8017526.YFI8

OPERATING INSTRUCTION

WL100-2 for transparent objects

Miniature photoelectric sensor

en / de / fr / pt / it / es / zh / ja / ru

SICK
Sensor Intelligence.

Photoelectric retro-reflective sensor

Operating instructions

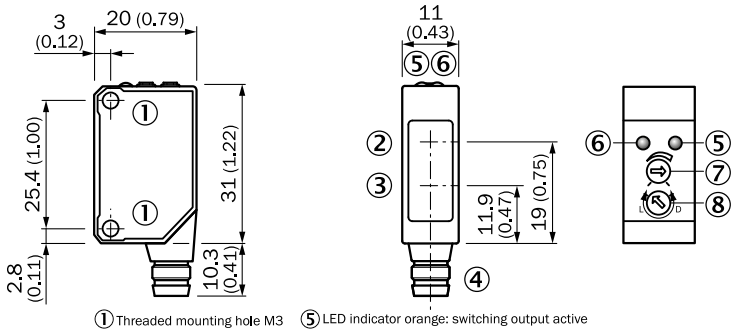
2 Safety notes

- Read the operating instructions before commissioning.
- Connection, mounting, and setting may only be performed by trained specialists.
- Not a safety component in accordance with the EU Machinery Directive.
- When commissioning, protect the device from moisture and contamination.
- These operating instructions contain information required during the life cycle of the sensor.

3 Correct use

Photoelectric retro-reflective sensor with additional option for the detection of transparent objects

The WL100-2 is an opto-electronic photoelectric retro-reflective sensor (referred to as "sensor" in the following) for the optical, non-contact detection of objects, animals, and persons. A reflector is required for this product to function. If the product is used for any other purpose or modified in any way, any warranty claim against SICK AG shall become void.



4 Commissioning

1 Adjust the distance between the sensor and the reflector according to the corresponding diagram (x = sensing range, y = operating reserve).

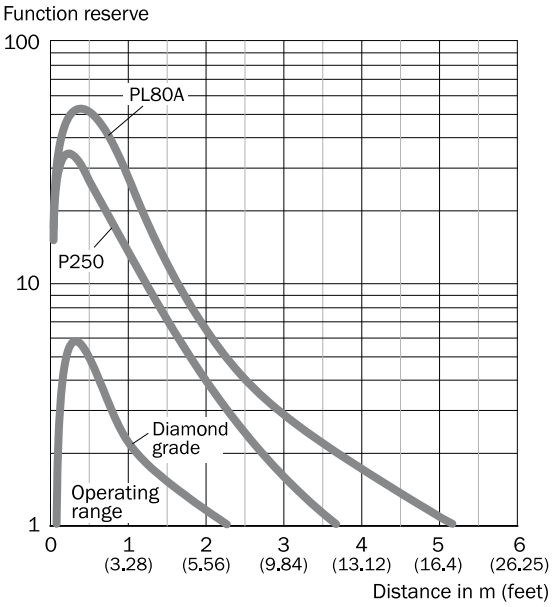


Image 1: H

2 Mount the sensor and the reflector using suitable mounting brackets (see the SICK range of accessories). Align the sensor and reflector with each other.

Note the sensor's maximum permissible tightening torque of < 0.5 Nm.

3 The sensors must be connected in a voltage-free state (V_S = 0 V). The information in the graphics [B] must be observed, depending on the type of connection:

- Male connector connection: pin assignment
- Cable: core color

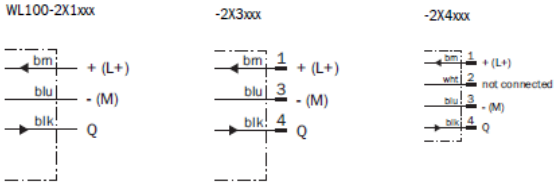


Image 2: B

Only apply voltage/switch on the power supply (V_S > 0 V) once all electrical connections have been completed. The green LED indicator lights up on the sensor.

Explanations of the connection diagram (Graphic B):

Switching output Q (according to Graphic B):

WL100-2P (PNP: load -> M)

L = light switching

D = dark-switching

4 Align the sensor with a suitable reflector. Select the position so that the red emitted light beam hits the center of the reflector. The sensor must have a clear view of the reflector, with no object in the path of the beam [see E]. You must ensure that the optical openings of the sensor and reflector are completely clear.

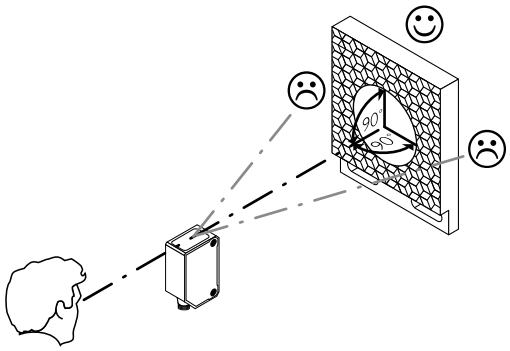


Image 3: E

5 Sensor with potentiometer:

The sensitivity is adjusted with the potentiometer (type: 270°). Clockwise rotation: operating reserve increased; counterclockwise rotation: operating reserve reduced. Adjustment for detecting transparent objects (> 20% damping): Place object between sensor and reflector. Reduce the sensitivity until the LED indicator goes out. Once the object is removed, the LED indicator must light up again. If the LED indicator does not light up again, check the application conditions.

The sensor is adjusted and ready for operation. Refer to Graphics C and G to check the function. If the switching output fails to behave in accordance with Graphic C, check application conditions. See section Fault diagnosis.

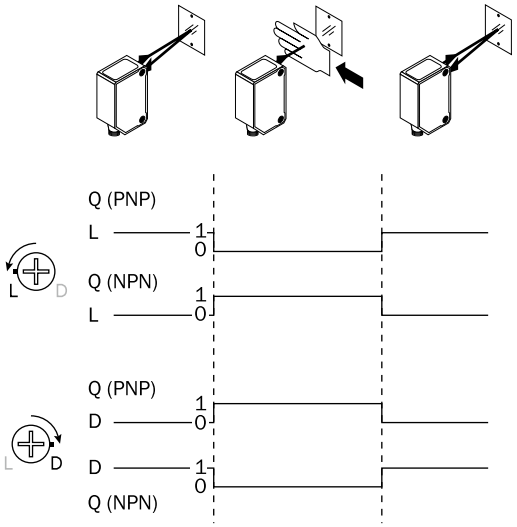


Image 4: C

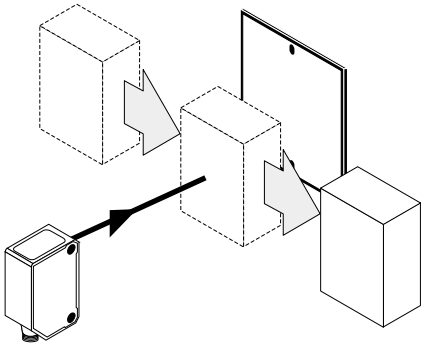


Image 5: G

6 Fault diagnosis

Table indicates which measures are to be taken if the sensor stops working.

