



PFM series

M12 cylindrical inductive sensors
for food and beverage applications



M12 cylindrical for food
and beverage applications

features

- AISI 316L (DIN 1.4404) stainless steel housing
- LED status indicator
- IP67 – IP68 – IP69K protection degree
- ATEX models, cat. 3, available on request
- Complete protection against electrical damages
- Standard and long distance models



web contents



- Application notes
- Photos
- Catalogue / Manuals



code description (*)

	PFM	1	/	A	P	-	1	H	26
series	PFM	M12 inductive sensor for food+beverage applications							
housing	1	Standard housing							
output state	A	NO output							
	B	NO+NC complementary output							
output logic	N	NPN output							
	P	PNP output							
distance	1	2 mm standard shielded							
	2	4 mm standard unshielded							
	3	4 mm long distance shielded							
	4	8 mm long distance unshielded							
connect.	H	M12 plug exit							
special models	26	Extended temperature range models							

(*) ATEX models available, contact our Sales Dept. for further information.

available models

standard models

model	installation	sensing	plug	distance (mm)	NPN/NO	PNP/NO		
M12	shielded	standard	M12	2	PFM1/AN-1H	PFM1/AP-1H		
	unshielded			4	PFM1/AN-2H	PFM1/AP-2H		
	shielded	long distance			PFM1/AN-3H	PFM1/AP-3H		
	unshielded				8	PFM1/AN-4H	PFM1/AP-4H	

available models

models with complementary output

model	installation	sensing	plug	distance (mm)	NPN/NO+NC	PNP/NO+NC		
M12	shielded	standard	M12	2	PFM1/BN-1H	PFM1/BP-1H		
	unshielded			4	PFM1/BN-2H	PFM1/BP-2H		
	shielded	long distance			PFM1/BN-3H	PFM1/BP-3H		
	unshielded				8	PFM1/BN-4H	PFM1/BP-4H	

available models

models with extended temperature range

model	installation	sensing	plug	distance (mm)	PNP/NO+NC
M12	shielded	standard	M12	2	PFM1/BP-1H 26
	unshielded			4	PFM1/BP-2H 26

correction factors

code	steel FE 360	copper	alluminium	brass	stainless steel
PFM1/**-1H*	1	0.25	0.3	0.4	0.75
PFM1/**-2H*		0.33	0.4	0.5	0.8
PFM1/**-3H*		0.3	0.35	0.4	0.75
PFM1/**-4H*		0.33	0.4	0.45	

