

Product Description

- Laser displacement sensor ,FULL Metal JACKET,durable, better protective performance,small size ,small spot, high precision,LED display and teachnical key setting, 940nm infrared laser,2.5 m and 4 m TOF ranging. Suitable for dispensing machine,Applications in pharmaceuticalpacking,automobile AGV and other industries.



Product features:

- Support switch output,NPN/PNP can be set.
- Support analog output,current output/voltage output.
- Support laser light source control through external input.
- Four white digital tubes,clear and bright
- Support multiple detection modes,multi-scene applications.



Type	Measurement range	Indicating spot diameter	Detecting spot size	Repeatability	Contron output	Resolution
OSM41-K2500CBLI6*M	50...2500mm	4mm@2.5m	9cm*5.5cm@2.5m	5mm	NPN/PNP+ Analog mA	3mm
OSM41-K2500CBLI6*-Q12.1						
OSM41-K2500CBLU6*M	50...2500mm	4mm@2.5m	9cm*5.5cm@2.5m	5mm	NPN/PNP+ Analog V	3mm
OSM41-K2500CBLU6*-Q12.1						
OSM41-K4000CBLI6*M	50...4000mm	4mm@2.5m 5mm@4m	9cm*5.5cm@2.5m 13cm*8.5cm@4m	5mm	NPN/PNP+ Analog mA	3mm
OSM41-K4000CBLI6*-Q12.1						
OSM41-K4000CBLU6*M	50...4000mm	4mm@2.5m 5mm@4m	9cm*5.5cm@2.5m 13cm*8.5cm@4m	5mm	NPN/PNP+ Analog V	3mm
OSM41-K4000CBLU6*-Q12.1						

Note 1: This product is a laser product, which can be used after 10 minutes of preheating after power-on.
 Note 2: For breakout products, *M represents the cable length; if not specified, the default is 2 meters.
 For pigtail products, * represents the cable length in meters. If there is no Wei connector product

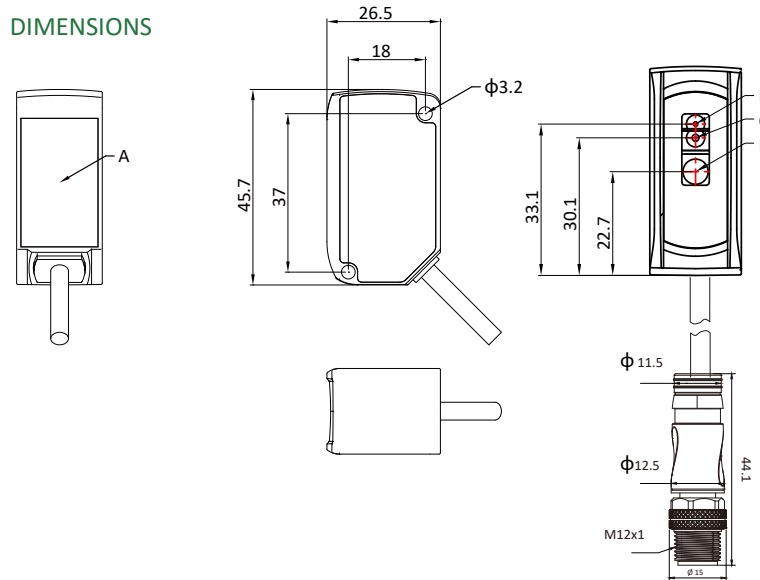
TECHNICAL SPECIFICATION

OPERATING VOLTAGE	10...30 VDC , Class 2	WORKING TEMPERATURE	-10°C ... +50°C
POWER SUPPLY	<1W	AMBIENT TEMPERATURE	-20°C ... +60°C

