

M12 Inductive Sensor (Food & Beverage) PFM

- M12 or smooth body
- Stainless steel AISI 316L
- Standard and Long distance sensing, models
- Complete protection against electrical damage
- LED status indicator
- IP67, IP68 and IP69K



Ordering & Ordering Codes

PFM		1		/		A		P		-		1		H		V5	
Body Style																Body Style	
M12 Short Body / Smooth Body		PFM												V5		Smooth Body or Blank for M12	
Body Size																Connection Type	
Standard Housing		1												H		M12 Connector	
Output State																Sensing Distance	
NO ⁽¹⁾						A						1				2mm Shielded	
NC						C						2				4mm Unshielded	
NO + NC Complimentary ⁽¹⁾						B						3				4mm Shielded Long Distance	
Output Logic																4	
PNP						P										8mm Unshielded Long Distance	
NPN						N											

⁽¹⁾ Standard Models

Specifications

Models	PFM1/**-1H	PFM1/**-2H	PFM1/**-3H	PFM1/**-4H
Sensing distance (mm)	2	4	4	8
Hysteresis		1 to 20%		
Standard target (mm)	12 x 12 Fe360	12 x 12 Fe360	12 x 12 Fe360	24 x 24 Fe360
Repeat accuracy @ UB 20-30 V Ta = 23°C ± 5°C	5%			
Supply	10 - 30VDC			
Maximum ripple	≤10%			
Output current	≤200mA			
Output voltage drop	≤2V			
No load current	≤15mA			
Leakage current	≤10μA			
Switching frequency	2kHz			
Time delay before availability	50ms			
Operating temperature	-40°C to 80°C, short exposure 100°C (during cleaning for 15s)			
Temperature drift	10%			
Short circuit protection	Yes, auto reset			

Models	All Models
Voltage reversal protection	Yes
Induction protection	Yes
Shocks and vibrations	IEC EN60947-5-2 / 7.4
Weight	35g
LED Indicators	NO output state
Protection degree	IP67, IP68 (1m 7 days) and IP69K ⁽²⁾
EMC protection	According to IEC 60947-5-2
IEC 60255-5	1kV
IEC 61000-4-2	Level 3 or air 8kV
IEC 61000-4-3	Level 3 10V/m
IEC 61000-4-4	Level 3 2kV
Housing material	Stainless steel AISI316L (DIN 1.4404)
Front end material	PPS (FDA certified)
Connection	M12 plug with gold plated pins
Tightening torque	20Nm

⁽²⁾ According to DIN 40050 part 9

Correction Factor

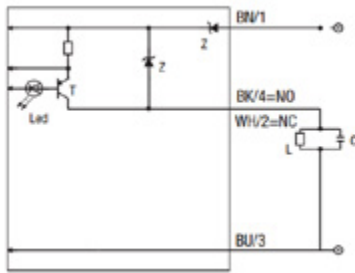
Tolerance ±10%

Model	Steel Fe 360	Copper	Aluminium	Brass	Stainless Steel
PFM1/**-1*	1	0.25	0.3	0.4	0.75
PFM1/**-2*	1	0.33	0.4	0.5	0.8
PFM1/**-3*	1	0.3	0.35	0.4	0.75
PFM1/**-4*	1	0.33	0.4	0.45	0.75

