OSM40 HIGH PRECISION LASER DISTANCE SENSOR

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.

IO-Link

Product features:

- Short,medium and long distances are available.
- Support switch output,NPN/PNP can be set.
- Support IO-LINK output
- 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-KL35CB6Q12.1/IO	25...35mm	30mm	0.2mm @50mm	10μm	±0.1%F.S.	0.001mm
OSM40-KL70CB6Q12.1/IO	35...70mm	50mm	0.5mm @50mm	30μm	±0.1%F.S.	0.01mm
OSM40-KL160CB6Q12.1/IO	60...160mm	100mm	0.5mm @100mm	70μm	±0.1%F.S.	0.01mm
OSM40-KL300CB6Q12.1/IO	100...300mm	200mm	1mm @200mm	200μm	±0.2%F.S.	0.1mm
OSM40-KL800CB6Q12.1/IO	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-KL1000CB6Q12.1/IO	110...1000mm	200mm	1mm @150mm 2mm @600mm	0.5mm (400mm~600mm) 1mm (150mm~400mm) 3mm (600mm~1000mm) 5mm (1000mm~2000mm)	±0.2%F.S. (150mm~400mm) ±0.3%F.S. (400mm~600mm) ±0.5%F.S. (600mm~2000mm)	1mm
OSM40-KL2000CB6Q12.1/IO	150~2000mm	400mm				

Note 1: This product is a laser product, which can be used after 10 minutes of preheating after power-on.

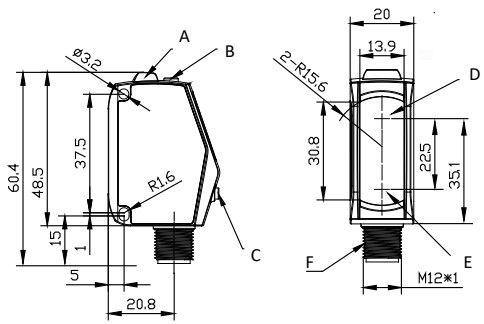
OSM40 HIGH PRECISION LASER DISTANCE SENSOR

TECHNICAL SPECIFICATION

OPERATING VOLTAGE	10 ... 30 V DC , Class 2	**WORKING TEMPERATURE**	-10°C... +50°C
POWER SUPPLY	<1 W	**AMBIENT ILLUMINANCE**	under 3000lux
LIGHT SOURCE TYPE	Laser class 2, 655 nm	**PROTECTION DEGREE**	IP67
CONTROL OUTPUT	NPN/PNP can be set	**HOUSING MATERIAL**	316L
IO-LINK OUTPUT	IO-Link v1.1.2 protocol	**WINDOWS MATERIAL**	glass
RESPONSE TIME	15 ms / 5 ms / 1.5 ms	**CONNECTIONS**	M12 Connector

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

IO-Link

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IO-LINK输出
- 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-KL35CB6Q12.1/IO	25...35mm	30mm	0.2mm@50mm	10μm	±0.1%F.S.	0.001mm
OSM40-KL70CB6Q12.1/IO	35...70mm	50mm	0.5mm@50mm	30μm	±0.1%F.S.	0.01mm
OSM40-KL160CB6Q12.1/IO	60...160mm	100mm	0.5mm@100mm	70μm	±0.1%F.S.	0.01mm
OSM40-KL300CB6Q12.1/IO	100...300mm	200mm	1mm@200mm	200μm	±0.2%F.S.	0.1mm
OSM40-KL800CB6Q12.1/IO	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-KL1000CB6Q12.1/IO	110...1000mm	200mm	1mm@150mm 2mm@600mm	0.5mm (400mm~600mm) 1mm (150mm~400mm) 3mm (600mm~1000mm) 5mm (1000mm~2000mm)	±0.2%F.S. (150mm~400mm) ±0.3%F.S. (400mm~600mm) ±0.5%F.S. (600mm~2000mm)	1mm
OSM40-KL2000CB6Q12.1/IO	150~2000mm	400mm				

