

Proximity Sensors



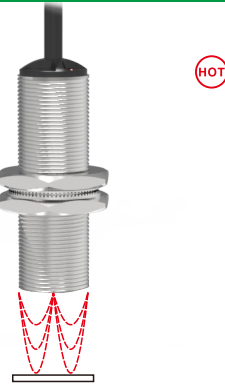
- Non-contact involved, strong abrasive resistance, high stability.
- Highly sensitive and intense accuracy, life span up to 8 years.
- Variety of popular materials, such as stainless steel, nickel copper alloy plastic and Teflon coating.
- Includes a complete range of specifications, and sizes.
- IP67 protection design, excellent water and oil resistance.



Standard Distance Type (TR series)

- Classical cylindrical appearance, high stability
- Adaptive to different occasions, top-notch quality, low price
- Customizable cables & connectors as requested

P.E-17



Extended Distance Type (TL series)

- sensing distance is double that of standard products
- Save installing space effectively
- Customizable cables & connectors at your request

P.E-20



Long Distance Type (TY series)

- Ultra-long sensing distance, up to 40mm
- Avoid any attenuation caused by the material of detected objects
- Ip67 high protection degree

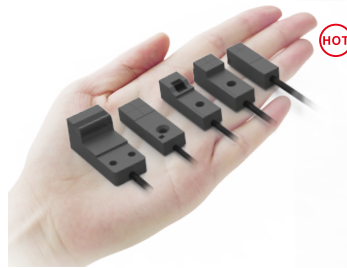
P.E-23



Square Type (TQ series)

- Kidney-shaped hole, easy installation
- Up to 8 mm sensing distance
- Plastic housing, protection degree IP67

P.E-26



Mini-square Type (TE series)

- 6mm (extra small), built-in amplifier
- 8mm sensing distance, the longest sensing distance in the industry
- Sensing surface on the top and at the front to suit your needs

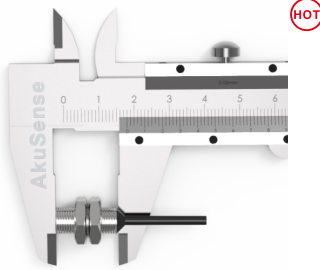
P.E-27



Mini-cylindrical Type (TX series)

- Highly stabilized detection in narrow space
- Shield type, can be embedded in detecting objects
- $\Phi 3, \Phi 4, M4, M5$, various models for you to choose from

P.E-29



Short-body Type (TSS/TS series)

- Compared with similar sensors, the length can be shortened 1/3
- 18mm body length can perfectly fit into narrow space
- Epoxy resin fillings exhibit excellent shock resistance

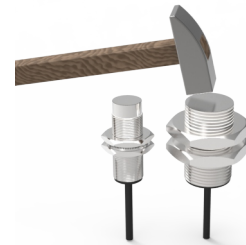
P.E-31



Ring-type (TH series)

- 2mm thickness, the thinnest one in the industry
- Stainless steel casing; strong impact resistance
- Flexible sensitivity adjustment with knobs

P.E-34



Metal Face Type (TM series)

- Stainless steel face, with great impact resistance
- 1000PSI/High pressure resistance
- Wonderful thermal shock and chemical resistance

P.E-35



Temperature Resistance Type (TG/TZ series)

- Extended temperature varies from -40°C to $+220^{\circ}\text{C}$
- Degree of protection up to IP67
- Reverse polarity protection and surge protection

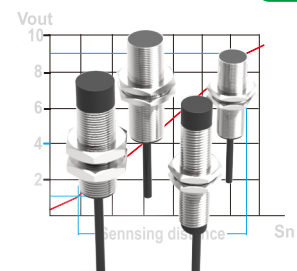
P.E-37



IP69K High Protection (TP series)

- AISI 316L stainless steel housing
- IP67-IP68-IP69K protection level
- Can be used in the food and beverage field

P.E-39



Analog Output Type (TA series)

- First choice of short distance and non-contact detection
- Analog output 0~20mA and 0~10v
- Output PNP-Analog

P.E-41

| |
|------------------|
| Fiber Optic |
| Slot Sensors |
| Photoelectric |
| Laser |
| Proximity |
| Displacement |
| Magnetic |
| Contact |
| Area |
| Ultrasonic |
| Vibration |
| Temperature |
| Cables |
| Tester |

| |
|-----------------------|
| Guidance |
| Inductive sensors |
| Standard distance |
| Extended distance |
| Long distance |
| Square |
| Mini square |
| Mini-cylindrical |
| Short-body |
| Ring-type |
| Metal face |
| Temperature |
| Analog output |
| DC 2 wires |
| IP69K high protection |

| |
|---------------------------|
| Capacitive sensors |
| Cylindrical |
| Correction resistanc type |
| Flat type |
| Level detection |



DC 2-wire Type (TD series)

- Nonpolarized specifications, easy wiring method
- With smallest sensing surface M8
- 10~30V DC and 10~60V DC ,two voltages

P.E-40



Cylindrical Type (CK series)

- Detect metal, plastic and liquid, ect
- With reverse polarity, short circuit, surge and many other protection functions
- Metal and plastic housings are available

P.E-42



Corrosion Resistant Type (CWF series)

- Up to 20 turns sensitivity adjustment
- Teflon coatings ensure superior corrosion resistance
- Widely used in detection of metals, water, oil, glasses, plastic and water, etc

P.E-43



Flat Type (CQ series)

- 7mm of thickness only for saving space
- Enjoy stability; comparable to world famous brands
- Offer different kinds of sensing distance of 5mm, 6mm, 7mm and 10mm, etc

P.E-44



Liquid Level Detection (CE series)

- Free from influence of liquid color in pipeline
- Suitable for pipeline diameter from Φ 8mm to Φ 11mm, Φ 12mm to Φ 26 mm
- With built-in amplifier to save installing space

P.E-45

| |
|---------------|
| Fiber Optic |
| Slot Sensors |
| Photoelectric |
| Laser |
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| Area |
| Ultrasonic |
| Vibration |
| Temperature |
| Cables |
| Tester |

Guidance

| |
|-----------------------|
| Inductive sensors |
| Standard distance |
| Extended distance |
| Long distance |
| Square |
| Mini square |
| Mini-cylindrical |
| Short-body |
| Ring-type |
| Metal face |
| Temperature |
| Analog output |
| DC 2 wires |
| IP69K high protection |

| |
|--------------------------|
| Capacitive sensors |
| Cylindrical |
| Corrosion resistant type |
| Flat type |
| Level detection |

| Type 1 | Type 2 | Series | |
|--------------------|----------------------|------------------------|---------------|
| Inductive Sensors | Cylindrical | Standard Distance | TR Series |
| | | Extended Distance | TL Series |
| | | Long Distance | TY Series |
| | | Mini-cylindrical | TX Series |
| | | Short-body | TSS/TS Series |
| | | Analog Output | TA Series |
| | Square | Standard Square | TQ Series |
| | | Mini-square | TE Series |
| | | Ring-type | TH Series |
| | Special Applications | Metal Face | TM Series |
| | | Temperature Resistance | TG/TZ Series |
| | | IP69K High Protection | TP Series |
| | | | |
| Capacitive Sensors | Cylindrical | Plastic Shells | CK Series |
| | Corrosion Resistant | Teflon Shells | CWF Series |
| | Flat | Plastic Shells | CQ Series |
| | Special Applications | Liquid Level Detecion | CE Series |

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- Tester

Guidance

- Inductive sensors**
- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection

- Capacitive sensors**
- Cylindrical
- Corrosion resistant type
- Flat type
- Level detection

Guidance

Standard Distance DC 3-wire

| Type | Appearance | Sensing distance | | Model numbers | | Pages | |
|----------------|------------|------------------|------------------------|-------------------|---|----------------|---------------|
| | | Unit: mm | | NPN Normally open | NPN Normally closed | | |
| Pre-wired Type | Shielded | | $\phi 6.5 \times 45.5$ | 1.5mm | TRF6.5-1.5NO | TRF6.5-1.5NC | E-17 |
| | | | M8*45 | 1.5mm | TRF08-1.5NO | TRF08-1.5NC | |
| | | | M12*44.5 | 2mm | TRF12-02NO | TRF12-02NC | |
| | | | M18*55 | 5mm | TRF18-05NO | TRF18-05NC | |
| | | | M30*54 | 10mm | TRF30-10NO | TRF30-10NC | |
| | Unshielded | | $\phi 6.5 \times 45$ | 2mm | TRN6.5-02NO | TRN6.5-02NC | |
| | | | M8*45.5 | 2mm | TRN08-02NO HOT | TRN08-02NC | |
| | | | M12*46.5 | 4mm | TRN12-04NO HOT | TRN12-04NC | |
| | | | M18*54 | 8mm | TRN18-08NO | TRN18-08NC | |
| | | | M30*58 | 15mm | TRN30-15NO | TRN30-15NC | |
| Connector Type | Shielded | | M8*60 | 1.5mm | TRF08-1.5NO-E1 | TRF08-1.5NC-E1 | |
| | | | M12*68 | 2mm | TRF12-02NO-E2 | TRF12-02NC-E2 | |
| | | | M18*82 | 5mm | TRF18-05NO-E2 | TRF18-05NC-E2 | |
| | | | M30*78 | 10mm | TRF30-10NO-E2 | TRF30-10NC-E2 | |
| | | | Unshielded | | M8*60 | 2mm | TRN08-02NO-E1 |
| | M12*67 | 4mm | | | TRN12-04NO-E2 | TRN12-04NC-E2 | |
| | M18*78 | 8mm | | | TRN18-08NO-E2 | TRN18-08NC-E2 | |
| | M30*78 | 15mm | | | TRN30-15NO-E2 | TRN30-15NC-E2 | |

Noted: Model numbers ended with "PO"/"PO-E1"/"PO-E2" are PNP normally open ; model numbers ended with "PC"/"PC-E1"/"PC-E2" are PNP normally closed.

Extended Distance DC 3-wire

| Type | Appearance | Sensing distance | | Model numbers | | Pages | |
|----------------|------------|------------------|----------------------|-------------------|---|---------------|---------------|
| | | Unit: mm | | NPN Normally open | NPN Normally closed | | |
| Pre-wired Type | Shielded | | $\phi 6.5 \times 45$ | 2mm | TLF6.5-02NO | TLF6.5-02NC | E-20 |
| | | | M8*45 | 2mm | TLF08-02NO | TLF08-02NC | |
| | | | M12*45 | 4mm | TLF12-04NO | TLF12-04NC | |
| | | | M18*54 | 8mm | TLF18-08NO | TLF18-08NC | |
| | | | M30*54 | 16mm | TLF30-16NO | TLF30-16NC | |
| | Unshielded | | $\phi 6.5 \times 44$ | 4mm | TLN6.5-04NO | TLN6.5-04NC | |
| | | | M8*44 | 4mm | TLN08-04NO HOT | TLN08-04NC | |
| | | | M12*53 | 8mm | TLN12-08NO HOT | TLN12-08NC | |
| | | | M18*58 | 16mm | TLN18-16NO | TLN18-16NC | |
| | | | M30*61 | 25mm | TLN30-25NO | TLN30-25NC | |
| Connector Type | Shielded | | M8*60 | 2mm | TLF08-02NO-E1 | TLF08-02NC-E1 | |
| | | | M12*68 | 4mm | TLF12-04NO-E2 | TLF12-04NC-E2 | |
| | | | M18*82 | 8mm | TLF18-08NO-E2 | TLF18-08NC-E2 | |
| | | | M30*78 | 16mm | TLF30-16NO-E2 | TLF30-16NC-E2 | |
| | | | Unshielded | | M8*60 | 4mm | TLN08-04NO-E1 |
| | M12*71 | 8mm | | | TLN12-08NO-E2 | TLN12-08NC-E2 | |
| | M18*82 | 16mm | | | TLN18-16NO-E2 | TLN18-16NC-E2 | |
| | M30*81 | 25mm | | | TLN30-25NO-E2 | TLN30-25NC-E2 | |

Noted: Model numbers ended with "PO"/"PO-E1"/"PO-E2" are PNP normally open ; model numbers ended with "PC"/"PC-E1"/"PC-E2" are PNP normally closed.

- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vibration
- Temperature
- Cables
- Tester

- Guidance**
- Inductive sensors**
- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection
- Capacitive sensors**
- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

| Type | Appearance | Sensing distance | Model numbers | | Pages | |
|----------------|------------|----------------------|-------------------|---------------------|---------------|------|
| | | | NPN Normally open | NPN Normally closed | | |
| Unit: mm | | | | | | |
| Pre-wired Type | Shielded | $\phi 6.5 \times 45$ | 3mm | TYF6.5-03NO | TYF6.5-03NC | E-23 |
| | | M8*45 | 3mm | TYF08-03NO | TYF08-03NC | |
| | | M12*45 | 6mm | TYF12-06NO | TYF12-06NC | |
| | | M18*54 | 12mm | TYF18-12NO | TYF18-12NC | |
| | | M30*54 | 22mm | TYF30-22NO | TYF30-22NC | |
| | Unshielded | $\phi 6.5 \times 44$ | 6mm | TYN6.5-06NO | TYN6.5-06NC | |
| | | M8*44 | 6mm | TYN08-06NO | TYN08-06NC | |
| | | M12*53 | 10mm | TYN12-10NO | TYN12-10NC | |
| | | M18*58 | 20mm | TYN18-20NO | TYN18-20NC | |
| | | M30*61 | 40mm | TYN30-40NO | TYN30-40NC | |
| Connector Type | Shielded | M8*60 | 3mm | TYF08-03NO-E1 | TYF08-03NC-E1 | |
| | | M12*68 | 6mm | TYF12-06NO-E2 | TYF12-06NC-E2 | |
| | | M18*82 | 12mm | TYF18-12NO-E2 | TYF18-12NC-E2 | |
| | | M30*78 | 22mm | TYF30-22NO-E2 | TYF30-22NC-E2 | |
| | Unshielded | M8*60 | 6mm | TYN08-06NO-E1 | TYN08-06NC-E1 | |
| | | M12*71 | 10mm | TYN12-10NO-E2 | TYN12-10NC-E2 | |
| | | M18*82 | 20mm | TYN18-20NO-E2 | TYN18-20NC-E2 | |
| | | M30*81 | 40mm | TYN30-40NO-E2 | TYN30-40NC-E2 | |

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- Photoelectric
- Laser
- Proximity**
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- Magnetic
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- Vibration
- Temperature
- Cables
- Tester









Guidance

| Type | Appearance | Sensing distance | Model numbers | | Pages | |
|----------------|----------------|------------------|-------------------|---------------------|-------------|------|
| | | | NPN Normally open | NPN Normally closed | | |
| Unit: mm | | | | | | |
| Pre-wired Type | 17*17*27 | Shielded | 5mm | TQF17-05NO | TQF17-05NC | E-26 |
| | | Unshielded | 8mm | TQN17-08NO | TQN17-08NC | |
| | 18*18*34 | Shielded | 5mm | TQF18-05NO (HOT) | TQF18-05NC | |
| | | Unshielded | 8mm | TQN18-08NO | TQN18-08NC | |
| | 18*10*30.5 | Shielded | 5mm | TQF18C-05NO (HOT) | TQF18C-05NC | |
| | | Unshielded | 8mm | TQN18C-08NO | TQN18C-08NC | |

Noted: Model numbers ended with "PO" are PNP normally open ;model numbers ended with "PC" are PNP normally closed.


