OSM40 HIGH PRECISION LASER DISTANCE SENSOR

ELCO INDUSTRIAL AUTOMATION

Product Description

- Laser displacement sensor ,655nm laser source,FULL Metal JACKET,durable,better protective performance,small lignt spot,high precision,LED display and key setting,and rich interfaces.Suitable for pharmaceutical,packing,automobile non-standard equipment and other applications.



Product features:

- Short,medium and long distances are available.
- Support switch output,NPN/PNP can be set.
- Support analog output,current output/voltage output can be set.
- Support laser light source control through external input.
- Support ECO mode setting.
- LED display+Teaching function
- Strong ambient light resistance and compact size
- Support multiple detection modes,multi-scene applications.

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PROXIMITY SWITCH
E326357

CE

Type	Measurement range	Measurement center distance	Beam diameter	Repeatability	Linearity	Resolution
OSM40-KL35CBLIU6*M	25...35mm	30mm	0.2mm @50mm	10μm	±0.1%F.S.	0.001mm
OSM40-KL35CBLIU6-*-Q12.1						
OSM40-KL70CBLIU6*M	35...70mm	50mm	0.5mm @50mm	30μm	±0.1%F.S.	0.01mm
OSM40-KL70CBLIU6-*-Q12.1						
OSM40-KL160CBLIU6*M	60...160mm	100mm	0.5mm @100mm	70μm	±0.1%F.S.	0.01mm
OSM40-KL160CBLIU6-*-Q12.1						
OSM40-KL300CBLIU6*M	100...300mm	200mm	1mm @200mm	200μm	±0.2%F.S.	0.1mm
OSM40-KL300CBLIU6-*-Q12.1						
OSM40-KL800CBLIU6*M	150...800mm	400mm	1mm @150mm 2mm @600mm	0.5mm(≤400mm) 1mm(≤600mm) 3mm(≤800mm)	±0.2%F.S.(≤400mm) ±0.3%F.S.(≤600mm) ±0.5%F.S.(≤800mm)	0.1mm
OSM40-KL800CBLIU6-*-Q12.1						
OSM40-KL1000CBLIU6*M	110 ...1000mm	200mm	1mm @150mm 2mm @600mm	1mm(＜400mm) 5mm(＜1000mm) 20mm(＜2000mm)	±0.2%F.S. (150mm~600mm) ±0.5%F.S. (600mm~1000mm) ±1.5%F.S. (1000~2000mm)	1mm
OSM40-KL1000CBLIU6 -*-Q12.1						
OSM40-KL2000CBLIU6*M	150 ...2000mm	400mm	1mm @150mm 2mm @600mm			
OSM40-KL2000CBLIU6 -*-Q12.1						

Note 1: This product is a laser product, which can be used after 10 minutes of preheating after power-on.
Note 2: * M refers to the cable length in meters. If there is no * M in the model,the default cable length is 2 meters.
For pigtail products, * represents the cable length in meters. If there is no Wei connector product

OSM40 HIGH PRECISION LASER DISTANCE SENSOR

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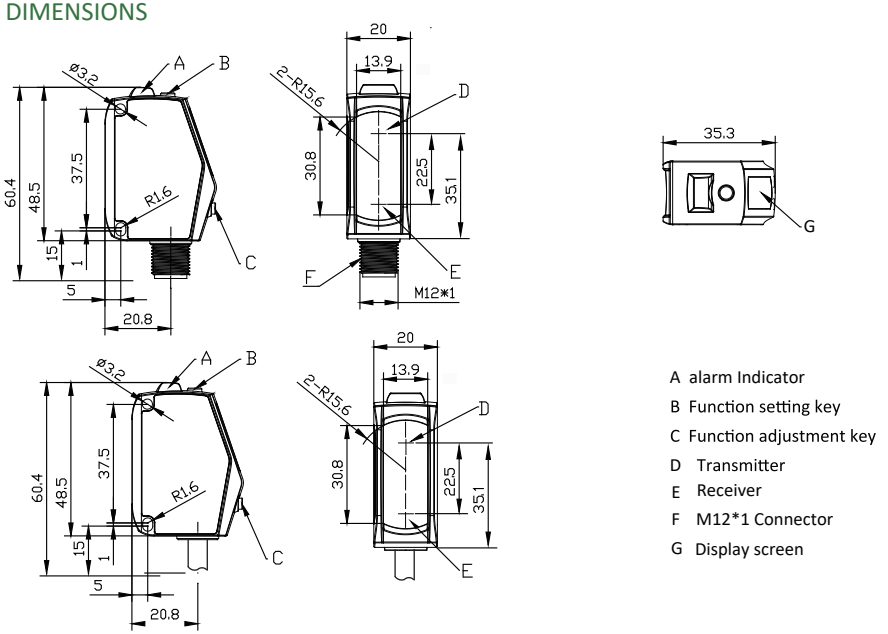
TECHNICAL SPECIFICATION

OPERATING VOLTAGE	10...30VDC, Class2	**WORKING TEMPERATURE**	-10°C ... +50°C
POWER SUPPLY	<1W	**AMBIENT ILLUMINANCE**	under 3000lux
LIGHT SOURCE TYPE	Laser class 2, 655nm	**PROTECTION DEGREE**	IP67
CONTROL OUTPUT	NPN/PNP can be set	**HOUSING MATERIAL**	316L
ANALOG OUTPUT	current: 4~20mA (beyond,0mA) Load resistance ≤ 300Ω voltage: 0~5V（beyond,5.2V） 0~10V（beyond,10.2V） Load resistance ≥ 10kΩ	**WINDOWS MATERIAL**	glass
		CONNECTIONS	M12 Connector /Cable/pigtail
RESPONSE TIME	15ms/5ms/1.5ms	**LASER LABEL**	pasting on packing bag
		MAINTAIN	disassemble; please return to ELCO
		MAXIMUM HUMIDITY	Max.85%Rh
		Altitude	Up to 2000m
		Pollution degree	3



DIMENSIONS



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

OSM40高精度位移传感器

产品说明:

- 激光位移传感器，655nm激光光源，全金属外壳，坚固耐用，防护性能更好，体积小，光斑小，精度高，LED显示和按键设置，接口丰富。适用制药、包装、汽车、非标设备等应用



产品特点:

- 短、中、长三种检测距离可选
- 支持开关量输出，NPN/PNP可设定
- 支持模拟量输出，电流输出/电压输出可设定
- 支持激光光源通过外部输入控制
- 支持ECO模式设定
- LED显示+示教功能
- 抗环境光能力强，紧凑尺寸
- 支持多种检测模式，多场景应用

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PROXIMITY SWITCH
E326357

CE

型号	检测距离	测量中心距离	光束直径	重复精度	线性度	分辨率
OSM40-KL35CBLIU6*M	25...35mm	30mm	0.2mm@50mm	10μm	±0.1%F.S.	0.001mm
OSM40-KL35CBLIU6 -*-Q12.1						
OSM40-KL70CBLIU6*M	35...70mm	50mm	0.5mm@50mm	30μm	±0.1%F.S.	0.01mm
OSM40-KL70CBLIU6 -*-Q12.1						
OSM40-KL160CBLIU6*M	60...160mm	100mm	0.5mm@ 100mm	70μm	±0.1%F.S.	0.01mm
OSM40-KL160CBLIU6 -*-Q12.1						
OSM40-KL300CBLIU6*M	100...300mm	200mm	1mm@200mm	200μm	±0.2%F.S.	0.1mm
OSM40-KL300CBLIU6 -*-Q12.1						
OSM40-KL800CBLIU6*M	150...800mm	400mm	1mm@150mm 2mm@600mm	0.5mm(≤400mm) 1mm(≤600mm) 3mm(≤800mm)	±0.2%F.S.(≤400mm) ±0.3%F.S.(≤600mm) ±0.5%F.S.(≤800mm)	0.1mm
OSM40-KL800CBLIU6 -*-Q12.1						
OSM40-KL1000CBLIU6*M	110 ...1000mm	200mm	1mm@150mm 2mm@600mm	1mm(＜400mm) 5mm(＜1000mm) 20mm(＜2000mm)	±0.2%F.S. (150mm~600mm) ±0.5%F.S. (600mm~1000mm) ±1.5%F.S. (1000~2000mm)	1mm
OSM40-KL1000CBLIU6 -*-Q12.1						
OSM40-KL2000CBLIU6*M	150 ...2000mm	400mm	1mm@150mm 2mm@600mm			
OSM40-KL2000CBLIU6 -*-Q12.1						

注1：本产品为激光类产品，上电预热十分钟后使用。
注2：出线产品*M代表线长，如无为默认2M长度。pigtail产品*代表线长，单位为米，若无为接插件产品。

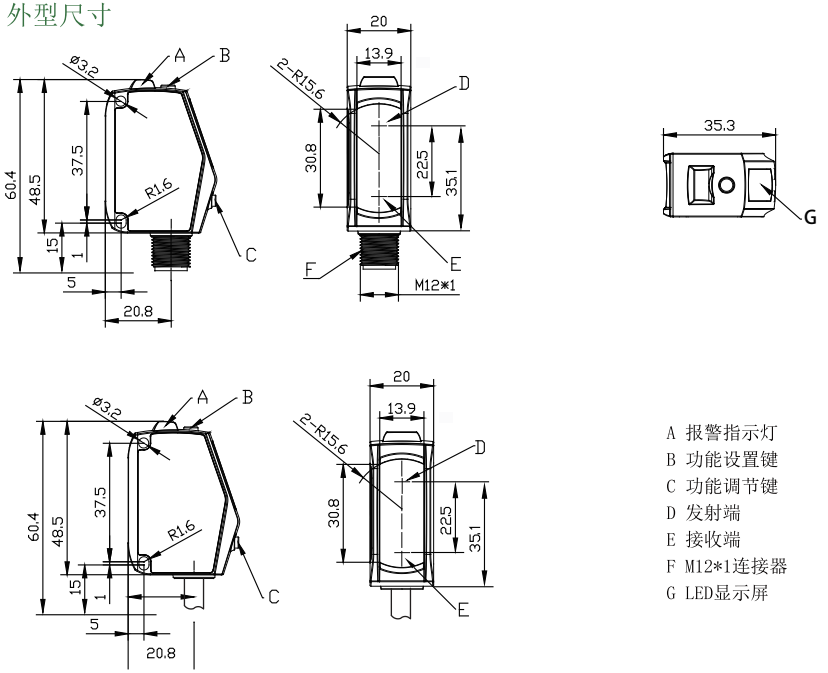
OSM40高精度位移传感器

技术参数

工作电压	10...30VDC, Class2	工作温度	-10°C ... +50°C
功率	＜1W	环境照度	3000lux以下
光源	激光Ⅱ级，655nm	防护等级	IP67
控制输出	NPN/PNP 可选	外壳	316L
模拟量输出	电流：4-20mA(超出时，0mA) 负载电阻≤300Ω 电压：0-5V(超出时，5.2V) 0-10 (超出时，10.2V) 负载电阻≥10kΩ	窗口	玻璃
		连接形式	线缆式/M12连接器/pigtail
反应时间	15ms/ms/.5ms 可选	激光标签	包装袋粘贴
		维护信息	异常返厂宜科处理
		最高湿度	最高85%相对湿度
		海拔	高达2000米
		污染程度	三级



外型尺寸

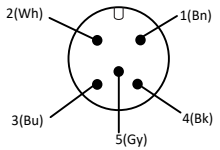


A 报警指示灯
B 功能设置键
C 功能调节键
D 发射端
E 接收端
F M12*1连接器
G LED显示屏

INTERFACE DEFINITION AND WIRING DIAGRAM

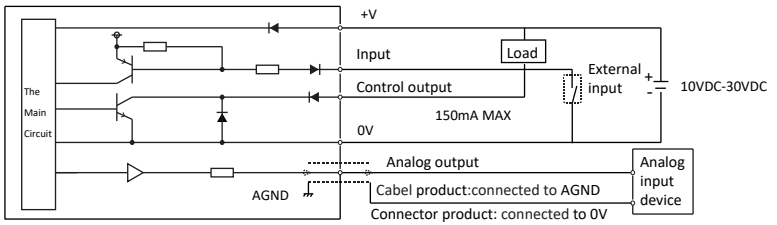
	Function	Cabel product core color
1	Positive power supply	Brown
2	Analog output	Gray
3	Power negative	Blue
4	NPN/PNP	Black
5	External input/set to 0	Pink
6	AGND	Shielded wire