7 Tab_Fault diagnosis

LED indicator/fault pattern / ***LED indicator/fault pattern***	**Cause /** ***Cause***	**Measures /** ***Measures***
Green LED does not light up or flickers / *Green LED does not light up or flickers*	Sensor is still ready for operation, but the operating conditions are not ideal (operating reserve factor between 0.9 and 1.1) / *Sensor is still ready for operation, but the operating conditions are not ideal (operating reserve factor between 0.9 and 1.1)*	Check the operating conditions: Fully align the beam of light (light spot) with the reflector / Clean the optical surfaces (sensor and reflector) / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sensor and the reflector, and check the reflector type against Graphic E / Reflector is not suitable for the application in question (we recommend only using SICK reflectors) / Damping of the object is < 20% / Check sensing range and adjust if necessary, see Graphic E / Distance between the sensor and the reflector is too long / *Check the operating conditions: Fully align the beam of light (light spot) with the reflector / Clean the optical surfaces (sensor and reflector) / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sensor and the reflector, and check the reflector type against Graphic E / Reflector is not suitable for the application in question (we recommend only using SICK reflectors) / Damping of the object is < 20% / Check sensing range and adjust if necessary, see Graphic E / Distance between the sensor and the reflector is too long*
Green LED does not light up / *Green LED does not light up*	No voltage or voltage below the limit values / *No voltage or voltage below the limit values*	Check the power supply, check all electrical connections (cables and plug connections) / *Check the power supply, check all electrical connections (cables and plug connections)*
Green LED does not light up / *Green LED does not light up*	Voltage interruptions / *Voltage interruptions*	Ensure there is a stable power supply without interruptions / *Ensure there is a stable power supply without interruptions*
Green LED does not light up / *Green LED does not light up*	Sensor is faulty / *Sensor is faulty*	If the power supply is OK, replace the sensor / *If the power supply is OK, replace the sensor*
Signal interruptions when object is detected / *Signal interruptions when object is detected*	Depolarizing property of the object surface (e.g., tape), reflection / *Depolarizing property of the object surface (e.g., tape), reflection*	Reduce sensitivity or change the position of the sensor / *Reduce sensitivity or change the position of the sensor*

8 Disassembly and disposal

The sensor must be disposed of according to the applicable country-specific regulations. Efforts should be made during the disposal process to recycle the constituent materials (particularly precious metals).

9 Maintenance

SICK sensors are maintenance-free.

We recommend doing the following regularly:

- Clean the external lens surfaces
- Check the screw connections and plug-in connections

No modifications may be made to devices.

Subject to change without notice. Specified product properties and technical data are not written guarantees.

Reflexions-Lichtschranke

Betriebsanleitung

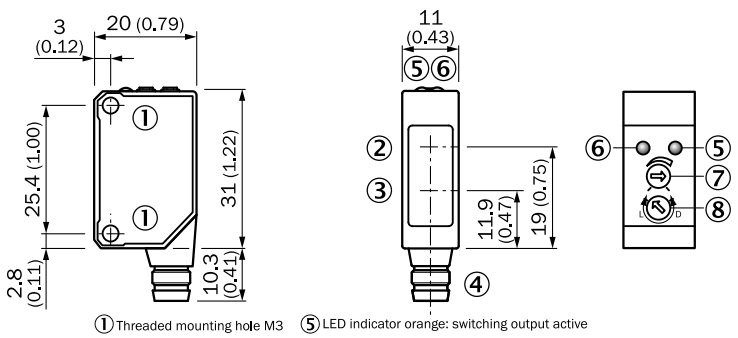
12 Sicherheitshinweise

- Vor der Inbetriebnahme die Betriebsanleitung lesen.
- Anschluss, Montage und Einstellung nur durch Fachpersonal.
- Kein Sicherheitsbauteil gemäß EU-Maschinenrichtlinie.
- Gerät bei Inbetriebnahme vor Feuchte und Verunreinigung schützen.
- Diese Betriebsanleitung enthält Informationen, die während des Lebenszyklus des Sensors notwendig sind.

13 Bestimmungsgemäße Verwendung

Reflexions-Lichtschranke mit Zusatzoption zur Erkennung transparenter Objekte

Die WL100-2 ist eine optoelektronische Reflexions-Lichtschranke (im Folgenden Sensor genannt) und wird zum optischen, berührungslosen Erfassen von Sachen, Tieren und Personen eingesetzt. Zur Funktion wird ein Reflektor benötigt. Bei jeder anderen Verwendung und bei Veränderungen am Produkt verfällt jeglicher Gewährleistungsanspruch gegenüber der SICK AG.



14 Inbetriebnahme

1 Distanz zwischen Sensor und Reflektor mit dem zugehörigen Diagramm [vgl. H] abgleichen (x = Schaltabstand, y = Funktionsreserve).

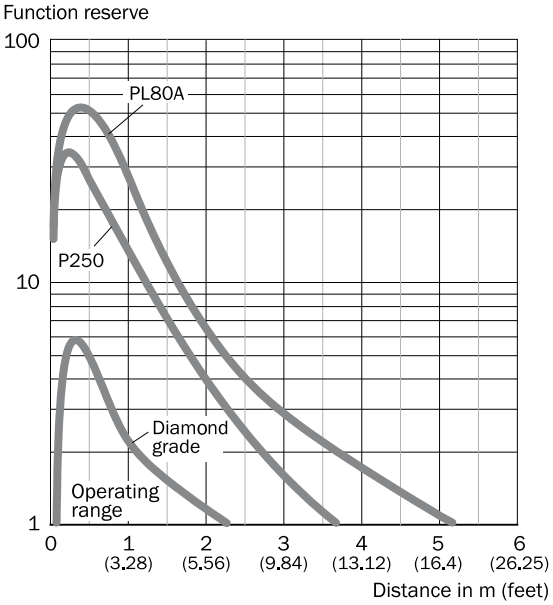


Abb. 6: H

2 Sensor und Reflektor an geeignete Befestigungswinkel montieren (siehe SICK-Zubehör-Programm). Sensor und Reflektor zueinander ausrichten.

Maximal zulässiges Anzugsdrehmoment des Sensors von < 0.5 Nm beachten.

3 Anschluss der Sensoren muss spannungsfrei (V_S = 0 V) erfolgen. Je nach Anschlussart sind die Informationen in den Grafiken [vgl. B] zu beachten:

- Steckeranschluss: Pinbelegung
- Leitung: Adernfarbe

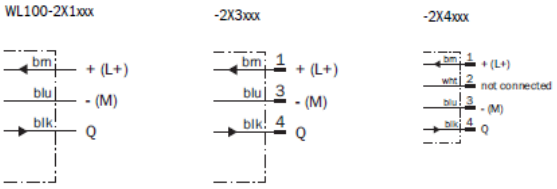


Abb. 7: B

Erst nach Anschluss aller elektrischen Verbindungen die Spannungsversorgung (V_S > 0 V) anlegen bzw. einschalten. Am Sensor leuchtet die grüne Anzeige-LED.