INDICATING LIGHT	Red semiconductor laser level 2	DETECTION LIGHT SOURCE	940nm infrared laser (class 1)
CONTROL OUTPUT	NPN/PNP can be set	MEASUREMENT ACCURACY	30mm
ANALOG OUTPUT	Current: 4~20mA (beyond,0mA) Voltage: 0~10V (beyond,10.2V)	RESPONSE FREQUENCY	30Hz
VOLTAGE WITHSTAND	650V/AC/50/60Hz 60S	PROTECTION DEGREE	IP67
INSULATION IMPEDANCE	50MQ(500VDC)	HOUSING MATERIAL	Die-cast zinc
REACTION TIME	66ms/33ms optional	WINDOWS MATERIAL	Glass
CONNECTIONS	Cable/Pigtail Cable	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:Teach button & indicator
 B:Receiver
 C:Transmitter
 D:Indicator

产品说明:

- 激光位移传感器, 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, 940nm红外激光, 2.5米、4米TOF型测距。适用点胶机、制药、包装、汽车、AGV等行业应用。



产品特点:

- 支持开关量输出, NPN/PNP可设定
- 支持模拟量输出, 电流输出或电压输出
- 支持激光光源通过外部输入控制
- 四位白色数码管, 明亮清晰
- 支持多种检测模式, 多场景应用



型号	检测距离	指示光斑直径	检测光斑尺寸	重复精度	控制输出	分辨率
OSM41-K2500CBLI6*M	50...2500mm	4mm@2.5m	9cm*5.5cm@2.5m	5mm	NPN/PNP+模拟量mA	3mm
OSM41-K2500CBLI6-*-Q12.1						
OSM41-K2500CBLU6*M	50...2500mm	4mm@2.5m	9cm*5.5cm@2.5m	5mm	NPN/PNP+模拟量V	3mm
OSM41-K2500CBLU6-*-Q12.1						
OSM41-K4000CBLI6*M	50...4000mm	4mm@2.5m 5mm@4m	9cm*5.5cm@2.5m 13cm*8.5cm@4m	5mm	NPN/PNP+模拟量mA	3mm
OSM41-K4000CBLI6-*-Q12.1						
OSM41-K4000CBLU6*M	50...4000mm	4mm@2.5m 5mm@4m	9cm*5.5cm@2.5m 13cm*8.5cm@4m	5mm	NPN/PNP+模拟量V	3mm
OSM41-K4000CBLU6-*-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。

