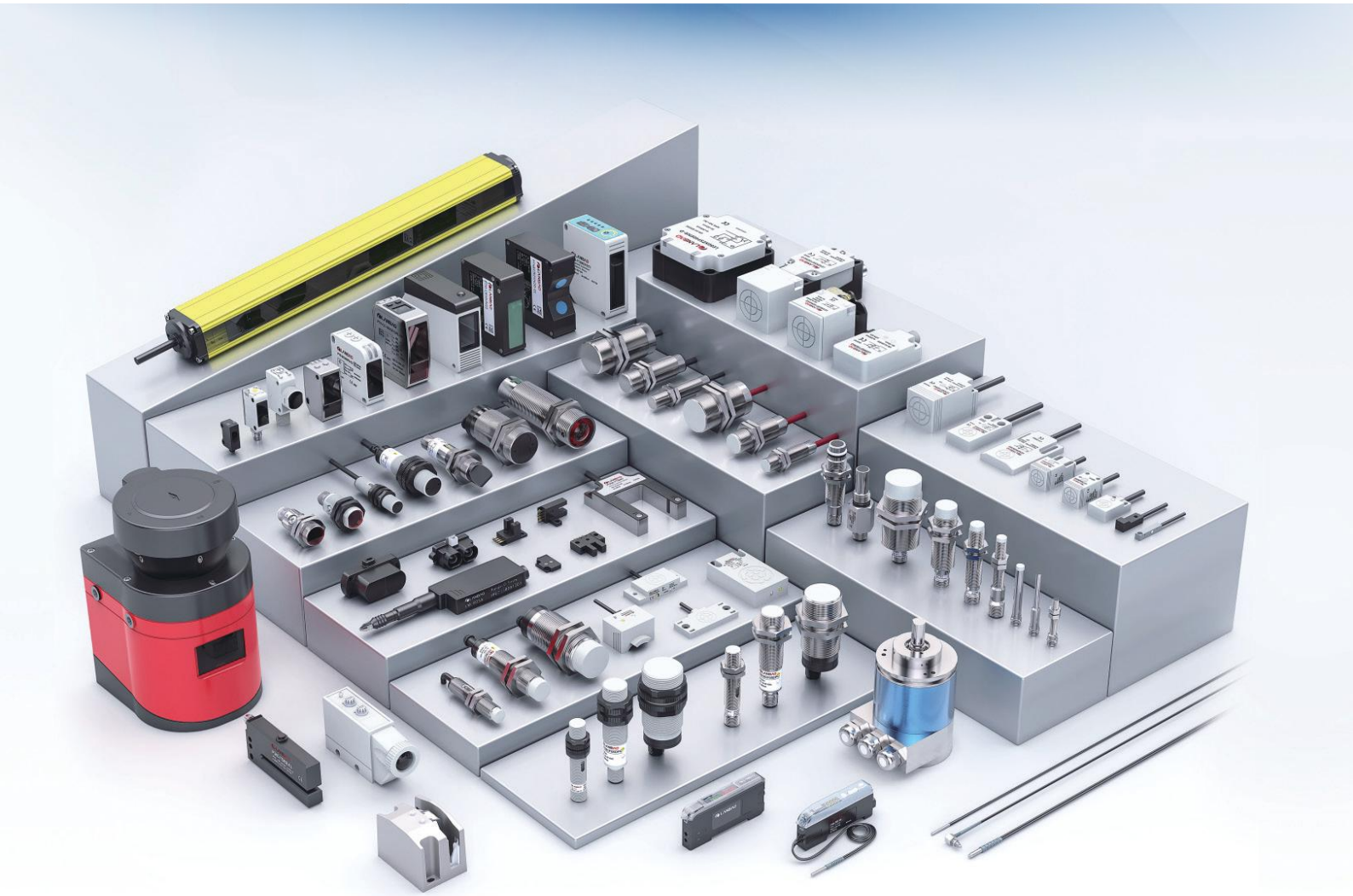
传通世界 感知未来
Sensing the dream

LANBAO

传感器概览
PRODUCT SUMMARY



上海兰宝传感科技股份有限公司
Shanghai Lanbao Sensing Technology Co., Ltd.

上海兰宝传感科技股份有限公司

上海兰宝传感科技股份有限公司创立于1998年，国内先进的工业离散传感器供应商之一。兰宝严格遵守国际标准，通过GB/T19001-2016 / ISO 9001:2015质量管理体系认证、ISO14001:2015/GB/T24001-2016 环境管理体系认证、ISO 45001:2018职业健康安全管理体系，实施RoHS环保指令，系列化产品已通过CCC、CE及UL认证，为客户提供电感式传感器、电容式传感器、光电式传感器、激光测距/位移传感器、光幕、张力传感器等5000种规格型号产品及多样化的工业自动化综合解决方案。

兰宝提供的产品可实现限位保护、定位检测、距离测量、段差检测、信号传送、自动计数、测速等功能，广泛应用于彷织、烟草、包装、电梯、电子、机床、物流、工程机械等行业。丰富的产品选择，快速灵活的交货周期，独特的定制化方案，专业的团队和一流的服务，兰宝始终致力于为客户提供安全可靠、更具竞争力的工业测控解决方案。

Shanghai Lanbao Sensing Technology Co., Ltd.

Established in 1998, Shanghai Lanbao Sensing Technology Co., Ltd is one of leading domestic suppliers of industrial discrete sensors. Lanbao strictly abides by international standards and has passed GB/T19001-2016/ISO 9001:2015 quality management system certification,ISO14001:2015/GB/T24001-2016 Environmental Management System certification, ISO 45001:2018 Occupational Health and Safety Management System, implement RoHS environmental protection directive, and our serial products have passed CCC, CE and UL certification, providing customers with inductive sensors, capacitive sensors, photoelectric sensors, laser ranging/displacement sensors, light curtains, tension sensors and other 5000 specifications and diversified industrial automation solutions.

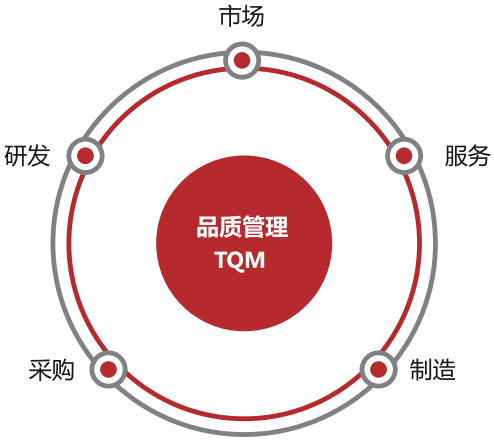
The produts provided by Lanbao can relize the functions of limit protection, positioning detection, distance measurement, widely usde in tetile, tobacco, packaging, elevator, electronics, CNC, logistics, engineering machinery and many other industries.With rich product selection, fast and flexible delivery, unique customized solutions, Lanbao is committde to providing customers with safe, reliable and competitive industrial measurement and control solutions.

LANBAO SENSOR

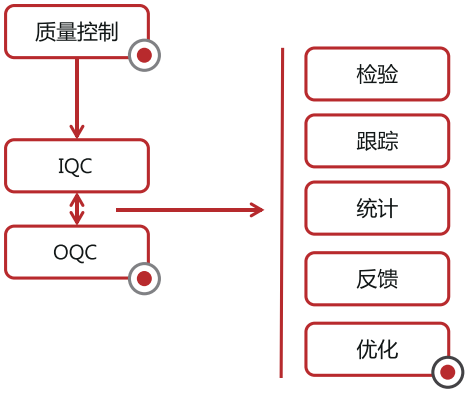
兰宝汇集国际业内顶尖精英，掌握核心技术，专注于工业自动化产品领域。在导入全球领先的管理理念和制度的同时，集合设计、开发、研制、生产等配套流程，打造一体化经营格局，最终成为国际工业自动化产品制造领域的翘楚。兰宝拥有一批国际领先的自动化制造设备，保证产品具有国际技术水平和可靠质量。兰宝以严谨的品质管理与控制流程，确保每一件产品"零缺陷"。

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.

全面质量管理
Total Quality Management



完整IQC和OQC检验流程
Complete IQC,OQC testing process



04 电感式传感器
Inductive sensors

06	标准功能系列	Standard function
14	频率增强系列	Frequency enhanced
14	增强远距离系列	Extended sensing distance
17	模拟量输出系列	Analog output
18	温度扩展系列	Extended temperature
19	耐高压系列	High pressure resistant
20	全金属封装系列	Full metal housing
21	转速监控系列	Rotation speed monitor
22	齿轮测速系列	Gear speed monitoring
23	强磁免疫系列	Welding-immune
24	自诊断系列	Self-diagnosis
24	无衰减系列	Factor one
25	宽电压系列	Wide voltage
26	夹钳位置系列	Inductive power clamp sensors
27	耐高压测速系列	High pressure resistant speed monitoring

28 电容式传感器
Capacitive sensors

30	标准功能系列	Standard function
32	延时功能系列	Time delay function
33	增强远距离系列	Extended sensing distance
34	耐腐蚀系列	Corrosion resistance test
35	管道液位系列	Pipe liquid level detecting
35	耐高温料位系列	High temperature resistant material level detecting

36 光电式传感器
Photoelectric sensors

38	对射系列	Through beam
45	回归反射系列	Retro reflection
46	偏振反射系列	Polarized reflection
47	透明物体检测系列	Transparent object detection
48	漫反射系列	Diffuse reflection
51	背景抑制系列	Background suppression

53 限定反射系列 Focus reflection
54 颜色检测传感器 Color sensors
55 色标传感器 Mark senors
55 光纤传感器 Optical fiber sensors

57 测量传感器 Measuring sensors

57 红外测距传感器 Infrared ranging sensor
59 数显型激光测距传感器 Digital laser distance sensors
62 激光测距感器 Laser distance sensors
63 数显型激光位移传感器 Digital laser displacement sensors
66 激光位移传感器 Laser displacement sensors
67 2D激光扫描传感器 2D Laser scanners
68 CCD激光线径测量 CCD laser diameter measurement
69 3D激光线扫描 3D laser scanner

70 光幕传感器 Light curtains

72 区域光幕传感器 Area light curtains
74 测量光幕传感器 Measuring light curtains

76 编码器 Encoders

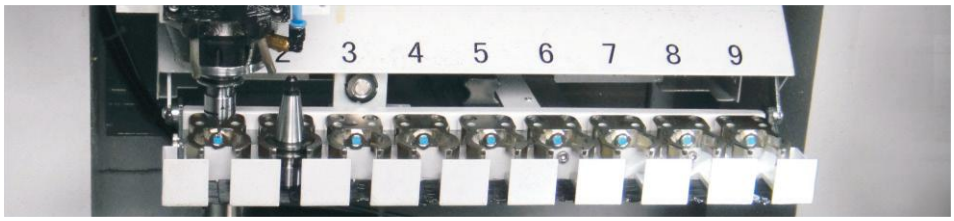
78 绝对值旋转编码器 Absolute rotary encoder

79 张力传感器 Tension sensors

81 传感器附件 Sensor accessories

92 接线图 Wiring diagram

电感式传感器
Inductive sensors



- 非接触式位置检测、无磨损、高可靠性
- 清晰可见的指示灯设计，更易判断开关的工作状态
- 直径规格从Φ4至M30，长度规格从超短形、短形到加长形，方形规格从5*5至80*80
- 电缆连接与连接器连接可选
- 采用专用IC制作，性能更加稳定
- 具有短路保护，逆极性保护，过载保护及浪涌保护
- 能进行各种限位、计数控制，适用范围广

- 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.

产品命名方式 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. 分类 Type code

L:电感式 Inductive

2. 外形 Shape code

R:圆柱形 Cylindrical
E:方形 Rectangular

3. 尺寸 Size code

数字:外壳尺寸 Number: Housing diameter
如: 08:M8 e.g: 08:M8

4. 外壳形状 Shape code

Q:光滑圆柱形 Smooth cylindrical
V:角柱形 Angle column
Z:组合形 Combination
H:环形 Ring-shaped
U:槽型 U-shaped
X:改进外形及特殊功能产品
Appearance improved/function enhanced products

5. 外壳材料 Housing material

无:金属铜壳 N/A: Copper
S:塑料 Plastic
G:不锈钢 Stainless steel
V:铝 Aluminium

6. 外形尺寸 Housing length

A:短型 Short
B:标准型 Standard
C:长型 Long

7. 安装形式 Mounting

N:非埋 Non-flush(nf)
F: 埋入 Flush(f)

8. 检测距离 Sensing distance

数字: 检测距离
如: 02:2mm
04:4mm
10:10mm

9. 工作电压 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.输出方式 Output way

B:AC/DC二线 AC/DC 2 wires
L:DC二线 DC 2 wires
T:AC二线 AC 2 wires
P:PNP
N:NPN

11. 输出状态 Output status

B:常开/常闭可选 NO/NC Optional
O:常开 NO
C:常闭 NC
R:常开+常闭 NO+NC
IU:电压型+电流型 Voltage+current (0...10V,0...20mA)
U:电压型(0...10V) Voltage(0...10V)
I:电流型(0...20mA) Current(0...20mA)
I4:电流型(4...20mA) Current(4...20mA)
L: IO Link

12. 开关功能 By sensor function

无:标准功能型 N/A: Standard function
M:模拟量 Analog
N:NAMUR
W:耐高温(-25℃...120℃)
High temperature resistant(-25℃...120℃)
W1:耐低温(-40℃...70℃)
Low temperature resistant(-40℃...70℃)
W2:耐高温(-25℃...100℃)
High temperature resistant(-25℃...100℃)
B:耐高压 High pressure resistant
Z:自诊断 Self-diagnosis
Y:增强远距离型 Extended sensing distance
G:频率增强型 Frequency enhanced
Q:全金属封装型 Full metal housing
A:强磁免疫型 Welding-immune
J:转速监控型 Rotation speed monitoring

13. 引线长度 Cable length

如: 无:2m e.g: N/A:2m
3M:3m

14. 连接形式 Connection

无:2m引线式 N/A:2m cable
E1:M8三芯插件 M8 connector (3 pins)
E2:M12四芯插件 M12 connector (4 pins)
E3:M8四芯插件 M8 connector (4 pins)
D:内端子接线 Terminal
F1:M8三芯插件+0.2m引线
M8 connector (3 pins)+0.2m cable
F2:M12四芯插件+0.2m引线
M12 connector (4 pins)+0.2m cable

15. 特殊要求 Special requirement

用四位数字表示 In 4 digits

标准功能系列 Standard function

外壳代号 Shell code		LR04Q	LR05	LR6.5Q	LR08	LR12X
尺寸规格（mm） 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
安装方式 Mounting		● 埋入 ● Flush	● 埋入 ● Flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 Sensing distance		0.8mm	0.8mm	1.5mm, 2mm	1.5mm, 2mm	2mm, 4mm
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	/	/	NPN NO+NC PNP NO+NC
	DC 2线 DC 2 Wires	/	/	NO NC	NO NC	NO NC
	AC 2线 AC 2 Wires	/	/	/	/	NO NC
	AC/DC 2线 AC/DC 2 Wires	/	/	/	/	/
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC 20...250 VAC
开关频率 Frequency		2000Hz	2000Hz	2000Hz, 1500Hz	2000Hz, 1500Hz	DC3/4: 1500Hz, 1000Hz DC2: 800Hz, 500Hz AC2: 20Hz
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		不锈钢 Stainless steel	不锈钢 Stainless steel	不锈钢 Stainless steel	不锈钢, 镍铜合金 Stainless steel Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy
连接方式 Connection		成型电缆, M8 连接器 Cable, M8 Connector	成型电缆, M8 连接器 Cable, M8 Connector	成型电缆, M8 连接器 Cable, M8 Connector	成型电缆 M8/M12 连接器 Cable M8/M12 Connector	成型电缆 Cable
产品认证 Certification		CE	CE	CE	CE	CE UL

标准功能系列 Standard function

外壳代号 Shell code		LR18X	LR30X	LR12X	LR18X	LR30X
尺寸规格（mm） 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
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 Sensing distance		5mm, 8mm	10mm, 15mm	2mm, 4mm	5mm, 8mm	10mm, 15mm
输出方式 Output	DC 3线 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线 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线 DC 2 Wires	NO NC	NO NC	NO NC	NO NC	NO NC
	AC 2线 AC 2 Wires	NO NC	NO NC	NO NC	NO NC	NO NC
	AC/DC 2线 AC/DC 2 Wires	NO NC	NO NC	/	NO NC	NO NC
电源电压 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
开关频率 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
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy
连接方式 Connection		成型电缆 Cable	成型电缆 Cable	M12 连接器 M12 Connector	M12 连接器 M12 Connector	M12 连接器 M12 Connector
产品认证 Certification		CE UL	CE UL	CE UL	CE UL	CE UL

标准功能系列 Standard function

外壳代号 Shell code		LE08	LE08X	LE09	LE11	
尺寸规格（mm） Dimensions(mm)		7.5*8*23	7.5*8*23	7.5*8*23	12*7*27	
安装方式 Mounting		◑ 非埋 ◑ Non-flush	◑ 非埋 ◑ Non-flush	◑ 非埋 ◑ Non-flush	◑ 非埋 ◑ Non-flush	
检测距离 Sensing distance		2.5mm	2.5mm	2.5mm	3mm	
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	/	/	
	DC 2线 DC 2 Wires	/	/	/	/	
	AC 2线 AC 2 Wires	/	/	/	/	
	AC/DC 2线 AC/DC 2 Wires	/	/	/	/	
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
开关频率 Frequency		1000Hz	1000Hz	1000Hz	1000Hz	
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	
防护等级 Protection degree		IP67	IP67	IP67	IP67	
外壳材料 Housing material		PC	PC	PC	PC	
连接方式 Connection		成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	
产品认证 Certification		CE	CE	CE	CE	

标准功能系列 Standard function

外壳代号 Shell code		LE10	LE17	LE18	LE20	LE25
尺寸规格（mm） Dimensions(mm)		18*10*30	17*17*28	18*18*35	20*20*38	25*25*39
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 Sensing distance		5mm, 8mm	5mm, 8mm	5mm, 8mm	5mm, 8mm	7mm, 10mm
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	/	/	/
	DC 2线 DC 2 Wires	/	NO NC	NO NC	NO NC	NO NC
	AC 2线 AC 2 Wires	/	NO NC	NO NC	NO NC	NO NC
	AC/DC 2线 AC/DC 2 Wires	/	/	/	/	/
电源电压 Supply voltage		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
开关频率 Frequency		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
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		PBT	PBT	PBT	PBT	PBT
连接方式 Connection		成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	成型电缆 Cable
产品认证 Certification		CE	CE	CE	CE	CE

标准功能系列 Standard function

外壳代号 Shell code		LE30	LE40	LE50	LE68	LE40SZ
尺寸规格（mm）Dimensions(mm)		30*30*53	40*40*53	25*10*50	20*40*71, 20*40*80	40*40*66
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 Sensing distance		10mm, 15mm	15mm,20mm	5mm, 8mm	15mm, 25mm	15mm,20mm
输出方式 Output	DC 3线 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线 DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	/	/	NPN NO+NC PNP NO+NC
	DC 2线 DC 2 Wires	NO NC	NO NC	NO NC	NO NC	NO NC
	AC 2线 AC 2 Wires	NO NC	NO NC	NO NC	NO NC	NO NC
	AC/DC 2线 AC/DC 2 Wires	/	/	/	NO NC	NO NC
电源电压 Supply voltage		10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC	10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC 20...250 VAC 20...250 VAC/DC
开关频率 Frequency		DC3/4: 700Hz, 500Hz DC2: 700Hz, 500Hz AC2: 20Hz	DC3/4: 400Hz, 200Hz DC2: 400Hz, 200Hz AC2: 20Hz	700Hz, 500Hz	DC3/4: 500Hz, 300Hz DC2: 500Hz, 300Hz AC2: 20Hz	DC3/4: 500Hz, 300Hz DC2: 500Hz, 300Hz AC2: 20Hz
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		PBT	PBT	PBT	PBT	PBT
连接方式 Connection		成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	成型电缆, M12 连接器 Cable, M12 Connector	M12 连接器 M12 Connector
产品认证 Certification		CE	CE	CE	CE	CE

标准功能系列 Standard function

外壳代号 Shell code		LE40XZ	LE80XZ	LE05	LE81	LE82
尺寸规格（mm） 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
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入 ● Flush	● 埋入 ● Flush	● 埋入 ● Flush
检测距离 Sensing distance		15mm,20mm	40mm, 50mm	0.8mm	1.5mm	1.5mm
输出方式 Output	DC 3线 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线 DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	/	/	/
	DC 2线 DC 2 Wires	NO NC	NO NC	NO NC	/	/
	AC 2线 AC 2 Wires	NO NC	NO NC	/	/	/
	AC/DC 2线 AC/DC 2 Wires	NO NC	NO NC	/	/	/
电源电压 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
开关频率 Frequency		DC3/4: 500Hz, 300Hz DC2: 500Hz, 300Hz AC2: 20Hz	DC3/4: 100Hz, 50Hz DC2: 100Hz, 50Hz AC2: 10Hz	1800Hz	2000Hz	2000Hz
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		PBT	PBT	铝合金 Aluminum alloy	铝合金 Aluminum alloy	铝合金 Aluminum alloy
连接方式 Connection		M12 连接器, 端子连接 M12 Connector Terminal connect	M12 连接器, 端子连接 M12 Connector Terminal connect	成型电缆, M8 中继线型 Cable, M8 Trunk line type	成型电缆, M8 连接器 Cable, M8 Connector	成型电缆, M8 连接器 Cable, M8 Connector
产品认证 Certification		CE	CE	CE	CE	CE

标准功能型-本质安全系列 Standard Function Type-Intrinsically Safe Series

外壳代号 Shell code		LR05	LR6.5Q	LR08	LR12X	LR18X
尺寸规格（mm） 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
安装方式 Mounting		● 埋入 ● Flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 Sensing distance		0.8mm	1.5mm, 2mm	1.5mm, 2mm	2mm, 4mm	5mm, 8mm
输出方式 Output	NAMUR	NC	NC	NC	NC	NC
	DC 3线 DC 3 Wires	/	/	/	/	/
	DC 4线 DC 4 Wires	/	/	/	/	/
	DC 2线 DC 2 Wires	/		/	/	/
	AC 2线 AC 2 Wires	/	/	/	/	/
电源电压 Supply voltage		7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC
开关频率 Frequency		3000Hz	3000Hz	2500Hz, 2000Hz	2000Hz, 1500Hz	1500Hz, 1000Hz
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		不锈钢 Stainless steel	不锈钢 Stainless steel	不锈钢 Stainless steel	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy
连接方式 Connection		成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	成型电缆 Cable
产品认证 Certification		CE	CE	CE	CE	CE

