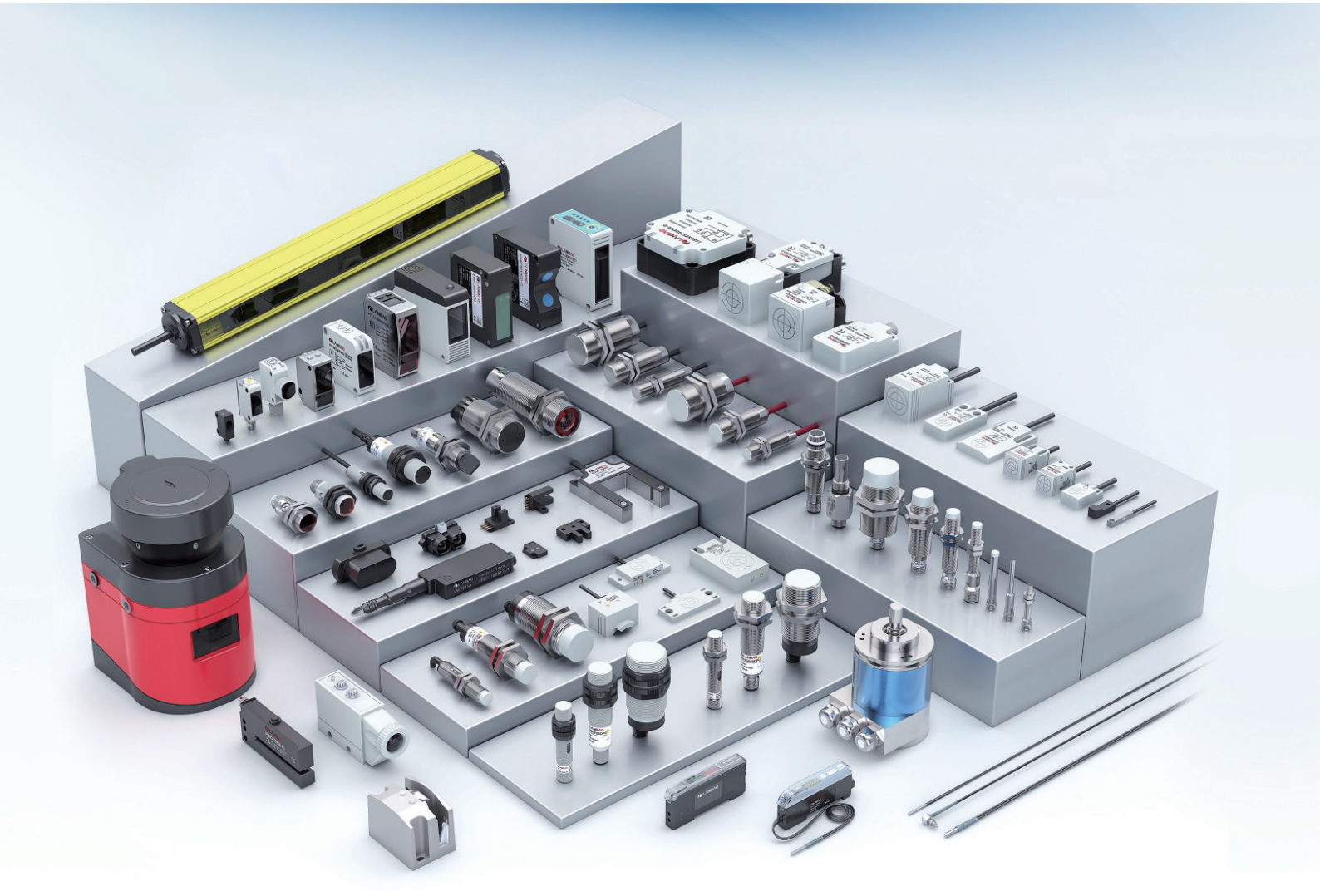
Sensing the dream

LANBAO

PRODUCT SUMMARY



Shanghai Lanbao Sensing Technology Co., Ltd.



Shanghai Lanbao Sensing Technology Co., Ltd.

Established in 1998, Shanghai Lanbao Sensing Technology Co., Ltd. is a supplier of intelligent manufacturing core components and application equipment, national science and technology "Little Giant" enterprise supported by the government, National intellectual property advantage enterprises, Shanghai Enterprise Technology Center, "TOP 100" of Shanghai hard core technology enterprises in 2022, First batch of 20 smart factories in Shanghai in 2020, Director unit of Shanghai industrial technology innovation promotion association. Our products include intelligent inductive sensor, photoelectric sensor and capacitive sensor, which can fully meet the perception needs of discrete industrial customers for positioning, distance and displacement measuring, or speed testing in various applications, such as high temperature, electromagnetic interference, narrow space, or strong light reflection etc.

Lanbao always adheres to the development concept of taking scientific and technological innovation as the first driving force, continues to expand the application of intelligent sensing and measuring technology in the industrial Internet of things, meets the digital and intelligent needs of customers in the upgrading of intelligent manufacturing, helps the localization process of intelligent manufacturing equipment industry, and firmly contributes to the prosperous development of China's sensing industry.

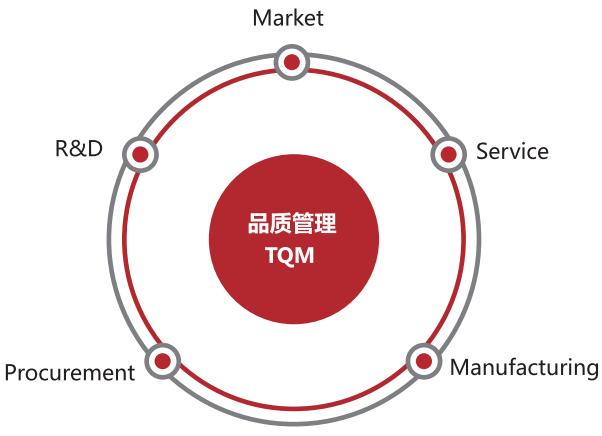


LANBAO SENSOR

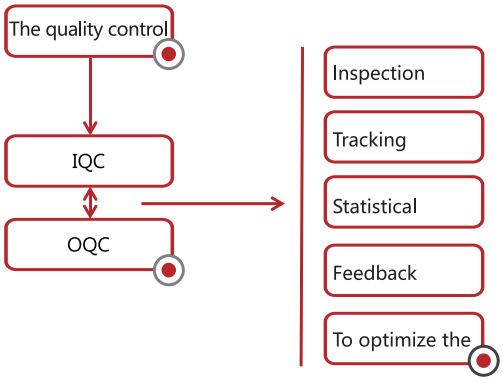


With excellent talents, core technology, Lanbao always concentrates on industrial automation field. By introducing global leading management philosophy and systems, congregating design, development, research and production, it is aim of Lanbao that finally to be a leading manufacturer in global industrial automation field. Our series international leading automation manufacturing equipments ensure international technical level and reliable quality, our strict quality management and control process guarantee "zero defect" products.

Total Quality Management



Complete IQC,OQC testing process



04 Inductive sensors

06 Standard function
14 Frequency enhanced
14 Extended sensing distance
17 Analog output
18 Extended temperature
19 High pressure resistant
20 Full metal housing
21 Rotation speed monitor
22 Gear speed monitoring
23 Welding-immune
24 Self-diagnosis
24 Factor one
26 Inductive power clamp sensors
27 High pressure resistant speed monitoring
27 High protection type

28 Capacitive sensors

30 Standard function
33 Time delay function
33 Extended sensing distance
35 Corrosion resistance test
36 Pipe liquid level detecting
37 High temperature resistant material level detecting

38 Photoelectric sensors

40 Through beam
47 Retro reflection
48 Polarized reflection
49 Transparent object detection
50 Diffuse reflection
53 Background suppression

55 Focus reflection
55 TOF reflection
56 Mark senors
57 Optical fiber sensors
60 Color sensors

61 Measuring sensors

61 Digital laser distance sensors
65 Laser distance sensors
66 Digital laser displacement sensors
69 Laser displacement sensors
70 CCD laser diameter measurement
71 Thin gas pressure sensor

72 Light curtains

74 Area light curtains
76 Measuring light curtains

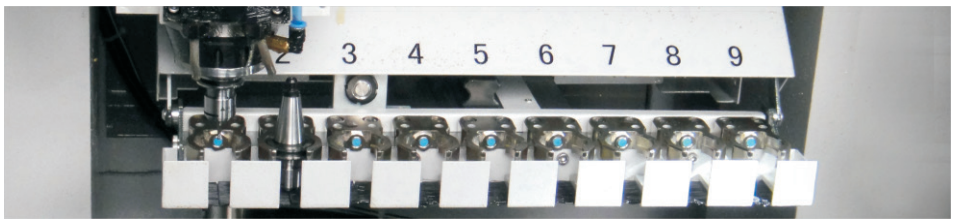
78 Tension sensors

80 Sensor accessories

82 Connection cables
84 Connectors
86 Distribution boxs
88 Mounting brackets
92 Reflectors

93 Wiring diagram





- Contactless, no abrasion, high reliability.
- LED indicator.
- Diameter from Φ4 to M30, multi lengths available, square specifications from 5*5 to 80*80.
- Cable and connector connection optional.
- Stable performance with professional IC design.
- With short circuit protection, reverse polarity protection, overload protection and surge protection.
- Widely applied in position controlling and counting function.

Naming rules

L	R	08	□	□	□	F	15	D	N	O	□	-	□	□	□□□□
1	2	3	4	5	6	7	8	9	10	11	12		13	14	15

1. Type code

L: Inductive

2. Shape code

R: Cylindrical

E: Rectangular

3. Size code

Number: Housing diameter

e.g: 08:M8

4. Shape code

Q: Smooth cylindrical

V: Angle column

Z: Combination

H: Ring-shaped

U: U-shaped

X: Appearance improved/function enhanced products

5. Housing material

N/A: Copper

S: Plastic

G:Stainless steel

V: Aluminium

6. Housing length

A:Short

B: Standard

C:Long

7. Mounting

N:Non-flush(nf)

F: Flush(f)

8. Sensing distance

Digital: Sensing distance

e.g: 02:2mm

04:4mm

10:10mm

9. Supply voltage

A:20...250VAC

B:90...250VAC

D:10...30VDC

E:10...60VDC

F:8.2VDC

L:15...30VDC

H:20...30VDC

S:20...250VAC/DC

10. Output way

B: AC/DC 2 wires

L: DC 2 wires

T: AC 2 wires

P:PNP

N:NPN

11. Output status

B:NO/NC Optional

O:NO

C: NC

R: NO+NC

IU: Voltage+current (0...10V,0...20mA)

U: Voltage(0...10V)

I: Current(0...20mA)

I4:Current(4...20mA)

L: IO Link

12. By sensor function

N/A: Standard function

M: Analog

N:NAMUR

W: High temperature resistant(-25℃...120℃)

W1:Low temperature resistant(-40℃...70℃)

W2:High temperature resistant(-25℃...100℃)

B:High pressure resistant

Z:Self-diagnosis

Y:Extended sensing distance

G:Frequency enhanced

Q:Full metal housing

A: Welding-immune

J: Rotation speed monitoring

13. Cable length

e.g: N/A:2m

3M:3m

14. Connection

N/A:2m cable

E1: M8 connector (3 pins)

E2: M12 connector (4 pins)

E3: M8 connector (4 pins)

D: Terminal

F1:M8 connector (3 pins)+0.2m cable

F2:M12 connector (4 pins)+0.2m cable

15. Special requirement

In 4 digits

Standard function







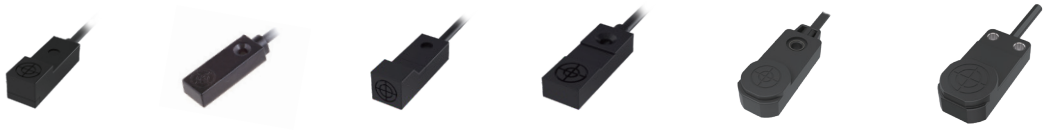
Shell code		LR04Q	LR05	LR6.5Q	LR08	LR12X
Dimensions(mm)		Φ4*30, Φ4*54	M5*0.5*30, M5*0.5*40	Φ6.5*40, Φ6.5*43 Φ6.5*49, Φ6.5*52	M8*1*40, M8*1*43 M8*1*49, M8*1*52 M8*1*65, M8*1*68	M12*1*51, M12*1*55
Mounting		● Flush	● Flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush
Sensing distance		0.8mm	0.8mm	1.5mm, 2mm	1.5mm, 2mm	2mm, 4mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	/	/	/	/	NPN NO+NC PNP NO+NC
	DC 2 Wires	/	/	NO NC	NO NC	NO NC
	AC 2 Wires	/	/	/	/	NO NC
	AC/DC 2 Wires	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC 20...250 VAC
Frequency		2000Hz	2000Hz	2000Hz, 1500Hz	2000Hz, 1500Hz	DC3/4: 1500Hz, 1000Hz DC2: 800Hz, 500Hz AC2: 20Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		Stainless steel	Stainless steel	Stainless steel	Stainless steel Nickel-copper Alloy	Nickel-copper Alloy
Connection		Cable, M8 Connector	Cable, M8 Connector	Cable, M8 Connector	Cable M8/M12 Connector	Cable
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL CCC

Standard function



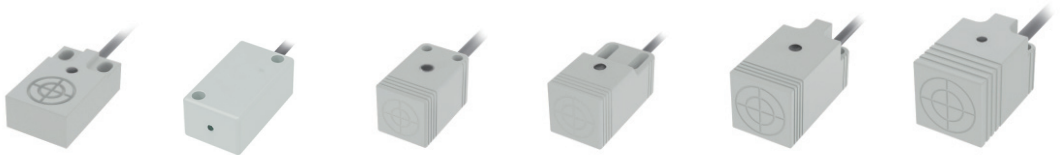
Shell code		LR18X	LR30X	LR12X	LR18X	LR30X
Dimensions(mm)		M18*1*51.5 M18*1*59.5	M30*1.5*52 M30*1.5*64	M12*1*63 M12*1*67	M18*1*63 M18*1*71	M30*1.5*63 M30*1.5*75
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush
Sensing distance		5mm, 8mm	10mm, 15mm	2mm, 4mm	5mm, 8mm	10mm, 15mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC
	DC 2 Wires	NO NC	NO NC	NO NC	NO NC	NO NC
	AC 2 Wires	NO NC	NO NC	NO NC	NO NC	NO NC
	AC/DC 2 Wires	NO NC	NO NC	/	NO NC	NO NC
Supply voltage		10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC	10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC 20...250 VAC 20...250 VAC/DC
Frequency		DC3/4: 1000Hz, 800Hz DC2: 500Hz, 300Hz AC2: 20Hz	DC3/4: 500Hz, 300Hz DC2: 200Hz AC2: 20Hz	DC3/4: 1500Hz, 1000Hz DC2: 800Hz, 500Hz AC2: 20Hz	DC3/4: 1000Hz, 800Hz DC2: 500Hz, 300Hz AC2: 20Hz	DC3/4: 500Hz, 300Hz DC2: 200Hz AC2: 20Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		Nickel-copper Alloy	Nickel-copper Alloy	Nickel-copper Alloy	Nickel-copper Alloy	Nickel-copper Alloy
Connection		Cable	Cable	M12 Connector	M12 Connector	M12 Connector
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL

Standard function



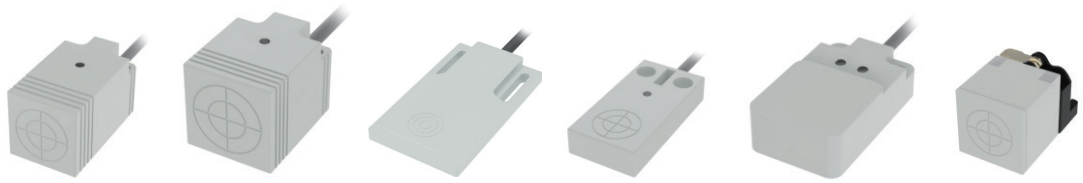
Shell code		LE08	LE08X	LE09	LE11	LE12	LE15
Dimensions(mm)		7.5*8*23	7.5*8*23	7.5*8*23	7*12*27	7.1*12*27.8	8*15*31.5
Mounting		◑ Non-flush	◑ Non-flush	◑ Non-flush	◑ Non-flush	◑ Non-flush	◑ Non-flush
Sensing distance		2.5mm	2.5mm	2.5mm	3mm	4mm	5mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	/	/	/	/	/	/
	DC 2 Wires	/	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/	/
	AC/DC 2 Wires	/	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10…30 VDC	10…30 VDC
Frequency		1000Hz	1000Hz	1000Hz	1000Hz	800 Hz	800 Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃…70℃	-25℃…70℃
Protection degree		IP67	IP67	IP67	IP67	IP67	IP67
Housing material		PC	PC	PC	PC	PC	PC
Connection		Cable	Cable	Cable	Cable	Cable	Cable
Certification		CE UKCA	CE UKCA	CE UKCA	CE UKCA	CE UKCA	CE UKCA

Standard function



Shell code		LE10	LE16	LE17	LE18	LE20	LE25
Dimensions(mm)		18*10*30	16*28 *12	17*17*28	18*18*35	20*20*38	25*25*39
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush
Sensing distance		5mm, 8mm	2mm, 4mm	5mm, 8mm	5mm, 8mm	5mm, 8mm	7mm, 10mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	/	/	/	/	/	/
	DC 2 Wires	/	/	NO NC	NO NC	NO NC	NO NC
	AC 2 Wires	/	/	NO NC	NO NC	NO NC	NO NC
	AC/DC 2 Wires	/	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC 90...250 VAC	10...30 VDC 90...250 VAC	10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC
Frequency		1000Hz, 800Hz	1000Hz, 800Hz	DC3/4: 700Hz, 500Hz DC2: 700Hz, 500Hz AC2: 20Hz	DC3/4:700Hz, 500Hz DC2: 700Hz, 500Hz AC2: 20Hz	DC3/4: 700Hz, 500Hz DC2: 700Hz, 500Hz AC2: 20Hz	DC3/4: 700Hz, 500Hz DC2: 700Hz, 500Hz AC2: 20Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP67	IP67	IP67	IP67	IP67	IP67
Housing material		PBT	PBT	PBT	PBT	PBT	PBT
Connection		Cable	Cable	Cable	Cable	Cable	Cable
Certification		CE UKCA	CE UKCA	CE UKCA	CE UKCA	CE UKCA	CE UKCA

Standard function



Shell code		LE30	LE40	LE36	LE50	LE68	LE40SZ
Dimensions(mm)		30*30*53	40*40*53	36 *60 *8mm	25*10*50	20*40*71, 20*40*80	40*40*66
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush
Sensing distance		10mm, 15mm	15mm,20mm	5mm, 8mm	5mm, 8mm	15mm, 25mm	15mm,20mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	/	/	/	NPN NO+NC PNP NO+NC
	DC 2 Wires	NO NC	NO NC	/	NO NC	NO NC	NO NC
	AC 2 Wires	NO NC	NO NC	/	NO NC	NO NC	NO NC
	AC/DC 2 Wires	/	/	/	/	NO NC	NO NC
Supply voltage		10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC	10...30 VDC	10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC 20...250 VAC 20...250 VAC/DC
Frequency		DC3/4:700Hz, 500Hz DC2: 700Hz, 500Hz AC2: 20Hz	DC3/4:400Hz, 200Hz DC2: 400Hz, 200Hz AC2: 20Hz	700Hz, 500Hz	700Hz, 500Hz	DC3/4:500Hz, 300Hz DC2: 500Hz, 300Hz AC2: 20Hz	DC3/4:500Hz, 300Hz DC2: 500Hz, 300Hz AC2: 20Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP67	IP67	IP67	IP67	IP67	IP67
Housing material		PBT	PBT	PBT	PBT	PBT	PBT
Connection		Cable	Cable	Cable	Cable	Cable, M12 Connector	M12 Connector
Certification		CE UKCA	CE UKCA	CE UKCA	CE UKCA	CE UKCA	CE UKCA

Standard function

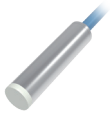






Shell code		LE40XZ	LE80XZ	LE05	LE81	LE82
Dimensions(mm)		40*40*120, 40*40*129	40*80*98, 40*80*104	5*5*25	8*8*40, 8*8*50	8*8*40, 8*8*50
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush	● Flush	● Flush
Sensing distance		15mm,20mm	40mm, 50mm	0.8mm	1.5mm	1.5mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	/	/	/
	DC 2 Wires	NO NC	NO NC	NO NC	/	/
	AC 2 Wires	NO NC	NO NC	/	/	/
	AC/DC 2 Wires	NO NC	NO NC	/	/	/
Supply voltage		10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC	10...30 VDC	10...30 VDC
Frequency		DC3/4: 500Hz, 300Hz DC2: 500Hz, 300Hz AC2: 20Hz	DC3/4: 100Hz, 50Hz DC2: 100Hz, 50Hz AC2: 10Hz	1800Hz	2000Hz	2000Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		PBT	PBT	Aluminum alloy	Aluminum alloy	Aluminum alloy
Connection		M12 Connector Terminal connect	M12 Connector Terminal connect	Cable, M8 Trunk line type	Cable, M8 Connector	Cable, M8 Connector
Certification		CE UKCA	CE UKCA	CE UKCA	CE UKCA	CE UKCA

