

ENGLISH

Photoelectric Reflex Switch
with Teach-in
Operating Instructions

Safety Specifications

- Read the operating instructions before starting operation.
- Connection, assembly, and settings only by competent technicians.
- Protect the device against moisture and soiling when operating.
- No safety component in accordance with EU machine guidelines. For use in NFPA 79 applications only. UL-listed adapters providing field wiring leads are available.
- UL: The device shall be supplied from an isolating transformer having a secondary overcurrent protective device that complies with UL 248 and be installed in the field rated either:
a) max 5 amps for voltages 0 ~ 20 V (0 ~ 28.3 V peak), or
b) 100 / Vp for voltages of 20 ~ 30 V (28.3 ~ 42.4 V peak).
Alternatively, they can be supplied from a Class 2 power supply.
UL Environmental Rating: Enclosure type 1

Proper Use

The WL4S-3 Inox photoelectric reflex switch is an opto-elec-tronic sensor and is used for optical, non-contact detection of objects, animals, and people. A reflector is required for operation.

Starting Operation

- 1 Mount reflector at a right angle to the sensor. Light spot must be clearly detectable on the reflector.
- 2 Set sensitivity: There are 2 operating modes:
a) Maximum sensitivity: Sensor is directed to the open air and not to a reflector – hold the teach button pressed down > 2 ... < 8 s – maximum sensitivity is set.
b) Switching threshold is at 50 % light attenuation: Sensor must have an uninterrupted view of the reflector; no object may be in the light beam. Keep the teach button pressed down > 2 ... < 8 s – 50 % threshold is set.
Setting via cable (ET): Connect white cable or PIN 2 to L+ (PNP) or to M (NPN) in line with the desired sensitivity > 2 ... < 8 s.
- 3 **LED indicator blinks:** Sensor still works perfectly, but it is shortly before the switch-off threshold. Clean the lens surfaces, align the sensor/reflector better or check the range according to the reserve/range chart. (View mode is in operating mode 10 % switching threshold switched off.)

Maintenance

SICK photoelectric switches do not require any maintenance. We recommend that you clean the external lens surfaces and check the screw connections and plug-in connections at regular intervals.