标准功能型-本质安全系列 Standard Function Type-Intrinsically Safe Series

外壳代号 Shell code		LR30X	LE40SZ	LE40XZ	LE80XZ	
尺寸规格（mm） 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	
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	
检测距离 Sensing distance		10mm, 15mm	15mm, 20mm	15mm, 20mm	40mm, 50mm	
输出方式 Output	NAMUR	NC	NC	NC	NC	
	DC 3线 DC 3 Wires	/	/	/	/	
	DC 4线 DC 4 Wires	/	/	/	/	
	DC 2线 DC 2 Wires	/	/	/	/	
	AC 2线 AC 2 Wires	/	/	/	/	
电源电压 Supply voltage		7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	7.7...9 VDC	
开关频率 Frequency		1000Hz, 800Hz	400Hz, 250Hz	400Hz, 250Hz	100Hz	
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	
防护等级 Protection degree		IP67	IP67	IP67	IP67	
外壳材料 Housing material		镍铜合金 Nickel-copper Alloy	PBT	PBT	PBT	
连接方式 Connection		成型电缆 Cable	M12 连接器 M12 Connector	M12 连接器, 端子连接 M12 Connector Terminal connect	M12 连接器, 端子连接 M12 Connector Terminal connect	
产品认证 Certification		CE	CE	CE	CE	

频率增强系列 Frequency enhanced

增强远距离系列 Extended sensing distance

外壳代号 Shell code		LR12X	LR18X	LR04Q	LR05	LR6.5Q
尺寸规格（mm） 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
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 准埋入 ● Quasi-flush	● 准埋入 ● Quasi-flush	● 准埋入, ◑ 非埋 ● Quasi-flush ◑ Non-flush
检测距离 Sensing distance		2mm, 4mm	5mm, 8mm	1.5mm	1.5mm	2mm, 4mm
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	/	/	NO NC
	DC 2线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	/	/
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
开关频率 Frequency		4000Hz, 3000Hz	2000Hz, 1500Hz	1200Hz	1200Hz	DC3/4: 1500Hz, 1000Hz DC2: 1500Hz, 1000Hz
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	不锈钢 Stainless steel	不锈钢 Stainless steel	不锈钢 Stainless steel
连接方式 Connection		成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M8 连接器 Cable, M8 Connector	成型电缆, M8 连接器 Cable, M8 Connector	成型电缆 M8/M12 连接器 Cable M8/M12 Connector
产品认证 Certification		CE UL	CE UL	CE	CE	CE

增强远距离系列 Extended sensing distance

外壳代号 Shell code		LR08	LR12X	LR18X	LR30X	LE40SZ
尺寸规格（mm） 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	40*40*66
安装方式 Mounting		● 准埋入, ◑ 非埋 ● Quasi-flush ◑ Non-flush	● 准埋入, ◑ 非埋 ● Quasi-flush ◑ Non-flush	● 准埋入, ◑ 非埋 ● Quasi-flush ◑ Non-flush	● 准埋入, ◑ 非埋 ● Quasi-flush ◑ Non-flush	● 准埋入, ◑ 非埋 ● Quasi-flush ◑ Non-flush
检测距离 Sensing distance		2mm, 4mm	4mm, 6mm, 8mm 10mm	8mm, 12mm, 20mm	15mm, 22mm, 40mm	25mm, 40mm
输出方式 Output	DC 3线 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线 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线 DC 2 Wires	NO NC	NO NC	NO NC	NO NC	NO NC
	AC 2线 AC 2 Wires	/	/	NO NC	NO NC	NO NC
	AC/DC 2线 AC/DC 2 Wires	/	/	NO NC	NO NC	NO NC
电源电压 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	10...30 VDC 20...250 VAC 20...250 VAC/DC
开关频率 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	DC3/4: 200Hz, 100Hz DC2: 200Hz, 100Hz AC2: 20Hz
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		不锈钢 Stainless steel	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	PBT
连接方式 Connection		成型电缆 M8/M12 连接器 Cable M8/M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	M12 连接器 M12 Connector
产品认证 Certification		CE	CE UL	CE UL	CE UL	CE

增强远距离系列 Extended sensing distance

外壳代号 Shell code		LE40XZ	LE80XZ			
尺寸规格（mm） Dimensions(mm)		40*40*120, 40*40*129	40*80*98, 40*80*104			
安装方式 Mounting		● 准埋入, ◑ 非埋 ● Quasi-flush ◑ Non-flush	● 准埋入, ◑ 非埋 ● Quasi-flush ◑ Non-flush			
检测距离 Sensing distance		25mm, 40mm	50mm, 70mm			
输出方式 Output	DC 3线 DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC			
	DC 4线 DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC			
	DC 2线 DC 2 Wires	NO NC	NO NC			
	AC 2线 AC 2 Wires	NO NC	NO NC			
	AC/DC 2线 AC/DC 2 Wires	NO NC	NO NC			
电源电压 Supply voltage		10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC 20...250 VAC 20...250 VAC/DC			
开关频率 Frequency		DC3/4: 200Hz, 100Hz DC2: 200Hz, 100Hz AC2: 20Hz	DC3/4: 50Hz, 30Hz DC2: 50Hz, 30Hz AC2: 20Hz			
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃			
防护等级 Protection degree		IP67	IP67			
外壳材料 Housing material		PBT	PBT			
连接方式 Connection		M12 连接器, 端子连接 M12 Connector Terminal connect	M12 连接器, 端子连接 M12 Connector Terminal connect			
产品认证 Certification		CE	CE			

模拟量输出系列 Analog output

外壳代号 Shell code		LR12X	LR18X	LR30X	LE40SZ	LE40XZ
尺寸规格（mm） 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
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 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
输出方式 Output	电压型输出 Voltage output	0...10V	0...10V	0...10V	0...10V	0...10V
	电流型输出 Current output	0...20mA/4...20mA	0...20mA/4...20mA	0...20mA/4...20mA	0...20mA/4...20mA	0...20mA/4...20mA
	电压+电流输出 Voltage+Current output	0...10V+0...20mA	0...10V+0...20mA	0...10V+0...20mA	0...10V+0...20mA	0...10V+0...20mA
电源电压 Supply voltage		15...30 VDC	15...30 VDC	15...30 VDC	15...30 VDC	15...30 VDC
开关频率 Frequency		200Hz, 100Hz	200Hz, 100Hz	200Hz, 100Hz	100Hz, 50Hz	100Hz, 50Hz
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	PBT	PBT
连接方式 Connection		成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	M12 连接器 M12 Connector	M12 连接器, 端子连接 M12 Connector Terminal connect
产品认证 Certification		CE UL	CE UL	CE UL	CE	CE

温度扩展系列 Extended temperature

外壳代号 Shell code		LR12X	LR18X	LR30X	LE40SZ	LE40XZ
尺寸规格（mm） 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
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 Sensing distance		2mm, 4mm	5mm, 8mm	10mm, 15mm	15mm, 20mm	15mm, 20mm
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	/	/	/
	DC 2线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	/	/
	AC/DC 2线 AC/DC 2 Wires	/	/	/	/	/
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
开关频率 Frequency		1500Hz, 1000Hz	1000Hz, 800Hz	5000Hz, 300Hz	300Hz, 200Hz	300Hz, 200Hz
环境温度 Ambient temperature		-40°C...70°C -25°C...120°C	-40°C...70°C -25°C...120°C	-40°C...70°C -25°C...120°C	-40°C...70°C -25°C...100°C	-40°C...70°C -25°C...100°C
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		镍铜合金 Nick-copper Alloy	镍铜合金 Nick-copper Alloy	镍铜合金 Nick-copper Alloy	PBT	PBT
连接方式 Connection		成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	M12 连接器 M12 Connector	M12 连接器, 端子连接 M12 Connector Terminal connect
产品认证 Certification		CE UL	CE UL	CE UL	CE	CE

耐高压系列 High pressure resistant

外壳代号 Shell code		LR12X	LR14X	LR16X	LR18X	
尺寸规格（mm） 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	
安装方式 Mounting		● 埋入 ● Flush	● 埋入 ● Flush	● 埋入 ● Flush	● 埋入 ● Flush	
检测距离 Sensing distance		1.5mm	1.5mm, 3mm	2mm	2mm	
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	/	/	
	DC 2线 DC 2 Wires	/	/	/	/	
	AC 2线 AC 2 Wires	/	/	/	/	
	AC/DC 2线 AC/DC 2 Wires	/	/	/	/	
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
开关频率 Frequency		600Hz	600Hz	600Hz	200Hz	
耐受压力 Withstand presssure		500Bar	500Bar	500Bar	500Bar	
环境温度 Ambient temperature		-25℃...70℃	-25℃...80℃	-25℃...80℃	-25℃...80℃	
防护等级 Protection degree		IP68	IP68	IP68	IP68	
外壳材料 Housing material		不锈钢 Stainless steel	不锈钢 Stainless steel	不锈钢 Stainless steel	不锈钢 Stainless steel	
连接方式 Connection		成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	
产品认证 Certification		CE UL	CE	CE UL	CE UL	

全金属封装系列 Full metal housing

外壳代号 Shell code		LR12X	LR18X	LR30X		
尺寸规格（mm） Dimensions(mm)		M12*1*74	M18*1*74	M30*1*74		
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush		
检测距离 Sensing distance		2mm, 4mm	5mm, 8mm	10mm, 15mm		
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	/		
	DC 2线 DC 2 Wires	/	/	/		
	AC 2线 AC 2 Wires	/	/	/		
	AC/DC 2线 AC/DC 2 Wires	/	/	/		
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC		
开关频率 Frequency		300Hz	200Hz	100Hz		
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃		
防护等级 Protection degree		IP67	IP67	IP67		
外壳材料 Housing material		316L 不锈钢 316L Stainless steel	316L 不锈钢 316L Stainless steel	316L 不锈钢 316L Stainless steel		
连接方式 Connection		M12 连接器 M12 Connector	M12 连接器 M12 Connector	M12 连接器 M12 Connector		
产品认证 Certification		CE UL	CE UL	CE UL		

转速监控系列 Rotation speed monitor

外壳代号 Shell code		LR18X	LR30X			
尺寸规格（mm） Dimensions(mm)		M18*1*61.5 M18*1*69.5	M30*1.5*62 M30*1.5*74			
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush			
检测距离 Sensing distance		5mm, 8mm	10mm, 15mm			
输出方式 Output	DC 3线 DC 3 Wires	NPN NC PNP NC	NPN NC PNP NC			
	DC 4线 DC 4 Wires	/	/			
	DC 2线 DC 2 Wires	/	/			
	AC 2线 AC 2 Wires	NC	NC			
	AC/DC 2线 AC/DC 2 Wires	/	/			
电源电压 Supply voltage		10...30 VDC 20...250 VAC	10...30 VDC 20...250 VAC			
开关频率 Frequency		DC: 3...3000 次/分钟 AC: 3...1200 次/分钟 DC: 3...3000 times/min AC: 3...1200 times/min	DC: 3...3000 次/分钟 AC: 3...1200 次/分钟 DC: 3...3000 times/min AC: 3...1200 times/min			
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃			
防护等级 Protection degree		IP67	IP67			
外壳材料 Housing material		镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy			
连接方式 Connection		成型电缆 Cable	成型电缆 Cable			
产品认证 Certification		CE	CE			

齿轮测速系列 Gear speed monitoring

外壳代号 Shell code		FY12		FY18		
尺寸规格（mm） Dimensions(mm)		M12*1*61	M12*1*73	M18*1*61.5	M18*1*73	
安装方式 Mounting		● 埋入 ● Flush	● 埋入 ● Flush	● 埋入 ● Flush	● 埋入 ● Flush	
检测距离 Sensing distance		2mm	2mm	2mm	2mm	
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	/	/	
	DC 2线 DC 2 Wires	/	/	/	/	
	AC 2线 AC 2 Wires	/	/	/	/	
	AC/DC 2线 AC/DC 2 Wires	/	/	/	/	
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
开关频率 Frequency		25000Hz	25000Hz	25000Hz	25000Hz	
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	
防护等级 Protection degree		IP67	IP67	IP67	IP67	
外壳材料 Housing material		镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	
连接方式 Connection		成型电缆 Cable	M12 连接器 M12 Connector	成型电缆 Cable	M12 连接器 M12 Connector	
产品认证 Certification		/	/	/	/	

强磁免疫系列 Welding-immune

外壳代号 Shell code		LR12X	LR18X	LR30X	LE21	
尺寸规格（mm） 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	
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入 ● Flush	
检测距离 Sensing distance		2mm, 4mm	5mm, 8mm	10mm, 15mm	0.3mm	
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	/	/	
	DC 2线 DC 2 Wires	/	/	/	/	
	AC 2线 AC 2 Wires	/	/	/	/	
	AC/DC 2线 AC/DC 2 Wires	/	/	/	/	
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
开关频率 Frequency		3000Hz, 2000Hz	1500Hz, 1000Hz	800Hz, 500Hz	500Hz	
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	
防护等级 Protection degree		IP67	IP67	IP67	IP67	
外壳材料 Housing material		黄铜+PTFE 涂层 Brass+PTFE	黄铜+PTFE 涂层 Brass+PTFE	黄铜+PTFE 涂层 Brass+PTFE	PA66	
连接方式 Connection		成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆 Cable	
产品认证 Certification		CE	CE	CE	CE	

自诊断系列 Self-diagnosis

无衰减系列 Factor one

外壳代号 Shell code		LR12X	LR12X	LR12X	LR18X	LR30X
尺寸规格（mm） 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
安装方式 Mounting		◑ 非埋 ◑ Non-flush	◑ 非埋 ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 Sensing distance		3.7mm	3.7mm	2mm,4mm	5mm,8mm	10mm,15mm
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC
	DC 2线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	/	/
	AC/DC 2线 AC/DC 2 Wires	/	/	/	/	/
电源电压 Supply voltage		20...30 VDC	20...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
开关频率 Frequency		300Hz	300Hz	800Hz, 500Hz	400Hz, 200Hz	300Hz, 150Hz
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		镍铜合金 Nick-copper Alloy	镍铜合金 Nick-copper Alloy	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy
连接方式 Connection		成型电缆 Cable	M12 连接器 M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector
产品认证 Certification		CE UL	CE UL	CE	CE	CE

无衰减系列 Factor one

宽电压系列 Wide voltage

外壳代号 Shell code		LE40SZ	LE40XZ	LE40SZ	LE40XZ	LE80XZ
尺寸规格（mm） Dimensions(mm)		40*40*66	40*40*120,40*40*129	40*40*66	40*40*120,40*40*129	40*80*98,40*80*104
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 Sensing distance		15mm, 20mm	15mm, 20mm	25mm,40mm	25mm,40mm	50mm,70mm
输出方式 Output	DC 3线 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线 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线 DC 2 Wires	/	/	NO NC	NO NC	NO NC
	AC 2线 AC 2 Wires	/	/	/	/	/
	AC/DC 2线 AC/DC 2 Wires	/	/	/	/	/
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...60 VDC	10...60 VDC	10...60 VDC
开关频率 Frequency		200Hz, 100Hz	200Hz, 100Hz	DC3/4: 500Hz, 300Hz DC2: 500Hz, 300Hz	DC3/4: 500Hz, 300Hz DC2: 500Hz, 300Hz	DC3/4: 100Hz, 50Hz DC2: 100Hz, 50Hz
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		PBT	PBT	PBT	PBT	PBT
连接方式 Connection		M12 连接器 M12 Connector	M12 连接器, 端子连接 M12 Connector Terminal connect	M12 连接器 M12 Connector	M12 连接器, 端子连接 M12 Connector Terminal connect	M12 连接器, 端子连接 M12 Connector Terminal connect
产品认证 Certification		CE	CE	CE	CE	CE

夹钳位置系列 Clamp position series

外壳代号 Shell code		LT18 (V1)	LT18 (V2)	LT18 (V3)	LT18 (V4)	
尺寸规格（mm） Dimensions(mm)		47*18*35	47*18*35	47*18*35	47*18*35	
安装方式 Mounting		◑ 非埋 ◑ Non-flush	◑ 非埋 ◑ Non-flush	◑ 非埋 ◑ Non-flush	◑ 非埋 ◑ Non-flush	
检测距离 Sensing distance		2mm	2mm	2mm	2mm	
输出方式 Output	DC 3线 DC 3 Wires	/	/	/	/	
	DC 4线 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	
	DC 2线 DC 2 Wires	/	/	/	/	
	AC 2线 AC 2 Wires	/	/	/	/	
	AC/DC 2线 AC/DC 2 Wires	/	/	/	/	
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
耐受压力 Withstand presssure		/	/	/	/	
开关频率 Frequency		30Hz	30Hz	30Hz	30Hz	
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	
防护等级 Protection degree		IP67	IP67	IP67	IP67	
外壳材料 Housing material		PA66	PA66	PA66	PA66	
连接方式 Connection		M12 连接器 M12 Connector	M12 连接器 M12 Connector	M12 连接器 M12 Connector	M12 连接器 M12 Connector	
产品认证 Certification		CE	CE	CE	CE	

耐高压测速系列 High pressure resistant speed monitoring

外壳代号 Shell code		FYG12	FYG12T			
尺寸规格（mm） Dimensions(mm)		M12*77	M12*77.5			
安装方式 Mounting		● 埋入 ● Flush	● 埋入 ● Flush			
检测距离 Sensing distance		4mm	2mm			
输出方式 Output	DC 3线 DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC			
	DC 4线 DC 4 Wires	/	/			
	DC 2线 DC 2 Wires	/	/			
	AC 2线 AC 2 Wires	/	/			
	AC/DC 2线 AC/DC 2 Wires	/	/			
电源电压 Supply voltage		7...30 VDC	10...30 VDC			
耐受压力 Withstand presssure		500Bar	500Bar			
开关频率 Frequency		5000Hz	20000Hz			
环境温度 Ambient temperature		-30℃...110℃	-40℃...80℃			
防护等级 Protection degree		IP68	IP68			
外壳材料 Housing material		不锈钢 Stainless steel	不锈钢 Stainless steel			
连接方式 Connection		M12 连接器 M12 Connector	M12 连接器 M12 Connector			
产品认证 Certification		CE	CE			

电容式传感器
Capacitive sensors

- 可以检测金属,塑料,液体等不同物质，应用更广泛
- 可通过非金属管壁检测容器内的不同物质
- 具有电位器进行灵敏度调节功能

- 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.

产品命名方式 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. 分类代号 Type code

C:电容式 Capacitive

2. 外形代号 Shape code

R:螺纹圆柱形 Threaded cylindrical
Q:光滑圆柱形 Smooth cylindrical
E:方形 Rectangular

3. 尺寸代号 Size code

数字:外壳尺寸
Number: Housing diameter
如: 08:M8 e.g: 08:M8

4. 外壳材料 Housing material

无:金属铜壳 N/A: Copper
S:塑料 Plastic
G:不锈钢 Stainless steel

5. 外形尺寸 Housing length

A:短型 Short
B:标准型 Standard
C:长型 Long
D:超长型 Super Long

6. 安装形式 Mounting

N:非埋 Non-flush(nf)
F:埋入 Flush(f)

7. 检测距离 Sensing distance

数字：检测距离
如: 02:2mm
04:4mm
10:10mm

8. 工作电压 Supply voltage

A:20...250VAC
D:10...30VDC
M:18...36VDC
S:20...250VAC/DC

9. 输出方式 Output way

B:AC/DC 2线 AC/DC 2 wires
T:AC 2线 AC 2 wires
P:PNP
N:NPN
K:继电器 Relay

10. 输出状态 Output status

B:常开/常闭可选
NO/NC optional
O:常开 NO
C:常闭 NC
R:常开+常闭 R:NO+NC
注：继电器输出可以不选
Note:Relay output is optional
L: IO Link

11. 开关功能 By sensor function

无:标准功能型
N/A:Standard function
Y:增强远距离型
Extended sensing distance
T1:带前延时功能
On-delay function
T160:60s
T1600:600s
T2:带后延时功能
Off-delay function
T260:60s
T2600:600s

12. 引线长度 Cable length

如: 无:2m e.g: N/A:2m
3M:3m

13. 连接形式 Connection

无:2m引线式 N/A:2m cable
E2:M12四芯插件 M12 connector (4 pins)
D:内端子接线 Terminal

14. 特殊要求 Special requirement

用四位数字表示 In 4 Digits

标准功能系列 Standard function

外壳代号 Shell code		CR12	CR18	CR30	CQ20	CQ32
尺寸规格（mm） 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
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 Sensing distance		2mm, 4mm	5mm, 8mm	10mm, 15mm	10mm, 15mm	15mm, 20mm
输出方式 Output	DC 3线 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线 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线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	NO NC	NO NC	NO NC	NO NC
	AC/DC 2线 AC/DC 2 Wires	/	NO NC	NO NC	/	NO NC
电源电压 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
开关频率 Frequency		50Hz	50Hz, 15Hz	50Hz, 15Hz	50Hz, 15Hz	50Hz, 15Hz
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		镍铜合金, PA66 Nickel-copper Alloy, PA66	镍铜合金, PBT Nickel-copper Alloy, PBT	镍铜合金, PBT Nickel-copper Alloy, PBT	镍铜合金, PBT Nickel-copper Alloy, PBT	镍铜合金, PBT Nickel-copper Alloy, PBT
连接方式 Connection		成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆 Cable	成型电缆 Cable
产品认证 Certification		CE	CE UL	CE UL	CE UL	CE UL

标准功能系列 Standard function

外壳代号 Shell code		CQ34S	CE05	CE05X	CE05-S	CE07
尺寸规格（mm） Dimensions(mm)		Φ34*80	50*20*5	50*20*5	50*20*5	30*7*50
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	◑ 非埋 ◑ Non-flush	◑ 非埋 ◑ Non-flush	◑ 非埋 ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 Sensing distance		15mm, 25mm	3.5mm, 5mm, 8mm	3.5mm, 5mm, 8mm	6mm(可调)	5mm, 8mm
输出方式 Output	DC 3线 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线 DC 4 Wires	NPN NO+NC PNP NO+NC	/	/	/	/
	DC 2线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	NO NC	/	/	/	/
	AC/DC 2线 AC/DC 2 Wires	NO NC	/	/	/	/
电源电压 Supply voltage		10...30 VDC 20...250 VAC 20...250 VAC/DC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
开关频率 Frequency		50Hz, 15Hz	30Hz	30Hz	30Hz	60Hz
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-10℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		PBT	PBT	PBT	PBT	PBT
连接方式 Connection		成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	成型电缆 Cable
产品认证 Certification		CE	CE	CE	CE	CE

标准功能系列
Standard function

延时功能系列
Time delay function

外壳代号 Shell code		CE34	CE35	CE39	CR30S	CQ32S
尺寸规格（mm） Dimensions(mm)		50*7*20	35*15*58	39*59*15	M30*1.5*62	Φ32*80
安装方式 Mounting		◑ 非埋 ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	◑ 非埋 ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 Sensing distance		10mm	10mm, 15mm	12mm	10mm, 15mm	15mm, 20mm
输出方式 Output	DC 3线 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线 DC 4 Wires	/	NPN NO+NC PNP NO+NC	/	/	/
	DC 2线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	NO NC	/
	AC/DC 2线 AC/DC 2 Wires	/	/	/	/	继电器 NO+NC Relay output NO+NC
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	20...250 VAC	20...250 VAC
开关频率 Frequency		30Hz	50Hz	50Hz	10Hz	1Hz
环境温度 Ambient temperature		-10℃...70℃	-10℃...70℃	-10℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		PBT	PBT	PBT	PBT	PBT
连接方式 Connection		成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	成型电缆 Cable
产品认证 Certification		CE	CE	CE	CE	CE