Tolerance ±10%

technical specification

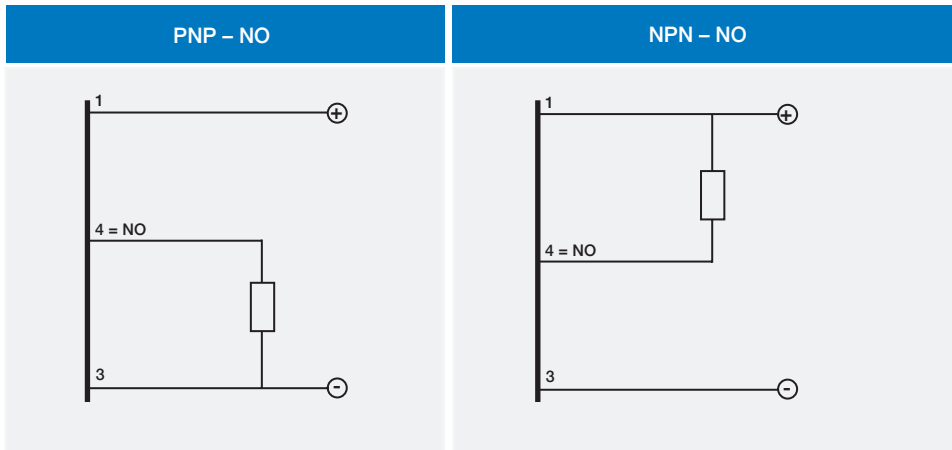


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	PFM1/**-1H	PFM1/**-2H	PFM1/**-3H	PFM1/**-4H
rated operative distance Sn	2 mm	4 mm		8 mm
working distance	0...1.62 mm	0...3.24 mm		0...6.5 mm
hysteresis	1...20%			
standard target	12x12 mm FE360			24x24 mm FE360
repeatability	5%			
operating voltage	10...30 Vcc			
output type	NPN or PNP - NO + NC or NO			
max ripple content	≤ 10%			
output current	≤ 200 mA			
output voltage drop	≤ 2 V			
no-load supply current	≤15 mA			
leakage current	≤15 µA			
switching frequency	2 kHz			
power on delay	50 ms			
ambient temperature range	-40...+80 °C short exposure (15') to 100°C (during cleaning processes) / -25...+110°C (PFM-26 models)			
temperature drift of Sr	10%			
short-circuit protection	●			
voltage reversal protection	●			
induction protection	●			
shocks and vibration	IEC 60947-5-2 / 7.4			
weight	30 g			
LEDs	NO output state / no led (PFM-26 models)			
protection degree	IP67, IP68 (1m, 7days); IP69K (according to DIN 40050 part 9)			
EMC	in conformity with the EMC Directive according to IEC 60947-5-2			
housing material	stainless Steel AISI316L (DIN 1.4404)			
active head material	PPS (FDA certified)			
connection	M12 plug with gold-plated pins			
tightening torque	25 Nm			