注1：本产品为激光类产品，上电预热十分钟后使用。

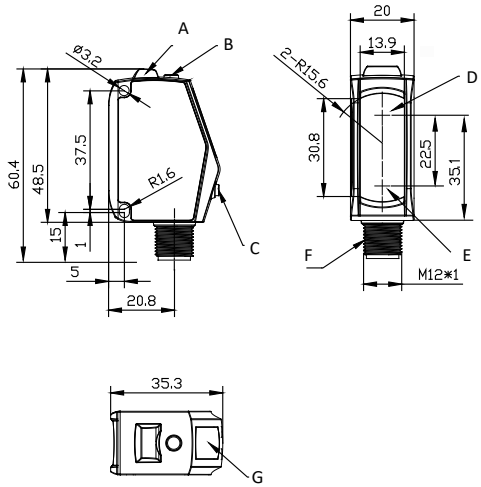
OSM40高精度位移传感器

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
IO-Link输出	IO-Link v1.1.2协议	窗口	玻璃
反应时间	15ms/5ms/1.5ms可选	连接形式	M12连接器

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

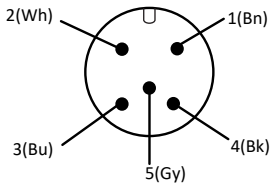


A 报警指示灯
B 功能设置键
C 功能调节键
D 发射端
E 接收端
F M12*1连接器
G LED显示屏

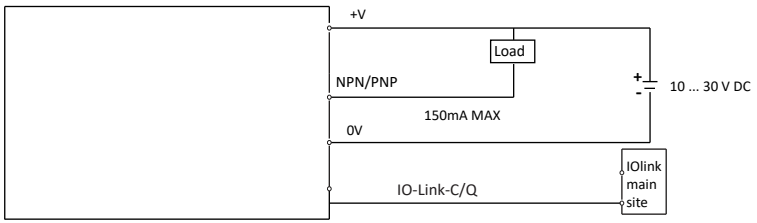
INTERFACE DEFINITION AND WIRING DIAGRAM

	Function	Connector product core color
1	Positive power supply	Brown
2	NPN/PNP	Gray
3	Power negative	Blue
4	IO-Link-C/Q	Black
5	NC	Pink

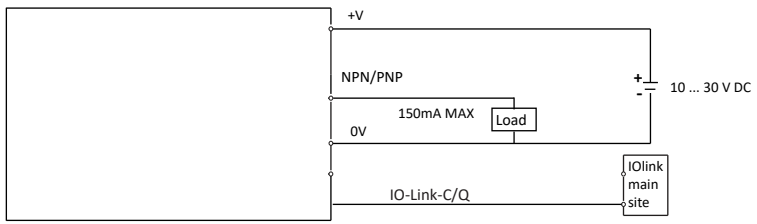
Connector wiring diagram



Wiring diagram (NPN)



Wiring diagram (PNP)



SAFETY PRECAUTIONS

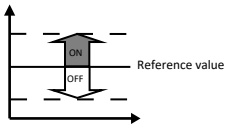
⚠DANGEROUS	**This product is for the purpose of object detection only.Do not use this product for the purpose of protecting human body or human body parts.This product should not be used as an explosion-proof product.Do not use this product in dangerous places or in the enviroment of potentially explosive 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.**

TEACHING MODE DESCRIPTION

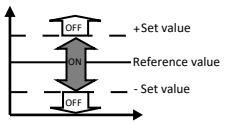
Teach

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

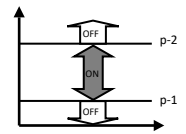
1. Normal detection mode
In the menu，select the "__|¯¯" mode,automatically enter the detection interface;Select the target object(*) within the effective detection distance and press the TEACH key,and prompt "GOOD" to complete the setting.The location of the target object is the judgement distance.



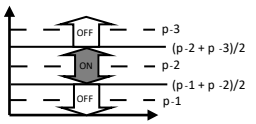
2. 1-point teaching window comparison mode
In the menu,select the "_N_.1"mode,first enter the wisdow size setting interface;The default setting value is 0.5mm,press UP/DOWN to adjust the window size setting value.Press the TEACH key to enter the measurement interface;within the effective measurement 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.



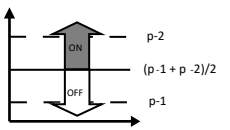
3. 2-point teaching window comparison mode
In the menu，select the "_N_.2" mode,automatically enter the measurement interface.Select the target object 1(*) within the effective detection distance and press the TEACH key,and prompt "LP1" to complete p-1 setting.Select the target object 2 (*)within the 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.

