

TCD210174AD

**Autonics**

# Cylindrical Inductive Long-Distance Proximity Sensors



## PRD Series (IO-Link) 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.

### Features

- Reduced installation work by identifying object IDs
- Malfunction and damage prevention through status monitoring
- Shortest time recovery through abnormal detection
- Mode indicator for check status
  - IO-Link mode
    - : Communication indicator (flashing green), operation indicator (orange), abnormal detect indicator (cross-flashing green, orange)
  - SIO mode
    - : Operation indicator (orange), stable indicator (green), abnormal detect indicator (cross-flashing green, orange)
- IP67 Protection rating (IEC standard)

### Ordering Information

This is only for reference, the actual product does not support all combinations. For selecting the specified model, follow the Autonics website.

PRD ① ② - ③ D - ④ - IL2

#### ① Connection

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

#### ② DIA. of sensing side

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

#### ③ Sensing distance

Number: Sensing distance (unit: mm)

#### ④ Cable

No mark: Standard type  
V: Oil resistant cable type

### Product Components

- Product × 1
- Instruction manual × 1
- Bolt × 1
- Washer × 2

### Sold Separately

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

### Software

Download the installation file and the manuals from the Autonics website.

#### ■ atIOLink

atIOLink with purposes for setting, diagnosis, and maintenance of IO-Link device via IODD file is provided as the Port and Device Configuration Tool (PDCT).

- IODD (IO Device Description)

This file contains information such as manufacturer information, process data, diagnostic data, and parameter setting of a sensor using IO-Link communication. By uploading the IODD file to PDCT Software, you can check the setting and communication data according to the user interface.

Download the IODD file from the Autonics website.

## Specifications

Installation	Flush type		
Model	PRD□12-4D-□-IL2	PRD□18-7D-□-IL2	PRD□30-15D-□-IL2
DIA. of sensing side	Ø 12 mm	Ø 18 mm	Ø 30 mm
Sensing distance	4 mm	7 mm	15 mm
Setting distance	0 to 2.8 mm	0 to 4.9 mm	0 to 10.5 mm
Hysteresis	≤ 10 % of sensing distance		
Standard sensing target: iron	12 × 12 × 1 mm	20 × 20 × 1 mm	45 × 45 × 1 mm
Response frequency <sup>01)</sup>	500 Hz	250 Hz	100 Hz
Affection by temperature	≤ ± 10 % for sensing distance at ambient temperature 20 °C		
Indicator <sup>02)</sup>	IO-Link mode, SIO mode		
IO-Link mode	Communication indicator (flashing green), operation indicator (orange), Abnormal detect indicator (cross-flashing green, orange)		
SIO mode	Operation indicator (orange), stable indicator (green), Abnormal detect indicator (cross-flashing green, orange)		
Approval	CE   IO-Link	CE   IO-Link	CE   IO-Link

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.

02) In case of SIO mode, use the device within the range where the stable indicator (green) is ON.  
If the sensing target is in the too close detection distance, the stable indicator turns OFF, but it is in a stable detection state.  
In case of IO-Link mode, use the device within the range where unstable detection (Byte0\_bit6) turns 0.  
If the sensing target is in the too close detection distance, the too close detection (Byte0\_bit5) is 1, but it is a stable detection state.

Installation	Non-flush type		
Model	PRD□12-8D-□-IL2	PRD□18-14D-□-IL2	PRD□30-25D-□-IL2
DIA. of sensing side	Ø 12 mm	Ø 18 mm	Ø 30 mm
Sensing distance	8 mm	14 mm	25 mm
Setting distance	0 to 5.6 mm	0 to 9.8 mm	0 to 17.5 mm
Hysteresis	≤ 10 % of sensing distance		
Standard sensing target: iron	25 × 25 × 1 mm	40 × 40 × 1 mm	75 × 75 × 1 mm
Response frequency <sup>01)</sup>	400 Hz	200 Hz	100 Hz
Affection by temperature	≤ ± 10 % for sensing distance at ambient temperature 20 °C		
Indicator <sup>02)</sup>	IO-Link mode, SIO mode		
IO-Link mode	Communication indicator (flashing green), operation indicator (orange), Abnormal detect indicator (cross-flashing green, orange)		
SIO mode	Operation indicator (orange), stable indicator (green), Abnormal detect indicator (cross-flashing green, orange)		
Approval	CE   IO-Link	CE   IO-Link	CE   IO-Link

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.

02) In case of SIO mode, use the device within the range where the stable indicator (green) is ON.  
If the sensing target is in the too close detection distance, the stable indicator turns OFF, but it is in a stable detection state.  
In case of IO-Link mode, use the device within the range where unstable detection (Byte0\_bit6) turns 0.  
If the sensing target is in the too close detection distance, the too close detection (Byte0\_bit5) is 1, but it is a stable detection state.

Unit weight (package)	Ø 12 mm	Ø 18 mm	Ø 30 mm
Cable	≈ 62 g (≈ 74 g)	≈ 97 g (≈ 115 g)	≈ 143 g (≈ 180 g)
Cable connector	≈ 37 g (≈ 67 g)	≈ 62 g (≈ 80 g)	≈ 108 g (≈ 145 g)
Connector	≈ 20g (≈ 49g)	≈ 41 g (≈ 81 g)	≈ 138 g (≈ 197 g)

Power supply	12 - 24 VDC== (ripple P-P: ≤ 10 %), operating voltage: 10 - 30 VDC==
Current consumption	IO-Link mode: ≤ 25 mA, SIO mode: ≤ 20 mA
Control output	≤ 100 mA
Residual voltage <sup>01)</sup>	≤ 2 V
Protection circuit	Surge protection circuit, output short over current protection circuit, reverse polarity protection
Insulation resistance	≥ 50 MΩ (500 VDC== megger)
Dielectric strength	1,000 VAC~ 50 / 60 Hz for 1 min
Vibration	1.5 mm double amplitude at frequency 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours
Shock	1000 m/s <sup>2</sup> (≈ 100 G) in each X, Y, Z direction for 3 times
Ambient temp. <sup>02)</sup>	-25 to 70 °C, storage: -25 to 70 °C (no freezing or condensation)
Ambient humi.	35 to 95 %RH, storage: 35 to 95 %RH (no freezing or condensation)
Protection rating	IP67 (IEC standard)
Connection	Cable / Cable connector / connector models
Cable spec. <sup>03)</sup>	DIA. of sensing side Ø 12 mm: Ø 4 mm, 4-wire DIA. of sensing side Ø 18 mm, Ø 30 mm : Ø 5 mm, 4-wire
Wire spec.	AWG 22 (0.08 mm, 60-core), insulator diameter: Ø 1.25 mm
Connector spec.	M12 plug connector
Material	Standard type cable (black): polyvinyl chloride (PVC), Oil resistant cable (gray): polyvinyl chloride (oil resistant PVC), case / nut: nickel plated brass, washer: nickel plated iron, sensing side: PBT

01) Load current: 100 mA, cable length: 2 m

02) UL approved surrounding air temperature 40 °C

03) Cable type: 2 m, Cable connector type: 300 mm

## Communication Interface

### ■ IO-Link

Version	Ver. 1.1
Class	Class A
Baud rate	COM 2 (38.4 kbps)
Min. cycle time	2.3 ms
Data length	PD: 2 byte, OD: 1 byte (M-sequence: TYPE_2_2)
Vendor ID	899 (0x383)