Standard Function Type-Intrinsically Safe Series




Shell code		LR05	LR6.5Q	LR08	LR12X	LR18X
Dimensions(mm)		M5*0.5*30	M5*6.5*22 M5*6.5*25	M8*1*22, M8*1*25	M12*1*31, M12*1*35	M18*1*31.5 M18*1*39.5
Mounting		● Flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush
Sensing distance		0.8mm	1.5mm, 2mm	1.5mm, 2mm	2mm, 4mm	5mm, 8mm
Output	NAMUR	NC	NC	NC	NC	NC
	DC 3 Wires	/	/	/	/	/
	DC 4 Wires	/	/	/	/	/
	DC 2 Wires	/		/	/	/
	AC 2 Wires	/	/	/	/	/
Supply voltage		7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC
Frequency		3000Hz	3000Hz	2500Hz, 2000Hz	2000Hz, 1500Hz	1500Hz, 1000Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		Stainless steel	Stainless steel	Stainless steel	Nickel-copper Alloy	Nickel-copper Alloy
Connection		Cable	Cable	Cable	Cable	Cable
Certification		—	—	—	—	—

Standard Function Type-Intrinsically Safe Series



Shell code		LR30X	LE40SZ	LE40XZ	LE80XZ	
Dimensions(mm)		M30*1.5*32 M30*1.5*44	40*40*66	40*40*120, 40*40*129	40*80*98, 40*80*104	
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	
Sensing distance		10mm, 15mm	15mm, 20mm	15mm, 20mm	40mm, 50mm	
Output	NAMUR	NC	NC	NC	NC	
	DC 3 Wires	/	/	/	/	
	DC 4 Wires	/	/	/	/	
	DC 2 Wires	/	/	/	/	
	AC 2 Wires	/	/	/	/	
Supply voltage		7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	
Frequency		1000Hz, 800Hz	400Hz, 250Hz	400Hz, 250Hz	100Hz	
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	
Protection degree		IP67	IP67	IP67	IP67	
Housing material		Nickel-copper Alloy	PBT	PBT	PBT	
Connection		Cable	M12 Connector	M12 Connector Terminal connect	M12 Connector Terminal connect	
Certification		—	—	—	—	

Frequency enhanced

Extended sensing distance







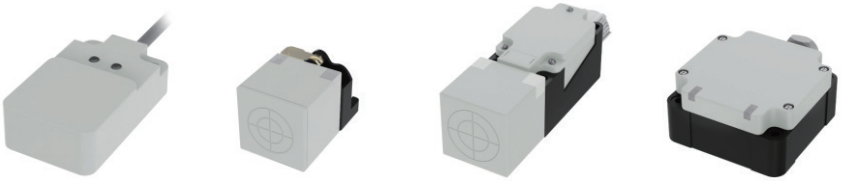
Shell code		LR12X	LR18X	LR04Q	LR05	LR6.5Q
Dimensions(mm)		M12*1*61, M12*1*65 M12*1*73, M12*1*77	M18*1*61.5, M18*1*69.5 M18*1*73, M18*1*81	Φ4*30, Φ4*54	M5*0.5*30,M5*0.5*40	Φ6.5*40, Φ6.5*43 Φ6.5*49, Φ6.5*52
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Quasi-flush	● Quasi-flush	● Quasi-flush ◑ Non-flush
Sensing distance		2mm, 4mm	5mm, 8mm	1.5mm	1.5mm	2mm, 4mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	/	/	/	/	NO NC
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
Frequency		4000Hz, 3000Hz	2000Hz, 1500Hz	1200Hz	1200Hz	DC3/4: 1500Hz, 1000Hz DC2: 1500Hz, 1000Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		Nickel-copper Alloy	Nickel-copper Alloy	Stainless steel	Stainless steel	Stainless steel
Connection		Cable, M12 Connector	Cable, M12 Connector	Cable, M8 Connector	Cable, M8 Connector	Cable M8/M12 Connector
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL

Extended sensing distance



Shell code		LR08	LR12X	LR18X	LR30X	
Dimensions(mm)		M8*1*40, M8*1*54 M8*1*65	M12*1*51, M12*1*55 M12*1*63, M12*1*67 M12*1*61, M12*1*65 M12*1*73, M12*1*77	M18*1*51.5,M18*1*59.5 M18*1*63, M18*1*71 M18*1*61.5, M18*1*69.5 M18*1*73, M18*1*81	M30*1.5*52, M30*1.5*64 M30*1.5*63, M30*1.5*75 M30*1.5*62, M30*1.5*74 M30*1.5*73, M30*1.5*85	
Mounting		● Quasi-flush ◑ Non-flush	● Quasi-flush ◑ Non-flush	● Quasi-flush ◑ Non-flush	● Quasi-flush ◑ Non-flush	
Sensing distance		2mm, 4mm	4mm, 6mm 8mm, 10mm	8mm, 12mm, 20mm	15mm, 22mm, 40mm	
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	
	DC 4 Wires	/	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	
	DC 2 Wires	NO NC	NO NC	NO NC	NO NC	
	AC 2 Wires	/	/	NO NC	NO NC	
	AC/DC 2 Wires	/	/	NO NC	NO NC	
Supply voltage		10...30 VDC	10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC 20...250 VAC 20...250 VAC/DC	
Frequency		DC3/4: 1500Hz, 1000Hz DC2: 1500Hz, 1000Hz	DC3/4: 800Hz, 500Hz 600Hz, 400Hz DC2: 800Hz, 500Hz AC2: 20Hz	DC3/4: 400Hz, 200Hz 200Hz, 100Hz DC2: 400Hz, 200Hz AC2: 20Hz	DC3/4: 300Hz, 150Hz 100Hz, 50Hz DC2: 300Hz, 150Hz AC2: 20Hz	
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	
Protection degree		IP67	IP67	IP67	IP67	
Housing material		Stainless steel	Nickel-copper Alloy	Nickel-copper Alloy	Nickel-copper Alloy	
Connection		Cable M8/M12 Connector	Cable, M12 Connector	Cable, M12 Connector	Cable, M12 Connector	
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL	

Extended sensing distance



Shell code		LE68	LE40SZ	LE40XZ	LE80XZ	
Dimensions(mm)		20 *40 *68mm	40*40*66	40*40*120, 40*40*129	40*80*98, 40*80*104	
Mounting		● Flush, ◑ Non-flush	● Quasi-flush ◑ Non-flush	● Quasi-flush ◑ Non-flush	● Quasi-flush ◑ Non-flush	
Sensing distance		22mm	25mm, 40mm	25mm, 40mm	50mm, 70mm	
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	
	DC 4 Wires	/	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	
	DC 2 Wires	/	NO NC	NO NC	NO NC	
	AC 2 Wires	/	NO NC	NO NC	NO NC	
	AC/DC 2 Wires	/	NO NC	NO NC	NO NC	
Supply voltage		10...30 VDC	10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC 20...250 VAC 20...250 VAC/DC	
Frequency		200Hz	DC3/4: 200Hz, 100Hz DC2: 200Hz, 100Hz AC2: 20Hz	DC3/4: 200Hz, 100Hz DC2: 200Hz, 100Hz AC2: 20Hz	DC3/4: 50Hz, 30Hz DC2: 50Hz, 30Hz AC2: 20Hz	
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	
Protection degree		IP67	IP67	IP67	IP67	
Housing material		PBT	PBT	PBT	PBT	
Connection		Cable, M12 Connector	M12 Connector	M12 Connector Terminal connect	M12 Connector Terminal connect	
Certification		CE UKCA	CE UKCA	CE UKCA	CE UKCA	

Analog output







Shell code		LR12X	LR18X	LR30X	LE40SZ	LE40XZ
Dimensions(mm)		M12*1*61,M12*1*65 M12*1*73,M12*1*77	M18*1*61.5,M18*1*69.5 M18*1*73,M18*1*81	M30*1.5*62,M30*1.5*74 M30*1.5*73,M30*1.5*85	40*40*66	40*40*120, 40*40*129
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush
Sensing distance		0.4...2mm 0.8...4mm	1...5mm 1.6...8mm	2...10mm 3...15mm	2...10mm 3...15mm	2...10mm 3...15mm
Output	Voltage output	0...10V	0...10V	0...10V	0...10V	0...10V
	Current output	0...20mA/4...20mA	0...20mA/4...20mA	0...20mA/4...20mA	0...20mA/4...20mA	0...20mA/4...20mA
	Voltage+Current output	0...10V+0...20mA	0...10V+0...20mA	0...10V+0...20mA	0...10V+0...20mA	0...10V+0...20mA
Supply voltage		15...30 VDC	15...30 VDC	15...30 VDC	15...30 VDC	15...30 VDC
Frequency		200Hz, 100Hz	200Hz, 100Hz	200Hz, 100Hz	100Hz, 50Hz	100Hz, 50Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		Nickel-copper Alloy	Nickel-copper Alloy	Nickel-copper Alloy	PBT	PBT
Connection		Cable, M12 Connector	Cable, M12 Connector	Cable, M12 Connector	M12 Connector	M12 Connector Terminal connect
Certification		CE UKCA	CE UKCA	CE UKCA	CE UKCA	CE UKCA

Extended temperature







Shell code		LR12X	LR18X	LR30X	LE40SZ	LE40XZ
Dimensions(mm)		M12*1*51,M12*1*55 M12*1*63,M12*1*67	M18*1*51.5,M18*1*59.5 M18*1*63,M18*1*71	M30*1.5*52,M30*1.5*64 M30*1.5*63,M30*1.5*75	40*40*66	40*40*120, 40*40*129
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush
Sensing distance		2mm, 4mm	5mm, 8mm	10mm, 15mm	15mm, 20mm	15mm, 20mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	/	/	/	/	/
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC/DC 2 Wires	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
Frequency		1500Hz, 1000Hz	1000Hz, 800Hz	5000Hz, 300Hz	300Hz, 200Hz	300Hz, 200Hz
Ambient temperature		-40℃...70℃ -25℃...120℃	-40℃...70℃ -25℃...120℃	-40℃...70℃ -25℃...120℃ -25...180℃	-40℃...70℃ -25℃...100℃	-40℃...70℃ -25℃...100℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		Nickel-copper Alloy	Nickel-copper Alloy	Nickel-copper Alloy	PBT	PBT
Connection		Cable M12 Connector	Cable M12 Connector	Cable M12 Connector	M12 Connector	M12 Connector Terminal connect
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA	CE UKCA

High pressure resistant



Shell code		LR12X	LR14X	LR16X	LR18X	
Dimensions(mm)		M12*1*62, M12*1*77	M14*1*54, M14*1*64	M16*1*63, M16*1*73	M18*1*58, M18*1*74	
Mounting		● Flush	● Flush	● Flush	● Flush	
Sensing distance		1.5mm	1.5mm, 3mm	2mm	2mm	
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	
	DC 4 Wires	/	/	/	/	
	DC 2 Wires	/	/	/	/	
	AC 2 Wires	/	/	/	/	
	AC/DC 2 Wires	/	/	/	/	
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Frequency		600Hz	600Hz	600Hz	200Hz	
Withstand presssure		500Bar	500Bar	500Bar	500Bar	
Ambient temperature		-25℃...70℃	-25℃...80℃	-25℃...80℃	-25℃...80℃	
Protection degree		IP68	IP68	IP68	IP68	
Housing material		Stainless steel	Stainless steel	Stainless steel	Stainless steel	
Connection		Cable, M12 Connector	Cable, M12 Connector	Cable, M12 Connector	Cable, M12 Connector	
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL	

Full metal housing





Shell code		LR12X	LR18X	LR30X		
Dimensions(mm)		M12*1*74	M18*1*74	M30*1*74		
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush		
Sensing distance		2mm, 4mm	5mm, 8mm	10mm, 15mm		
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC		
	DC 4 Wires	/	/	/		
	DC 2 Wires	/	/	/		
	AC 2 Wires	/	/	/		
	AC/DC 2 Wires	/	/	/		
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC		
Frequency		300Hz	200Hz	100Hz		
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃		
Protection degree		IP67	IP67	IP67		
Housing material		316L Stainless steel	316L Stainless steel	316L Stainless steel		
Connection		M12 Connector	M12 Connector	M12 Connector		
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL		

Rotation speed monitor



Shell code		LR18X	LR30X			
Dimensions(mm)		M18*1*61.5 M18*1*69.5	M30*1.5*62 M30*1.5*74			
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush			
Sensing distance		5mm, 8mm	10mm, 15mm			
Output	DC 3 Wires	NPN NC PNP NC	NPN NC PNP NC			
	DC 4 Wires	/	/			
	DC 2 Wires	/	/			
	AC 2 Wires	NC	NC			
	AC/DC 2 Wires	/	/			
Supply voltage		10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC			
Frequency		DC: 3...3000 times/min AC: 3...1200 times/min	DC: 3...3000 times/min AC: 3...1200 times/min			
Ambient temperature		-25℃...70℃	-25℃...70℃			
Protection degree		IP67	IP67			
Housing material		Nickel-copper Alloy	Nickel-copper Alloy			
Connection		Cable	Cable			
Certification		CE UKCA	CE UKCA			

Gear speed monitoring

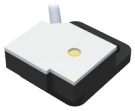





Shell code		FY12		FY18		
Dimensions(mm)		M12*1*61	M12*1*73	M18*1*61.5	M18*1*73	
Mounting		● Flush	● Flush	● Flush	● Flush	
Sensing distance		2mm	2mm	2mm	2mm	
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	
	DC 4 Wires	/	/	/	/	
	DC 2 Wires	/	/	/	/	
	AC 2 Wires	/	/	/	/	
	AC/DC 2 Wires	/	/	/	/	
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Frequency		25000Hz	25000Hz	25000Hz	25000Hz	
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	
Protection degree		IP67	IP67	IP67	IP67	
Housing material		Nickel-copper Alloy	Nickel-copper Alloy	Nickel-copper Alloy	Nickel-copper Alloy	
Connection		Cable	M12 Connector	Cable	M12 Connector	
Certification		—	—	—	—	

Welding-immune



Shell code		LR12X	LR18X	LR30X	LE21	
Dimensions(mm)		M12*1*51,M12*1*55 M12*1*63,M12*1*67	M18*1*51.5,M18*1*59.5 M18*1*63,M18*1*71	M30*1.5*52,M30*1.5*64 M30*1.5*63,M30*1.5*75	26.2*20.2*10.5	
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush	
Sensing distance		2mm, 4mm	5mm, 8mm	10mm, 15mm	0.3mm	
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO	
	DC 4 Wires	/	/	/	/	
	DC 2 Wires	/	/	/	/	
	AC 2 Wires	/	/	/	/	
	AC/DC 2 Wires	/	/	/	/	
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
Frequency		3000Hz, 2000Hz	1500Hz, 1000Hz	800Hz, 500Hz	500Hz	
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	
Protection degree		IP67	IP67	IP67	IP67	
Housing material		Brass+PTFE	Brass+PTFE	Brass+PTFE	PA66	
Connection		Cable, M12 Connector	Cable, M12 Connector	Cable, M12 Connector	Cable	
Certification		CE UKCA	CE UKCA	CE UKCA	CE UKCA	

Self-diagnosis

Factor one







Shell code		LR12X	LR12X	LR12X	LR18X	LR30X
Dimensions(mm)		M12*1*70	M12*1*69, M12*1*89	M12*1*51,M12*1*55 M12*1*63,M12*1*67	M18*1*51.5,M18*1*59.5 M18*1*63,M18*1*71	M30*1.5*52,M30*1.5*64 M30*1.5*63,M30*1.5*75
Mounting		◑ Non-flush	◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush
Sensing distance		3.7mm	3.7mm	2mm,4mm	5mm,8mm	10mm,15mm
Output	DC 3 Wires	PNP NO; PNP NC	PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	/	/	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC/DC 2 Wires	/	/	/	/	/
Supply voltage		20...30 VDC	20...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
Frequency		300Hz	300Hz	800Hz, 500Hz	400Hz, 200Hz	300Hz, 150Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		Nickel-copper Alloy	Nickel-copper Alloy	Nickel-copper Alloy	Nickel-copper Alloy	Nickel-copper Alloy
Connection		Cable	M12 Connector	Cable, M12 Connector	Cable, M12 Connector	Cable, M12 Connector
Certification		CE UKCA UL	CE UKCA UL	—	—	—

Factor one





Shell code	LE40SZ	LE40XZ			
Dimensions(mm)	40*40*66	40*40*120,40*40*129			
Mounting	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush			
Sensing distance	15mm, 20mm	15mm, 20mm			
Output DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC			
Output DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC			
Output DC 2 Wires	/	/			
Output AC 2 Wires	/	/			
Output AC/DC 2 Wires	/	/			
Supply voltage	10...30 VDC	10...30 VDC			
Frequency	200Hz, 100Hz	200Hz, 100Hz			
Ambient temperature	-25℃...70℃	-25℃...70℃			
Protection degree	IP67	IP67			
Housing material	PBT	PBT			
Connection	M12 Connector	M12 Connector Terminal connect			
Certification	—	—			

Clamp position series







Shell code		LT18 (V1)	LT18 (V2)	LT18 (V3)	LT18 (V4)	LT20-V1
Dimensions(mm)		47*18*35	47*18*35	47*18*35	47*18*35	18...28mm
Mounting		◑ Non-flush	◑ Non-flush	◑ Non-flush	◑ Non-flush	◑ Non-flush
Sensing distance		2mm	2mm	2mm	2mm	2mm
Output	DC 3 Wires	/	/	/	/	/
	DC 4 Wires	NPN NO+NO PNP NO+NO	NPN NO+NO PNP NO+NO	NPN NO+NO PNP NO+NO	NPN NO+NO PNP NO+NO	NPN NO+NO PNP NO+NO
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC/DC 2 Wires	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
Withstand presssure		/	/	/	/	/
Frequency		30Hz	30Hz	30Hz	30Hz	1000Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		PA66	PA66	PA66	PA66	PA66
Connection		M12 Connector	M12 Connector	M12 Connector	M12 Connector	M12 Connector
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL

High pressure resistant speed monitoring

High protection type






Shell code		FYG12	FYG12T	LR18X	LR30X	
Dimensions(mm)		M12*77	M12*77.5	M18*52.5	M30*53	
Mounting		● Flush	● Flush	● Quasi-flush ● Flush	● Flush	
Sensing distance		4mm	2mm	5mm/8mm	10mm/15mm	
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	/	/	
	DC 4 Wires	/	/	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	
	DC 2 Wires	/	/	/	/	
	AC 2 Wires	/	/	/	/	
	AC/DC 2 Wires	/	/	/	/	
Supply voltage		10...30 VDC	10...30 VDC	10…30 VDC	10…36 VDC	
Withstand presssure		500Bar	500Bar	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s	
Frequency		5000Hz	20000Hz	1000 Hz/500 Hz	500 Hz	
Ambient temperature		-30℃...110℃	-40℃...80℃	-40℃…85℃	-40℃…85℃	
Protection degree		IP68	IP68	IP68/IP69K	IP68/IP69K	
Housing material		Stainless steel	Stainless steel	Nickel-copper Alloy	Nickel-copper Alloy	
Connection		M12 Connector	M12 Connector	Cable M12 connector (4 pins)+0.2m cable	Cable M12 connector (4 pins)+0.2m cable	
Certification		CE UKCA	CE UKCA	CE UKCA UL	CE UKCA UL	





- Wide range of detecting targets: metal, plastic and fluid etc.
- Be able to detect different objects in container through nonmetallic container wall.
- Sensibility could be adjusted by potentiometer.