electrical diagrams of connections

3 wires versions

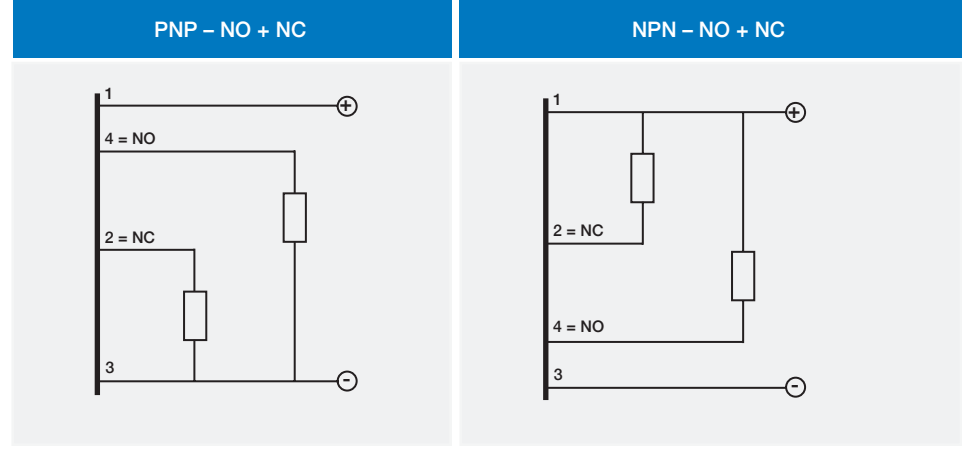


BN brown
BU blue
BK black
WH white

PFM

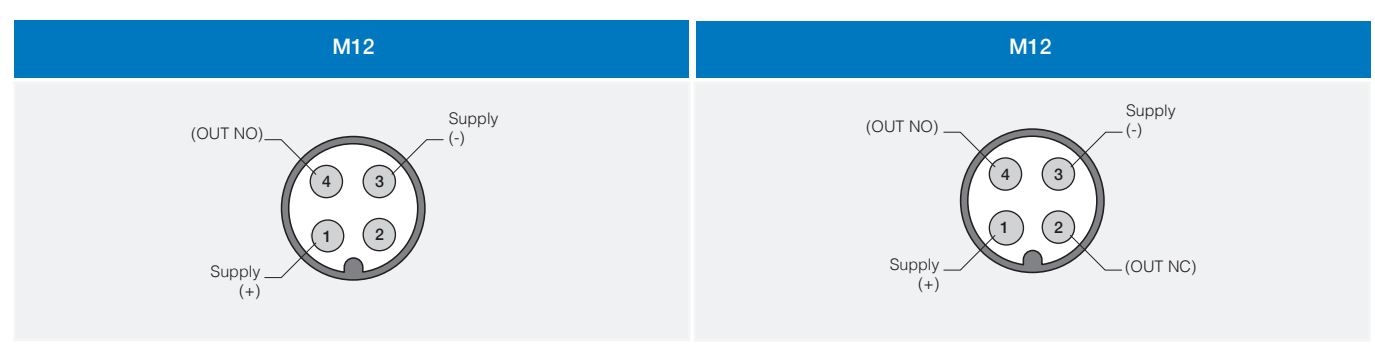
electrical diagrams of connections

complementary outputs versions

