

Cylindrical Inductive General / Spatter-Resistant Proximity Sensors



PR / PRA Series (AC 2-wire) CATALOG

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Major Features

- Excellent noise immunity with specialized sensor IC
- Built-in surge protection circuit
- Simple operation, reliable performance, and high durability
- Spatter-resistant type: PTFE coated for high heat resistance (prevent malfunction from welding spatter)
- Cable connector type / Connector type: easy maintenance and wiring
- Operation indicator (red LED)
- IP67 Protection structure (IEC standards)
- Durable and reliable alternative to micro switches and limit switches

Ordering Information

This is only for reference.

For selecting the specific model, follow the Autonics web site.

PR ① ② ③ ④ - ⑤ A ⑥

① Characteristic

No mark: General type
A: Spatter-resistant type

② Connection

No mark: Cable type
W: Cable connector type
CM: Connector type

③ Body length

No mark: Normal
L: Long

④ DIA. of sensing side

Number: DIA. of sensing side (unit: mm)

⑤ Sensing distance

Number: Sensing distance (unit: mm)

⑥ Control output

O: Normally open
C: Normally closed

Specifications

Installation	Flush type		
General	PR□12-2A□	PR□18-5A□	PR□30-10A□
Spatter-resistant	PRA□12-2A□	PRA□18-5A□	PRA□30-10A□
DIA. of sensing side	Ø 12 mm	Ø 18 mm	Ø 30 mm
Sensing distance	2 mm	5 mm	10 mm
Setting distance	0 to 1.4 mm	0 to 3.5 mm	0 to 7 mm
Hysteresis	≤ 10 % of sensing distance		
Standard sensing target: iron	12 × 12 × 1 mm	18 × 18 × 1 mm	30 × 30 × 1 mm
Response frequency ⁰¹⁾	20 Hz		
Affection by temperature	≤ ± 10 % for sensing distance at ambient temperature 20 °C		
Indicator	Operation indicator (red)		
Approval	CE ENEC	CE ENEC	CE ENEC

Installation	Non-flush type		
General	PR□12-4A □	PR□18-8A □	PR□30-15A □
DIA. of sensing side	Ø 12 mm	Ø 18 mm	Ø 30 mm
Sensing distance	4 mm	8 mm	15 mm
Setting distance	0 to 2.8 mm	0 to 5.6 mm	0 to 10.5 mm
Hysteresis	≤ 10 % of sensing distance		
Standard sensing target: iron	12 × 12 × 1 mm	25 × 25 × 1 mm	45 × 45 × 1 mm
Response frequency ⁰¹⁾	20 Hz		
Affection by temperature	≤ ± 10 % for sensing distance at ambient temperature 20 °C		
Indicator	Operation indicator (red)		
Approval	CE ENEC	CE ENEC	CE ENEC

01) The response frequency is the average value. The standard sensing target is used and the width is set as 2 times of the standard sensing target, 1/2 of the sensing distance for the distance.

Unit weight (package)		Ø 12 mm	Ø 18 mm	Ø 30 mm
Cable	Normal	≈ 72 g (≈ 84 g) ⁰¹⁾	≈ 118 g (≈ 130 g) ⁰²⁾	≈ 170 g (≈ 207 g)
	Long	-	≈ 130 g (≈ 142 g)	≈ 208 g (≈ 245 g)
Cable connector	Normal	≈ 42 g (≈ 54 g)	≈ 66 g (≈ 78 g)	≈ 122 g (≈ 134 g)
	Long	-	≈ 78 g (≈ 90 g)	≈ 158 g (≈ 195 g)
Connector	Normal	≈ 30 g (≈ 42 g)	≈ 54 g (≈ 66 g)	≈ 142 g (≈ 154 g)
	Long	-	≈ 66 g (≈ 78 g)	≈ 182 g (≈ 194 g)

01) Spatter-resistant type: ≈ 66 g (≈ 78 g)

02) Spatter-resistant type: ≈ 106 g (≈ 118 g)

Power supply	100-240 VAC ~ 50/60 Hz, operating voltage: 85-264 VAC ~
Leakage current	≤ 2.5 mA
Control output	DIA. of sensing side Ø 12 mm: 5 to 150 mA DIA. of sensing side Ø 18 mm, Ø 30 mm: 5 to 200 mA
Residual voltage	≤ 10 V
Protection circuit	Surge protection circuit
Insulation resistance	≥ 50 MΩ (500 VDC = megger)
Insulation type	Double insulation or reinforced insulation (symbol: □) dielectric strength between the measuring input part and the power part: general type 1 kV, spatter-resistant type 1.5 kV
Dielectric strength	General type : 2,500 VAC ~ 50/60 Hz for 1 min (between all terminals and case) Spatter-resistant type : 1,500 VAC ~ 50/60 Hz for 1 min (between all terminals and case)
Vibration	1 mm amplitude at frequency 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours
Shock	500 m/s ² (≈ 50 G) in each X, Y, Z direction for 3 times
Ambient temperature	-25 to 70 °C, storage: -30 to 80 °C (non-freezing or non-condensation)
Ambient humidity	35 to 95 %RH, storage: 35 to 95 %RH (non-freezing or non-condensation)
Protection structure	IP67 (IEC standards)
Connection	Cable type / Cable connector type ⁰¹⁾ / Connector type ⁰¹⁾ model
Cable spec. ⁰²⁾	DIA. of sensing side Ø 12 mm: Ø 4 mm, 2-wire DIA. of sensing side Ø 18 mm, Ø 30 mm: Ø 5 mm, 2-wire
Wire spec.	AWG 22 (0.08 mm, 60-wire), insulator diameter: Ø 1.25 mm
Connector spec.	M12 connector
Material	Standard type cable (black): polyvinyl chloride (PVC)
General	Case/Nut: nickel plated brass, washer: nickel plated iron, sensing side: PBT
Spatter-resistant	Case/Nut: PTFE coated brass, washer: PTFE coated iron, sensing side: PTFE

01) Except spatter-resistant type

02) Cable type: 2 m, cable connector type: 300 mm

Sold Separately

- Connector cable, connector connection cable
- Spatter protection cover
- Transmission coupler
- Fixed bracket