Naming rules

C	R	12	□	B	F	02	D	N	O	□	-	□	□	□□□□
1	2	3	4	5	6	7	8	9	10	11		12	13	15

1. Type code

Capacitive

2. Shape code

R: Threaded cylindrical

Q: Smooth cylindrical

E: Rectangular

3. Size code

Number: Housing diameter

e.g: 08:M8

4. Housing material

N/A: Copper

S: Plastic

G:Stainless steel

5. Housing length

A:Short

B: Standard

C:Long

D: Super Long

6. Mounting

N:Non-flush(nf)

F: Flush(f)

7. Sensing distance

Digital：Sensing distance

e.g: 02:2mm

04:4mm

10:10mm

8. Supply voltage

A:20...250VAC

D:10...30VDC

M:18...36VDC

S:20...250VAC/DC

9. Output way

B: AC/DC 2 wires

T: AC 2 wires

P:PNP

N:NPN

K: Relay

10. Output status

B: NO/NC optional

O:NO

C: NC

R: R:NO+NC

Note:Relay output is optional

L: IO Link

11. By sensor function

N/A:Standard function

Y:Extended sensing distance

T1: On–delay function

T160:60s

T1600:600s

T2:Off–delay function

T260:60s

T2600:600s

12. Cable length

e.g: N/A:2m

3M:3m

13. Connection

N/A:2m cable

M12 connector (4 pins)

Terminal

14. Special requirement

In 4 Digits

Standard function



Shell code		CR12	CR18	CR30	CQ20	CQ32
Dimensions(mm)		M12*1*52, M12*1*65	M18*1*70, M18*1*83.5	M30*1.5*62 M30*1.5*79	Φ20*80	Φ32*80
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush
Sensing distance		2mm, 4mm	5mm, 8mm	10mm, 15mm	10mm, 15mm	15mm, 20mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	/	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	NO NC	NO NC	NO NC	NO NC
	AC/DC 2 Wires	/	NO NC	NO NC	/	NO NC
Supply voltage		10...30 VDC	10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC 20...250 VAC/DC
Frequency		50Hz	50Hz, 15Hz	50Hz, 15Hz	50Hz, 15Hz	50Hz, 15Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		Nickel-copper Alloy, PA66	Nickel-copper Alloy, PBT	Nickel-copper Alloy, PBT	Nickel-copper Alloy, PBT	Nickel-copper Alloy, PBT
Connection		Cable, M12 Connector	Cable, M12 Connector	Cable, M12 Connector	Cable	Cable
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL

Standard function







Shell code		CQ34S	CR30X	CQ32X	CE05	CE05X
Dimensions(mm)		Φ34*80	M30*64	ϕ32*80	50*20*5	30*7*50
Mounting		● Flush, ◑ Non-flush	● Flush	● Flush	◑ Non-flush	● Flush, ◑ Non-flush
Sensing distance		15mm, 25mm	10mm	15mm	3.5mm, 5mm, 8mm	3.5mm, 5mm, 8mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	/	/	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	NPN NO+NC PNP NO+NC	/	/	/	/
	DC 2 Wires	NO NC	/	/	/	/
	AC 2 Wires	NO NC	NO NC	/	/	/
	AC/DC 5 Wires	/	/	NO+NC	/	/
Supply voltage		10...30 VDC 20...250 VAC 20...250 VAC/DC	20…250V AC/DC	20…250V AC	10...30 VDC	10...30 VDC
Frequency		50Hz, 15Hz	/	/	30Hz	60Hz
Ambient temperature		-25℃...70℃	-25℃…70℃	-25℃…70℃	-25℃...70℃	-10℃...70℃
Protection degree		IP67	IP68	IP67	IP67	IP67
Housing material		PBT	PBT	PC/PBT	PBT	PBT
Connection		Cable	Cable, M12 Connector	Cable	Cable	Cable
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA	CE UKCA

Standard function



Shell code		CE05-S	CE07	CE34	CE35	CE39
Dimensions(mm)		50*20*5	30*7*50	50*7*20	35*15*58	39*59*15
Mounting		◑ Non-flush	● Flush, ◑ Non-flush	◑ Non-flush	● Flush, ◑ Non-flush	◑ Non-flush
Sensing distance		6mm(Adjustable)	5mm, 8mm	10mm	10mm, 15mm	12mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	/	/	/	NPN NO+NC PNP NO+NC	/
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC/DC 2 Wires	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
Frequency		30Hz	60Hz	30Hz	50Hz	50Hz
Ambient temperature		-25℃...70℃	-10℃...70℃	-10℃...70℃	-10℃...70℃	-10℃...70℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		PBT	PBT	PBT	PBT	PBT
Connection		Cable	Cable	Cable	Cable	Cable
Certification		CE UKCA	CE UKCA	CE UKCA	CE UKCA	CE UKCA

Time delay function

Extended sensing distance







Shell code		CR30X	CQ32X	CQ34S	CR12D	CR12X
Dimensions(mm)		M30*64	ϕ32*80	Φ34*80	M12*1*63,M12*1*65.5 M12*1*75,M12*1*80.5	M12*1*63,M12*1*68 M12*1*75,M12*1*80
Mounting		● Flush	● Flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush
Sensing distance		10mm	15mm	15mm, 25mm	4mm,8mm	4mm,8mm
Output	DC 3 Wires	/	/	/	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	/	/	/	/	/
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC 5 Wires	NO NC	NO NC	Relay output NO+NC	/	/
Supply voltage		20…250V AC/DC	20…250V AC	20...250 VAC	10...30 VDC	10...30 VDC
Frequency		/	/	1Hz	40Hz	25Hz
Ambient temperature		-25℃…70℃	-25℃…70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP68	IP67	IP67	IP67	IP67
Housing material		PBT	PC/PBT	PBT	Nickel-copper Alloy	Nickel-copper Alloy
Connection		Cable	Cable	Cable	Cable, M12 Connector	Cable, M12 Connector
Certification		—	—	—	CE UKCA UL	CE UKCA UL

Extended sensing distance







Shell code		CR18X	CR30X	CR12XS	CR18XS	CR30XS
Dimensions(mm)		M18*1*70,M18*1*85 M18*1*80,M18*1*95	M30*1.5*64,M30*1.5*81 M30*1.5*79,M30*1.5*96	M12*1*62,M12*1*67 M12*1*74,M12*1*79	M18*1*70,M18*1*85 M18*1*80,M18*1*95	M30*1.5*64,M30*1.5*81 M30*1.5*79,M30*1.5*96
Mounting		● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush	● Flush, ◑ Non-flush
Sensing distance		8mm, 12mm	15mm, 25mm	4mm,8mm	8mm, 12mm	15mm, 25mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	/	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC 5 Wires	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
Frequency		25Hz	40Hz	40Hz	25Hz	20Hz
Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
Protection degree		IP67	IP67	IP68	IP68	IP68
Housing material		Nickel-copper Alloy	Nickel-copper Alloy	PBT	PBT	PBT
Connection		Cable, M12 Connector	Cable, M12 Connector	Cable, M12 Connector	Cable, M12 Connector	Cable, M12 Connector
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL

Corrosion resistance test



Shell code	CR18XT	CR18XT	CR18XT		
Dimensions(mm)	M18*80	M18*70.8	M18*70.8		
Mounting	◑ Non-flush	● Flush, ◑ Non-flush	● Quasi-flush ◑ Non-flush		
Sensing distance	5mm(Contact use)	5mm/8mm	8mm/12mm		
Output DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC		
Output DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC		
Output DC 2 Wires	/	/	/		
Output AC 2 Wires	/	/	/		
Output AC/DC 2 Wires	/	/	/		
Supply voltage	10…30 VDC	10…30 VDC	10…30 VDC		
Frequency	/	20Hz	20Hz		
Ambient temperature	-25°C…70°C	-25°C…70°C	-25°C…70°C		
Protection degree	IP67	IP67	IP67		
Housing material	PTEE	PTEE	PTEE		
Connection	Cable	Cable	Cable		
Certification	CE UKCA UL	CE UKCA UL	CE UKCA UL		

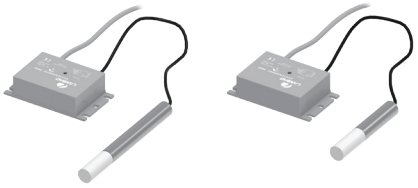
Pipe liquid level detecting





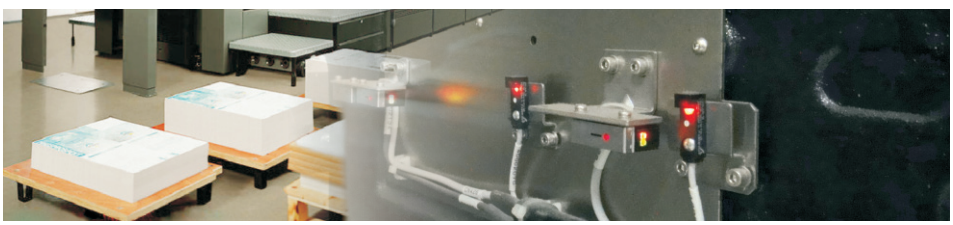
Shell code		CE10	CE15			
Dimensions(mm)		43*24*20	34*33*20			
Mounting		◑ Non-flush	◑ Non-flush			
Sensing distance		13mm	26mm			
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC			
	DC 4 Wires	/	/			
	DC 2 Wires	/	/			
	AC 2 Wires	/	/			
	AC/DC 2 Wires	/	/			
Supply voltage		10...30 VDC	10...30 VDC			
Frequency		60Hz	60Hz			
Ambient temperature		-10℃...55℃	-10℃...55℃			
Protection degree		IP67	IP67			
Housing material		PBT	PBT			
Connection		Cable	Cable			
Certification		CE UKCA	CE UKCA			

High temperature resistant material level detecting



Shell code		CE53(Long)	CE53(Short)			
Dimensions(mm)		95.5*55*22	95.5*55*22			
Mounting		◑ Non-flush	◑ Non-flush			
Sensing distance		8mm	8mm			
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC			
	DC 4 Wires	/	/			
	DC 2 Wires	/	/			
	AC 2 Wires	/	/			
	AC/DC 2 Wires	/	/			
Supply voltage		18...36 VDC	18...36 VDC			
Frequency		0.3Hz	0.3Hz			
Ambient temperature		Sensor : 250℃ Control box : 0℃...60℃	Sensor : 250℃ Control box : 0℃...60℃			
Protection degree		IP54	IP54			
Housing material		PA6	PA6			
Connection		Cable	Cable			
Certification		CE UKCA	CE UKCA			





- Easy to set up and adjust distance.
- Short-circuit protection, reverse polarity protection.
- Cable and connector connection optional.
- Stainless steel housing, strong and durable. Plastic housing, economical and easy to install.
- Light ON/dark ON conversion function.
- Built-in power supply, AC, DC or AC/DC universal power supply.
- Relay output, capacity up to 250VAC*3A.

Naming rules

P	R	12	□	□	-	B	C15	D	N	O	□	-	□□	□□	□□□□
1	2	3	4	5		6	7	8	9	10	11		12	13	14

1. Type code

P: Photoelectric

2. Shape code

R: Threaded cylindrical

U: U-Shaped

Q: Smooth cylindrical

2 letters: Rectangular housing code

TE TF TB SE SS

SM SR SV ST

3. Size Code

Number: Housing diameter

e.g: 08: M8

4. Housing material

N/A: Copper

S: Plastic

5. Housing length

N/A: Standard

Short: S

Long: L

6. Mounting

B: Diffuse reflection

D: Retro reflection

P: Polarized reflection

S: Focus reflection

T: Through beam reflection

M: Color mark detect

Y: Background suppression

G: Glass bottle detection

7. Sensing distance

e.g: C10: 10cm

C40: 40cm

M5: 5m

M10: 10m

R50: 50mm

8. Supply voltage

A: 20...250VAC

A2: 220VAC

B: 90...250VAC

C: 380VAC

D: 10...30VDC

J: 5VDC

S: 20...240VAC/DC

T: 12...24VDC

9. Output way

T: AC 2 wires

P: PNP

N: NPN

E: NPN/PNP

F: NPN+PNP

K: Relay

G: Push-Pull

10. Output status

O: NO

C: NC

R: NO+NC

A: NO/NC Reversible

B: NO/NC Optional

Cable optional; Potentiometer optional

Note: Relay output is optional

L: IO Link

11. Light source type

No: infrared light source

R: Red light source

L: Laser light source

X: Line light source

12. Cable length

e.g: N/A: 2m

3M: 3m

13. Connection

N/A: 2m cable

E1: M8 connector (3 pins)

E2: M12 connector (4 pins)

E3: M8 connector (4 pins)

E4: M12 trapezoid connector (4 pins)

E5: M12 connector (5 pins)

D: Terminal

F3: M8 connector (3 pins)+0.2m cable

14. Special requirement

In 4 digits

Through beam







Shell code		PR12	PR18	PSM	PSS	PR18G
Sensing distance		5m, 10m	10m, 20m	20m	20m	10m, 20m
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	/	/	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	/	NPN NO+NC PNP NO+NC	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC	NPN NO+NC PNP NO+NC
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	NO NC	/	/	NO NC
	AC/DC 5 Wires	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC 20...250 VAC	10...30 VDC	10...30 VDC	10...30 VDC 20...250 VAC
Response time		DC: <8.2ms	DC: <8.2ms AC: <50 ms	DC: ≤1ms	DC: ≤1ms	DC: <8.2ms AC: <50 ms
Ambient temperature		-15℃...55℃	-15℃...55℃	-25℃...55℃	-25℃...55℃	-15℃...55℃
Protection degree		IP67	IP67	IP67	IP67	IP65
Housing material		Nickel-copper Alloy,PBT	Nickel-copper Alloy,PBT	Nickel-copper Alloy	PC/ABS	Nickel-copper Alloy,PBT
Connection		Cable M12 Connector	Cable M12 Connector	Cable M12 Connector	Cable M12 Connector	Cable M12 Connector
Certification		CE UKCA UL	CE UKCA UL	CE UKCA	CE UKCA	CE UKCA UL

Through beam





Shell code		PR30	PR30L			
Sensing distance		20m, 40m	100m, 150m			
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC			
	DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC			
	DC 2 Wires	/	/			
	AC 2 Wires	NO NC	/			
	AC/DC 5 Wires	/	/			
Supply voltage		10...30 VDC 20...250 VAC	10...30 VDC			
Response time		DC: <8.2ms AC: <50 ms	DC: <8.2ms			
Ambient temperature		-15℃...55℃	-15℃...55℃			
Protection degree		IP67	IP67			
Housing material		Nickel-copper Alloy,PBT	Nickel-copper Alloy,PBT			
Connection		Cable M12 Connector	Cable			
Certification		CE UKCA UL	—			

Through beam








Shell code		PU05M-F	PU05M-K	PU05M-L	PU05M-R	PU05M-T	PU05M-Y
Sensing distance		5mm	5mm	5mm	5mm	5mm	5mm
Output	DC 3 Wires	/	/	/	/	/	/
	DC 4 Wires	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC
	DC 2 Wires	/	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/	/
	AC/DC 5 Wires	/	/	/	/	/	/
Supply voltage		5...24 VDC	5...24 VDC	5...24 VDC	5...24 VDC	5...24 VDC	5...24 VDC
Response time		0.5ms	0.5ms	0.5ms	0.5ms	0.5ms	0.5ms
Ambient temperature		-25℃...55℃	-25℃...55℃	-25℃...55℃	-25℃...55℃	-25℃...55℃	-25℃...55℃
Protection degree		IP64	IP64	IP64	IP64	IP64	IP64
Housing material		PBT	PBT	PBT	PBT	PBT	PBT
Connection		Cable Connector type	Cable Connector type	Cable Connector type	Cable Connector type	Cable Connector type	Cable Connector type
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL

Through beam

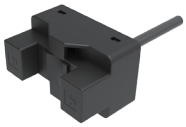


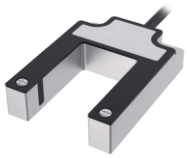
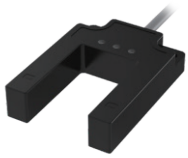




Shell code		PU05S-F	PU05S-K	PU05S-L	PU05S-R	PU05S-U
Sensing distance		5mm	5mm	5mm	5mm	5mm
Output	DC 3 Wires	/	/	/	/	/
	DC 4 Wires	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC/DC 5 Wires	/	/	/	/	/
Supply voltage		5...24 VDC	5...24 VDC	5...24 VDC	5...24 VDC	5...24 VDC
Response time		0.5ms	0.5ms	0.5ms	0.5ms	0.5ms
Ambient temperature		-25℃...55℃	-25℃...55℃	-25℃...55℃	-25℃...55℃	-25℃...55℃
Protection degree		IP64	IP64	IP64	IP64	IP64
Housing material		PBT	PBT	PBT	PBT	PBT
Connection		Cable Connector type	Cable Connector type	Cable Connector type	Cable Connector type	Cable Connector type
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL

Through beam

Shell code		PU07	PU13S	PU15	PU30	PU30S
Sensing distance		7mm	13mm	15mm	30mm	30mm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	/	NPN NO; NPN NC PNP NO; PNP NC	/	/
	DC 4 Wires	/	NPN NO/NC PNP NO/NC	/	NPN NO/NC PNP NO/NC	NPN NO+NC PNP NO+NC
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC/DC 5 Wires	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
Response time		DC: <1ms	DC: <1ms	DC: <1ms	DC: <1ms	DC: < 0.6ms
Ambient temperature		-15℃...55℃	-15℃...55℃	-15℃...55℃	-15℃...55℃	-25℃...55℃
Protection degree		IP64	IP50	IP64	IP60	IP67
Housing material		PBT	PBT	PBT	Aluminum alloy+PC	PBT
Connection		Cable	Cable	Cable	Cable	Cable
Certification		UL	UL	UL	UL	UL

Through beam







Shell code		PSV	PSV-S	PST	PSJ	PSE
Sensing distance		50cm, 100cm	50cm, 100cm	2m, 50cm	1.5m	5m,10m,20m
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO/NC PNP NO/NC
	DC 4 Wires	/	/	/	/	/
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC/DC 5 Wires	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	12...24 VDC	10...30 VDC
Response time		DC: < 1ms	DC: < 1ms	DC: < 0.5ms	DC: < 1ms	DC: < 1ms
Ambient temperature		-20℃...55℃	-20℃...55℃	-20℃...55℃	-20℃...55℃	-25℃...55℃
Protection degree		IP65	IP65	IP65	IP40	IP67
Housing material		PC+PBT	PC+PBT	ABS	PC/ABS	PC/ABS
Connection		Cable	Cable	Cable, M8 Trunk line type	Cable	Cable M8 Connector
Certification		CE UKCA	CE UKCA	CE UKCA	CE UKCA	CE UKCA

Through beam






Shell code		PSR	PTF	PTE	PTL	
Sensing distance		20m	10m, 20m	60m	20m, 30m, 40m	
Output	DC 3 Wires	/	NPN NO; NPN NC PNP NO; PNP NC	/	/	
	DC 4 Wires	NPN NO/NC PNP NO/NC	NPN NO+NC PNP NO+NC	NPN+PNP NO/NC	NPN NO+NC PNP NO+NC	
	DC 2 Wires	/	/	/	/	
	AC 2 Wires	/	/	/	/	
	AC/DC 5 Wires	/	Relay output NO+NC	Relay output NO+NC	Relay output NO+NC	
Supply voltage		10...30 VDC	10...30 VDC 24...240 VAC/ 12...240 VDC	10...30 VDC 24...240 VAC/DC	10...30 VDC 24...240 VAC/ 12...240 VDC	
Response time		DC: < 1ms	DC: < 8.2ms AC: < 30 ms	DC: < 2ms AC/DC: <10ms	DC: < 8.2ms AC: < 30 ms	
Ambient temperature		-15℃...60℃	-15℃...55℃	-25℃...55℃	-15℃...55℃	
Protection degree		IP67	IP64	IP67	IP67	
Housing material		ABS	PC/ABS	PC/ABS	PC/ABS	
Connection		Cable M12 Connector	Cable M12 Connector	Cable M12 Connector	Terminal	
Certification		CE UKCA UL	CE UKCA	CE UKCA	CE UKCA	

Retro reflection



Shell code		PR18	PR18G	PR30	PTL	PST
Sensing distance		3m	3m	5m	5m	25cm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	/	NPN NO; NPN NC PNP NO; PNP NC
	DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	/
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	NO NC	NO NC	NO NC	/	/
	AC/DC 5 Wires	/	/	/	Relay output NO+NC	/
Supply voltage		10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC	10...30 VDC 24...240 VAC/ 12...240 VDC	10...30 VDC
Response time		DC: < 8.2ms AC: < 50 ms	DC: < 8.2ms AC: < 50 ms	DC: < 8.2ms AC: < 50 ms	DC: < 8.2ms AC: < 30 ms	DC: < 0.5ms
Ambient temperature		-15℃...55℃	-15℃...55℃	-15℃...55℃	-15℃...55℃	-20℃...55℃
Protection degree		IP67	IP65	IP67	IP67	IP65
Housing material		Nickel-copper Alloy,PBT	Nickel-copper Alloy,PBT	Nickel-copper Alloy,PBT	PC/ABS	ABS
Connection		Cable M12 Connector	Cable M12 Connector	Cable M12 Connector	Terminal	Cable, M8 Trunk line type
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	—	CE UKCA

