

Plastic square shape photoelectric sensors PSE series



Feature description

- Universal housing, an ideal replacement for a wide range of sensor types;
- IP67, suitable for harsh environments;
- Product 485 output interface
- Using TOF principle, the difference between black and white of the product is small, and the detection is stable



Model specification

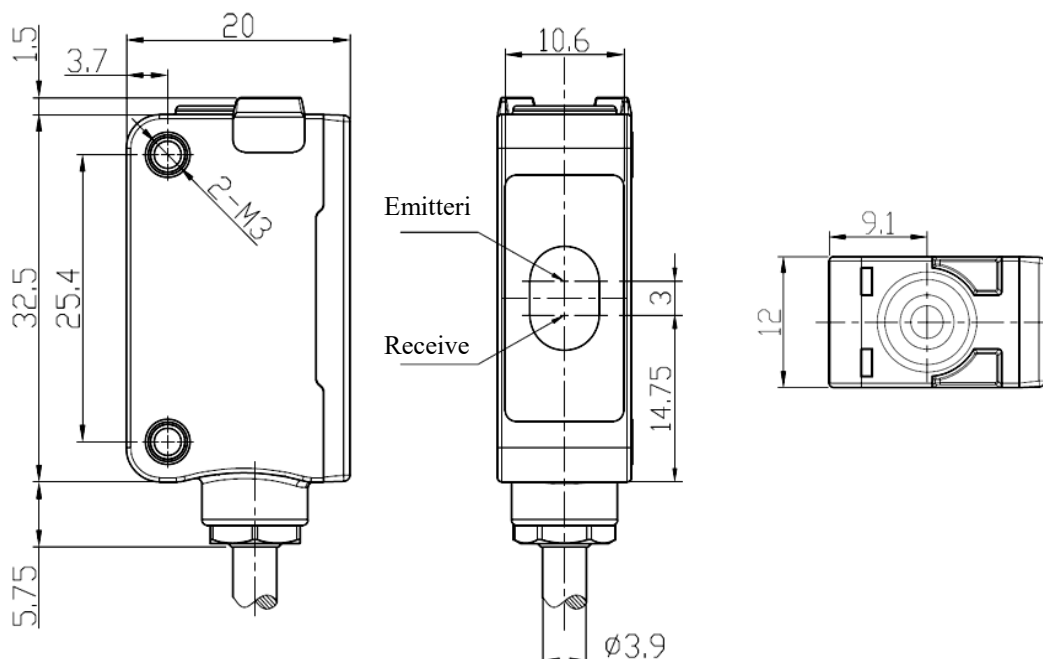
RS485	PSE-CM3DR
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Specifications

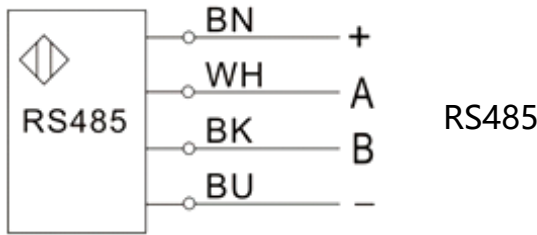
Detection range	0.02...3m	Ambient temperature	-20...55°C
Repeat accuracy	Within $\pm 1\text{cm}$ (2~30cm); $\leq 1\%$ (30cm~300cm)	Temperature range	35%...85%(No condensation)
Detection accuracy	Within $\pm 3\text{cm}$ (2~30cm); $\leq 2\%$ (30cm~300cm)	withstand voltage	1000V/AC 50/60Hz 60s
Response time	35ms	Anti-ambient light	Sunshine $\leq 10\,000\text{Lx}$, Incandescent $\leq 3\,000\text{Lx}$, Fluorescent lamp $\leq 1000\text{Lx}$
Divergence angle	$\pm 2^\circ$	Protection degree	IP67
Resolution	1mm	Electromagnetic compatibility	IEC60947-5-2
Color sensitivity	< 10%	Material	PC+ABS
Output type	RS485	Connection	0.5m PVC cable
Supply voltage	10...30VDC	Accessory	Mounting bracket ZJP-8
Consumption current	$\leq 40\text{ mA}$		
Indicator	Green LED: power		