- Inductive sensors**
- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection
- Capacitive sensors**
- Cylindrical
- Correction resistancetype
- Flat type
- Level detection

Mini Square DC 3-wire



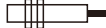
| Type | Appearance | Sensing distance | Model numbers | | Pages | |
|--|------------|---|-------------------|---------------------|------------------------|-------------|
| | | | NPN Normally open | NPN Normally closed | | |
| Pre-wired Type | Unshielded | Unit: mm | | | | |
| | |  | E06 | 1mm | TEN06-01NO | TEN06-01NC |
| | | 6.2*6.4*20.4 | | | | |
| | |  | E07 | 1mm | TEN07-01NO | TEN07-01NC |
| | | 6.1*6.3*20.4 | | | | |
| | |  | E08 | 2.5mm | TEN08-2.5NO HOT | TEN08-2.5NC |
| | | 8*8.4*23.5 | | 3mm | TEN08-03NO | TEN08-03NC |
| | |  | E09 | 2.5mm | TEN09-2.5NO | TEN09-2.5NC |
| | | 8*8.4*25.5 | | 3mm | TEN09-03NO HOT | TEN09-03NC |
| | |  | E10 | 2.5mm | TEN10-2.5NO | TEN10-2.5NC |
| 6.6*10.4*30.5 | 4mm | TEN10-04NO | | TEN10-04NC | | |
|  | E12 | 4mm | TEN12-04NO | TEN12-04NC | | |
| 8*12.4*30.5 | | | | | | |
|  | E15 | 5mm | TEN15-05NO | TEN15-05NC | | |
| 8*15.4*34.5 | | 8mm | TEN15-08NO | TEN15-08NC | | |
|  | E16 | 5mm | TEN16-05NO | TEN16-05NC | | |
| 15*16.4*34.5 | | 8mm | TEN16-08NO | TEN16-08NC | | |

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Mini-cylindrical DC 3-wire

| Type | Appearance | Sensing distance | Model numbers | | Pages | | |
|----------------|------------|---|-------------------|---------------------|-------------|-------------|-------------|
| | | | NPN Normally open | NPN Normally closed | | | |
| Pre-wired Type | Shielded | Unit: mm | | | | | |
| | |  | φ 3 * 25 | 0.6mm | TXF03-0.6NO | TXF03-0.6NC | |
| | | | | 0.8mm | TXF03-0.8NO | TXF03-0.8NC | |
| | | | | 1.0mm | TXF03-01NO | TXF03-01NC | |
| | | | φ 4 * 25 | 0.8mm | TXF04-0.8NO | TXF04-0.8NC | |
| | | | | 1.0mm | TXF04-01NO | TXF04-01NC | |
| | | | | 1.2mm | TXF04-1.2NO | TXF04-1.2NC | |
| | | | | 1.5mm | TXF04-1.5NO | TXF04-1.5NC | |
| | | | | M4 * 25 | 0.6mm | TXFM4-0.6NO | TXFM4-0.6NC |
| | | | | | 0.8mm | TXFM4-0.8NO | TXFM4-0.8NC |
| | | 1.0mm | TXFM4-01NO | | TXFM4-01NC | | |
| | | M5 * 25 | 0.8mm | TXF05-0.8NO | TXF05-0.8NC | | |
| | | | 1.0mm | TXF05-01NO | TXF05-01NC | | |
| | | | 1.2mm | TXF05-1.2NO | TXF05-1.2NC | | |
| | | | 1.5mm | TXF05-1.5NO | TXF05-1.5NC | | |

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| Type | Appearance | Sensing distance | | Model numbers | | Pages |
|----------------|---|---|-------------|--|---------------------|---------------|
| | | Unit: mm | | NPN Normally open | NPN Normally closed | |
| Pre-wired Type | Shielded |  | φ 6.5*18 | 1mm | TSSF6.5-01NO | TSSF6.5-01NC |
| | | | | 2mm | TSSF6.5-02NO | TSSF6.5-02NC |
| | | | | 3mm | TSSF6.5-03NO | TSSF6.5-03NC |
| | |  | φ 6.5*18 | 1mm | TSSF6.5Y-01NO | TSSF6.5Y-01NC |
| | | | | 2mm | TSSF6.5Y-02NO | TSSF6.5Y-02NC |
| | | | | 3mm | TSSF6.5Y-03NO | TSSF6.5Y-03NC |
| |  | M8*18 | 1mm | TSSF08-01NO | TSSF08-01NC | |
| | | | 2mm | TSSF08-02NO HOT | TSSF08-02NC | |
| | | M12*22 | 2mm | TSSF12-02NO | TSSF12-02NC | |
| | 4mm | | TSSF12-04NO | TSSF12-04NC | | |

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| Type | Appearance | Sensing distance | | Model numbers | | Pages |
|----------------|------------|---|------------|---|---------------------|------------|
| | | Unit: mm | | NPN Normally open | NPN Normally closed | |
| Pre-wired Type | Shielded |  | M8*35 | 1mm | TSF08-01NO | TSF08-01NC |
| | | | | 2mm | TSF08-02NO | TSF08-02NC |
| | | | M12*35 | 2mm | TSF12-02NO | TSF12-02NC |
| | | | | 4mm | TSF12-04NO | TSF12-04NC |
| | | | M18*35 | 5mm | TSF18-05NO | TSF18-05NC |
| | | | | 8mm | TSF18-08NO | TSF18-08NC |
| | | | M30*35 | 10mm | TSF30-10NO | TSF30-10NC |
| | | | | 16mm | TSF30-16NO | TSF30-16NC |
| | | | Unshielded |  | M8*35 | 2mm |
| | 4mm | TSN08-04NO | | | | TSN08-04NC |
| | M12*35 | 4mm | | | TSN12-04NO | TSN12-04NC |
| | | 8mm | | | TSN12-08NO | TSN12-08NC |
| | M18*43 | 8mm | | | TSN18-08NO | TSN18-08NC |
| | | 16mm | | | TSN18-16NO | TSN18-16NC |
| | M30*47 | 15mm | | | TSN30-15NO | TSN30-15NC |
| | | 25mm | | | TSN30-25NO | TSN30-25NC |

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- Laser
- Proximity**
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- Magnetic
- Contact
- Area
- Ultrasonic
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- Cables
- Tester

Guidance

Inductive sensors


- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection

Capacitive sensors

- Cylindrical
- Correction resistanc type
- Flat type
- Level detection



Guidance

Ring-type DC 3-wire

| Type | Appearance | Sensing distance | | Model numbers | | Pages | |
|----------------|---|------------------|----------------|-------------------|---------------------|-----------|------|
| | | Unit: mm | | NPN Normally open | NPN Normally closed | | |
| Pre-wired Type |  | H10 | Hole height:20 | 10.5mm | TH10-20NO | TH10-20NC | E-34 |
| | | H15 | Hole height:20 | 15.5mm | TH15-20NO | TH15-20NC | |
| | | H21 | Hole height:20 | 22.5mm | TH21-20NO | TH21-20NC | |
| | | H43 | Hole height:20 | 43.5mm | TH43-20NO | TH43-20NC | |

Noted: Model numbers ended with "PO" are PNP normally open ;model numbers ended with"PC" are PNP normally closed.




Metal Face DC 3-wire

| Type | Appearance | Sensing distance | | Model numbers | | Pages | |
|----------------|------------|---|------------|-------------------|---------------------|------------|------|
| | | Unit: mm | | NPN Normally open | NPN Normally closed | | |
| Pre-wired Type | Shielded |  | M8*45 | 1mm | TMF08-01NO | TMF08-01NC | E-35 |
| | | | | 2mm | TMF08-02NO | TMF08-02NC | |
| | | | M12*45 | 2mm | TMF12-02NO | TMF12-02NC | |
| | | | | 4mm | TMF12-04NO | TMF12-04NC | |
| | | | M18*54 | 5mm | TMF18-05NO | TMF18-05NC | |
| | | | | 8mm | TMF18-08NO | TMF18-08NC | |
| | | | M30*54 | 10mm | TMF30-10NO | TMF30-10NC | |
| | 16mm | TMF30-16NO | | TMF30-16NC | | | |
| | Unshielded |  | M8*49 | 2mm | TMN08-02NO | TMN08-02NC | |
| | | | | 3mm | TMN08-03NO | TMN08-03NC | |
| | | | M12*54 | 4mm | TMN12-04NO | TMN12-04NC | |
| | | | | 8mm | TMN12-08NO | TMN12-08NC | |
| | | | M18*62 | 8mm | TMN18-08NO | TMN18-08NC | |
| | | | | 16mm | TMN18-16NO | TMN18-16NC | |
| M30*66 | | | 15mm | TMN30-15NO | TMN30-15NC | | |
| | 25mm | TMN30-25NO | TMN30-25NC | | | | |

Noted: Model numbers ended with "PO" are PNP normally open ;model numbers ended with"PC" are PNP normally closed.


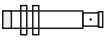
- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vibration
- Temperature
- Cables
- Tester
- Guidance
- Inductive sensors
 - Standard distance
 - Extended distance
 - Long distance
 - Square
 - Mini square
 - Mini-cylindrical
 - Short-body
 - Ring-type
 - Metal face
 - Temperature
 - Analog output
 - DC 2 wires
 - IP69K high protection
- Capacitive sensors
 - Cylindrical
 - Correction resistanc type
 - Flat type
 - Level detection

DC 3-wire **Temperature Resistance**

| | Type | Appearance | Sensing distance | | Model numbers | | Pages |
|----------------------------|------------|---|------------------|------|--|---------------------|-------|
| | | | Unit: mm | | NPN Normally open | NPN Normally closed | |
| High temperature resistant | Shielded |  | M12*54 | 2mm | TGF12-02NO | TGF12-02NC | E-37 |
| | | | M18*55 | 5mm | TGF18-05NO | TGF18-05NC | |
| | | | M30*51.5 | 10mm | TGF30-10NO | TGF30-10NC | |
| | Unshielded |  | M12*51 | 4mm | TGN12-04NO | TGN12-04NC | |
| | | | M18*51.5 | 8mm | TGN18-08NO HOT | TGN18-08NC | |
| | | | M30*51.5 | 15mm | TGN30-15NO | TGN30-15NC | |
| | Shielded |  | M12*55 | 2mm | TGF12-02NO2 | TGF12-02PO2 | |
| | | | M18*55 | 5mm | TGF18-05NO2 | TGF18-05PO2 | |
| | | | M30*54 | 10mm | TGF30-10NO2 | TGF30-10PO2 | |

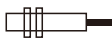

Noted: Model numbers ended with "PO" are PNP normally open ; model numbers ended with "PC" are PNP normally closed.

IP69K High Protection

| | Type | Appearance | Sensing distance | | Model numbers | | Pages |
|----------------|------------|---|------------------|------|---------------|---------------|-------|
| | | | Unit: mm | | NPN | PNP | |
| Pre-wired Type | Shielded |  | M12*64.6 | 2mm | TPF12-02NR-E2 | TPF12-02PR-E2 | E-39 |
| | | | | 4mm | TPF12-04NR-E2 | TPF12-04PR-E2 | |
| | | | M18*63.1 | 5mm | TPF18-05NR-E2 | TPF18-05PR-E2 | E-40 |
| | | | | 8mm | TPF18-08NR-E2 | TPF18-08PR-E2 | |
| | Unshielded |  | M12*64.6 | 4mm | TPN12-04NR-E2 | TPN12-04PR-E2 | E-39 |
| | | | | 8mm | TPN12-08NR-E2 | TPN12-08PR-E2 | |
| | | | M18*63.1 | 8mm | TPN18-08NR-E2 | TPN18-08PR-E2 | E-40 |
| | | | | 12mm | TPN18-12NR-E2 | TPN18-12PR-E2 | |

Note: The model ending with **NR-E2 is NPN normally open + normally closed; the model ending with **PR-E2 is PNP normally open + normally closed.

DC 3-wire **Analog Output**

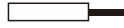
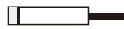
| | Type | Appearance | Sensing distance | | Model numbers | | Pages |
|----------------|------------|---|------------------|------|--------------------|--------------------|-------|
| | | | Unit: mm | | PNP Current output | PNP Voltage output | |
| Pre-wired Type | Shielded |  | M12*45 | 3mm | TAF12-03PA | TAF12-03PV | E-41 |
| | | | M18*54 | 4mm | TAF18-04PA | TAF18-04PV | |
| | | | M30*54 | 10mm | TAF30-10PA | TAF30-10PV | |
| | Unshielded |  | M12*44 | 4mm | TAN12-04PA | TAN12-04PV | |
| | | | M18*54 | 7mm | TAN18-07PA | TAN18-07PV | |
| | | | M30*58 | 14mm | TAN30-14PA | TAN30-14PV | |

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- Temperature
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- Tester

Guidance

- Inductive sensors**
- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection
- Capacitive sensors**
- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

DC 2-Wire

| Type | Appearance | Sensing distance | | Model numbers | | Pages | | |
|----------------|------------|---|---|---------------|-----------------|-------------|------|-------------|
| | | Unit: mm | | Normally open | Normally closed | | | |
| Pre-wired Type | Shielded |  | φ 6.5*45 | 1mm | TDF6.5-01HO | TDF6.5-01HC | F-42 | |
| | | | | 2mm | TDF6.5-02HO | TDF6.5-02HC | | |
| | | | M8*45 | 1mm | TDF08-01HO | TDF08-01HC | | |
| | | | | 2mm | TDF08-02HO | TDF08-02HC | | |
| | | | M12*45 | 2mm | TDF12-02HO | TDF12-02HC | | |
| | | | | 4mm | TDF12-04HO | TDF12-04HC | | |
| | | | M18*54 | 5mm | TDF18-05HO | TDF18-05HC | | |
| | | | | 8mm | TDF18-08HO | TDF18-08HC | | |
| | | | M30*54 | 10mm | TDF30-10HO | TDF30-10HC | | |
| | | | | 16mm | TDF30-16HO | TDF30-16HC | | |
| | | Unshielded |  | φ 6.5*44 | 2mm | TDN6.5-02HO | | TDN6.5-02HC |
| | | | | | 4mm | TDN6.5-04HO | | TDN6.5-04HC |
| | | | M8*44 | 2mm | TDN08-02HO | TDN08-02HC | | |
| | | | | | 4mm | TDN08-04HO | | TDN08-04HC |
| | | | M12*44 | 4mm | TDN12-04HO | TDN12-04HC | | |
| | | | | | 8mm | TDN12-08HO | | TDN12-08HC |
| | | | M18*54 | 8mm | TDN18-08HO | TDN18-08HC | | |
| | | | | | 16mm | TDN18-16HO | | TDN18-16HC |
| | | | M30*58 | 15mm | TDN30-15HO | TDN30-15HC | | |
| | | | | | 25mm | TDN30-25HO | | TDN30-25HC |

Guidance

Inductive sensors

- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection

Capacitive sensors

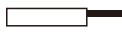
- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

DC 3-wire **Cylindrical**

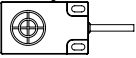
| Type | Appearance | Sensing distance | Model numbers | | Pages |
|----------------|------------|------------------|-------------------|---------------------|------------|
| | | | NPN Normally open | NPN Normally closed | |
| Plastic Shells | Shielded | M12*55 | 3mm | CKF12-03NO | CKF12-03NC |
| | | M18*70 | 8mm | CKF18-08NO | CKF18-08NC |
| | | M30*80 | 20mm | CKF30-20NO | CKF30-20NC |
| | Unshielded | M12*59 | 6mm | CKN12-06NO | CKN12-06NC |
| | | M18*73 | 15mm | CKN18-15NO | CKN18-15NC |
| | | M30*82 | 30mm | CKN30-30NO | CKN30-30NC |

Noted:Model numbers ended with "PO" are PNP normally open ;model numbers ended with "PC" are PNP normally closed.




DC 4-wire **Corrosion Resistant Type**

| Type | Appearance | Sensing distance | Model numbers | Pages | |
|---------------------------|---|------------------|---------------|------------|------|
| Teflon casing Shielded |  | M18*70.5 | 10mm | CWF18-10NP | E-45 |

DC 3-wire **Flat Type**

| Appearance | Sensing distance | Model numbers | | | Pages |
|---|------------------|-------------------|---------------------|-------------------|-------|
| | | NPN Normally open | NPN Normally closed | PNP Normally open | |
|  | 5mm | CQ07-05NO | | | |
| | 6mm | CQ07-06NO | | | |
| | 7mm | | CQ07-07NC | CQ07-07PO | |
| | 10mm | | CQ07-10NC | CQ07-10PO | |

DC 3-wire **Liquid Level Detection**

| Type | Appearance | Exterior diameter of pipes | Model numbers | Pages |
|------------|---|----------------------------|--|-----------|
| Unshielded |  | φ 8~ φ 11 | CE15-13NO | CE15-13NC |
| |  | φ 12~ φ 26 | CE30-26NO  | CE30-26NC |

Noted:Model numbers ended with "PO" are PNP normally open ;model numbers ended with "PC" are PNP normally closed.

- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vibration
- Temperature
- Cables
- Tester

Guidance

- Inductive sensors
- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection

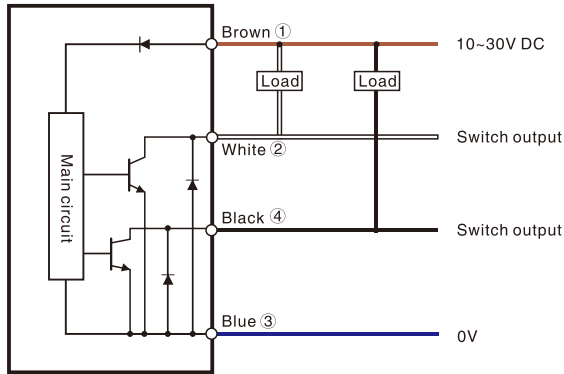
Capacitive sensors

- Cylindrical
- Correction resistant type
- Flat type
- Level detection

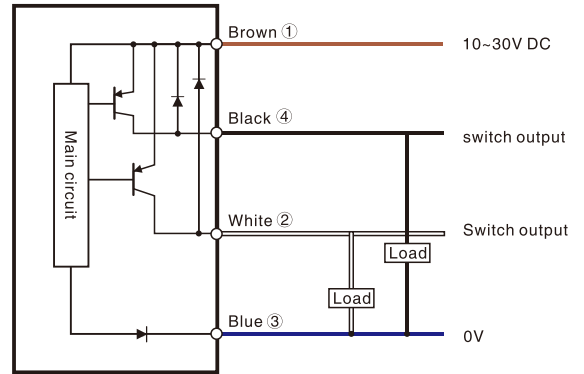
Input/Output Circuit

DC 4-Wire

NPN Output

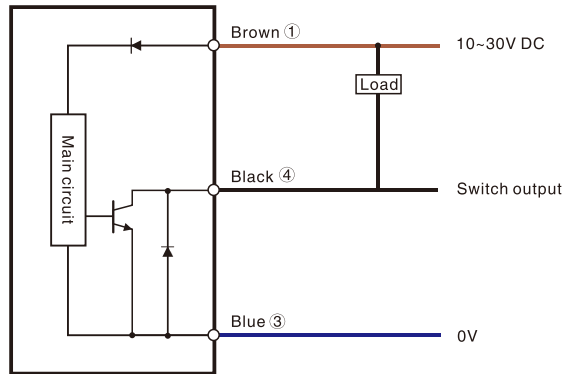


PNP Output

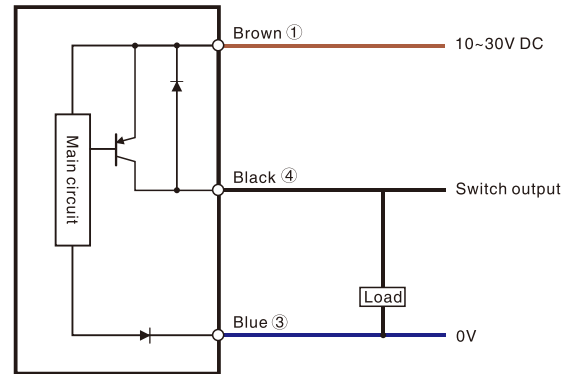


DC 3-Wire

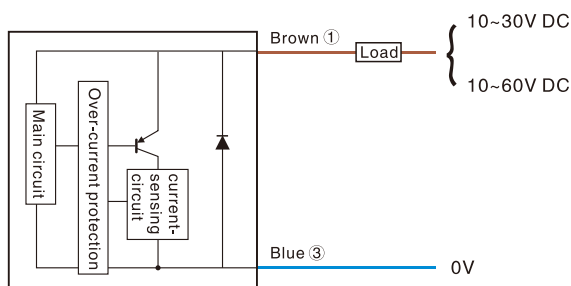
NPN Output



PNP Output



DC 2-Wire



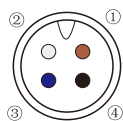
*Load (can be connected between blue wire and negative power supply.)
M8 sensor does not include short-circuit protection or current detection circuit. 1 and 4 in the circuit diagram show the connection of the connector type.

Analog

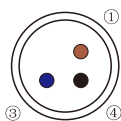
| | |
|-------------------------------|--|
| 3-wire Voltage output | |
| 3-wire Current output | |
| 4-wire Voltage/current output | |

Configuration of Connector Type Sensor

Note: Terminal 1 and 4 are used in connector models



M12 4 pin



M8 3 pin

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- Tester

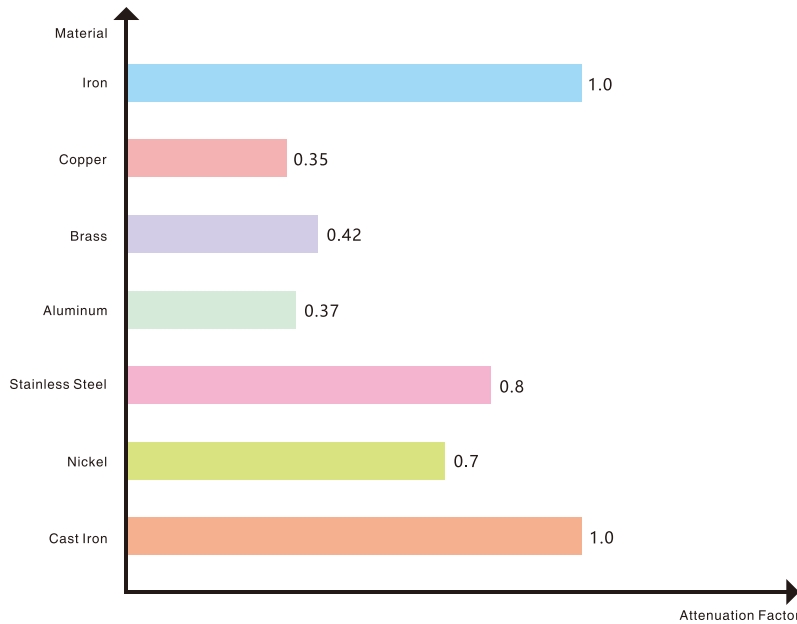
Guidance

- Inductive sensors**
- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
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- Capacitive sensors**
- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

Inductance Attenuation Coefficient

Sensing distance=Nominal sensing distance*Attenuation factor



Note:
 1. Proper installation: shielded or unshielded
 2. Specifications
 3. Sensing distance
 4. Feature of detecting objects(material and size)

Capacitive Sensors Dielectric Constant

For capacitive sensors, the sensing distance and sensitivity vary due to changes in the dielectric constant of the target object. The bigger the dielectric constant of the target object, the farther the sensing distance of the sensor

Dielectric Constant chart

| Material | Dielectric Constant |
|------------------|---------------------|
| Air | 1 |
| Wood | 2~7 |
| Paper | 2.3 |
| Polypropylene | 2.3 |
| Rubber, neoprene | 2.5 |
| Porcelain | 4.4 |
| Glass, pyrex | 5 |
| Water | 80 |

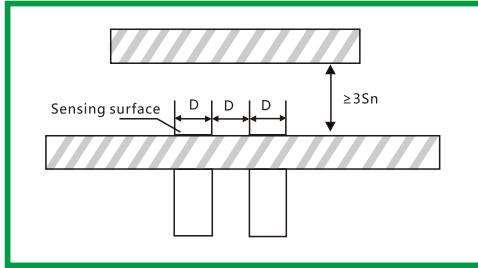
- Fiber Optic
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Guidance

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- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection

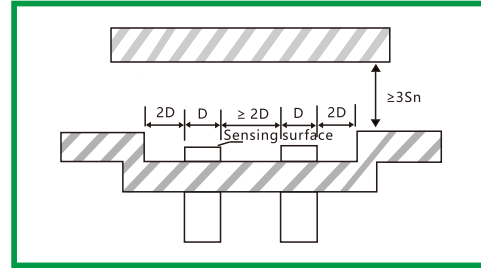
- Capacitive sensors**
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Mounting Method-Shielded, Unshielded



Shielded Mounting Proximity Sensors

Sensing surface must be flush with metal surface



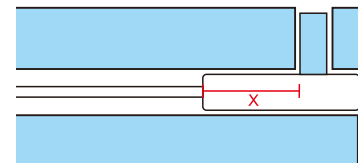
Unshielded Mounting Proximity Sensors

The distance between sensing surface to surrounding metals must be more than 2 times sensing distance

Mounting Torque

Cylindrical Type

1. $\phi 3/3.4/4$: Fix the sensing head with a screw at 7mm where it is near the tip part;
2. $\phi 6.5$ Shielded mounting: Fix the sensing head with a screw at 8mm where it is near the tip part;
3. $\phi 6.5$ Unshielded mounting: Fix the sensing head with a screw at 12mm where it is near the tip part.



$\phi 3/ \phi 3.4/ \phi 4$: X=7mm $\phi 6.5$: X=8-12mm

Thread Type

When installing a threaded sensor, please do not exceed the torque listed below.

| Model No. | Tightening torque N |
|-----------|---------------------|
| M4*0.5 | 1.5 |
| M5*0.5 | 1.5 |
| M8*1 | 3.5 |
| M12*1 | 16 |
| M18*1 | 28 |
| M30*1.5 | 150 |

Guidance

Inductive sensors

Standard distance

Extended distance

Long distance

Square

Mini square

Mini-cylindrical

Short-body

Ring-type

Metal face

Temperature

Analog output

DC 2 wires

IP69K high protection

Capacitive sensors

Cylindrical

Correction

resistance type

Flat type

Level detection

Capacitive Sensors



| No. | Classification | Explanation of model numbers |
|-----|------------------|---|
| ① | Series | A: Analog Output D: DC 2-wire E: Mini Square G: High-temperature Resistant H: Ring-type L: Extended Distance M: Metal Face Q: Square R: Standard Distance S: Short-body P: IP69K SS: Extra Short Outer Casing X: Mini-cylindrical Y: Long Distance Z: Low Temperature Resistant |
| ② | Mounting | F: Shielded N: Unshielded |
| ③ | Specifications | 08: M8 12: M12 18: M18 30: M30 |
| ④ | Sensing Distance | 1.5: 1.5mm 02: 2mm 05: 5mm 08: 8mm |
| ⑤ | Output Type | N: NPN P: PNP H: DC 2-Wire |
| ⑥ | Output Status | O: Normally open C: Normally closed A: Current output V: Voltage output |
| ⑦ | Connection | Null: Pre-wired type E1: M8 3 pin connector E2: M12 4 pin connector |

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- Capacitive sensors**
- Cylindrical
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- Flat type
- Level detection

Capacitive Sensors



| No. | Classification | Explanation of model numbers |
|-----|------------------|--|
| ① | Series | E: Liquid Level Detection K: Plastic Shells Q: Flat Type W: Corrosion resistant |
| ② | Mounting | F: Shielded N: Unshielded |
| ③ | Specifications | 08: M8 12: M12 18: M18 30: M30 |
| ④ | Sensing Distance | 1.5: 1.5mm 02: 2mm 05: 5mm 08: 8mm |
| ⑤ | Output Type | N: NPN P: PNP H: DC 2-Wire |
| ⑥ | Output Status | O: Normally open C: Normally closed |
| ⑦ | Connection | Null: Pre-wired type E1: M8 3 pin connector E2: M12 4 pin connector |

Standard Distance

Pre-wired

Proximity



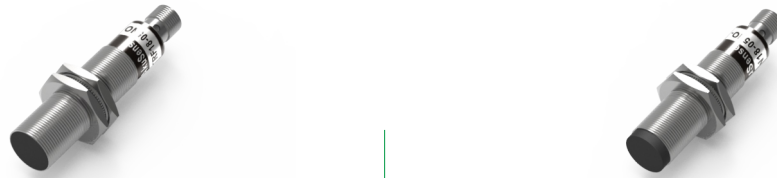
| | | | | | | | | | | |
|--------------------------|---|-------------|---------------------|-----------|------------|-----------------|-----------|---------------------|-----------|-------------|
| Appearance | | | | | | | | | | |
| Mounting | Shielded | | Shielded | | | Unshielded | | Unshielded | | |
| Housing size | φ 6.5 | M8 | M12 | M18 | M30 | φ 6.5 | M8 | M12 | M18 | M30 |
| Sensing distance | 1.5mm ± 10% | 1.5mm ± 10% | 2mm ± 10% | 5mm ± 10% | 10mm ± 10% | 2mm ± 10% | 2mm ± 10% | 4mm ± 10% | 8mm ± 10% | 15mm ± 10% |
| Housing material | Stainless steel | | Nickel copper alloy | | | Stainless steel | | Nickel copper alloy | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | | | | | | | |
| Voltage drop | < 1.5V | | < 2.0V | | | < 1.5V | | < 2.0V | | |
| Load Current, Max | 150mA | | | | | | | | | |
| Current consumption | < 10mA | | | | | | | | < 20mA | |
| Leakage current | < 0.01mA | | | | | | | | | |
| Switch frequency | 2KHz | 1.5KHz | 1KHz | | 300Hz | 2KHz | 1KHz | 800Hz | 500Hz | 150Hz |
| Repeat accuracy | < 1.0% (Sr) | | | | | | | < 5.0% (Sr) | | < 1.0% (Sr) |
| Hysteresis | < 15% (Sr) | | | | | < 15% (Sr) | | | | |
| Sensing surface material | PBT | | | | | | | | | |
| Operating temperature | -25°C~+75°C | | | | | | | | | |
| Protective circuit | Short circuit | | | | | | | | | |
| Degree of protection | IP67 | | | | | | | | | |
| Area | <div style="display: flex; justify-content: space-between;"> Model No. NPN Normally open TRF6.5-1.5[NIO] TRF08-1.5[NIO] TRF12-02[NIO] TRF18-05[NIO] TRF30-10[NIO] TRN6.5-02[NIO] TRN08-02[NIO] TRN12-04[NIO] TRN18-08[NIO] TRN30-15[NIO] </div> | | | | | | | | | |
| Others | <div style="display: flex; justify-content: space-between;"> [NIO]:NPN Normally open [NIC]:NPN Normally closed [PIO]:PNP Normally open [PIC]:PNP Normally closed </div> | | | | | | | | | |

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- Analog output
- DC 2 wires
- IP69K high protection
- Capacitive sensors
- Cylindrical
- Correction resistant type
- Flat type
- Level detection

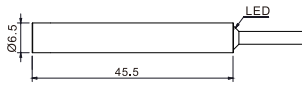
Connector Type



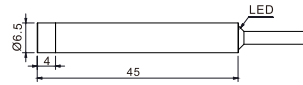
| | | | | | | | | | | | | |
|--------------------------|--|---------------------|-----------|------------|-----------------|---------------------|-----------|------------|------------|--|--|--|
| Appearance | | | | | | | | | | | | |
| Mounting | Shielded | | | | | | | | Unshielded | | | |
| Housing size | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 | | | | |
| Sensing distance | 1.5mm ± 10% | 2mm ± 10% | 5mm ± 10% | 10mm ± 10% | 2mm ± 10% | 4mm ± 10% | 8mm ± 10% | 15mm ± 10% | | | | |
| Housing material | Stainless steel | Nickel copper alloy | | | Stainless steel | Nickel copper alloy | | | | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | | | | | | | | | |
| Voltage drop | < 1.5V | | | | | | | | | | | |
| Load Current Max | 150mA | | | | | | | | | | | |
| Current consumption | < 10mA | | | | | | | | | | | |
| Leakage current | < 0.01mA | | | | | | | | | | | |
| Switch frequency | 1.5KHz | 2KHz | 1KHz | 300Hz | 1KHz | 500Hz | 150Hz | | | | | |
| Repeat accuracy | < 1.0% (Sr) | | | | | | | | | | | |
| Hysteresis | < 15% (Sr) | | | | | | | | | | | |
| Sensing surface material | PBT | | | | | | | | | | | |
| Operating temperature | -25°C~+75°C | | | | | | | | | | | |
| Protective circuit | Short circuit | | | | | | | | | | | |
| Degree of protection | IP67 | | | | | | | | | | | |
| Area | <div style="display: flex; justify-content: space-between;"> Model No. NPN Normally open TRF08-1.5[NIO]-E1 TRF12-02[NIO]-E2 TRF18-05[NIO]-E2 TRF30-10[NIO]-E2 TRN08-02[NIO]-E1 TRN12-04[NIO]-E2 TRN18-08[NIO]-E2 TRN30-15[NIO]-E2 </div> | | | | | | | | | | | |
| Others | <div style="display: flex; justify-content: space-between;"> [NIO]:NPN Normally open [NIC]:NPN Normally closed [PIO]:PNP Normally open [PIC]:PNP Normally closed </div> | | | | | | | | | | | |

