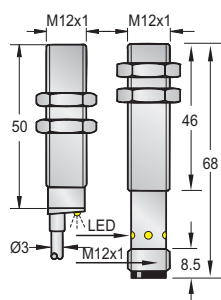


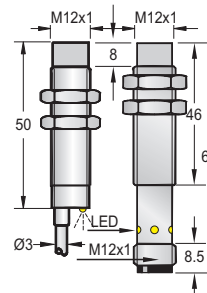


Features

- M12mm diameter
- Sn=2mm, 4mm, 6mm shielded
4mm, 8mm, 10mm non-shielded
- PTFE housing case
- NPN, PNP Output
- NO, NC Function, NO+NC Function
- Short circuit protection
Overload protection
Reverse polarity protection
- 2m Cable version
M12 connector version
- IP67 Protection



(Unit: mm)

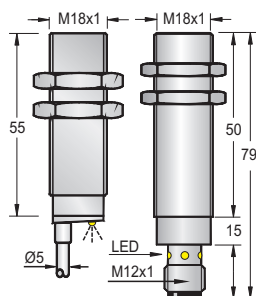


(Unit: mm)

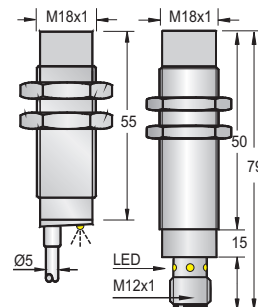
CE		Shielded			Non-shielded		
		Standard Sn	Extended Sn	Long Sn	Standard Sn	Extended Sn	Long Sn
2m Cable	NPN-NO	L1PE12C02A	L1PE12C04A	L1PE12C06A	L1PF12C04A	L1PF12C08A	L1PF12C10A
	NPN-NC	L1PE12D02A	L1PE12D04A	L1PE12D06A	L1PF12D04A	L1PF12D08A	L1PF12D10A
	PNP-NO	L1PE12A02A	L1PE12A04A	L1PE12A06A	L1PF12A04A	L1PF12A08A	L1PF12A10A
	PNP-NC	L1PE12B02A	L1PE12B04A	L1PE12B06A	L1PF12B04A	L1PF12B08A	L1PF12B10A
	NPN-NO+NC	L1PE12F02A	L1PE12F04A	L1PE12F06A	L1PF12F04A	L1PF12F08A	L1PF12F10A
	PNP-NO+NC	L1PE12E02A	L1PE12E04A	L1PE12E06A	L1PF12E04A	L1PF12E08A	L1PF12E10A
12 Connector	NPN-NO	L1PE12C02H	L1PE12C04H	L1PE12C06H	L1PF12C04H	L1PF12C08H	L1PF12C10H
	NPN-NC	L1PE12D02H	L1PE12D04H	L1PE12D06H	L1PF12D04H	L1PF12D08H	L1PF12D10H
	PNP-NO	L1PE12A02H	L1PE12A04H	L1PE12A06H	L1PF12A04H	L1PF12A08H	L1PF12A10H
	PNP-NC	L1PE12B02H	L1PE12B04H	L1PE12B06H	L1PF12B04H	L1PF12B08H	L1PF12B10H
	NPN-NO+NC	L1PE12F02H	L1PE12F04H	L1PE12F06H	L1PF12F04H	L1PF12F08H	L1PF12F10H
	PNP-NO+NC	L1PE12E02H	L1PE12E04H	L1PE12E06H	L1PF12E04H	L1PF12E08H	L1PF12E10H
General Data							
Housing size		M12mm			M12mm		
Installation type		Shielded			Non-shielded		
Sensing distance(Sn: mm)		2mm	4mm	6mm	4mm	8mm	10mm
Standard sensing object		Steel 12x12x1mm	Steel 12x12x1mm	Steel 18x18x1mm	Steel 12x12x1mm	Steel 24x24x1mm	Steel 30x30x1mm