Note: Power-on initialization time <3ms

Dimensions



Wiring diagram



Communication instruction(Only for RS485)

- ◆Baud rate:115200(default) ◆Parity check:None ◆Data bits:8
- ◆Stop bit:1 ◆Slave default address:0x80

Note:The default address is 0x80.Different slave addresses or different baud rates will have different redundancy checks.

1.Command to read distance information

Master station request message format:

Slave address	Function code	Data start address		The amount of data (Unit:Word)		Redundancy check	
		D8	D9	MSB	LSB	LSB	MSB
80	03	D8	D9	MSB	LSB	LSB	MSB

Slave station response message format:

Slave address	Function code	Bytes	Data		Redundancy check	
			MSB	LSB	LSB	MSB
80	03	02	MSB	LSB	LSB	MSB

For example:

Master request:80 03 D8 D9 00 01 71 40

Slave response:80 03 02 4E 20 B0 22

Distance=0x4E*256+0x20=20000(Decimal,unit:mm)

When the response data from the slave station is 0xFFFF, it means that the current product is in over-range or low signal strength, This distance information is not available, and it is recommended to shield it.

2.Modified address command

Master station request message format:

Slave address	Function code	Address where data is stored		Modify value	Redundancy check		
		00	01		Slave address	LSB	MSB
1 bytes	06	00	01	00	Slave address	LSB	MSB

Slave station response message format:

Slave address	Function code	Address where data is stored		Modify value	Redundancy check		
		00	01		Slave address	LSB	MSB
1 bytes	06	00	01	00	Slave address	LSB	MSB

Note:The valid range of address setting is 0x80...0xF4, and the modified address takes effect after powering on.

If the modified address is out of range, the modification is invalid.

Return error command as follows:

Slave address	Function code	Error code	Redundancy check	
1 bytes	86H	02	LSB	MSB

Slave address	Function code	Error code	Redundancy check	
1 bytes	86H	02	LSB	MSB

For example:

To change the slave address from the default 0x80 to 0x85:

Master request:80 06 00 01 00 85 07 B8

Slave response:80 06 00 01 00 85 07 B8(Modification suces)

Or response:80 86 02 93 89(Wanted address is invalid)

Power on again to finish the modification.

3.Check/Read the address of slave station

Master station request message format:

Slave address	Function code	Data start address		The amount of data (Unit:Word)		Redundancy check	
F5	03	00	01	00	01	C0	BE

Slave station response message format:

Slave address	Function code	Bytes	Data		Redundancy check	
F5	03	02	00	Slave address	LSB	MSB

0xF5—broadcast address

For example:master request:F5 03 00 01 00 01 C0 BE

slave response:F5 03 02 01 00 80 08 31

Hence the slave address is 0x80

4.Modify the baud rate

Master station request message format:

Slave address	Function code	Data start address		The amount of data (Unit:Word)		Redundancy check	
1 bytes	06	00	55	MSB	LSB	LSB	MSB

Modify the LSB bit of the value:baud rate setting MSB defaults to 00

115200	57600	38400	19200	9600
01	02	03	04	05

Slave station response message format:

Slave address	Function code	Data start address		Modify value		Redundancy check	
1 bytes	06	MSB	LSB	MSB	LSB	LSB	MSB

Note:The slave baud rate defaults to 0x01(115200),and the baud rate setting has a valid range ftom 0x01~0x05.

If it is not in this range,the operation will be invalid. After power on again,the baud rate modification will take effect.

Return operation error instruction are as follows:

Slave address	Function code	Error code	Redundancy check	
1 bytes	86	02	LSB	MSB