Erläuterungen zum Anschlussschema (Grafik B):

Schaltausgang Q (gemäß Grafik B):

WL100-2P (PNP: Last -> M)

L = hellschaltend

D = dunkelschaltend

4 Sensor auf geeigneten Reflektor ausrichten. Positionierung so wählen, dass der rote Sendelichtstrahl in der Mitte des Reflektors auftrifft. Der Sensor muss freie Sicht auf den Reflektor haben, es darf sich kein Objekt im Strahlengang befinden [vgl. E]. Es ist darauf zu achten, dass die optischen Öffnungen von Sensor und Reflektor vollständig frei sind.

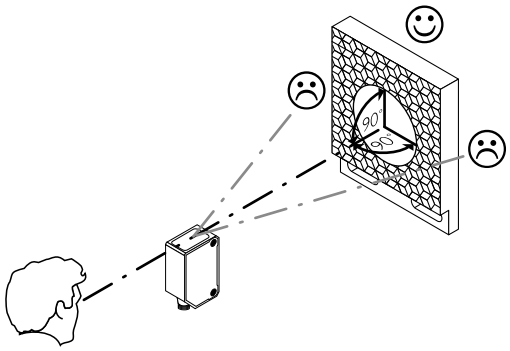


Abb. 8: E

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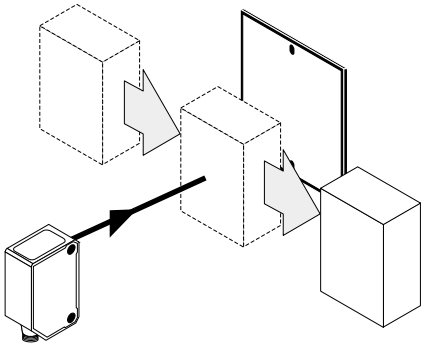


Sensor mit Potentiometer:

Mit dem Potentiometer (Art: 270°) wird die Empfindlichkeit eingestellt. Drehung nach rechts: Erhöhung der Funktionsreserve, Drehung nach links: Verringerung der Funktionsreserve. Einstellung zur Detektion transparenter Objekte (> 20 % Dämpfung): Objekt zwischen Sensor und Reflektor stellen. Die Empfindlichkeit soweit reduzieren, bis die Anzeige-LED erlischt. Nach Entfernen des Objekts muss die Anzeige-LED wieder leuchten. Leuchtet die Anzeige-LED nicht wieder, Einsatzbedingungen prüfen.

Sensor ist eingestellt und betriebsbereit. Zur Überprüfung der Funktion Grafik C und G heranziehen. Verhält sich der Schaltausgang nicht gemäß Grafik C, Einsatzbedingungen prüfen. Siehe Abschnitt Fehlerdiagnose.

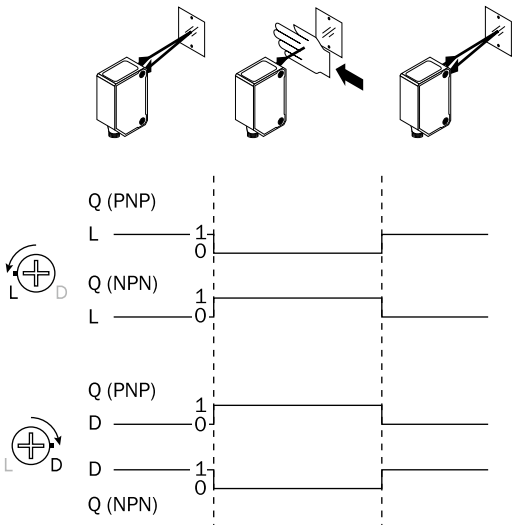


Abb. 9: C

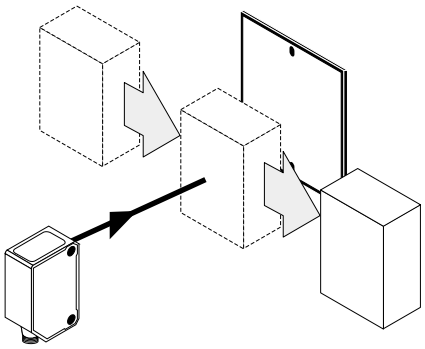


Abb. 10: G

16 Fehlerdiagnose

Tabelle I zeigt, welche Maßnahmen durchzuführen sind, wenn die Funktion des Sensors nicht mehr gegeben ist.

17 Tab_Fehlerdiagnose

Anzeige-LED / Fehlerbild / ***LED indicator/fault pattern***	**Ursache /** ***Cause***	**Maßnahme /** ***Measures***
Grüne LED leuchtet nicht bzw. flackert / *Green LED does not light up or flickers*	Sensor ist noch betriebsbereit, aber die Betriebsbedingungen sind nicht optimal (Funktionsreservefaktor zwischen 0,9 und 1,1) / *Sensor is still ready for operation, but the operating conditions are not ideal (operating reserve factor between 0.9 and 1.1)*	Betriebsbedingungen prüfen: Lichtstrahl (Lichtfleck) vollständig auf den Reflektor ausrichten / Reinigung der optischen Flächen(Sensor und Reflektor) / Empfindlichkeit (Potentiometer) neu einstellen / falls Potentiometer auf max. Schaltabstand eingestellt: Abstand zwischen Sensor und Reflektor verringern sowie Reflektortyp mit Grafik H überprüfen / Reflektor eignet sich nicht für gewählte Applikation (wir empfehlen, ausschließlich SICK-Reflektoren zu verwenden) / Dämpfung des Objektes ist < 20 % / Schaltabstand überprüfen und ggf. anpassen, siehe Grafik H. / Abstand zwischen Sensor und Reflektor ist zu groß / *Check the operating conditions: Fully align the beam of light (light spot) with the reflector. / Clean the optical surfaces (sensor and reflector). / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sensor and the reflector, and check the reflector type against Graphic H. / Reflector is not suitable for the application in question (we recommend only using SICK reflectors) / Damping of the object is < 20% / Check sensing range and adjust if necessary; see Graphic H. / Distance between the sensor and the reflector is too long*