Polarized reflection







Shell code		PSM	PSS	PTL	PSR	PSE
Sensing distance		3m	3m	12m	3m	3m
Output	DC 3 Wires	/	/	/	/	NPN NO/NC PNP NO/NC
	DC 4 Wires	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC	NPN NO+NC PNP NO+NC	NPN NO/NC PNP NO/NC	/
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC/DC 5 Wires	/	/	Relay output NO+NC	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC 24...240 VAC/ 12...240 VDC	10...30 VDC	10...30 VDC
Response time		DC: ≤0.5ms	DC: ≤0.5ms	DC: < 8.2ms AC: < 30 ms	DC: < 0.5ms	DC: < 0.5ms
Ambient temperature		-25℃...55℃	-25℃...55℃	-15℃...55℃	-15℃...60℃	-25℃...55℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		Nickel-copper Alloy,PBT	PC/ABS	PC/ABS	ABS	PC/ABS
Connection		Cable M12 Connector	Cable M12 Connector	Terminal	Cable M12 Connector	Cable M8 Connector
Certification		CE UKCA	CE UKCA	CE UKCA	CE UKCA UL	CE UKCA

Transparent object detection





Shell code		PSM	PSS	PSE		
Sensing distance		2m	2m	2m,50cm		
Output	DC 3 Wires	/	/	NPN NO/NC PNP NO/NC		
	DC 4 Wires	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC	/		
	DC 2 Wires	/	/	/		
	AC 2 Wires	/	/	/		
	AC/DC 5 Wires	/	/	/		
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC		
Response time		DC: ≤0.5ms	DC: ≤0.5ms	DC: ≤0.5ms		
Ambient temperature		-25℃...55℃	-25℃...55℃	-25℃...55℃		
Protection degree		IP67	IP67	IP67		
Housing material		Nickel-copper Alloy	PC/ABS	PC/ABS		
Connection		Cable M12 Connector	Cable M12 Connector	Cable M8 Connector		
Certification		CE UKCA	CE UKCA	CE UKCA		

Diffuse reflection



Shell code		PR12	PR18	PR18G	PR30	PSM
Sensing distance		15cm	10cm,40cm	10cm,40cm	50cm,100cm	10cm, 40cm(Infrared light) 40cm, (Red light), 100cm
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	/
	DC 4 Wires	/	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO/NC PNP NO/NC
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	NO NC	NO NC	NO NC	/
	AC/DC 5 Wires	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC	10...30 VDC
Response time		DC: <8.2ms	DC: <8.2ms AC: <50 ms	DC: <8.2ms AC: <50 ms	DC: <8.2ms AC: <50 ms	DC: ≤0.5ms
Ambient temperature		-15℃...55℃	-15℃...55℃	-15℃...55℃	-15℃...55℃	-25℃...55℃
Protection degree		IP67	IP67	IP65	IP67	IP67
Housing material		Nickel-copper Alloy,PBT	Nickel-copper Alloy,PBT	Nickel-copper Alloy,PBT	Nickel-copper Alloy,PBT	Nickel-copper Alloy
Connection		Cable M12 Connector	Cable M12 Connector	Cable M12 Connector	Cable M12 Connector	Cable M12 Connector
Certification		CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA UL	CE UKCA

Diffuse reflection







Shell code		PSS	PBA	PSE	PTF	PTE
Sensing distance		10cm, 40cm(Infrared light) 40cm, (Red light), 100cm	2m	30cm, 10cm, 100cm	50cm, 100cm	30cm, 200cm
Output	DC 3 Wires	/	NPN NO; NPN NC PNP NO; PNP NC	NPN NO/NC PNP NO/NC	NPN NO; NPN NC PNP NO; PNP NC	/
	DC 4 Wires	NPN NO/NC PNP NO/NC	/	/	NPN NO+NC PNP NO+NC	NPN+PNP NO/NC
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC/DC 5 Wires	/	/	/	Relay output NO+NC	Relay output NO+NC
Supply voltage		10...30 VDC	12...24 VDC	10...30 VDC	10...30 VDC 24...240 VAC/ 12...240 VDC	10...30 VDC 24...240 VAC/DC
Response time		DC: ≤0.5ms	DC: <3ms	DC: < 0.5ms	DC: < 8.2ms AC: < 30 ms	DC: < 2 ms AC/DC: < 10 ms
Ambient temperature		-25℃...55℃	-15℃...55℃	-25℃...55℃	-15℃...55℃	-25℃...55℃
Protection degree		IP67	IP54	IP67	IP64	IP67
Housing material		PC/ABS	PC/ABS	PC/ABS	PC/ABS	PC/ABS
Connection		Cable M12 Connector	Cable	Cable M8 Connector	Cable M12 Connector	Cable M12 Connector
Certification		CE UKCA	—	CE UKCA	CE UKCA	CE UKCA

Diffuse reflection





Shell code		PTL	PSR	PSV		
Sensing distance		80cm,200cm	30cm	10cm		
Output	DC 3 Wires	/	/	NPN NO; NPN NC PNP NO; PNP NC		
	DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO/NC PNP NO/NC	/		
	DC 2 Wires	/	/	/		
	AC 2 Wires	/	/	/		
	AC/DC 5 Wires	Relay output NO+NC	/	/		
Supply voltage		10...30 VDC 24...240 VAC/ 12...240 VDC	10...30 VDC	10...30 VDC		
Response time		DC: < 8.2ms AC: < 30 ms	DC: < 0.5ms	DC: < 1ms		
Ambient temperature		-15℃...55℃	-15℃...60℃	-20℃...55℃		
Protection degree		IP67	IP67	IP65		
Housing material		PC/ABS	ABS	PC+PBT		
Connection		Terminal	Cable M12 Connector	Cable		
Certification		—	CE UKCA UL	CE UKCA		

Background suppression







Shell code		PSM	PSS	PSE	PSE	PSR
Sensing distance		10cm	10cm	5cm(Background suppression/ Prospects for inhibiting)	25cm,35cm	10cm
Output	DC 3 Wires	/	/	/	/	/
	DC 4 Wires	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC/DC 5 Wires	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
Response time		DC: ≤0.5ms	DC: ≤0.5ms	DC: ≤0.5ms	DC: ≤ 1ms	DC: < 0.5ms
Ambient temperature		-25℃...55℃	-25℃...55℃	-25℃...55℃	-25℃...55℃	-15℃...60℃
Protection degree		IP67	IP67	IP67	IP67	IP67
Housing material		Nickel-copper Alloy	PC/ABS	PC+ABS	PC+ABS	ABS
Connection		Cable M12 Connector	Cable M12 Connector	Cable M8 Connector	Cable M8 Connector	Cable M12 Connector
Certification		CE UKCA	CE UKCA	CE UKCA	CE UKCA	CE UKCA UL

Background suppression





Shell code		PST	PSV			
Sensing distance		8cm,10cm 15mm,30mm	30mm			
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC			
	DC 4 Wires	/	/			
	DC 2 Wires	/	/			
	AC 2 Wires	/	/			
	AC/DC 5 Wires	/	/			
Supply voltage		10...30 VDC	10...30 VDC			
Response time		DC: < 1ms	DC: < 1ms			
Ambient temperature		-20℃...55℃	-20℃...55℃			
Protection degree		IP65	IP65			
Housing material		ABS	PC+PBT			
Connection		Cable, M8 Trunk line type	Cable			
Certification		CE UKCA	CE UKCA			

Focus reflection

TOF reflection







Shell code		PST	PSV	PSE	PSE	PSE
Sensing distance		25mm	25mm	5cm	60cm, 1m, 3m	3m
Output	DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	NPN NO/NC PNP NO/NC	/	NPN NO/NC PNP NO/NC
	DC 4 Wires	/	/	/	/	RS485
	DC 2 Wires	/	/	/	/	/
	AC 2 Wires	/	/	/	/	/
	AC/DC 5 Wires	/	/	/	/	/
Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10…30 VDC	10…30 VDC
Response time		DC: < 0.5ms	DC: < 1ms	DC: < 0.5ms	35ms	35ms
Ambient temperature		-20℃...55℃	-20℃...55℃	-25℃...55℃	-20...55℃	-20...55℃
Protection degree		IP65	IP65	IP67	IP67	IP67
Housing material		ABS	PC+PBT	PC+ABS	PC+ABS	PC+ABS
Connection		Cable, M8 Trunk line type	Cable	Cable M8 Connector	M8 Connector 2m PVC Cable	0.5m PVC Cable
Certification		CE UKCA	CE UKCA	CE UKCA	—	—

Mark sensors





Shell code	SPM-TNR-WB	SPM-TNR-RGB	
Sensing distance	10±2mm	18...28mm	
Response time	1ms	＜200μs	
Output	NPN NO/NC PNP NO/NC	NPN/PNP	
Supply voltage	12...24 VDC	24VDC±10% Ripple P-P＜10%	
Light source	Red light/green light, White light/blue light	Composite LED:Red/Green/Blue (Light source wavelength: 640nm/ 525nm/470nm)	
Withstanding voltage	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s	
Insulation resistance	≥50MΩ(500VDC)	≥50MΩ(500VDC)	
Anti-vibration	10...50Hz,repeat-amplitude;1.5mm, (2 hours each for x,y,z direction)	10...50Hz,repeat-amplitude;1.5mm, (2 hours each for x,y,z direction)	
Ambient temperature	-25℃...55℃	-10...55℃ (No frost、No condensation)	
Protection degree	IP65	IP65	
Housing material	PBT	PBT	
Connection	Cable	Cable	

Optical fiber sensors







Shell code	FD1	FD2	FD3
Sensing distance	Depand on fiber type	Depand on fiber type	Depand on fiber type
Response time	< 1ms	< 200μs (FINE) < 300μs (TURBO) < 550μs (SUPER)	50μs
Output	NPN+PNP NO/NC	NPN NO/NC PNP NO/NC	NPN PNP
Supply voltage	10...30 VDC	12...24 VDC	12...24 VDC
Illumination intensity	Incandescent lamp:intensity of illumination 3,000lux		
Withstanding voltage	AC1,000V 1 minute 50/60Hz		
Insulation resistance	>50MΩ,base on DC500V megger	>50MΩ,base on DC500V megger	>50MΩ,base on DC500V megger
Anti-vibration	10...55Hz,amplitude;1mm, (2 hours each for x,y,z direction)	10...55Hz,amplitude;1mm, (2 hours each for x,y,z direction)	10...55Hz,amplitude;1mm, (2 hours each for x,y,z direction)
Anti-concussion	Acceleration:500m/s²(approx:30G) 3 times each for x,y and z direction	Acceleration:500m/s²(approx:30G) 3 times each for x,y and z direction	Acceleration:500m/s²(approx:30G) 3 times each for x,y and z direction
Ambient temperature	0℃...55℃ (dewed or iced forbidden)	0℃...55℃ (dewed or iced forbidden)	-20...55℃(No freezing)
Ambient humidity	35...85%RH		
Protection degree	IP54		
Housing material	PC+ABS		PC
Connection	Cable		

Optical fiber PFR series



Shell code		PFR-610	PFRC-610	PFRD-410	PFRC-410	PFRD-310	PFRC-310
Dimensions		M6	M6	M4	M4	M3	M3
Min bending radius		R25	R25	R15	R15	R15	R15
Sensing distance (mm)	FD1 Fiber optic amplifier	100	90	60	40	40	40
	FD2 Fiber optic amplifier	FINE:110 TURBO:190 SUPER:290	FINE:80 TURBO:170 SUPER:280	FINE:40 TURBO:90 SUPER:240	FINE:40 TURBO:70 SUPER:160	FINE:40 TURBO:70 SUPER:120	FINE:40 TURBO:80 SUPER:120
Min detected target (mm)		Φ0.2	Φ0.1	Φ0.1	Φ0.1	Φ0.1	Φ0.05

Optical fiber PFT series



Shell code		PFT-610	PFT-410	PFT-310	
Dimensions		M6	M4	M3	
Min bending radius		R25	R25	R2	
Sensing distance (mm)	FD1 Fiber optic amplifier	280mm	250mm	200mm	
	FD2 Fiber optic amplifier	FINE:300 TURBO:500 SUPER:800	FINE:300 TURBO:500 SUPER:800	FINE:200 TURBO:400 SUPER:700	
Min detected target (mm)		Φ0.5	Φ0.5	Φ0.5	

Optical fiber PFT series





Shell code	PFT-R01	PFT-R02	PFT-S01	
Dimensions	Detection area 2×11	Detection area 3×40	—	
Min bending radius	R2	R2	R5	
Sensing distance (mm) FD3 Fiber optic amplifier	700...1200mm	1400...2000mm	1...25mm	

Optical fiber PFR/T-V series






Shell code	PFR-620-V	PFR-420-V	PFT-420-V	PFT-620-V
Dimensions	M6	M4	M4	M6
Min bending radius	R2	R2	R2	R2
Sensing distance (mm)	15/30/45mm	35/110/200mm	150/500/2000mm	150/500/2000mm

Color sensors



Shell code	Amplifier CPES-TxB
Response time	200μS (HIGH SPEED) /1ms (FINE) /4ms (TURBO) /8ms (SUPER)
Control output	NPN(PNP)Open collector X4 channel, max 40VDC(30VDC),1 output reaches 100mA,A total of 4 outputs reach 200mA,residual voltage:1V max
Output	NPN、PN
Supply voltage	24VDC, Ripple(P-P): ＜10%
Consumption current	Normal mode: 1.5W(≤62.5mA),Ecomode: 1W(≤42mA)
Timer function	Timer OFF/OFF-delay/ON-delay/single trigger, timer time is adjustable from 1 to 1,000ms (for each domain separately)
Ambient temperature	-10...55°C(No condensation)
Circuit protection	Short-circuit protection、Reverse polarity protection、Zener protection
Vibration resistance	10...55Hz, dual amplitude 1.5mm(2 hours each in X, Y, Z directions)

	Detection head CPES-C09
Examination range	11...20mm
Min spot diameter	1mm@16mm
Minimum bending radius	R25mm
Light source	Composite LED:Red/Green/Blue(Lightsource wave length:665nm/520nm/465nm)
Ambient luminosity	Incandescent: maximum1,000lux; Daylight: maximum20,000lux
Protection degree	IP40
Housing material	Body: PC; Lens cover: Polyarylate
Connection	2m PVC Cable

Digital laser distance sensors



Shell code		PDA	
Item code		Standard type	High precision type
Series code	RS...485	PDA-CC10DGR	PDA-CC10DGRM
	4...20mA	PDA-CC10TGI	PDA-CC10TGIM

Light source	Red Laser (650nm)	
Laser class	Class 2	
Spot diameter	1mm*3mm@100mm	
Measuring range	30...100mm	
Linear accuracy①②	RS-485：±0.3%F.S. 4...20mA：±0.4%F.S.	RS-485/4...20mA：±0.1%F.S.
Repeated accuracy①②③	10μm@30mm；30μm@50mm；100μm@100mm	
Resolution	5μm@30mm；50μm@100mm	
Supply voltage	RS-485:10...30VDC 4...20mA:12...24VDC	
Voltage drop	<2.5V	
Power consumption	≤700mW	
Load current	200mA	
Circuit protection④	Short circuit, reverse polarity, overload protection	
Output	RS-485(Support Modbus protocol); 4...20mA(Load resistance < 390Ω)	
Integrated function⑤	Slave address,Port rate setting;Product self-check;Output setting;Analog map settings; Average setting;Parameter query;Single point teach;window teach;Window Teach-in setting	
Indicator	Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED	
Ambient temperature	-10℃...50℃	
Temperature drift	±0.02%F.S./℃	
Response time	2ms/16ms/40ms(Configurable)	
Ambient humidity	35...85%RH(No condensation)	
Anti-ambient light	Incandescent light: < 3,000lux	
Impulse withsand	500m/s²(Approximate 50G),3 times each in X, Y, Z direction	
Vibration resistance	10...55Hz Double amplitude 1mm, 2H each in X, Y, Z directions	
Protection degree	IP67	
Material	Housing: Aluminum; Lens cover: PMMA； Display panel: PC	
Dimension	65*51*23mm	
Connection	2m 5-pin/4-pin PVC cable(5-pin: RS...485 output; 4-pin: analog output)	

Remark: ①Test conditions： standard data at (23.5)℃; supply voltage 24VDC; 30 minutes' warmup before test; sampling period 2ms; average sampling times 100; standard sensing object 90% white card.
②The statistical data follows the 3σ criteria
③Repeat accuracy: 23 ± 5 ℃ environment, 90% reflectivity white card, 100 test data results;
④Protecion circuit only for switch output.
⑤Slave address, baud rate setting only for RS-485 series.
⑥Product operation steps and precautions in "User manual".

Digital laser distance sensors



Shell code		PDA	
Item code		Standard type	High precision type
Series code	RS...485	PDA-CC50DGR	PDA-CC50DGRM
	4...20mA	PDA-CC50TGI	PDA-CC50TGIM
Light source		Red Laser (650nm)	
Laser class		Class 2	
Spot diameter		Φ2.5mm@500mm	
Measuring range		80...500mm	
Linear accuracy①②		RS-485: ±0.3%F.S. 4...20mA: ±0.4%F.S.	RS-485/4...20mA: ±0.15%F.S. (80...250mm) ±0.3%F.S. (250...500mm)
Repeated accuracy①②③		30μm@80mm; 250μm@250mm; 1000μm@500mm	
Resolution		15μm@80mm; 500μm@500mm	
Supply voltage		RS-485:10...30VDC; 4...20mA:12...24VDC	
Voltage drop		<2.5V	
Power consumption		≤700mW	
Load current		200mA	
Circuit protection④		Short circuit, reverse polarity, overload protection	
Output		RS-485(Support Modbus protocol); 4...20mA(Load resistance < 390Ω)	
Integrated function⑤		Slave address,Port rate setting;Product self-check;Output setting;Analog map settings; Average setting;Parameter query;Single point teach;window teach;Window Teach-in setting	
Indicator		Power indicator: GreenLED; Action indicator: YellowLED; Alarm indicator: YellowLED	
Ambient temperature		-10℃...50℃	
Temperature drift		±0.02%F.S./℃	
Response time		2ms/16ms/40ms(Configurable)	
Ambient humidity		35...85%RH(No condensation)	
Anti-ambient light		Incandescent light: < 3,000lux	
Impulse withsand		500m/s²(Approximate 50G),3 times each in X, Y, Z direction	
Vibration resistance		10...55Hz Double amplitude 1mm, 2H each in X, Y, Z directions	
Protection degree		IP67	
Material		Housing: Aluminum; Lens cover: PMMA; Display panel: PC	
Dimension		65*51*23mm	
Connection		2m 5-pin/4-pin PVC cable(5-pin: RS...485 output; 4-pin: analog output)	

Remark: ①Test conditions: standard data at (23.5)℃; supply voltage 24VDC; 30 minutes' warmup before test; sampling period 2ms; average sampling times 100; standard sensing object 90% white card.
②The statistical data follows the 3σ criteria
③Repeat accuracy: 23 ± 5 ℃ environment, 90% reflectivity white card, 100 test data results;
④Protecion circuit only for switch output.
⑤Slave address, baud rate setting only for RS-485 series.
⑥Product operation steps and precautions in "User manual".

Digital laser distance sensors



Shell code		PDA	
Item code		Standard type	High precision type
Series code	RS...485	PDA-CC100DGR	PDA-CC100DGRM
	4...20mA	PDA-CC100TGI	PDA-CC100TGIM

Light source	Red Laser (650nm)	
Laser class	Class 2	
Spot diameter	Φ3mm@1000mm	
Measuring range	150...1000mm	
Linear accuracy①②	RS-485/4...20mA: ±0.6%F.S.	RS-485/4...20mA: ±0.3%F.S. (150...450mm) ±0.6%F.S. (450...1000mm)
Repeated accuracy①②③	100μm@150mm; 520μm@500mm; 4000μm@1000mm	
Resolution	50μm@150mm; 2000μm@1000mm	
Supply voltage	RS-485:10...30VDC; 4...20mA:12...24VDC	
Voltage drop	<2.5V	
Power consumption	≤700mW	
Load current	200mA	
Circuit protection④	Short circuit, reverse polarity, overload protection	
Output	RS-485(Support Modbus protocol); 4...20mA(Load resistance < 390Ω)	
Integrated function⑤	Slave address,Port rate setting;Product self-check;Output setting;Analog map settings; Average setting;Parameter query;Single point teach;window teach;Window Teach-in setting	
Indicator	Power indicator: GreenLED; Action indicator: YellowLED; Alarm indicator: YellowLED	
Ambient temperature	-10℃...50℃	
Temperature drift	±0.02%F.S./℃	
Response time	2ms/16ms/40ms(Configurable)	
Ambient humidity	35...85%RH(No condensation)	
Anti-ambient light	Incandescent light: < 3,000lux	
Impulse withsand	500m/s²(Approximate 50G),3 times each in X, Y, Z direction	
Vibration resistance	10...55Hz Double amplitude 1mm, 2H each in X, Y, Z directions	
Protection degree	IP67	
Material	Housing: Aluminum; Lens cover: PMMA; Display panel: PC	
Dimension	65*51*23mm	
Connection	2m 5-pin/4-pin PVC cable(5-pin: RS...485 output; 4-pin: analog output)	

Remark: ①Test conditions: standard data at (23.5)℃; supply voltage 24VDC; 30 minutes' warmup before test; sampling period 2ms; average sampling times 100; standard sensing object 90% white card.
②The statistical data follows the 3σ criteria
③Repeat accuracy: 23 ± 5 ℃ environment, 90% reflectivity white card, 100 test data results;
④Protecion circuit only for switch output.
⑤Slave address, baud rate setting only for RS-485 series.
⑥Product operation steps and precautions in "User manual".