Connector wiring diagram

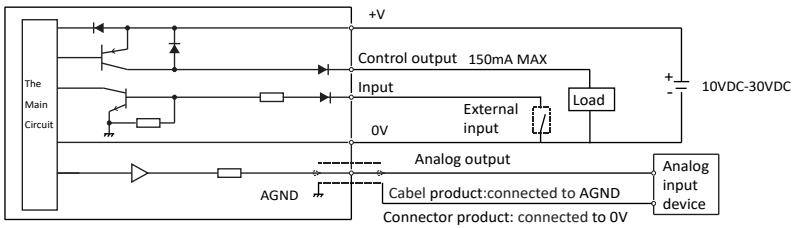


	Function	Connector product core color
1	Positive power supply	Brown
2	Analog output	White
3	Power negative	Blue
4	NPN/PNP	Black
5	External input/set to 0	Gray

Wiring diagram（NPN）



Wiring diagram（PNP）



SAFETY PRECAUTIONS

⚠DANGEROUS	This product is for the purpose of object detection only.Do not use this product for the purpose of protecting human body or human body parts.This product should not be used as an explosion-proof product.Do not use this product in dangerous places or in the enviroment of potentially explosive gases. Failure to use the control or adjustment device or perform the steps in accordance with this regulation may result in harmful radiation exposure. Ce produit est à des fins de détection d' objets seulement.N' utilisez pas ce produit dans le but de protéger le corps humain ou des parties du corps humain.Ce produit ne doit pas être utilisé comme produit antidéflagrant.Ne pas utiliser ce produit dans des endroits dangereux ou dans l' environnement de gaz potentiellement explosifs. La non-utilisation du dispositif de commande ou de réglage ou l' exécution des étapes conformément au présent règlement peut entrainer une exposition aux rayonnements nocifs.
⚠ WARN	This product is a sensor with DC power supply.Please do not apply AC power supply.If AC voltage applied,the product may explode or catch fire. Ce produit est un capteur avec alimentation cc.Veuillez ne pas appliquer d' alimentation en courant alternatif.En cas de tension,le produit peut exploser ou prendre feu.
NOTICE	Do not use the same wiring with the power cord and high-voltage line,otherwise the mainmodule may fail or be damaged due to noise.When using a commercially available switching regulator,be sure to ground the housingground terminal and the ground terminal. Please do not use this product outdoors. N'utilisez pas le même câblage avec le cordon d'alimentation et la ligne à haute tension,sinon le module principal peut tomber en panne ou être endommagé en raison du bruit.Lorsque vous utilisez un régulateur de commutation disponible dans le commerce,assurez-vous de mettre à la terre le terminal d'habitation et le terminal de terre.Veuillez ne pas utiliser ce produit à l'extérieur.

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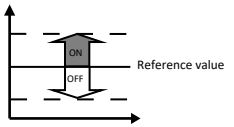
TEACHING MODE DESCRIPTION

Teach

Detection mode setting description：
It is necessary to set the "Detection Mode Setting"in the menu to the corresponding function mode in advance.

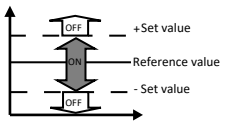
1. Normal detection mode

In the menu，select the "__|‾‾" mode,automatically enter the detection interface;Select the target object(*) within the effective detection distance and press the TEACH key,and prompt "GOOD" to complete the setting.The location of the target object is the judgement distance.



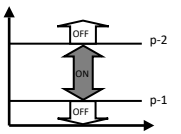
2. 1-point teaching window comparison mode

In the menu,select the "_N_.1"mode,first enter the wisdow size setting interface;The default setting value is 0.5mm,press UP/DOWN to adjust the window size setting value.Press the TEACH key to enter the measurement interface;within the effective measurement distance,select the target object(*), press TEACH key,prompt "GOOD",complete the setting.The position of the target object is the center,plus and minus setting value as window edge, and perform window mode judgement.



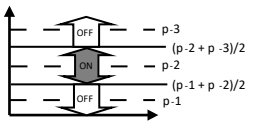
3. 2-point teaching window comparison mode

In the menu， select the "_N_.2" mode,automatically enter the measurement interface.Select the target object 1(*) within the effective detection distance and press the TEACH key,and prompt "LP1" to complete p-1 setting.Select the target object 2 (*)within the effective detection distance and press TEACH key,prompt "GOOD" to complete the p-2 setting.
Use the distance between the location of target object 1 and target object 2 as the window to determine the window mode.



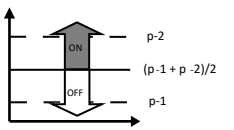
4. 3-point teaching window comparison mode

In the menu， select the "_N_.3" mode,automatically enter the measurement interface.Select the target object 1(*) within the effective detection distance and press the TEACH key,and prompt "LP1" to complete p-1 setting.Select the target object 2(*) within the effective detection distance and press TEACH key,prompt "LP2" to complete the p-2 setting.Select the target object 3(*) within the effective detection distance and press TEACH key,prompt "GOOD" to complete the p-3 setting.
Take the middle distance between p-1 and p-2 as window edge 1,and the middle distance between p-2 and p-3 as window edge 2,and perform window mode judgement.



5. midpoint teaching mode

In the menu， select the "Nid" mode,automatically enter the measurement interface.Select the target object 1(*) within the effective detection distance and press the TEACH key,and prompt "LP1" to complete p-1 setting.Select the target object 2(*) within the effective detection distance and press TEACH key,prompt "GOOD" to complete the p-2 setting.
Take the middle distance between p-1 and p-2 as the judgement distance.

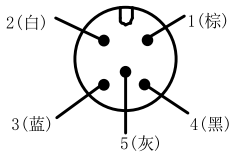


*Represents fine adjustment:After selecting the target object,you can fine-tune the distance of the target object with the UP/DOWN key,and then press the TEACH key to confirm.