Anzeige-LED / Fehlerbild / ***LED indicator/fault pattern***	**Ursache /** ***Cause***	**Maßnahme /** ***Measures***
grüne LED leuchtet nicht / *Green LED does not light up*	keine Spannung oder Spannung unterhalb der Grenzwerte / *No voltage or voltage below the limit values*	Spannungsversorgung prüfen, den gesamten elektrischen Anschluss prüfen (Leitungen und Steckerverbindungen) / *Check the power supply, check all electrical connections (cables and plug connections)*
grüne LED leuchtet nicht / *Green LED does not light up*	Spannungsunterbrechungen / *Voltage interruptions*	Sicherstellen einer stabilen Spannungsversorgung ohne Unterbrechungen / *Ensure there is a stable power supply without interruptions*
grüne LED leuchtet nicht / *Green LED does not light up*	Sensor ist defekt / *Sensor is faulty*	Wenn Spannungsversorgung in Ordnung ist, dann Sensor austauschen / *If the power supply is OK, replace the sensor*
Signalunterbrechungen bei Objektdetektion / *Signal interruptions when object is detected*	Depolarisierende Eigenschaft der Objektoberfläche (z. B. Folie), Umspiegelung / *Depolarizing property of the object surface (e.g., tape), reflection*	Empfindlichkeit reduzieren oder Sensorposition verändern / *Reduce sensitivity or change the position of the sensor*

18 Demontage und Entsorgung

Die Entsorgung des Sensors hat gemäß den länderspezifisch anwendbaren Vorschriften zu erfolgen. Für die enthaltenen Wertstoffe (insbesondere Edelmetalle) ist im Rahmen der Entsorgung eine Verwertung anzustreben.

19 Wartung

SICK-Sensoren sind wartungsfrei.

Wir empfehlen, in regelmäßigen Abständen

- die optischen Grenzflächen zu reinigen
- Verschraubungen und Steckverbindungen zu überprüfen

Veränderungen an Geräten dürfen nicht vorgenommen werden.

Irrtümer und Änderungen vorbehalten. Angegebene Produkteigenschaften und technische Daten stellen keine Garantieerklärung dar.

Barrière réflexe

Notice d'instruction

22 Consignes de sécurité

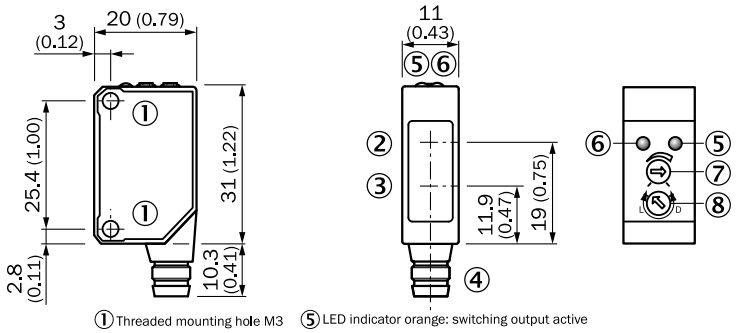
- Lire la notice d'instruction avant la mise en service.
- Confier le raccordement, le montage et le réglage uniquement à un personnel spécialisé.
- Il ne s'agit pas d'un composant de sécurité au sens de la directive machines CE.

- Protéger l'appareil contre l'humidité et les impuretés lors de la mise en service.
- Cette notice d'instruction contient des informations nécessaires pendant toute la durée de vie du capteur.

23 Utilisation conforme

Détecteur à réflexion directe avec option de détection d'objets transparents

WL100-2 est une barrière réflexe optoélectronique (appelée capteur dans ce document) qui permet la détection optique sans contact d'objets, d'animaux et de personnes. Un réflecteur est nécessaire à son fonctionnement. Toute autre utilisation ou modification du produit annule la garantie de SICK AG.



24 Mise en service

1 Comparer la distance entre le capteur et le réflecteur avec le diagramme [voir H] correspondant (x = portée, y = réserve de fonctionnement).

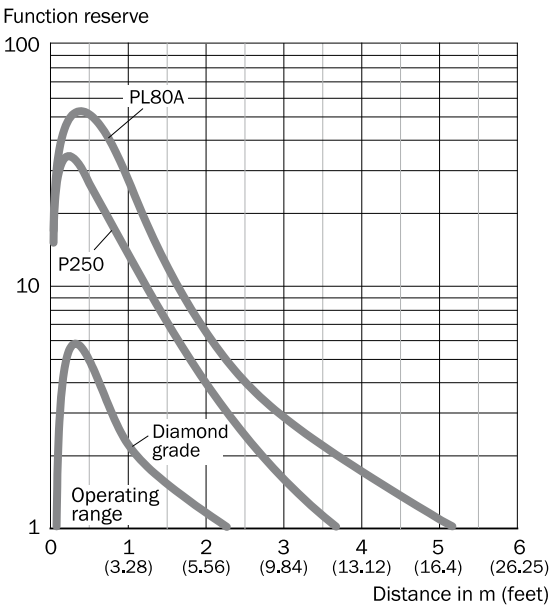


Image 11: H

2 Monter le capteur et le réflecteur sur des équerres de fixation adaptées (voir la gamme d'accessoires SICK). Aligner le capteur sur le réflecteur.

Respecter le couple de serrage maximum autorisé du capteur de < 0.5 Nm

3 Le raccordement des capteurs doit s'effectuer hors tension (V_S = 0 V). Selon le mode de raccordement, respecter les informations contenues dans les schémas [B] :

– Raccordement du connecteur : affectation des broches
– Câble : couleur des fils

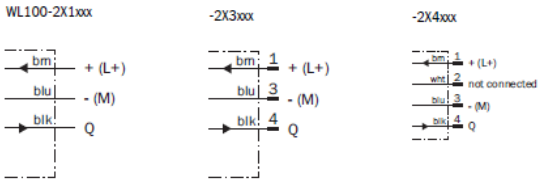


Image 12: B

Après avoir terminé tous les raccordements électriques, enclencher l'alimentation électrique (V_S > 0 V). La DEL verte s'allume sur le capteur.

Explications relatives au schéma de raccordement (schéma B) :

Sortie de commutation Q (selon le schéma B) :

WL100-2P (PNP : charge -> M)

L = commutation claire

D = commutation sombre

4 Aligner le capteur sur un réflecteur adéquat. Sélectionner la position de sorte que le faisceau lumineux émis rouge touche le réflecteur en plein milieu. Le capteur doit disposer d'un champ de vision dégagé sur le réflecteur, il ne doit donc y avoir aucun objet dans la trajectoire du faisceau [voir E]. S'assurer que les ouvertures optiques du capteur et du réflecteur sont parfaitement dégagées.