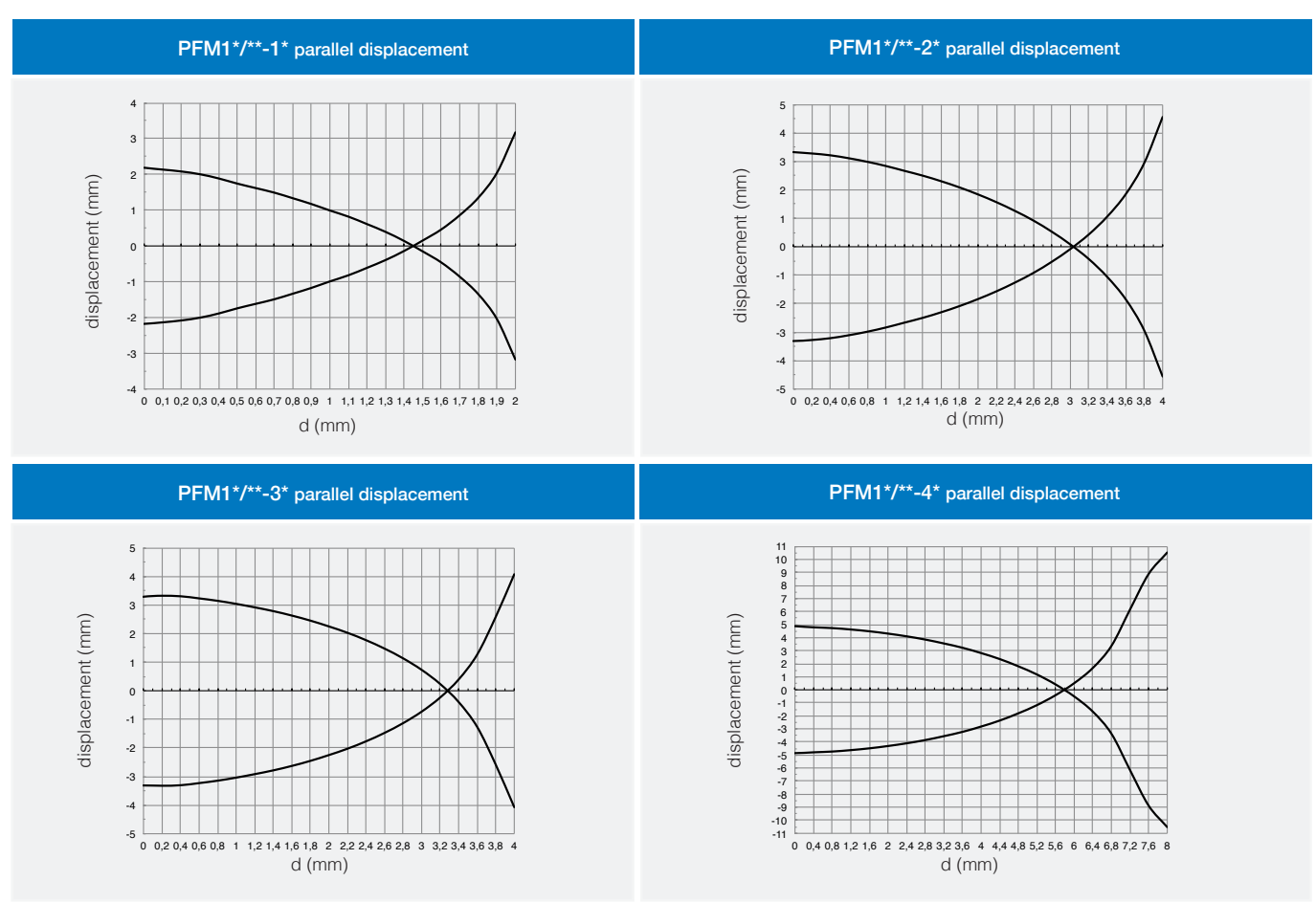


- BN** brown
- BU** blue
- BK** black
- WH** white

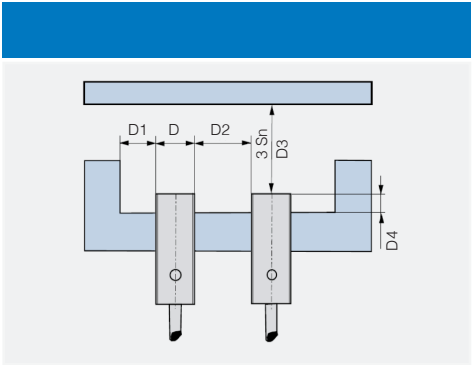
plug



response diagram



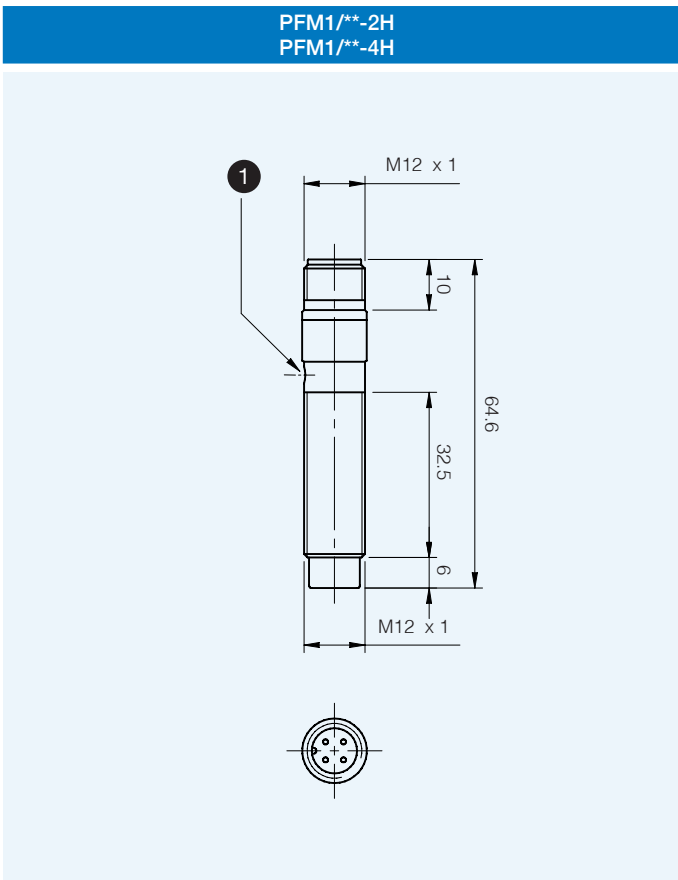
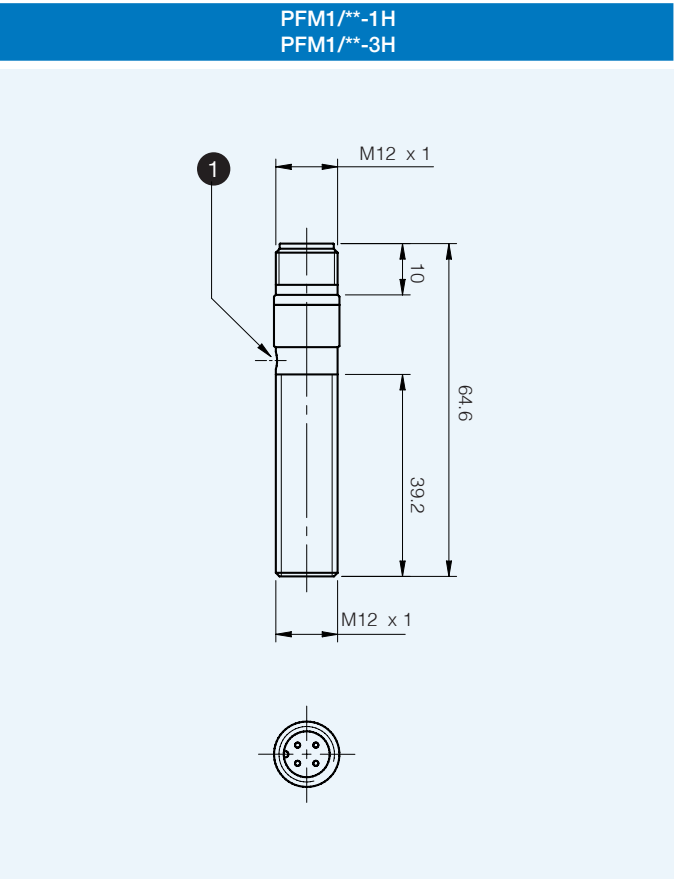
installation