φ6.5

TRF6.5-1.5□□

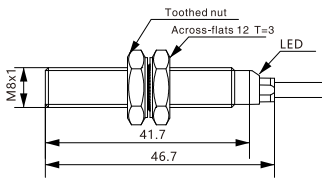


TRN6.5-02□□

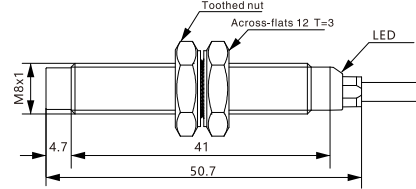


M8

TRF08-1.5□□

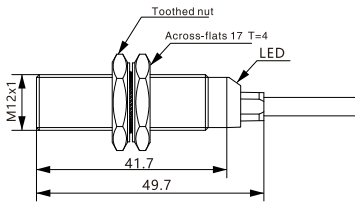


TRN08-02□□

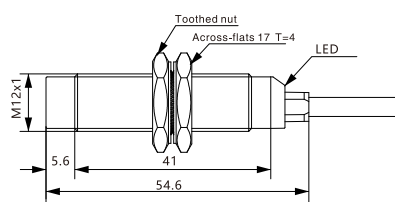


M12

TRF12-02□□

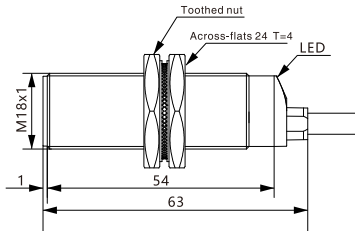


TRN12-04□□

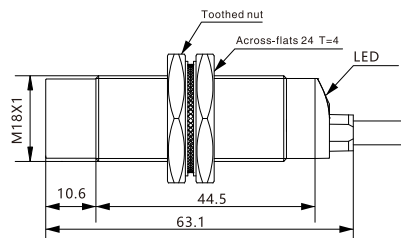


M18

TRF18-05□□

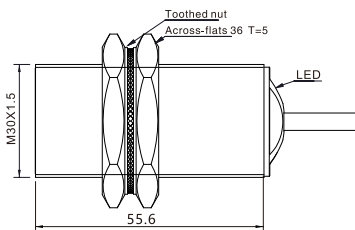


TRN18-08□□

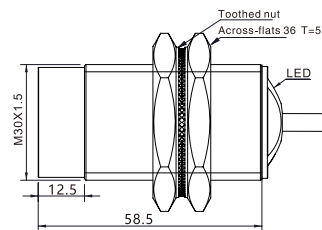


M30

TRF30-10□□



TRN30-15□□



| |
|------------------|
| Fiber Optic |
| Slot Sensors |
| Photoelectric |
| Laser |
| Proximity |
| Displacement |
| Magnetic |
| Contact |
| Area |
| Ultrasonic |
| Vibration |
| Temperature |
| Cables |
| Tester |

Guidance

| |
|--------------------------|
| Inductive sensors |
| Standard distance |
| Extended distance |
| Long distance |
| Square |
| Mini square |
| Mini-cylindrical |
| Short-body |
| Ring-type |
| Metal face |
| Temperature |
| Analog output |
| DC 2 wires |
| IP69K high protection |

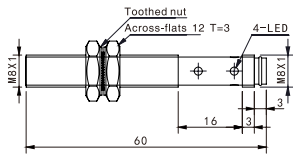
| |
|---------------------------|
| Capacitive sensors |
| Cylindrical |
| Correction resistanc type |
| Flat type |
| Level detection |

Standard Distance

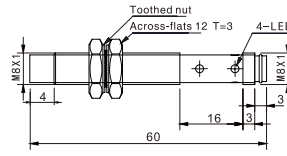
Dimensions- Connector Type (Unit:mm)

M8

TRF08-1.5□□-E1

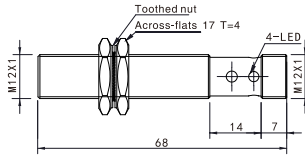


TRN08-02□□-E1

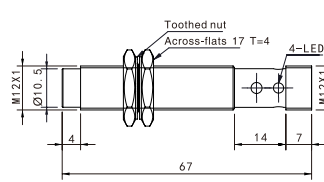


M12

TRF12-02□□-E2

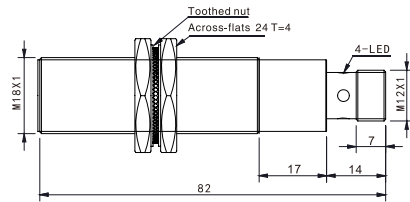


TRN12-04□□-E2

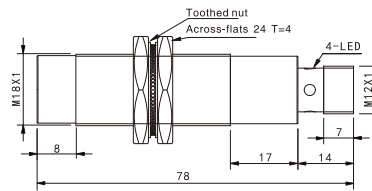


M18

TRF18-05□□-E2

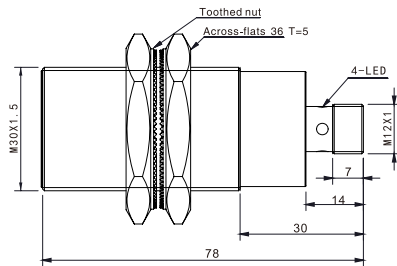


TRN18-08□□-E2

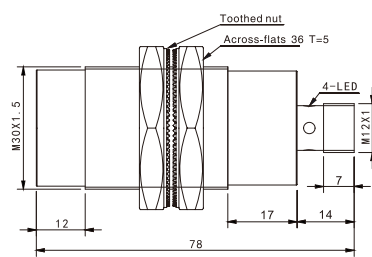


M30

TRF30-10□□-E2



TRN30-15□□-E2



- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vibration
- Temperature
- Cables
- Tester

Guidance

- Inductive sensors**
- Standard distance**
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection

- Capacitive sensors**
- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

| | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|-------------------------|----------------------|---------------------|------------------------|------------|----------------------|------------|------------------------|------------|------------|----|-----------|----|----------|----|----------|----|----------|----|----------|----|
| Appearance | | | | | | | | | | | | | | | | | | | | | |
| Mounting | Shielded | | Shielded | | | Unshielded | | Unshielded | | | | | | | | | | | | | |
| Housing size | φ 6.5 | M8 | M12 | M18 | M30 | φ 6.5 | M8 | M12 | M18 | M30 | | | | | | | | | | | |
| Sensing distance | 2mm ± 10% | 2mm ± 10% | 4mm ± 10% | 8mm ± 10% | 16mm ± 10% | 4mm ± 10% | 4mm ± 10% | 8mm ± 10% | 16mm ± 10% | 25mm ± 10% | | | | | | | | | | | |
| Housing material | Stainless steel | | Nickel copper alloy | | | Stainless steel | | Nickel copper alloy | | | | | | | | | | | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | | | | | | | | | | | | | | | | | | |
| Voltage drop | < 1.5V | < 2.0V | | | | < 1.5V | < 2.0V | | | | | | | | | | | | | | |
| Load Current, Max | 150mA | | | | | | | | | | | | | | | | | | | | |
| Current consumption | < 10mA | | | | | | | | | | | | | | | | | | | | |
| Leakage current | < 0.01mA | | | | | | | | | | | | | | | | | | | | |
| Switch frequency | 2KHz | 1KHz | 300Hz | 500Hz | 150Hz | 1KHz | 800Hz | 300Hz | 150Hz | 100Hz | | | | | | | | | | | |
| Repeat accuracy | < 1.0%(Sr) | | < 5.0%(Sr) | < 1.0%(Sr) | | | < 5.0%(Sr) | | < 1.0%(Sr) | | | | | | | | | | | | |
| Hysteresis | < 15%(Sr) | | | | | | | | | | | | | | | | | | | | |
| Sensing surface material | PBT | | | | | | | | | | | | | | | | | | | | |
| Operating temperature | -25°C~+75°C | | | | | | | | | | | | | | | | | | | | |
| Protective circuit | Short circuit | | | | | | | | | | | | | | | | | | | | |
| Degree of protection | IP67 | | | | | | | | | | | | | | | | | | | | |
| Model No. | NPN Normally open | TLF6.5-02 | NO | TLF08-02 | NO | TLF12-04 | NO | TLF18-08 | NO | TLF30-16 | NO | TLN6.5-04 | NO | TLN08-04 | NO | TLN12-08 | NO | TLN18-16 | NO | TLN30-25 | NO |
| | Others | NO:NPN Normally open | | NC:NPN Normally closed | | PO:PNP Normally open | | PC:PNP Normally closed | | | | | | | | | | | | | |

- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vibration
- Temperature
- Cables
- Tester

Connector Type

| | | | | | | | | | | | | | | | | | |
|--------------------------|-------------------------|----------------------|-----------|------------------------|-----------------|----------------------|------------|------------------------|----|----------|----|----------|----|----------|----|----------|----|
| Appearance | | | | | | | | | | | | | | | | | |
| Mounting | Shielded | | | | Unshielded | | | | | | | | | | | | |
| Housing size | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 | | | | | | | | | |
| Sensing distance | 2mm ± 10% | 4mm ± 10% | 8mm ± 10% | 16mm ± 10% | 4mm ± 10% | 8mm ± 10% | 16mm ± 10% | 25mm ± 10% | | | | | | | | | |
| Housing material | Stainless steel | Nickel copper alloy | | | Stainless steel | Nickel copper alloy | | | | | | | | | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | | | | | | | | | | | | | | |
| Voltage drop | < 1.5V | | | | | | | | | | | | | | | | |
| Load Current, Max | 150mA | | | | | | | | | | | | | | | | |
| Current consumption | < 10mA | | | | | | | | | | | | | | | | |
| Leakage current | < 0.01mA | | | | | | | | | | | | | | | | |
| Switch frequency | 1KHz | | 500Hz | 150Hz | 800Hz | 500Hz | 150Hz | 100Hz | | | | | | | | | |
| Repeat accuracy | < 1.0%(Sr) | | | | | | | | | | | | | | | | |
| Hysteresis | < 15%(Sr) | | | | | | | | | | | | | | | | |
| Sensing surface material | PBT | | | | | | | | | | | | | | | | |
| Operating temperature | -25°C~+75°C | | | | | | | | | | | | | | | | |
| Protective circuit | Short circuit | | | | | | | | | | | | | | | | |
| Degree of protection | IP67 | | | | | | | | | | | | | | | | |
| Model No. | NPN Normally open | TLF08-02 | NO | TLF12-04 | NO | TLF18-08 | NO | TLF30-16 | NO | TLN08-04 | NO | TLN12-08 | NO | TLN18-16 | NO | TLN30-25 | NO |
| | Others | NO:NPN Normally open | | NC:NPN Normally closed | | PO:PNP Normally open | | PC:PNP Normally closed | | | | | | | | | |

Guidance

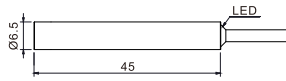
- Inductive sensors**
- Standard distance
- Extended distance**
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection
- Capacitive sensors**
- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

Extended Distance

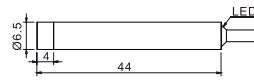
Dimensions-Pre-wired Type (Unit:mm)

φ6.5

TLF6.5-02□□

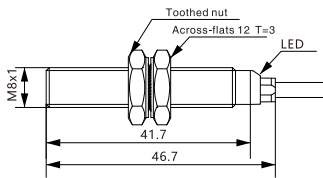


TLN6.5-04□□

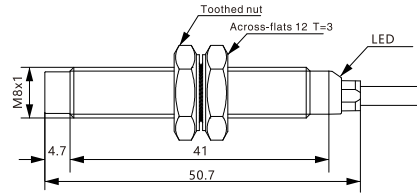


M8

TLF08-02□□

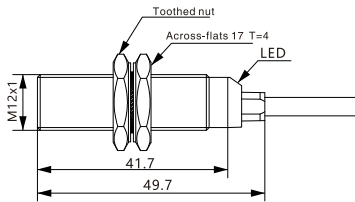


TLN08-04□□

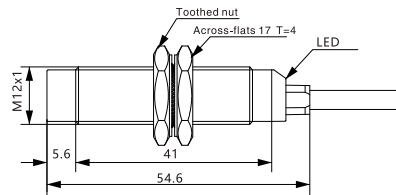


M12

TLF12-04□□

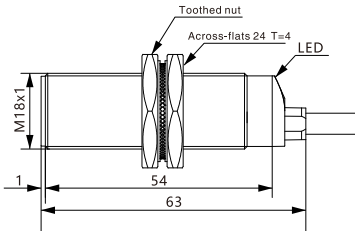


TLN12-08□□

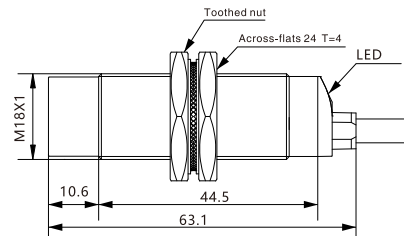


M18

TLF18-08□□

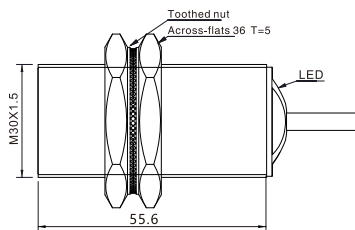


TLN18-16□□

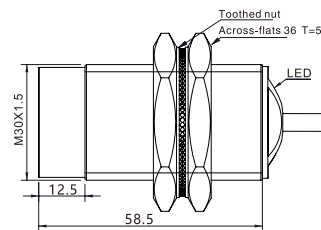


M30

TLF30-16□□



TLN30-25□□



- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vibration
- Temperature
- Cables
- Tester

Guidance

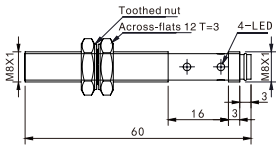
- Inductive sensors
- Standard distance
- Extended distance**
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection

- Capacitive sensors
- Cylindrical
- Correction resistant type
- Flat type
- Level detection

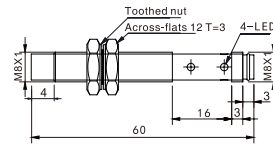
Dimensions- Connector Type (Unit:mm)