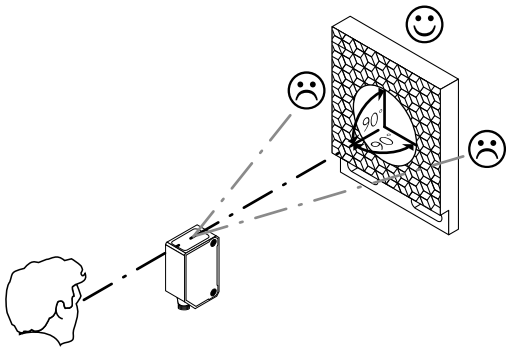


Image 13: E

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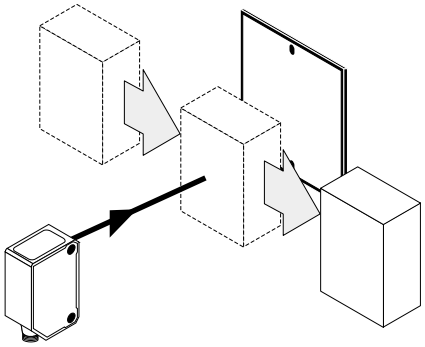


Capteur avec potentiomètre :

La sensibilité se règle avec le potentiomètre (réf : 270°). Rotation vers la droite : augmentation de la réserve de fonctionnement, rotation vers la gauche : réduction de la réserve de fonctionnement. Réglage pour la détection d'objets transparents (> 20 % d'atténuation) : placer l'objet entre le capteur et le réflecteur. Réduire la sensibilité jusqu'à ce que la DEL s'éteigne. Une fois l'objet enlevé, la DEL doit se rallumer. Si la DEL ne se rallume pas, vérifier les conditions d'utilisation.

Le capteur est réglé et prêt à être utilisé. Pour contrôler le fonctionnement, utiliser les schémas C et G. Si la sortie de commutation ne se comporte pas comme indiqué sur le schéma C, vérifier les conditions d'utilisation. Voir la section consacrée au diagnostic.

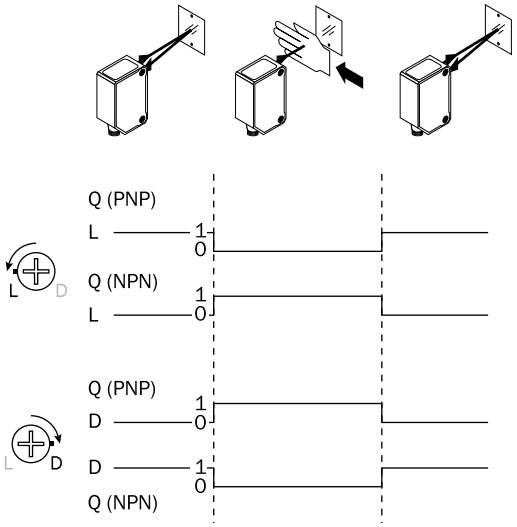


Image 14: C

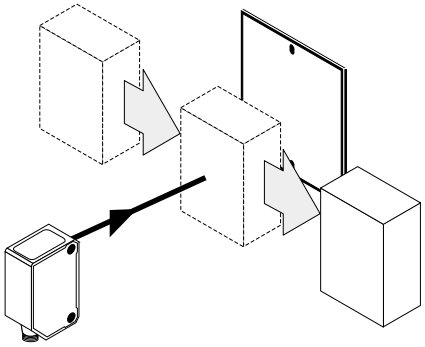


Image 15: G

26 Diagnostic

Le tableau I présente les mesures à appliquer si le capteur ne fonctionne plus.

27 Tab_Diagnostic

LED d'état / image du défaut / ***LED indicator/fault pattern***	**Cause /** ***Cause***	**Mesure /** ***Measures***
La LED verte ne s'allume pas ou vacille / *Green LED does not light up or flickers*	Le capteur est encore opérationnel, mais les conditions d'utilisation ne sont pas idéales (facteur de réserve de fonctionnement entre 0,9 et 1,1) / *Sensor is still ready for operation, but the operating conditions are not ideal (operating reserve factor between 0.9 and 1.1)*	Vérifier les conditions d'utilisation : Diriger le faisceau lumineux (spot lumineux) entièrement sur le réflecteur / Nettoyage des surfaces optiques (capteur et réflecteur) / Régler à nouveau la sensibilité (potentiomètre) / Si le potentiomètre est réglé sur la portée max. : réduire la distance entre le capteur et le réflecteur et contrôler le type de réflecteur avec le schéma E / Le réflecteur ne convient pas à l'application sélectionnée (nous recommandons d'utiliser exclusivement des réflecteurs SICK) / L'atténuation de l'objet est < 20 % / Contrôler la portée et éventuellement l'adapter, voir le schéma E / La distance entre le capteur et le réflecteur est trop grande / *Check the operating conditions: Fully align the beam of light (light spot) with the reflector / Clean the optical surfaces (sensor and reflector) / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sensor and the reflector, and check the reflector type against Graphic E / Reflector is not suitable for the application in question (we recommend only using SICK reflectors) / Damping of the object is < 20% / Check sensing range and adjust if necessary, see Graphic E / Distance between the sensor and the reflector is too long*
La LED verte ne s'allume pas / *Green LED does not light up*	Pas de tension ou tension inférieure aux valeurs limites / *No voltage or voltage below the limit values*	Contrôler l'alimentation électrique, contrôler tous les branchements électriques (câbles et connexions) / *Check the power supply, check all electrical connections (cables and plug connections)*
La LED verte ne s'allume pas / *Green LED does not light up*	Coupures d'alimentation électrique / *Voltage interruptions*	S'assurer que l'alimentation électrique est stable et ininterrompue / *Ensure there is a stable power supply without interruptions*
La LED verte ne s'allume pas / *Green LED does not light up*	Le capteur est défectueux / *Sensor is faulty*	Si l'alimentation électrique est en bon état, remplacer le capteur / *If the power supply is OK, replace the sensor*

LED d'état / image du défaut / *LED indicator/fault pattern*	Cause / *Cause*	Mesure / *Measures*
Coupures de signal lors de détection d'objet / *Signal interruptions when object is detected*	Propriété dépolarisante de la surface de l'objet (par ex. film), réflexions / *Depolarizing property of the object surface (e.g., tape), reflection*	Réduire la sensibilité ou changer la position du capteur / *Reduce sensitivity or change the position of the sensor*

28 Démontage et mise au rebut

La mise au rebut du capteur doit respecter la réglementation nationale en vigueur. Dans le cadre de la mise au rebut, veiller à recycler les matériaux (notamment les métaux précieux).

29 Maintenance

Les capteurs SICK ne nécessitent aucune maintenance.

Nous vous recommandons de procéder régulièrement

- au nettoyage des surfaces optiques
- au contrôle des vissages et des connexions enfichables

Ne procéder à aucune modification sur les appareils.

Sujet à modification sans préavis. Les caractéristiques du produit et techniques fournies ne sont pas une déclaration de garantie.

Barreira de luz de reflexão

Manual de instruções

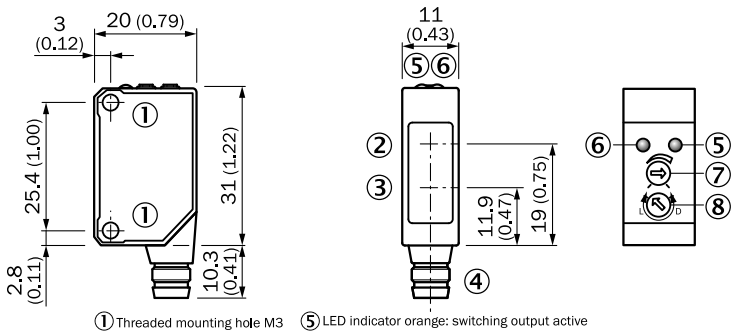
32 Notas de segurança

- Ler as instruções de operação antes da colocação em funcionamento.
- A conexão, a montagem e o ajuste devem ser executados somente por pessoal técnico qualificado.
- Os componentes de segurança não se encontram em conformidade com a Diretiva Europeia de Máquinas.
- Durante o funcionamento, manter o aparelho protegido contra impurezas e umidade.
- Este manual de instruções contém informações necessárias para toda a vida útil do sensor.