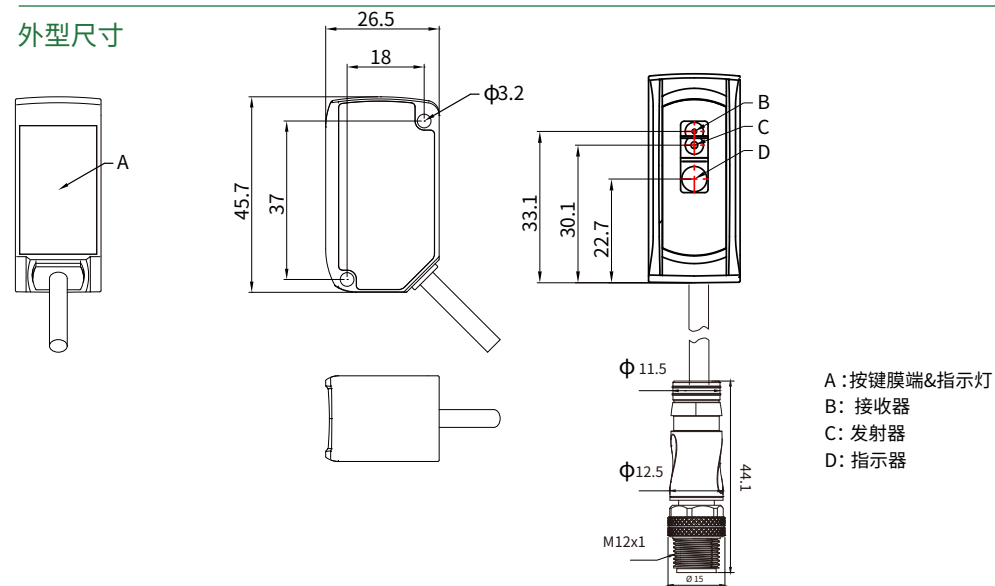
技术参数

工作电压	10...30VDC, Class2	工作温度	-10°C...+50°C
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功率	<1W	环境温度	-20°C...+60
指示光源	红色半导体激光2级	检测光源	940nm infrared laser (class1)
控制输出	NPN/PNP可选	测量精度	30mm
模拟量输出	电流: 4~20mA(超出时, 0mA) 电压: 0-10V(超出时, 10.2V)	响应频率	30Hz
耐电压	650V/AC/50/60HZ 60S	防护等级	IP67
绝缘阻抗	≥50MΩ (500VDC)	外壳	压铸锌
反应时间	66ms/33ms可选	窗口	玻璃
连接形式	线缆式/pigtail线缆	激光标签	包装袋粘贴
		维护信息	异常返厂宜料处理
		最高湿度	最高85%相对湿度
		海拔	高达2000米
		污染程度	三级

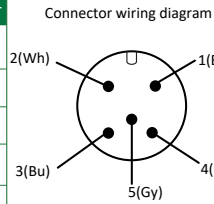


外型尺寸



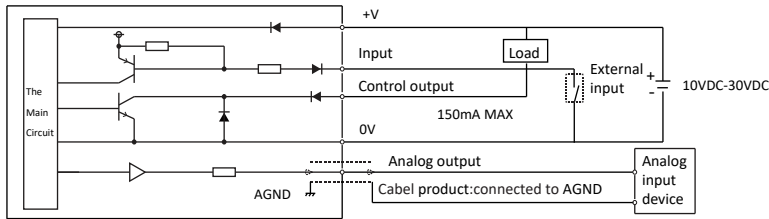
INTERFACE DEFINITION AND WIRING DIAGRAM

Function	Pigtail cable 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

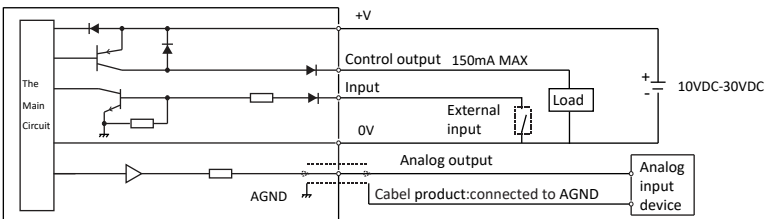


Function	Cabel product core color
1 Positive power supply	Brown
2 Analog output	Gray
3 Power negative	Blue
4 NPN/PNP	Black
5 External input/set to 0	Pink
6 AGND	Shielded wire

Wiring diagram (NPN)



Wiring diagram (PNP)



TEACHING MODE DESCRIPTION

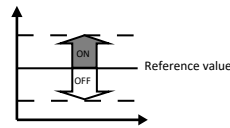
Teach

Detection mode setting description:

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

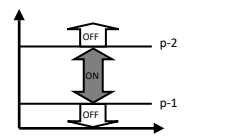
1. Normal detection mode

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.



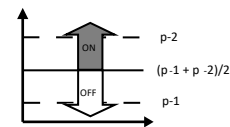
2. 2-point teaching window comparison mode

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.



3. midpoint teaching mode

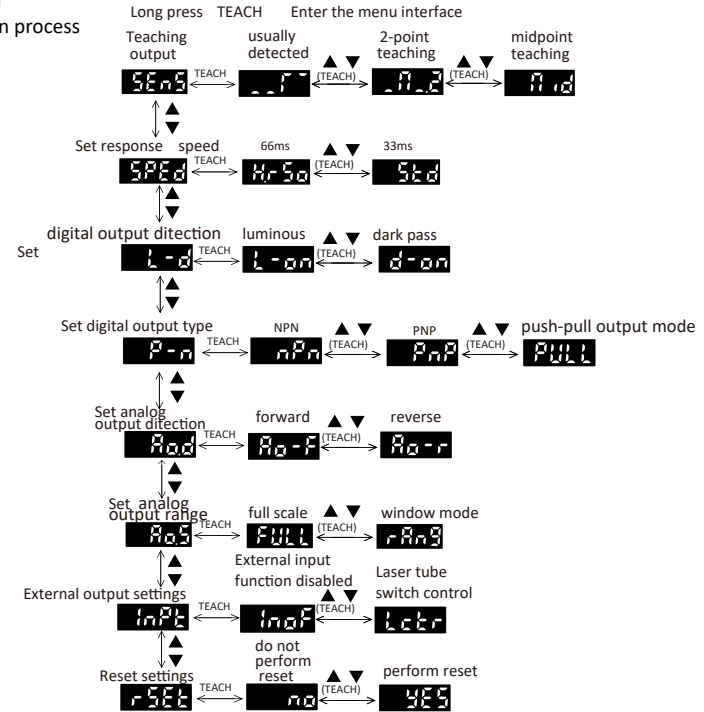
In the menu, select the "Nid" mode, automatically enter the measurement interface. Select the target object 1(*) within the effective detection distance and press the TEACH key, and prompt "LP1" to complete p-1 setting. Select the target object 2(*) within the effective detection distance and press TEACH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