M8

TLF08-02□□-E1



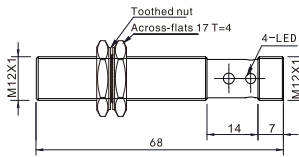
TLN08-04□□-E1



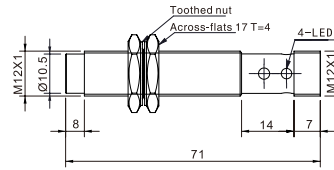
M8 3 Pin

M12

TLF12-04□□-E2



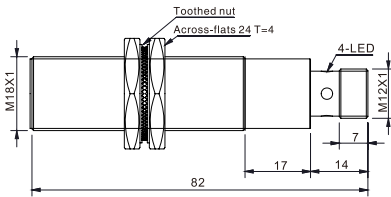
TLN12-08□□-E2



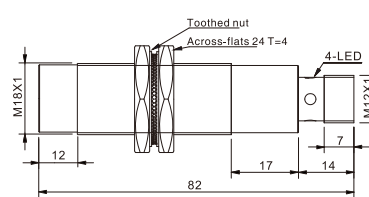
M12 4 Pin

M18

TLF18-08□□-E2



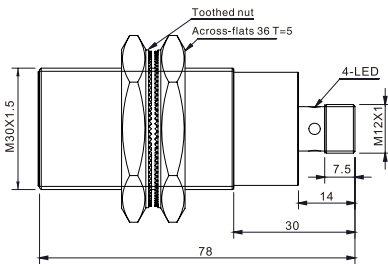
TLN18-16□□-E2



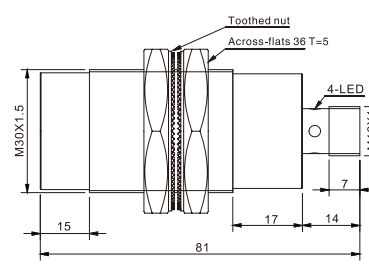
M12 4 Pin

M30

TLF30-16□□-E2



TLN30-25□□-E2



M12 4 Pin

Proximity

Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

Magnetic

Contact

Area

Ultrasonic

Vibration

Temperature

Cables

Tester

Guidance

Inductive sensors

Standard distance

Extended distance

Long distance

Square

Mini square

Mini-cylindrical

Short-body

Ring-type

Metal face

Temperature

Analog output

DC 2 wires

IP69K high protection

Capacitive sensors

Cylindrical

Correction

resistanc type

Flat type

Level detection

Long Distance

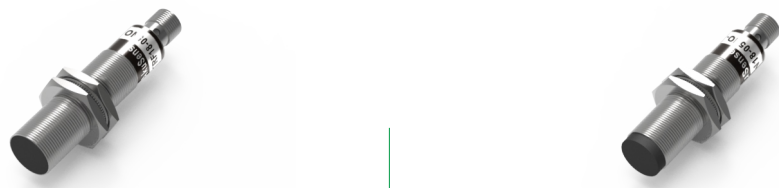
Pre-wired

Proximity



| | | | | | | | | | | | |
|--------------------------|-------------------------|--|---------------------|------------|------------|-----------------|-------------|---------------------|------------|------------|------------|
| Appearance | | | | | | | | | | | |
| Mounting | Shielded | | Shielded | | | Unshielded | | Unshielded | | | |
| Housing size | φ 6.5 | M8 | M12 | M18 | M30 | φ 6.5 | M8 | M12 | M18 | M30 | |
| Sensing distance | 3mm ± 10% | 3mm ± 10% | 6mm ± 10% | 12mm ± 10% | 22mm ± 10% | 6mm ± 10% | 6mm ± 10% | 10mm ± 10% | 20mm ± 10% | 40mm ± 10% | |
| Housing material | Stainless steel | | Nickel copper alloy | | | Stainless steel | | Nickel copper alloy | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | | | | | | | | |
| Voltage drop | < 1.5V | | | | | | | | | | |
| Load Current, Max | 150mA | | | | | | | | | | |
| Current consumption | < 10mA | | | | | | | | | | |
| Leakage current | < 0.01mA | | | | | | | | | | |
| Switch frequency | 1KHz | 800Hz | 300Hz | 150Hz | | 500Hz | 400Hz | 100Hz | | | |
| Repeat accuracy | < 5.0% (Sr) | | | | | | | | | | |
| Hysteresis | < 15% (Sr) | | | | | | | | | | |
| Sensing surface material | PBT | | | | | | | | | | |
| Operating Temperature | -25°C~+75°C | | | | | | | | | | |
| Protective circuit | Short circuit | | | | | | | | | | |
| Degree of protection | IP67 | | | | | | | | | | |
| Model No. | NPN Normally open | TYF6.5-03N□ | TYF08-03N□ | TYF12-06N□ | TYF18-12N□ | TYF30-22N□ | TYN6.5-06N□ | TYN08-06N□ | TYN12-10N□ | TYN18-20N□ | TYN30-40N□ |
| | Others | N□:NPN Normally open NC□:NPN Normally closed P□:PNP Normally open PC□:PNP Normally closed | | | | | | | | | |

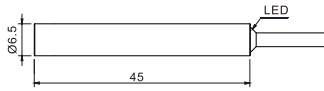
Connector Type



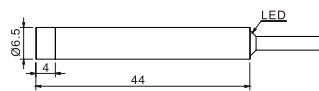
| | | | | | | | | | |
|--------------------------|-------------------------|--|---------------|---------------|-----------------|---------------------|---------------|---------------|---------------|
| Appearance | | | | | | | | | |
| Mounting | Shielded | | | | Unshielded | | | | |
| Housing size | M8 | M12 | M18 | M30 | M8 | M12 | M18 | M30 | |
| Sensing distance | 3mm ± 10% | 6mm ± 10% | 12mm ± 10% | 22mm ± 10% | 6mm ± 10% | 10mm ± 10% | 20mm ± 10% | 40mm ± 10% | |
| Housing material | Stainless steel | Nickel copper alloy | | | Stainless steel | Nickel copper alloy | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | | | | | | |
| Voltage drop | < 1.5V | | | | | | | | |
| Load Current , Max | 150mA | | | | | | | | |
| Current consumption | < 10mA | | | | | | | | |
| Leakage current | < 0.01mA | | | | | | | | |
| Switch frequency | 1KHz | 800Hz | 300Hz | 150Hz | 500Hz | 400Hz | 100Hz | | |
| Repeat accuracy | < 5.0% (Sr) | | | | | | | | |
| Hysteresis | < 15% (Sr) | | | | | | | | |
| Sensing surface material | PBT | | | | | | | | |
| Operating Temperature | -25°C~+75°C | | | | | | | | |
| Protective circuit | Short circuit | | | | | | | | |
| Degree of protection | IP67 | | | | | | | | |
| Model No. | NPN Normally open | TYF08-03N□-E1 | TYF12-06N□-E2 | TYF18-12N□-E2 | TYF30-22N□-E2 | TYN08-06N□-E1 | TYN12-10N□-E2 | TYN18-20N□-E2 | TYN30-40N□-E2 |
| | Others | N□:NPN Normally open NC□:NPN Normally closed P□:PNP Normally open PC□:PNP Normally closed | | | | | | | |

φ6.5

TYF6.5-03□□

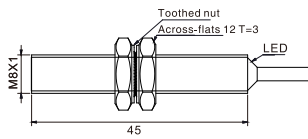


TYN6.5-06□□

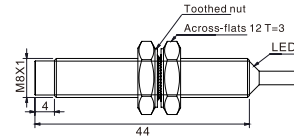


M8

TYF08-03□□

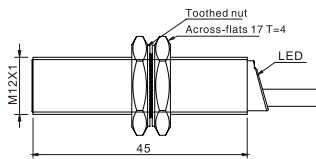


TYN08-06□□

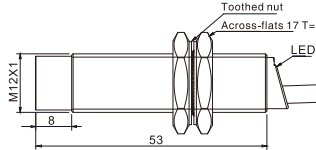


M12

TYF12-06□□

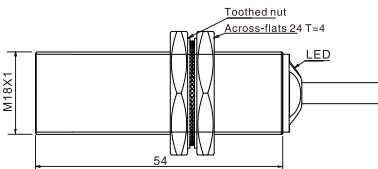


TYN12-10□□

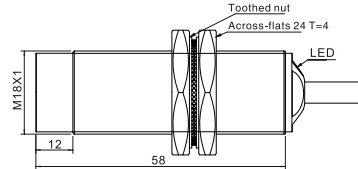


M18

TYF18-12□□

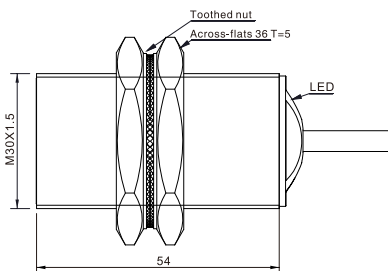


TYN18-20□□

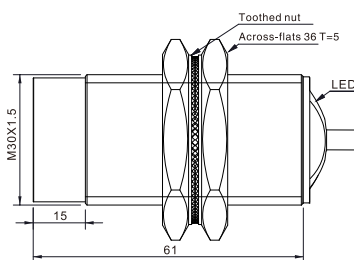


M30

TYF30-22□□



TYN30-40□□



| |
|------------------|
| Fiber Optic |
| Slot Sensors |
| Photoelectric |
| Laser |
| Proximity |
| Displacement |
| Magnetic |
| Contact |
| Area |
| Ultrasonic |
| Vision |
| Vibration |
| Temperature |
| Annexes |

Guidance

| |
|--------------------------|
| Inductive sensors |
| Standard distance |
| Extended distance |
| Long distance |
| Square |
| Mini square |
| Mini-cylindrical |
| Short-body |
| Ring-type |
| Metal face |
| Temperature |
| Analog output |
| DC 2 wires |
| IP69K high protection |

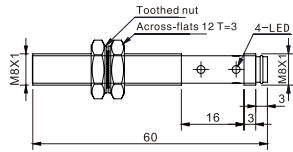
| |
|---------------------------|
| Capacitive sensors |
| Cylindrical |
| Correction resistanc type |
| Flat type |
| Level detection |

Long Distance

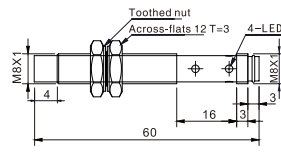
Dimensions-Connector Type (Unit:mm)

M8

TYF08-03□□-E1

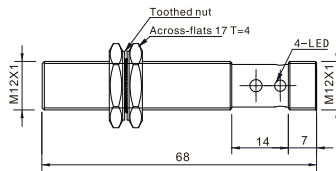


TYN08-06□□-E1

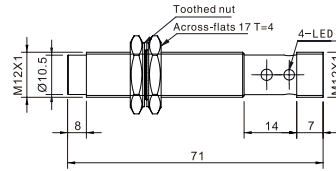


M12

TYF12-06□□-E2

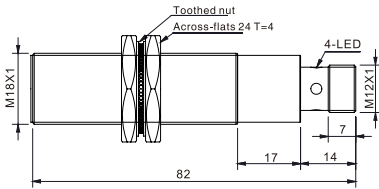


TYN12-10□□-E2

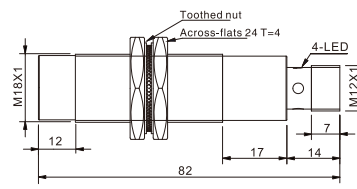


M18

TYF18-12□□-E2

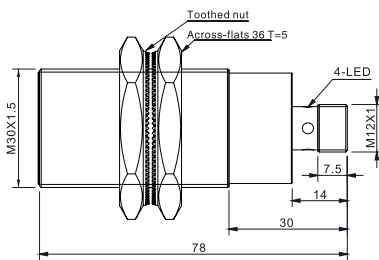


TYN18-20□□-E2

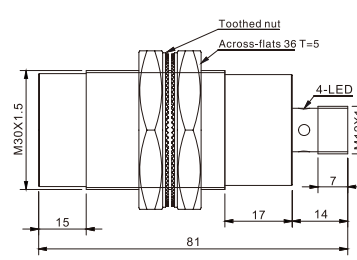


M30

TYF30-22□□-E2



TYN30-40□□-E2



| |
|------------------|
| Fiber Optic |
| Slot Sensors |
| Photoelectric |
| Laser |
| Proximity |
| Displacement |
| Magnetic |
| Contact |
| Area |
| Ultrasonic |
| Vision |
| Vibration |
| Temperature |
| Annexes |

| |
|-----------------------|
| Guidance |
| Inductive sensors |
| Standard distance |
| Extended distance |
| Long distance |
| Square |
| Mini square |
| Mini-cylindrical |
| Short-body |
| Ring-type |
| Metal face |
| Temperature |
| Analog output |
| DC 2 wires |
| IP69K high protection |

| |
|---------------------------|
| Capacitive sensors |
| Cylindrical |
| Correction resistanc type |
| Flat type |
| Level detection |



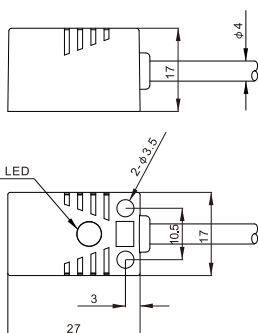
| | | | | | | | |
|--------------------------|-------------------|----------------------|------------------------|----------------------|------------------------|-------------|-------------|
| Appearance | | | | | | | |
| Mounting | Shielded | Unshielded | Shielded | Unshielded | Shielded | Unshielded | |
| Housing size | Q17 | | Q18 | | Q18C | | |
| Sensing distance | 5mm ± 10% | 8mm ± 10% | 5mm ± 10% | 8mm ± 10% | 5mm ± 10% | 8mm ± 10% | |
| Housing material | Plastic | | | | | | |
| Operating voltage | 10~30V DC | | | | | | |
| Voltage drop | < 1.5V | | | | | | |
| Load Current, Max | 150mA | | | | | | |
| Current consumption | < 10mA | | | | | | |
| Leakage current | < 0.01mA | | | | | | |
| Switch frequency | 1KHz | 300Hz | 1KHz | 300Hz | 1KHz | 300Hz | |
| Repeat accuracy | < 1.0%(Sr) | | | | | | |
| Hysteresis | < 15%(Sr) | | | | | | |
| Sensing surface material | ABS | | | | | | |
| Operating Temperature | -25°C~+75°C | | | | | | |
| Protective circuit | Short circuit | | | | | | |
| Degree of protection | IP67 | | | | | | |
| Model No. | NPN Normally open | TQF17-05□□ | TQN17-08□□ | TQF18-05□□ | TQN18-08□□ | TQF18C-05□□ | TQN18C-08□□ |
| | Others | □□:NPN Normally open | □□:NPN Normally closed | □□:PNP Normally open | □□:PNP Normally closed | | |

- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Dimensions (Unit:mm)

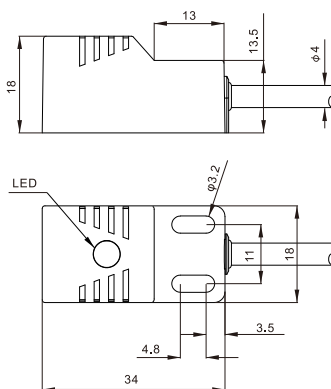
Q17

TQF17-05□□
TQN17-08□□



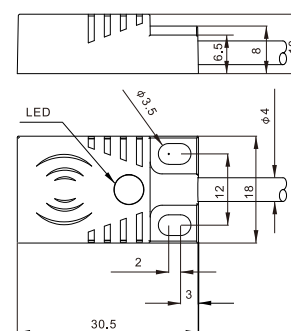
Q18

TQF18-05□□
TQN18-08□□



Q18C

TQF18C-05□□
TQN18C-08□□



Guidance

Inductive sensors

- Standard distance
- Extended distance
- Long distance

Square

- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection

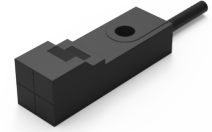
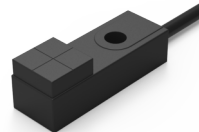
Capacitive sensors

- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

Mini-square

Pre-wired

Proximity

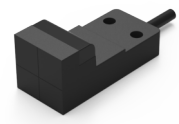
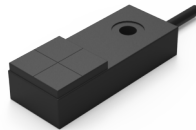
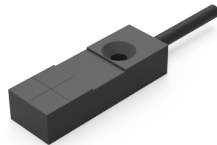


| | | | | |
|--------------------------|---|---|--|--|
| Appearance | | | | |
| Mounting | Unshielded | | | |
| Housing size | E06 | E07 | E08 | E09 |
| Sensing distance | 1mm ± 15% | 1mm ± 15% | 2.5mm ± 10% | 2.5mm ± 10% |
| Housing material | Plastic | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | |
| Voltage drop | < 1.5V | | | |
| Load Current , Max | 100mA | | 150mA | |
| Current consumption | < 10mA | | | |
| Leakage current | < 0.01mA | | | |
| Switch frequency | 500Hz | | 800Hz | |
| Repeat accuracy | < 5% (Sr) | | < 1% (Sr) | |
| Hysteresis | < 15% (Sr) | | | |
| Sensing surface material | PC | | | |
| Operating Temperature | -25°C~+75°C | | | |
| Protective circuit | - | | Short circuit | |
| Degree of protection | IP67 | | | |
| Model No. | NPN Normally open TEN06-01[N _{NO}] | NPN Normally open TEN07-01[N _{NO}] | NPN Normally open TEN08-2.5[N _{NO}] (HOT) | NPN Normally open TEN09-2.5[N _{NO}] (HOT) |
| Others | [N _{NO}]:NPN Normally open | [N _{NC}]:NPN Normally closed | [P _{NO}]:PNP Normally open | [P _{NC}]:PNP Normally closed |

- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

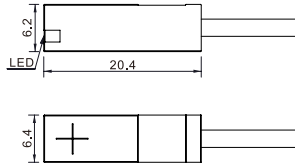
- Inductive sensors**
- Standard distance
- Extended distance
- Long distance
- Square
- Mini square**
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection
- Capacitive sensors**
- Cylindrical
- Correction resistanc type
- Flat type
- Level detection



| | | | | |
|--------------------------|---|---|--|--|
| Appearance | | | | |
| Mounting | Unshielded | | | |
| Housing size | E10 | E12 | E15 | E16 |
| Sensing distance | 2.5mm/4mm ± 10% | 4mm ± 10% | 5mm/8mm ± 10% | 5mm/8mm ± 10% |
| Housing material | Plastic | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | |
| Voltage drop | < 1.5V | | | |
| Load Current, Max | 150mA | | | |
| Current consumption | < 10mA | | | |
| Leakage current | < 0.01mA | | | |
| Switch frequency | 800Hz/200Hz | | 1KHz/500Hz | |
| Repeat accuracy | < 5% (Sr) | | < 1% (Sr) | |
| Hysteresis | < 15% (Sr) | | | |
| Sensing surface material | PC | | | |
| Operating Temperature | -25°C~+75°C | | | |
| Protective circuit | Short circuit | | | |
| Degree of protection | IP67 | | | |
| Model No. | NPN Normally open TEN10-2.5[N _{NO}]/TEN10-04[N _{NO}] | NPN Normally open TEN12-04[N _{NO}] | NPN Normally open TEN15-05[N _{NO}]/TEN15-08[N _{NO}] | NPN Normally open TEN16-05[N _{NO}]/TEN16-08[N _{NO}] |
| Others | [N _{NO}]:NPN Normally open | [N _{NC}]:NPN Normally closed | [P _{NO}]:PNP Normally open | [P _{NC}]:PNP Normally closed |