33 Especificações de uso

Barreira de luz de reflexão com opção adicional para a detecção de objetos transparentes

O WL100-2 é uma barreira de luz de reflexão optoeletrônica (doravante denominada "sensor") utilizada para a detecção óptica, sem contato, de objetos, animais e pessoas. É necessário um refletor para o funcionamento. Qualquer utilização diferente ou alterações do produto provocam a perda da garantia da SICK AG.



34 Colocação em funcionamento

1 Equiparar a distância entre o sensor e o refletor com o respectivo diagrama [cp. H] (x = distância de comutação, y = reserva de função).

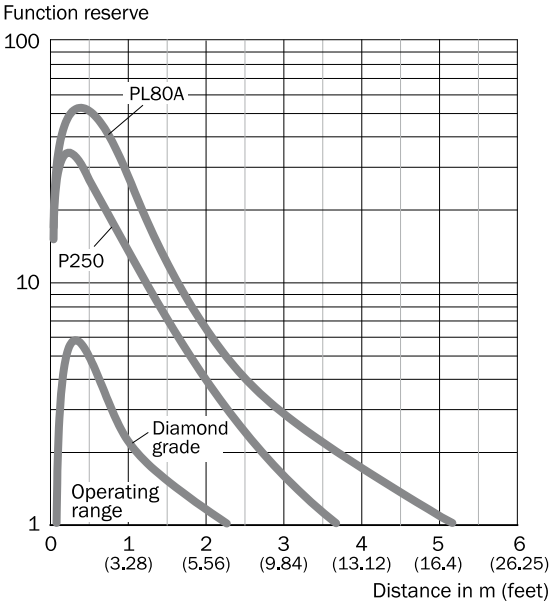


Image 16: H

2 Montar o sensor e o refletor em cantoneiras de fixação adequadas (ver linha de acessórios da SICK). Alinhar o sensor e o refletor entre si.

Observar o torque de aperto máximo permitido de < 0.5 Nm para o sensor.

3 A conexão dos sensores deve ser realizada em estado desenergizado (V_S = 0 V). Conforme o tipo de conexão, devem ser observadas as informações contidas nos gráficos [cp. B]:

- Conector: Pin-out
- Cabo: Cor dos fios

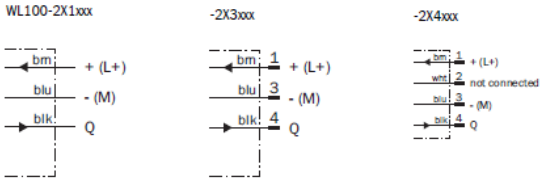


Image 17: B

Instalar ou ligar a alimentação de tensão (V_S > 0 V) somente após a conclusão de todas as conexões elétricas. O indicador LED verde está aceso no sensor.

Explicações relativas ao esquema de conexões (Gráfico B):

Saída de comutação Q (conforme o gráfico B):

WL100-2P (PNP: carga -> M)

L = comutação por luz

D = comutação por sombra

4 Alinhar o sensor ao refletor adequado. Posicionar, de forma que o feixe da luz de emissão vermelha incida sobre o centro do refletor. O espaço entre o sensor e o refletor deve estar desimpedido; não pode haver objetos no caminho óptico [cp. E]. Certificar-se de que as aberturas ópticas do sensor e do refletor estejam completamente livres.

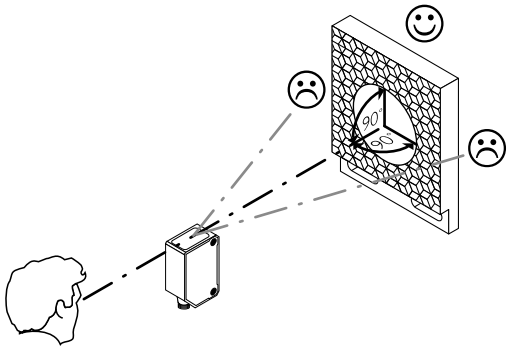


Image 18: E

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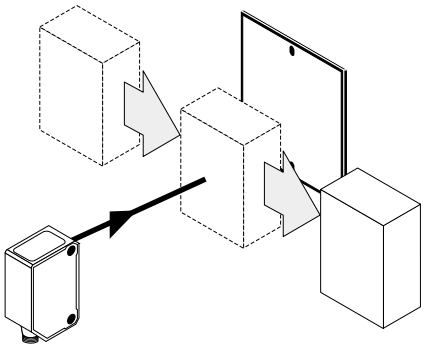


Sensor com potenciômetro:

A sensibilidade é ajustada com o potenciômetro (tipo: 270°). Giro para direita: aumento da reserva de função; giro para esquerda: redução da reserva de função. Ajuste para a detecção de objetos transparentes (> 20 % de atenuação): colocar o objeto entre o sensor e o refletor. Reduzir a sensibilidade até que o indicador LED apague. O indicador LED deve reacender após a remoção do objeto. Se o indicador LED não reacender, verificar as condições de uso.

O sensor está ajustado e operacional. Utilizar os gráficos C e G para verificar o funcionamento. Se a saída de comutação não se comportar de acordo com o gráfico C, verificar as condições de uso. Ver seção Diagnóstico de erros.

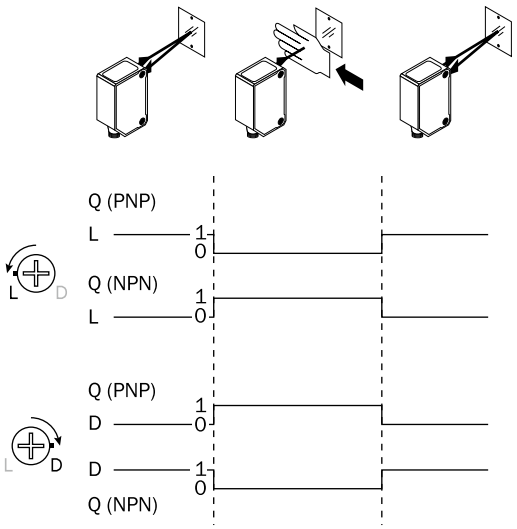


Image 19: C

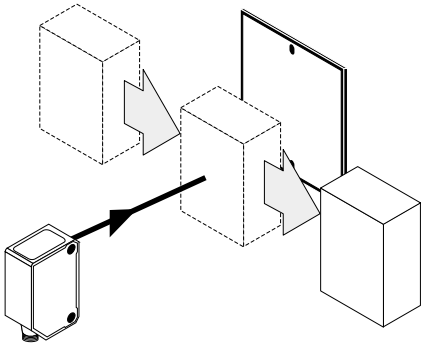


Image 20: G

36 Diagnóstico de erros

A tabela I mostra as medidas a serem executadas, quando o sensor não estiver funcionando.