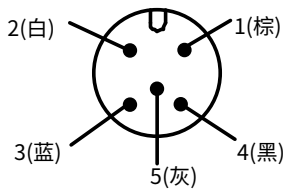


*Represents fine adjustment:After selecting the target object,you can fine-tune the distance of the target object with the UP/DOWN key,and then press the TEACH key to confirm.

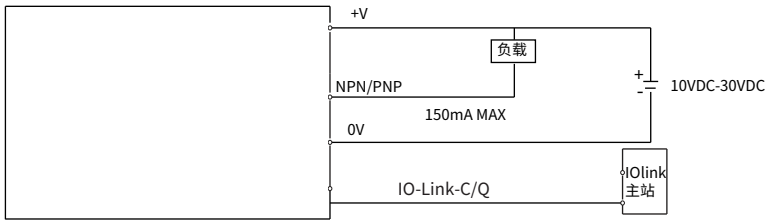
接口定义和接线图

	功能	接插件式线芯颜色
1	电源正	棕
2	NPN/PNP	白
3	电源负	蓝
4	IO-Link-C/Q	黑
5	NC	灰

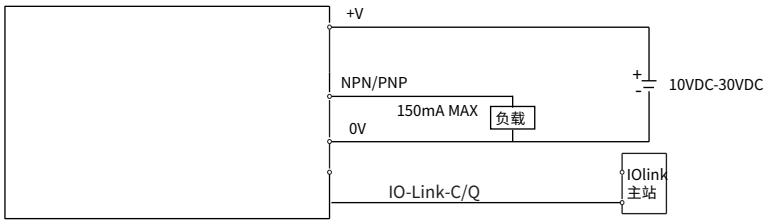
接插件接线图



接线图（NPN）



接线图（PNP）



安全注意事项

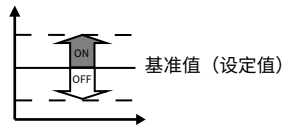
▲危险	本产品仅用于物体检测。请勿将本产品用于保护人体或人体部位。本产品不得用作防爆产品。请勿在危险场所或可能存在爆炸性气体的环境中使用本产品。本装置控制或调节装置的未使用或未按本规定执行步骤，可能导致有害辐射暴露。未按照本规定使用控制或调节装置或未执行相应步骤，可能导致有害辐射暴露。
▲警告	该产品为直流电源传感器。请勿使用交流电源。如接入交流电压，产品可能会爆炸或起火。
通知	请不要将电源线与高压线路使用同一布线，否则主模块可能会因噪声而故障或损坏。在使用市售的开关稳压器时，请确保将外壳接地端子和地线端子接地。请勿在户外使用本产品。

教导模式说明

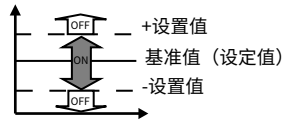
教导

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。

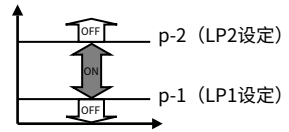
1.通常检测模式
在菜单中，选定“⎽⎽|‾‾|⎽⎽”模式，自动进入测量界面；
在有效测量距离内，选定目标物体(*)，按TEACH键，提示“GOOD”，完成设置；目标物体所在位置即为判定距离。



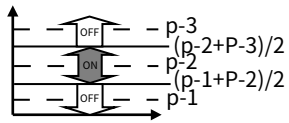
2. 1点教导模式
在菜单中，选定“_N_.1”模式，先进入窗口大小设置界面；
设置值默认为0.5mm，按UP/DOWN调整窗口大小设置值，按TEACH键确认后进入测量界面；在有效测量距离内，选定目标物体(*)，按TEACH键，提示“GOOD”，完成设置；目标物体所在位置为中心，上下加减设置值为窗口，进行窗口模式判定；



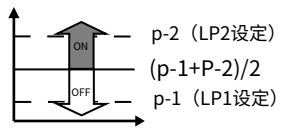
3. 2点教导模式
在菜单中，选定“_N_.2”模式，自动进入测量界面；
在有效测量距离内，选定目标物体1(*)，按TEACH键，提示“LP1”，完成p-1设定；
在有效测量距离内，选定目标物体2(*)，按TEACH键，提示“GOOD”，完成p-2设定；
以目标物体1和目标物体2所在位置之间的距离为窗口，进行窗口模式判定；