接口定义和接线图

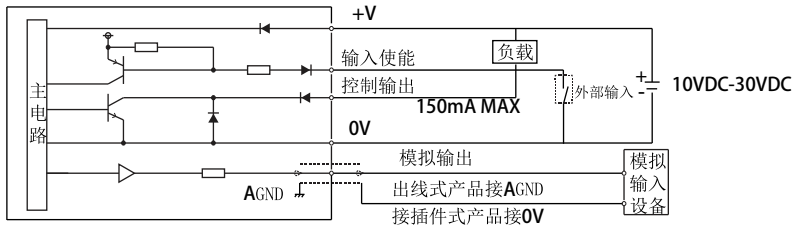
	功能	出线式线芯颜色
1	电源正	棕
2	模拟量输出	灰
3	电源负	蓝
4	NPN/PNP	黑
5	激光使能输入/置零	粉
6	AGND	屏蔽线

接插件接线图

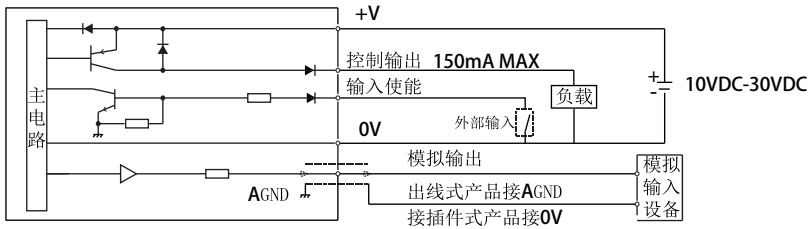


	功能	接插件式线芯颜色
1	电源正	棕
2	模拟量输出	白
3	电源负	蓝
4	NPN/PNP	黑
5	激光使能输入/置零	灰

接线图（NPN）



接线图（PNP）



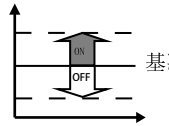
安全注意事项

▲危险	本产品仅用于物体检测。请勿将本产品用于保护人体或人体部位。本产品不得用作防爆产品。请勿在危险场所或可能存在爆炸性气体的环境中使用本产品。本装置控制或调节装置的未使用或未按本规定执行步骤，可能导致有害辐射暴露。未按照本规定使用控制或调节装置或未执行相应步骤，可能导致有害辐射暴露。
▲ 警告	该产品为直流电源传感器。请勿使用交流电源。如接入交流电压，产品可能会爆炸或起火。
通知	请不要将电源线与高压线路使用同一布线，否则主模块可能会因噪声而故障或损坏。在使用市售的开关稳压器时，请确保将外壳接地端子和地线端子接地。请勿在户外使用本产品。

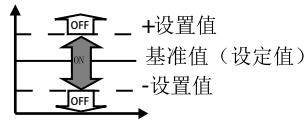
教导模式说明

教导
检测模式设定说明：
需事先在**Menu**中将“检测模式设定”设为对应功能模式。

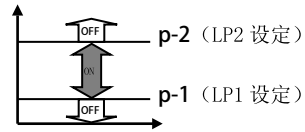
1.通常检测模式
在菜单中，选定“⎽⎽|‾‾”模式，自动进入测量界面；
在有效测量距离内，选定目标物体(*)，按**TEACH**键，提示“**GOOD**”，完成设置；目标物体所在位置即为判定距离。



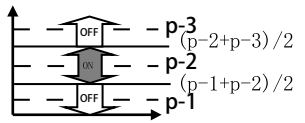
2. 1点教导模式
在菜单中，选定“_N_.1”模式，先进入窗口大小设置界面；
设置值默认为**0.5mm**，按UP/DOWN 调整窗口大小设置值，按**TEACH**键确认后进入测量界面；在有效测量距离内，选定目标物体(*)，按**TEACH**键，提示“**GOOD**”，完成设置；目标物体所在位置为中心，上下加减设置值为窗口，进行窗口模式判定；



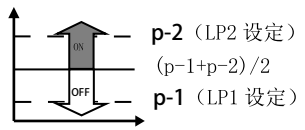
3. 2点教导模式
在菜单中，选定“_N_.2”模式，自动进入测量界面；
在有效测量距离内，选定目标物体1(*)，按**TEACH**键，
提示“LP1”，完成**p-1**设定；
在有效测量距离内，选定目标物体2(*)，按**TEACH**键，
提示“**GOOD**”，完成**p-2**设定；
以目标物体**1**和目标物体**2**所在位置之间的距离为窗口，
进行窗口模式判定；



4. 3点教导模式
在菜单中，选定“_N_.3”模式，自动进入测量界面；
在有效测量距离内，选定目标物体1(*)，按**TEACH**键，
提示“LP1”，完成**p-1**设定；
在有效测量距离内，选定目标物体2(*)，按**TEACH**键，
提示“LP2”，完成**p-2**设定；
在有效测量距离内，选定目标物体3(*)，按**TEACH**键，
提示“**GOOD**”，完成**p-3**设定；
以**p-1**和**p-2**的中间距离为窗口边沿**1**，以**p-2**和**p-3**的中间距离为窗口边沿**2**，进行窗口模式判定；



5. 中点教导模式
在菜单中，选定“Nid”模式，自动进入测量界面；
在有效测量距离内，选定目标物体1(*)，按**TEACH**键，
提示“LP1”，完成**p-1**设定；
在有效测量距离内，选定目标物体2(*)，按**TEACH**键，
提示“**GOOD**”，完成**p-2**设定；
以**p-1**和**p-2**的中间距离为为判定距离；

