

OSM40 High Precision Laser Distance Sensor

INSTRUCTION MANUAL



Detection mode	Type	Sensing range	Beam	Output	Connection	Wiring diagram
	OSM40-KL800CBLIW6Q12.1	150mm~800mm	LASER	NPN /PNP IOUT:4~20mA XUVW	M12 Connector	Fig1

Technical Specification

Electrical

Power supply	10...30VDC
Power Consumption	<1W
Measurement center distance	400mm
Measurement range	150mm~800mm
Repeatability *1	0.5mm (150mm~400mm) 1mm (400mm~600mm) 3mm (600mm~800mm)
Linearity	±0.2%F.S.(150mm~400mm) ±0.3%F.S.(400mm~600mm) ±0.5%F.S.(600mm~800mm)
Light source	Red semiconductor laser 2. 655nm
Beam diameter	1mm@150mm 2mm@600mm
Control output	NPN/PNP
Analog output	4~20mA
Response time	10ms/5ms/1.5ms

Environmental

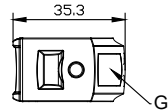
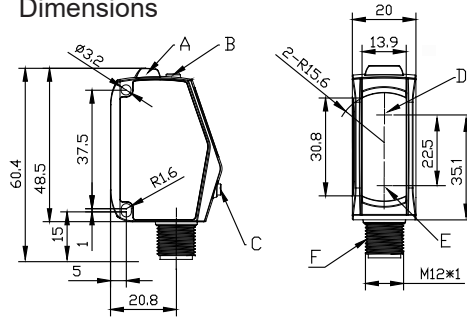
Ambient temperature	-20℃ ...60℃
Ambient illuminance	under 3000lux

Protection IP67

Mechanical

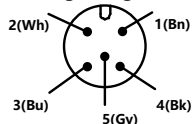
Housing material	316L
Windows material	PMMA
Connections	M12 Connector

Dimensions



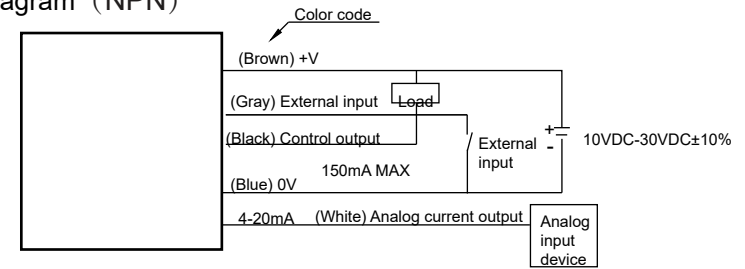
- A alarm Indicator
- B Function setting key
- C Function adjustment key
- D Transmitter
- E Receiver
- F M12*1 Connector
- G Display screen

Wiring diagram

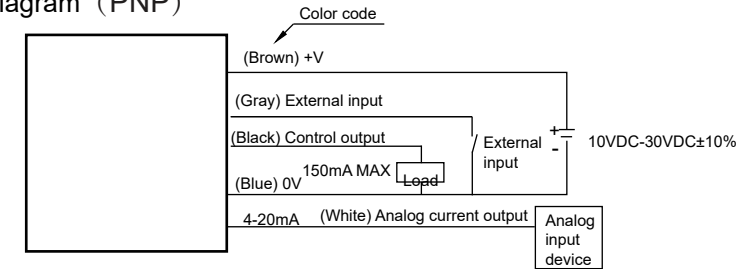


	Harness color	Function
1	Brown	Positive power supply
2	White	Current output
3	Blue	Power negative
4	Black	NPN/PNP
5	Gray	External input

Wiring diagram (NPN)



Wiring diagram (PNP)



External connection example

Fig1

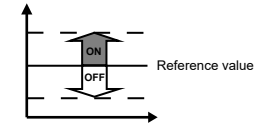
Teaching

Sensing mode illustrate:

Preset "sensing mode setting" to the corresponding function mode in menu.

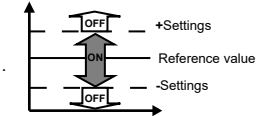
1. Normal sensing mode

Press the TEACH Key in the sensing object present condition.



