

# IP69K High Protection



NEW!



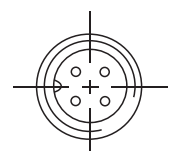
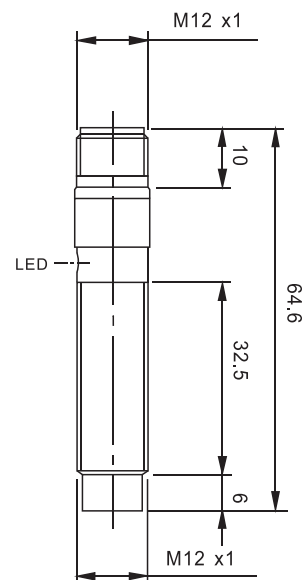
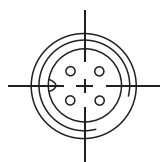
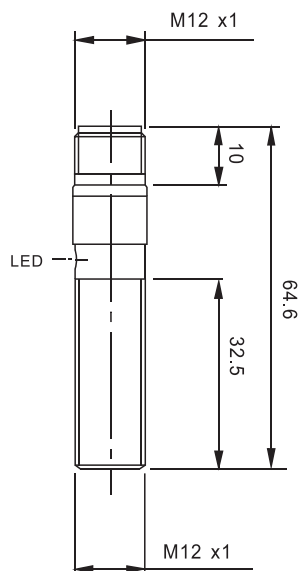
NEW!

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!

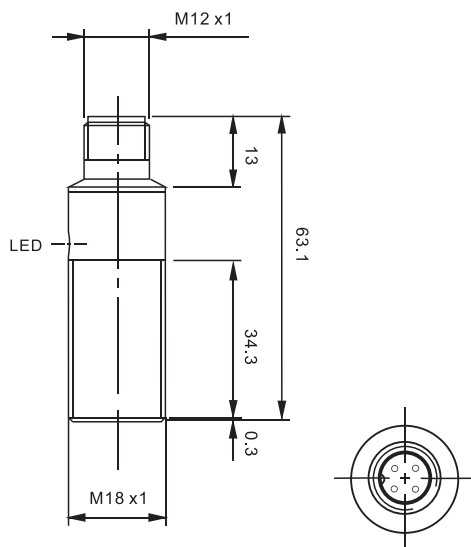


NEW!

Appearance					
Mounting		Shielded		Unshielded	
Sensing distance	5mm		8mm	12mm	
Working distance	0~4mm		0~6.5mm	0~9.72mm	
Hysteresis			1~20%		
Standard target		18 x 18mm FE360		36 x 36mm FE360	
Repeatability			5%		
Operating Voltage			10~30V DC		
Output type			NPorPNP-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

### Dimensions (Unit:mm)

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



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