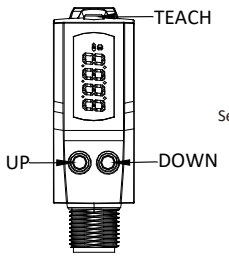


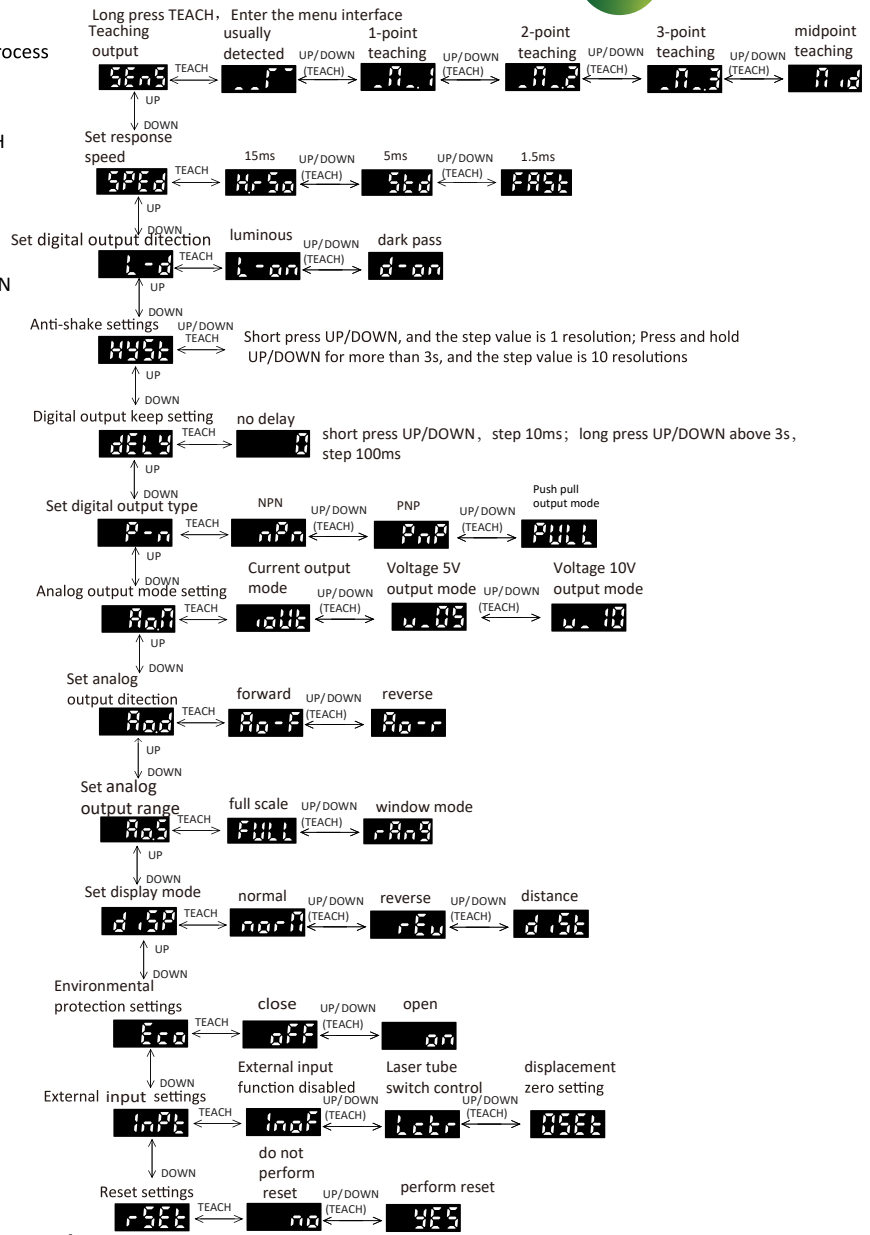
*代表微调：在选定目标物体后，可通过UP/DOWN键微调目标物体距离，之后再按TEACH键确定。

INSTRUCTION

1.Menu operation process

STEP





2.Description of button reset function

1) Simultaneously press and hold the UP and DOWN keys to reset the button to zero;

2) When no reset operation has been performed (key reset operation or external input trigger) and the current display mode is not distance mode, long press and hold the UP and DOWN keys,Then set the current detection position to the displacement zero point, and the red indicator light in the LED display screen remains constant;

3) When a reset operation has been performed (key reset operation or external input trigger), long press and hold the UP and DOWN keys again to restore the displacement zero point, and the LED displays The red indicator light in the screen is off;

4) When the current display mode is distance mode or the measured value exceeds the actual range of the sensor, long press and hold the UP and DOWN keys, and the LED display screen will display "ErrO";

5) When the lock button is turned on, long press and hold the UP and DOWN keys, and the LED display screen will display "Loc";

OSM40 HIGH PRECISION LASER DISTANCE SENSOR

1.Ranging diaplay

Measurement interface：Show actual measurement distance，when the distance is out of detected distance,it diaplays“----”。

Display description:Take the center distance as 0 point,the distance less than the center is positive,the distance greater than the center is negative,and the displayed value is the offset value.

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,diaplay 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.Unter 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)Teaching 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。“nid”midpoint teaching mode.

The above teaching modes are detailed in 6.Teaching mode description.

2)Set response speed:

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

Submenu items：“H.rSo”high precision 15ms;“Std”standard 5ms（default）；“FASt”high speed 1.5ms；

3)Set digital output dirction

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

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

4)Anti-shake settings

The menu displays "HySt". Press TEACH to enter the submenu.

The initial display resolution of the submenu * 10 is the hysteresis distance. When pressing UP/DOWN briefly,

the step distance is 1 resolution;Press and hold the UP/DOWN key for more than 3s, and the step distance is 10 resolutions.

5)Digital output keep setting

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

Submenu initial diaplay“ 0”,no delay，short press UP/DOWN，step 10ms；long press UP/DOWN above 3s，step 100ms。

Setting range is 0~1000ms，initial value is 0ms。

6)Set digital output type

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

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

7)Analog output mode setting

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

Submenu items：“ioUt”current output mode（default）；“v_5v”voltage 5v output mode;“v_10v”voltage 10v output mode.

8)Set analog output dirction

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

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

Forward direction:short distance corresponds to small current/voltage,long distance corresponds to large current/voltage.The reverse is the opposite.

9)Set analog output range

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

Submenu items：“FULL”full scale mode（default）；“rAng”window mode。

When set to window mode,the analog output range can be set through the two-point teaching mode.

10)Set display 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.

11)Environmental protection settings

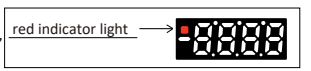
The main menu shows“ Eco”，press TEACH to enter the submenu;

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

12)External input settings

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

Submenu items：“InoF”External input function disabled（default）；“Lctr”laser tube switch control, turn on emission when there is no external input,and stop emission when the external input is low；“0SEt”displacement zero setting，external input connected to low level to trigger once，the current detection position is set as the displacement zero point,in this mode，the red indicator light on the display windoe is always on.The restoration of the displacement zero point is triggered again,and the red indicator light is off.