37 Tab_Diagnóstico de erros

Indicador LED / padrão de erro / ***LED indicator/fault pattern***	**Causa /** ***Cause***	**Medida /** ***Measures***
LED verde apagado ou tremulando / *Green LED does not light up or flickers*	Sensor ainda está operacional, mas as condições de operação não são ideais (fator de reserva de função entre 0,9 e 1,1) / *Sensor is still ready for operation, but the operating conditions are not ideal (operating reserve factor between 0.9 and 1.1)*	Verificar as condições de operação: Alinhar o feixe de luz (ponto de luz) completamente ao refletor / Limpeza das superfícies ópticas (sensor e refletor) / reajustar a sensibilidade (potenciômetro) / Se o potenciômetro estiver ajustado para a máx. distância de comutação: reduzir a distância entre o sensor e o refletor e verificar o tipo de refletor com o gráfico E / Refletor não é adequado para a aplicação selecionada (recomendamos utilizar apenas refletores SICK) / Atenuação do objeto é < 20 % / Verificar e, se necessário, adaptar a distância de comutação, ver gráfico E / Distância entre sensor e refletor é grande demais / *Check the operating conditions: Fully align the beam of light (light spot) with the reflector / Clean the optical surfaces (sensor and reflector) / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sensor and the reflector, and check the reflector type against Graphic E / Reflector is not suitable for the application in question (we recommend only using SICK reflectors) / Damping of the object is < 20% / Check sensing range and adjust if necessary, see Graphic E / Distance between the sensor and the reflector is too long*
LED verde apagado / *Green LED does not light up*	Sem tensão ou tensão abaixo dos valores-limite / *No voltage or voltage below the limit values*	Verificar a alimentação de tensão, verificar toda a conexão elétrica (cabos e conectores) / *Check the power supply, check all electrical connections (cables and plug connections)*
LED verde apagado / *Green LED does not light up*	Interrupções de tensão / *Voltage interruptions*	Assegurar uma alimentação de tensão estável sem interrupções / *Ensure there is a stable power supply without interruptions*
LED verde apagado / *Green LED does not light up*	Sensor está com defeito / *Sensor is faulty*	Se a alimentação de tensão estiver em ordem, substituir o sensor / *If the power supply is OK, replace the sensor*

Indicador LED / padrão de erro / *LED indicator/fault pattern*	Causa / *Cause*	Medida / *Measures*
Interrupções de sinal na detecção de objetos / *Signal interruptions when object is detected*	Propriedade despolarizante da superfície do objeto (por ex., película), reflexos de superfície / *Depolarizing property of the object surface (e.g., tape), reflection*	Reduzir a sensibilidade ou modificar a posição do sensor / *Reduce sensitivity or change the position of the sensor*

38 Desmontagem e descarte

O descarte do sensor deve ser efetuado de acordo com as normas aplicáveis específicas de cada país. No âmbito do descarte, deve-se procurar o aproveitamento dos materiais recicláveis contidos (principalmente dos metais nobres).

39 Manutenção

Os sensores SICK não requerem manutenção.

Recomendamos que se efetue em intervalos regulares

- uma limpeza das superfícies ópticas
- uma verificação das conexões roscadas e dos conectores

Não são permitidas modificações no aparelho.

Sujeito a alterações sem aviso prévio. As propriedades do produto e os dados técnicos especificados não constituem nenhum certificado de garantia.

Relè fotoelettrico a riflessione

Istruzioni per l'uso

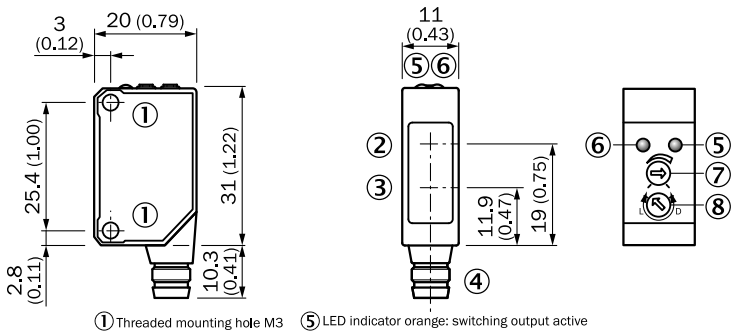
42 Avvertenze sulla sicurezza

- Prima della messa in funzionamento leggere le istruzioni per l'uso.
- Allacciamento, montaggio e regolazione solo a cura di personale tecnico specializzato.
- Nessun componente di sicurezza ai sensi della direttiva macchine UE.
- Alla messa in funzionamento proteggere l'apparecchio dall'umidità e dalla sporcizia.
- Queste istruzioni per l'uso contengono le informazioni che sono necessarie durante il ciclo di vita del sensore fotoelettrico. deTec4 core

43 Uso conforme alle prescrizioni

relè fotoelettrico a riflessione optoelettronica con opzione supplementare per il riconoscimento degli oggetti trasparenti

La WL100-2 è un relè fotoelettrico a riflessione optoelettronica (di seguito nominato sensore) utilizzato per il rilevamento ottico senza contatto di oggetti, animali e persone. Per il funzionamento è necessario un riflettore. Se viene utilizzata diversamente e in caso di modifiche sul prodotto, decade qualsiasi diritto alla garanzia nei confronti di SICK.



44 Messa in funzione

1 Predisporre la distanza tra sensore e riflettore in base al relativo diagramma (x = distanza di commutazione, y = riserva di funzionamento) [cfr. H] .

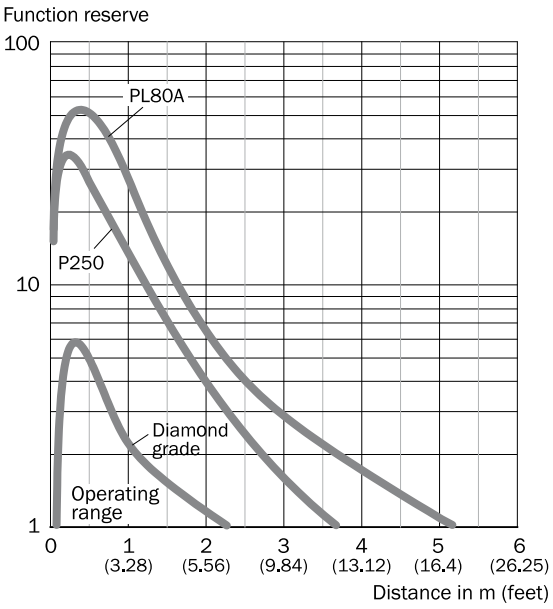


Image 21: H

2 Montare il sensore e il riflettore su dei punti di fissaggio adatti (vedi il programma per accessori SICK). Orientare reciprocamente il sensore e il rispettivo riflettore.