SICK

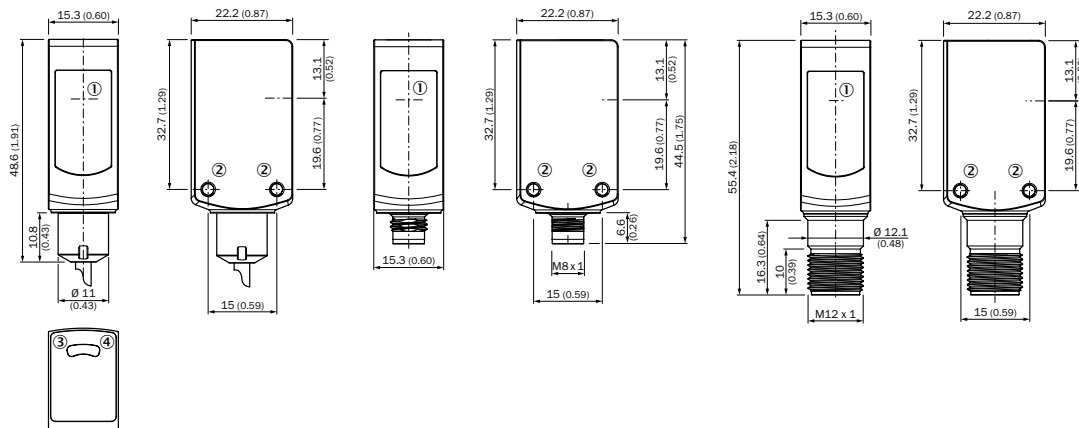
8012968.1E52 0122 COMAT

WL4S-3 Inox

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Czech Republic Phone +420 234 719 500	Singapore Phone +65 6744 3732
Chile Phone +56 (2) 2274 7430	Slovakia Phone +421 482 901 201
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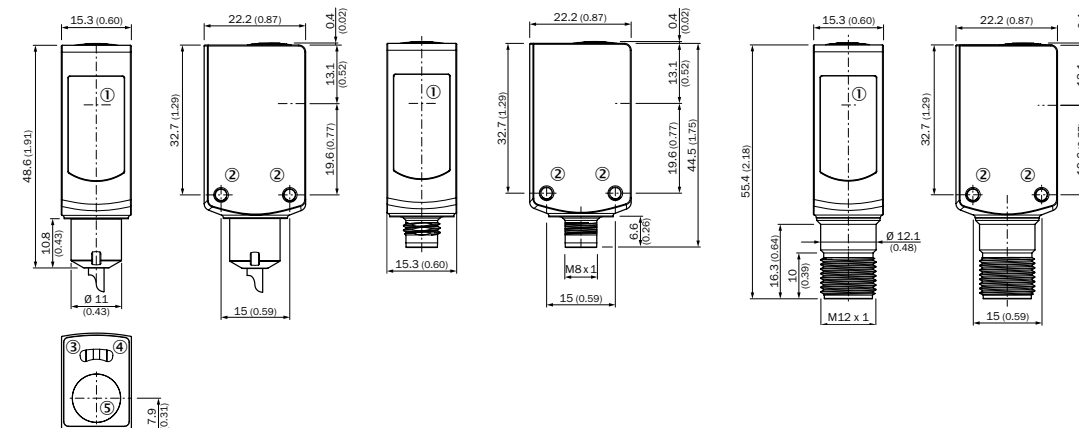
SICK AG, Erwin-Sick-Strasse 1, D-79183 Waldkirch
Detailed addresses and further locations at www.sick.com

A
WL4S-3xxx0V



- 1 Middle of optical axis receiver / Mitte der Optikachse, Empfänger
- 2 Mounting threads M3 2x / Befestigungsgewinde M3 2x
- 3 LED yellow: status light received / LED gelb: Lichtempfangsanzeige
- 4 LED green: operating voltage active / LED grün: Betriebsspannung aktiv
- 5 Teach-in button / Teach-in-Taste

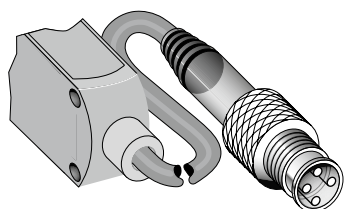
WL4S-3xxx2V



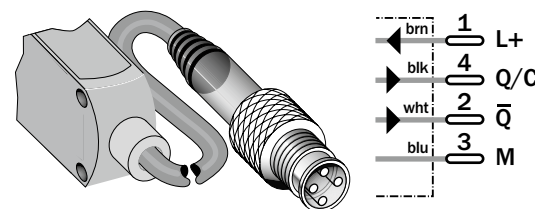
B
WL4S-3V

Safety note: / Sicherheitshinweis: Connect and secure cable receptacle tension-free. / Beim Anschließen muss die Leitung spannungsfrei sein.
Only for versions with connecting cable: / Nur für Varianten mit Anschlussleitung: The following apply for connection: brn = brown, blu = blue, blk = black, wht = white. / Erläuterungen zu den Anschlussdiagrammen: brn = braun, blu = blau, blk = schwarz, wht = weiß

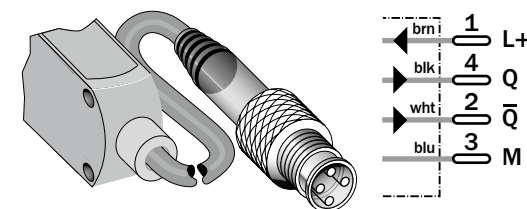
Teach via cable / Teach-in via Leitung



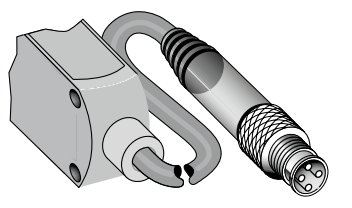
Teach-in button + IO-Link / Teach-in-Taste + IO-Link



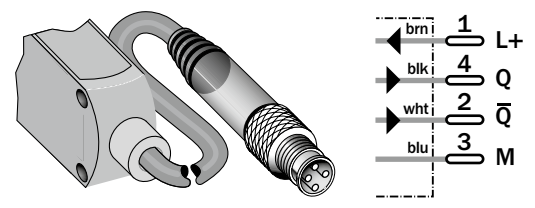
Teach-in button or fix adjustment / Teach-in-Taste oder fixe Einstellung