Digital laser distance sensors



Shell code		PDB
Series code	RS...485	PDB-CM8DGR
	4...20mA	PDB-CM8TGI
	0...10V	PDB-CM8TGU
Measuring range		0.2...8m①
Light source		Infrared laser(850nm)
Laser class		Class 3
Spot diameter		90*90mm(at 5mmeter)
Working principle		TOF
Repeated accuracy		±1%F.S.
Linear accuracy ①		±1%F.S.
Resolution		1mm
Supply voltage		RS-485：10...30VDC；4...20mA/0...10V：12...24VDC
Voltage drop		<2.5V
Consumption Power		⩽700mW
Load current		50mA
Circuit protection		Short circuit, reverse polarity
Impulse frequency		10MHZ
Testing frequency		100HZ
Impulse duration		50ns
Average optical power		20mW
Output		Output 1：Digital value:RS-485(Support ModBus protocol); Analog:4...20mA(Load resistance＜300Ω),Analog:0...10V(Load resistance＞5K) Output 2：Switch value:PUSH-PULL/NPN/PNP,NO/NC Settable
Integrated function		Button to lock; button to unlock; action point setting;Output setting; single point teach; Window teach mode setting; factory date reset;Slave address&Port rate setting(only for RS-485)
Indicator		Power indicator: Green LED;Action indicator: Yellow LED, Yellow LED
Ambient temperature		-10℃...50℃
Anti-ambient light		＜20，000lux
Impulse withsand		500m/s²(Approximate 50G),3 times each in X, Y,Z direction
Vibration resistance		10...55Hz Double amplitude1mm, 2H each in X, Y, Z directions
Protection degree		IP67
Material		Housing:ABS;Lens cover:PMMA
Dimension		65*51*23mm
Connection		RS-485:2m 5pins PVC cable;4...20mA:2m 4pins PVC cable;0...10V:2m 4pins PVC cable

Note: ① Detection object is 90% white card

Laser distance sensors



Shell code		PDB
Series code	RS...485	PDB-CC50DGR
	4...20mA	PDB-CC50TGI

Light source	Red Laser (650nm)
Laser class	Class 2
Spot diameter	Φ2.5mm@500mm
Measuring range	80...500mm
Linear accuracy①②	RS-485：±0.3%F.S. 4...20mA：±0.4%F.S.
Repeated accuracy①②③	30μm@80mm；250μm@250mm；1000μm@500mm
Resolution	15μm@80mm；500μm@500mm
Supply voltage	RS-485:10...30VDC；4...20mA:12...24VDC
Voltage drop	<2.5V
Power consumption	≤700mW
Load current	200mA
Circuit protection④	Short circuit, reverse polarity, overload protection
Output	RS-485(Support Modbus protocol); 4...20mA(Load resistance < 390Ω)
Integrated function⑤	Slave address,Port rate setting;Product self-check;Output setting; Average setting;Parameter query;Single point teach;window teach;Window Teach-in setting
Indicator	Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED
Ambient temperature	-10℃...50℃
Temperature drift	±0.02%F.S./℃
Response time	2ms/16ms/40ms(Configurable)
Ambient humidity	35...85%RH(No condensation)
Anti-ambient light	Incandescent light: < 3,000lux
Impulse withsand	500m/s²(Approximate 50G),3 times each in X, Y, Z direction
Vibration resistance	10...55Hz Double amplitude 1mm, 2H each in X, Y, Z directions
Protection degree	IP67
Material	Housing:ABS;Lens cover:PMMA
Dimension	65*51*23mm
Connection	RS...485:2m 5-pin PVCcable; 4...20mA:2m 4-pin PVC cable

Remark: ①Test conditions：standard data at (23.5)℃; supply voltage 24VDC; 30 minutes' warmup before test; sampling period 2ms; average sampling times 100; standard sensing object 90% white card.
②The statistical data follows the 3σ criteria
③Repeat accuracy: 23 ± 5 ℃ environment, 90% reflectivity white card, 100 test data results;
④Protecion circuit only for switch output.
⑤Slave address, baud rate setting only for RS-485 series.
⑥Product operation steps and precautions in "User manual".

Digital laser displacement sensors



Shell code		PDA	
Item code		Standard type	High precision type
Series code	RS...485	PDA-CR30DGR	PDA-CR30DGRM
	4...20mA	PDA-CR30TGI	PDA-CR30TGIM
Measuring center distance		30mm	
Measuring range		±5mm	
Light source		Red Laser (650nm)	
Laser class		Class 2	
Spot diameter		Φ0.5mm@30mm	
Linear accuracy①②		RS-485：±0.3%F.S.；4...20mA：±0.4%F.S.	RS-485/4...20mA：±0.1%F.S.
Repeated accuracy①②③		5μm	
Resolution		2.5μm@30mm	
Supply voltage		RS-485:10...30VDC；4...20mA:12...24VDC	
Voltage drop		<2.5V	
Power consumption		≤700mW	
Load current		200mA	
Circuit protection④		Short circuit, reverse polarity, overload protection	
Output		RS-485(Support Modbus protocol);4...20mA(Load resistance < 390Ω)	
Integrated function⑤		Slave address,Port rate setting;Zero setting;Product self-check;Output setting;Analog map settings; Average setting;Parameter query;Single point teach;window teach;Window Teach-in setting	
Indicator		Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED	
Ambient temperature		-10℃...50℃	
Temperature drift		±0.08%F.S./℃	
Response time		2ms/16ms/40ms(Configurable)	
Ambient humidity		35...85%RH(No condensation)	
Anti-ambient light		Incandescent light: < 3,000lux	
Impulse withsand		500m/s²(Approximate 50G),3 times each in X, Y, Z direction	
Vibration resistance		10...55Hz Double amplitude 1mm, 2H each in X, Y, Z directions	
Protection degree		IP67	
Material		Housing: Aluminum; Lens cover: PMMA；Display panel: PC	
Dimension		65*51*23mm	
Connection		2m 5-pin/4-pin PVC cable(5-pin: RS...485 output; 4-pin: analog output)	

Remark: ①Test conditions：standard data at (23.5)℃; supply voltage 24VDC; 30 minutes' warmup before test; sampling period 2ms; average sampling times 100; standard sensing object 90% white card.
②The statistical data follows the 3σ criteria
③Repeat accuracy: 23 ± 5 ℃ environment, 90% reflectivity white card, 100 test data results;
④Protecion circuit only for switch output.
⑤Slave address, baud rate setting only for RS-485 series.
⑥Product operation steps and precautions in "User manual".

Digital laser displacement sensors



Shell code		PDA	
Item code		Standard type	High precision type
Series code	RS...485	PDA-CR50DGR	PDA-CR50DGRM
	4...20mA	PDA-CR50TGI	PDA-CR50TGIM
Measuring center distance		50mm	
Measuring range		±15mm	
Light source		Red Laser (650nm)	
Laser class		Class 2	
Spot diameter		Φ0.5mm@50mm	
Linear accuracy①②		RS-485：±0.3%F.S.；4...20mA：±0.4%F.S.	RS-485/4...20mA：±0.1%F.S.
Repeated accuracy①②③		20μm	
Resolution		10μm@50mm	
Supply voltage		RS-485:10...30VDC；4...20mA:12...24VDC	
Voltage drop		<2.5V	
Power consumption		≤700mW	
Load current		200mA	
Circuit protection④		Short circuit, reverse polarity, overload protection	
Output		RS-485(Support Modbus protocol)；4...20mA(Load resistance < 390Ω)	
Integrated function⑤		Slave address,Port rate setting;Zero setting;Product self-check;Output setting;Analog map settings; Average setting;Parameter query;Single point teach;window teach;Window Teach-in setting	
Indicator		Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED	
Ambient temperature		-10℃...50℃	
Temperature drift		±0.02%F.S./℃	
Response time		2ms/16ms/40ms(Configurable)	
Ambient humidity		35...85%RH(No condensation)	
Anti-ambient light		Incandescent light: < 3,000lux	
Impulse withsand		500m/s²(Approximate 50G),3 times each in X, Y, Z direction	
Vibration resistance		10...55Hz Double amplitude 1mm, 2H each in X, Y, Z directions	
Protection degree		IP67	
Material		Housing: Aluminum; Lens cover: PMMA； Display panel: PC	
Dimension		65*51*23mm	
Connection		2m 5-pin/4-pin PVC cable(5-pin: RS...485 output; 4-pin: analog output)	

Remark: ①Test conditions: standard data at (23.5)℃; supply voltage 24VDC; 30 minutes' warmup before test; sampling period 2ms; average sampling times 100; standard sensing object 90% white card.
②The statistical data follows the 3σ criteria
③Repeat accuracy: 23 ± 5 ℃ environment, 90% reflectivity white card, 100 test data results;
④Protecion circuit only for switch output.
⑤Slave address, baud rate setting only for RS-485 series.
⑥Product operation steps and precautions in "User manual".

Digital laser displacement sensors



Shell code		PDA	
Item code		Standard type	High precision type
Series code	RS...485	PDA-CR85DGR	PDA-CR85DGRM
	4...20mA	PDA-CR85TGI	PDA-CR85TGIM

Measuring center distance	85mm	
Measuring range	±25mm	
Light source	Red Laser (650nm)	
Laser class	Class 2	
Spot diameter	Φ0.5mm@85mm	
Linear accuracy①②	RS-485：±0.3%F.S.；4...20mA：±0.4%F.S.	RS-485/4...20mA：±0.1%F.S.
Repeated accuracy①②③	60μm	
Resolution	30μm@85mm	
Supply voltage	RS-485:10...30VDC；4...20mA:12...24VDC	
Voltage drop	<2.5V	
Power consumption	≤700mW	
Load current	200mA	
Circuit protection④	Short circuit, reverse polarity, overload protection	
Output	RS-485(Support Modbus protocol);4...20mA(Load resistance < 390Ω)	
Integrated function⑤	Slave address,Port rate setting;Zero setting;Product self-check;Output setting;Analog map settings; Average setting;Parameter query;Single point teach;window teach;Window Teach-in setting	
Indicator	Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED	
Ambient temperature	-10℃...50℃	
Temperature drift	±0.04%F.S./℃	
Response time	2ms/16ms/40ms(Configurable)	
Ambient humidity	35...85%RH(No condensation)	
Anti-ambient light	Incandescent light: < 3,000lux	
Impulse withsand	500m/s²(Approximate 50G),3 times each in X, Y, Z direction	
Vibration resistance	10...55Hz Double amplitude 1mm, 2H each in X, Y, Z directions	
Protection degree	IP67	
Material	Housing: Aluminum; Lens cover: PMMA；Display panel: PC	
Dimension	65*51*23mm	
Connection	2m 5-pin/4-pin PVC cable(5-pin: RS...485 output; 4-pin: analog output)	

Remark: ①Test conditions：standard data at (23.5)℃; supply voltage 24VDC; 30 minutes' warmup before test; sampling period 2ms; average sampling times 100; standard sensing object 90% white card.
②The statistical data follows the 3σ criteria
③Repeat accuracy: 23 ± 5 ℃ environment, 90% reflectivity white card, 100 test data results;
④Protecion circuit only for switch output.
⑤Slave address, baud rate setting only for RS-485 series.
⑥Product operation steps and precautions in "User manual".

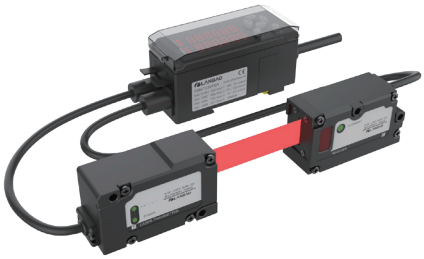
Laser displacement sensors



Shell code		PDB
Item code	RS...485	PDB-CR50DGR
	4...20mA	PDB-CR50TGI
Measuring center distance		50mm
Measuring range		±15mm
Light source		Red Laser (650nm)
Laser class		Class 2
Spot diameter		Φ0.5mm@50mm
Linear accuracy①②		RS-485：±0.3%F.S.；4...20mA：±0.4%F.S.
Repeated accuracy①②③		20μm
Resolution		10μm@50mm
Supply voltage		RS-485:10...30VDC；4...20mA:12...24VDC
Voltage drop		<2.5V
Power consumption		≤700mW
Load current		200mA
Circuit protection④		Short circuit, reverse polarity, overload protection
Output		RS-485(Support Modbus protocol);4...20mA(Load resistance < 390Ω)
Integrated function⑤		Slave address,Port rate setting;Zero setting;Product self-check;Output setting; Average setting;Parameter query;Single point teach;window teach;Window Teach-in setting
Indicator		Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED
Ambient temperature		-10℃...50℃
Temperature drift		±0.02%F.S./℃
Response time		2ms/16ms/40ms(Configurable)
Ambient humidity		35...85%RH(No condensation)
Anti-ambient light		Incandescent light: < 3,000lux
Impulse withsand		500m/s²(Approximate 50G),3 times each in X, Y, Z direction
Vibration resistance		10...55Hz Double amplitude 1mm, 2H each in X, Y, Z directions
Protection degree		IP67
Material		Housing:ABS;Lens cover:PMMA
Dimension		65*51*23mm
Connection		RS...485:2m 5-pin PVCcable; 4...20mA:2m 4-pin PVC cable

Remark: ①Test conditions：standard data at (23.5)℃; supply voltage 24VDC; 30 minutes' warmup before test; sampling period 2ms; average sampling times 100; standard sensing object 90% white card.
②The statistical data follows the 3σ criteria
③Repeat accuracy: 23 ± 5 ℃ environment, 90% reflectivity white card, 100 test data results;
④Protecion circuit only for switch output.
⑤Slave address, baud rate setting only for RS-485 series.
⑥Product operation steps and precautions in "User manual".

CCD laser diameter measurement



Shell code	PDM
Item code	**PDM-TC50TGR**
Detection range	Width mode:10mm;Edge mode:±5mm
Installation distance	0...50cm
Smallest detector	Φ1mm(Sensor head:500 mm)①
Light source	Red semiconductor laser;Laser class:Class 1
Light spot size	14*12mm
Supply voltage	12...24VDC
Voltage drop	<2.5V
Linear accuracy	±0.28%F.S.
Repeat accuracy	±10μm(Setting distance:100 mm) ②;±15μm(Setting distance:500 mm)②
Dimension	Emitter:55*32*23mm;Receiver:55*32*23mm
Temperature drift	±0.08%F.S./℃、(±8μm/℃)
Indicator (emission)	Optical axis calibration indication:Green LED;power indicator:Green LED
Indicator (receive)	Optical axis calibration indication: Green LED; Position indicator:Double strip LED(Yellow,Green)
Anti ambient light	Incandescent light < 3,000lux
Protection degree	IP50
Ambient temperature	-10...45°C(No freezing)
Environment humidity	35...85%RH(Non-condensing)
Material	Housing:Aluminium
Connection method	PVC cable
	Controller
Supply voltage	12...24VDC
Consumption current	≤900mA(Emitter and receiver)
Display resolution	1 μm
Display range	-99.999...99.999
Display method	Double-digit 8-segment display; Upper、lower: Red, 6-digit
Response time	2ms
Output 1	NPN NC
Output 2	RS485 Output
Ambient temperature	-10...45°C(Non-condensing)
Environment humidity	35...85%RH(Non-condensing)
Housing	Plastic
Installation	Guide rail installation

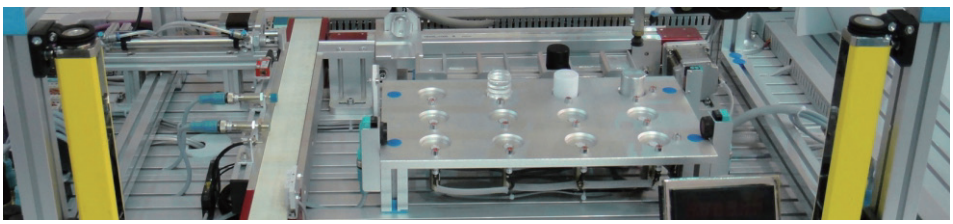
Remark: ①When the installation distance is 100 mm, the light is blocked at a position 50 mm away from the receiver. The margin of error to the ideal straight line
②When the light is blocked by half in the middle of the installation distance. The number of averages is set to 16 and sampling is executed for 30 seconds

Thin Gas Pressure Sensor



Item code	DPG-10Tx-L
Rated pressure range	-100.0...100.0kPa
Set pressure range	-105.0...105.0kPa
Pressure resistance	500kPa
Test gas type	Air, non corrosive, non combustible
Output	NPN/PNP (open collector) ,1-5V (analog output)
Supply voltage	15...30VDC
Consumption current	⩽40mA (No load)
Max load current	200mA
Max supply voltage	30VDC
Internal voltage drop	⩽1.5V
Control input	NPN: low level input (mechanical switch or electronic switch) Level voltage requirement: below 0.4Vdc, input time above 10ms PNP: high level input (mechanical switch or electronic switch) Level voltage requirement: 20-24VDC,input time above 10ms
Max current of solenoid valve drive	200mA@24VDC max.
Repetition accuracy	±0.2%F.S.±1 digit
Reaction time	⩽2.5ms (Malfunction prevention function：2.5ms,20ms,100ms,500ms,1000ms,1999ms optional)
Short circuit protection	OUT switch : Yes；Vacuum solenoid valve (v-sol) / vacuum breaking solenoid valve (d-sol): No
Indicator	Three ½ Bit LED 7 segment display (red) (sampling rate: 5 times / s)
Indication accuracy	±0.6%F.S.±1 digit
Linearity	±2%F.S.
Action indicator	OUT:Green; V-Sol control input: Red (Vacuum)
Protection degree	IP40
Voltage resistance	1000VAC 1min
Insulation resistance	＞50MΩ (500VDC)
Impact resistance	980m/s² (100G)
Temperature characteristic	±2%F.S. based on 25°C(temperataure range 0...50°C)
Air inlet form	90° air inlet port
Cable specification	Oil resistant NBR/PVC drag chain cable





- Synchronous scanning ensures safety and reliability.
- Various protection heights optional.
- Multi resolution optional: 14mm, 20mm, 25mm, 30mm, 40mm.
- Protecting human body from being hurt by dangerous machines, such as folding shear machine, paper cutter and punching machine etc.

Naming rules

L	G	20	□-T	08	05	T	NA-F2	□□□□
1	2	3	4 5	6	7	8	9 10	11

1. Type code

L: Area light curtains

S: Safety light curtains

M: Measuring light curtains

2. Shape

C: Shape code 38*38mm

G: Shape code 26*26mm

H: Shape code 47*36mm

3. Optic axis distance

E.g. 20:20mm

4. Beam type

N/A: Light curtain with parallel beams

5. Detect mode

T: Through beam reflection

6. Optic axis number

04: 4 Axises 08: 8 Axises

24: 24 Axises .....

7. Sensing distance

02:2m; 03:3m .....

8. Supply

T:12...24VDC D:10...30VDC

L:15...30VDC .....

9. Output status

N/A:Emitter

U: Voltage output(0...10V)

U1: Voltage output(0...5V)

I: Current output(0...20mA)

IU: Voltage+current output(0...10V,0...20mA)

NO: Receiver NPN NO output

NC: Receiver NPN NC output

PO: Receiver PNP NO output

PC: Receiver PNP NC output

AO: Receiver NPN+NPN NO output

AC: Receiver NPN+NPN NC output

BO: Receiver PNP+PNP NO output

BC: Receiver PNP+PNP NC output

10. Connection

N/A:Cable:2m

3M: Cable:3m

E2: M12 Plug 4pin

E3: M8 Plug 4pin

E5: M12 Plug 4pin

E8: M12 Plug 8pin

F2: M12 Plug 4pin with cable

11. Special requirement

In 4 digits



Area light curtains

- Ultra long detection range.
- Various series and specifications optional, detection range from 120 to 1920mm.
- Products with self-check function, be able to detect internal exceptions.
- Strong intensity LED indicates operation status.