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；

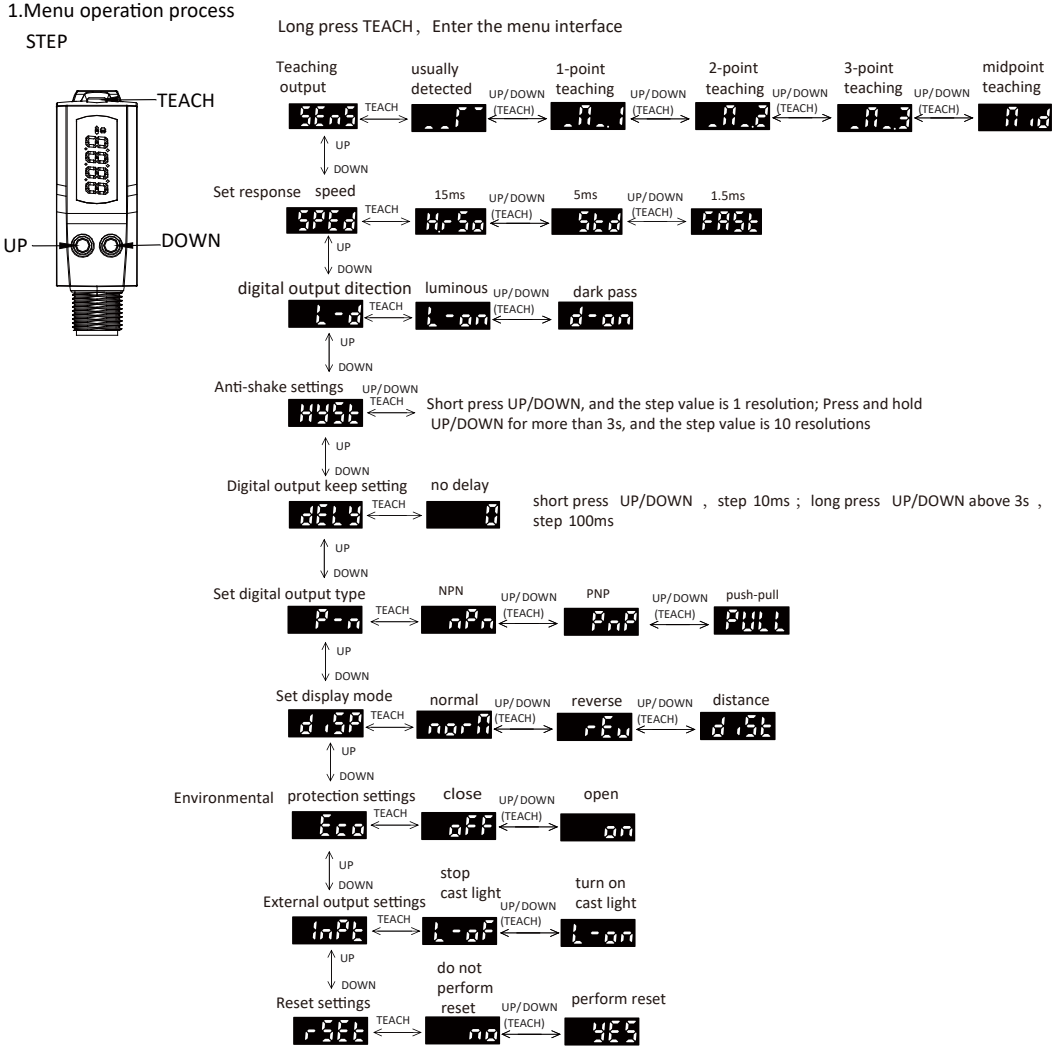


*代表微调：在选定目标物体后，可通过UP/DOWN键微调目标物体距离，之后再按TEACH键确定。

INSTRUCTION

1.Menu operation process

STEP



OSM40 HIGH PRECISION LASER DISTANCE SENSOR

2.Ranging diaplay

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

3.Menu and key operation

3.1 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。

3.2 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 teach--ing 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 dietection

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 main menu shows“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（default）；“ PnP”PNP output mode.“PULL”push-pull output mode。

7)Set display mode

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

Submenu items：“norN”normal displacement mode；“rEv”reverse displacement mode；“dist”distance mode；

Factory default distance mode.

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 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.