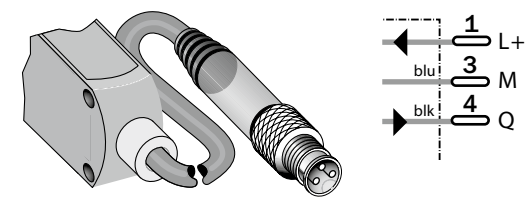
Teach via cable / Teach-in via Leitung



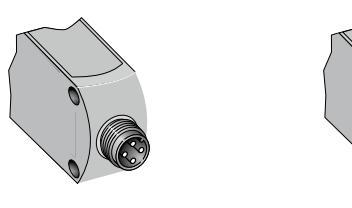
Teach-in button or fix adjustment / Teach-in-Taste oder fixe Einstellung



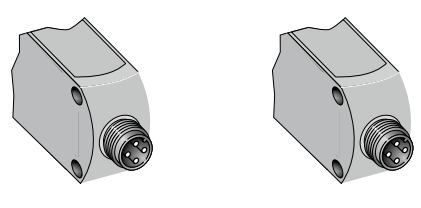
Teach-in button or fix adjustment / Teach-in-Taste oder fixe Einstellung



Teach via cable / Teach-in via Leitung



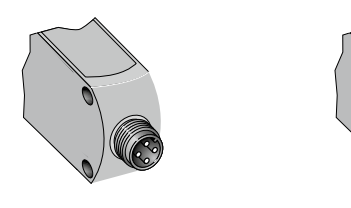
Teach-in button + IO-Link / Teach-in-Taste + IO-Link



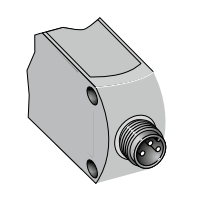
Teach-in button or fix adjustment / Teach-in-Taste oder fixe Einstellung



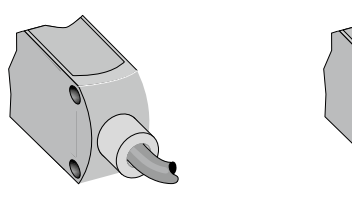
Teach-in button + alarm output / Teach-in-Taste + Alarmausgang



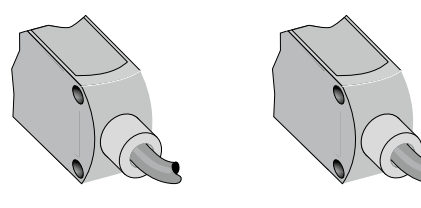
Teach-in button or fix adjustment / Teach-in-Taste oder fixe Einstellung



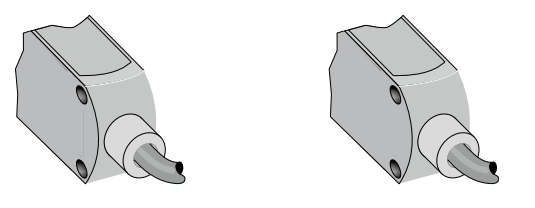
Teach via cable / Teach-in via Leitung



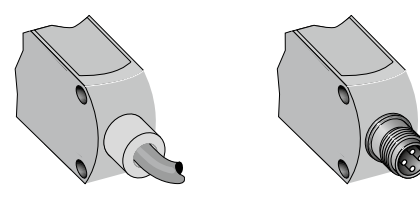
Teach-in button or fix adjustment / Teach-in-Taste oder fixe Einstellung



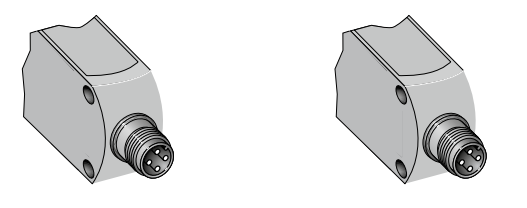
Teach-in button + alarm output / Teach-in-Taste + Alarmausgang



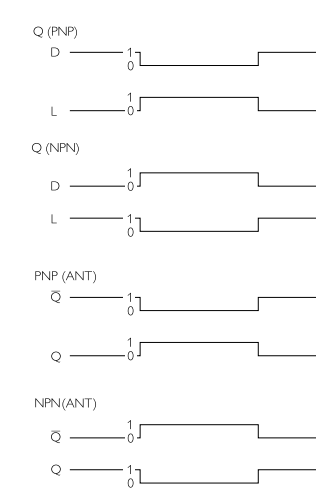
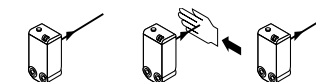
Teach-in button or fix adjustment / Teach-in-Taste oder fixe Einstellung