13)Reset settingsthe

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

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

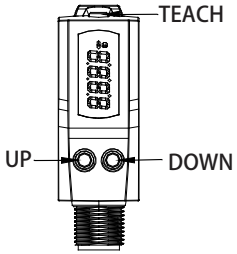
2.3 Key lock function

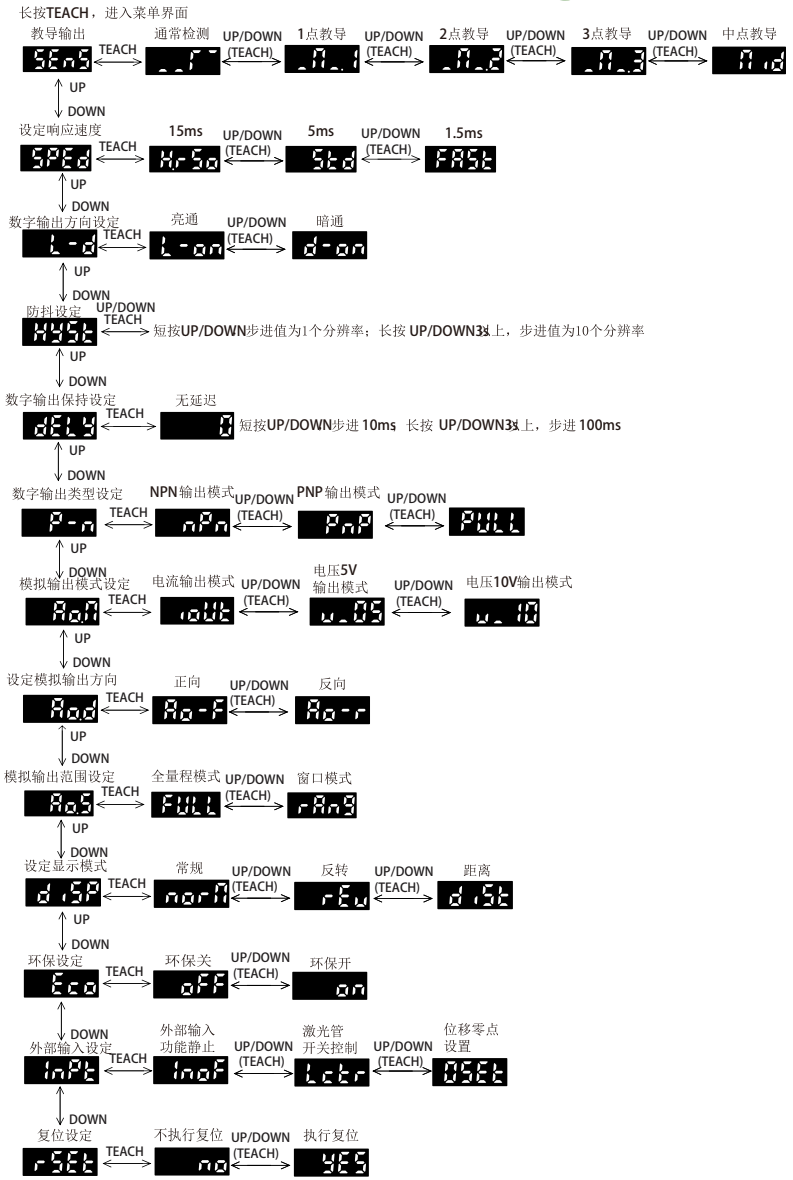
Turn on key lock:In the measurement interface,press the TEACH and UP keys at the same time for more than 3s，the interface displays “Lc.on”，and the menu function is invalid at this time.

Turn off the key lock:After the key lock is turned on,press the TEACH and UP keys at the same time for more than 3s，the interface displays “Lc.FA”，press the TEACH and UP keys at the same time for more than 3s again，the interface displays “Lc.oF” and the key function are restored.

操作指南

1. 菜单操作流程





2.按键归零功能说明

1)同时长按UP和DOWN键进行按键归零；
2)当未进行过归零操作(按键归零操作或外部输入触发)，且当前显示模式不为距离模式，长按UP和DOWN键，则将当前检测位置设置为位移零点，此时LED显示屏中红色指示灯常量；
3)当已进行过归零操作(按键归零操作或外部输入触发)，再次长按UP和DOWN键，则还原位移零点，LED显示屏中红色指示灯熄灭；
4)当前显示模式为距离模式或测量值超出传感器实际量程时，长按UP和DOWN键，LED显示屏中将显示“ErrO”；
5)当开启按键锁定时，长按UP和DOWN键，LED显示屏中将显示“Loc”；