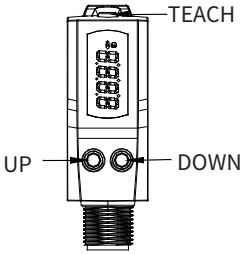
3.3 Key lock function

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

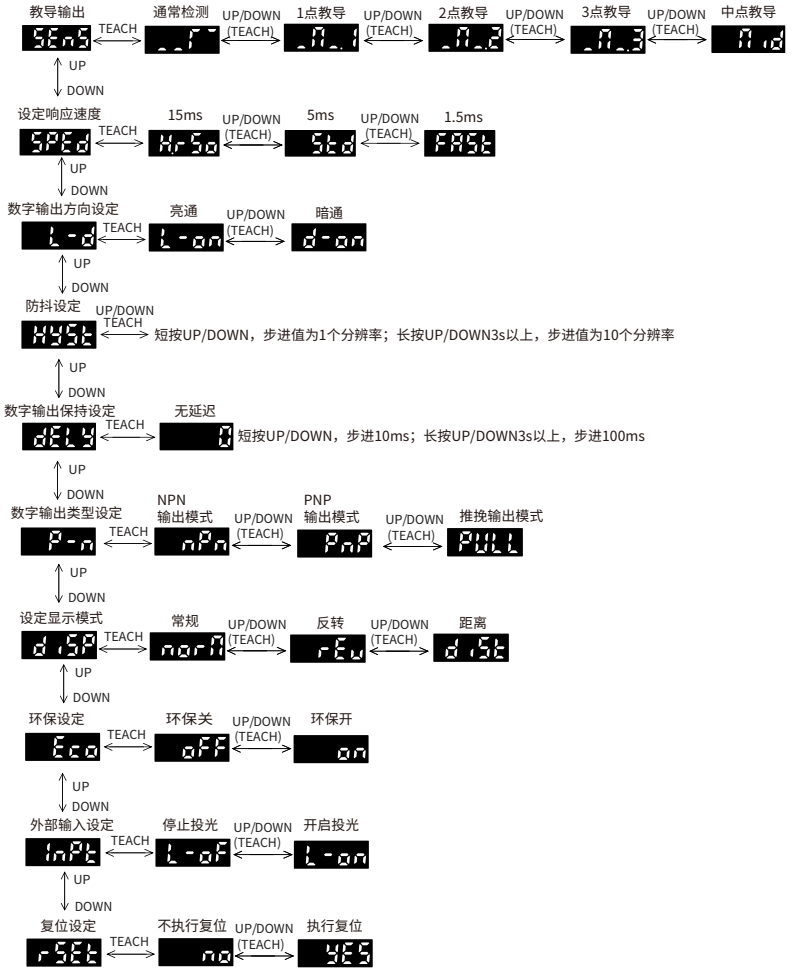
Turn off the key lock:After the key lock is turned on,press the UP and DOWN keys at the same time for more than 3s，the interface displays “Lc.FA”，press the UP and DOWN keys at the same time for more than 3s again，the interface displays “Lc.oF” and the key function are restored.

操作指南

1.菜单操作流程



长按TEACH，进入菜单界面



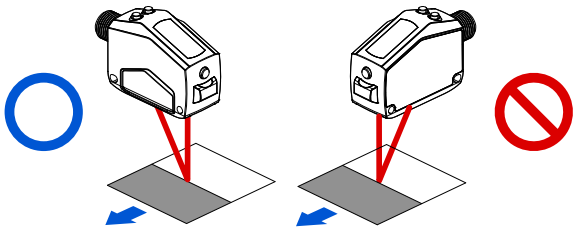
2.测距显示
测量界面：显示实际测量距离，超出检测范围时显示“----”。
3.菜单及按键操作
3.1 进入菜单：测量界面下长按TEACH键3秒以上，进入菜单界面；
退出菜单：菜单界面下长按TEACH键3秒以上，或20秒无按键操作，返回测量界面。
3.2 菜单操作
进入菜单界面，显示主菜单；通过短按UP/DOWN键切换菜单选项；
主菜单界面，通过短按TEACH键进入相应的子菜单选项，子菜单下，短按UP/DOWN进行参数选择，在对应选项下短按TEACH键确认并返回上级主菜单；
1)教导输出
主菜单显示“SEnS”，按TEACH进入子菜单。
子菜单项：“_|‾”通常检测模式（默认）；“_N_.1”1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
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)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；“rEv”反转位移模式；“dist”距离模式；出厂设置默认距离模式。
8)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Lcd显示。
9)外部输入设定
菜单显示“InPt”，按TEACH进入子菜单。
子菜单项：“L-oF”停止投光；“L-on”开启投光；
外部输入使能说明：外部输入为低时停止投光，无外部输入时默认开启投光。
10)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。
3.3 按键锁定功能
开启按键锁定：测量界面下，同时按下UP和DOWN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UP和DOWN键3秒以上，界面显示“Lc.FA”，再次同时按下UP和DOWN键3秒以上，界面显示“Lc.oF”，按键功能恢复。