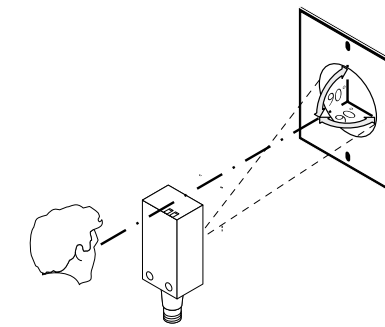
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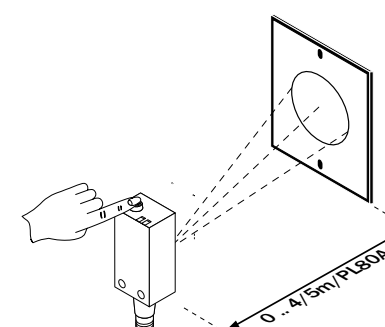
Teach via cable / Teach-in via Leitung



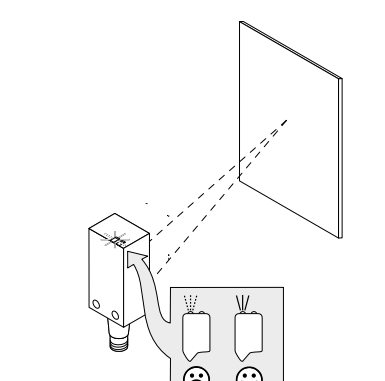
1



2



3



DEUTSCH

Reflexions-Lichtschanke
ohne/mit Teach-in
Betriebsanleitung

Sicherheitshinweise

- Vor der Inbetriebnahme die Betriebsanleitung lesen.
- Anschluss, Montage und Einstellung nur durch Fachpersonal.
- Gerät bei Inbetriebnahme vor Feuchte und Verunreinigung schützen.
- Kein Sicherheitsbauteil gemäß EU-Maschinenrichtlinie. Nur zur Verwendung in Anwendungen gemäß NFPA 79. Von UL gelistete Adapter mit Anschlusskabeln sind verfügbar.
- UL: The device shall be supplied from an isolating transformer having a secondary overcurrent protective device that complies with UL 248 and be installed in the field rated either:
a) max 5 amps for voltages 0 ~ 20 V (0 ~ 28.3 V peak), or
b) 100 / Vp for voltages of 20 ~ 30 V (28.3 ~ 42.4 V peak).
Alternatively, they can be supplied from a Class 2 power supply.
UL Environmental Rating: Enclosure type 1



Bestimmungsgemäße Verwendung

Die Reflexions-Lichtschanke WL4S-3 Inox ist ein optoelektronischer Sensor und wird zum optischen, berührungslosen Erfassen von Sachen, Tieren und Personen eingesetzt. Zum Betrieb ist ein Reflektor erforderlich.

Inbetriebnahme

- 1 Reflektor rechtwinklig zum Sensor montieren. Lichtfleck muss deutlich auf dem Reflektor erkennbar sein.
- 2 Es gibt 2 Betriebsmodi:
a) Maximale Empfindlichkeit: Sensor sieht ins Freie und nicht auf einen Reflektor – Teachknopf > 2 ... < 8 s gedrückt halten – maximale Empfindlichkeit ist eingestellt.
b) Schaltschwelle liegt bei 50 % Lichtdämpfung: Sensor muss freie Sicht auf den Reflektor haben, es darf sich kein Objekt im Strahlengang befinden. Teachknopf > 2 ... < 8 s gedrückt halten – 50 %-Schwelle ist eingestellt. Gelbe Empfangs-LED leuchtet.
Einstellung über Leitung (ET): Weiße Leitung bzw. PIN 2 entsprechend der gewünschten Empfindlichkeit > 2 ... < 8 s auf L+ (PNP) bzw. auf M (NPN) legen.
- 3 **Anzeige-LED blinkt:** Sensor arbeitet noch einwandfrei, befindet sich aber kurz vor der Ausschaltsschwelle. Optikflächen reinigen, Sensor/Reflektor besser ausrichten bzw. Reichweite gemäß Reserve-/Reichweitendiagramm überprüfen. (Blickmode ist im Betriebsmode 10 % Schaltschwelle abgeschaltet.)