2. 1-point teaching

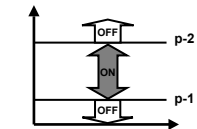
Press the TEACH Key in the sensing object present condition.



3. 2-point teaching

① Press the TEACH Key in the sensing object p-1 present condition.

② Press the TEACH Key in the sensing object p-2 present condition.

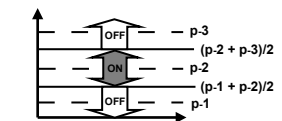


4. 3-point teaching

① Press the TEACH Key in the sensing object p-1 present condition.

② Press the TEACH Key in the sensing object p-2 present condition.

③ Press the TEACH Key in the sensing object p-3 present condition.

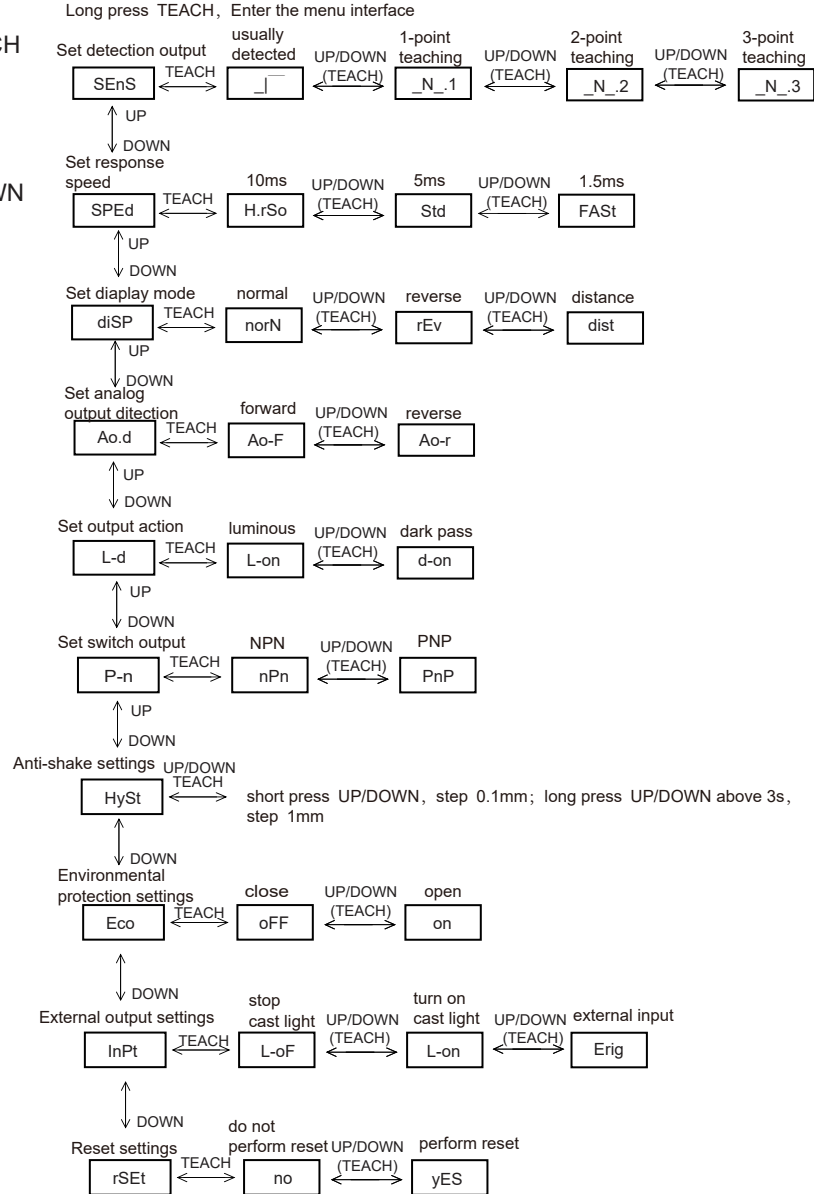
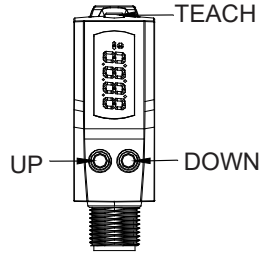


*1: This is a laser product, it should be used after warming up for ten minutes.