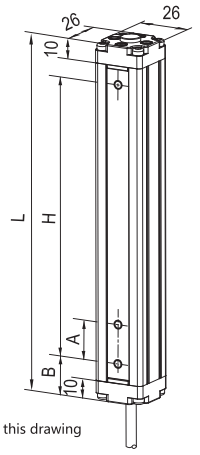
Axises quantity	8Axises	12Axises	16Axises	20Axises	24Axises	28Axises	32Axises
Emitter	LG20-T0805T-F2	LG20-T1205T-F2	LG20-T1605T-F2	LG20-T2005T-F2	LG20-T2405T-F2	LG20-T2805T-F2	LG20-T3205T-F2
NPN NO/NC	LG20-T0805TNA-F2	LG20-T1205TNA-F2	LG20-T1605TNA-F2	LG20-T2005TNA-F2	LG20-T2405TNA-F2	LG20-T2805TNA-F2	LG20-T3205TNA-F2
PNP NO/NC	LG20-T0805TPA-F2	LG20-T1205TPA-F2	LG20-T1605TPA-F2	LG20-T2005TPA-F2	LG20-T2405TPA-F2	LG20-T2805TPA-F2	LG20-T3205TPA-F2
Protection height	140mm	220mm	300mm	380mm	460mm	540mm	620mm
Response time	<10ms	<15ms	<20ms	<25ms	<30ms	<35ms	<40ms
Axises quantity	**36Axises**	**40Axises**	**44Axises**	**48Axises**			
Emitter	LG20-T3605T-F2	LG20-T4005T-F2	LG20-T4405T-F2	LG20-T4805T-F2			
NPN NO/NC	LG20-T3605TNA-F2	LG20-T4005TNA-F2	LG20-T4405TNA-F2	LG20-T4805TNA-F2			
PNP NO/NC	LG20-T3605TPA-F2	LG20-T4005TPA-F2	LG20-T4405TPA-F2	LG20-T4805TPA-F2			
Protection height	700mm	780mm	860mm	940mm			
Response time	<45ms	<50ms	<55ms	<60ms			
Detection width	0.5...5m						
Axis distance	20mm						
Sensing object	>Φ30mm opaque object						
Power voltage	12...24 VDC±10%						
Current consumption	Emitter: < 60mA(Current consumption has nothing to do with the number of axises) Receiver: < 45mA(8 axises, current consumption will increase 5mA when 8 axises increased)						
Light source	850nm Infrared (modulate)						
Circuit protection	Reverse polarity, short-circuit protection, overload protection						
Ambient temperature	-10℃...55℃(dewed or iced forbidden), storage: -10℃...60℃						
Ambient humidity	35...85%RH, storage:35...85%RH						
Intensity of illumination	Incandescent lamp: intensity of illumination 4,000lux						
Anti-vibration	10...55Hz,amplitude:1.2mm,2 hours each for x, y and z direction						
Anti-shocking	Acceleration:500m/s²(approx:50G),3 times each for x, y and z direction						
Protection degree	IP65						
Housing material	Housing: AL; Light cover: PC; End cover: enhanced nylon						
Connection	18cm cable with M12 connector						
Accessory	5m Connection cable(QE12-N4F5, QE12-N3F5)						

Datasheets

Item code	A	B	H	L
LG20-T0805T/TxA-F2	20	20	140	180
LG20-T1205T/TxA-F2	20	20	220	260
LG20-T1605T/TxA-F2	20	20	300	340
LG20-T2005T/TxA-F2	20	20	380	420
LG20-T2405T/TxA-F2	20	20	460	500
LG20-T2805T/TxA-F2	20	20	540	580
LG20-T3205T/TxA-F2	20	20	620	660
LG20-T3605T/TxA-F2	20	20	700	740
LG20-T4005T/TxA-F2	20	20	780	820
LG20-T4405T/TxA-F2	20	20	860	900
LG20-T4805T/TxA-F2	20	20	940	980

H: Protection height, H=A* (N-1)
A : Axis distance, 20mm
L: Total height: L=H+40mm
N: Optic axis quantity

Dimensions



Note: Dimension of LG20, LG40 also refers to this drawing

www.lanbaosensor.com

Area light curtains

Axises quantity	4Axises	6Axises	8Axises	10Axises	12Axises	14Axises	16Axises
Emitter	LG40-T0405T-F2	LG40-T0605T-F2	LG40-T0805T-F2	LG40-T1005T-F2	LG40-T1205T-F2	LG40-T1405T-F2	LG40-T1605T-F2
NPN NO/NC	LG40-T0405TNA-F2	LG40-T0605TNA-F2	LG40-T0805TNA-F2	LG40-T1005TNA-F2	LG40-T1205TNA-F2	LG40-T1405TNA-F2	LG40-T1605TNA-F2
PNP NO/NC	LG40-T0405TPA-F2	LG40-T0605TPA-F2	LG40-T0805TPA-F2	LG40-T1005TPA-F2	LG40-T1205TPA-F2	LG40-T1405TPA-F2	LG40-T1605TPA-F2
Protection height	120mm	200mm	280mm	360mm	440mm	520mm	600mm
Response time	< 5ms	< 10ms	< 15ms	< 20ms	< 25ms	< 30ms	< 35ms
Axises quantity	**18Axises**	**20Axises**	**22Axises**	**24Axises**	**26Axises**	**28Axises**	**30Axises**
Emitter	LG40-T1805T-F2	LG40-T2005T-F2	LG40-T2205T-F2	LG40-T2405T-F2	LG40-T2605T-F2	LG40-T2805T-F2	LG40-T3005T-F2
NPN NO/NC	LG40-T1805TNA-F2	LG40-T2005TNA-F2	LG40-T2205TNA-F2	LG40-T2405TNA-F2	LG40-T2605TNA-F2	LG40-T2805TNA-F2	LG40-T3005TNA-F2
PNP NO/NC	LG40-T1805TPA-F2	LG40-T2005TPA-F2	LG40-T2205TPA-F2	LG40-T2405TPA-F2	LG40-T2605TPA-F2	LG40-T2805TPA-F2	LG40-T3005TPA-F2
Protection height	680mm	760mm	840mm	920mm	1000mm	1080mm	1160mm
Response time	< 40ms	< 45ms	< 50ms	< 55ms	< 60ms	< 65ms	< 70ms
Axises quantity	**32Axises**	**34Axises**	**36Axises**	**38Axises**	**40Axises**	**42Axises**	**44Axises**
Emitter	LG40-T3205T-F2	LG40-T3405T-F2	LG40-T3605T-F2	LG40-T3805T-F2	LG40-T4005T-F2	LG40-T4205T-F2	LG40-T4405T-F2
NPN NO/NC	LG40-T3205TNA-F2	LG40-T3405TNA-F2	LG40-T3605TNA-F2	LG40-T3805TNA-F2	LG40-T4005TNA-F2	LG40-T4205TNA-F2	LG40-T4405TNA-F2
PNP NO/NC	LG40-T3205TPA-F2	LG40-T3405TPA-F2	LG40-T3605TPA-F2	LG40-T3805TPA-F2	LG40-T4005TPA-F2	LG40-T4205TPA-F2	LG40-T4405TPA-F2
Protection height	1240mm	1320mm	1400mm	1480mm	1560mm	1640mm	1720mm
Response time	< 75ms	< 80ms	< 85ms	< 90ms	< 95ms	< 100ms	< 105ms
Axises quantity	**46Axises**	**48Axises**					
Emitter	LG40-T4605T-F2	LG40-T4805T-F2					
NPN NO/NC	LG40-T4605TNA-F2	LG40-T4805TNA-F2					
PNP NO/NC	LG40-T4605TPA-F2	LG40-T4805TPA-F2					
Protection height	1840mm	1920mm					
Response time	< 110ms	< 115ms					

Detection width	0.5...5m
Axis distance	40mm
Sensing object	>Φ60mm opaque object
Power voltage	12...24 VDC±10%
Current consumption	Emitter: < 60mA(Current consumption has nothing to do with the number of axises) Receiver: < 45mA(8 axises, current consumption will increase 5mA when 8 axises increased)
Light source	850nm Infrared (modulate)
Circuit protection	Reverse polarity, short-circuit protection, overload protection
Ambient temperature	-10℃...55℃(dewed or iced forbidden), storage: -10℃...60℃
Ambient humidity	35...85%RH, storage:35...85%RH
Intensity of illumination	Incandescent lamp: intensity of illumination 4,000lux
Anti-vibration	10...55Hz,amplitude:1.2mm,2 hours each for x, y and z direction
Anti-shocking	Acceleration:500m/s²(approx:50G),3 times each for x, y and z direction
Protection degree	IP65
Housing material	Housing: AL; Light cover: PC; End cover: enhanced nylon
Connection	18cm cable with M12 connector
Accessory	5m Connection cable(QE12-N4F5, QE12-N3F5)

Datasheets

Item code	A	B	H	L
LG40-T0405T/TxA-F2	40	20	120	160
LG40-T0605T/TxA-F2	40	20	200	240
LG40-T0805T/TxA-F2	40	20	280	320
LG40-T1005T/TxA-F2	40	20	360	400
LG40-T1205T/TxA-F2	40	20	440	480
LG40-T1405T/TxA-F2	40	20	520	560
LG40-T1605T/TxA-F2	40	20	600	640
LG40-T1805T/TxA-F2	40	20	680	720
LG40-T2005T/TxA-F2	40	20	760	800
LG40-T2205T/TxA-F2	40	20	840	880
LG40-T2405T/TxA-F2	40	20	920	960
LG40-T2605T/TxA-F2	40	20	1000	1040

Item code	A	B	H	L
LG40-T2805T/TxA-F2	40	20	1080	1120
LG40-T3005T/TxA-F2	40	20	1160	1200
LG40-T3205T/TxA-F2	40	20	1240	1280
LG40-T3405T/TxA-F2	40	20	1320	1360
LG40-T3605T/TxA-F2	40	20	1400	1440
LG40-T3805T/TxA-F2	40	20	1480	1520
LG40-T4005T/TxA-F2	40	20	1560	1600
LG40-T4205T/TxA-F2	40	20	1640	1680
LG40-T4405T/TxA-F2	40	20	1720	1760
LG40-T4605T/TxA-F2	40	20	1800	1840
LG40-T4805T/TxA-F2	40	20	1880	1920

H: Protection height, H=A* (N-1) L: Total height: L=H+40mm A : Axis distance 40mm N: Optic axis quantity



Measuring light curtains

- RS485 synchronous scanning technology, strong anti interference function.
- Various detection height, from 300mm to 2220mm.
- Optic axis distance:20mm.
- Dual switch control with two-way switch value and RS485 output.
- Faul+alarm and fault diagnosis function.

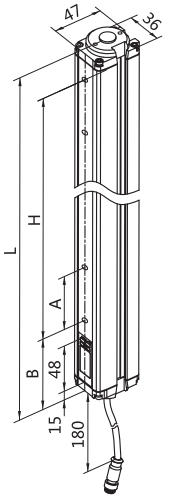
Axises quantity	16Axises	32Axises	48Axises	64Axises
Emitter	MH20-T1605L-F2	MH20-T3205L-F2	MH20-T4805L-F2	MH20-T6405L-F2
Receiver	MH20-T1605LS1DA-F8	MH20-T3205LS1DA-F8	MH20-T4805LS1DA-F8	MH20-T6405LS1DA-F8
Protection height	300mm	620mm	940mm	1260mm
Response time	5ms	10ms	15ms	18ms
Axises quantity	**80Axises**	**96Axises**	**112Axises**	
Emitter	MH20-T8005L-F2	MH20-T9605L-F2	MH20-T11205L-F2	
Receiver	MH20-T8005LS1DA-F8	MH20-T9605LS1DA-F8	MH20-T11205LS1DA-F8	
Protection height	1580mm	1900mm	2220mm	
Response time	19ms	20ms	24ms	
Detection width	0...5m			
Axis distance	20mm			
Sensing object	>Φ30mm opaque object			
Output	Two output NPN/PNP、NC/NO+RS485			
Supply voltage	15...30 VDC			
Current consumption	< 130mA@16axises@30VDC			
Light source	Infrared LED(modulate)			
Circuit protection	Short circurit, zenser, surge protection, reverse polarity protection			
Ambient temperature	-25℃...55℃(dewed or iced forbidden), storage: -30℃...75℃			
Ambient humidity	35...95%RH			
Intensity of illumination	Incandescent lamp: intensity of illumination > 5,000lux			
Anti-vibration	10...55Hz, amplitude: 0.5mm, 2 hours each for x, y and z direction			
Anti-shocking	Acceleration: 300m/s²(approx:30G), 3 times each for x, y and z direction			
Protection	IP67			
Housing material	Housing: AL; Light cover: PC; End cover: AL			
Connection	Emitter: M12 connector 4 pin, receiver: M12 connector 8 pin			
Accessory	Shielding wire(8 pin) 1 pc (standard length 3m), Shielding wire(4 pin) 1 pc (standard length 15m)			

Datasheets

Item code	A	B	H	L
MH20-T1605LS1DA-F8	20	70.2	300	363
MH20-T3205LS1DA-F8	20	70.2	620	683
MH20-T4805LS1DA-F8	20	70.2	940	1003
MH20-T6405LS1DA-F8	20	70.2	1260	1323
MH20-T8005LS1DA-F8	20	70.2	1580	1643
MH20-T9605LS1DA-F8	20	70.2	1900	1963
MH20-T112005LS1DA-F8	20	70.2	2220	2283

H:Protection height, H=20*(N-1)mm L:Total length:L=H+63mm
N:Optic axis quanity

Dimensions





Measuring light curtains

- RS485 synchronous scanning technology, strong anti interference function.
- Various detection height, from 300mm to 2220mm.
- Optic axis distance:20mm.
- Dual switch control with two-way switch value and RS485 output.
- Faul+alarm and fault diagnosis function.

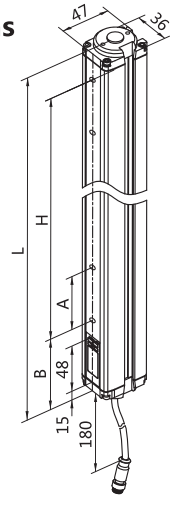
Axises quantity	8Axises	16Axises	24Axises	32Axises
Emitter	MH40-T0805L-F2	MH40-T1605L-F2	MH40-T2405L-F2	MH40-T3205L-F2
Receiver	MH40-T0805LS1DA-F8	MH40-T1605LS1DA-F8	MH40-T2405LS1DA-F8	MH40-T3205LS1DA-F8
Protection height	280mm	600mm	920mm	1260mm
Response time	5ms	10ms	15ms	18ms
Axises quantity	**40Axises**	**48Axises**	**56Axises**	
Emitter	MH40-T4005L-F2	MH40-T4805L-F2	MH40-T5605L-F2	
Receiver	MH40-T4005LS1DA-F8	MH40-T4805LS1DA-F8	MH40-T5605LS1DA-F8	
Protection height	1560mm	1880mm	2200mm	
Response time	19ms	20ms	24ms	
Detection width	0...5m			
Axis distance	40mm			
Sensing object	>Φ30mm opaque object			
Output	Two output NPN/PNP、NC/NO+RS485			
Supply voltage	15...30 VDC			
Current consumption	< 130mA@16axises@30VDC			
Light source	Infrared LED(modulate)			
Circuit protection	Short circurit, zenser, surge protection, reverse polarity protection			
Ambient temperature	-25℃...55℃(dewed or iced forbidden), storage: -30℃...75℃			
Ambient humidity	35...95%RH			
Intensity of illumination	Incandescent lamp: intensity of illumination > 5,000lux			
Anti-vibration	10...55Hz, amplitude: 0.5mm, 2 hours each for x, y and z direction			
Anti-shocking	Acceleration: 300m/s²(approx:30G), 3 times each for x, y and z direction			
Protection	IP67			
Housing material	Housing: AL; Light cover: PC; End cover: AL			
Connection	Emitter: M12 connector 4 pin, receiver: M12 connector 8 pin			
Accessory	Shielding wire(8 pin) 1 pc (standard length 3m), Shielding wire(4 pin) 1 pc (standard length 15m)			

Datasheets

Item code	A	B	H	L
MH40-T0805LS1DA-F8	40	70.2	280	363
MH40-T1605LS1DA-F8	40	70.2	600	683
MH40-T2405LS1DA-F8	40	70.2	920	1003
MH40-T3205LS1DA-F8	40	70.2	1240	1323
MH40-T4005LS1DA-F8	40	70.2	1560	1643
MH40-T4805LS1DA-F8	40	70.2	1880	1963
MH40-T5605LS1DA-F8	40	70.2	2200	2283

H:Protection height, H=20*(N-1)mm L:Total length:L=H+83mm
N:Optic axis quanity

Dimensions



Naming rules

TW	D	-	T	402	B	A	E	-	□□□□
1	2		3	4	5	6	7		8

1. Type code

TW: Tension sensor

2. Shape code

A: Housing 1
B: Housing 2
C: Housing 3
C1: Housing 3 (With hooked yarn guide)
D: Housing 4 (Type T)
E: Housing 5
F: Housing of Elevator Weighing Sensor
G: Housing 6
.....

3. Sensitive probe

T: Ceramic sensing probe
Y: Strain gauge sensing probe
H: Hall sensing probe

4. Measurement range

101:0...100cN(T/Y)
301:0...300cN(T/Y)
402:0...4000cN(T/Y)
202:0...2000cN(T/Y)
.....

5. Detect mode

B:19...29VDC
D:10...30VDC
F:10...18VDC
T:12...24VDC
M:24VDC
.....

6. Output

A:0.1...2.5VDC
B:0.1...5VDC
C:0.5...6VDC
D:0.5...4.5VDC
E:0.1...4VDC
F:2...6VDC
N:NPN
P:PNP
.....

7. Connection

E.g. 2m Cable
A: 0 25m Shielded cable with 3 pins
B: M12 3 pins connector
C: M12 4 pins connector
D: M12 5 pins connector
E: 3 pins connector
F: 2.54 socket with 5 pins
G: Socket with 3 pins
H: 3 pins plug with cable(2.0)
.....

8. Special requirement

In 4 digits

Tension sensor

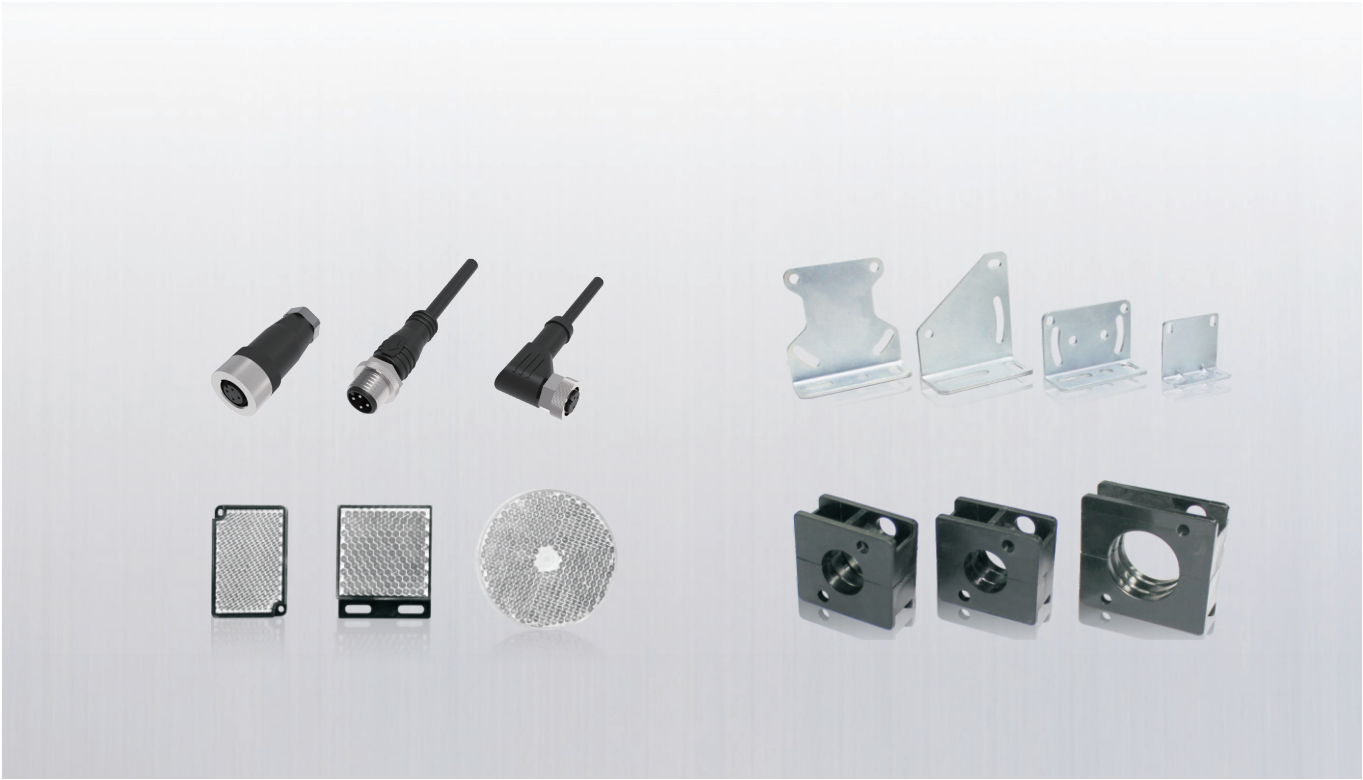
Tension sensors are widely used to detect tension of yarn during operation in textile and chemical fiber industry. During spinning, the tension of yarn will be changed to weak voltage signal and will be amplified by filter circuit, amplifying circuit, linear compensation circuit and adjusting circuit. The amplified voltage signal will be linearly outputted with tension.