延时功能系列
Time delay function

增强远距离系列
Extended sensing distance

外壳代号 Shell code		CQ34S	CR12D	CR12X	CR18X	CR30X
尺寸规格（mm） Dimensions(mm)		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	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
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush
检测距离 Sensing distance		15mm, 25mm	4mm,8mm	4mm,8mm	8mm, 12mm	15mm, 25mm
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	/	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC
	DC 2线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	/	/
	AC 5线 AC 5 Wires	继电器 NO+NC Relay output NO+NC	/	/	/	/
电源电压 Supply voltage		20...250 VAC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
开关频率 Frequency		1Hz	40Hz	25Hz	25Hz	40Hz
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		PBT	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy	镍铜合金 Nickel-copper Alloy
连接方式 Connection		成型电缆 Cable	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector
产品认证 Certification		CE	CE	CE	CE	CE

增强远距离系列
Extended sensing distance

耐腐蚀系列
Corrosion resistance test

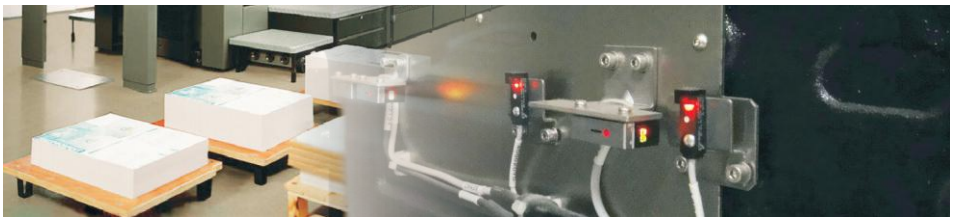
外壳代号 Shell code		CR12XS	CR18XS	CR30XS	CR18T	
尺寸规格（mm） Dimensions(mm)		M12*1*62,M12*1*67 M12*1*74,M12*1*79	M18*1*70,M18*1*85 M18*1*80,M18*1*95	M30*1.5*64,M30*1.5*81 M30*1.5*79,M30*1.5*96	M18*1*72	
安装方式 Mounting		● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	● 埋入, ◑ 非埋 ● Flush, ◑ Non-flush	
检测距离 Sensing distance		4mm,8mm	8mm, 12mm	15mm, 25mm	5mm, 8mm, 12mm	
输出方式 Output	DC 3线 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线 DC 4 Wires	/	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC	/	
	DC 2线 DC 2 Wires	/	/	/	/	
	AC 2线 AC 2 Wires	/	/	/	/	
	AC 5线 AC 5 Wires	/	/	/	/	
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
开关频率 Frequency		40Hz	25Hz	20Hz	40Hz	
环境温度 Ambient temperature		-25℃...70℃	-25℃...70℃	-25℃...70℃	-25℃...70℃	
防护等级 Protection degree		IP68	IP68	IP68	IP67	
外壳材料 Housing material		PBT	PBT	PBT	PTFE	
连接方式 Connection		成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆, M12 连接器 Cable, M12 Connector	成型电缆 Cable	
产品认证 Certification		CE	CE	CE	CE	

管道液位系列
Pipe liquid level detecting

耐高温料位系列
High temperature resistant material level detecting

外壳代号 Shell code		CE10	CE15	CE53（长款）	CE53（短款）
尺寸规格（mm） Dimensions(mm)		43*24*20	34*33*20	95.5*55*22	95.5*55*22
安装方式 Mounting		◑ 非埋 ◑ Non-flush	◑ 非埋 ◑ Non-flush	◑ 非埋 ◑ Non-flush	◑ 非埋 ◑ Non-flush
检测距离 Sensing distance		13mm	26mm	8mm	8mm
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	/	/
	DC 2线 DC 2 Wires	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	/
	AC/DC 2线 AC/DC 2 Wires	/	/	/	/
电源电压 Supply voltage		10...30 VDC	10...30 VDC	18...36 VDC	18...36 VDC
开关频率 Frequency		60Hz	60Hz	0.3Hz	0.3Hz
环境温度 Ambient temperature		-10℃...55℃	-10℃...55℃	感应头：250℃ 控制盒：0℃...60℃ Sensor：250℃ Control box：0℃...60℃	感应头：250℃ 控制盒：0℃...60℃ Sensor：250℃ Control box：0℃...60℃
防护等级 Protection degree		IP67	IP67	IP54	IP54
外壳材料 Housing material		PBT	PBT	PA6	PA6
连接方式 Connection		成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	成型电缆 Cable
产品认证 Certification		CE	CE	CE	CE

光电式传感器
Photoelectric sensors



- 可调节距离，易于设置
- 具有短路保护及逆极性保护功能
- 电缆连接与连接器连接可选
- 金属外壳坚固耐用，塑料外壳经济且安装简单
- 具有入光ON/遮光ON转换功能
- 内置电源可选择AC、DC或AC/DC通用电源
- 继电器输出，容量高达250VAC*3A

- 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.

产品命名方式 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. 分类代号 Type code

P:光电式 Photoelectric

2. 外形代号 Shape code

R:螺纹圆柱形 Threaded cylindrical

U:槽形 U-Shaped

Q:光滑圆柱外壳
Smooth cylindrical

2位字母:方形外壳
2 letters:Rectangular housing code
TE TF TB SE SS
SM SR SV ST

3. 尺寸代号 Size Code

数字:外壳尺寸 Number:Housing diameter

如: 08:M8 e.g: 08:M8

4. 外壳材料 Housing material

无:金属铜壳 N/A:Copper

S:塑料 S:Plastic

5. 外形尺寸 Housing length

无:标准型 N/A:Standard

短型:S Short:S

长型:L Long:L

6. 安装形式 Mounting

B:漫反射式 Diffuse reflection

D:回归反射式 Retro reflection

P:偏振反射式 Polarized reflection

S:限定反射式 Focus reflection

T:对射式 Through beam reflection

M:色标检测式 Color mark detect

Y:背景抑制式 Background suppression

G:透明瓶检测式 Glass bottle detection

7. 检测距离 Sensing distance

例: C10:10cm
C40:40cm
M5:5m
M10:10m
R50:50mm

8. 工作电压 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. 输出方式 Output way

T:AC 2线 AC 2 wires
P:PNP
N:NPN
E:NPN/PNP
F:NPN+PNP
K:继电器 Relay
G:Push-Pull

10. 输出状态 Output status

O:常开 NO
C:常闭 NC
R:常开+常闭 NO+NC
A:常开/常闭可逆
NO/NC Reversible
B:常开/常闭可选
NO/NC Optional
分为电缆线可选、电位器可选
Cable optional; Potentiometer optional
注:继电器输出可以不选
Note:Relay output is optional
L: IO Link

11. 光源类型 Light source type

无:红外光源
No: infrared light source
R:红色光源
R: Red light source
L:激光光源
L:Laser light source
X:线光源
L: Line light source

12. 引线长度 Cable length

例: 无:2m e.g: N/A:2m
3M:3m

13. 连接形式 Connection

无:2m引线式 N/A:2m cable
E1:M8三芯插件
M8 connector (3 pins)
E2:M12四芯插件
M12 connector (4 pins)
E3:M8四芯插件
M8 connector (4 pins)
E4:M12四芯梯形插件
M12 trapezoid connector (4 pins)
E5:M12五芯插件
M12 connector (5 pins)
D:内端子接线 Terminal
F3:M8三芯插件+0.2m引线
M8 connector (3 pins)+0.2m cable

14. 特殊要求 Special requirement

用四位数字表示 In 4 digits

对射系列 Through beam

外壳代号 Shell code		PR12	PR18	PSM	PSS	PR18G
检测距离 Sensing distance		5m, 10m	10m, 20m	20m	20m	10m, 20m
输出方式 Output	DC 3线 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线 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线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	NO NC	/	/	NO NC
	AC/DC 5线 AC/DC 5 Wires	/	/	/	/	/
电源电压 Supply voltage		10...30 VDC	10...30 VDC 20...250 VAC	10...30 VDC	10...30 VDC	10...30 VDC 20...250 VAC
响应时间 Response time		DC: <8.2ms	DC: <8.2ms AC: <50 ms	DC: ≤1ms	DC: ≤1ms	DC: <8.2ms AC: <50 ms
环境温度 Ambient temperature		-15℃...55℃	-15℃...55℃	-25℃...55℃	-25℃...55℃	-15℃...55℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP65
外壳材料 Housing material		镍铜合金, PBT Nickel-copper Alloy, PBT	镍铜合金, PBT Nickel-copper Alloy, PBT	镍铜合金 Nickel-copper Alloy	PC/ABS	镍铜合金, PBT Nickel-copper Alloy, PBT
连接方式 Connection		成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector
产品认证 Certification		CE UL	CE UL	CE	CE	CE UL

对射系列 Through beam

外壳代号 Shell code		PR30	PR30L			
检测距离 Sensing distance		20m, 40m	100m, 150m			
输出方式 Output	DC 3线 DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC			
	DC 4线 DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO+NC PNP NO+NC			
	DC 2线 DC 2 Wires	/	/			
	AC 2线 AC 2 Wires	NO NC	/			
	AC/DC 5线 AC/DC 5 Wires	/	/			
电源电压 Supply voltage		10...30 VDC 20...250 VAC	10...30 VDC			
响应时间 Response time		DC: <8.2ms AC: <50 ms	DC: <8.2ms			
环境温度 Ambient temperature		-15℃...55℃	-15℃...55℃			
防护等级 Protection degree		IP67	IP67			
外壳材料 Housing material		镍铜合金, PBT Nickel-copper Alloy,PBT	镍铜合金, PBT Nickel-copper Alloy,PBT			
连接方式 Connection		成型电缆 M12 连接器 Cable M12 Connector	成型电缆 Cable			
产品认证 Certification		CE UL	CE			

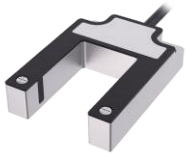
对射系列 Through beam

外壳代号 Shell code		PU5-21	PU5-31	PU05-K	PU05-L	PU05-T1
检测距离 Sensing distance		5mm	5mm	5mm	5mm	5mm
输出方式 Output	DC 3线 DC 3 Wires	/	/	/	/	/
	DC 4线 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线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	/	/
	AC/DC 5线 AC/DC 5 Wires	/	/	/	/	/
电源电压 Supply voltage		5...24 VDC	5...24 VDC	5...24 VDC	5...24 VDC	5...24 VDC
响应时间 Response time		DC: <0.33ms	DC: <0.33ms	DC: < 0.5ms	DC: < 0.5ms	DC: < 0.5ms
环境温度 Ambient temperature		-25℃...55℃	-25℃...55℃	-25℃...55℃	-25℃...55℃	-25℃...55℃
防护等级 Protection degree		IP50	IP50	IP50	IP50	IP50
外壳材料 Housing material		PA66+20%GF	PA66+20%GF	PBT	PBT	PBT
连接方式 Connection		接插件型 Connector type	成型电缆 Cable	成型电缆 接插件 Cable M12 Connector	成型电缆 接插件 Cable M12 Connector	成型电缆 接插件 Cable M12 Connector
产品认证 Certification		CE	CE	CE	CE	CE

对射系列 Through beam

外壳代号 Shell code		PU05-T2	PU05-Y1	PU05-Y2	PU05-F	PU05-R
检测距离 Sensing distance		5mm	5mm	5mm	5mm	5mm
输出方式 Output	DC 3线 DC 3 Wires	/	/	/	/	/
	DC 4线 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线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	/	/
	AC/DC 5线 AC/DC 5 Wires	/	/	/	/	/
电源电压 Supply voltage		5...24 VDC	5...24 VDC	5...24 VDC	5...24 VDC	5...24 VDC
响应时间 Response time		DC: < 0.5ms	DC: < 0.5ms	DC: < 0.5ms	DC: < 0.5ms	DC: < 0.5ms
环境温度 Ambient temperature		-25℃...55℃	-25℃...55℃	-25℃...55℃	-25℃...55℃	-25℃...55℃
防护等级 Protection degree		IP50	IP50	IP50	IP50	IP50
外壳材料 Housing material		PBT	PBT	PBT	PBT	PBT
连接方式 Connection		成型电缆 接插件 Cable M12 Connector	成型电缆 接插件 Cable M12 Connector	成型电缆 接插件 Cable M12 Connector	成型电缆 接插件 Cable M12 Connector	成型电缆 接插件 Cable M12 Connector
产品认证 Certification		CE	CE	CE	CE	CE

对射系列 Through beam



外壳代号 Shell code		PU07	PU15	PU30	PU30S	
检测距离 Sensing distance		7mm	15mm	30mm	30mm	
输出方式 Output	DC 3线 DC 3 Wires	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC	/	/	
	DC 4线 DC 4 Wires	/	/	NPN NO/NC PNP NO/NC	NPN NO+NC PNP NO+NC	
	DC 2线 DC 2 Wires	/	/	/	/	
	AC 2线 AC 2 Wires	/	/	/	/	
	AC/DC 5线 AC/DC 5 Wires	/	/	/	/	
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	
响应时间 Response time		DC: <1ms	DC: <1ms	DC: <1ms	DC: < 0.6ms	
环境温度 Ambient temperature		-15℃...55℃	-15℃...55℃	-15℃...55℃	-25℃...55℃	
防护等级 Protection degree		IP64	IP64	IP60	IP67	
外壳材料 Housing material		PBT	PBT	铝合金+PC Aluminum alloy+PC	PBT	
连接方式 Connection		成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	成型电缆 Cable	
产品认证 Certification		CE	CE	CE	CE	

对射系列 Through beam

外壳代号 Shell code		PSV	PSV-S	PST	PSJ	PSE
检测距离 Sensing distance		50cm	50cm	2m	1.5m	5m,10m,20m
输出方式 Output	DC 3线 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线 DC 4 Wires	/	/	/	/	/
	DC 2线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	/	/
	AC/DC 5线 AC/DC 5 Wires	/	/	/	/	/
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	12...24 VDC	10...30 VDC
响应时间 Response time		DC: < 1ms	DC: < 1ms	DC: < 0.5ms	DC: < 1ms	DC: < 1ms
环境温度 Ambient temperature		-20℃...55℃	-20℃...55℃	-20℃...55℃	-20℃...55℃	-25℃...55℃
防护等级 Protection degree		IP65	IP65	IP67	IP40	IP67
外壳材料 Housing material		PC+PBT	PC+PBT	ABS	PC/ABS	PC/ABS
连接方式 Connection		成型电缆 Cable	成型电缆 Cable	成型电缆, M8 中继线型 Cable, M8 Trunk line type	成型电缆 Cable	成型电缆 M8 连接器 Cable M8 Connector
产品认证 Certification		CE	CE	CE	CE	CE

对射系列 Through beam

外壳代号 Shell code		PSR	PTF	PTE	PTL
检测距离 Sensing distance		20m	10m, 20m	60m	20m, 30m, 40m
输出方式 Output	DC 3线 DC 3 Wires	/	NPN NO; NPN NC PNP NO; PNP NC	/	/
	DC 4线 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线 DC 2 Wires	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	/
	AC/DC 5线 AC/DC 5 Wires	/	继电器 NO+NC Relay output NO+NC	继电器 NO+NC Relay output NO+NC	继电器 NO+NC Relay output NO+NC
电源电压 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
响应时间 Response time		DC: < 1ms	DC: < 8.2ms AC: < 30 ms	DC: < 2ms AC/DC: <10ms	DC: < 8.2ms AC: < 30 ms
环境温度 Ambient temperature		-15℃...60℃	-15℃...55℃	-25℃...55℃	-15℃...55℃
防护等级 Protection degree		IP67	IP64	IP67	IP67
外壳材料 Housing material		ABS	PC/ABS	PC/ABS	PC/ABS
连接方式 Connection		成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	端子连接 Terminal
产品认证 Certification		CE	CE	CE	CE

回归反射系列 Retro reflection

外壳代号 Shell code		PR18	PR18G	PR30	PTL	PST
检测距离 Sensing distance		3m	3m	5m	5m	25cm
输出方式 Output	DC 3线 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线 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线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	NO NC	NO NC	NO NC	/	/
	AC/DC 5线 AC/DC 5 Wires	/	/	/	继电器 NO+NC Relay output NO+NC	/
电源电压 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
响应时间 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
环境温度 Ambient temperature		-15℃...55℃	-15℃...55℃	-15℃...55℃	-15℃...55℃	-20℃...55℃
防护等级 Protection degree		IP67	IP65	IP67	IP67	IP67
外壳材料 Housing material		镍铜合金, PBT Nickel-copper Alloy, PBT	镍铜合金, PBT Nickel-copper Alloy, PBT	镍铜合金, PBT Nickel-copper Alloy, PBT	PC/ABS	ABS
连接方式 Connection		成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	端子连接 Terminal	成型电缆, M8 中继线型 Cable, M8 Trunk line type
产品认证 Certification		CE UL	CE UL	CE UL	CE	CE

偏振反射系列 Polarized reflection

外壳代号 Shell code		PSM	PSS	PTL	PSR	PSE
检测距离 Sensing distance		3m	3m	12m	3m	3m
输出方式 Output	DC 3线 DC 3 Wires	/	/	/	/	NPN NO/NC PNP NO/NC
	DC 4线 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线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	/	/
	AC/DC 5线 AC/DC 5 Wires	/	/	继电器 NO+NC Relay output NO+NC	/	/
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC 24...240 VAC/ 12...240 VDC	10...30 VDC	10...30 VDC
响应时间 Response time		DC: ≤0.5ms	DC: ≤0.5ms	DC: < 8.2ms AC: < 30 ms	DC: < 0.5ms	DC: < 0.5ms
环境温度 Ambient temperature		-25℃...55℃	-25℃...55℃	-15℃...55℃	-15℃...60℃	-25℃...55℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		镍铜合金 Nickel-copper Alloy	PC/ABS	PC/ABS	ABS	PC/ABS
连接方式 Connection		成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	端子连接 Terminal	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M8 连接器 Cable M8 Connector
产品认证 Certification		CE	CE	CE	CE	CE

透明物体检测 Transparent object detection

外壳代号 Shell code		PSM	PSS	PSE		
检测距离 Sensing distance		2m	2m	2m,50cm		
输出方式 Output	DC 3线 DC 3 Wires	/	/	NPN NO/NC PNP NO/NC		
	DC 4线 DC 4 Wires	NPN NO/NC PNP NO/NC	NPN NO/NC PNP NO/NC	/		
	DC 2线 DC 2 Wires	/	/	/		
	AC 2线 AC 2 Wires	/	/	/		
	AC/DC 5线 AC/DC 5Wires	/	/	/		
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC		
响应时间 Response time		DC: ≤0.5ms	DC: ≤0.5ms	DC: ≤0.5ms		
环境温度 Ambient temperature		-25℃...55℃	-25℃...55℃	-25℃...55℃		
防护等级 Protection degree		IP67	IP67	IP67		
外壳材料 Housing material		镍铜合金 Nickel-copper Alloy	PC/ABS	PC+ABS		
连接方式 Connection		成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M8 连接器 Cable M8 Connector		
产品认证 Certification		CE	CE	CE		

漫反射系列 Diffuse reflection

外壳代号 Shell code		PR12	PR18	PR18G	PR30	PSM
检测距离 Sensing distance		15cm	10cm,40cm	10cm,40cm	50cm,100cm	10cm, 40cm(红外) 40cm(红光), 100cm
输出方式 Output	DC 3线 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线 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线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	NO NC	NO NC	NO NC	/
	AC/DC 5线 AC/DC 5 Wires	/	/	/	/	/
电源电压 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
响应时间 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
环境温度 Ambient temperature		-15℃...55℃	-15℃...55℃	-15℃...55℃	-15℃...55℃	-25℃...55℃
防护等级 Protection degree		IP67	IP67	IP65	IP67	IP67
外壳材料 Housing material		镍铜合金, PBT Nickel-copper Alloy, PBT	镍铜合金, PBT Nickel-copper Alloy, PBT	镍铜合金, PBT Nickel-copper Alloy, PBT	镍铜合金, PBT Nickel-copper Alloy, PBT	镍铜合金 Nickel-copper Alloy
连接方式 Connection		成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector
产品认证 Certification		CE	CE UL	CE UL	CE	CE

漫反射系列 Diffuse reflection

外壳代号 Shell code		PSS	PBA	PSE	PTF	PTE
检测距离 Sensing distance		10cm, 40cm(红外) 40cm(红光), 100cm	2m	30cm, 10cm, 100cm	50cm, 100cm	30cm, 200cm
输出方式 Output	DC 3线 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线 DC 4 Wires	NPN NO/NC PNP NO/NC	/	/	NPN NO+NC PNP NO+NC	NPN+PNP NO/NC
	DC 2线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	/	/
	AC/DC 5线 AC/DC 5Wires	/	/	/	继电器 NO+NC Relay output NO+NC	继电器 NO+NC Relay output NO+NC
电源电压 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
响应时间 Response time		DC: ≤0.5ms	DC: <3ms	DC: < 0.5ms	DC: < 8.2ms AC: < 30 ms	DC: < 2 ms AC/DC: < 10 ms
环境温度 Ambient temperature		-25℃...55℃	-15℃...55℃	-25℃...55℃	-15℃...55℃	-25℃...55℃
防护等级 Protection degree		IP67	IP54	IP67	IP64	IP67
外壳材料 Housing material		PC/ABS	PC/ABS	PC/ABS	PC/ABS	PC/ABS
连接方式 Connection		成型电缆 M12 连接器 Cable M12 Connector	成型电缆 Cable	成型电缆 M8 连接器 Cable M8 Connector	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector
产品认证 Certification		CE	CE	CE	CE	CE

漫反射系列 Diffuse reflection

外壳代号 Shell code		PTL	PSR	PSV		
检测距离 Sensing distance		80cm,200cm	30cm	10cm		
输出方式 Output	DC 3线 DC 3 Wires	/	/	NPN NO; NPN NC PNP NO; PNP NC		
	DC 4线 DC 4 Wires	NPN NO+NC PNP NO+NC	NPN NO/NC PNP NO/NC	/		
	DC 2线 DC 2 Wires	/	/	/		
	AC 2线 AC 2 Wires	/	/	/		
	AC/DC 5线 AC/DC 5 Wires	继电器 NO+NC Relay output NO+NC	/	/		
电源电压 Supply voltage		10...30 VDC 24...240 VAC/ 12...240 VDC	10...30 VDC	10...30 VDC		
响应时间 Response time		DC: < 8.2ms AC: < 30 ms	DC: < 0.5ms	DC: < 1ms		
环境温度 Ambient temperature		-15℃...55℃	-15℃...60℃	-20℃...55℃		
防护等级 Protection degree		IP67	IP67	IP65		
外壳材料 Housing material		PC/ABS	ABS	PC+PBT		
连接方式 Connection		端子连接 Terminal	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 Cable		
产品认证 Certification		CE	CE	CE		

背景抑制系列 Background suppression

外壳代号 Shell code		PSM	PSS	PSE	PSE	PTB
检测距离 Sensing distance		10cm	10cm	5cm	25cm,35cm	2m
输出方式 Output	DC 3线 DC 3 Wires	/	/	/	/	/
	DC 4线 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+PNP NO/NC
	DC 2线 DC 2 Wires	/	/	/	/	/
	AC 2线 AC 2 Wires	/	/	/	/	/
	AC/DC 5线 AC/DC 5 Wires	/	/	/	/	/
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
响应时间 Response time		DC: ≤0.5ms	DC: ≤0.5ms	DC: ≤0.5ms	DC: ≤1ms	DC: <2ms
环境温度 Ambient temperature		-25℃...55℃	-25℃...55℃	-25℃...55℃	-25℃...55℃	-15℃...55℃
防护等级 Protection degree		IP67	IP67	IP67	IP67	IP67
外壳材料 Housing material		镍铜合金 Nickel-copper Alloy	PC/ABS	PC+ABS	PC+ABS	ABS
连接方式 Connection		成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M12 连接器 Cable M12 Connector	成型电缆 M8 连接器 Cable M8 Connector	成型电缆 M8 连接器 Cable M8 Connector	成型电缆 M12 连接器 Cable M12 Connector
产品认证 Certification		CE	CE	CE	CE	CE

