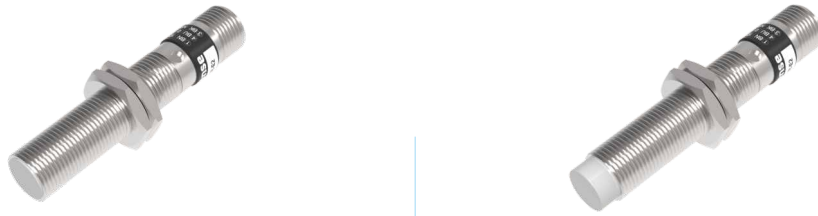


IP69K High Protection

TP Series

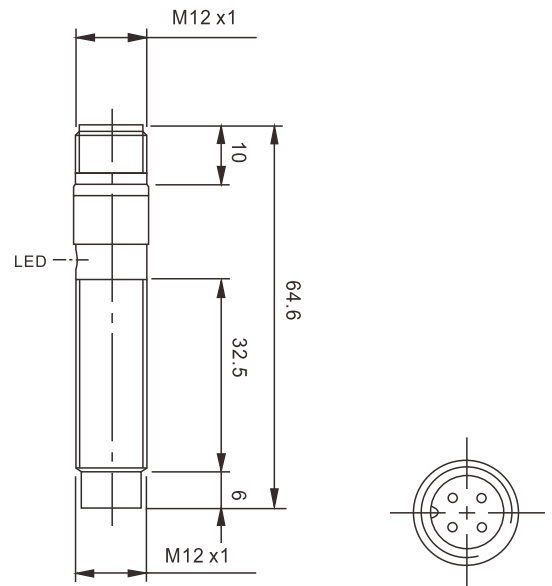
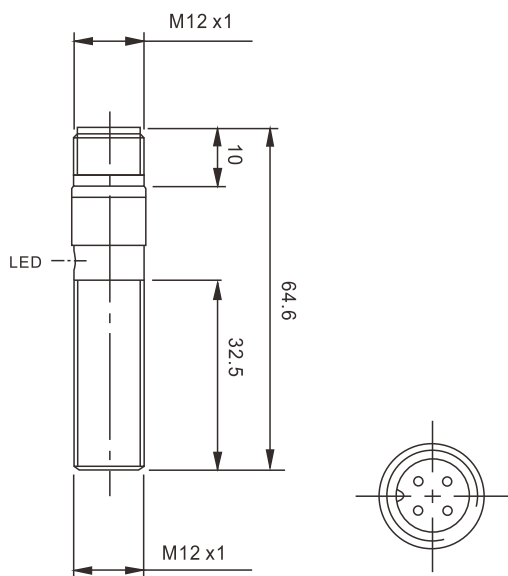


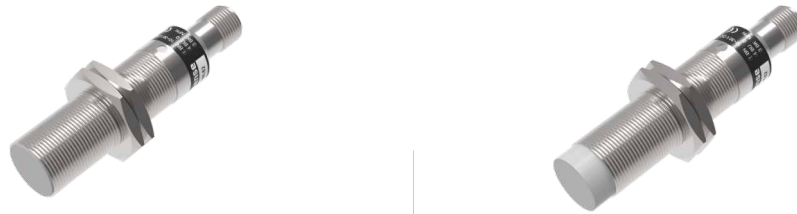
Appearance	Shielded		Unshielded		
Mounting	2mm		4mm		
Sensing distance	0~1.62mm	4mm	4mm	8mm	
Working distance	0~1.62mm		0~3.24mm		
Hysteresis	1~20%				
Standard target	12 x 12mm FE360		24 x 24mm FE360		
Repeatability	5%				
Operating	10~30V DC				
Output type	NPN or PNP-NO+NC or NO				
Maximum ripple 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				
Degree of protection	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				
Sensing surface 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)

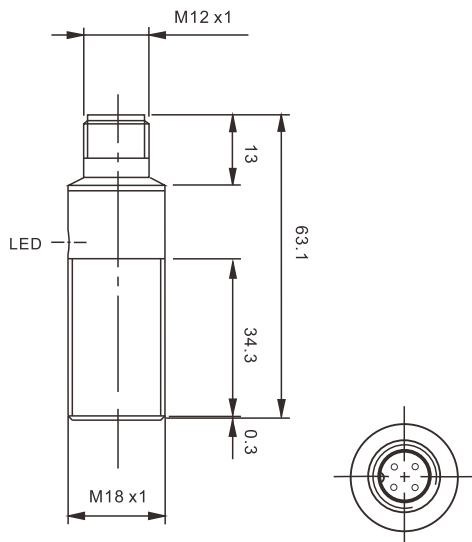




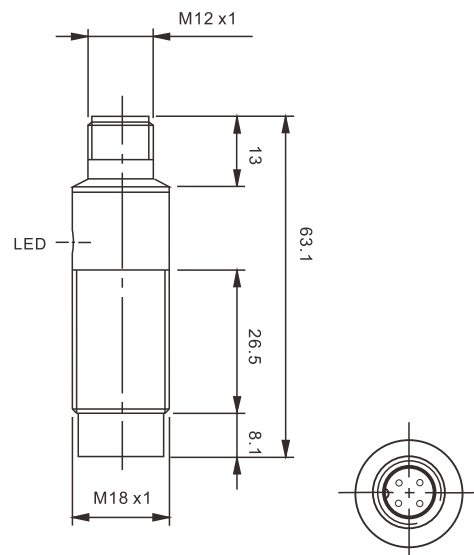
Appearance	Shielded		Unshielded		
Mounting	5mm		8mm		
Sensing distance	0~4mm		0~6.5mm		
Working distance			12mm		
Hysteresis			1~20%		
Standard target	18 × 18mm FE360		36 × 36mm FE360		
Repeatability			5%		
Operating Voltage			10~30V DC		
Output type			NPN or PNP-NO+NC or NO		
Maximum ripple content			≤ 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 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		
Degree of protection			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		
Sensing surface 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

Dimensions (Unit:mm)

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



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



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

Guidance

Inductive sensors

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

Capacitive sensors

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