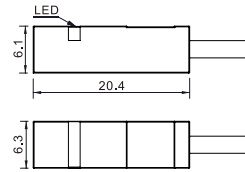
E06

TEN06-01□□



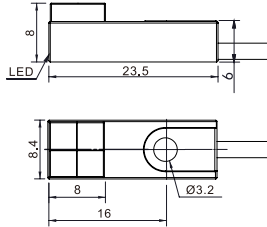
E07

TEN07-01□□



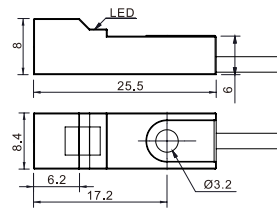
E08

TEN08-2.5/03□□



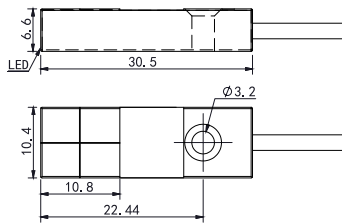
E09

TEN09-2.5/03□□



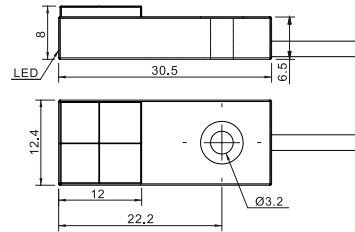
E10

TEN10-2.5/04□□



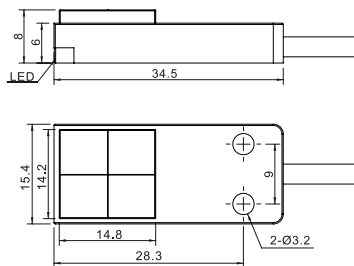
E12

TEN12-04□□



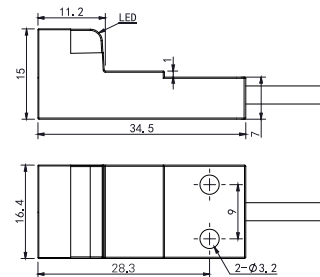
E15

TEN15-05/08□□



E16

TEN16-05/08□□



| |
|------------------|
| Fiber Optic |
| Slot Sensors |
| Photoelectric |
| Laser |
| Proximity |
| Displacement |
| Magnetic |
| Contact |
| Area |
| Ultrasonic |
| Vision |
| Vibration |
| Temperature |
| Annexes |

Guidance

Inductive sensors

| |
|-------------------|
| Standard distance |
| Extended distance |
| Long distance |
| Square |

Mini square

| |
|-----------------------|
| Mini-cylindrical |
| Short-body |
| Ring-type |
| Metal face |
| Temperature |
| Analog output |
| DC 2 wires |
| IP69K high protection |

Capacitive sensors

| |
|---------------------------|
| Cylindrical |
| Correction resistanc type |
| Flat type |
| Level detection |

Mini-cylindrical

Pre-wired

Proximity



| | | |
|--------------------------|---|-------------------------------|
| Appearance | | |
| Mounting | Shielded | |
| Housing size | φ3 | φ4 |
| Sensing distance | 0.6mm/0.8mm/1.0mm ± 10% | 0.8mm/1.0mm/1.2mm/1.5mm ± 10% |
| Housing material | Stainless steel | |
| Operating voltage | 10~30V DC(Ripple < 10%) | |
| Voltage drop | < 1.5V | |
| Load Current, Max | 100mA | 150mA |
| Current consumption | < 10mA | |
| Leakage current | < 0.01mA | |
| Switch frequency | 2KHz | |
| Repeat accuracy | < 1.0%(Sr) | |
| Hysteresis | < 15%(Sr) | |
| Sensing surface material | PA66 | |
| Operating Temperature | -25°C~+75°C | |
| Degree of protection | IP67 | |
| Model No. | NPN Normally open: TXF03-0.6[NO]/TXF03-0.8[NO]/TXF03-01[NO] TXF04-0.8[NO]/TXF04-01[NO] /TXF04-1.2[NO] /TXF04-1.5[NO] Others: [NO]:NPN Normally open [NC]:NPN Normally closed [PO]:PNP Normally open [PC]:PNP Normally closed | |



| | | |
|--------------------------|---|-------------------------------|
| Appearance | | |
| Mounting | Shielded | |
| Housing size | M4 | M5 |
| Sensing distance | 0.6mm/0.8mm/1.0mm ± 10% | 0.8mm/1.0mm/1.2mm/1.5mm ± 10% |
| Housing material | Stainless steel | |
| Operating voltage | 10~30V DC(Ripple < 10%) | |
| Voltage drop | < 1.5V | |
| Load Current,Max | 100mA | |
| Current consumption | < 10mA | |
| Leakage current | < 0.01mA | |
| Switch frequency | 2KHz | |
| Repeat accuracy | < 5.0%(Sr) | |
| Hysteresis | < 15%(Sr) | |
| Sensing surface material | PA66 | |
| Operating Temperature | -25°C~+75°C | |
| Degree of protection | IP67 | |
| Model No. | NPN Normally open: TFXM4-0.6[NO] / TFXM4-0.8[NO] / TFXM4-01[NO] TFXF05-0.8[NO] / TFXF05-01[NO] / TFXF05-1.2[NO] / TFXF05-1.5[NO] Others: [NO]:NPN Normally open [NC]:NPN Normally closed [PO]:PNP Normally open [PC]:PNP Normally closed | |

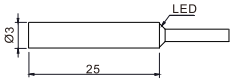
- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

- Inductive sensors**
- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical**
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection
- Capacitive sensors**
- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

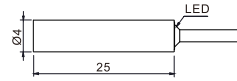
φ 3

TXF03-0.6/0.8/01□□



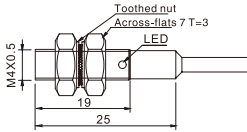
φ 4

TXF04-0.8/01/1.2/1.5□□



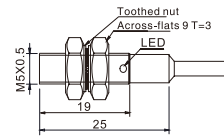
M4

TXFM4-0.6/0.8/01□□



M5

TXF05-0.8/01/1.2/1.5□□



Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

Magnetic

Contact

Area

Ultrasonic

Vision

Vibration

Temperature

Annexes

Guidance

Inductive sensors

Standard distance

Extended distance

Long distance

Square

Mini square

Mini-cylindrical

Short-body

Ring-type

Metal face

Temperature

Analog output

DC 2 wires

IP69K high protection

Capacitive sensors

Cylindrical

Correction

resistanc type

Flat type

Level detection

Short-body

Ultra Short Housing

Proximity



| | | |
|--------------------------|--|--|
| Appearance | | |
| Mounting | Shielded | |
| Housing size | φ 6.5 | φ 6.5Y |
| Sensing distance | 1mm/2mm ± 10% | |
| Housing material | Stainless steel | |
| Operating voltage | 10~30V DC(Ripple < 10%) | |
| Voltage drop | < 1.5V | |
| Load Current , Max | 150mA | |
| Current consumption | < 10mA | |
| Leakage current | < 0.01mA | |
| Switch frequency | 2KHz | |
| Repeat accuracy | < 1.0%(Sr) | |
| Hysteresis | < 15%(Sr) | |
| Sensing surface material | PBT | |
| Operating Temperature | -25°C~+75°C | |
| Protective circuit | Short circuit | |
| Degree of protection | IP67 | |
| Model No. | TSSF6.5-01 / TSSF6.5-02 | TSSF6.5Y-01 / TSSF6.5-02 |
| | :NPN Normally open :NPN Normally closed | :PNP Normally open :PNP Normally closed |

- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

- Inductive sensors**
- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body**
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection

- Capacitive sensors**
- Cylindrical
- Correction resistanc type
- Flat type
- Level detection



| | | |
|--------------------------|--|--|
| Appearance | | |
| Mounting | Shielded | |
| Housing size | M8 | M12 |
| Sensing distance | 1mm/2mm ± 10% | 2mm/4mm ± 10% |
| Housing material | Stainless steel | Nickle plated brass |
| Operating voltage | 10~30V DC(Ripple < 10%) | |
| Voltage drop | < 1.5V | |
| Load Current , Max | 150mA | |
| Current consumption | < 10mA | |
| Leakage current | < 0.01mA | |
| Switch frequency | 2KHz | |
| Repeat accuracy | < 1.0%(Sr) | |
| Hysteresis | < 15%(Sr) | |
| Sensing surface material | PBT | |
| Operating Temperature | -25°C~+75°C | |
| Protective circuit | Short circuit, except TSSF08-02 | |
| Degree of protection | IP67 | |
| Model No. | TSSF08-01 / TSSF08-02 | TSSF12-02 / TSSF12-04 |
| | :NPN Normally open :NPN Normally closed | :PNP Normally open :PNP Normally closed |

(HOT)



Appearance

| | | | | | |
|--------------------------|-------------------------|-----------------------|------------------------|-----------------------|------------------------|
| Mounting | Shielded | | | | |
| Housing size | M8 | M12 | M18 | M30 | |
| Sensing distance | 1mm/2mm ± 10% | 2mm/4mm ± 10% | 5mm/8mm ± 10% | 10mm/16mm ± 10% | |
| Housing material | Stainless steel | Nickle plated brass | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | | |
| Voltage drop | < 1.5V | | | | |
| Load Current, Max | 150mA | | | | |
| Current consumption | < 10mA | | | | |
| Leakage current | < 0.01mA | | | | |
| Switch frequency | 2KHz | 2KHz/1Hz | 1KHz/500Hz | 300Hz/150Hz | |
| Repeat accuracy | < 1.0%(Sr) | | | | |
| Hysteresis | < 15%(Sr) | | | | |
| Sensing surface material | PBT | | | | |
| Operating Temperature | -25°C~+75°C | | | | |
| Protective circuit | Short circuit | | | | |
| Degree of protection | IP67 | | | | |
| Model No. | NPN Normally open | TSF08-01NO/TSF08-02NO | TSF12-02NO/TSF12-04NO | TSF18-05NO/TSF18-08NO | TSF30-10NO/TSF30-16NO |
| | Others | NO:NPN Normally open | NC:NPN Normally closed | PO:PNP Normally open | PC:PNP Normally closed |



Appearance

| | | | | | |
|--------------------------|-------------------------|-----------------------|------------------------|-----------------------|------------------------|
| Mounting | Unshielded | | | | |
| Housing size | M8 | M12 | M18 | M30 | |
| Sensing distance | 2mm/4mm ± 10% | 4mm/8mm ± 10% | 8mm/16mm ± 10% | 15mm/25mm ± 10% | |
| Housing material | Stainless steel | Nickle plated brass | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | | |
| Voltage drop | < 1.5V | | | | |
| Load Current, Max | 150mA | | | | |
| Current consumption | < 10mA | < 20mA | | | |
| Leakage current | < 0.01mA | | | | |
| Switch frequency | 2KHz/1KHz | 1KHz/500Hz | 500Hz/150Hz | 150Hz/100Hz | |
| Repeat accuracy | < 1.0%(Sr) | | | | |
| Hysteresis | < 15%(Sr) | | | | |
| Sensing surface material | PBT | | | | |
| Operating Temperature | -25°C~+75°C | | | | |
| Protective circuit | Short circuit | | | | |
| Degree of protection | IP67 | | | | |
| Model No. | NPN Normally open | TSN08-02NO/TSN08-04NO | TSN12-04NO/TSN12-08NO | TSN18-08NO/TSN18-16NO | TSN30-15NO/TSN30-25NO |
| | Others | NO:NPN Normally open | NC:NPN Normally closed | PO:PNP Normally open | PC:PNP Normally closed |

- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

- Inductive sensors**
- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body**
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection

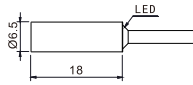
- Capacitive sensors**
- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

Short-body

Extra Shot Outer Casing-Dimensions (Unit:mm)

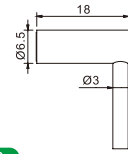
M6.5

TSSF6.5-01/02/03 □ □



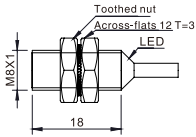
M6.5Y

TSSF6.5Y-01/02/03 □ □



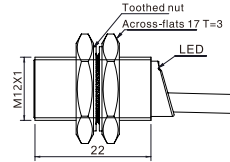
M8

TSSF08-01/02/03 □ □



M12

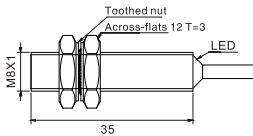
TSSF12-02/04/06 □ □



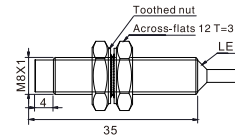
General-Dimensions (Unit:mm)

M8

TSF08-01/02 □ □

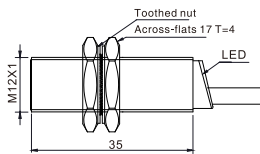


TSN08-02/04 □ □

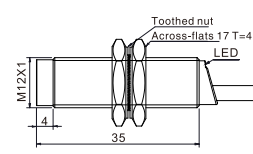


M12

TSF12-02/04 □ □

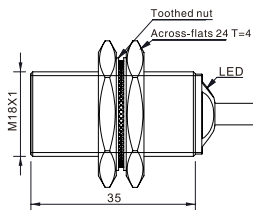


TSN12-04/08 □ □

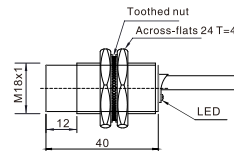


M18

TSF18-05/08 □ □

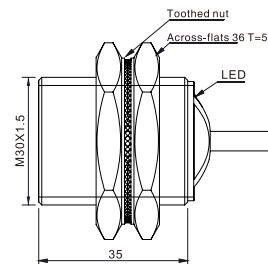


TSN18-08/16 □ □

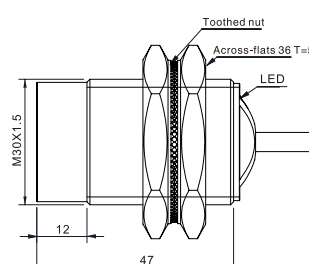


M30

TSF30-10/16 □ □













TSN30-15/25 □ □



| |
|---------------|
| Fiber Optic |
| Slot Sensors |
| Photoelectric |
| Laser |
| Proximity |
| Displacement |
| Magnetic |
| Contact |
| Area |
| Ultrasonic |
| Vision |
| Vibration |
| Temperature |
| Annexes |

| |
|-----------------------|
| Guidance |
| Inductive sensors |
| Standard distance |
| Extended distance |
| Long distance |
| Square |
| Mini square |
| Mini-cylindrical |
| Short-body |
| Ring-type |
| Metal face |
| Temperature |
| Analog output |
| DC 2 wires |
| IP69K high protection |

| |
|---------------------------|
| Capacitive sensors |
| Cylindrical |
| Correction resistanc type |
| Flat type |
| Level detection |