Wartung

Diese SICK-Lichtschanke ist wartungsfrei. Wir empfehlen, in regelmäßigen Abständen - die optischen Grenzflächen zu reinigen, - Verschraubungen und Steckverbindungen zu überprüfen.

FRANÇAIS
Barrière réflex <div>avec apprentissage</div> Instructions de Service

Conseils de sécurité

- Lire les Instructions de Service avant la mise en marche.
- Installation, raccordement et réglage ne doivent être effectués que par du personnel qualifié.
- Lors de la mise en service, protéger l'appareil de l'humidité et des saletés.
- N'est pas un composant de sécurité au sens de la directive européenne concernant les machines. Pour utilisation dans des applications NFPA 79 uniquement. Des adaptateurs repertoriés UL fournissant des fils de câblage de terrain sont disponibles.
- UL: The device shall be supplied from an isolating transformer having a secondary overcurrent protective device that complies with UL 248 to be installed in the field rated either:

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Utilisation correcte

La barrière réflex WL4S-3 Inox est un capteur optoélectronique qui s'utilise pour la saisie optique de choses, d'animaux et de personnes sans aucun contact. Pour son fonctionnement, il est nécessaire de disposer d'un réflecteur.

Mise en service

- Installer le réflecteur perpendiculairement au capteur. Le spot lumineux doit être clairement visible sur le réflecteur.

- Réglage sensibilité : Il existe 2 modes de fonctionnement :

a) Sensibilité maximale : Le capteur regarde dans le vide, pas vers un réflecteur – Maintenir appuyé le bouton Apprentissage > 2 ... < 8 s – on a réglé sur la sensibilité maximale.

b) Le seuil de commutation est de 50 % de l'atténuation de la lumière : Le capteur doit avoir une bonne vue du réflecteur, il ne doit y avoir aucun objet dans la trajectoire du rayon lumineux. Maintenir appuyé le bouton Apprentissage > 2 ... < 8 s – le seuil de commutation est réglé sur 50 %. La LED de réception jaune est allumée.

Réglage au moyen du câble (ET) : Appliquer L+ (PNP) ou M (NPN) respectivement au câble blanc ou à la broche 2 pendant > 2 ... < 8 s en fonction de la sensibilité souhaitée.

- La LED témoin clignote :** Le capteur fonctionne encore de façon parfaite, mais se trouve juste devant le seuil de débranchement. Nettoyer les surfaces optiques, améliorer l'orientation du capteur/réflecteur ou contrôler la portée conformément au diagramme Réserve/Portée. (Le mode clignotement est débranché dans le mode de fonctionnement Seuil de commuta-tion à 10 %.)

Maintenance

Les détecteurs de lumière SICK ne nécessitent pas d'entretien. Nous recommandons, à intervalles réguliers

- de nettoyer les surfaces optiques,
- de contrôler les assemblages vissés et les connexions à fiche et à prise.

PORTUGUÉS
Barreira de luz com reflexão por espelho <div>com teach-in</div> Instruções de operação

Instruções de segurança

- Antes do comissionamento dev ler as instruções de operação.
- Conexões, montagem e ajuste devem ser executados exclusivamente por pessoal devidamente qualificado.
- Guardar o aparelho ao abrigo de umidade e sujidade.
- Não se trata de elemento de segurança segundo a Diretiva Máquinas da União Europeia. Somente para o uso em aplicações NFPA 79. Estão disponíveis adaptadores listados pela UL com fios de cabeamento de campo.
- UL: The device shall be supplied from an isolating transformer having a secondary overcurrent protective device that complies with UL 248 to be installed in the field rated either:

a) max 5 amps for voltages 0 ~ 20 V (0 ~ 28.3 V peak), or

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Utilização devida

A barreira de luz com reflexão por espelho WL4S-3 Inox é um sensor opto-eletrónico que é utilizado para a análise ótica, sem contato, de objetos, animais e pessoas. O seu funcionamento requer um refletor.

Comissionamento

- Montar o refletor perpendicularmente ao sensor. O ponto luminoso deve ser nitidamente reconhecível no refletor.
- Ajuste da sensibilidade: Existem 2 modos operacionais:

a) sensibilidade máxima: o sensor está livre e não sobre um refletor – manter apertado o botão Teach > 2 ... < 8 s – sensibilidade máxima está ajustada.

b) o limiar de comutação situa-se em 50 % de atenuação luminosa: O sensor deverá ter visão aberta sobre o refletor, nenhum objeto poderá estar no trajeto do raio luminoso. Manter apertado o botão Teach > 2 ... < 8 s – o limiar 50 % está ajustado.