- Fast response, high sensitivity.
- Wide measuring tension range.
- Fine linearity and temperature feature.
- Less damage to material.
- Mainly used in textile industry.





Shell code	TWC	TWK
Supply voltage	10...30VDC	10...30VDC
Current consumption	<15mA	< 22mA
Non-linearity	<1%FS	< 2%FS
Tension range	0...300cN, 0...100cN	0...100cN, 0...300cN
Sensor	Ceramic strain gauge type	Hall sensor
Output	Voltage output: 0.5...6VDC	Voltage output: 0.3...2.3VDC
Connection	Terminal	Plug-in unit
Circuit protection	Reverse polarity protection	Reverse polarity protection, Surge protection
Ambient temperature	0...50℃(dewed or iced forbidden)	0...50℃(dewed or iced forbidden)
Housing material	Housing: zinc aluminum; Transmission: ceramics	Housing: zinc alloy; Transmission: ceramics



Sensor accessories



Connection cables & Distribution Box

Mounting brackets

Reflectors

Mounting clamps

Connection cable

Naming rules

Q	E12	-	N	3	G	5	P	U	-	E12	N	3	F	□□□□
1	2		3	4	5	6	7	8		9	10	11	12	13

1. Connector classification
- C: Customized
- Q: Standard

2. Connector specification
- E8:M8 connector
- E12: M12 connector

3. Thread type
- N: Internal thread connection
- W: External thread connection

4. Pin number
- 3: 3 pin
- 4: 4 pin
- 5: 5 pin
- .....

5. Cable lead-out
- F: 180° straight angle
- G: 90° right angle

6. Cable length
- N/A: Connector
- 02: 0.2m cable
- 2: 2m cable
- 5: 5m cable
- 10: 10m cable
- .....

7. Connector classification
- N/A: No LED, universal
- P: With LED, PNP interface
- N: With LED, NPN interface

8. Cable material
- N/A: PVC
- U:PUR

9. Connector specification
- N/A: With cable directly
- E8: With M8 connector
- E12: With M12 connector
- .....

10. Thread type
- N/A: With cable directly
- N: Internal thread connection
- W: External thread connection

11. Pin number
- N/A: With cable directly
- 3: 3 pins
- 4: 4 pins
- 5: 5 pins
- .....

12. Cable lead-out
- N/A: With cable directly
- F: 180° straight angle
- G:90° right angle

13. Special code
- In 4 digits

Model & Code

DB	12	08	04	-	x	-	Mxx	P
1	2	3	4		5		6	7

1. Product series
- DB: Distribution box

2. Core wire
- 08: M8 Connector
- 12: M12 Connector

3. I/O channel number
- 04:4
- 06:6
- 08:8
- 10:10

4. I/O port
- 03:3
- 04:4
- 05:5

5. Cable material
- 0: No cable
- 1:PVC
- 2:PUR

6. Cable type
- D:D-SUB
- M: Plug connector M23
- None: pre-wired cable
- 03: 3m Cable
- 05: 5m Cable
- 07: 7m Cable

7. LED indication
- P:PNP
- N:NPN

Connection cable (LED)



Shell code	QE12-N3Fx-x	QE12-N3Gx-x	QE12-N4Fx-x	QE12-N4Gx-x	
Specifications	M12*40	M12*42	M12*40	M12*42	
Operating voltage	30VDC Max	30VDC Max	30VDC Max	30VDC Max	
Nominal current	4A	4A	4A	4A	
Insulation resistance	100MΩ	100MΩ	100MΩ	100MΩ	
Output	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP	
Temperature range	-30℃...90℃	-30℃...90℃	-30℃...90℃	-30℃...90℃	
Outer covering	PU	PU	PU	PU	
Bearing material	Nickel-copper alloy	Nickel-copper alloy	Nickel-copper alloy	Nickel-copper alloy	
Protection degree	IP67	IP67	IP67	IP67	
Material	PVC/PU	PVC/PU	PVC/PU	PVC/PU	
Diameter	Φ4.4	Φ4.4	Φ5.2	Φ5.2	
Core wire	3*0.34mm² (0.2*11)	3*0.34mm² (0.2*11)	4*0.34mm² (0.2*11)	4*0.34mm² (0.2*11)	
Length	2m/5m	2m/5m	2m/5m	2m/5m	

Connection cable



Shell code	QE8-NxFx	QE8-NxGx	QE8-WxFx	QE8-WxGx	QE12-NxFx
Specifications	M8*35.5	M8*21	M8*40.5	M8*21	M12*40
Operating voltage	60 VAC/DC	60 VAC/DC	60 VAC/DC	60 VAC/DC	250V AC/DC
Nominal current	4A	4A	4A	4A	4A
Insulation resistance	100MΩ	100MΩ	100MΩ	100MΩ	100MΩ
Temperature range	-30℃...90℃	-30℃...90℃	-30℃...90℃	-30℃...90℃	-30℃...90℃
Outer covering	PVC	PVC	PVC	PVC	PVC
Bearing material	Nickel-copper alloy	Nickel-copper alloy	Nickel-copper alloy	Nickel-copper alloy	Nickel-copper alloy
Protection degree	IP67	IP67	IP67	IP67	IP67
Material	PVC/PU	PVC/PU	PVC/PU	PVC/PU	PVC/PU
Diameter	Φ4.4	Φ4.4	Φ4.4	Φ4.4	Φ5.2
Core wire	3*0.25mm² (0.1*32)/ 4*0.25mm² (0.1*32)	3*0.25mm² (0.1*32)/ 4*0.25mm² (0.1*32)	3*0.25mm² (0.1*32)/ 4*0.25mm² (0.1*32)	3*0.25mm² (0.1*32)/ 4*0.25mm² (0.1*32)	3*0.34mm² (0.2*11)/ 4*0.34mm² (0.2*11)/ 5*0.34mm² (0.2*11)
Length	2m/5m	2m/5m	2m/5m	2m/5m	2m/5m

Connection cable

Connectors



Shell code	QE12-NxGx	QE12-WxFx	QE12-WxGx	QE8-NxF	QE8-WxF
Specifications	M12*42	M12*42	M12*42	M8*40	M8*46.5
Operating voltage	250 VAC/DC	250 VAC/DC	250 VAC/DC	60 VAC/DC	60 VAC/DC
Nominal current	4A	4A	4A	4A	4A
Insulation resistance	100MΩ	100MΩ	100MΩ	100MΩ	100MΩ
Temperature range	-30℃...90℃	-30℃...90℃	-30℃...90℃	-40℃...85℃	-40℃...85℃
Outer covering	PVC	PVC	PVC	PVC	PVC
Bearing material	Nickel-copper alloy	Nickel-copper alloy	Nickel-copper alloy	Nickel-copper alloy	Nickel-copper alloy
Protection degree	IP67	IP67	IP67	IP67	IP67
Material	PVC/PU	PVC/PU	PVC/PU	/	/
Diameter	Φ5.2	Φ5.2	Φ5.2	4...5mm	4...5mm
Core wire	3*0.34mm² (0.2*11)/ 4*0.34mm² (0.2*11)/ 5*0.34mm² (0.2*11)	3*0.34mm² (0.2*11)/ 4*0.34mm² (0.2*11)/ 5*0.34mm² (0.2*11)	3*0.34mm² (0.2*11)/ 4*0.34mm² (0.2*11)/ 5*0.34mm² (0.2*11)	3 pins/4 pins	3 pins/4 pins
Length	2m/5m	2m/5m	2m/5m	/	/

Connectors



Shell code	QE12-NxF	QE12-NxG	QE12-WxF	QE12-WxG	
Specifications	M12*48	M12*37.6	M12*56.7	M12*37.6	
Operating voltage	250 VAC/DC	250 VAC/DC	250V AC/DC	250 VAC/DC	
Nominal current	4A	4A	4A	4A	
Insulation resistance	100MΩ	100MΩ	100MΩ	100MΩ	
Temperature range	-40℃...85℃	-40℃...85℃	-40℃...85℃	-40℃...85℃	
Outer covering	PVC	PVC	PVC	PVC	
Bearing material	Nickel-copper alloy	Nickel-copper alloy	Nickel-copper alloy	Nickel-copper alloy	
Protection degree	IP67	IP67	IP67	IP67	
Material	/	/	/	/	
Diameter	4...6mm	4...6mm	4...6mm	4...6mm	
Core wire	4 pins/5 pins	4 pins/5 pins	4 pins/5 pins	4 pins/5 pins	
Length	/	/	/	/	

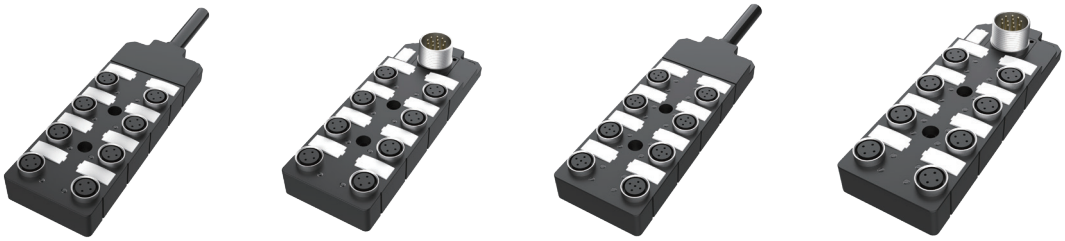
Distribution Box





Shell code	DB080403-x-xxx	DB080803-x-xxx	DB080803-x-Dxxx	
Specifications	90*45	98*45	152*54	
Operating voltage	10...30 VDC	10...30 VDC	10...30 VDC	
Nominal current	2A/Port, 8A/Total	2A/Port, 8A/Total	4A/Port, 10A/Total	
Insulation resistance	8mΩ MAX	8mΩ MAX	8mΩ MAX	
Temperature range	-20℃...80℃	-20℃...80℃	-20℃...80℃	
Output status	NPN/PNP	NPN/PNP	NPN/PNP	
Output way	NO	NO	NO	
Output indicate	Yellow LED	Yellow LED	Yellow LED	
Connection specification	M8 port 3-core	M8 port 3-core	M12 port 4-core	
Material	/	PVC	/	
Socket material	Carobronze/Gold plated	Carobronze/Gold plated	Carobronze/Gold plated	
Length	/	3m	/	

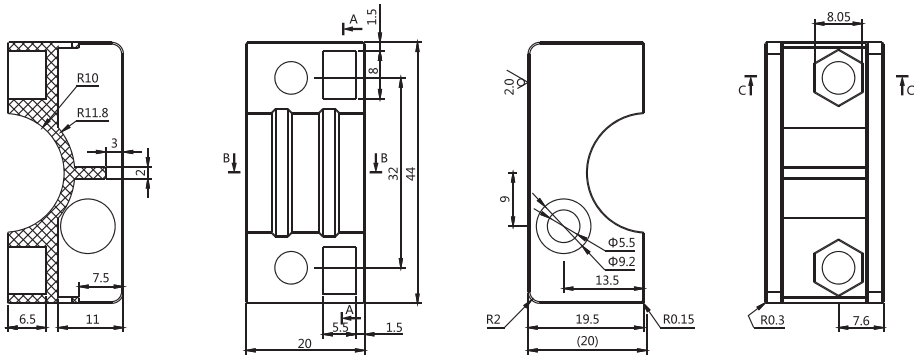
Distribution Box



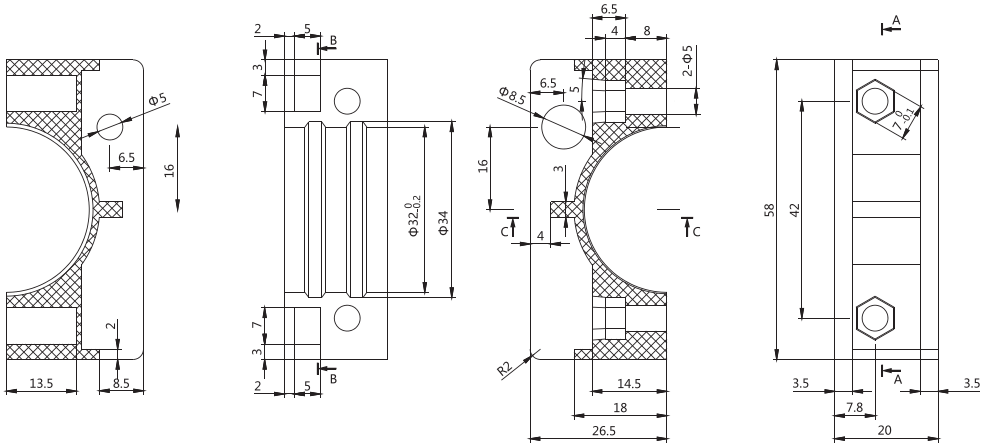
Shell code	DB120804-x-xxx	DB120804-x-Mxxx	DB120805-x-xxx	DB120805-x-Mxxx
Specifications	90*45	98*45	152*54	152*54
Operating voltage	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
Nominal current	2A/Port, 8A/Total	2A/Port, 8A/Total	4A/Port, 10A/Total	4A/Port, 10A/Total
Insulation resistance	8mΩ MAX	8mΩ MAX	8mΩ MAX	8mΩ MAX
Temperature range	-20℃...80℃	-20℃...80℃	-20℃...80℃	-20℃...80℃
Output status	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP
Output way	NO	NO	NO	NO
Output indicate	Yellow LED	Yellow LED	Yellow LED	Yellow LED
Connection specification	M8 port 3-core	M8 port 3-core	M12 port 4-core	M12 port 4-core
Material	/	PVC	/	PVC
Socket material	Carobronze/Gold plated	Carobronze/Gold plated	Carobronze/Gold plated	Carobronze/Gold plated
Length	/	3m	/	5m

Capacitive sensors mounting rack

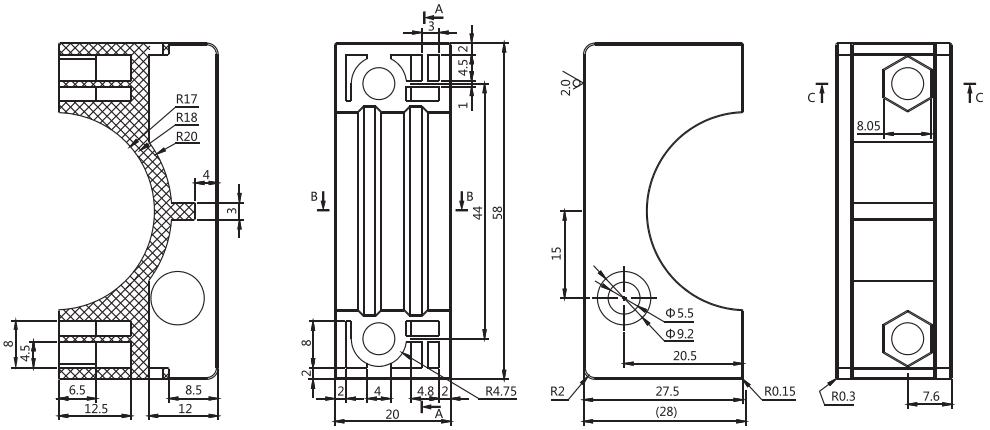
ZJC-1 (CQ20/CQ20S Mounting rack)



ZJC-2 (CQ32/CQ32S Mounting rack)

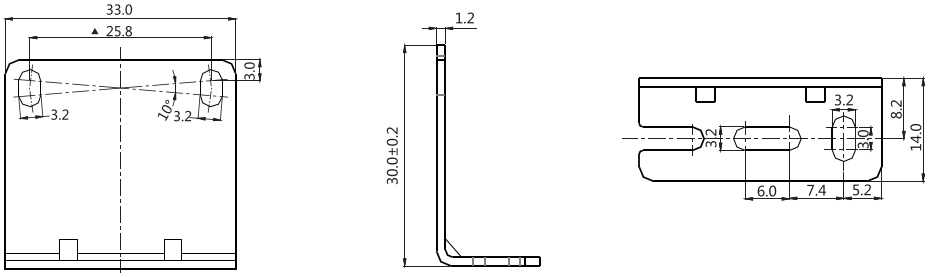


ZJC-3 (CQ34S Mounting rack)

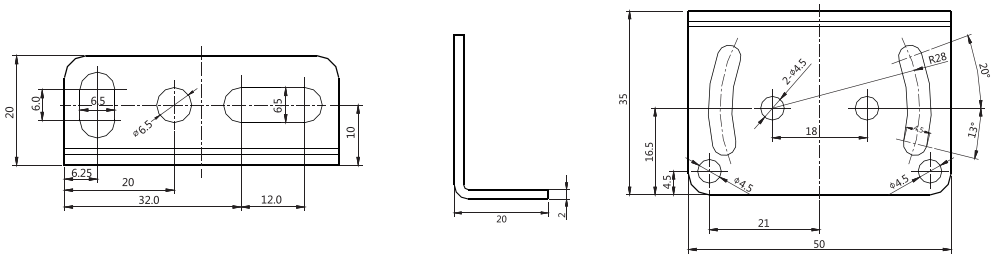


Photoelectric sensors mounting rack

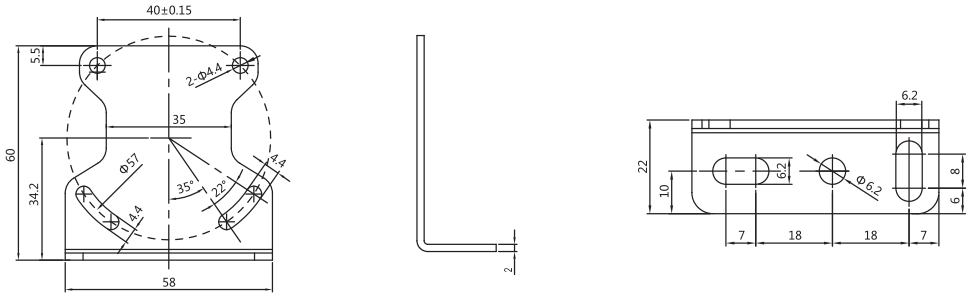
ZJP-1



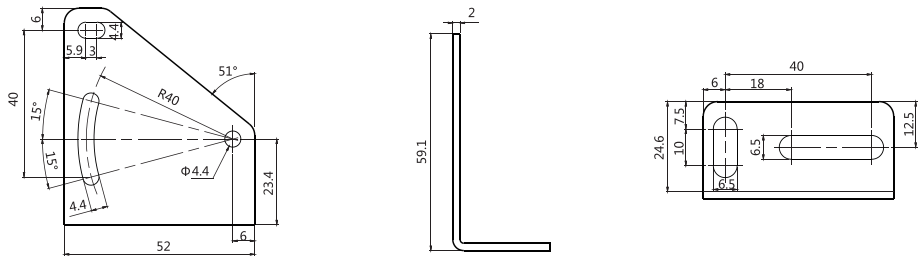
ZJP-4 (PTF Mounting rack)



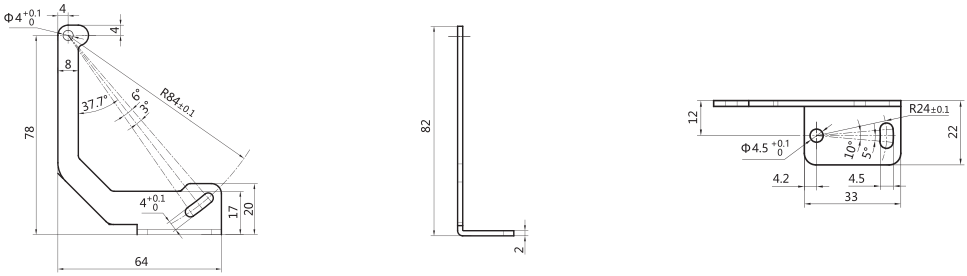
ZJP-5 (PTF/PTE Mounting rack)



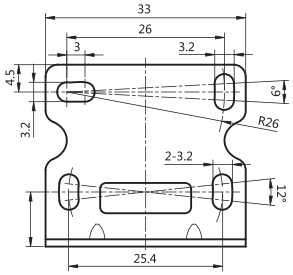
ZJP-6 (PTL Mounting rack)