Effective sensing distance (Sr: mm)		90 ... 110% of Sn			90 ... 110% of Sn		
Assured operating distance(Sa: mm)		0 ... 80% of Sn			0 ... 80% of Sn		
Hysteresis		<15%			<15%		
Housing material		PTFE			PTFE		
Operating voltage		10 ... 30VDC(55Vdc can also be customized)			10 ... 30VDC(55Vdc can also be customized)		
Electrical Data							
Rated operating voltage		24VDC			24VDC		
Repeated accuracy		±10%			±10%		
Ripple		<10%			<10%		
No load current		10mA			10mA		
Max. Load current		200mA			200mA		
Leakage current		<0.01mA			<0.01mA		
Voltage drop		<1.5VDC	<2.0VDC	<2.0VDC	<1.5VDC	<2.0VDC	<2.0VDC
Switching frequency		2000Hz	1000Hz	800Hz	1000Hz	500Hz	400Hz
Response time		0.1ms/0.1ms	0.2ms/0.2ms	0.2ms/0.2ms	0.2ms/0.2ms	0.3ms/0.3ms	0.5ms/0.5ms
Rated insulation voltage		75VDC			75VDC		
Operating temperature		-25°C ... +70°C			-25°C ... +70°C		
Storage temperature		-40°C ... +80°C			-40°C ... +80°C		
Temperature drift		<10%			<10%		
Power indicator		No			No		
Function indicator		Yellow LED			Yellow LED		
Reverse polarity protection		Yes			Yes		
Short-circuit protection		Yes			Yes		
Overload trip point		220mA			220mA		
Correction factors		Fe37 steel=1/stainless steel approx. 0.85/brass approx. 0.5/ Al. Approx. 0.45/ copper approx. 0.4			Fe37 steel=1/stainless steel approx. 0.85/brass approx. 0.5/ Al. Approx. 0.45/ copper approx. 0.4		
Mechanical Data							
Sensing surface material		PTFE			PTFE		
Protection		IP67			IP67		
Shock rating		Shock, half-sinus, 30gn, 11ms			Shock, half-sinus, 30gn, 11ms		
Vibration rating		55Hz, 1mm ampl., 3x30min.			55Hz, 1mm ampl., 3x30min.		
EMC		IEC 60947-5-2			IEC 60947-5-2		
Accessory		2 nuts			2 nuts		
Connection		2m PVC cable (Ø4 3x0.34mm²/4x0.34mm²)			Euro-Style 4-Pin M12 connector		
Weight		Approx. 67g/31g			Approx. 65g/30g		