Ajuste mediante condutor (ET): Aplicar condutor branco ou PIN 2 a L+ (PNP) ou a M (NPN) segundo a sensibilidade desejada > 2 ... < 8 s.

- LED de indicação pisca:** Sensor ainda funciona perfeitamente, mas encontra-se pouco antes do limiar de desconexão. Limpar as superfícies ópticas, alinhar melhor o sensor/refletor ou verificar o alcance de acordo com o diagrama de reserva/de alcances. (o modo de visão, no modo operacional, está desconectado 10 % do limiar de desconexão.)

Manutenção

Os sensores de luz SICK não requerem manutenção. Recomendamos que se faça, em intervalos regulares,

- a limpeza das superfícies óticas,
- e um controle às conexões rosçadas e uniões de conetores.

ITALIANO
Sensore luminoso a riflessione <div>con teach-in</div> Istruzioni per l'uso

Avvertimenti di sicurezza

- Vor der Inbetriebnahme die Betriebsanleitung lesen.
- Anschluss, Montage und Einstellung nur durch Fachpersonal.
- Gerät bei Inbetriebnahme vor Feuchte und Verunreinigung schützen.
- Kein Sicherheitsbauteil gemäß EU-Maschinenrichtlinie. Nur zur Verwendung in Anwendungen gemäß NFPA 79. Von UL gelistete Adapter mit Anschlusskabeln sind verfügbar.
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Impiego conforme allo scopo

Il sensore luminosa a riflessione WL4S-3 Inox è un sensore optoelettronico che viene impiegato per il rilevamento ottico a distanza di oggetti, animali e persone. Per l'esercizio è necessario un riflettore.

Messa in esercizio

- Montare il riflettore ad angolo retto rispetto al sensore. Il punto luminoso deve essere chiaramente visibile sul riflettore.

- Impostazione della sensibilità

Ci sono 2 modi operativi:

a) Sensibilità massima: il sensore è rivolto verso un'area libera, non verso un riflettore – tenere premuto il tasto Teach > 2 ... < 8 s – è impostata la sensibilità massima.

b) Soglia di commutazione al 50 % di smorzamento luminoso: Il sensore deve avere la vista libera fino al riflettore, senza nessun oggetto nel fascio luminoso. Tenere premuto il tasto Teach > 2 ... < 8 s – è impostata la soglia del 50 %. Si accende il LED giallo di ricezione.

Impostazione via cavo (ET): a seconda della sensibilità desiderata > 2 ... < 8 s collegare il cavo bianco o risp. PIN 2 a L+ (PNP) o risp. M (NPN).

- La spia LED lampeggia:** il sensore lavora ancora senza problemi, ma è prossimo alla soglia di disinserzione. Pulire le superfici ottiche, correggere l'orientamento del sensore/riflettore o controllare la portata sulla base del diagramma di riserva/portata (nel modo operativo con soglia di commutazione del 10 % la modalità Sguardo è disinserita.)

Manutenzione

Le barriere luminose SICK non richiedono manutenzione. Si consiglia

- di pulire regolarmente le superfici ottiche limite,
- di controllare regolarmente gli avvitamenti e i collegamenti a spina.

NEREDLANDS
Reflectie-fotocel <div>met teach-in</div> Gebruiksaanwijzing

PORTUGUÉS
Barreira de luz com reflexão por espelho <div>com teach-in</div> Instruções de operação

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Sensore luminoso a riflessione <div>con teach-in</div> Istruzioni per l'uso

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Barrière réflex <div>avec apprentissage</div> Instructions de Service

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Barreira de luz com reflexão por espelho <div>com teach-in</div> Instruções de operação

漢語
镜面反射型光电器 <div>Teach-in</div> 操作規程

- 使用前阅读操作规程
- 只允许专业人员进行接线,安装及调整.
- 使用时应防潮 防静电
- 按照 EU-机器规程无保护元件。只用于 NFPA 79 应用。可提供 UL 列出的适配器（带现场配线引线）。
- UL: The device shall be supplied from an isolating transformer having a secondary overcurrent protective device that complies with UL 248 to be installed in the field rated either:

a) max 5 amps for voltages 0 ~ 20 V (0 ~ 28.3 V peak), or

b) 100 / Vp for voltages of 20 ~ 30 V (28.3 ~ 42.4 V peak).

