Cylindrical Inductive Transmission Couplers

PET Series

PRODUCT MANUAL

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

- Inductive coupling allows signals to be generated and transmitted without additional power supply
- Stable operation in various environmental settings including dust or oil
- Applications
  : drilling, robotics, automated conveyors system, etc.

Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death.

01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)
Failure to follow this instruction may result in personal injury, economic loss or fire.

02. Do not use the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.
Failure to follow this instruction may result in explosion or fire.

03. Do not disassemble or modify the unit.
Failure to follow this instruction may result in fire.

⚠ Caution Failure to follow instructions may result in injury or product damage.

01. Use the unit within the rated specifications.
Failure to follow this instruction may result in fire or product damage.

02. Use a dry cloth to clean the unit, and do not use water or organic solvent.
Failure to follow this instruction may result in fire.

Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- 12-24 VDC⎓ power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Use the product, after 0.8 sec of supplying power.
- Wire as short as possible and keep away from high voltage lines or power lines, to prevent surge and inductive noise.
  Do not use near the equipment which generates strong magnetic force or high frequency noise (transceiver, etc.).
  In case installing the product near the equipment which generates strong surge (motor, welding machine, etc.), use diode or varistor to remove surge.
- This unit may be used in the following environments.
  - Indoors (in the environment condition rated in 'Specifications')
  - Altitude max. 2,000 m
  - Pollution degree 2
  - Installation category II

Cautions for Installation

- Install the unit correctly with the usage environment, location, and the designated specifications.
- Do NOT impacts with a hard object or excessive bending of the wire lead-out. It may cause damage the water resistance.
- Do NOT pull the Ø 5 mm cable with a tensile strength of 50 N or over. It may result in fire due to the broken wire.
- When extending wire, use AWG 22 cable or over within 5 m.

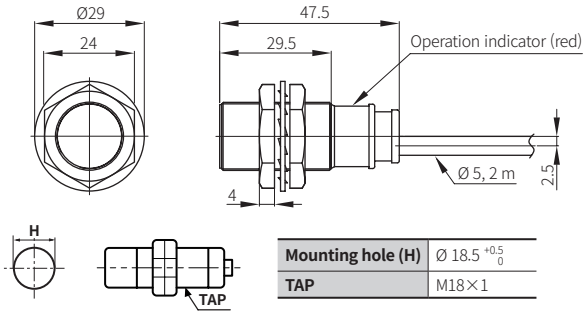
EAC

Specifications

Installation	**Flush type**
Model	**PET18-5**
Transmiting distance	5 mm
Setting distance	1 to 4.5 mm
Response time	≤ 1 ms
Indicator	Operation indicator (red)
Approval	EAC
Unit weight (package)	≈ 121 g (≈ 133 g)
Insulation type	≥ 50 MΩ (500 VDC⎓ megger)
Dielectric strength	Between the charging part and the case: 1,500 VAC~ 50 / 60 Hz for 1 min
Vibration	1 mm double amplitude at frequency 10 to 55 Hz in each X, Y, Z direction for 2 hours
Shock	500 m/s² (≈ 50 G) X, Y, Z directions for 3 times
Ambient temperature	-25 to 70 °C, storage: -30 to 80 °C (no freezing or condensation)
Ambient humidity	35 to 95 %RH, storage: 35 to 95 %RH (no freezing or condensation)
Protection structure	IP67 (IEC standards)
Connection	Cable type model
Wire spec.	Ø 5 mm, 2-wire, 2 m
Connector spec.	AWG 22 (0.08 mm, 60-core), insulator diameter: Ø 1.25 mm
Contact switch spec.	Contact resistance is ≤ 300 mΩ, open resistance is ≥ 10 MΩ, leakage current at OFF is zero.
Material	Nut/Case: nickel plated brass, washer: nickel plated steel, sensing side: PBT, Standard type cable (black): polyvinyl chloride (PVC)

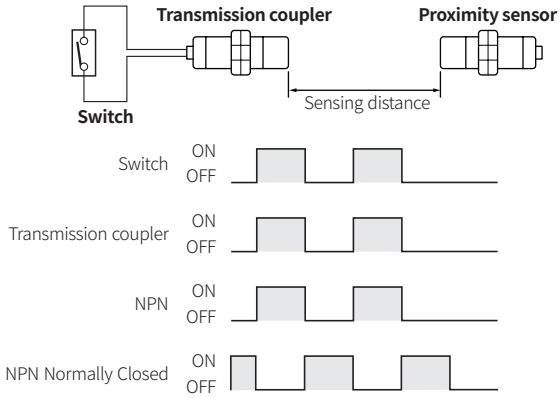
Dimensions

- Unit: mm, For the detailed dimensions of the product, follow the Autonics web site.



Mounting hole (H)	Ø 18.5 $^{+0.5}_{0}$
TAP	M18×1

Operation Timing Chart

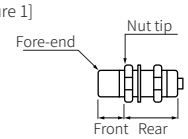


Tightening Torque

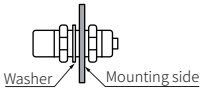
Use the provided washer to tighten the nuts.
The tightening torque of the nut varies with the distance from the fore-end. [Figure 1]
If the nut tip is located at the front of the product, apply the front tightening torque.
the allowable tightening torque table is for inserting the washer as [Figure 2].

Front torque	14.7 N m
Rear torque	14.7 N m

[Figure 1]

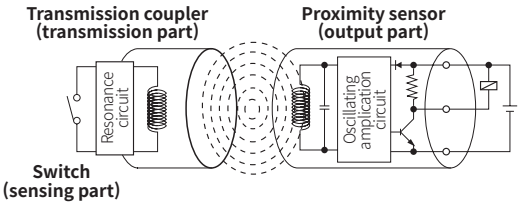


[Figure 2]



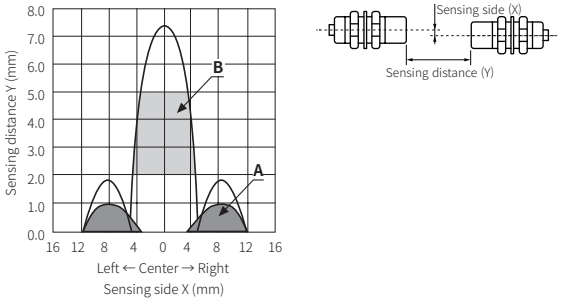
Operation Mechanism

- It is transmitted ON/OFF signal with a magnetic coupling of coils.
- The coil of transmission part and proximity sensor is coupled electronically and the induced current is generated at closed-loop of transmission part influenced by a magnetic field from proximity sensor coil when the switch of sensing part is ON. The proximity sensor is detected by this induction current.
- Signal transmission is available even if there is plastic or glass between the transmission coupler.



Feature Data

- Be sure that the proximity sensor detects the surrounding cover of the sensing side of transmission coupler even the connection switch is OFF in sensing A part.
- When installing in the rotating body, set within the range of B part on the graph.



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