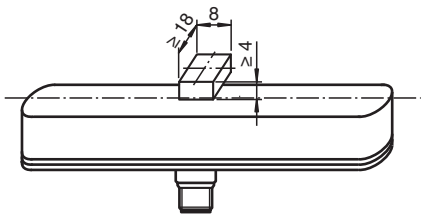


Wire colors in accordance with EN 60947-5-2

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

Application

dimensions for the target object:



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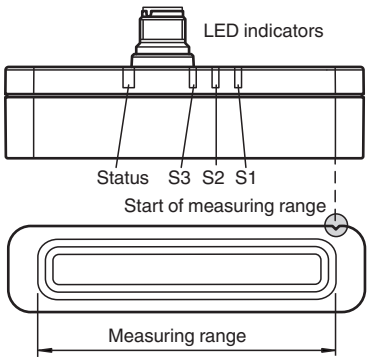
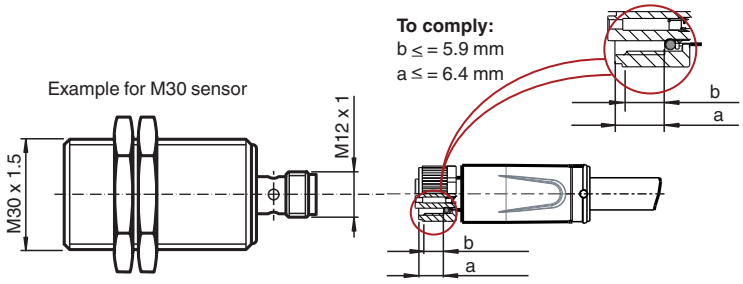


Installation

Requirement for male cordset to achieve IP degree of protection



b = max. distance from start of thread to seal
a = max. distance from start of union nut to seal

Accessories

	**BT-F90-W**	Damping element for sensors of type F90, F112, and F166; side hole
	**MH-F90**	Mounting bracket for mounting of F90 sensors
	**ICE2-8IOL-K45S-RJ45**	EtherNet/IP IO-Link master with 8 inputs/outputs, DIN rail, screw terminal
	**ICE3-8IOL-K45P-RJ45**	PROFINET IO IO-Link master with 8 inputs/outputs, DIN rail, push-in terminals
	**ICE3-8IOL-K45S-RJ45**	PROFINET IO IO-Link master with 8 inputs/outputs, DIN rail, screw terminal
	**IO-Link-Master02-USB**	IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection
	**ICE2-8IOL-K45P-RJ45**	EtherNet/IP IO-Link master with 8 inputs/outputs, DIN rail, push-in connectors

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Operation

Attention!

If the sensor is supplied via an IO-Link-Master, ensure that the sum of the no-load supply current and operating currents of all sensor outputs does not exceed the maximum current the IO-Link-Master can supply.

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