DIGITAL TUBE DIAPLAY INTERPRETATION

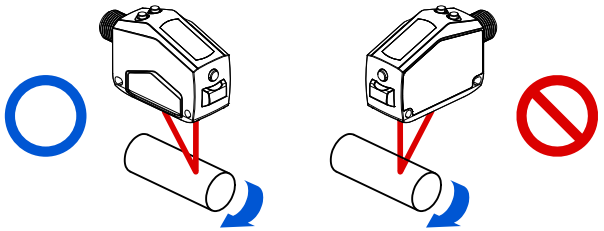
SEnS	sens	teaching output
__m	__m	usually detected
_m_1	_m_1	1-point teaching
_m_2	_m_2	2-point teaching
_m_3	_m_3	3-point teaching
m_d	_mid	midpoint teaching
SPEd	sped	set response speed
hrSo	h.rso	high precision 15ms
Std	std	standard 5ms
FASt	fast	high speed 1.5ms
L-d	l-d	set switch output ditection
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
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 input setting
L-oF	l-of	stop light（turn off the laser）
L-on	l-on	start light（turn on the laser）
rSEt	rest	reset settings
no	no	do not perform reset
YES	yes	perform reset

OSM40 HIGH PRECISION LASER DISTANCE SENSOR

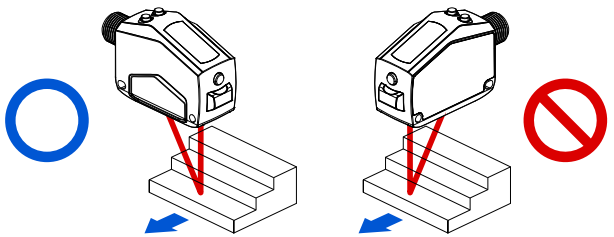
INSTALLATON DIAGRAM



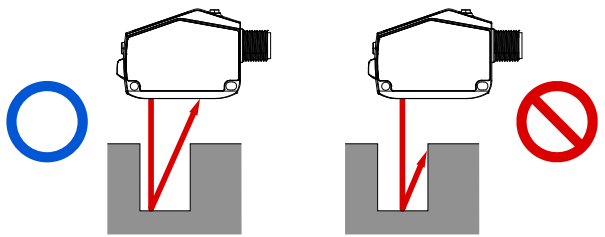
1.In the case of color or material difference
When the material or color of moving object is extremely diffetent,install it in the direction shown on the left to keep the measurement error to a minimum.



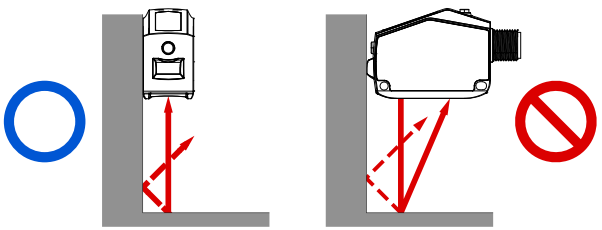
2.Detect rotating objects
When detecting a rotating object, install it in the direction shoen on the left,which can suppress the influence of the object's vertical vibration and position shift.



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.



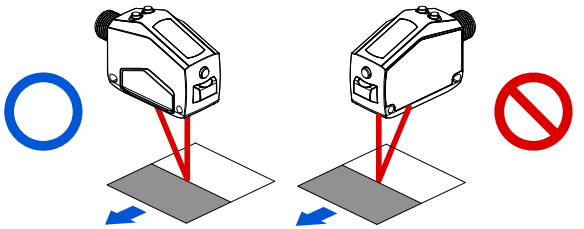
5.When installed on the wall
Please install according to the method shown on the left to avoid the multiple reflected light from the wall entering the light receiving part.