INSTRUCTION

1. Menu operation process

STEP



2. Ranging display

Measurement interface: Show actual measurement distance, resolution is 1mm, when the distance is out of detected distance, it displays "----".

3. Menu and key operation

3.1 Enter the menu: Long press TEACH above 3s when it is in the measurement interface, enter the menu interface;

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

3.2 Menu operation

Enter the menu interface, display 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) Teaching output

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

Submenu items: "—" usually detected mode (default); "_N_2" 2-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 66ms; "Std" standard 33ms (default);

3) Set digital output dtection

The main menu shows "L-d", press TEACH to enter the submenu; Submenu items: "L-on" luminous (default); "d-on" dark pass;

4) Set digital output type

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

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

5) Set analog output dtection

The main menu shows "Ao.d", press TEACH to enter the submenu; Submenu items: "Ao-F" forward (default); "Ao-r" reverse;

6) 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;

7) External output 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. The laser indication is turned on when there is no external input, and the laser indication is turned off when the external input is low

8) Reset settings

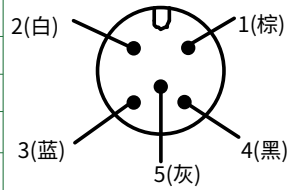
The main menu shows "rSEt", press TEACH to enter the submenu;

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

接口定义和接线图

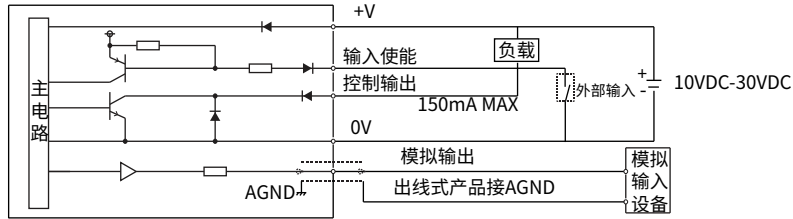
功能	Pigtail式线芯颜色
1 电源正	棕
2 模拟量输出	白
3 电源负	蓝
4 NPN/PNP	黑
5 激光使能输入/置零	灰

Pigtail式接线图

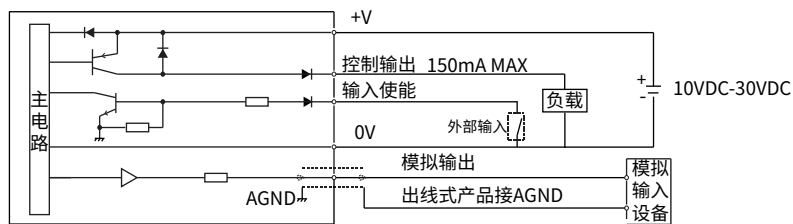


功能	出线式线芯颜色
1 电源正	棕
2 模拟量输出	灰
3 电源负	蓝
4 NPN/PNP	黑
5 激光使能输入/置零	粉
6 AGND	屏蔽线

接线图 (NPN)



接线图 (PNP)