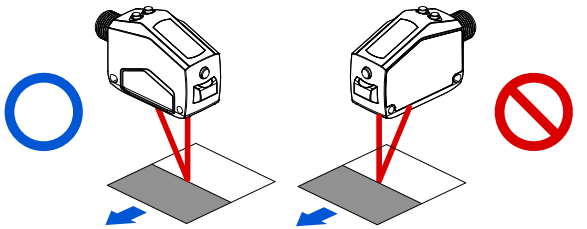
1.测距显示
测量界面：显示实际测量距离，超出检测范围时显示“----”。
显示说明：以中心距离为0点，小于中心距离为正，大于中心距离为负，显示值为偏移值。
2.菜单及按键操作
2.1 进入菜单：测量界面下长按TEACH键3秒以上，进入菜单界面；
退出菜单：菜单界面下长按TEACH键3秒以上，或20秒无按键操作，返回测量界面。
2.2 菜单操作
进入菜单界面，显示主菜单；通过短按UP/DOWN键切换菜单选项；
主菜单界面，通过短按TEACH键进入相应的子菜单选项，子菜单下，短按UP/DOWN进行参数选择，在对应选项下短按TEACH键确认并返回上级主菜单；
1)教导输出
主菜单显示“SEnS”，按TEACH进入子菜单。
子菜单项：“__|‾‾”通常检测模式（默认）；“_N_.1”1点教导窗口比较模式；“_N_.2”2点教导窗口比较模式；“_N_.3”3点教导窗口比较模式；“Nid中点教导模式”。以上教导模式详见6.教导模式说明；
2)设定响应速度:
主菜单显示“SPEd”，按TEACH进入子菜单;
子菜单项：“H.rSo”高精度15ms;“Std”标准5ms（默认）;“FASt”高速1.5ms;
3)数字输出方向设定
主菜单显示“L-d”，按TEACH进入子菜单;
子菜单项：“L-on”亮通（默认）；“d-on”暗通;
4)防抖设定（同回差）
菜单显示“HySt”，按TEACH进入子菜单。
子菜单初始显示分辨率*10为迟滞距离，短按UP/DOWN时，步进距离为1个分辨率；
长按UP/DOWN键3s以上，步进距离为10个分辨率。
5)数字输出保持设定
菜单显示“delay”，按TEACH进入子菜单。
子菜单显示“ 0”无延迟，短按UP/DOWN时，步进距离10ms；
长按UP/DOWN键3s以上，步进距离100ms。设置范围0~1000ms，初始值为0ms。
6)数字输出类型设定
主菜单显示“P-n”，按TEACH进入子菜单。
子菜单项：“nPn”NPN输出模式（默认）；“PnP”PNP输出模式；“PULL”推挽输出模式。
7)模拟输出模式设定
主菜单显示“Ao.N”，按TEACH进入子菜单。
子菜单项：“ioUt”电流输出模式（默认）；“v_05”电压5V输出模式;“v_10”电压10V输出模式。
8)设定模拟输出方向
菜单显示“Ao.d”，按TEACH进入子菜单。
子菜单项：“Ao-F”正向（默认）；“Ao-r”反向。
正向：近距离对应小电流/电压，远距离对应大电流/电压。反向相反。
9)设定模拟输出范围
菜单显示“Ao.S”，按TEACH进入子菜单。
子菜单项：“FULL”全量程模式（默认）；“rAng”窗口模式;
设置为窗口模式时，可通过两点教导模式设定模拟输出范围。
10)设定显示模式
菜单显示“diSP”，按TEACH进入子菜单。
子菜单项：“norN”正常位移模式（默认）；“rEv”反转位移模式；“dist”距离模式。
11)环保设定
菜单显示“Eco”，按TEACH进入子菜单。
环保功能说明：该功能打开后，30s无按键自动熄灭Led显示。
12)外部输入设定
菜单显示“InPt”，按TEACH进入子菜单。
子菜单项：“InoF”外部输入功能禁止（默认）；“Lctr”激光管开光控制，
无外部输入时开启投光，外部输入为低时停止投光；“0SEt” 位移零点设置，
外部输入接低电平触发一次，则将当前检测位置设置为位移零点，此模式显示窗
红色指示灯常亮，再次触发还原位移零点，指示灯灭。
13)复位设定
菜单显示“rSEt”，按TEACH进入子菜单。
子菜单项：“ no”不执行复位；“ yES” 执行复位，恢复默认设置。
2.3 按键锁定功能
开启按键锁定：测量界面下，同时按下TEACH和UP键3秒以上，界面显示“Lc.on”，此时菜单功能失效；
关闭按键锁定：按键锁定开启后，同时按下TEACH和UP键3秒以上，界面显示“Lc.FA”，再次同时按下TEACH和UP键3秒以上，界面显示“Lc.oF”，按键功能恢复。

DIGITAL TUBE DIAPLAY INTERPRETATION

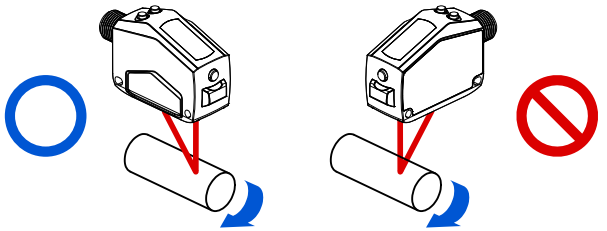
SEnS	sens	teaching output
__m__	__m__	usually detected
_A_1	_m_1	1-point teaching
_A_2	_m_2	2-point teaching
_A_3	_m_3	3-point teaching
A_d	_mid	midpoint teaching
SPEd	sped	set response speed
H-5o	h.rso	high precision 15ms
Std	std	standard 5ms
FASt	fast	high speed 1.5ms
L-d	l-d	set switch output ditection
L-on	l-on	luminous
d-on	d-on	dark pass
HYSt	hyst	anti-shake settings
dELY	dely	switch output keep settings
0	0	no delay
P-n	p-n	set switch output
nPn	npn	NPN
PnP	pnp	PNP
PULL	pull	push-pull output mode
AoA	rom	set analog output mode
oUt	iout	current output mode
u_05	v-5V	voltage 5V output mode
u_10	v-10V	voltage 10V output mode
Aod	rod	set analog output direction
Ao-F	ao-f	reverse
Ao-r	ao-r	forward
AoS	aos	set analog output range
FULL	full	full scale
rAn9	rang	window mode(corresponding to two-point teaching mode)
d iSP	disp	set diaplay mode
norM	norm	normal displacement mode
rEv	rev	reverse displacement mode
d iSt	dist	distance mode
Eco	eco	environmental protection settings
oFF	off	environmental protection close
on	on	environmental protection open
inPt	inpt	external output settings
inoF	inof	external input function disabled
Lctr	lctr	laser tube switch control
0SEt	0set	displacement zero setting
rSEt	rest	reset settings
no	no	do not perform reset
YES	yes	perform reset

OSM40 HIGH PRECISION LASER DISTANCE SENSOR

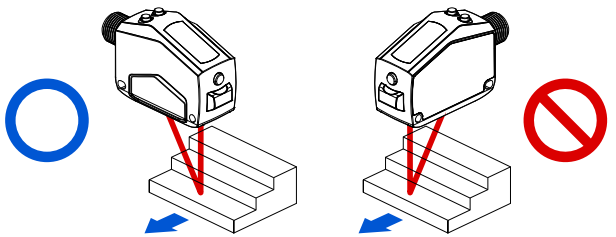
INSTALLATON DIAGRAM



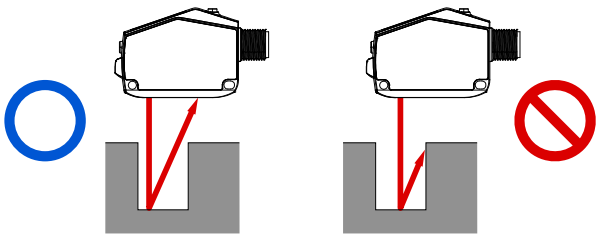
1.In the case of color or material difference
When the material or color of moving object is extremely diffetent,install it in the direction shown on the left to keep the measurement error to a minimum.