OSM40 High Precision Laser Distance Sensor

OPERATION GUIDE

STEP



1.Ranging diaspay

Measurement interface: Show actual measurement distance, resolution is 0.1mm, when the distance is out of detected distance,it diaspays“----”.

2.Menu and key operation

2.1 Enter the menu: Long pressTEACH above 3s when it is in the measurement interface, enter the menu interface;

Exit menu: Long pressTEACH above 3s when it is in the menu interface, or no key operation for 20s, return to measurement interface.

2.2 Menu operation

Enter the menu interface,diaspay the main menu,switch the menu options by pressing the up/down key. On the main menu interface,enter the submenu options by short pressing TEACH key.Under the submenu, short press up/down to select the parameter.Short press the TEACH key to confirm and return to the previous main menu.

1)Set detection output

The main menu shows “SEnS”, press TEACH to enter the submenu;

Submenu items: “_” usually detected mode (default); “_N_1” 1-point teaching window comparison mode; “_N_2” 2-point teaching window comparison mode; “_N_3” 3-point teaching window comparison mode.

When teaching window comparison mode at 1-point,short press the TEACH key to enter the window size setting interface;the initial value is 0.5mm,press up/down to adjust the window size parameter,step 0.5mm,long press up/down for more than 3s,step 5mm.

After selecting the teaching mode,you can teach on the measurement interface.If the teaching succeeds,“good” will be displayed;if the teaching fails,“Fail” will be displayed.

Please refer to the specific mode description for the above 3 teaching modes.

2)Set response speed:

The main menu shows“SPEd”, press TEACH to enter the submenu;

Submenu items: “H.rSo” high precision 10ms; “Std” standard 5ms;

“FAST” high speed 1.5ms (default);

3)Set diaspay mode

The main menu shows “diSP”, press TEACH to enter the submenu;

Submenu items: “norN”normal displacement mode (default); “rEv”reverse displacement mode; “dist”distance mode.

4)Set analog output dition

The main menu shows “Ao.d”, press TEACH to enter the submenu;

Submenu items: “Ao-F” forward (default); “Ao-r” reverse.

5)Set output action

The main menu shows “L-d”, press TEACH to enter the submenu;

Submenu items: “L-on” luminous (default); “d-on” dark pass;

6)Set switch output

The main menu shows “P-n”, press TEACH to enter the submenu;

Submenu items: “nPn” NPN output mode (default); “PnP” PNP output mode.

7)Anti-shake settings

The main menu shows “HySt”, press TEACH to enter the submenu;

Submenu initial diaspay “0.1”,0.1mm is hysteresis distance, short press UP/DOWN, step 0.1mm; long press UP/DOWN above 3s, step 1mm。Setting range is 0~5mm, initial value is 3mm。

8)Environmental protection settings

The main menu shows “Eco”, press TEACH to enter the submenu;

Environmental protection function note: After the function is turned on,the LED will automatically turn off the display in 30s without any button.

9)External output settings

The main menu shows “InPt”, press TEACH to enter the submenu;

Submenu items: “L-oF” stop cast light; “L-on” turn on cast light; “Erig” external input (default);

External input note: When the external input is low,stop cast light, no external input,default turn on cast light.

10)Reset settings

The main menu shows “rSEt”, press TEACH to enter the submenu;

Submenu items: “no” do not perform reset; “yES” perform reset, restore default settings.

2.3 Key lock function

On the measurement interface, both press TEACH and DOWN key for above 3s, interface display“Lc.on”, the key lock, menu function failure, automatic return to the measurement interface after a delay of 3s.both press TEACH and DOWN key for above 3s again, interface display“Lc.oF”, key function recovery, automatic return to the measurement interface after a delay of 3s.