背景抑制系列 Background suppression

外壳代号 Shell code		PSR	PST	PSV		
检测距离 Sensing distance		10cm	8cm	30mm		
输出方式 Output	DC 3线 DC 3 Wires	/	NPN NO; NPN NC PNP NO; PNP NC	NPN NO; NPN NC PNP NO; PNP NC		
	DC 4线 DC 4 Wires	NPN NO/NC PNP NO/NC	/	/		
	DC 2线 DC 2 Wires	/	/	/		
	AC 2线 AC 2 Wires	/	/	/		
	AC/DC 5线 AC/DC 5 Wires	/	/	/		
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC		
响应时间 Response time		DC: < 0.5ms	DC: < 0.5ms	DC: < 1ms		
环境温度 Ambient temperature		-15℃...60℃	-20℃...55℃	-20℃...55℃		
防护等级 Protection degree		IP67	IP67	IP65		
外壳材料 Housing material		ABS	ABS	PC+PBT		
连接方式 Connection		成型电缆 M12 连接器 Cable M12 Connector	成型电缆, M8 中继线型 Cable, M8 Trunk line type	成型电缆 Cable		
产品认证 Certification		CE	CE	CE		

限定反射系列 Focus reflection

外壳代号 Shell code		PST	PSV	PSE		
检测距离 Sensing distance		25mm	25mm	5cm		
输出方式 Output	DC 3线 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		
	DC 4线 DC 4 Wires	/	/	/		
	DC 2线 DC 2 Wires	/	/	/		
	AC 2线 AC 2 Wires	/	/	/		
	AC/DC 5线 AC/DC 5 Wires	/	/	/		
电源电压 Supply voltage		10...30 VDC	10...30 VDC	10...30 VDC		
响应时间 Response time		DC: < 0.5ms	DC: < 1ms	DC: < 0.5ms		
环境温度 Ambient temperature		-20℃...55℃	-20℃...55℃	-25℃...55℃		
防护等级 Protection degree		IP67	IP65	IP67		
外壳材料 Housing material		ABS	PC+PBT	PC+ABS		
连接方式 Connection		成型电缆, M8 中继线型 Cable, M8 Trunk line type	成型电缆 Cable	成型电缆 M8 连接器 Cable M8 Connector		
产品认证 Certification		CE	CE	CE		

颜色检测传感器 Color sensors

外壳代号 Shell code	CPES-B	CPES-F	PU03
检测距离 Sensing distance	28±3mm	28±3mm	3mm
响应时间 Response time	25uS	150uS	40uS
输出方式 Output	推挽输出+模拟量（0...5V）输出 Push-pull output+Analog output(0...5V)	推挽输出+模拟量（0...5V）输出 Push-pull output+Analog output(0...5V)	推挽输出 Push-pull output
电源电压 Supply voltage	12...24 VDC	12...24 VDC	10...30 VDC
光源 Light source	白光 White light	紫外光 Ultraviolet light	红外光 Infrared light
光斑直径 Spot diameter	3mm@28mm	6mm...8mm@50mm	/
调节方式 Adjustment method	MARK键 和 BKGD键 MARK Key and BKGD Key	MARK键 和 BKGD键 MARK Key and BKGD Key	示教按键 Teach-in key
耐电压 Withstanding voltage	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s	1000V/AC 50/60Hz 60s
环境温度 Ambient temperature	-10℃...55℃	-10℃...55℃	-20℃...55℃
防护等级 Protection degree	IP65	IP65	IP65
外壳材料 Housing material	PBT	PBT	PBT
连接方式 Connection	M12连接器，成型电缆 M12 Connector, Cable	M12连接器 M12 Connector	M8连接器 M8 Connector

色标传感器 Mark sensors

外壳代号 Shell code	SPM
检测距离 Sensing distance	10±2mm
响应时间 Response time	1ms
输出方式 Output	NPN NO/NC PNP NO/NC
电源电压 Supply voltage	12...24 VDC
光源 Light source	红光/绿光, 白光/蓝光 Red light/green light, White light/blue light
耐电压 Withstanding voltage	1000V/AC 50/60Hz 60s
绝缘阻抗 Insulation resistance	≥50MΩ(500VDC)
耐振动 Anti-vibration	复振幅1.5mm 10...50Hz (X,Y,Z方向各2小时) 10...50Hz,repeat-amplitude;1.5mm, (2 hours each for x,y,z direction)
环境温度 Ambient temperature	-25℃...55℃
防护等级 Protection degree	IP65
外壳材料 Housing material	PBT
连接方式 Connection	成型电缆 Cable

光纤传感器 Optical fiber sensors

外壳代号 Shell code	FD1	FD2
检测距离 Sensing distance	取决于光纤类型 Depand on fiber type	取决于光纤类型 Depand on fiber type
响应时间 Response time	< 1ms	< 200μs (FINE) < 300μs (TURBO) < 550μs (SUPER)
输出方式 Output	NPN+PNP NO/NC	NPN NO/NC PNP NO/NC
电源电压 Supply voltage	10...30 VDC	12...24 VDC
照明度 Illumination intensity	白炽灯：受光面照明度3,000lux Incandescent lamp:intensity of illumination 3,000lux	
耐电压 Withstanding voltage	AC1,000V 1分钟 50/60Hz AC1,000V 1 minute 50/60Hz	
绝缘电阻 Insulation resistance	>50MΩ，基于DC500V的高阻表 >50MΩ,base on DC500V megger	>20MΩ， 基于DC500V的高阻表 >20MΩ, base on DC500V megger
耐振动 Anti-vibration	10...55Hz,振幅;1mm, (X,Y和Z各方向2小时) 10...55Hz,amplitude;1mm, (2 hours each for x,y,z direction)	10...55Hz,振幅;1.5mm, (X,Y和Z各方向2小时) 10...55Hz,amplitude;1.5mm, (2 hours each for x,y,z direction)
耐冲击 Anti-concussion	加速度:500m/s²(约30G), X,Y和Z各方向3次 Acceleration:500m/s²(approx:30G) 3 times each for x,y and z direction	加速度:500m/s²(约50G), X,Y和Z各方向3次 Acceleration:500m/s²(approx:50G) 3 times each for x,y and z direction
环境温度 Ambient temperature	0℃...55℃ (不可结露、结冰) 0℃...55℃ (dewed or iced forbidden)	-10℃...50℃ (不可结露、结冰) -10℃...50℃ (dewed or iced forbidden)
环境湿度 Ambient humidity	35...85%RH	
防护等级 Protection degree	IP54	
外壳材料 Housing material	PC+ABS	
连接方式 Connection	成型电缆 Cable	

光纤头 Fiber head

外壳代号 Shell code		PFR-610	PFRC-610	PFRD-410	PFRC-410	PFRD-310	PFRC-310
尺寸规格 Dimensions		M6	M6	M4	M4	M3	M3
最小弯曲半径 Min bending radius		R25	R25	R15	R15	R15	R15
检测距离(mm) Sensing distance	FD1放大器 FD1 Fiber optic amplifier	100	90	60	40	40	40
	FD2放大器 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
最小检出物(mm) Min detected target		Φ0.2	Φ0.1	Φ0.1	Φ0.1	Φ0.1	Φ0.05

外壳代号 Shell code		PFT-610	PFT-410	PFT-310
尺寸规格 Dimensions		M6	M4	M3
最小弯曲半径 Min bending radius		R25	R25	R25
检测距离(mm) Sensing distance	FD1放大器 FD1 Fiber optic amplifier	280	250	200
	FD2放大器 FD2 Fiber optic amplifier	FINE:300 TURBO:500 SUPER:800	FINE:300 TURBO:500 SUPER:800	FINE:200 TURBO:400 SUPER:700
最小检出物(mm) Min detected target		Φ0.5	Φ0.5	Φ0.5

红外测距传感器 Infrared ranging sensor

外壳代号 Shell code	PTK
型号 Item code	PTK-CM12DR55-2M
检测距离 Sensing distance	0.15...12m
重复精度① Repeated accuracy①	5%
检测精度① Detection precision①	5%
响应时间 Response time	40ms
输出方式 Output	RS485
发散角 Divergence angle	±1.8°
消耗电流 Current consumption	≤120mA
电源电压 Supply voltage	10...30 VDC
光源类型 Light source	红外LED (850nm) Infrared LED (850nm)
色敏度② Color sensitivity②	≤10%
环境温度 Ambient temperature	-15℃...65℃
防护等级 Protection degree	IP67
外壳材料 Housing material	ABS
保护电路 Circuit protection	极性保护（电源正负极之间） Polarity protection(Between 2 poles of the power supply)
冲击耐压 Impulse withstand	1000V/AC 50/60Hz 60s
抗环境光 Ambient light	100,000lux
电磁兼容 Electromagnetic compatibility	EN 60947-5-2
规格尺寸 Dimension	52.3*21*23.7mm
重量 Weight	≤65g（含2m PVC扁平电缆线） ≤65g (Including 2m PVC flat cables)

备注 Notes

① 测试距离为0.8Sn（Sn为最大检测距离），目标物为90%反射率的白卡
Detection distance is 0.8Sn (Sn is max detection distance), target is white card with 90% reflectivity;

② 测试距离为0.8Sn（Sn为最大检测距离），黑卡与白卡的测试距离差
Detection distance is 0.8Sn (Sn is max detection distance), distance difference between black and white card.

红外测距传感器 Infrared ranging sensor

外壳代号 Shell code	PTK
型号 Item code	PTK-CM12DG55-2M
检测距离 Sensing distance	通道1(黑线):0.3...12m(可调); 通道2(白线):0.3...12m(可调) Channel1(black line):0.3...12m(Adjustable); Channel2(white line):0.3...12m(Adjustable)
响应时间 Response time	100ms
输出方式 Output	推挽输出 (NO/NC相对于PNP); 距离设定/自学习方式设定可选 PUSH-PULL (NO/NC for PNP); Manual/Teach setting
发散角 Divergence angle	±1.8°
回差范围 Hysteresis error	3...20%
消耗电流 Current consumption	≤70mA
负载电流 Load current	200mA
电源电压 Supply voltage	10...30 VDC
光源类型 Light source	红外LED (850nm) Infrared LED (850nm)
色敏度② Color sensitivity②	≤10%
环境温度 Ambient temperature	-15℃...65℃
防护等级 Protection degree	IP67
外壳材质 Housing material	ABS
保护电路 Circuit protection	极性保护（电源正负极之间） Polarity protection(Between 2 poles of the power supply)
冲击耐压 Impulse withstand	1000V/AC 50/60Hz 60s
抗环境光 Ambient light	100,000lux
电磁兼容 Electromagnetic compatibility	EN 60947-5-2
规格尺寸 Dimension	52.3*21*23.7mm
重量 Weight	≤65g（含2m PVC扁平电缆线） ≤65g (Including 2m PVC flat cables)

备注 Notes

① 测试距离为0.8Sn（Sn为最大检测距离），目标物为90%反射率的白卡
Detection distance is 0.8Sn (Sn is max detection distance), target is white card with 90% reflectivity;

② 测试距离为0.8Sn（Sn为最大检测距离），黑卡与白卡的测试距离差
Detection distance is 0.8Sn (Sn is max detection distance), distance difference between black and white card.

数显型激光测距传感器 Digital laser distance sensors

外壳代号 Shell Code		PDA	
类型 Type		标准型	高精度型
系列代码 Series code	RS...485	PDA-CC10DGR	PDA-CC10DGRM
	4...20mA	PDA-CC10TGI	PDA-CC10TGIM

光源类型 Light source	红色激光（650nm） Red Laser (650nm)	
激光等级 Laser class	Class 2	
光斑大小 Spot diameter	1mm*3mm@100mm	
测量范围 Measuring range	30...100mm	
线性精度①② Linear accuracy①②	RS-485：±0.3%F.S. 4...20mA：±0.4%F.S.	RS-485/4...20mA：±0.1%F.S.
重复精度①②③Repeated accuracy①②③	10um@30mm；30um@50mm；100um@100mm	
分辨率 Resolution	5um@30mm；50um@100mm	
电源电压 Supply voltage	RS-485:10...30VDC 4...20mA:12...24VDC	
压降 Voltage drop	<2.5V	
消耗功率 Power consumption	≤700mW	
负载电流 Load current	200mA	
保护回路④ Circuit protection④	短路保护、逆极性保护、过载保护 Short circuit, reverse polarity, overload protection	
输出方式 Output	数字量：RS-485（支持ModBus协议）；模拟量：4...20mA（负载电阻＜390Ω） RS-485(Support Modbus protocol);4...20mA(Load resistance＜390Ω)	
内置功能⑤ Integrated function⑤	从栈地址&波特率设置、产品自检、输出设置、模拟映射设置， 平均值设置、参数查询、单点示教，窗口示教，恢复出厂 设置 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	
指示灯 Indicator	电源指示：绿色LED；动作指示：黄色LED；报警指示：黄色LED Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED	
环境温度 Ambient temperature	-10℃...50℃	
温度漂移 Temperature drift	±0.02%F.S./℃	
响应时间 Response time	2ms/16ms/40ms 可设置 2ms/16ms/40ms(Configurable)	
环境湿度 Ambient humidity	35...85%RH（无凝霜） 35...85%RH(No condensation)	
抗环境光 Anti-ambient light	白炽灯：＜3,000lux Incandescent light: ＜3,000lux	
耐冲击 Impulse withsand	500m/s²（约50G），X，Y，Z三方向各3次 500m/s²(Approximate 50G),3 times each in X, Y,Z direction	
耐振动 Vibration resistance	10...55Hz双振幅1mm，X，Y，Z三方向各2小时 10...55Hz Double amplitude1mm, 2H each in X, Y, Z directions	
防护等级 Protection degree	IP67	
材质 Material	外壳：铝；镜头盖：PMMA 显示板：PC Housing: Aluminum; Lens cover: PMMA; Display panel: PC	
规格尺寸 Dimension	65*51*23mm	
连接方式 Connection	2m 5芯/4芯 PVC 引线（5芯：RS...485输出；4芯：模拟量输出） 2m 5-pin/4-pin PVC cable(5-pin: RS...485 output; 4-pin: analog output)	

备注：①测试条件：标准数据在（23.5）℃；输入电压24VDC；预热30分钟后测试；采样周期2ms；平均采样次数100次；标准检测物90%白卡。
②统计数据遵循3σ准则。
③重复精度表示在23±5℃环境下，90%反射率白卡测试100个数据统计结果。
④保护回路仅针对开关量输出。
⑤从栈地址、波特率设置仅针对于RS...485输出系列。
⑥产品的操作步骤与注意事项，详见"产品使用说明书"

数显型激光测距传感器 Digital laser distance sensors

外壳代号 Shell Code		PDA	
类型 Type		标准型	高精度型
系列代码 Series code	RS...485	PDA-CC50DGR	PDA-CC50DGRM
	4...20mA	PDA-CC50TGI	PDA-CC50TGIM

光源类型 Light source	红色激光（650nm） Red Laser (650nm)	
激光等级 Laser class	Class 2	
光斑大小 Spot diameter	Φ2.5mm@500mm	
测量范围 Measuring range	80...500mm	
线性精度①② 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）
重复精度①②③Repeated accuracy①②③	30um@80mm；250um@250mm；1000um@500mm	
分辨率 Resolution	15um@80mm；500um@500mm	
电源电压 Supply voltage	RS-485:10...30VDC；4...20mA:12...24VDC	
压降 Voltage drop	<2.5V	
消耗功率 Power consumption	≤700mW	
负载电流 Load current	200mA	
保护回路④ Circuit protection④	短路保护、逆极性保护、过载保护 Short circuit, reverse polarity, overload protection	
输出方式 Output	数字量：RS-485（支持ModBus协议）；模拟量：4...20mA（负载电阻＜390Ω） RS-485(Support Modbus protocol); 4...20mA(Load resistance＜390Ω)	
内置功能⑤ Integrated function⑤	从栈地址&波特率设置、产品自检、输出设置、模拟映射设置， 平均值设置、参数查询、单点示教，窗口示教，恢复出厂 设置 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	
指示灯 Indicator	电源指示：绿色LED；动作指示：黄色LED；报警指示：黄色LED Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED	
环境温度 Ambient temperature	-10℃...50℃	
温度漂移 Temperature drift	±0.02%F.S./℃	
响应时间 Response time	2ms/16ms/40ms 可设置 2ms/16ms/40ms(Configurable)	
环境湿度 Ambient humidity	35...85%RH（无凝霜） 35...85%RH(No condensation)	
抗环境光 Anti-ambient light	白炽灯：＜3,000lux Incandescent light: ＜3,000lux	
耐冲击 Impulse withsand	500m/s²（约50G），X，Y，Z三方向各3次 500m/s²(Approximate 50G),3 times each in X, Y,Z direction	
耐振动 Vibration resistance	10...55Hz双振幅1mm，X，Y，Z三方向各2小时 10...55Hz Double amplitude1mm, 2H each in X, Y, Z directions	
防护等级 Protection degree	IP67	
材质 Material	外壳：铝；镜头盖：PMMA 显示板：PC Housing: Aluminum; Lens cover: PMMA；Display panel: PC	
规格尺寸 Dimension	65*51*23mm	
连接方式 Connection	2m 5芯/4芯 PVC 引线（5芯：RS...485输出；4芯：模拟量输出） 2m 5-pin/4-pin PVC cable (5-pin: RS...485 output; 4-pin: analog output)	

备注：①测试条件：标准数据在（23.5）℃；输入电压24VDC；预热30分钟后测试；采样周期2ms；平均采样次数100次；标准检测物90%白卡。
②统计数据遵循3σ准则。
③重复精度表示在23±5℃环境下，90%反射率白卡测试100个数据统计结果。
④保护回路仅针对开关量输出。
⑤从栈地址、波特率设置仅针对于RS...485输出系列。
⑥产品的操作步骤与注意事项，详见"产品使用说明书"

数显型激光测距传感器 Digital laser distance sensors

外壳代号 Shell Code		PDA	
类型 Type		标准型	高精度型
系列代码 Series code	RS...485	PDA-CC100DGR	PDA-CC100DGRM
	4...20mA	PDA-CC100TGI	PDA-CC100TGIM

光源类型 Light source	红色激光（650nm） Red Laser (650nm)	
激光等级 Laser class	Class 2	
光斑大小 Spot diameter	Φ3mm@1000mm	
测量范围 Measuring range	150...1000mm	
线性精度①② 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）
重复精度①②③Repeated accuracy①②③	100um@150mm；520um@500mm；4000um@1000mm	
分辨率 Resolution	50um@150mm；2000um@1000mm	
电源电压 Supply voltage	RS-485:10...30VDC；4...20mA:12...24VDC	
压降 Voltage drop	<2.5V	
消耗功率 Power consumption	≤700mW	
负载电流 Load current	200mA	
保护回路④ Circuit protection④	短路保护、逆极性保护、过载保护 Short circuit, reverse polarity, overload protection	
输出方式 Output	数字量：RS-485（支持ModBus协议）；模拟量：4...20mA（负载电阻＜390Ω） RS-485(Support Modbus protocol);4...20mA(Load resistance＜390Ω)	
内置功能⑤ Integrated function⑤	从栈地址&波特率设置、产品自检、输出设置、模拟映射设置， 平均值设置、参数查询、单点示教，窗口示教，恢复出厂 设置 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	
指示灯 Indicator	电源指示：绿色LED；动作指示：黄色LED；报警指示：黄色LED Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED	
环境温度 Ambient temperature	-10℃...50℃	
温度漂移 Temperature drift	±0.02%F.S./℃	
响应时间 Response time	2ms/16ms/40ms 可设置 2ms/16ms/40ms(Configurable)	
环境湿度 Ambient humidity	35...85%RH（无凝霜） 35...85%RH(No condensation)	
抗环境光 Anti-ambient light	白炽灯：＜3,000lux Incandescent light: ＜3,000lux	
耐冲击 Impulse withsand	500m/s²（约50G），X，Y，Z三方向各3次 500m/s²(Approximate 50G),3 times each in X, Y,Z direction	
耐振动 Vibration resistance	10...55Hz双振幅1mm，X，Y，Z三方向各2小时 10...55Hz Double amplitude1mm, 2H each in X, Y, Z directions	
防护等级 Protection degree	IP67	
材质 Material	外壳：铝；镜头盖：PMMA 显示板：PC Housing: Aluminum; Lens cover: PMMA; Display panel: PC	
规格尺寸 Dimension	65*51*23mm	
连接方式 Connection	2m 5芯/4芯 PVC 引线（5芯：RS...485输出；4芯：模拟量输出） 2m 5-pin/4-pin PVC cable (5-pin: RS...485 output; 4-pin: analog output)	

备注：①测试条件：标准数据在（23.5）℃；输入电压24VDC；预热30分钟后测试；采样周期2ms；平均采样次数100次；标准检测物90%白卡。
②统计数据遵循3σ准则。
③重复精度表示在23±5℃环境下，90%反射率白卡测试100个数据统计结果。
④保护回路仅针对开关量输出。
⑤从栈地址、波特率设置仅针对于RS...485输出系列。
⑥产品的操作步骤与注意事项，详见"产品使用说明书"

激光测距传感器 Laser distance sensors

外壳代号 Shell Code		PDB
系列代码 Series code	RS...485	PDB-CC50DGR
	4...20mA	PDB-CC50TGI
光源类型 Light source		红色激光（650nm） Red Laser (650nm)
激光等级 Laser class		Class 2
光斑大小 Spot diameter		Φ2.5mm@500mm
测量范围 Measuring range		80...500mm
线性精度①② Linear accuracy①②		RS-485：±0.3%F.S. 4...20mA：±0.4%F.S.
重复精度①②③Repeated accuracy①②③		30um@80mm；250um@250mm；1000um@500mm
分辨率 Resolution		15um@80mm；500um@500mm
电源电压 Supply voltage		RS-485:10...30VDC；4...20mA:12...24VDC
压降 Voltage drop		<2.5V
消耗功率 Power consumption		≤700mW
负载电流 Load current		200mA
保护回路④ Circuit protection④		短路保护、逆极性保护、过载保护 Short circuit, reverse polarity,overload protection
输出方式 Output		数字量：RS-485（支持ModBus协议）；模拟量：4...20mA（负载电阻＜390Ω） RS-485(Support Modbus protocol)；4...20mA(Load resistance＜390Ω)
内置功能⑤ Integrated function⑤		从栈地址&波特率设置、产品自检、输出设置、 平均值设置、参数查询、单点示教，窗口示教，恢复出厂 设置 Slave address,Port rate setting;Product self-check;Output setting; Average setting;Parameter query;Single point teach;window teach;Window Teach-in setting
指示灯 Indicator		电源指示：绿色LED；动作指示：黄色LED；报警指示：黄色LED Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED
环境温度 Ambient temperature		-10℃...50℃
温度漂移 Temperature drift		±0.02%F.S./℃
响应时间 Response time		2ms/16ms/40ms 可设置 2ms/16ms/40ms(Configurable)
环境湿度 Ambient humidity		35...85%RH（无凝霜） 35...85%RH(No condensation)
抗环境光 Anti-ambient light		白炽灯：＜3,000lux Incandescent light: ＜3,000lux
耐冲击 Impulse withsand		500m/s²（约50G），X，Y，Z三方向各3次 500m/s²(Approximate 50G),3 times each in X, Y,Z direction
耐振动 Vibration resistance		10...55Hz双振幅1mm，X，Y，Z三方向各2小时 10...55Hz Double amplitude1mm, 2H each in X, Y, Z directions
防护等级 Protection degree		IP67
材质 Material		外壳：ABS；镜头盖：PMMA Housing:ABS;Lens cover:PMMA
规格尺寸 Dimension		65*51*23mm
连接方式 Connection		RS...485：2m 5芯 PVC引线；4...20mA：2m 4芯 PVC引线 RS...485:2m 5-pin PVCcable; 4...20mA:2m 4-pin PVC cable