code	D4	D1	D2	D3
PFM1/**-1*	$\geq 0 \text{ mm}^{(1)}$	$\geq 6 \text{ mm}$	$\geq 12 \text{ mm}$	$\geq 6 \text{ mm}$
PFM1/**-2*	$\geq 6 \text{ mm}^{(2)}$	$\geq 12 \text{ mm}$	$\geq 24 \text{ mm}$	$\geq 12 \text{ mm}$
PFM1/**-3*	$\geq 0 \text{ mm}^{(3)}$	$\geq 6 \text{ mm}$	$\geq 12 \text{ mm}$	$\geq 12 \text{ mm}$
PFM1/**-4*	$\geq 12 \text{ mm}$	$\geq 12 \text{ mm}$	$> 24 \text{ mm}$	$\geq 24 \text{ mm}$
PFM1/**-1*26	$\geq 0 \text{ mm}^{(4)}$	$\geq 6 \text{ mm}$	$\geq 12 \text{ mm}$	$\geq 6 \text{ mm}$
PFM1/**-2*26	$\geq 6 \text{ mm}^{(2)}$	$\geq 12 \text{ mm}$	$\geq 24 \text{ mm}$	$\geq 12 \text{ mm}$

(1) $\geq 2 \text{ mm}$ for non magnetic material
(2) $\geq 0 \text{ mm}$ for non magnetic material
(3) $\geq 3.6 \text{ mm}$ for non magnetic material
(4) $\geq 1.2 \text{ mm}$ for non magnetic material

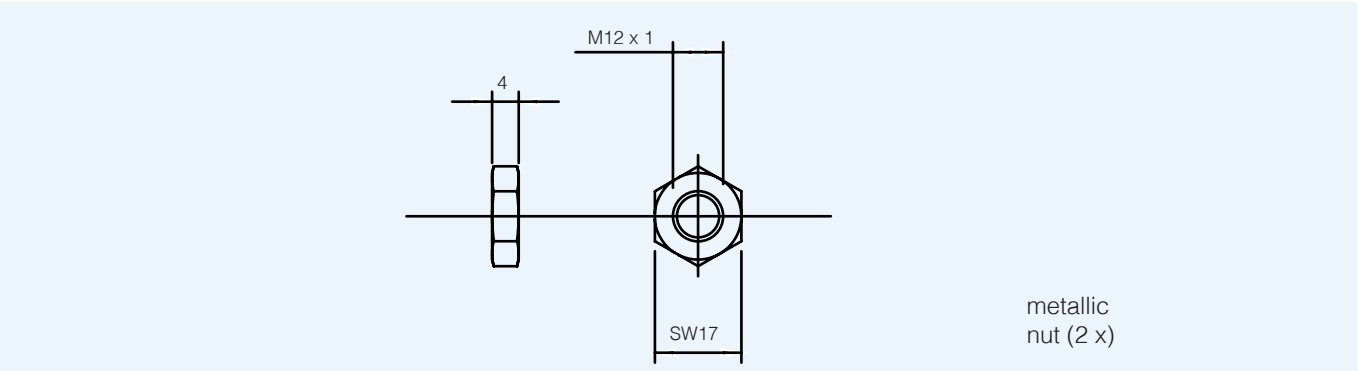
dimensions



1 LED (no LED in PFM-26 models)

dimensions (mm)

accessories included in all M12 models



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PFM