Features

- M18mm diameter
- Sn=5mm, 8mm, 12mm shielded
8mm, 12mm, 20mm non-shielded
- PTFE housing case
- NPN, PNP Output
- NO, NC Function, NO+NC Function
- Short circuit protection
Overload protection
Reverse polarity protection
- 2m Cable version
M12 connector version
- IP67 Protection



(Unit: mm)



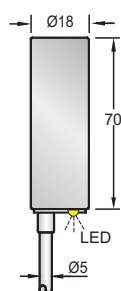
(Unit: mm)

CE		Shielded			Non-shielded		
		Standard Sn	Extended Sn	Long Sn	Standard Sn	Extended Sn	Long Sn
2m Cable	NPN-NO	L1PE18C05A	L1PE18C08A	L1PE18C12A	L1PF18C08A	L1PF18C16A	L1PF18C20A
	NPN-NC	L1PE18D05A	L1PE18D08A	L1PE18D12A	L1PF18D08A	L1PF18D16A	L1PF18D20A
	PNP-NO	L1PE18A05A	L1PE18A08A	L1PE18A12A	L1PF18A08A	L1PF18A16A	L1PF18A20A
	PNP-NC	L1PE18B05A	L1PE18B08A	L1PE18B12A	L1PF18B08A	L1PF18B16A	L1PF18B20A
	NPN-NO+NC	L1PE18F05A	L1PE18F08A	L1PE18F12A	L1PF18F08A	L1PF18F16A	L1PF18F20A
	PNP-NO+NC	L1PE18E05A	L1PE18E08A	L1PE18E12A	L1PF18E08A	L1PF18E16A	L1PF18E20A
12 Connector	NPN-NO	L1PE18C05H	L1PE18C08H	L1PE18C12H	L1PF18C08H	L1PF18C16H	L1PF18C20H
	NPN-NC	L1PE18D05H	L1PE18D08H	L1PE18D12H	L1PF18D08H	L1PF18D16H	L1PF18D20H
	PNP-NO	L1PE18A05H	L1PE18A08H	L1PE18A12H	L1PF18A08H	L1PF18A16H	L1PF18A20H
	PNP-NC	L1PE18B05H	L1PE18B08H	L1PE18B12H	L1PF18B08H	L1PF18B16H	L1PF18B20H
	NPN-NO+NC	L1PE18F05H	L1PE18F08H	L1PE18F12H	L1PF18F08H	L1PF18F16H	L1PF18F20H
	PNP-NO+NC	L1PE18E05H	L1PE18E08H	L1PE18E12H	L1PF18E08H	L1PF18E16H	L1PF18E20H
General Data							
Housing size		M18mm			M18mm		
Installation type		Shielded			Non-shielded		
Sensing distance(Sn: mm)		5mm	8mm	12mm	8mm	16mm	20mm
Standard sensing object		Steel 18x18x1mm	Steel 24x24x1mm	Steel 36x36x1mm	Steel 24x24x1mm	Steel 48x48x1mm	Steel 60x60x1mm
Effective sensing distance (Sr: mm)		90 ... 110% of Sn			90 ... 110% of Sn		
Assured operating distance(Sa: mm)		0 ... 80% of Sn			0 ... 80% of Sn		
Hysteresis		<15%			<15%		
Housing material		PTFE			PTFE		
Operating voltage		10 ... 30VDC(55Vdc can also be customized)			10 ... 30VDC(55Vdc can also be customized)		
Electrical Data							
Rated operating voltage		24VDC			24VDC		
Repeated accuracy		±10%			±10%		
Ripple		<10%			<10%		
No load current		10mA			10mA		
Max. Load current		200mA			200mA		
Leakage current		<0.01mA			<0.01mA		
Voltage drop		<1.5VDC	<2.0VDC	<2.0VDC	<1.5VDC	<2.0VDC	<2.0VDC
Switching frequency		1000Hz	500Hz	300Hz	500Hz	150Hz	100Hz
Response time		0.2ms/0.2ms	0.5ms/0.5ms	0.5ms/0.5ms	0.5ms/0.5ms	1ms/1ms	1ms/1ms
Rated insulation voltage		75VDC			75VDC		
Operating temperature		-25°C ... +70°C			-25°C ... +70°C		
Storage temperature		-40°C ... +80°C			-40°C ... +80°C		
Temperature drift		<10%			<10%		
Power indicator		No			No		
Function indicator		Yellow LED			Yellow LED		
Reverse polarity protection		Yes			Yes		
Short-circuit protection		Yes			Yes		
Overload trip point		220mA			220mA		
Correction factors		Fe37 steel=1/stainless steel approx. 0.85/brass approx. 0.5/ Al. Approx. 0.45/ copper approx. 0.4			Fe37 steel=1/stainless steel approx. 0.85/brass approx. 0.5/ Al. Approx. 0.45/ copper approx. 0.4		
Mechanical Data							
Sensing surface material		PTFE			PTFE		
Protection		IP67			IP67		
Shock rating		Shock, half-sinus, 30gn, 11ms			Shock, half-sinus, 30gn, 11ms		
Vibration rating		55Hz, 1mm ampl., 3x30min.			55Hz, 1mm ampl., 3x30min.		
EMC		IEC 60947-5-2			IEC 60947-5-2		
Accessory		2 nuts			2 nuts		
Connection		2m PVC cable (Ø5 3x0.34mm ² /4x0.34mm ²)			Euro-Style 4-Pin M12 connector		
Weight		Approx. 150g/91g			Approx. 140g/86g		