备注：①测试条件：标准数据在（23.5）℃；输入电压24VDC；预热30分钟后测试；采样周期2ms；平均采样次数100次；标准检测物90%白卡。
②统计数据遵循3σ准则。
③重复精度表示在23±5℃环境下，90%反射率白卡测试100个数据统计结果。
④保护回路仅针对开关量输出。
⑤从栈地址、波特率设置仅针对于RS...485输出系列。
⑥产品的操作步骤与注意事项，详见"产品使用说明书"

数显型激光位移传感器 Digital laser displacement sensors

外壳代号 Shell Code		PDA	
类型 Type		标准型	高精度型
系列代码 Series code	RS...485	PDA-CR30DGR	PDA-CR30DGRM
	4...20mA	PDA-CR30TGI	PDA-CR30TGIM

测量中心距离 Measuring center distance	30mm	
测量范围 Measuring range	±5mm	
光源类型 Light source	红色激光（650nm） Red Laser (650nm)	
激光等级 Laser class	Class 2	
光斑大小 Spot diameter	Φ0.5mm@30mm	
线性精度①② Linear accuracy①②	RS-485：±0.3%F.S.；4...20mA：±0.4%F.S.	RS-485/4...20mA：±0.1%F.S.
重复精度①②③Repeated accuracy①②③	5um	
分辨率 Resolution	2.5um@30mm	
电源电压 Supply voltage	RS-485:10...30VDC；4...20mA:12...24VDC	
压降 Voltage drop	<2.5V	
消耗功率 Power consumption	≤700mW	
负载电流 Load current	200mA	
保护回路④ Circuit protection④	短路保护、逆极性保护、过载保护 Short circuit, reverse polarity, overload protection	
输出方式 Output	数字量：RS-485（支持ModBus协议）；模拟量：4...20mA（负载电阻＜390Ω） RS-485(Support Modbus protocol);4...20mA(Load resistance＜390Ω)	
内置功能⑤ Integrated function⑤	从栈地址&波特率设置、零点设置、产品自检、输出设置、模拟映射设置， 平均值设置、参数查询、单点示教，窗口示教，恢复出厂 设置 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	
指示灯 Indicator	电源指示：绿色LED；动作指示：黄色LED；报警指示：黄色LED Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED	
环境温度 Ambient temperature	-10℃...50℃	
温度漂移 Temperature drift	±0.08%F.S./℃	
响应时间 Response time	2ms/16ms/40ms 可设置 2ms/16ms/40ms(Configurable)	
环境湿度 Ambient humidity	35...85%RH（无凝霜） 35...85%RH(No condensation)	
抗环境光 Anti-ambient light	白炽灯：＜3,000lux Incandescent light: ＜3,000lux	
耐冲击 Impulse withsand	500m/s²（约50G），X，Y，Z三方向各3次 500m/s²(Approximate 50G),3 times each in X, Y,Z direction	
耐振动 Vibration resistance	10...55Hz双振幅1mm，X，Y，Z三方向各2小时 10...55Hz Double amplitude1mm, 2H each in X, Y, Z directions	
防护等级 Protection degree	IP67	
材质 Material	外壳：铝；镜头盖：PMMA 显示板：PC Housing: Aluminum; Lens cover: PMMA；Display panel: PC	
规格尺寸 Dimension	65*51*23mm	
连接方式 Connection	2m 5芯/4芯 PVC 引线（5芯：RS...485输出；4芯：模拟量输出） 2m 5-pin/4-pin PVC cable (5-pin: RS...485 output; 4-pin: analog output)	

备注：①测试条件：标准数据在（23.5）℃；输入电压24VDC；预热30分钟后测试；采样周期2ms；平均采样次数100次；标准检测物90%白卡。
②统计数据遵循3σ准则。
③重复精度表示在23±5℃环境下，90%反射率白卡测试100个数据统计结果。
④保护回路仅针对开关量输出。
⑤从栈地址、波特率设置仅针对于RS...485输出系列。
⑥产品的操作步骤与注意事项，详见"产品使用说明书"

数显型激光位移传感器 Digital laser displacement sensors

外壳代号 Shell Code		PDA	
类型 Type		标准型	高精度型
系列代码 Series code	RS...485	PDA-CR50DGR	PDA-CR50DGRM
	4...20mA	PDA-CR50TGI	PDA-CR50TGIM

测量中心距离 Measuring center distance	50mm	
测量范围 Measuring range	±15mm	
光源类型 Light source	红色激光（650nm） Red Laser (650nm)	
激光等级 Laser class	Class 2	
光斑大小 Spot diameter	Φ0.5mm@50mm	
线性精度①② Linear accuracy①②	RS-485：±0.3%F.S.；4...20mA：±0.4%F.S.	RS-485/4...20mA：±0.1%F.S.
重复精度①②③Repeated accuracy①②③	20um	
分辨率 Resolution	10um@50mm	
电源电压 Supply voltage	RS-485:10...30VDC；4...20mA:12...24VDC	
压降 Voltage drop	<2.5V	
消耗功率 Power consumption	≤700mW	
负载电流 Load current	200mA	
保护回路④ Circuit protection④	短路保护、逆极性保护、过载保护 Short circuit, reverse polarity, overload protection	
输出方式 Output	数字量：RS-485（支持ModBus协议）；模拟量：4...20mA（负载电阻＜390Ω） RS-485(Support Modbus protocol); 4...20mA(Load resistance＜390Ω)	
内置功能⑤ Integrated function⑤	从栈地址&波特率设置、零点设置、产品自检、输出设置、模拟映射设置， 平均值设置、参数查询、单点示教，窗口示教，恢复出厂 设置 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	
指示灯 Indicator	电源指示：绿色LED；动作指示：黄色LED；报警指示：黄色LED Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED	
环境温度 Ambient temperature	-10℃...50℃	
温度漂移 Temperature drift	±0.02%F.S./℃	
响应时间 Response time	2ms/16ms/40ms 可设置 2ms/16ms/40ms(Configurable)	
环境湿度 Ambient humidity	35...85%RH（无凝霜） 35...85%RH(No condensation)	
抗环境光 Anti-ambient light	白炽灯：＜3,000lux Incandescent light: ＜3,000lux	
耐冲击 Impulse withsand	500m/s²（约50G），X，Y，Z三方向各3次 500m/s²(Approximate 50G),3 times each in X, Y,Z direction	
耐振动 Vibration resistance	10...55Hz双振幅1mm，X，Y，Z三方向各2小时 10...55Hz Double amplitude1mm, 2H each in X, Y, Z directions	
防护等级 Protection degree	IP67	
材质 Material	外壳：铝；镜头盖：PMMA 显示板：PC Housing: Aluminum; Lens cover: PMMA; Display panel: PC	
规格尺寸 Dimension	65*51*23mm	
连接方式 Connection	2m 5芯/4芯 PVC 引线（5芯：RS...485输出；4芯：模拟量输出） 2m 5-pin/4-pin PVC cable (5-pin: RS...485 output; 4-pin: analog output)	

备注：①测试条件：标准数据在（23.5）℃；输入电压24VDC；预热30分钟后测试；采样周期2ms；平均采样次数100次；标准检测物90%白卡。
②统计数据遵循3σ准则。
③重复精度表示在23±5℃环境下，90%反射率白卡测试100个数据统计结果。
④保护回路仅针对开关量输出。
⑤从栈地址、波特率设置仅针对于RS...485输出系列。
⑥产品的操作步骤与注意事项，详见"产品使用说明书"

数显型激光位移传感器 Digital laser displacement sensors

外壳代号 Shell Code		PDA	
类型 Type		标准型	高精度型
系列代码 Series code	RS...485	PDA-CR85DGR	PDA-CR85DGRM
	4...20mA	PDA-CR85TGI	PDA-CR85TGIM

测量中心距离 Measuring center distance	85mm	
测量范围 Measuring range	±25mm	
光源类型 Light source	红色激光（650nm） Red Laser (650nm)	
激光等级 Laser class	Class 2	
光斑大小 Spot diameter	Φ0.5mm@85mm	
线性精度①② Linear accuracy①②	RS-485：±0.3%F.S.；4...20mA：±0.4%F.S.	RS-485/4...20mA：±0.1%F.S.
重复精度①②③Repeated accuracy①②③	60um	
分辨率 Resolution	30um@85mm	
电源电压 Supply voltage	RS-485:10...30VDC；4...20mA:12...24VDC	
压降 Voltage drop	<2.5V	
消耗功率 Power consumption	≤700mW	
负载电流 Load current	200mA	
保护回路④ Circuit protection④	短路保护、逆极性保护、过载保护 Short circuit, reverse polarity, overload protection	
输出方式 Output	数字量：RS-485（支持ModBus协议）；模拟量：4...20mA（负载电阻＜390Ω） RS-485(Support Modbus protocol);4...20mA(Load resistance＜390Ω)	
内置功能⑤ Integrated function⑤	从栈地址&波特率设置、零点设置、产品自检、输出设置、模拟映射设置， 平均值设置、参数查询、单点示教，窗口示教，恢复出厂 设置 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	
指示灯 Indicator	电源指示：绿色LED；动作指示：黄色LED；报警指示：黄色LED Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED	
环境温度 Ambient temperature	-10℃...50℃	
温度漂移 Temperature drift	±0.04%F.S./℃	
响应时间 Response time	2ms/16ms/40ms 可设置 2ms/16ms/40ms(Configurable)	
环境湿度 Ambient humidity	35...85%RH（无凝霜） 35...85%RH(No condensation)	
抗环境光 Anti-ambient light	白炽灯：＜3,000lux Incandescent light: ＜3,000lux	
耐冲击 Impulse withsand	500m/s²（约50G），X，Y，Z三方向各3次 500m/s²(Approximate 50G),3 times each in X, Y,Z direction	
耐振动 Vibration resistance	10...55Hz双振幅1mm，X，Y，Z三方向各2小时 10...55Hz Double amplitude1mm, 2H each in X, Y, Z directions	
防护等级 Protection degree	IP67	
材质 Material	外壳：铝；镜头盖：PMMA 显示板：PC Housing: Aluminum; Lens cover: PMMA; Display panel: PC	
规格尺寸 Dimension	65*51*23mm	
连接方式 Connection	2m 5芯/4芯 PVC 引线（5芯：RS...485输出；4芯：模拟量输出） 2m 5-pin/4-pin PVC cable (5-pin: RS...485 output; 4-pin: analog output)	

备注：①测试条件：标准数据在（23.5）℃；输入电压24VDC；预热30分钟后测试；采样周期2ms；平均采样次数100次；标准检测物90%白卡。
②统计数据遵循3σ准则。
③重复精度表示在23±5℃环境下，90%反射率白卡测试100个数据统计结果。
④保护回路仅针对开关量输出。
⑤从栈地址、波特率设置仅针对于RS...485输出系列。
⑥产品的操作步骤与注意事项，详见"产品使用说明书"

激光位移传感器 Laser displacement sensors

外壳代号 Shell Code		PDB
系列代码 Series code	RS...485	PDB-CR50DGR
	4...20mA	PDB-CR50TGI
测量中心距离 Measuring center distance		50mm
测量范围 Measuring range		±15mm
光源类型 Light source		红色激光（650nm） Red Laser (650nm)
激光等级 Laser class		Class 2
光斑大小 Spot diameter		Φ0.5mm@50mm
线性精度①② Linear accuracy①②		RS-485：±0.3%F.S.；4...20mA：±0.4%F.S.
重复精度①②③Repeated accuracy①②③		20um
分辨率 Resolution		10um@50mm
电源电压 Supply voltage		RS-485:10...30VDC；4...20mA:12...24VDC
压降 Voltage drop		<2.5V
消耗功率 Power consumption		≤700mW
负载电流 Load current		200mA
保护回路④ Circuit protection④		短路保护、逆极性保护、过载保护 Short circuit, reverse polarity, overload protection
输出方式 Output		数字量：RS-485（支持ModBus协议）；模拟量：4...20mA（负载电阻＜390Ω） RS-485(Support Modbus protocol);4...20mA(Load resistance＜390Ω)
内置功能⑤ Integrated function⑤		从栈地址&波特率设置、零点设置、产品自检、输出设置、 平均值设置、参数查询、单点示教，窗口示教，恢复出厂 设置 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
指示灯 Indicator		电源指示：绿色LED；动作指示：黄色LED；报警指示：黄色LED Power indicator：GreenLED；Action indicator：YellowLED；Alarm indicator：YellowLED
环境温度 Ambient temperature		-10℃...50℃
温度漂移 Temperature drift		±0.02%F.S./℃
响应时间 Response time		2ms/16ms/40ms 可设置 2ms/16ms/40ms(Configurable)
环境湿度 Ambient humidity		35...85%RH（无凝霜） 35...85%RH(No condensation)
抗环境光 Anti-ambient light		白炽灯：＜3,000lux Incandescent light: ＜3,000lux
耐冲击 Impulse withsand		500m/s²（约50G），X，Y，Z三方向各3次 500m/s²(Approximate 50G),3 times each in X, Y,Z direction
耐振动 Vibration resistance		10...55Hz双振幅1mm，X，Y，Z三方向各2小时 10...55Hz Double amplitude1mm, 2H each in X, Y, Z directions
防护等级 Protection degree		IP67
材质 Material		外壳：ABS；镜头盖：PMMA Housing:ABS;Lens cover:PMMA
规格尺寸 Dimension		65*51*23mm
连接方式 Connection		RS...485：2m 5芯 PVC引线；4...20mA：2m 4芯 PVC引线 RS...485:2m 5-pin PVCcable; 4...20mA:2m 4-pin PVC cable

备注：①测试条件：标准数据在（23.5）℃；输入电压24VDC；预热30分钟后测试；采样周期2ms；平均采样次数100次；标准检测物90%白卡。
②统计数据遵循3σ准则。
③重复精度表示在23±5℃环境下，90%反射率白卡测试100个数据统计结果。
④保护回路仅针对开关量输出。
⑤从栈地址、波特率设置仅针对于RS...485输出系列。
⑥产品的操作步骤与注意事项，详见"产品使用说明书"

2D激光扫描传感器 2D Laser scanners

外壳代号 Shell Code	PDL		
型号 Item code	PDL-CM20	PDL-CM30	PDL-CM50
检测范围 Detection range	0.05...20 m	0.05...30 m	0.05...50 m
光源类型 Light source	红外(905nm) Infrard (905nm)		
激光等级 Laser class	CLASS Ⅰ		
扫描频率 Scanning frequency	50 Hz		
角度分辨率 Angle resolution	0.5°		
加热装置 Heating device	有 Yes		
张角 Aperture angle	180°	270°	
保护距离（6%反射率） Protection range@6% reflectivity	18 m	27 m	30 m
雨雾校正算法 Rain & fog correction	有 Yes		
响应时间 Response time	≥20 ms		
上电预热时间 Warm-up time	<5 min		
绝对精度 Absolute accuracy	±30 mm		
内置功能 Integrated functions	多区域不同形状的灵活监控 Field monitoring with flexible shapes		
同步检测区数 Number of simultaneous evaluation areas	8		
Ethernet (功能) Ethernet (Function)	参数设置 Parameter settings		
Ethernet (数据传输率) Ethernet (Data transmission rate)	10/100 Mbit/s		
CAN总线 CAN	有 Yes		
开关量输出 Digital output	2路继电器 2 relay		
RS232串口 RS232	9.6 kBaud ... 230.4 kBaud		
状态显示 Status indication	OLED(分辨率： 128*64）（尺寸： 36*19.5 mm) OLED, Resolution: 128*64, Size: 36*19.5mm		
连接方式 Connection	1 x M18 四芯航空插头（公头）； 1 x M18 五芯航空插头（母座）； 1 x M18 五芯航空插头（母座） 1 x M18 4pins male aviation connector;1 x M18 5pins female aviation connector;1 x M18 9pins female aviation connector;		
工作电压 Power supply	16...30 VDC		
功耗 Power consumption	Typ. 8 W, 加热装置类型 30 W Typ.8W/38W (with heating)		
防护等级 Enclosure rating	IP68（GB/T 4208-2017）		
重量 Weight	1.25kg		
规格尺寸 Dimensions	174.5*115*102 mm		
EMC	IEC 61000-6-4:2001/IEC61000-6-2:2005		
耐振动 Vibration resistance	GB/T2423.10-2008		
抗冲击 Shock resistance	GB/T2423.5-1995		
环境温度 Ambient temperature	-30 °C ... 50 °C		
储存温度 Storage temperature	-40 °C ... 70 °C		
抗环境光 Anti-ambient light	70klux		

CCD激光线径测量 CCD laser diameter measurement

外壳代号 Shell Code	PDM
型号 Item code	PDM-TC50TGR
检测范围 Detection range	宽度模式:10mm;边缘模式:±5mm Width mode:10mm;Edge mode:±5mm
安装间距 Installation distance	0...50cm
最小检测体 Smallest detector	Φ1mm(设置距离:500 mm) ① Φ1mm(Sensor head:500 mm)①
光源类型 Light source	红色半导体激光;激光等级:Class 1 Red semiconductor laser;Laser class:Class 1
光斑大小 Light spot size	14*12mm
电源电压 Supply voltage	12...24VDC
压降 Voltage drop	<2.5V
线性精度 Linear accuracy	±0.28%F.S.
重复精度 Repeat accuracy	±10μm (设置距离:100 mm) ②; ±15μm (设置距离:500 mm) ② ±10μm(Setting distance:100 mm) ②;±15μm(Setting distance:500 mm)②
外形尺寸 Dimension	发射器:55*32*23mm;接收器:55*32*23mm Emitter:55*32*23mm;Receiver:55*32*23mm
温度漂移 Temperature drift	±0.08%F.S./℃、(±8μm/℃)
指示灯(发射) Indicator (emission)	光轴校准指示:绿色LED;电源指示灯: 绿色LED Optical axis calibration indication:Green LED;power indicator:Green LED
指示灯(接收) Indicator (receive)	光轴校准指示:绿色LED;位置显示:双条形LED(黄、绿色) Optical axis calibration indication: Green LED; Position indicator:Double strip LED(Yellow,Green)
抗环境光 Anti ambient light	白炽灯:<3,000lux Incandescent light < 3,000lux
防护等级 Protection degree	IP50
环境温度 Ambient temperature	-10...45°C(无凝霜) -10...45°C(No freezing)
环境湿度 Environment humidity	35...85% RH(无凝霜) 35...85%RH(Non-condensing)
材质 Material	外壳:铝 Housing:Aluminium
连接方式 Connection method	PVC 引线 PVC cable

	控制器 Controller
电源电压 Supply voltage	12...24VDC
消耗电流 Consumption current	≤900mA(包括发射器,接收器) ≤900mA(Emitter and receiver)
显示分辨率 Display resolution	1 μm
显示范围 Display range	-99.999...99.999
显示方式 Display method	双位8段显示;上、下级:红色,6 位 Double-digit 8-segment display; Upper、lower: Red, 6-digit
响应时间 Response time	2ms
输出1 Output 1	NPN NC
输出2 Output 2	RS485输出 RS485 Output
环境温度 Ambient temperature	-10...45°C(无凝霜) -10...45°C(Non-condensing)
环境湿度 Environment humidity	35...85%RH(无凝霜) 35...85%RH(Non-condensing)
外壳 Housing	塑料 Plastic
安装 Installation	导轨安装 Guide rail installation

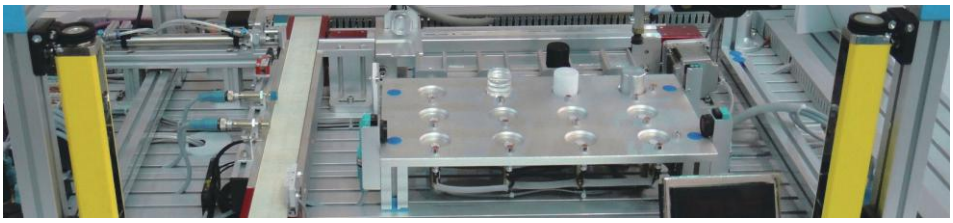
备注:①安装距离为 100 mm 时,光线在距离接收器 50 mm 的位置被遮挡时。到理想直线的误差幅度。
②在安装距离的中间位置光线被遮挡一半时。平均次数设为 16 且采样执行30 秒。

3D激光线扫描 3D laser scanner

外壳代号 Shell Code	PHM			
型号 Item code	PHM3020	PHM3072	PHM3140	PHM3215
检测范围 Detection range	28mm	72mm	400mm	500mm
净距离 Net distance	42mm	72mm	365mm	1500mm
光源类型 Light source	蓝色激光 (450nm) Blue laser(450nm)			
激光等级 Laser level	Class II			
电源电压 Supply voltage	12...24 VDC			
消耗功率 Consumption power	≤800mW			
线性度(Z方向) Linearity (Z direction)	0.1% F.S.			
分辨率(X方向) Resolution(X direction)	17...21um	40...57um	150...240um	410...1250um
近端视野 (X方向) Near end field of view (X direction)	17mm	50mm	185mm	520mm
远端视野 (X方向) Far end field of view (X direction)	20mm	70mm	302mm	1580mm
外形尺寸 Dimension	144*92*43mm	167*80*50mm	360*120*51mm	530*98.5*60mm
输出方式 Output type	开关量/RS485/以太网 Switch value/RS485/Ethernet			
响应时间 Response time	6ms			
保护回路 Protection circuit	短路保护、逆极性保护、浪涌保护 Short circuit、reverse polarity、surge			
工作温度 Operating temperature	-10…50°C			
存储温度 Storage temperature	-20…70°C			
防护等级 Protection degree	IP65			
材质 Material	铝 Aluminium			
耐振动 Vibration resistance	10...55Hz双振幅1mm，X，Y，Z三方向各2小时 10...55Hz Double amplitude1mm, 2H each in X, Y, Z directions			
耐冲击 Impact resistance	500m/s²（约50G），X，Y，Z三方向各3次 500m/s²(Approximate 50G),3 times each in X, Y,Z direction			
连接方式 Connection method	传感头与控制器连接：USB 3.0 Sensor connect to controller:USB 3.0			

备注：①标准检测物：90%反射率白卡；
Notes Standard sensing object : 90% reflectivity white card;
②客户可以根据应用需求进行测量区域设定与定制。
Customers can set and customize the measurement area according to application requirements.

光幕传感器
Light curtains



- 采用同步扫描方式，安全可靠
- 备有多种保护高度选择
- 具有10mm, 20mm, 25mm, 30mm, 40mm等多种分辨率
- 用于折剪机，切纸机，冲压机床等各种危险区域的人体部位保护

- 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.