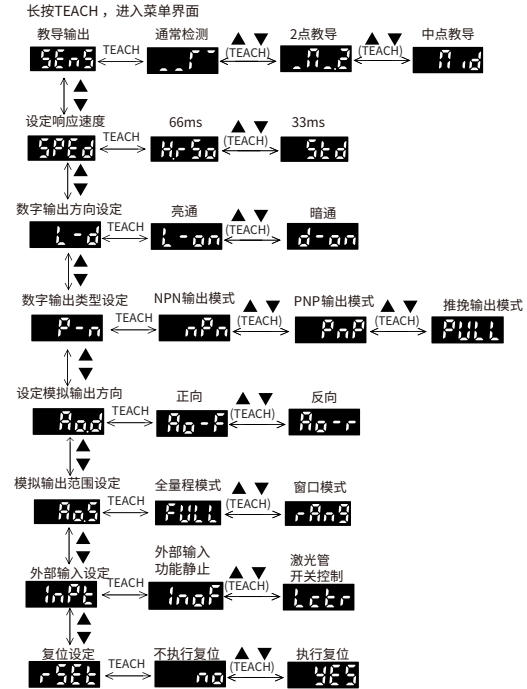


教导模式说明

教导	
<p>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。</p>	
<p>1.通常检测模式 在菜单中,选定“<input type="checkbox"/>”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。</p>	
<p>2. 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;</p>	
<p>3. 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的中间距离为判定距离;</p>	

操作指南

1.菜单操作流程



2.测距显示

测量界面: 显示实际测量距离,分辨率为1mm,未检测到距离信息时显示“----”。

3.菜单及按键操作

3.1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。

3.2菜单操作

进入菜单界面,显示主菜单,通过短按 键切换菜单选项;短按TEACH进入相应子菜单选项,短按进行参数选择,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

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_2” 2点教导窗口模式; “Nid” 中点教导模式”。以上教导模式详见教导模式说明;

2) 设定响应速度:

菜单显示“SPeD”,按TEACH进入子菜单,子菜单项: “H.rSo” 高精度66ms; “Std” 标准33ms(默认);

3) 数字输出方向设定

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) 数字输出类型设定

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;

5) 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;

6) 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;

7) 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” 激光管开关控制。无外部输入时打开激光指示,外部输入为低时关闭激光指示。

8) 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” 窗口模式;

DIGITAL TUBE DISPLAY INTERPRETATION

SEN5	sens	teaching output
_m	_m	usually detected
_m_2	_m_2	2-point teaching
_mid	_mid	midpoint teaching
SPEd	sped	set response speed
Hr50	h. rso	high precision 60ms
Std	std	standard 33ms
L-d	l-d	set switch output detection
L-on	l-on	luminous
d-on	d-on	dark pass
P-n	p-n	set switch output
nPN	nPN	NPN
pnp	pnp	PNP
PULL	pull	push-pull output mode
rod	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
rang	rang	window mode(corresponding to two-point teaching mode)
inpt	inpt	external output settings
inof	inof	external input function disabled
lctr	lctr	laser tube switch control
rest	rest	reset settings
no	no	do not perform reset
yes	yes	perform reset

SAFETY PRECAUTIONS

⚠ DANGEROUS	<p>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 environment of potentially explosive gases.</p> <p>Failure to use the control or adjustment device or perform the steps in accordance with this regulation may result in harmful radiation exposure.</p> <p>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.</p> <p>La non-utilisation du dispositif de commande ou de réglage ou l'exécution des étapes conformément au présent règlement peut entraîner une exposition aux rayonnements nocifs.</p>
⚠ WARN	<p>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.</p> <p>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.</p>
NOTICE	<p>Do not use the same wiring with the power cord and high-voltage line, otherwise the main module may fail or be damaged due to noise. When using a commercially available switching regulator, be sure to ground the housing ground terminal and the ground terminal.</p> <p>Please do not use this product outdoors.</p> <p>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.</p>

INSTALLATION DIAGRAM

1. In the case of color or material difference
When the material or color of moving object is extremely different, 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 shown 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 path 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

SEN5	sens	教导输出
_m	_m	通常检测
_m_2	_m_2	2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66ms
std	std	标准速度33ms
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
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
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
rANG	rANG	窗口模式（对应两点教导模式）
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
rest	rest	复位设定
no	no	不执行复位
yes	yes	执行复位

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。

安装示意图