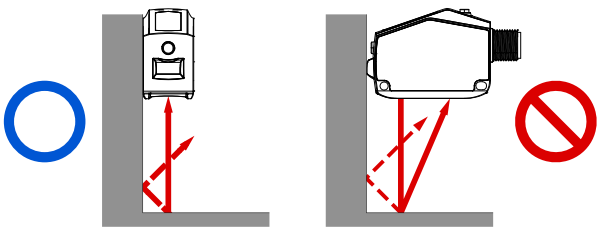
2.Detect rotating objects
When detecting a rotating object, install it in the direction shoen on the left,which can suppress the influence of the object's vertical vibration and position shift.



3.When there is a step
If there is a step in the moving detection object,install it according to the method shown on the left,so as to suppress the influence of the step edge during measurement.



4.Measure in narrow places and recessed parts
In the case of measuring in a narrow place or hole,please be careful not to block the light psth from the light emitting part to the light receiving part when installing.

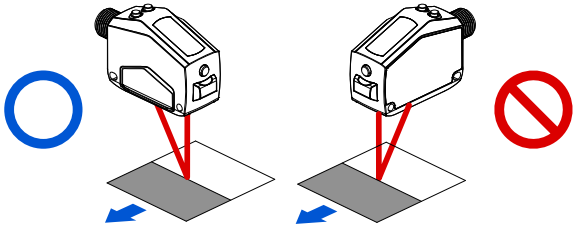


5.When installed on the wall
Please install according to the method shown on the left to avoid the multiple reflected light from the wall entering the light receiving part.

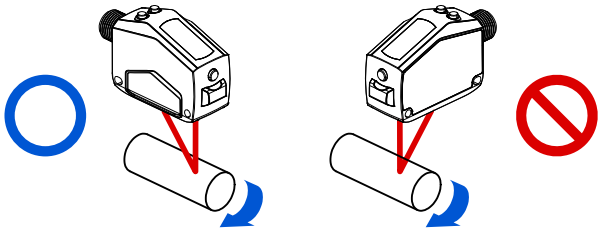
数码管显示释义

SEnS	sens	教导输出
_m	_m	通常检测
_m_1	_m_1	1点教导
_m_2	_m_2	2点教导
_m_3	_m_3	3点教导
_mid	_mid	中点教导
SPEd	sped	设定响应速度
H.rSo	h.rso	高精度速度15ms
Std	std	标准速度5ms
FASt	fast	高速1.5ms
l-d	l-d	设定开关量输出方向
l-on	l-on	亮通
d-on	d-on	暗通
HYSt	hyst	防抖设定
dELY	dely	开关量输出保持设定
0	0	无延迟
P-n	p-n	设定开关量输出类型
nPn	npn	NPN输出模式
PnP	pnp	PNP输出模式
PULL	pull	推挽输出模式
ROM	rom	设定模拟输出模式
iout	iout	电流输出模式
v_05	v-5V	电压5V输出模式
v_10	v-10V	电压10V输出模式
Rod	rod	设定模拟输出方向
Ao-F	ao-f	正向
Ao-r	ao-r	反向
AoS	aos	设定模拟输出范围
FULL	full	全量程模式
rAn9	rang	窗口模式（对应两点教导模式）
d.SP	disp	设定显示模式
norM	norm	正常位移模式
rEv	rev	反转位移模式
d.St	dist	距离模式
Eco	eco	环保设定
oFF	off	环保关
on	on	环保开
InPt	inpt	外部输入设定
InoF	inof	外部输入功能静止
Lctr	lctr	激光管开关控制
0SEt	0set	位移零点设置
rSEt	rest	复位设定
no	no	不执行复位
YES	yes	执行复位

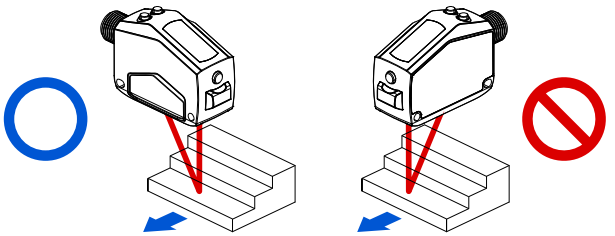
安装示意图



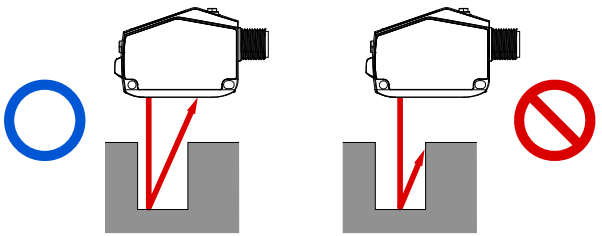
1. 材质、有色差的情况下
测量时，移动的测量对象物的材质、颜色极端不同的情况下，按照左图所示方向进行安装，从而可将测量误差控制在最小限度。



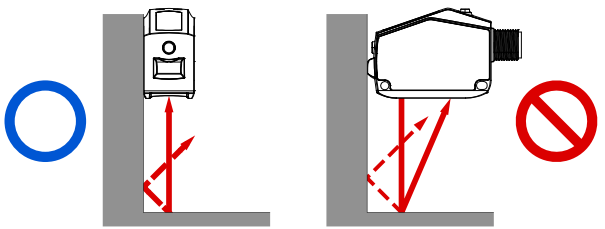
2. 对旋转的对象物进行检测
对旋转的对象物进行检测时，按照左图所示方向进行安装，从而可抑制对象物的上下振动和位置偏移等的影响。



3. 存在段差的情况下
移动的检测对象物存在段差的情况下，请按照左图所示方法进行安装，从而可在测量时抑制段差边缘所产生的影响。



4. 在狭窄场所和凹陷部分进行测量
在狭窄场所和孔中进行测量的情况下，安装时，请注意避免遮挡投光部至受光部的光路。



5. 安装在墙上时
请按照左图所示方法进行安装，以免墙面产生的多重反射光入光到受光部分。另外墙面反射率较高的情况下，如改成无光泽的黑色，则效果更好。