产品命名方式 Naming rules

光幕 Light curtains

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

1. 分类 Type code

L:区域光幕传感器
Area light curtains

S:安全光幕传感器
Safety light curtains

M:测量光幕传感器
Measuring light curtains

2. 外形 Shape

C:外形代号 38*38mm Shape code

G:外形代号 26*26mm Shape code

H:外形代号 47*36mm Shape code

3. 光轴间距 Optic axis distance

例：20表示间距为20mm
E.g. 20:20mm

4. 光种类 Beam type

无 N/A:平行光幕
Light curtain with parallel beams

5. 检测方法 Detect mode

T:对射 Through beam reflection

6. 光轴数 Optic axis number

04:4轴 4 Axises 08:8轴 8 Axises

24:24轴 24 Axises .....

7. 检测距离 Sensing distance

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

8. 工作电压 Supply

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

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

9. 输出方式及状态 Output status

无:发射器 N/A:Emitter

U:电压型(0...10v) Voltage output(0...10V)

U1:电压型(0...5V) Voltage output(0...5V)

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

IU:电压型+电流型(0...10V,0...20mA)
Voltage+current output(0...10V,0...20mA)

NO:接收器 NPN NO输出
Receiver NPN NO output

NC:接收器 NPN NC输出
Receiver NPN NC output

PO:接收器 PNP NO输出
Receiver PNP NO output

PC:接收器 PNP NC输出
Receiver PNP NC output

AO:接收器 NPN+NPN NO输出
Receiver NPN+NPN NO output

AC:接收器 NPN+NPN NC输出
Receiver NPN+NPN NC output

BO:接收器 PNP+PNP NO输出
Receiver PNP+PNP NO output

BC:接收器 PNP+PNP NC输出
Receiver PNP+PNP NC output

10. 连接方式 Connection

无 N/A:引线式2m Cable:2m

3M:引线式3m Cable:3m

E2:M12四芯插件 M12 Plug 4pin

E3:M8四芯插件 M8 Plug 4pin

E5:M12五芯插件 M12 Plug 4pin

E8:M12八芯插件 M12 Plug 8pin

F2:M12四芯插件+引线
M12 Plug 4pin with cable

11. 特殊要求 Special requirement

用四位数字表示 In 4 digits

区域光幕传感器 Area light curtains

- 超长检测距离
- 系列化，多规格产品。检测高度从120到1920mm
- 具备自检功能，可自动检测产品内部异常，同步异常
- 高亮度动作指示灯，使得产品工作状态容易识别

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

光 轴 数 Axises quantity	8轴 8Axises	12轴 12Axises	16轴 16Axises	20轴 20Axises	24轴 24Axises	28轴 28Axises	32轴 32Axises
发 射 器 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
保 护 高 度 Protection height	140mm	220mm	300mm	380mm	460mm	540mm	620mm
响 应 时 间 Response time	<10ms	<15ms	<20ms	<25ms	<30ms	<35ms	<40ms

光 轴 数 Axises quantity	36轴 36Axises	40轴 40Axises	44轴 44Axises	48轴 48Axises
发 射 器 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
保 护 高 度 Protection height	700mm	780mm	860mm	940mm
响 应 时 间 Response time	<45ms	<50ms	<55ms	<60ms

检 测 距 离 Detection width	0.5...5m	
光 轴 间 距 Axis distance	20mm	
检 测 物 体 Sensing object	Φ30mm以上的不透明体	>Φ30mm opaque object
电 源 电 压 Power voltage	12...24 VDC±10%	
消 耗 电 流 Current consumption	发射器：<60mA(消耗电流与轴数无关)；接收器：<45mA(8轴，每增加8轴消耗电流增加5mA) 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)	
光 源 类 型 Light source	850nm红外光 (调制式)	850nm Infrared (modulate)
保 护 电 路 Circuit protection	逆极性， 过载， 短路	Reverse polarity, short-circuit protection, overload protection
周 围 温 度 Ambient temperature	-10℃...55℃(注意不可结露、结冰),存储：-10℃...60℃	-10℃...55℃(dewed or iced forbidden), storage: -10℃...60℃
周 围 湿 度 Ambient humidity	35...85%RH，存储：35...85%RH	35...85%RH, storage:35...85%RH
周围照明度 Intensity of illumination	白炽灯：受光面照明度 4,000lux	Incandescent lamp: intensity of illumination 4,000lux
耐 振 动 Anti-vibration	10...50Hz, 双振幅：1.2mm，X,Y和Z各方向2小时	10...55Hz,amplitude:1.2mm,2 hours each for x, y and z direction
耐 冲 击 Anti-shocking	加速度：500m/s²(约50G)，X,Y和Z各方向3次	Acceleration:500m/s²(approx:50G),3 times each for x, y and z direction
防 护 等 级 Protection degree	IP65	
材 质 Housing material	外壳：铝合金，透光罩：PC，端盖：增强尼龙	Housing: AL; Light cover: PC; End cover: enhanced nylon
接 线 方 式 Connection	引线18cm + M12连接器	18cm cable with M12 connector
配 件 Accessory	引线5m母座线（QE12-N4F5, QE12-N3F5）	5m Connection cable(QE12-N4F5, QE12-N3F5)

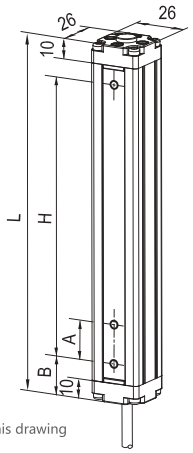
规格 Datasheets

规格 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:保护高度，H=A*（N-1） L:光幕总长度L=H+40mm A:光轴间距，20mm N:为光轴数

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

尺寸图 Dimensions



注：LG20、LG40尺寸图均可参照此图
Note: Dimension of LG20, LG40 also refers to this drawing

区域光幕传感器 Area light curtains

光 轴 数 Axises quantity	4轴 4Axises	6轴 6Axises	8轴 8Axises	10轴 10Axises	12轴 12Axises	14轴 14Axises	16轴 16Axises
发 射 器 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
保 护 高 度 Protection height	120mm	200mm	280mm	360mm	440mm	520mm	600mm
响 应 时 间 Response time	< 5ms	< 10ms	< 15ms	< 20ms	< 25ms	< 30ms	< 35ms
光 轴 数 Axises quantity	**18轴 18Axises**	**20轴 20Axises**	**22轴 22Axises**	**24轴 24Axises**	**26轴 26Axises**	**28轴 28Axises**	**30轴 30Axises**
发 射 器 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
保 护 高 度 Protection height	680mm	760mm	840mm	920mm	1000mm	1080mm	1160mm
响 应 时 间 Response time	< 40ms	< 45ms	< 50ms	< 55ms	< 60ms	< 65ms	< 70ms
光 轴 数 Axises quantity	**32轴 32Axises**	**34轴 34Axises**	**36轴 36Axises**	**38轴 38Axises**	**40轴 40Axises**	**42轴 42Axises**	**44轴 44Axises**
发 射 器 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
保 护 高 度 Protection height	1240mm	1320mm	1400mm	1480mm	1560mm	1640mm	1720mm
响 应 时 间 Response time	< 75ms	< 80ms	< 85ms	< 90ms	< 95ms	< 100ms	< 105ms
光 轴 数 Axises quantity	**46轴 46Axises**	**48轴 48Axises**					
发 射 器 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					
保 护 高 度 Protection height	1840mm	1920mm					
响 应 时 间 Response time	< 110ms	< 115ms					

检 测 距 离 Detection width	0.5...5m	
光 轴 间 距 Axis distance	40mm	
检 测 物 体 Sensing object	Φ60mm以上的不透明体	>Φ60mm opaque object
电 源 电 压 Power voltage	12...24 VDC±10%	
消 耗 电 流 Current consumption	发射器：<60mA(消耗电流与轴数无关)；接收器：<45mA(8轴，每增加8轴消耗电流增加5mA) 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)	
光 源 类 型 Light source	850nm红外光 (调制式)	850nm Infrared (modulate)
保 护 电 路 Circuit protection	逆极性， 过载， 短路	Reverse polarity, short-circuit protection, overload protection
周 围 温 度 Ambient temperature	-10℃...55℃ (注意不可结露、结冰), 存储：-10℃...60℃	-10℃...55℃(dewed or iced forbidden), storage: -10℃...60℃
周 围 湿 度 Ambient humidity	35...85%RH，存储：35...85%RH	35...85%RH, storage:35...85%RH
周围照明度 Intensity of illumination	白炽灯：受光面照明度 4,000lux	Incandescent lamp: intensity of illumination 4,000lux
耐 振 动 Anti-vibration	10...50Hz, 双振幅：1.2mm，X,Y和Z各方向3次	10...55Hz,amplitude:1.2mm,2 hours each for x, y and z direction
耐 冲 击 Anti-shocking	加速度：500m/s²(约50G)，X,Y和Z各方向3次	Acceleration:500m/s²(approx:50G),3 times each for x, y and z direction
防 护 等 级 Protection degree	IP65	
材 质 Housing material	外壳：铝合金；透光罩：PC；端盖：增强尼龙	Housing: AL; Light cover: PC; End cover: enhanced nylon
接 线 方 式 Connection	引线18cm + M12连接器	18cm cable with M12 connector
配 件 Accessory	引线5m母座线（QE12-N4F5, QE12-N3F5）	5m Connection cable(QE12-N4F5, QE12-N3F5)

规格 Datasheets

规格 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

规格 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:保护高度，H=A*（N-1） L:光幕总长度L=H+40mm A: 光轴间距 40mm N:为光轴数
H: Protection height, H=A*（N-1） L: Total height: L=H+40mm A : Axis distance 40mm N: Optic axis quantity

测量光幕传感器 Measuring light curtains

- 采用RS485同步扫描技术，具有较强的抗干扰能力
- 光幕备有多种保护高度选择，从300mm至2220mm
- 光轴间距为20mm，有效保护工作区域
- 具有两路开关量和RS485输出的双开关控制功能
- 具有故障报警并自我判断故障类型的自诊断功能

- 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.

光 轴 数 Axises quantity	16轴 16Axises	32轴 32Axises	48轴 48Axises	64轴 64Axises
发 射 器 Emitter	MH20-T1605L-F2	MH20-T3205L-F2	MH20-T4805L-F2	MH20-T6405L-F2
接 收 器 Receiver	MH20-T1605LS1DA-F8	MH20-T3205LS1DA-F8	MH20-T4805LS1DA-F8	MH20-T6405LS1DA-F8
保护高度 Protection height	300mm	620mm	940mm	1260mm
响应时间 Response time	5ms	10ms	15ms	18ms
光 轴 数 Axises quantity	**80轴 80Axises**	**96轴 96Axises**	**112轴 112Axises**	
发 射 器 Emitter	MH20-T8005L-F2	MH20-T9605L-F2	MH20-T11205L-F2	
接 收 器 Receiver	MH20-T8005LS1DA-F8	MH20-T9605LS1DA-F8	MH20-T11205LS1DA-F8	
保护高度 Protection height	1580mm	1900mm	2220mm	
响应时间 Response time	19ms	20ms	24ms	

检测距离 Detection width	0...5m	
光轴间距 Axis distance	20mm	
检测物体 Sensing object	Φ30mm以上的不透明体	>Φ30mm opaque object
输出方式 Output	两路输出NPN/PNP、NC/NO可设置+RS485	Two output NPN/PNP、NC/NO+RS485
电源电压 Supply voltage	15...30 VDC	
消耗电流 Current consumption	< 130mA@16轴@30VDC	< 130mA@16axises@30VDC
光源类型 Light source	红外光(调制式)	Infrared LED(modulate)
保护电路 Circuit protection	短路保护、齐纳保护、浪涌保护、反接保护	Short circurit, zenser, surge protection, reverse polarity protection
环境温度 Ambient temperature	-25℃...55℃(注意不可结露、结冰),存储：-30℃...75℃	-25℃...55℃(dewed or iced forbidden), storage: -30℃...75℃
周围湿度 Ambient humidity	35...95%RH	35...95%RH
周围照明度 Intensity of illumination	白炽灯：受光面照明度 > 50,000lux	Incandescent lamp: intensity of illumination > 5,000lux
耐 振 动 Anti-vibration	10...55Hz, 双振幅：0.5mm，X,Y和Z各方向2小时	10...55Hz, amplitude: 0.5mm, 2 hours each for x, y and z direction
耐 冲 击 Anti-shocking	加速度：300m/s²(约30G)，X,Y和Z各方向3次	Acceleration: 300m/s²(approx:30G), 3 times each for x, y and z direction
防护等级 Protection	IP67	
材 质 Housing material	外壳：铝合金，透光罩：PC，端盖：铝合金	Housing: AL; Light cover: PC; End cover: AL
接线方式 Connection	发射器：M12插件（4芯），接收器：M12插件（8芯）	Emitter: M12 connector 4 pin, receiver: M12 connector 8 pin
配 件 Accessory	屏蔽线（8芯）1根（长度标配3m），屏蔽线（4芯）1根（长度标配15m） Shielding wire(8 pin) 1 pc (standard length 3m), Shielding wire(4 pin) 1 pc (standard length 15m)	

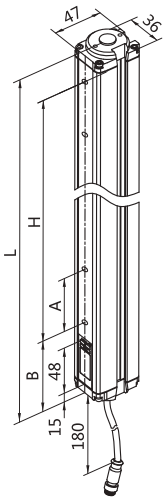
规格 Datasheets

规格 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：保护高度，H=20*(N-1)mm　L：光幕总长度L=H+63mm
N：光轴数

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

尺寸图 Dimensions



测量光幕传感器 Measuring light curtains

- 采用RS485同步扫描技术，具有较强的抗干扰能力
- 光幕备有多种保护高度选择，从280mm至2200mm
- 光轴间距为40mm，有效保护工作区域
- 具有两路开关量和RS485输出的双开关控制功能
- 具有故障报警并自我判断故障类型的自诊断功能

- RS485 synchronous scanning technology, strong anti interference function.
- Various detection height, from 280mm to 2220mm.
- Optic axis distance:40mm.
- Dual switch control with two-way switch value and RS485 output.
- Faul+alarm and fault diagnosis function.

光 轴 数 Axises quantity	8轴 8Axises	16轴 16Axises	24轴 24Axises	32轴 32Axises
发 射 器 Emitter	MH40-T0805L-F2	MH40-T1605L-F2	MH40-T2405L-F2	MH40-T3205L-F2
接 收 器 Receiver	MH40-T0805LS1DA-F8	MH40-T1605LS1DA-F8	MH40-T2405LS1DA-F8	MH40-T3205LS1DA-F8
保护高度 Protection height	280mm	600mm	920mm	1260mm
响应时间 Response time	5ms	10ms	15ms	18ms
光 轴 数 Axises quantity	**40轴 40Axises**	**48轴 48Axises**	**56轴 56Axises**	
发 射 器 Emitter	MH40-T4005L-F2	MH40-T4805L-F2	MH40-T5605L-F2	
接 收 器 Receiver	MH40-T4005LS1DA-F8	MH40-T4805LS1DA-F8	MH40-T5605LS1DA-F8	
保护高度 Protection height	1560mm	1880mm	2200mm	
响应时间 Response time	19ms	20ms	24ms	

检测距离 Detection width	0...5m	
光轴间距 Axis distance	40mm	
检测物体 Sensing object	Φ30mm以上的不透明体	>Φ30mm opaque object
输出方式 Output	两路输出NPN/PNP、NC/NO可设置+RS485	Two output NPN/PNP、NC/NO+RS485
电源电压 Supply voltage	15...30 VDC	
消耗电流 Current consumption	< 130mA@16轴@30VDC	< 130mA@16axises@30VDC
光源类型 Light source	红外光(调制式)	Infrared LED(modulate)
保护电路 Circuit protection	短路保护、齐纳保护、浪涌保护、反接保护	Short circurit, zenser, surge protection, reverse polarity protection
周围温度 Ambient temperature	-25℃...55℃(注意不可结露、结冰),存储：-30℃...75℃	-25℃...55℃(dewed or iced forbidden), storage: -30℃...75℃
周围湿度 Ambient humidity	35...95%RH	35...95%RH
周围照明度 Intensity of illumination	白炽灯：受光面照明度 > 50,000lux	Incandescent lamp: intensity of illumination > 5,000lux
耐 振 动 Anti-vibration	10...55Hz, 双振幅：0.5mm，X,Y和Z各方向2小时	10...55Hz, amplitude: 0.5mm, 2 hours each for x, y and z direction
耐 冲 击 Anti-shocking	加速度：300m/s²(约30G)，X,Y和Z各方向3次	Acceleration: 300m/s²(approx:30G), 3 times each for x, y and z direction
防护等级 Protection	IP67	
材 质 Housing material	外壳：铝合金，透光罩：PC，端盖：铝合金	Housing: AL; Light cover: PC; End cover: AL
接线方式 Connection	发射器：M12插件（4芯），接收器：M12插件（8芯）	Emitter: M12 connector 4 pin, receiver: M12 connector 8 pin
配 件 Accessory	屏蔽线（8芯）1根（长度标配3m），屏蔽线（4芯）1根（长度标配15m） Shielding wire(8 pin) 1 pc (standard length 3m), Shielding wire(4 pin) 1 pc (standard length 15m)	

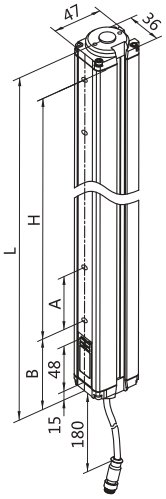
规格 Datasheets

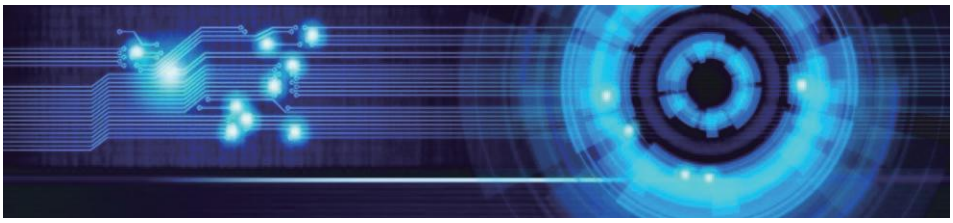
规格 Item code	A	B	H	L
MH40-T0805LS1DA-F8	40	70.2	280	363
MH40-T1605LS1DA-F8	40	70.2	600	683
MH40-T2405LS1DA-F8	40	70.2	920	1003
MH40-T3205LS1DA-F8	40	70.2	1240	1323
MH40-T4005LS1DA-F8	40	70.2	1560	1643
MH40-T4805LS1DA-F8	40	70.2	1880	1963
MH40-T5605LS1DA-F8	40	70.2	2200	2283

H：保护高度，H=40*(N-1)mm　L：光幕总长度L=H+83mm
N：光轴数

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

尺寸图 Dimensions





- 高负荷牢固性，适合重工业
- 齐全的接口：SSI，CANopen，DeviceNet，Profibus-DP
- 轴径: 实心轴Φ6, Φ10mm, 空心轴Φ15mm
- 单圈分辨率: 最大16位; 输出码制: 二进制/格雷码
- 不受温度影响的红外接受器阵列，每个发光阵列仅一个接收光电二极管，隔离型总线
- 反极性保护
- 可广泛应用于冶金设备及流水线、港口起重运输机械、水利、灌溉机械、重型机械、造纸、纺织机械、精密测量和数控设备、机床等

- Firmness with high load, suitable for heavy industries.
- SSI, CANopen, DeviceNet, Profibus-DP bus interface.
- Diameter of axle: Solid axle φ6,φ10 mm, Hollow axle φ15mm.
- Single-turn resolution: Maximum 16 digits. Output code system: Binary system/Gray code.
- Infrared receiver array which won't be affected by temperature, each LED array has only one receiving photodiode, isolated bus.
- Reversed-polarity protection.
- Widely used in Metallurgical equipment and assembly line, Lifting and transportation machinery at the port, Water conservancy and irrigation machinery, Heavy machinery, Papermaking and textile machinery, Precision measurement and CNC equipment, Machine tool.

产品命名方式 Naming rules

编码器 Encoder

ENA	-	60	□□	□	D	CA	16	□□	□□	-	□□□□
1		2	3	4	5	6	7	8	9		10

1. 分类 **Type code**

ENA： 绝对值旋转编码器
Absolute rotary encoder

2. 主体尺寸 **Body size**

Φ60mm

3. 法兰/轴类型 **Flange/axis type**

AA=夹紧型法兰,主轴Φ10*20mm
Clamp flange, Principle axis φ10*20mm

AB=同步型法兰,主轴Φ6*10mm
Synchronized flange, Principle axis φ6*10mm

4. 信号输出类型 **Signal output type**

B = 二进制码(CANopen, DeviceNet, Profibus-DP, SSI)
Binary code

G = 格雷码(CANopen, SSI)
Gray code

5. 电源电压 **Power supply**

10...30VDC

6. 通信接口 **Interface**

CA: CANopen
DP: Profibus-DP
DN: DeviceNet
SI: SSI

7. 单圈分辨率 **Single-turn resolution**

13=8192 (13 bit)
(Profibus-DP 标准 Standard, SSI 可选 Optional)

16=65536 (16 bit)
(CANopen可调 Adjustable, DeviceNet可调 Adjustable, SSI可选Optional)

8. 圈数位数 **Turn number digits**

00=单圈 Single-turn

12=4096 (12 bit)

9. 连接方式 **Connection**

A1=包含总线模盒,接线端子(Profibus-Dp, DeviceNet)
Including bus mould box, Terminal

C1=电缆1m,轴向(CANopen, SSI)
1m Cable, Axial direction

D1=电缆1m,径向(CANopen,SSI)
1m Cable, Radial direction

10. 特殊功能代码 **Special function code**

绝对值旋转编码器 Absolute rotary encoder

外壳代号 Shell code	SSI	CANopen	DeviceNet	Profibus-DP
电源电压 Supply voltage	10...30VDC	10...30VDC	10...30VDC	10...30VDC
总线连接 Bus connection	基于RS422/RS485通讯接口 Based on RS422/RS485 communication interface	符合ISO11898的CAN 收发器, 光隔离 Conforming to CAN transceiver of ISO11898, optical isolation	符合ISO11898的CAN 收发器, 光隔离 Conforming to CAN transceiver of ISO11898, optical isolation	基于RS485通讯接口 Based on RS485 communication interface
传输速率 Transmission rate	100k...1.5Mbit/s 100k...1.5Mbit/s	20k...1Mbit/s(可编程) 20k...1Mbit/s(Programmable)	125k...500kbit/s (通过旋转开关设置) 125k...500kbit/s (Set through rotary switch)	Max 6Mbit/s
最大单圈分辨率 Maximum single-cycle resolution	65536（16位） 65536（16 Bits）	65536（16位） 65536（16 Bits）	65536（16位） 65536（16 Bits）	8192（13位） 8192（13 Bits）
最大计圈数 Maximum number of cycles	4096（12位） 4096（12 Bits）			
精度 Precision	±180"			
环境温度 Ambient temperature	-40℃...85℃			
外壳材质 Housing material	铝合金 Auminum alloy			
机械最大转速 Machinery maximum speed	6000转 6000 circles			
主轴负载 Load of principal axis	轴向40N, 径向110N Axial direction 40N, radial direction 110N			
安装法兰 Mounting flange	同步 / 夹紧 Synchronous / Clamp			
主轴直径 Diameter of principal axis	6mm / 10mm			
主轴长度 Length of principal axis	10mm / 20mm			
防护等级 Protection Level	壳体部分IP67，主轴部分IP64 （根据用户需要，可提供IP66） Shell: IP67，Principal axis: IP64（According to customers' needs, IP66 is available）			

产品命名方式 Naming rules

张力传感器 Tension sensor

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

1. 分类 Type code

TW:张力传感器 Tension sensor

2. 外形规格 Shape code

A:外壳1 Housing 1
B:外壳2 Housing 2
C:外壳3 Housing 3
C1:外壳3（用勾状导丝器）
Housing 3 (With hooked yarn guide)
D:外壳4（T字1型的） Housing 4 (Type T)
E:外壳5 Housing 5
F:电梯称重传感器外壳
Housing of Elevator Weighing Sensor
G:外壳6 Housing 6
.....