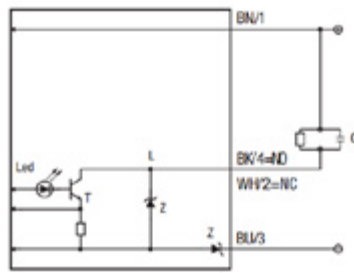
Correction Factor

BN = Brown BK = Black WH = White BU = Blue

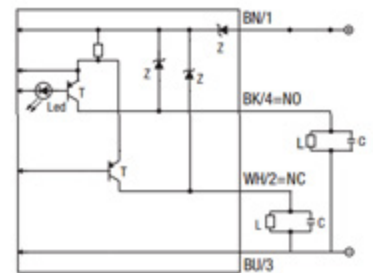
PNP NO or NC



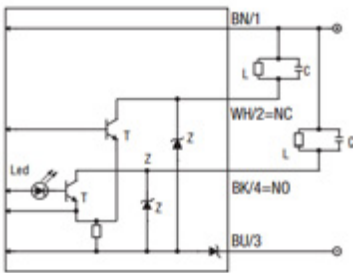
NPN NO or NC



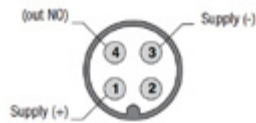
PNP - NO + NC



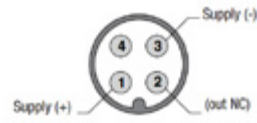
NPN - NO + NC



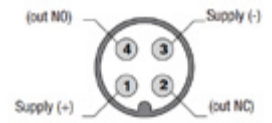
NO Output



NC Output

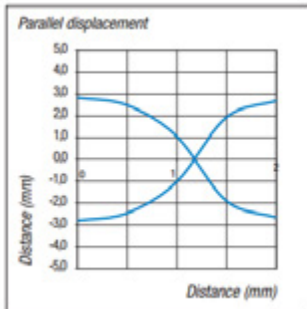


NO + NC Output

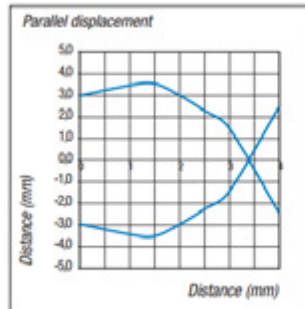


Response Graphs

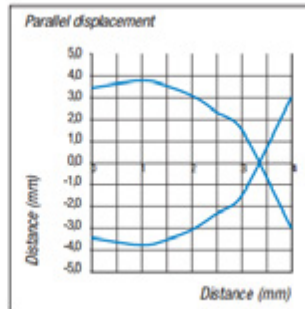
PFM1/**-1H



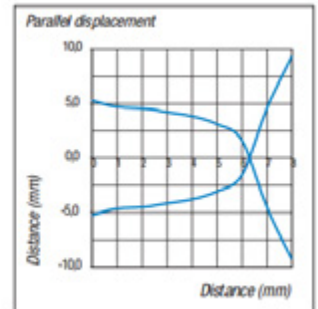
PFM1/**-2H



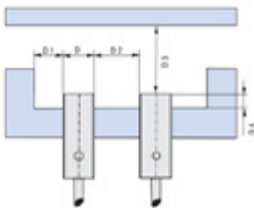
PFM1/**-3H



PFM1/**-4H



Installation



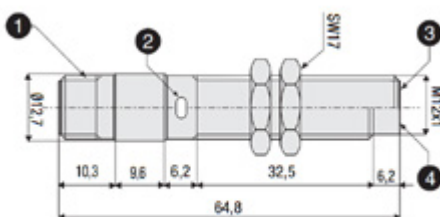
	D4	D1	D2	D3
PFM1/**-1*	≥ 0 mm ⁽³⁾	≥ 6 mm	≥ 12 mm	≥ 6 mm
PFM1/**-2*	≥ 6 mm ⁽⁴⁾	≥ 12 mm	≥ 24 mm	≥ 12 mm
PFM1/**-3*	≥ 0 mm ⁽⁵⁾	≥ 6 mm	≥ 12 mm	≥ 12 mm
PFM1/**-4*	≥ 12 mm	≥ 12 mm	≥ 24 mm	≥ 24 mm

⁽³⁾ ≥ 2mm for non magnetic material

⁽⁴⁾ ≥ 0mm for non magnetic material

⁽⁵⁾ ≥ 2.4mm for non magnetic material

Dimensions



1 - M12 Plug Exit

2 - LED status indicator (NO output energized)

3 - Shielded model

4 - Unshielded model