数码管显示释义

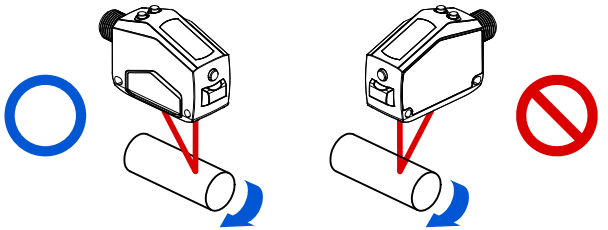
SEnS	sens	教导输出
_m‾	_m‾	通常检测
_m_1	_m_1	1点教导
_m_2	_m_2	2点教导
_m_3	_m_3	3点教导
_mid	_mid	中点教导
SPEd	sped	设定响应速度
h.rSo	h.rso	高精度速度15ms
_Std	std	标准速度5ms
FASt	fast	高速1.5ms
L-d	l-d	设定开关量输出方向
L-on	l-on	亮通
d-on	d-on	暗通
HYSt	hyst	防抖设定
dELY	dely	开关量输出保持设定
0	0	无延迟
P-n	p-n	设定开关量输出类型
nPn	npn	NPN输出模式
PnP	pnp	PNP输出模式
PULL	pull	推挽输出模式
diSP	disp	设定显示模式
norM	norm	正常位移模式
rEv	rev	反转位移模式
diSt	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
L-oF	l-of	停止投光（关闭激光）
L-on	l-on	开启投光（开启激光）
rSEt	rest	复位设定
no	no	不执行复位
YES	yes	执行复位

OSM40高精度位移传感器

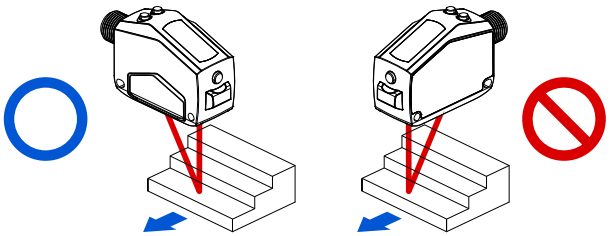
安装示意图



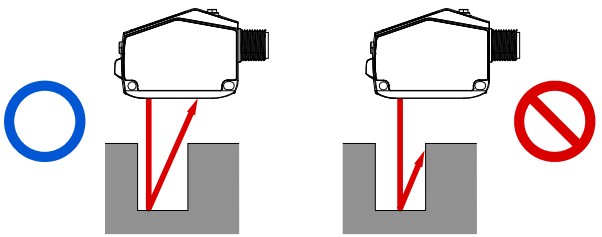
1.材质、有色差的情况下
测量时，移动的测量对象物的材质、颜色极端不同的情况下，按照左图所示方向进行安装，从而可将测量误差控制在最小限度。



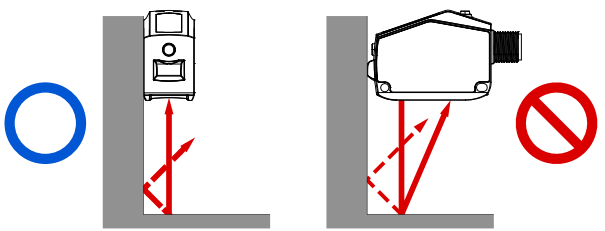
2.对旋转的对象物进行检测
对旋转的对象物进行检测时，按照左图所示方向进行安装，从而可抑制对象物的上下振动和位置偏移等的影响。



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。

IO-LINK V1.1.2 PROTOCOL

1.Physical layer

SIO Modus	no
Min Cycle Time	4.0ms
Baudrate	COM2
Process Data Length	2 Byte
IODD version	V1.1
Valid for IO-Link version	1.1.2

2.Process data

Record: 2Byte

bit	15	14~0
Type	Boolean	Integer15
Subindex	2	1

Note: OSM40-KL35 series
PDin data format, bit15 is the status indicator, 0: normal, 1: out of range.
Bit14-0 is the data, with a data range of 15000 to 25000.
Data offset 10mm (i.e. 15000 represents 25mm, 25000 represents 35mm)

3.ISDU（Index Service data unit）

Index dec(hex)	Name	Format (Offset)	Length	Access	Default Value	Value/ Range	Remark [Unit]
16(0x10)	Vendor Name	String	4Byte	ro	ELCO		
17(0x11)	Vendor Text	String	6Byte	ro			
18(0x12)	Product Name	String	5Byte	ro			
19(0x13)	Product ID	String	5Byte	ro			
20(0x14)	Product Text	String	6Byte	ro			
24(0x18)	Application Specific Tag	String	32Byte	ro	***		