3. 敏感头 Sensitive probe

T:陶瓷传感头 Ceramic sensing probe
Y:应变片传感头 Strain gauge sensing probe
H:霍尔传感头 Hall sensing probe

4. 测量范围 Measurement range

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

5. 电源电压 Detect mode

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

6. 输出范围 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. 连接形式 Connection

无:2M电缆线 2m Cable
A:0.25m三芯屏蔽电缆
0 25m Shielded cable with 3 pins
B:M12三芯插件 M12 3 pins connector
C:M12四芯插件 M12 4 pins connector
D:M12五芯插件 M12 5 pins connector
E:三芯带线插头 3 pins connector
F:五芯2.54插座 2.54 socket with 5 pins
G:三芯插座 Socket with 3 pins
H:三芯带线插头(2.0) 3 pins plug with cable(2.0)
.....

8. 特殊要求 Special requirement

用四位数字表示 In 4 digits

张力传感器 Tension sensor

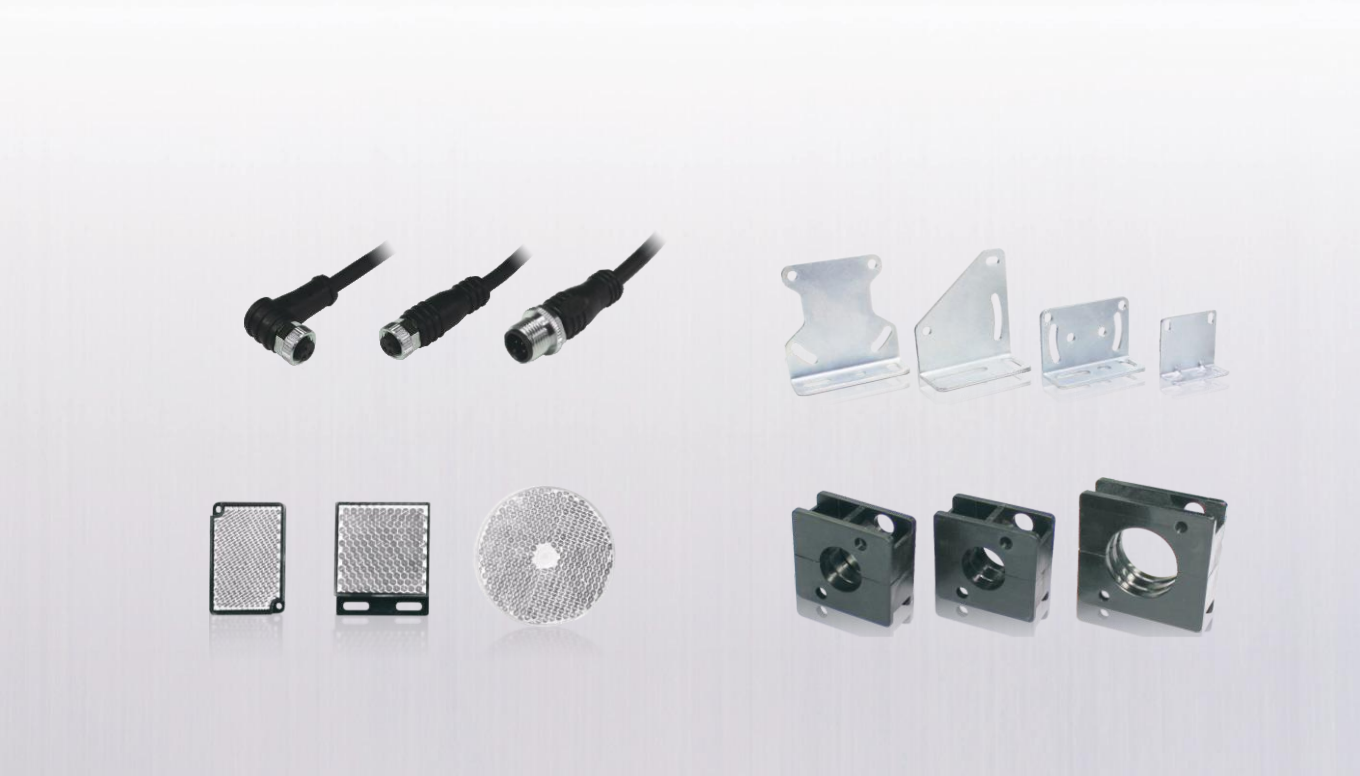
张力传感器广泛用于纺织与化纤行业，检测使用过程中的纱线张力。将作用在纱线上的张力转换成微弱电压信号，再经过滤波电路、放大电路、线性补偿电路、起始点调整电路、将弱信号放大补偿后，送到末级放大电路放大输出我们需要的与张力成线性关系的电压信号。

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.

- 响应速度快,灵敏度高
- 检测张力范围宽
- 线性度好、温度特性好
- 对材料损伤小
- 主要应用于轻纺行业

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

外壳代号 Shell code	TWC	TWK
电源电压 Supply voltage	10...30VDC	10...30VDC
消耗电流 Current consumption	<15mA	< 22mA
非线性度 Non-linearity	<1%FS	< 2%FS
张力范围 Tension range	0...300cN, 0...100cN	0...100cN, 0...300cN
感应器 Sensor	陶瓷应变式 Ceramic strain gauge type	霍尔式 Hall sensor
输出方式 Output	电压型输出：0.5...6VDC Voltage output: 0.5...6VDC	电压型输出：0.3...2.3VDC Voltage output: 0.3...2.3VDC
连接方式 Connection	端子连接 Terminal	接插件 Plug-in unit
保护电路 Circuit protection	逆极性保护 Reverse polarity protection	极性保护、冲击保护 Reverse polarity protection, Surge protection
环境温度 Ambient temperature	0...50℃（注意不可结露、结冰） 0...50℃(dewed or iced forbidden)	0...50℃（注意不可结露、结冰） 0...50℃(dewed or iced forbidden)
材质 Housing material	外壳：锌铝合金；传动结构：陶瓷 Housing: zinc aluminum; Transmission: ceramics	外壳：锌合金；传动结构：陶瓷 Housing: zinc alloy; Transmission: ceramics



传感器附件 Sensor accessories

连接线缆及分线盒
Connection cables & Distribution Box

安装支架
Mounting brackets

反光板
Reflectors

安装夹具
Mounting clamps

连接线缆 Connection cable

产品命名方式 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.连接器形状 Connector classification

C:定制型 Customized
Q:标准型 Standard

2.连接器规格 Connector specification

E8:M8连接器 M8 connector
E12:M12连接器 M12 connector

3.螺纹形式 Thread type

N:内螺纹连接 Internal thread connection
W:外螺纹连接 External thread connection

4.连接线芯数 Pin number

3:3芯 3 pin
4:4芯 4 pin
5:5芯 5 pin
....

5.出线方向 Cable lead-out

F:180°直头 180° straight angle
G:90°弯头 90° right angle

6.线缆长度 Cable length

无:连接头 N/A: Connector
02:0.2米电缆线 0.2m cable
2:2米电缆线 2m cable
5:5米电缆线 5m cable
10:10米电缆线 10m cable
....

7.输出方式 Connector classification

无:无LED,通用型 N/A: No LED, universal
P:带LED PNP 接口 With LED, PNP interface
N:带LED NPN 接口 With LED, NPN interface

8.线缆材质 Cable material

无:PVC N/A: PVC
U:PUR

9.连接器规格 Connector specification

无:直接出线 N/A: With cable directly
E8:M8连接器 With M8 connector
E12:M12连接器 With M12 connector
....

10.螺纹形式 Thread type

无:直接出线 N/A: With cable directly
N:内螺纹连接 Internal thread connection
W:外螺纹连接 External thread connection

11.连接线芯数 Pin number

无:直接出线 N/A: With cable directly
3:3芯 3 pins
4:4芯 4 pins
5:5芯 5 pins
....

12.出线方向 Cable lead-out

无:直接出线 N/A: With cable directly
F:180°直头 180° straight angle
G:90°弯头 90° right angle

13.特殊代码 Special code

四位数字代号 In 4 digits

分线盒型号代码 Model & Code

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

1. 产品系列 Product series

DB:分线盒 Distribution box

2. 接口类型 Core wire

08:M8连接器 M8 Connector
12:M12连接器 M12 Connector

3. I/O 通道数 I/O channel number

04:4
06:6
08:8
10:10

4. I/O 孔数 I/O port

03:3
04:4
05:5

5. 线缆材质 Cable material

0:无线缆 No cable
1:PVC
2:PUR

6. 出线规格 Cable type

D:D-SUB端子 D-SUB
M:M23端子 Plug connector M23
无:直接出线 None: pre-wired cable
03:3米电缆线 3m Cable
05:5米电缆线 5m Cable
07:7米电缆线 7m Cable

7. LED指示 LED indication

P:PNP
N:NPN

连接线缆 Connection cable

外壳代号 Shell code	QE8-N3Fx	QE8-N3Gx	QE8-W3Fx	QE8-W3Gx	QE12-N4Fx
尺寸规格 Specifications	M8*35.5	M8*21	M8*40.5	M8*21	M12*40
工作电压 Operating voltage	60 VAC/DC	60 VAC/DC	60 VAC/DC	60 VAC/DC	250V AC/DC
额定电流 Nominal current	4A	4A	4A	4A	4A
绝缘电阻 Insulation resistance	100MΩ	100MΩ	100MΩ	100MΩ	100MΩ
温度范围 Temperature range	-30℃...90℃	-30℃...90℃	-30℃...90℃	-30℃...90℃	-30℃...90℃
外被 Outer covering	PVC	PVC	PVC	PVC	PVC
承载材质 Bearing material	镍铜合金 Nickel-copper alloy	镍铜合金 Nickel-copper alloy	镍铜合金 Nickel-copper alloy	镍铜合金 Nickel-copper alloy	镍铜合金 Nickel-copper alloy
防护等级 Protection degree	IP67	IP67	IP67	IP67	IP67
连接线缆材质 Material	PVC/PU	PVC/PU	PVC/PU	PVC/PU	PVC/PU
连接线缆线径 Diameter	Φ4.4	Φ4.4	Φ4.4	Φ4.4	Φ5.2
连接线缆芯线 Core wire	3*0.25mm² (0.1*32)	3*0.25mm² (0.1*32)	3*0.25mm² (0.1*32)	3*0.25mm² (0.1*32)	4*0.34mm² (0.2*11)
连接线缆长度 Length	2m/5m	2m/5m	2m/5m	2m/5m	2m/5m
产品认证 Certification	CE	CE	CE	CE	CE

连接线缆
Connection cable

连接线缆 (带灯)
Connection cable (LED)

外壳代号 Shell code	QE12-N4Gx	QE12-W4Fx	QE12-W4Gx	QE12-N4F-x	QE12-N4G-x
尺寸规格 Specifications	M12*42	M12*42	M12*42	M12*40	M12*42
工作电压 Operating voltage	250 VAC/DC	250 VAC/DC	250 VAC/DC	30VDC Max	30VDC Max
额定电流 Nominal current	4A	4A	4A	4A	4A
绝缘电阻 Insulation resistance	100MΩ	100MΩ	100MΩ	100MΩ	100MΩ
温度范围 Temperature range	-30℃...90℃	-30℃...90℃	-30℃...90℃	-30℃...90℃	-30℃...90℃
外被 Outer covering	PVC	PVC	PVC	PU	PU
承载材质 Bearing material	镍铜合金 Nickel-copper alloy	镍铜合金 Nickel-copper alloy	镍铜合金 Nickel-copper alloy	镍铜合金 Nickel-copper alloy	镍铜合金 Nickel-copper alloy
防护等级 Protection degree	IP67	IP67	IP67	IP67	IP67
连接线缆材质 Material	PVC/PU	PVC/PU	PVC/PU	PVC/PU	PVC/PU
连接线缆线径 Diameter	Φ5.2	Φ5.2	Φ5.2	Φ5.2	Φ5.2
连接线缆芯线 Core wire	4*0.34mm² (0.2*11)	4*0.34mm² (0.2*11)	4*0.34mm² (0.2*11)	4*0.34mm² (0.2*11)	4*0.34mm² (0.2*11)
连接线缆长度 Length	2m/5m	2m/5m	2m/5m	2m/5m	2m/5m
产品认证 Certification	CE	CE	CE	CE	CE

连接器 Connection cable

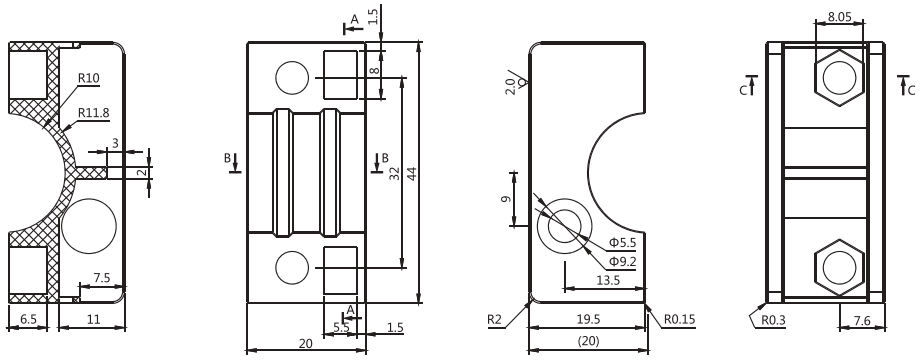
外壳代号 Shell code	QE8-N3F	QE8-W3F	QE12-N4F	QE12-W4G	QE12-W4F
尺寸规格 Specifications	M8*40	M8*46.5	M12*48	M12*37.6	M12*56.7
工作电压 Operating voltage	60 VAC/DC	60 VAC/DC	250 VAC/DC	250 VAC/DC	250V AC/DC
额定电流 Nominal current	4A	4A	4A	4A	4A
绝缘电阻 Insulation resistance	100MΩ	100MΩ	100MΩ	100MΩ	100MΩ
温度范围 Temperature range	-40℃...85℃	-40℃...85℃	-40℃...85℃	-40℃...85℃	-40℃...85℃
外被 Outer covering	PVC	PVC	PVC	PVC	PVC
承载材质 Bearing material	镍铜合金 Nickel-copper alloy	镍铜合金 Nickel-copper alloy	镍铜合金 Nickel-copper alloy	镍铜合金 Nickel-copper alloy	镍铜合金 Nickel-copper alloy
防护等级 Protection degree	IP67	IP67	IP67	IP67	IP67
连接线缆材质 Material	/	/	/	/	/
连接线缆线径 Diameter	4...5mm	4...5mm	4...6mm	4...6mm	4...6mm
连接线缆芯线 Core wire	/	/	/	/	/
连接线缆长度 Length	/	/	/	/	/
产品认证 Certification	CE	CE	CE	CE	CE

分线盒 Distribution Box

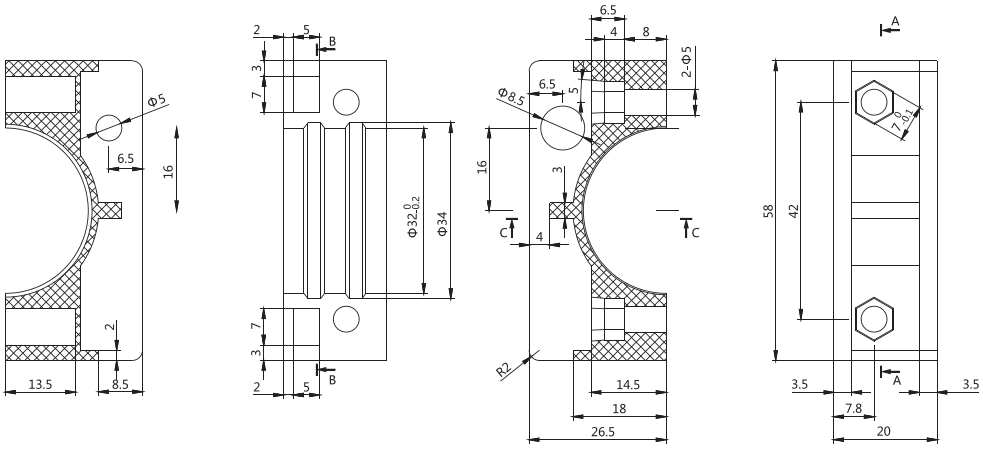
外壳代号 Shell code	DB080803-0-Dx	DB080803-1-03N	DB120804-0-MP	DB120804-1-03P
尺寸规格 Specifications	90*45	98*45	152*54	152*54
工作电压 Operating voltage	10...30 VDC	10...30 VDC	10...30 VDC	10...30 VDC
额定电流 Nominal current	2A/Port, 8A/Total	2A/Port, 8A/Total	4A/Port, 10A/Total	4A/Port, 10A/Total
接触阻抗 Insulation resistance	8mΩ MAX	8mΩ MAX	8mΩ MAX	8mΩ MAX
温度范围 Temperature range	-20℃...80℃	-20℃...80℃	-20℃...80℃	-20℃...80℃
输出功能 Output status	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP
输出类型 Output way	常开 NO	常开 NO	常开 NO	常开 NO
输出指示 Output indicate	黄色LED Yellow LED	黄色LED Yellow LED	黄色LED Yellow LED	黄色LED Yellow LED
连接规格 Connection specification	M8孔端 3芯 M8 port 3-core	M8孔端 3芯 M8 port 3-core	M12孔端 4芯 M12 port 4-core	M12孔端 4芯 M12 port 4-core
连接线缆材质 Material	/	PVC	/	PVC
接口材质 Socket material	磷青铜 镀金 Carobronze/Gold plated	磷青铜 镀金 Carobronze/Gold plated	磷青铜 镀金 Carobronze/Gold plated	磷青铜 镀金 Carobronze/Gold plated
连接线缆长度 Length	/	3m	/	5m
产品认证 Certification	/	/	/	/

电容式传感器安装支架 Capacitive sensors mounting rack

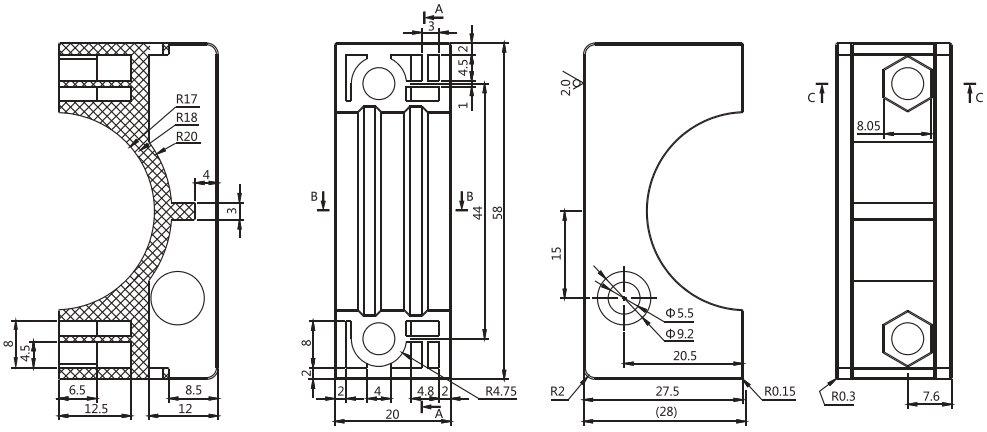
ZJC-1 (CQ20/CQ20S Mounting rack)



ZJC-2 (CQ32/CQ32S Mounting rack)

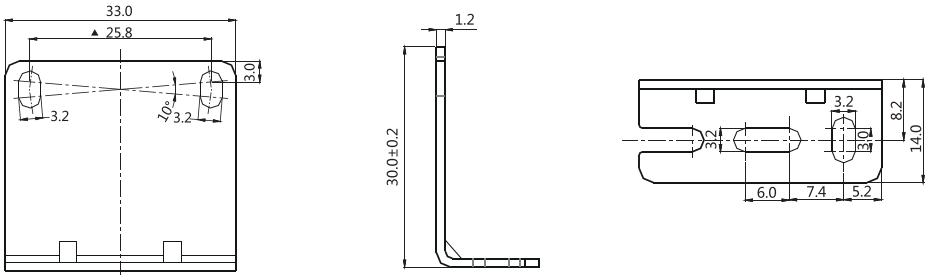


ZJC-3 (CQ34S Mounting rack)

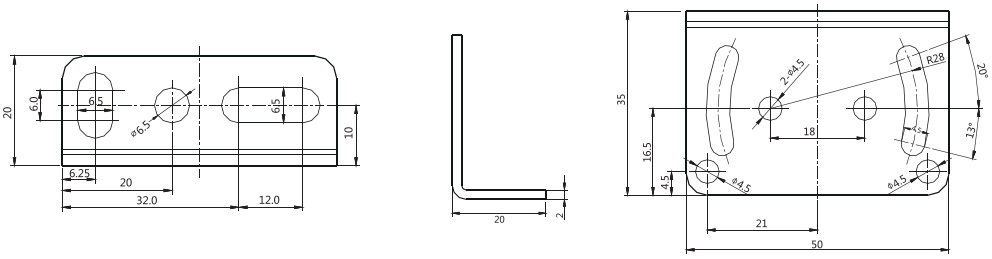


光电式传感器安装支架 Photoelectric sensors mounting rack

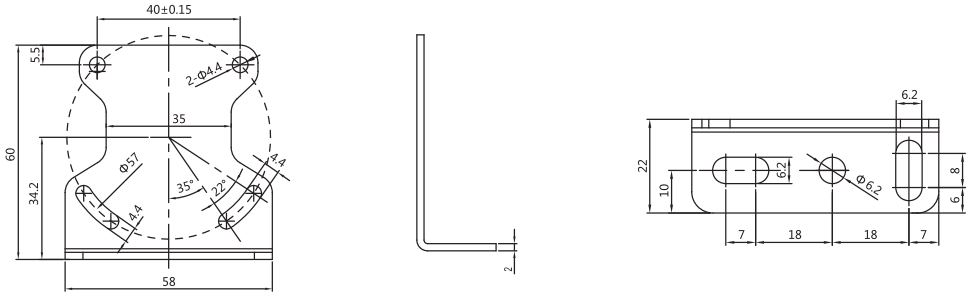
ZJP-1



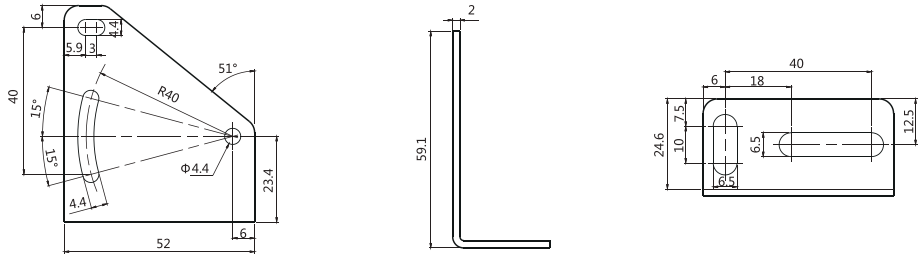
ZJP-4 (PTF Mounting rack)