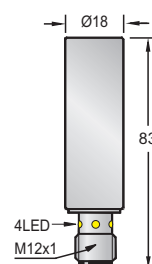


Features

- Ø18mm diameter
- Sn=5mm, 8mm, 12mm shielded
8mm, 12mm, 20mm non-shielded
- PTFE housing case
- NPN, PNP Output
- NO, NC Function, NO+NC Function
- Short circuit protection
Overload protection
Reverse polarity protection
- 2m Cable version
M12 connector version
- IP67 Protection



(Unit: mm)



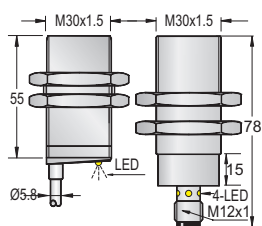
(Unit: mm)

CE		Shielded			Non-shielded		
		Standard Sn	Extended Sn	Long Sn	Standard Sn	Extended Sn	Long Sn
2m Cable	NPN-NO	L1QE18C05A	L1QE18C08A	L1QE18C12A	L1QF18C08A	L1QF18C16A	L1QF18C20A
	NPN-NC	L1QE18D05A	L1QE18D08A	L1QE18D12A	L1QF18D08A	L1QF18D16A	L1QF18D20A
	PNP-NO	L1QE18A05A	L1QE18A08A	L1QE18A12A	L1QF18A08A	L1QF18A16A	L1QF18A20A
	PNP-NC	L1QE18B05A	L1QE18B08A	L1QE18B12A	L1QF18B08A	L1QF18B16A	L1QF18B20A
	NPN-NO+NC	L1QE18F05A	L1QE18F08A	L1QE18F12A	L1QF18F08A	L1QF18F16A	L1QF18F20A
	PNP-NO+NC	L1QE18E05A	L1QE18E08A	L1QE18E12A	L1QF18E08A	L1QF18E16A	L1QF18E20A
12 Connector	NPN-NO	L1QE18C05H	L1QE18C08H	L1QE18C12H	L1QF18C08H	L1QF18C16H	L1QF18C20H
	NPN-NC	L1QE18D05H	L1QE18D08H	L1QE18D12H	L1QF18D08H	L1QF18D16H	L1QF18D20H
	PNP-NO	L1QE18A05H	L1QE18A08H	L1QE18A12H	L1QF18A08H	L1QF18A16H	L1QF18A20H
	PNP-NC	L1QE18B05H	L1QE18B08H	L1QE18B12H	L1QF18B08H	L1QF18B16H	L1QF18B20H
	NPN-NO+NC	L1QE18F05H	L1QE18F08H	L1QE18F12H	L1QF18F08H	L1QF18F16H	L1QF18F20H
	PNP-NO+NC	L1QE18E05H	L1QE18E08H	L1QE18E12H	L1QF18E08H	L1QF18E16H	L1QF18E20H
General Data							
Housing size		Ø18mm			Ø18mm		
Installation type		Shielded			Non-shielded		
Sensing distance(Sn: mm)		5mm	8mm	12mm	8mm	16mm	20mm
Standard sensing object		Steel 18x18x1mm	Steel 24x24x1mm	Steel 36x36x1mm	Steel 24x24x1mm	Steel 48x48x1mm	Steel 60x60x1mm
Effective sensing distance (Sr: mm)		90 ... 110% of Sn			90 ... 110% of Sn		
Assured operating distance(Sa: mm)		0 ... 80% of Sn			0 ... 80% of Sn		
Hysteresis		<15%			<15%		
Housing material		PTFE			PTFE		
Operating voltage		10 ... 30VDC(55Vdc can also be customized)			10 ... 30VDC(55Vdc can also be customized)		
Electrical Data							
Rated operating voltage		24VDC			24VDC		
Repeated accuracy		±10%			±10%		
Ripple		<10%			<10%		
No load current		10mA			10mA		
Max. Load current		200mA			200mA		
Leakage current		<0.01mA			<0.01mA		
Voltage drop		<1.5VDC	<2.0VDC	<2.0VDC	<1.5VDC	<2.0VDC	<2.0VDC
Switching frequency		1000Hz	500Hz	300Hz	500Hz	150Hz	100Hz
Response time		0.2ms/0.2ms	0.5ms/0.5ms	0.5ms/0.5ms	0.5ms/0.5ms	1ms/1ms	1ms/1ms
Rated insulation voltage		75VDC			75VDC		
Operating temperature		-25°C ... +70°C			-25°C ... +70°C		
Storage temperature		-40°C ... +80°C			-40°C ... +80°C		
Temperature drift		<10%			<10%		
Power indicator		No			No		
Function indicator		Yellow LED			Yellow LED		
Reverse polarity protection		Yes			Yes		
Short-circuit protection		Yes			Yes		
Overload trip point		220mA			220mA		
Correction factors		Fe37 steel=1/stainless steel approx. 0.85/brass approx. 0.5/ Al. Approx. 0.45/ copper approx. 0.4			Fe37 steel=1/stainless steel approx. 0.85/brass approx. 0.5/ Al. Approx. 0.45/ copper approx. 0.4		
Mechanical Data							
Sensing surface material		PTFE			PTFE		
Protection		IP67			IP67		
Shock rating		Shock, half-sinus, 30gn, 11ms			Shock, half-sinus, 30gn, 11ms		
Vibration rating		55Hz, 1mm ampl., 3x30min.			55Hz, 1mm ampl., 3x30min.		
EMC		IEC 60947-5-2			IEC 60947-5-2		
Accessory		/			/		
Connection		2m PVC cable (Ø5 3x0.34mm²/4x0.34mm²)			Euro-Style 4-Pin M12 connector		
Weight		Approx. 140g			Approx. 65g		