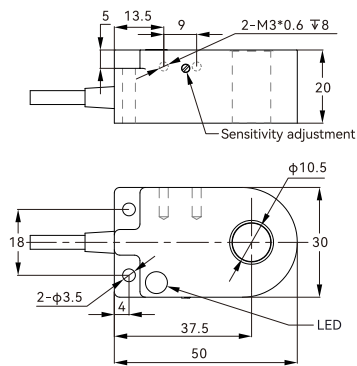
| | | | | |
|--------------------------|--|--|--|--|
| Appearance |  |  |  |  |
| Housing size | H10 | H15 | H21 | H43 |
| Hole diameter | 10.5mm | 15.5mm | 22.5mm | 43.5mm |
| Hole height | 20mm | | | |
| Housing material | ABS | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | |
| Voltage drop | < 1.5V | | | |
| Load Current, Max | 150mA | | | |
| Current consumption | < 15mA | | | |
| Leakage current | < 10mA | | | |
| Switch frequency | 2KHz | 1.5KHz | 1KHz | 500Hz |
| Min.detectable object | D=2.5mm; L=4mm | D=3mm; L=6mm | D=6mm; L=12mm | D=9mm; L=18mm |
| Repeat accuracy | < 2.0% (Sr) | | | |
| Hysteresis | < 15% (Sr) | | | |
| Sensing surface material | PBT | | | |
| Operating Temperature | -25°C~+75°C | | | |
| Protective circuit | Short circuit; Reverse polarity | | | |
| Degree of protection | IP67 | | | |
| Model No. | TH10-20  | TH15-20  | TH21-20  | TH43-20  |
| |  :NPN Normally open |  :NPN Normally closed |  :PNP Normally open |  :PNP Normally closed |

- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Dimensions (Unit:mm)

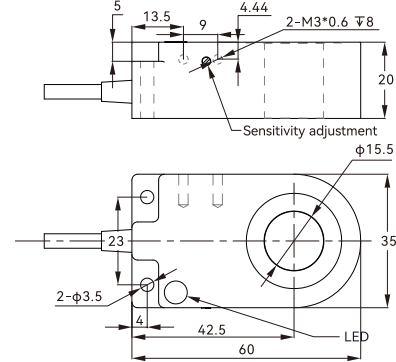
H10

TH10-20 □□



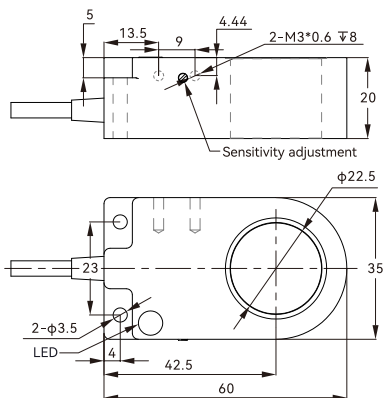
H15

TH15-20 □□



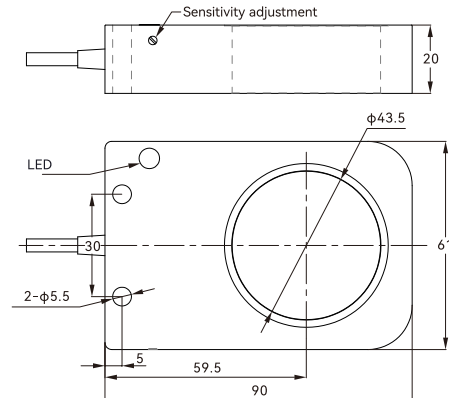
H21

TH21-20 □□



H43

TH43-20 □□



Guidance

Inductive sensors

- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type**
- Metal face
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection

Capacitive sensors

- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

Metal Face

Pre-wired

Proximity



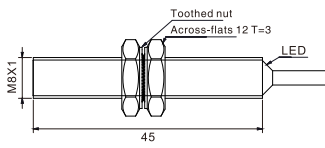
| | | | | | |
|--------------------------|-------------------------|--|--|--|--|
| Appearance | | | | | |
| Mounting | Shielded | | | | |
| Housing size | M8 | M12 | M18 | M30 | |
| Sensing distance | 1mm/2mm ± 10% | 2mm/4mm ± 10% | 5mm/8mm ± 10% | 10mm/16mm ± 10% | |
| Housing material | Stainless steel | | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | | |
| Voltage drop | < 1.5V | | | | |
| Load Current, Max | 150mA | | | | |
| Current consumption | < 10mA | | | | |
| Leakage current | < 0.01mA | | | | |
| Switch frequency | 2KHz/1KHz | | 1KHz/500Hz | 300Hz/150Hz | |
| Repeat accuracy | < 1.0%(Sr) | | | | |
| Hysteresis | < 15%(Sr) | | | | |
| Sensing surface material | Stainless steel | | | | |
| Operating Temperature | -25°C~+75°C | | | | |
| Protective circuit | Short circuit | | | | |
| Degree of protection | IP67 | | | | |
| Model No. | NPN Normally open | TMF08-01 NO /TMF08-02 NO | TMF12-02 NO /TMF12-04 NO | TMF18-05 NO /TMF18-08 NO | TMF30-10 NO /TMF30-16 NO |
| | Others | NO :NPN Normally open | NC :NPN Normally closed | PO :PNP Normally open | PC :PNP Normally closed |



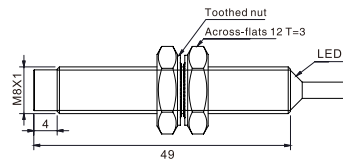
| | | | | | |
|--------------------------|-------------------------|--|--|--|--|
| Appearance | | | | | |
| Mounting | Unshielded | | | | |
| Housing size | M8 | M12 | M18 | M30 | |
| Sensing distance | 2mm/3mm ± 10% | 4mm/8mm ± 10% | 8mm/16mm ± 10% | 15mm/25mm ± 10% | |
| Housing material | Stainless steel | | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | | |
| Voltage drop | < 1.5V | | | | |
| Load Current, Max | 150mA | | | | |
| Current consumption | < 10mA | | | | |
| Leakage current | < 0.01mA | | | | |
| Switch frequency | 2KHz/1KHz | 1KHz/500Hz | 500Hz/150Hz | 150Hz/100Hz | |
| Repeat accuracy | < 1.0%(Sr) | | | | |
| Hysteresis | < 15%(Sr) | | | | |
| Sensing surface material | Stainless steel | | | | |
| Operating Temperature | -25°C~+75°C | | | | |
| Protective circuit | Short circuit | | | | |
| Degree of protection | IP67 | | | | |
| Model No. | NPN Normally open | TMN08-02 NO /TMN08-03 NO | TMN12-04 NO /TMN12-08 NO | TMN18-08 NO /TMN18-16 NO | TMN30-15 NO /TMN30-25 NO |
| | Others | NO :NPN Normally open | NC :NPN Normally closed | PO :PNP Normally open | PC :PNP Normally closed |

M8

TMF08-01/02□□

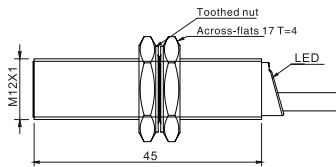


TMN08-02/03□□

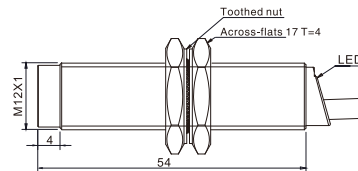


M12

TMF12-02/04□□

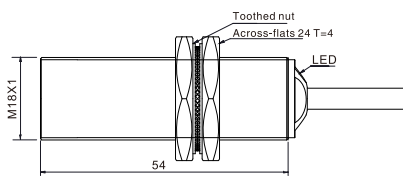


TMN12-04/08□□

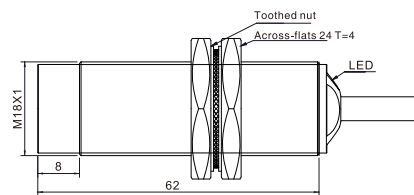


M18

TMF18-05/08□□

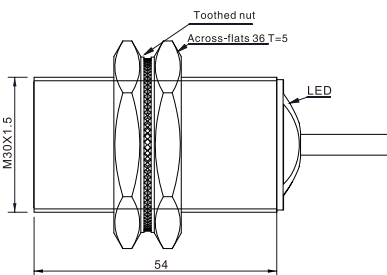


TMN18-08/16□□

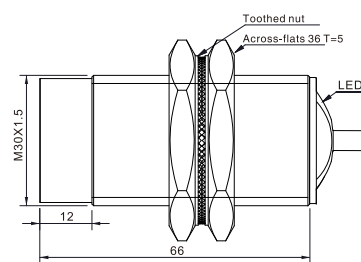


M30

TMF30-10/16□□



TMN30-15/25□□



- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

Inductive sensors

- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face**
- Temperature
- Analog output
- DC 2 wires
- IP69K high protection

Capacitive sensors

- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

Temperature Resistance

High Temperature (120°C) Resistance Pre-wired Type



| | | | | | | | |
|----------------------|------------------------------------|------------------------|--------------------------|------------------------|--------------------------|--------------|--------------|
| Appearance | | | | | | | |
| Mounting | Shielded | | | Unshielded | | | |
| Housing size | M12 | M18 | M30 | M12 | M18 | M30 | |
| Sensing distance | 2mm ± 10% | 5mm ± 10% | 10mm ± 10% | 4mm ± 10% | 8mm ± 10% | 15mm ± 10% | |
| Housing material | Nickel copper alloy | | | | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | | | | | |
| Voltage drop | < 2.5V | | | | | | |
| Load Current, Max | 100mA | | | | | | |
| Current consumption | < 15mA | | | | | | |
| Hysteresis | 1~20% | | | | | | |
| Repeat accuracy | < 5% | | | | | | |
| Response frequency | 1500Hz | 1000Hz | 500Hz | 1000Hz | 800Hz | 300Hz | |
| Indicator | Yellow LED | | | | | | |
| Ambient temperature | -25°C~+120°C | | | | | | |
| Ambient humidity | 35~95% RH | | | | | | |
| Protective circuit | Reverse polarity; Surge protection | | | | | | |
| Degree of protection | IP67 | | | | | | |
| Model No. | NPN Normally open | TGF12-02[NO] | TGF18-05[NO] | TGF30-10[NO] | TGN12-04[NO] | TGN18-08[NO] | TGN30-15[NO] |
| | Others | [NC]:NPN Normally open | [NC]:NPN Normally closed | [PC]:PNP Normally open | [PC]:PNP Normally closed | | |

High Temperature (220°C) Resistance Pre-wired Type



| | | | | |
|--------------------------|--------------------------------------|-------------|-------------|-------------|
| Appearance | | | | |
| Mounting | Shielded | | | |
| Housing size | M12 | M18 | M30 | |
| Sensing distance | 2mm ± 10% | 5mm ± 10% | 10mm ± 10% | |
| Housing material | Nickel copper alloy | | | |
| Operating voltage | 10~30V DC | | | |
| Voltage drop | < 1.8V | | | |
| Load current | External | | | |
| Current consumption | < 3mA(24V) | | | |
| Switch frequency | 500Hz/220°C | 500Hz/220°C | 200Hz/220°C | |
| Repeat accuracy | < 3.0% (Sr) | | | |
| Hysteresis | 3~15% (Sr) | | | |
| Sensing surface material | PBT | | | |
| Ambient temperature | -25~+220°C | | | |
| Degree of protection | IP66 | | | |
| Interface | PTFE Cable/2m; 3*0.34mm ² | | | |
| Model No. | NPN Normally open | TGF12-02NO2 | TGF18-05NO2 | TGF30-10NO2 |
| | NPN Normally open | TGF12-02PO2 | TGF18-05PO2 | TGF30-10PO2 |

Proximity

Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

Magnetic

Contact

Area

Ultrasonic

Vision

Vibration

Temperature

Annexes

Guidance

Inductive sensors

Standard distance

Extended distance

Long distance

Square

Mini square

Mini-cylindrical

Short-body

Ring-type

Metal face

Temperature

Analog output

DC 2 wires

IP69K high protection

Capacitive sensors

Cylindrical

Correction

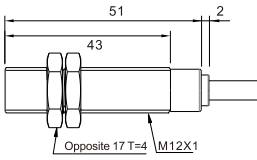
resistance type

Flat type

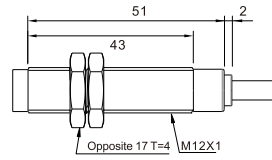
Level detection

M12

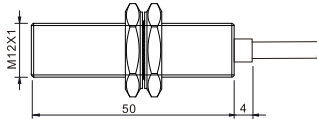
TGF12-02□□



TGN12-04□□

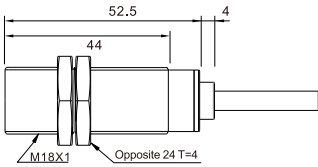


TGF12-02□□2

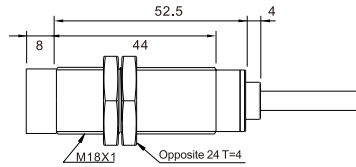


M18

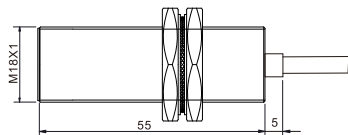
TGF18-05□□



TGN18-08□□

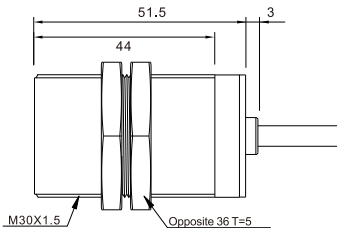


TGF18-05□□2

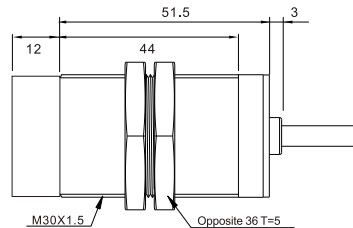


M30

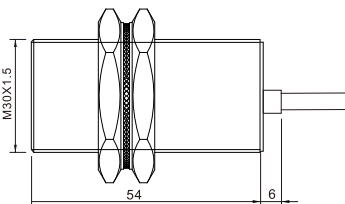
TGF30-10□□



TGN30-15□□



TGF30-10□□2



- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

Inductive sensors

- Standard distance
- Extended distance
- Long distance
- Square

Mini square

Mini-cylindrical

Short-body

Ring-type

Metal face

Temperature

Analog output

DC 2 wires

IP69K high protection

Capacitive sensors

Cylindrical

Correction resistanc type

Flat type

Level detection

IP69K High Protection

Proximity



NEW!



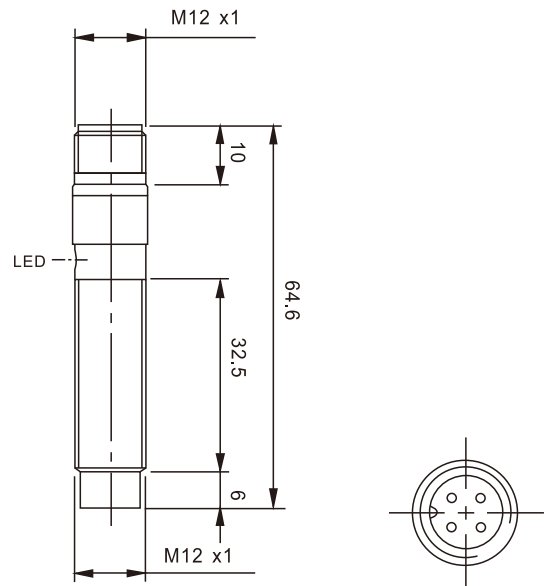
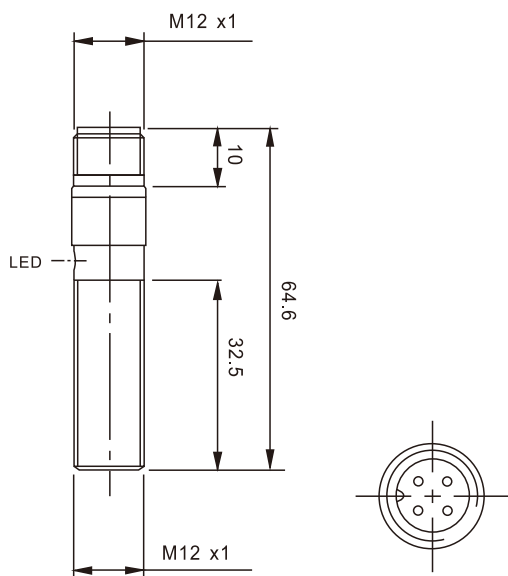
NEW!

| | | | | | |
|-----------------------------------|--|---------------|-----------------|---------------|---------------|
| Appearance | | | | | |
| Mounting | Shielded | | Unshielded | | |
| Sensing distance | 2mm | 4mm | 4mm | 8mm | |
| Working distance | 0~1.62mm | | 0~3.24mm | 0~6.5mm | |
| Hysteresis | 1~20% | | | | |
| Standard target | 12 x 12mm FE360 | | 24 x 24mm FE360 | | |
| Repeatability | 5% | | | | |
| Operating Voltage | 10~30V DC | | | | |
| Output type | NPNorPNP-NO+NCorNO | | | | |
| Maximum ripple content | ≤10% | | | | |
| Output current | ≤200mA | | | | |
| Output voltage drop | ≤2V | | | | |
| No-load current | ≤15mA | | | | |
| Leakage current | ≤15uA | | | | |
| operating frequency | 2kHz | | | | |
| Start delay | 50ms | | | | |
| Ambient temperature range | -40°C~+80°C in a short time (within 15 seconds) up to 100°C 10% | | | | |
| Thermal drift | 10% | | | | |
| Shock and vibration | IEC 60947-5-5/7.4 | | | | |
| Weight | 30g | | | | |
| LEDs | NO output status/without led-25°C~+110°C | | | | |
| Protection level | IP67,IP68(1m,7days);IP69K (in line with DIN 40050-9 standard) | | | | |
| Electromagnetic compatibility/EMC | Comply with EMC directive requirements and comply with IEC 60947-5-2 specification | | | | |
| Housing material | Stainless steel | | | | |
| Sensor head material | PPS (FDA certification) | | | | |
| Connection method | M12 connector with gold-plated pins | | | | |
| Tightening torque | 25Nm | | | | |
| Model No | NPN | TPF12-02NR-E2 | TPF12-04NR-E2 | TPN12-04NR-E2 | TPN12-08NR-E2 |
| | PNP | TPF12-02PR-E2 | TPF12-04PR-E2 | TPN12-04PR-E2 | TPN12-08PR-E2 |

Dimensions (Unit:mm)

TPF12-02NR-E2(PR)
TPF12-04NR-E2(PR)

TPN12-04NR-E2(PR)
TPN12-08NR-E2(PR)





NEW!