Alternatively, they can be supplied from a Class 2 power supply.

UL Environmental Rating: Enclosure type 1

参量使用

WL4S-3 Inox 镜面反射型光电器是一种光斑传感器,该传感器可对物体,动物和人进行无接触的 光学的检测.该装置的工作状态需要 — 反射片(附带)

投入使用

- 安装反射器，使其与传感器成直角。在反射器上必须能够清楚识别光斑。

- 灵敏度设置 : 有 2 个操作方式 :

a) 灵敏度最大 : 传感器不对向反射器，而是对向空处– 按住 Teach按钮> 2 ... < 8 s – 最大灵敏度就已设定。黄色受光灯亮起

b) 开关阈在光线弱化的 50 % 处: 传感器与反射器之间不应有遮挡；光路中不应有物件放置。按住 Teach 按钮 > 2 ... < 8 s ? 50 % 的阈值便已设定。黄色受光灯亮起。

通过导线设置（ET): 将白色导线或与所需灵敏度 > 2 ... < 8 s 相适宜的 PIN 2 与 L+ (PNP) 或与 M (NPN) 连接。

- 指示灯闪亮: 传感器还在正常运行，但已接近关闭阈。需清洁光谱表面，更好地校正传感器和反射器。还需根据有关储备及有效距离的图示检测有效距离。（闪烁模式已在操作模式 10 % 开关阈处关闭。）

维护

SICK-漫反射型光电开关全部免维护我们建议，

- 定期地清洁光学反光面,
- 检查螺丝拧紧和插头.

ESPAÑOL
Barrera de luz de reflexión <div>con teach-in</div> Manual de Servicio

Observaciones sobre seguridad

- Leer el Manual de Servicio antes de la puesta en macrcha.
- Conexión, montaje y ajuste solo por personal técnico.
- A la puesta en marcha proteger el aparato contra humedad y suciedad.
- No es elemento constructivo de seguridad según la Directiva UE sobre maquinaria. Para uso exclusivo en aplicaciones NFPA 79. Hay disponibles adaptadores con homologación UL para el cableado de campo.
- UL: The device shall be supplied from an isolating transformer having a secondary overcurrent protective device that complies with UL 248 to be installed in the field rated either:

a) max 5 amps for voltages 0 ~ 20 V (0 ~ 28.3 V peak), or

b) 100 / Vp for voltages of 20 ~ 30 V (28.3 ~ 42.4 V peak).

Alternatively, they can be supplied from a Class 2 power supply.

UL Environmental Rating: Enclosure type 1

Empleo para usos debidos

La barrera de luz de reflexión WL4S-3 Inox es un sensor optoelectrónico para la detección óptica y sin contacto de objetos, animales y personas. Para el servicio es necesario un reflector.

Puesta en marcha

- Montar el reflector en ángulo recto con el sensor. El punto luminoso debe poderse apreciar claramente en el reflector.

- Ajuste de sensibilidad: Hay 2 modos de servicio:

a) Sensibilidad máxima: El sensor mira hacia afuera y no hacia un reflector – mantener pulsado el botón Teach > 2 ... < 8 s – la sensibilidad máxima queda ajustada.

b) La onda de conmutación se halla en un 50 % de amortiguación de luz: El sensor debe tener vista libre hacia el reflector, no debe hallarse objeto alguno en el recorrido del haz luminoso. Mantener pulsado el botón Teach > 2 ... < 8 s – está ajustado un umbral del 50 %. Se enciende el LED amarillo de recepción.

Ajuste por medio de conductor (ET): Colocar el conductor blanco o el PIN 2 de acuerdo a la sensibilidad deseada > 2 ... < 8 s en L+ (PNP) o en M (NPN).

- Parpadea el LED de indicación:** El sensor trabaja aún correctamente, pero se halla a poca distancia del umbral de desconexión. Limpiar las superficies de la óptica, ajustar mejor el sensor/reflector o controlar el alcance de acuerdo al diagrama de reserva/Alcance. (El modo visual está desconectado en modo de servicio en un 10 % del umbral de conmutación).

Mantenimiento

Los palpadore de luz SICK están exentos de mantenimiento. Recomendamos a intervalos regulares

- limpiar las superficies ópticas
- controlar las prensaestopas y las bases de conexion.