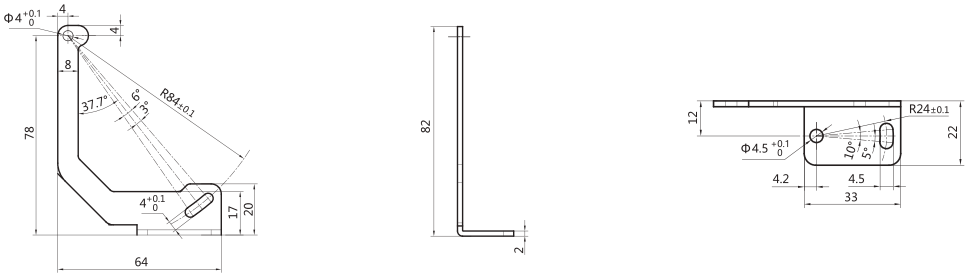
ZJP-5 (PTF/PTE Mounting rack)



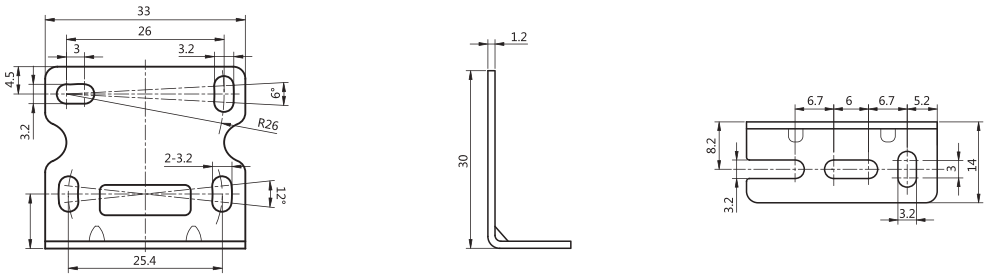
ZJP-6 (PTL Mounting rack)



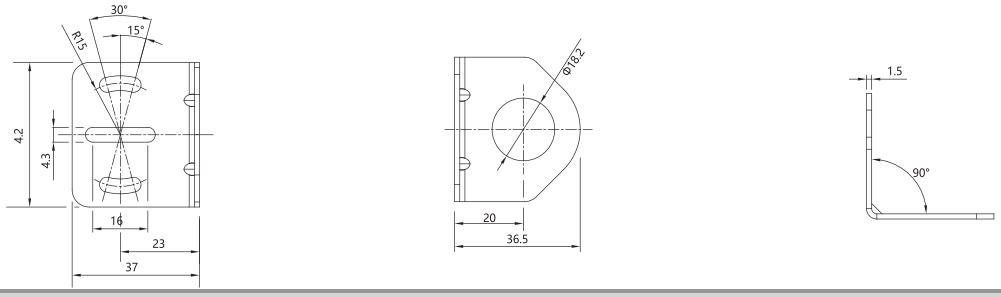
ZJP-7 (PTB Mounting rack)



ZJP-8 （PSE/PSR Mounting rack）

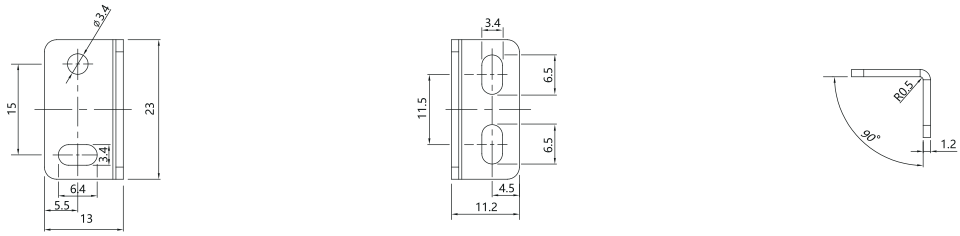


ZJP-9（PSS/PSM Mounting rack）

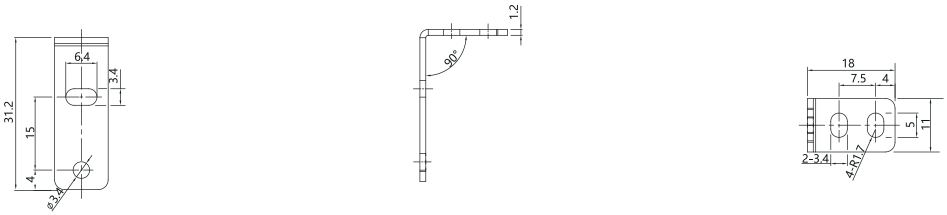


ZJP-10（PSS Mounting rack）

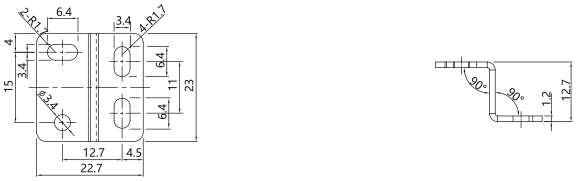
ZJP-11（PST Mounting rack）



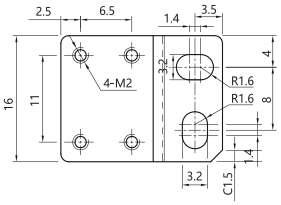
ZJP-12（PST Mounting rack）

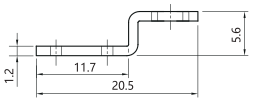


ZJP-13（PST Mounting rack）

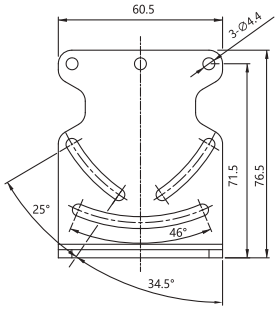


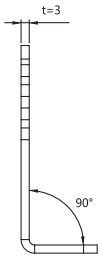
ZJP-14（PSV Mounting rack）

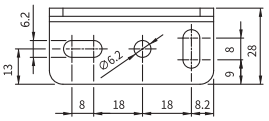




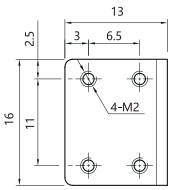
ZJP-15（PDA Mounting rack）

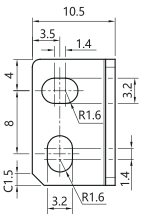


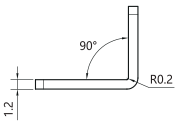




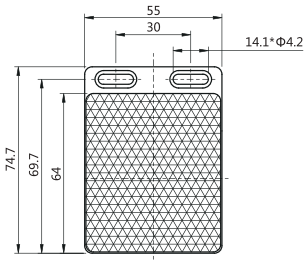
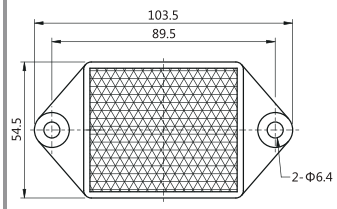
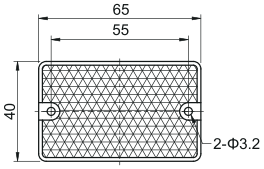
ZJP-16（PSV Mounting rack）

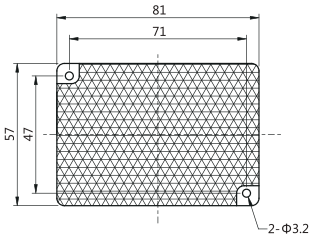
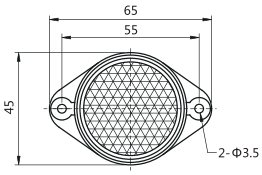
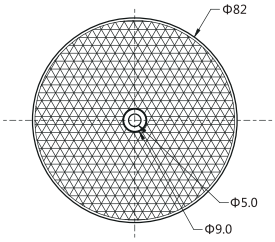


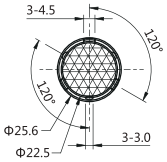
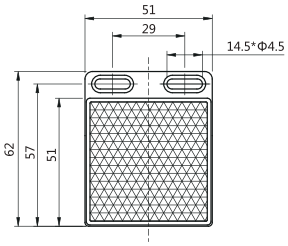
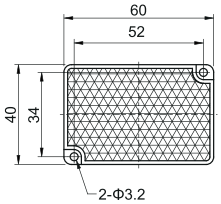


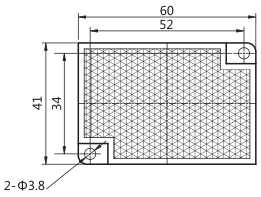
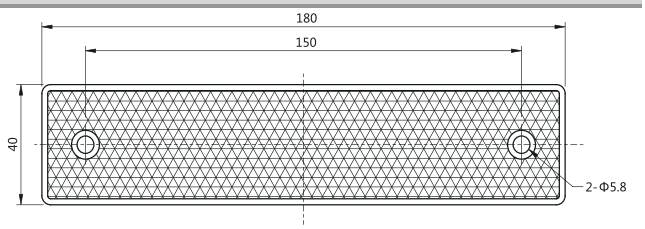


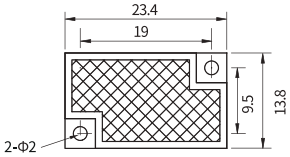
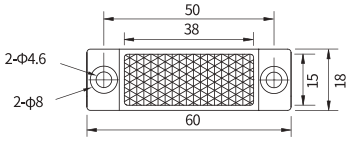
反光板 Reflector

产品型号 Item Code	TD-01	TD-01-3	TD-02
机械图 Dimensions			

产品型号 Item Code	TD-03	TD-04	TD-05
机械图 Dimensions			 适用型号*：PTL

产品型号 Item Code	STD-06	TD-08	TD-09
机械图 Dimensions			 适用型号*：PR18, PR18S, PR30, PTF, PSC, PTE, PSE

产品型号 Item Code	TD-09A	TD-10
机械图 Dimensions	 适用型号*：PSG	

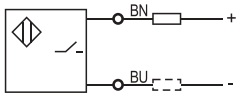
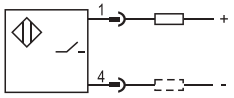
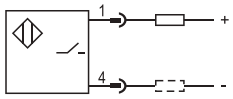
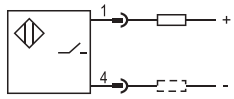
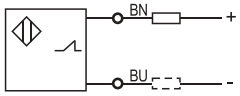
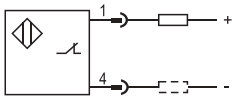
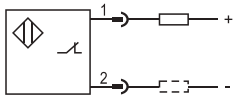
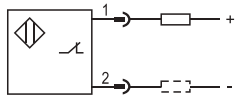
产品型号 Item Code	TD-11	TD-12
机械图 Dimensions		

*所示型号为该系列的偏振反射产品的标配反光板

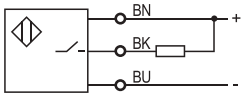
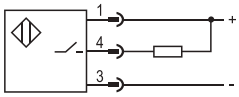
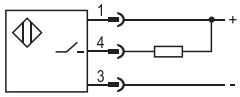
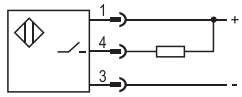
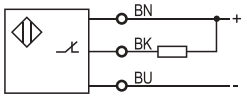
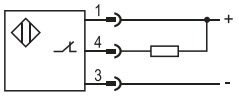
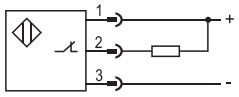
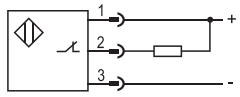
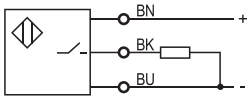
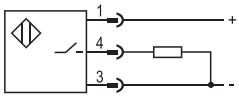
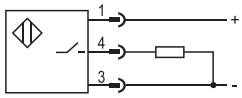
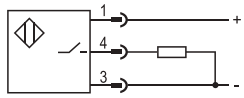
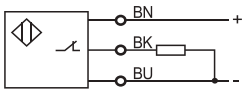
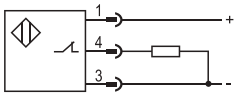
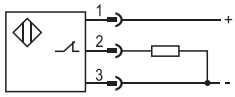
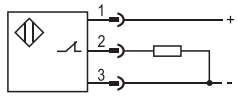
* Refers to the standard reflector of polarized reflection series

电感式/电容式传感器接线图 Inductive/Capacitive sensors wiring diagram

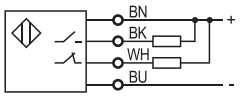
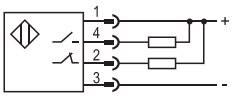
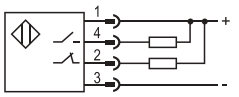
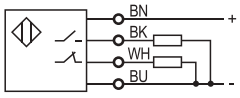
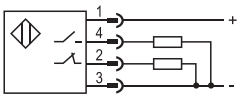
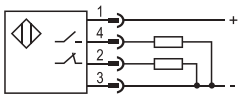
DC 2线 DC 2 Wires

	引线式 Cable type	M8 连接器 M8 Connector	M12 连接器 M12 Connector	端子连接 Terminal connect
NO				
NC				

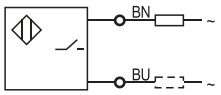
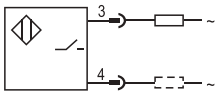
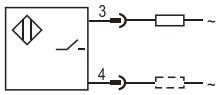
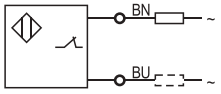
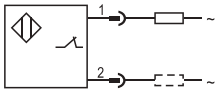
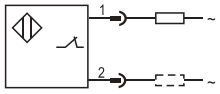
DC 3线 DC 3 Wires

	引线式 Cable type	M8 连接器 M8 Connector	M12 连接器 M12 Connector	端子连接 Terminal connect
NPN NO				
NPN NC				
PNP NO				
PNP NC				

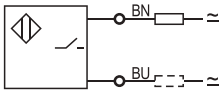
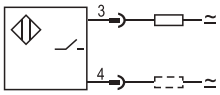
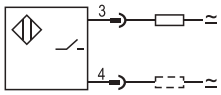
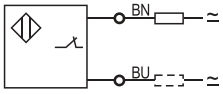
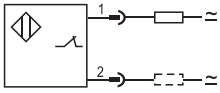
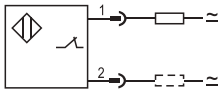
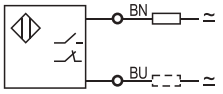
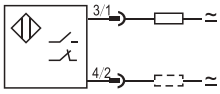
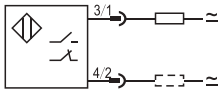
DC 4线 DC 4 Wires

	引线式 Cable type	M12 连接器 M12 Connector	端子连接 Terminal connect	
NPN NO+NC				
PNP NO+NC				

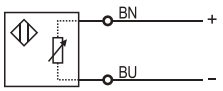
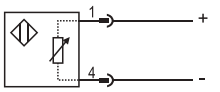
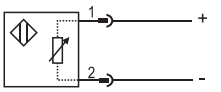
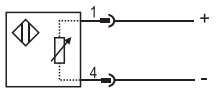
AC 2线 AC 2 Wires

	引线式 Cable type	M12 连接器 M12 Connector	端子连接 Terminal connect	
SCR NO				
SCR NC				

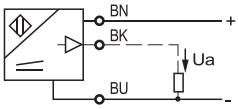
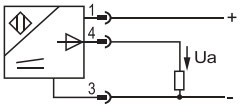
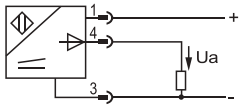
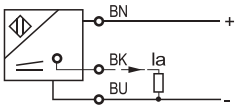
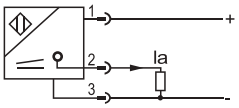
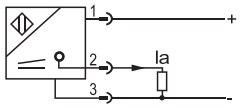
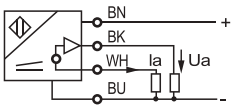
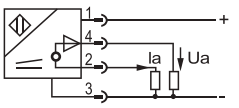
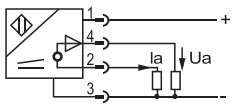
AC/DC 2线 AC/DC 2 Wires

	引线式 Cable type	M12 连接器 M12 Connector	端子连接 Terminal connect	
NO				
NC				
NO/NC				

本质安全型 NAMUR

	引线式 Cable type	M8 连接器 M8 Connector	M12 连接器 M12 Connector	端子连接 Terminal connect
				

模拟量输出型 Analog output

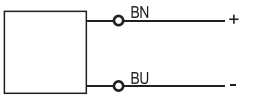
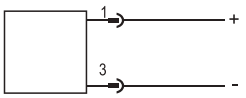
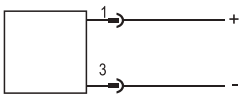
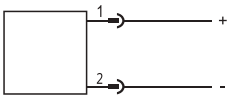
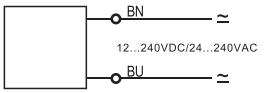
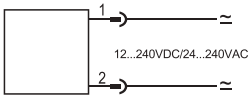
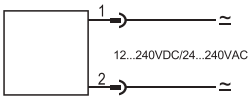
	引线式 Cable type	M12 连接器 M12 Connector	端子连接 Terminal connect	
3线式电压输出 3 Wires Voltage output				
3线式电流输出 3 Wires Current output				
4线式电压/电流输出 4 Wires Voltage/current output				

连接器 Connector

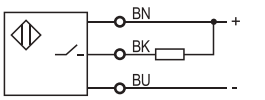
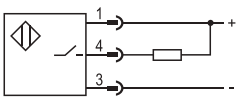
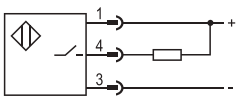
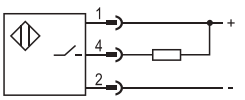
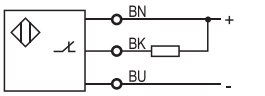
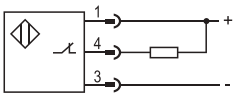
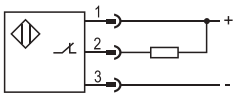
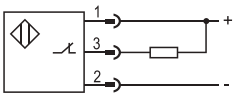
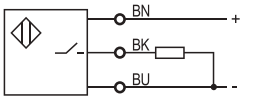
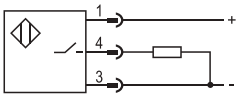
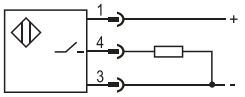
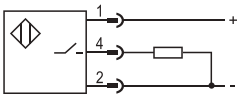
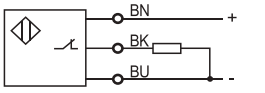
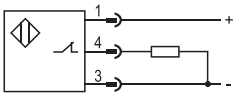
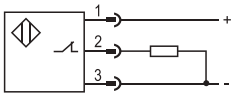
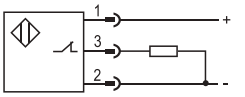
	M8(E1)连接器 M8 Connector	M12(E2)连接器 M12 Connector	M8(E3)连接器 M8 Connector	

光电式传感器接线图 Photoelectric sensors wiring diagram

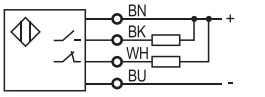
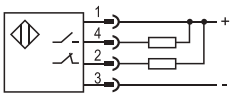
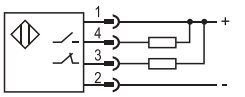
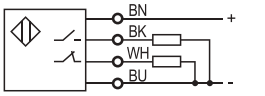
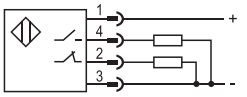
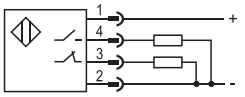
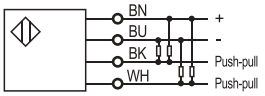
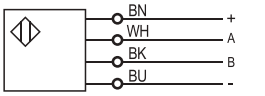
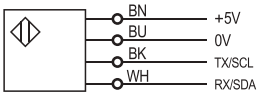
发射器 Emitter

	引线式 Cable type	M8连接器 M8 Connector	M12 连接器 M12 Connector	端子连接 Terminal connect
DC				
AC/DC				

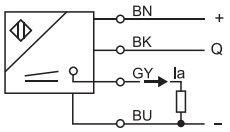
DC 3线 DC 3 Wires

	引线式 Cable type	M8连接器 M8 Connector	M12 连接器 M12 Connector	端子连接 Terminal connect
NPN NO				
NPN NC				
PNP NO				
PNP NC				

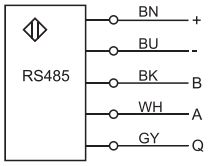
DC 4线 DC 4 Wires

	引线式 Cable type	M12 连接器 M12 Connector	端子连接 Terminal connect	
NPN NO+NC				
PNP NO+NC				
Push-pull				
RS485				
UART/IIC				

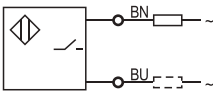
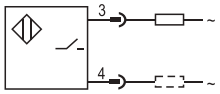
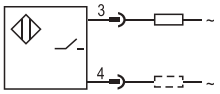
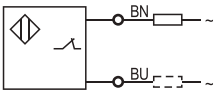
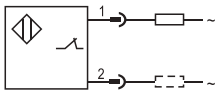
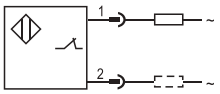
DC 4线 DC 4 Wires

	引线式 Cable type			
模拟量4...20mA Analog 4...20mA				

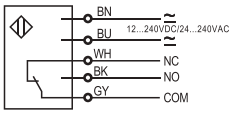
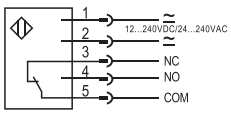
DC 5线 DC 5 Wires

	引线式 Cable type			
RS485				

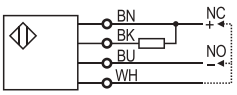
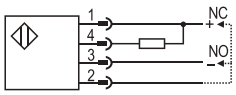
AC 2线 AC 2 Wires

	引线式 Cable type	M12 连接器 M12 Connector	端子连接 Terminal connect	
SCR NO				
SCR NC				

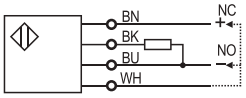
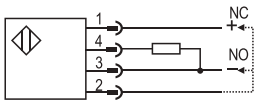
AC/DC 5线 AC/DC 5 Wires

	引线式 Cable type	端子连接 Terminal connect		
继电器 Relay				

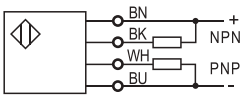
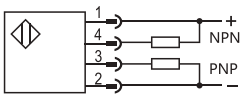
NPN

	引线式 Cable type	M12 连接器 M12 Connector		
NO/NC 可选 NO/NC Optional				

PNP

	引线式 Cable type	M12 连接器 M12 Connector		
NO/NC 可选 NO/NC Optional				

NPN+PNP

	引线式 Cable type	M12 连接器 M12 Connector		
				

连接器 Connector

	M8(E1)连接器 M8 Connector	M12(E2)连接器 M12 Connector	M8(E3)连接器 M8 Connector	M12(E5)连接器 M12 Connector

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