NEW!

| | | | | | |
|-----------------------------------|--|---------------|-----------------|---------------|---------------|
| Appearance | Shielded | | Unshielded | | |
| Mounting | 5mm | | 8mm | | |
| Sensing distance | 0~4mm | | 0~6.5mm | | |
| Working distance | | | 0~9.72mm | | |
| Hysteresis | 1~20% | | | | |
| Standard target | 18 × 18mm FE360 | | 36 × 36mm FE360 | | |
| Repeatability | 5% | | | | |
| Operating Voltage | 10~30V DC | | | | |
| Output type | NPNorPNP-NO+NOorNO | | | | |
| Maximum ripple content | ≤ 10% | | | | |
| Output current | ≤ 200mA | | | | |
| Output voltage drop | ≤ 2V | | | | |
| No-load current | ≤ 15mA | | | | |
| Leakage current | ≤ 10uA | | | | |
| operating frequency | 15kHz | | | | |
| Start delay | 50ms | | | | |
| Ambient temperature range | -40°C~+80°C in a short time (within 15 seconds) up to 100°C | | | | |
| Thermal drift | 10% | | | | |
| Shock and vibration | IEC 60947-5-5/7.4 | | | | |
| Weight | 30g | | | | |
| LEDs | NO output status / without led-25°C~+110°C | | | | |
| Protection level | IP67, IP68 (1m, 7 days); IP69K (in accordance with DIN 40050-9 standard) | | | | |
| Electromagnetic compatibility/EMC | Comply with EMC directive requirements and comply with IEC 60947-5-2 specification | | | | |
| Housing material | Stainless steel | | | | |
| Sensor head material | PPS (FDA certification) | | | | |
| Connection method | M12 connector with gold-plated pins | | | | |
| Tightening torque | 25Nm | | | | |
| Model No | NPN | TPF18-05NR-E2 | TPF18-08NR-E2 | TPN18-08NR-E2 | TPN18-12NR-E2 |
| | PNP | TPF18-05PR-E2 | TPF18-08PR-E2 | TPN18-08PR-E2 | TPN18-12PR-E2 |

- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

Inductive sensors

- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output
- DC 2 wires

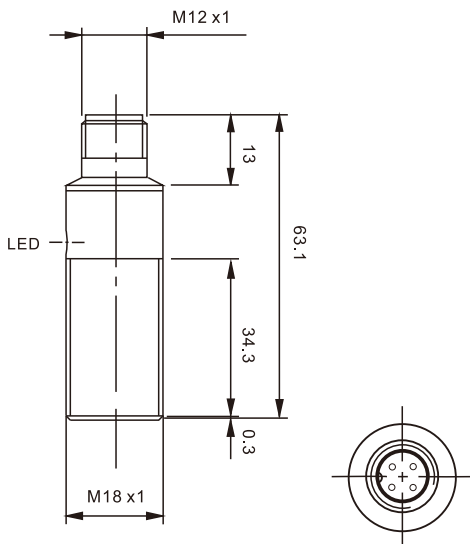
IP69K high protection

Capacitive sensors

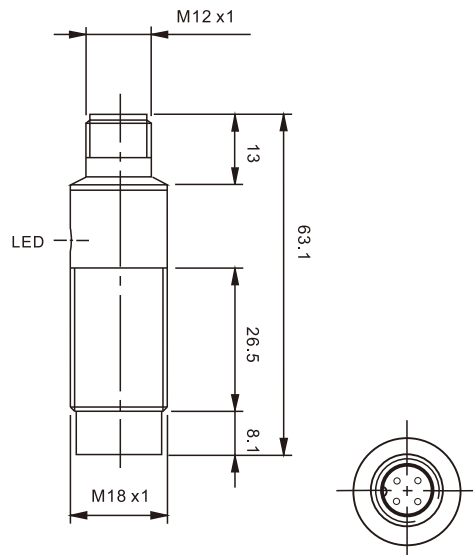
- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

Dimensions (Unit:mm)

TPF18-05NR-E2(PR)
TPF18-08NR-E2(PR)



TPN18-08NR-E2(PR)
TPN18-12NR-E2(PR)



Analog Output

Pre-wired

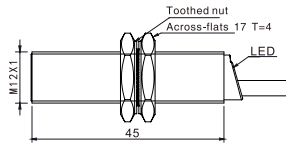


| | | | | | | | |
|--------------------------|-------------------------|--------------|--------------|---------------|--------------|--------------|------------|
| Appearance | Shielded | | | Unshielded | | | |
| Mounting | M12 | M18 | M30 | M12 | M18 | M30 | |
| Housing size | M12 | M18 | M30 | M12 | M18 | M30 | |
| Sensing distance | 0.1~3mm ± 10% | 1~4mm ± 10% | 5~10mm ± 10% | 0.1~4mm ± 10% | 1~7mm ± 10% | 7~14mm ± 10% | |
| Housing material | Nickel copper alloy | | | | | | |
| Operating voltage | 18~30V DC(Ripple < 10%) | | | | | | |
| Current consumption | < 15mA | | | | | | |
| Linear | < 5% | | | | | | |
| Switch frequency | 100Hz | | | | | | |
| Repeat accuracy | 0.02mm | | | | | | |
| Current output | 4~20mA/≤200Ω | 0~20mA/≤200Ω | 4~20mA/≤400Ω | 4~20mA/≤400Ω | 0~20mA/≤200Ω | 0~20mA/≤200Ω | |
| Volage output | 0~10VDC≥4.7KΩ | | | | | | |
| Output type | PNP-Analog | | | | | | |
| Sensing surface material | PBT | | | | | | |
| Ambient temperature | -25°C~+75°C | | | | | | |
| Protective circuit | Reverse polarity | | | | | | |
| Degree of protection | IP67 | | | | | | |
| Model No. | Current output | TAF12-03PA | TAF18-04PA | TAF30-10PA | TAN12-04PA | TAN18-07PA | TAN30-14PA |
| | Volage output | TAF12-03PV | TAF18-04PV | TAF30-10PV | TAN12-04PV | TAN18-07PV | TAN30-14PV |

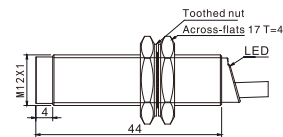
Dimensions (Unit:mm)

M12

TAF12-03□□

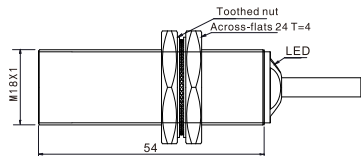


TAN12-04□□

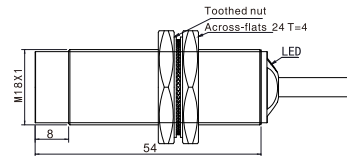


M18

TAF18-04□□

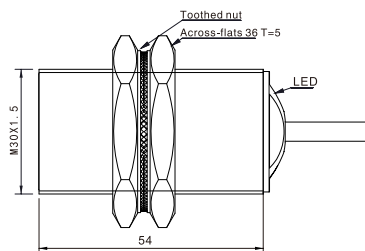


TAN18-07□□

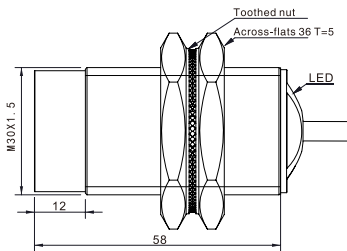



M30


TAF30-10□□



TAN30-14□□



| | | | | | | |
|--------------------------|--|-------------------------|-------------------------|-----------------------|-----------------------|-----------------------|
| Appearance |  | | | | | |
| Mounting | Shielded | | | | | |
| Housing size | φ 6.5 | M8 | M12 | M18 | M30 | |
| Sensing distance | 1mm/2mm ± 10% | 1mm/2mm ± 10% | 2mm/4mm ± 10% | 5mm/8mm ± 10% | 10mm/16mm ± 10% | |
| Housing material | Stainless steel | | Nickel copper alloy | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | 10~60V DC(Ripple < 10%) | | | |
| Operating current | 3~100mA | | | | | |
| Leakage current | < 0.8mA | | | | | |
| Voltage drop | < 6V/ < 4V | | | | | |
| Protective circuit | Short circuit | | | | | |
| Over-load current | > 120mA | | | | | |
| Switch frequency | 2KHz | | 1KHz | | 500Hz | |
| Hysteresis | 15% | | | | | |
| Temperature drift | 10% | | | | | |
| Repeat accuracy | < 2% | | | | | |
| Operating Temperature | -25°C~+75°C | | | | | |
| Sensing surface material | PBT | | | | | |
| Model No. | Normally open | TDF6.5-01HO/TDF6.5-02HO | TDF08-01HO/TDF08-02HO | TDF12-02HO/TDF12-04HO | TDF18-05HO/TDF18-08HO | TDF30-10HO/TDF30-16HO |
| | Normally close | TDF6.5-01HC/TDF6.5-02HC | TDF08-01HC/TDF08-02HC | TDF12-02HC/TDF12-04HC | TDF18-05HC/TDF18-08HC | TDF30-10HC/TDF30-16HC |

| | | | | | | |
|--------------------------|--|-------------------------|-------------------------|-----------------------|-----------------------|-----------------------|
| Appearance |  | | | | | |
| Mounting | Unshielded | | | | | |
| Housing size | φ 6.5 | M8 | M12 | M18 | M30 | |
| Sensing distance | 2mm/4mm ± 10% | 2mm/4mm ± 10% | 4mm/8mm ± 10% | 8mm/16mm ± 10% | 15mm/25mm ± 10% | |
| Housing material | Stainless steel | | Nickel plated brass | | | |
| Operating voltage | 10~30V DC(Ripple < 10%) | | 10~60V DC(Ripple < 10%) | | | |
| Operating current | 3~100mA | | | | | |
| Leakage current | < 0.8mA | | | | | |
| Voltage drop | < 6V/ < 4V | | | | | |
| Protective circuit | Short circuit | | | | | |
| Over-load current | > 120mA | | | | | |
| Switch frequency | 2KHz | | 1KHz | | 500Hz | |
| Hysteresis | 15% | | | | | |
| Temperature drift | 10% | | | | | |
| Repeat accuracy | < 2% | | | | | |
| Operating Temperature | -25°C~+75°C | | | | | |
| Sensing surface material | PBT | | | | | |
| Model No. | Normally open | TDN6.5-02HO/TDN6.5-04HO | TDN08-02HO/TDN08-04HO | TDN12-04HO/TDN12-08HO | TDN18-08HO/TDN18-16HO | TDN30-15HO/TDN30-25HO |
| | Normally close | TDN6.5-02HC/TDN6.5-04HC | TDN08-02HC/TDN08-04HC | TDN12-04HC/TDN12-08HC | TDN18-08HC/TDN18-16HC | TDN30-15HC/TDN30-25HC |

- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

Inductive sensors

- Standard distance
- Extended distance
- Long distance
- Square
- Mini square
- Mini-cylindrical
- Short-body
- Ring-type
- Metal face
- Temperature
- Analog output

DC 2-wires

- IP69K high protection

Capacitive sensors

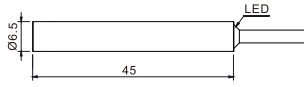
- Cylindrical
- Correction resistanc type
- Flat type
- Level detection

DC 2-wire

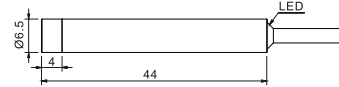
Dimensions (Unit:mm)

φ 6.5

TDF6.5-01/02 □ □

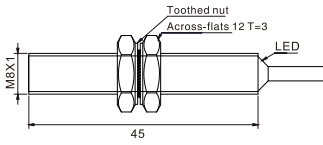


TDN6.5-02/04 □ □

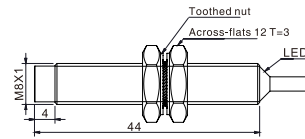


M8

TDF08-01/02 □ □

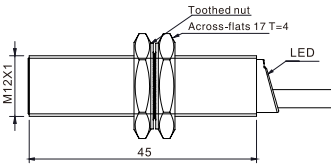


TDN08-02/04 □ □

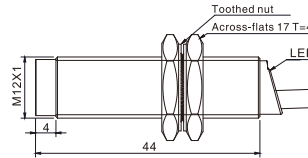


M12

TDF12-02/04 □ □

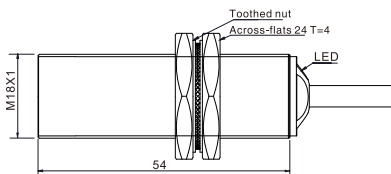


TDN12-04/08 □ □

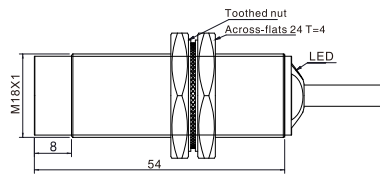


M18

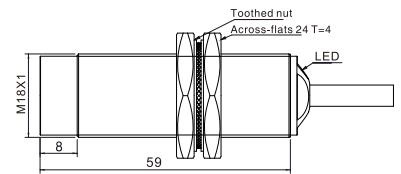
TDF18-05/08 □ □



TDN18-08 □ □

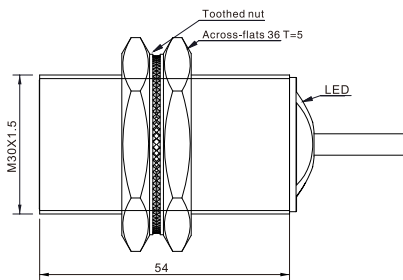


TDN18-16 □ □

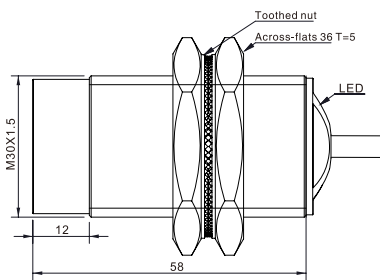


M30

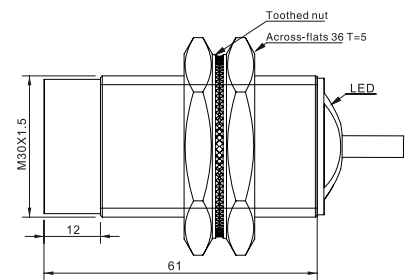
TDF30-10/16 □ □



TDN30-15 □ □



TDN30-25 □ □



- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity**
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

- Inductive sensors**
- Standard distance
 - Extended distance
 - Long distance
 - Square
 - Mini square
 - Mini-cylindrical
 - Short-body
 - Ring-type
 - Metal face
 - Temperature
 - Analog output

- DC 2-wires**
- IP69K high protection

- Capacitive sensors**
- Cylindrical
 - Correction resistant type
 - Flat type
 - Level detection