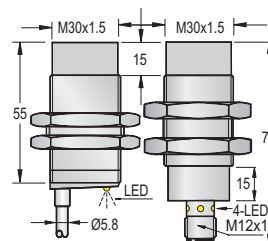


Features

- M30mm diameter
- Sn=10mm,16mm,22mm shielded
15mm,25mm,40mm non-shielded
- PTFE housing case
- NPN, PNP Output
- NO,NC Function,NO+NC Function
- Short circuit protection
Overload protection
Reverse polarity protection
- 2m Cable version
M12 connector version
- IP67 Protection



(Unit: mm)



(Unit: mm)

		Shielded			Non-shielded		
		Standard Sn	Extended Sn	Long Sn	Standard Sn	Extended Sn	Long Sn
2m Cable	NPN-NO	L1PE30C10A	L1PE30C16A	L1PE30C22A	L1PF30C15A	L1PF30C25A	L1PF30C40A
	NPN-NC	L1PE30D10A	L1PE30D16A	L1PE30D22A	L1PF30D15A	L1PF30D25A	L1PF30D40A
	PNP-NO	L1PE30A10A	L1PE30A16A	L1PE30A22A	L1PF30A15A	L1PF30A25A	L1PF30A40A
	PNP-NC	L1PE30B10A	L1PE30B16A	L1PE30B22A	L1PF30B15A	L1PF30B25A	L1PF30B40A
	NPN-NO+NC	L1PE30F10A	L1PE30F16A	L1PE30F22A	L1PF30F15A	L1PF30F25A	L1PF30F40A
	PNP-NO+NC	L1PE30E10A	L1PE30E16A	L1PE30E22A	L1PF30E15A	L1PF30E25A	L1PF30E40A
12 Connector	NPN-NO	L1PE30C10H	L1PE30C16H	L1PE30C22H	L1PF30C15H	L1PF30C25H	L1PF30C40H
	NPN-NC	L1PE30D10H	L1PE30D16H	L1PE30D22H	L1PF30D15H	L1PF30D25H	L1PF30D40H
	PNP-NO	L1PE30A10H	L1PE30A16H	L1PE30A22H	L1PF30A15H	L1PF30A25H	L1PF30A40H
	PNP-NC	L1PE30B10H	L1PE30B16H	L1PE30B22H	L1PF30B15H	L1PF30B25H	L1PF30B40H
	NPN-NO+NC	L1PE30F10H	L1PE30F16H	L1PE30F22H	L1PF30F15H	L1PF30F25H	L1PF30F40H
	PNP-NO+NC	L1PE30E10H	L1PE30E16H	L1PE30E22H	L1PF30E15H	L1PF30E25H	L1PF30E40H