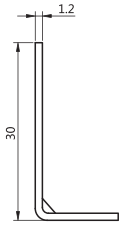


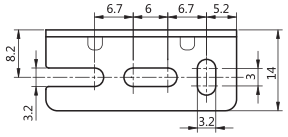
ZJP-7 (PTB Mounting rack)



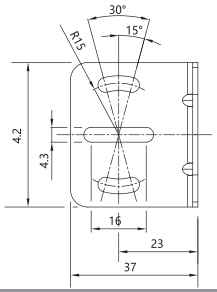
ZJP-8 （PSE/PSR Mounting rack）

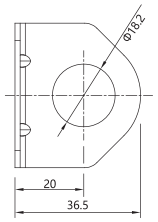


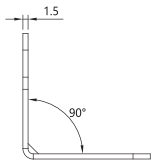




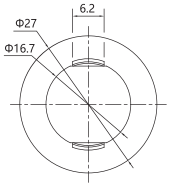
ZJP-9 (PSS/PSM Mounting rack)

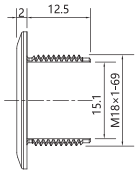




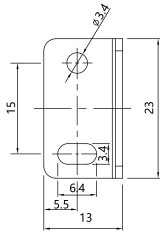


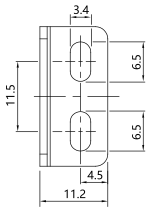
ZJP-10 (PSS Mounting rack)

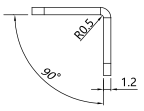




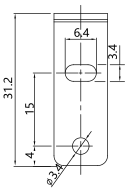
ZJP-11 (PST Mounting rack)

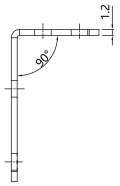


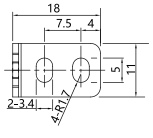




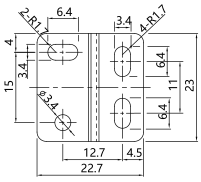
ZJP-12 (PST Mounting rack)

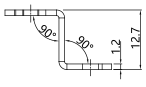




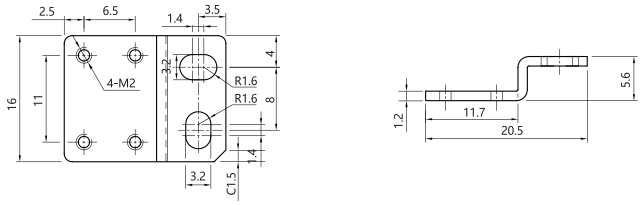


ZJP-13 (PST Mounting rack)

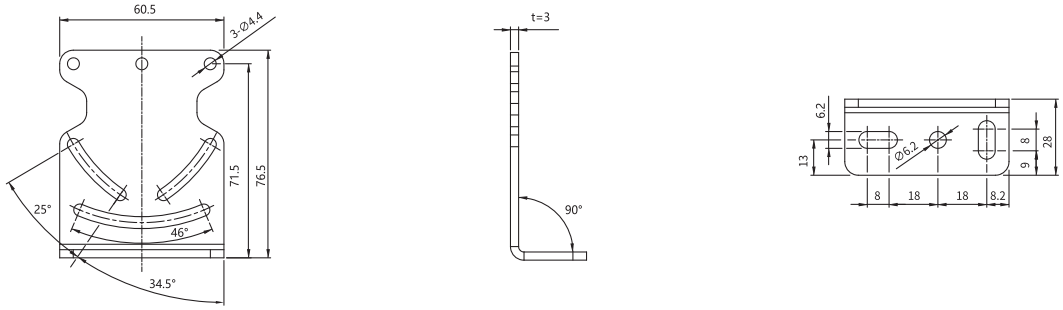




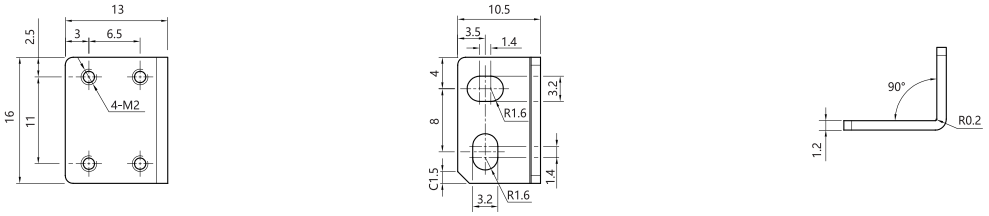
ZJP-14（PSV Mounting rack）



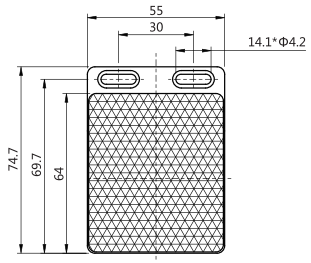
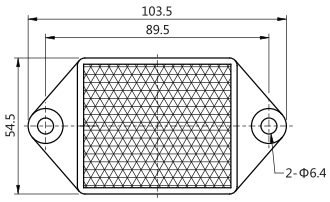
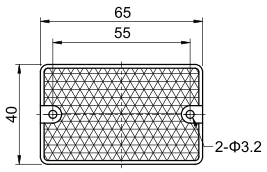
ZJP-15（PDA Mounting rack）

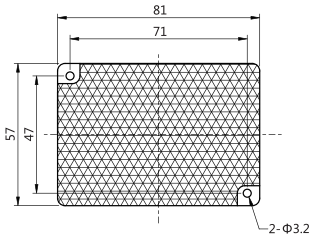
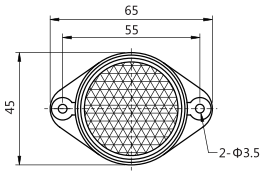
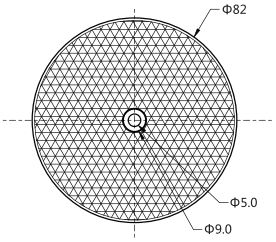


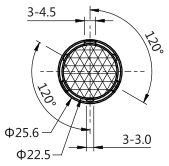
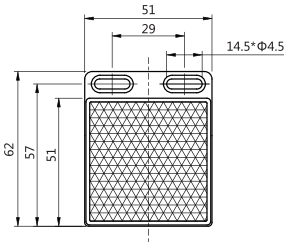
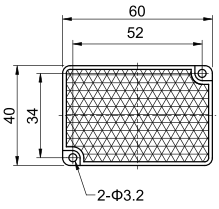
ZJP-16（PSV Mounting rack）

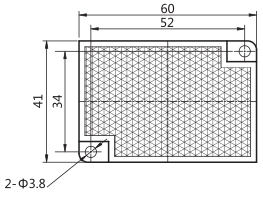
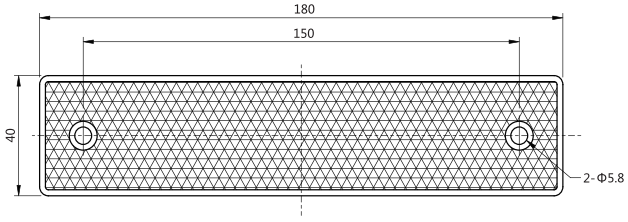


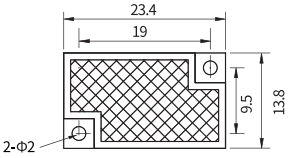
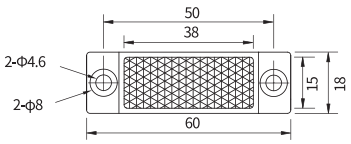
Reflector

Item Code	TD-01	TD-01-3	TD-02
Dimensions			

Item Code	TD-03	TD-04	TD-05
Dimensions			 Applicable models*: PTL

Item Code	STD-06	TD-08	TD-09
Dimensions			 Applicable models*: PR18, PR18S, PR30, PTF, PSC, PTE, PSE

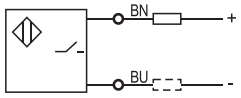
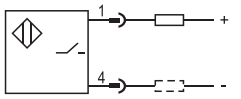
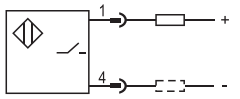
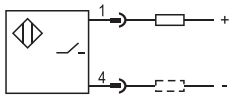
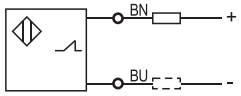
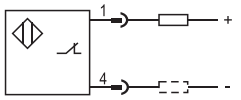
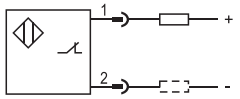
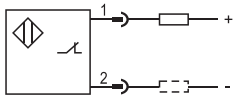
Item Code	TD-09A	TD-10
Dimensions	 Applicable models*: PSG	

Item Code	TD-11	TD-12
Dimensions		

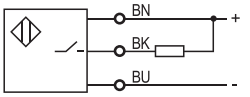
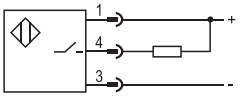
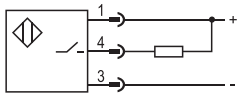
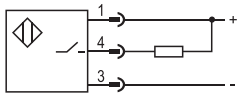
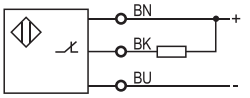
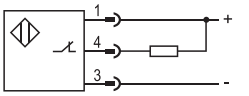
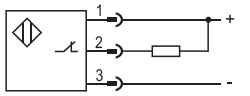
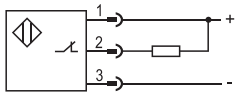
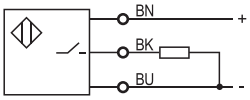
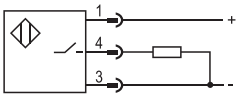
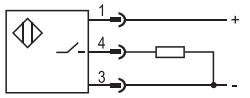
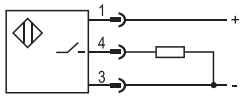
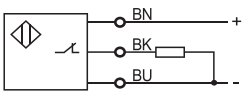
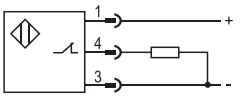
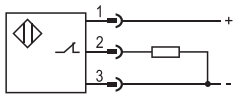
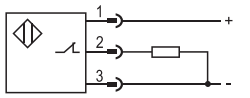
* Refers to the standard reflector of polarized reflection series

Inductive/Capacitive sensors wiring diagram

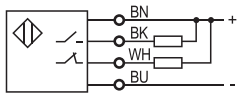
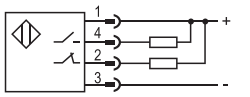
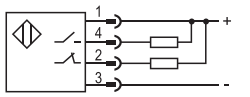
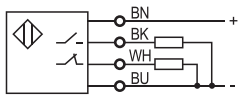
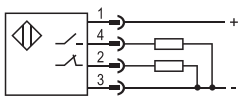
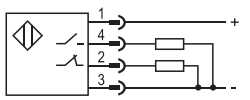
DC 2 Wires

	Cable type	M8 Connector	M12 Connector	Terminal connect
NO				
NC				

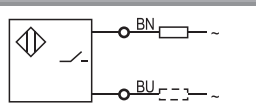
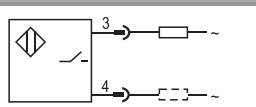
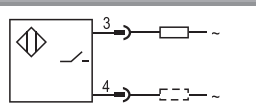
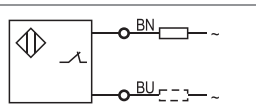
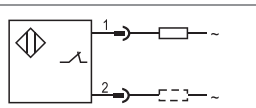
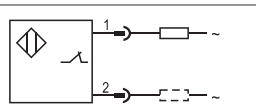
DC 3 Wires

	Cable type	M8 Connector	M12 Connector	Terminal connect
NPN NO				
NPN NC				
PNP NO				
PNP NC				

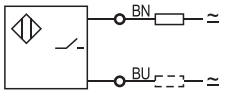
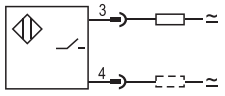
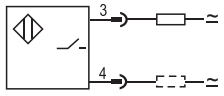
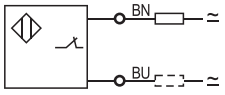
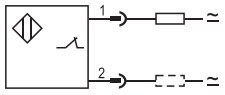
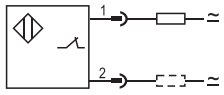
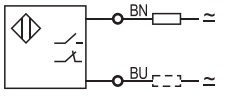
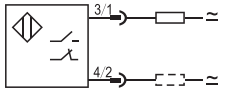
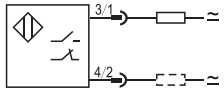
DC 4 Wires

	Cable type	M12 Connector	Terminal connect	
NPN NO+NC				
PNP NO+NC				

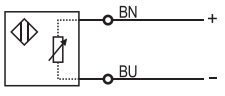
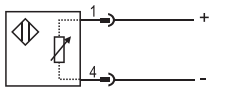
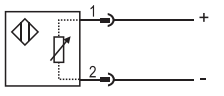
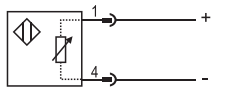
AC 2 Wires

	Cable type	M12 Connector	Terminal connect	
SCR NO				
SCR NC				

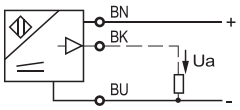
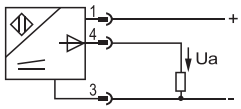
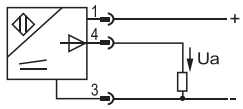
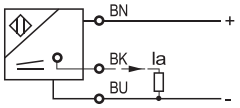
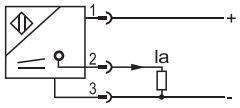
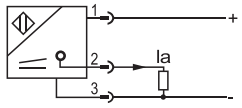
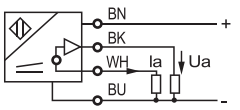
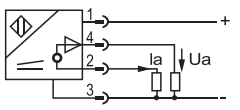
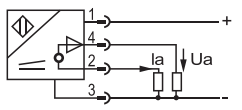
AC/DC 2 Wires

	Cable type	M12 Connector	Terminal connect	
NO				
NC				
NO/NC				

NAMUR

	Cable type	M8 Connector	M12 Connector	Terminal connect
				

Analog output

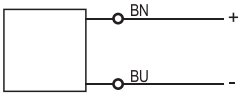
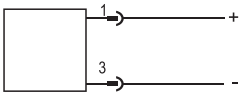
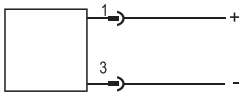
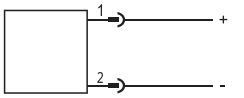
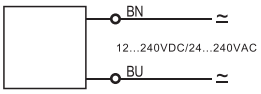
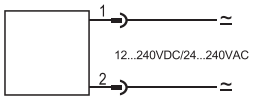
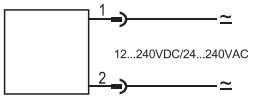
	Cable type	M12 Connector	Terminal connect	
3 Wires Voltage output				
3 Wires Current output				
4 Wires Voltage/current output				

Connector

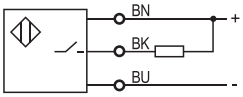
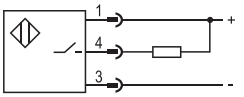
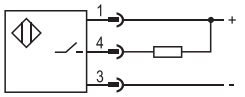
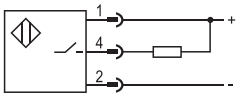
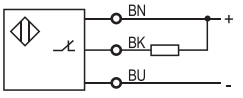
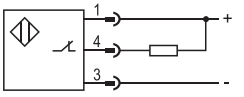
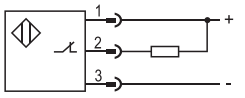
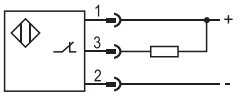
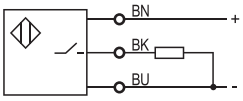
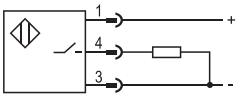
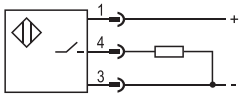
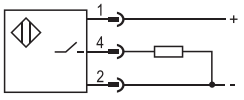
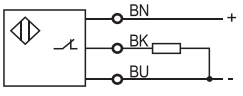
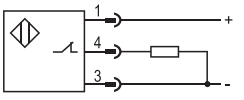
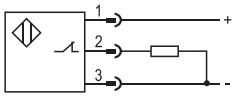
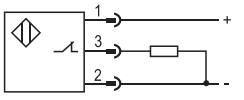
	M8 Connector	M12 Connector	M8 Connector	
				

Photoelectric sensors wiring diagram

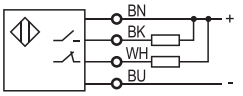
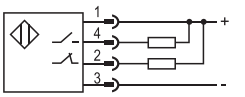
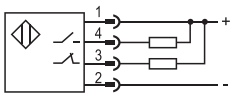
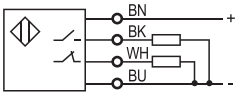
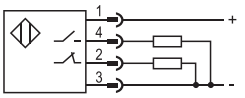
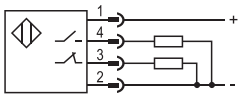
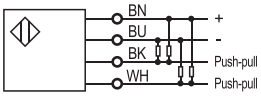
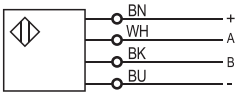
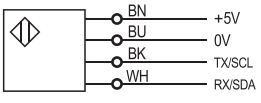
Emitter

	Cable type	M8 Connector	M12 Connector	Terminal connect
DC				
AC/DC				

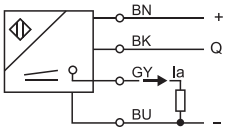
DC 3 Wires

	Cable type	M8 Connector	M12 Connector	Terminal connect
NPN NO				
NPN NC				
PNP NO				
PNP NC				

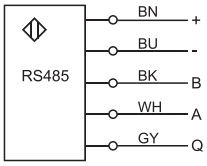
DC 4 Wires

	Cable type	M12 Connector	Terminal connect	
NPN NO+NC				
PNP NO+NC				
Push-pull				
RS485				
UART/IIC				

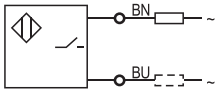
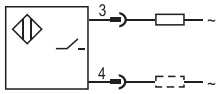
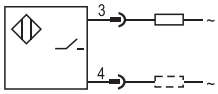
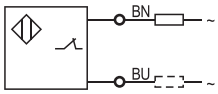
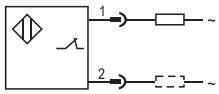
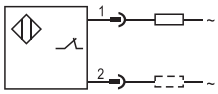
DC 4 Wires

	Cable type			
Analog 4...20mA				

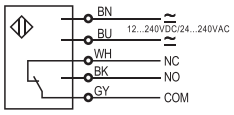
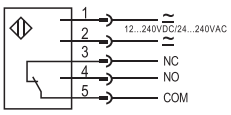
DC 5 Wires

	Cable type			
RS485				

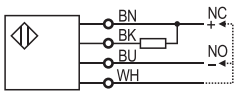
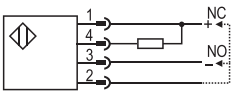
AC 2 Wires

	Cable type	M12 Connector	Terminal connect	
SCR NO				
SCR NC				

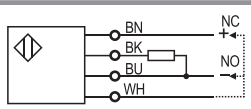
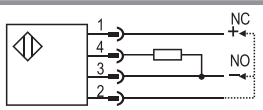
AC/DC Wires

	Cable type	Terminal connect		
Relay				

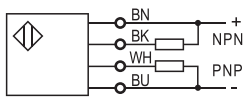
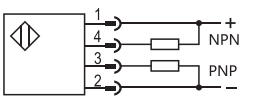
NPN

	Cable type	M12 Connector		
NO/NC Optional				

PNP

	Cable type	M12 Connector		
NO/NC Optional				

NPN+PNP

	Cable type	M12 Connector		
				

Connector

	M8 Connector	M12 Connector	M8 Connector	M12 Connector
				



Focus on big market, high-tech products

To build a domestic first-class, internationally renowned large-scale comprehensive sensor and industrial automation industry group

More than 20 years of hard working has enabled Lanbao to develop continuously and stably,It has completed the transformation of a Chinese sensor company from small to large, from weak to strong, and rapidly moving towards the world.

Lanbao is willing to cooperate with domestic and foreign counterparts to provide high-quality products and services to global customers,
continue to create maximum value for customers.

Integrity priority Customer supreme Innovation first





Hotline **800-820-8259**

www.shlanbao.cn
www.lanbaosensor.com

Shanghai Lanbao Sensing Technology Co., Ltd.

Add: No.228 Jinbi Road, Jinhui Industrial Park,
Fengxian Area, Shanghai, China 201404
Tel: 86-21-57486188
Fax: 86-21-57486199
E-mail: market@shlanbao.cn

LANBAO CATALOG 2023-05

Lanbao reserves the right to make changes