OSM40 HIGH PRECISION LASER DISTANCE SENSOR

Index dec(hex)	Name	Format (Offset)	Length	Access	Default Value	Value/ Range	Remark [Unit]
59(0x3B)	Teach Status	Record	1Byte	ro		Bit6:Teach flag SP2 1=successfull 0=not taught or not successfull Bit4:Teach flag SP1 1=successfull 0=not taught or not successfull Bit3~0:Teach State 0=IDLE 1=SP1 SUCCESS 2=SP2 SUCCESS 3=SP12 SUCCESS 4=WAIT FOR COMMAND 5=BUSY 6= RESERVED 7=ERROR	
60(0x3C)	BCD1 SP1/ SP2	Record	4Byte	rw		Bit31~16: Setpoint SP1 (UIntegerT) Bit15~0: Setpoint SP2 (UIntegerT)	
61(0x3D)	BCD1 Confi--gura--tion	Record	4Byte	rw		Bit31~24:Switchpoint Logic 0= Light Operate 1= Dark Operate Bit23~16: BDC Mode 1= Single Point Mode 128=Window Mode Bit15~0:Hysteresis (UIntegerT, *0.1mm)	
64(0x40)	Confi--gura--tion	Record	2Byte	rw		Bit15~8:Laser Switch 0= Laser Off 1= Laser On Bit7~0:Response Speed 0= 1.5ms 1= 5ms 2=10ms	
2(0x02)	System Com--mand			wo		65=Single Value Teach SP1 67=Window Value Teach SP1 68=Window Value Teach SP2 79=Exit Teach 130=Restore Factory Settings	

IO-Link v1.1.2协议

1.物理层

SIO 模式	无
最小循环时间	4.0ms
波特率	COM2
过程数据长度	2 字节
IODD 版本	V1.1
支持IO-Link版本	1.1.2

2.过程数据

Record: 2字节

位	15	14~0
类型	Boolean	Integer15
子索引	2	1

注：OSM40-KL35系列
PDin数据格式，bit15为状态指示，0：正常，1：超范围。
bit14-0为数据，数据范围15000-25000。
数据偏移10mm(即15000表示25mm,25000表示35mm)

3.ISDU (索引服务数据单元)

索引 dec(hex)	名称	格式 (Offset)	长度	读取	默认值	数值/ 范围	备注 [Unit]
16(0x10)	Vendor Name	String	4Byte	ro	ELCO		
17(0x11)	Vendor Text	String	6Byte	ro			
18(0x12)	Product Name	String	5Byte	ro			
19(0x13)	Product ID	String	5Byte	ro			
20(0x14)	Product Text	String	6Byte	ro			
24(0x18)	Application Specific Tag	String	32Byte	ro	***		

索引 dec(hex)	名称	格式 (Offset)	长度	读取	默认值	数值/ 范围	备注 [Unit]
59(0x3B)	Teach Status	Record	1Byte	ro		Bit6:Teach flag SP2 1=successfull 0=not taught or not successfull Bit4:Teach flag SP1 1=successfull 0=not taught or not successfull Bit3~0:Teach State 0=IDLE 1=SP1 SUCCESS 2=SP2 SUCCESS 3=SP12 SUCCESS 4=WAIT FOR COMMAND 5=BUSY 6= RESERVED 7=ERROR	
60(0x3C)	BCD1 SP1/ SP2	Record	4Byte	rw		Bit31~16: Setpoint SP1 (UIntegerT) Bit15~0: Setpoint SP2 (UIntegerT)	
61(0x3D)	BCD1 Confi--gura--tion	Record	4Byte	rw		Bit31~24:Switchpoint Logic 0= Light Operate 1= Dark Operate Bit23~16: BDC Mode 1= Single Point Mode 128=Window Mode Bit15~0:Hysteresis (UIntegerT, *0.1mm)	
64(0x40)	Confi--gura--tion	Record	2Byte	rw		Bit15~8:Laser Switch 0= Laser Off 1= Laser On Bit7~0:Response Speed 0= 1.5ms 1= 5ms 2=10ms	
2(0x02)	System Com--mand			wo		65=Single Value Teach SP1 67=Window Value Teach SP1 68=Window Value Teach SP2 79=Exit Teach 130=Restore Factory Settings	