General Data

Housing size	M30mm			M30mm		
Installation type	Shielded			Non-shielded		
Sensing distance(Sn: mm)	10mm	16mm	22mm	15mm	25mm	40mm
Standard sensing object	Steel 30x30x1mm	Steel 48x48x1mm	Steel 66x66x1mm	Steel 45x45x1mm	Steel 75x75x1mm	Steel 120x120x1mm
Effective sensing distance (Sr: mm)	90 ... 110% of Sn			90 ... 110% of Sn		
Assured operating distance(Sa: mm)	0 ... 80% of Sn			0 ... 80% of Sn		
Hysteresis	<15%			<15%		
Housing material	PTFE			PTFE		
Operating voltage	10 ... 30VDC(55Vdc can also be customized)			10 ... 30VDC(55Vdc can also be customized)		

Electrical Data

Rated operating voltage	24VDC			24VDC		
Repeated accuracy	±10%			±10%		
Ripple	<10%			<10%		
No load current	10mA			10mA		
Max. Load current	200mA			200mA		
Leakage current	<0.01mA			<0.01mA		
Voltage drop	<1.5VDC	<2.0VDC	<2.0VDC	<1.5VDC	<2.0VDC	<2.0VDC
Switching frequency	300Hz	150Hz	100Hz	150Hz	100Hz	100Hz
Response time	0.5ms/0.5ms	1ms/1ms	1ms/1ms	1ms/1ms	1ms/1ms	1ms/1ms
Rated insulation voltage	75VDC			75VDC		
Operating temperature	-25°C ... +70°C			-25°C ... +70°C		
Storage temperature	-40°C ... +80°C			-40°C ... +80°C		
Temperature drift	<10%			<10%		
Power indicator	No			No		
Function indicator	Yellow LED			Yellow LED		
Reverse polarity protection	Yes			Yes		
Short-circuit protection	Yes			Yes		
Overload trip point	220mA			220mA		
Correction factors	Fe37 steel=1/stainless steel approx. 0.85/brass approx. 0.5/ Al. Approx. 0.45/ copper approx. 0.4			Fe37 steel=1/stainless steel approx. 0.85/brass approx. 0.5/ Al. Approx. 0.45/ copper approx. 0.4		

Mechanical Data

Sensing surface material	PTFE			PTFE		
Protection	IP67			IP67		
Shock rating	Shock, half-sinus, 30gn, 11ms			Shock, half-sinus, 30gn, 11ms		
Vibration rating	55Hz, 1mm ampl., 3x30min.			55Hz, 1mm ampl., 3x30min.		
EMC	IEC 60947-5-2			IEC 60947-5-2		
Accessory	2 nuts			2 nuts		
Connection	2m PVC cable (Ø5.8 3x0.5mm ² /4x0.5mm ²)			Euro-Style 4-Pin M12 connector		
Weight	Approx. 182g/217g			Approx. 180g/215g		