Rispettare il momento torcente massimo consentito del sensore di < 0.5 Nm.

3 Il collegamento dei sensori deve avvenire in assenza di tensione (V_S = 0 V). In base al tipo di collegamento si devono rispettare le informazioni nei grafici [cfr. B]:

- Collegamento a spina: assegnazione pin
- Conduttore: colore filo

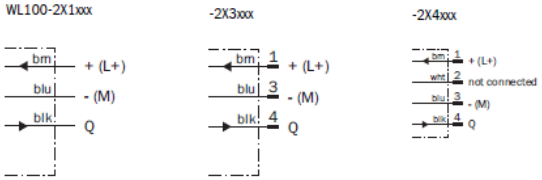


Image 22: B

Solamente in seguito alla conclusione di tutti i collegamenti elettrici, ripristinare o accendere l'alimentazione di tensione (V_S > 0 V). Sul sensore si accende l'indicatore LED verde.

Spiegazioni dello schema di collegamento (grafico B):

Uscita di commutazione Q (conformemente al grafico B):

WL100-2P (PNP: carico -> M)

L = lampade accese

D = lampade spente

4 Orientare il sensore sul relativo riflettore. Scegliere la posizione in modo tale che il raggio di luce rosso emesso colpisca il centro del riflettore. Il sensore deve avere una visuale libera sul riflettore, non ci deve essere nessun oggetto nella traiettoria del raggio [cfr. E]. Si deve fare attenzione affinché le aperture ottiche del sensore e del riflettore siano completamente libere.

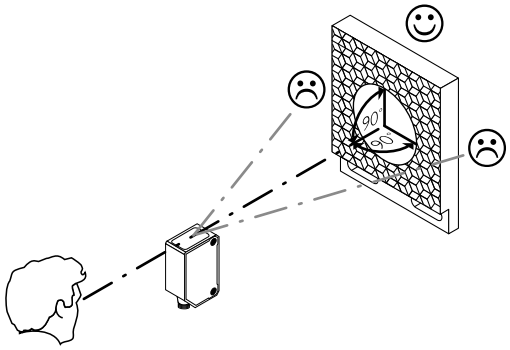


Image 23: E

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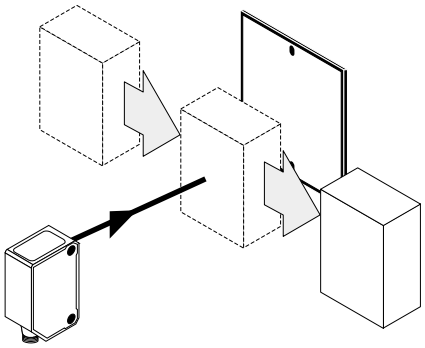


Sensore con potenziometro:

Con il potenziometro (tipo: 270°) viene regolata la sensibilità. Rotazione verso destra: innalzamento della riserva soglia operativa, rotazione verso sinistra: riduzione della riserva soglia operativa. Impostazione per rilevamento di oggetti trasparenti (> 20 % attenuazione): posizionare l'oggetto tra sensore e riflettore. Ridurre la sensibilità fino a quando l'indicatore LED si spegne. Una volta allontanato l'oggetto, l'indicatore LED deve riaccendersi. Se l'indicatore LED non si riaccende, controllare le condizioni d'impiego.

Il sensore è impostato e pronto per il funzionamento. Per verificare il funzionamento, osservare i grafici C e G. Se l'uscita di commutazione non si comporta conformemente al grafico C, verificare le condizioni d'impiego. Vedi paragrafo diagnostica delle anomalie.

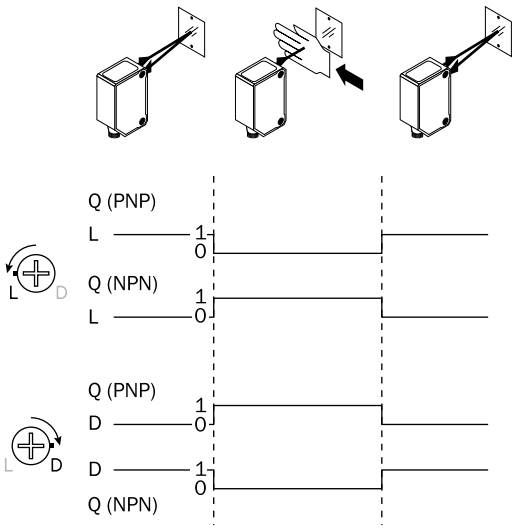


Image 24: C

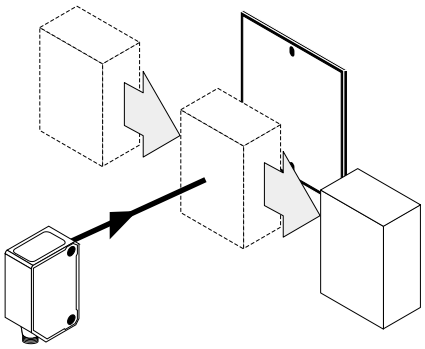


Image 25: G

46 Diagnostica delle anomalie

La tabella I mostra quali provvedimenti si devono adottare quando il sensore non funziona più.

47 Tabulatore_diagnostica delle anomalie

Indicatore LED / figura di errore / ***LED indicator/fault pattern***	**Causa /** ***Cause***	**Provvedimento /** ***Measures***
Il LED verde non si accende ovvero lampeggia / *Green LED does not light up or flickers*	Il sensore è ancora pronto per il funzionamento, ma le condizioni di esercizio non sono ottimali (fattore di riserva di funzionamento tra 0,9 e 1,1) / *Sensor is still ready for operation, but the operating conditions are not ideal (operating reserve factor between 0.9 and 1.1)*	Controllare le condizioni di esercizio: Dirigere il raggio di luce (il punto luminoso) completamente sul riflettore / Pulizia delle superfici ottiche (Sensore e riflettore) / Sensibilità (potenziometro) / se il potenziometro è impostato sulla distanza di commutazione massima: diminuire la distanza tra sensore e riflettore e verificare nuovamente il tipo di riflettore con il grafico E / se il riflettore non è adatto per l'applicazione selezionata (si consiglia, di usare esclusivamente riflettori SICK) / Attenuazione dell'oggetto è < 20 % / Controllare la distanza di commutazione e, se necessario, adattarla, vedi grafico E / La distanza tra sensore e riflettore è troppo grande / *Check the operating conditions: Fully align the beam of light (light spot) with the reflector / Clean the optical surfaces (sensor and reflector) / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sensor and the reflector, and check the reflector type against Graphic E / Reflector is not suitable for the application in question (we recommend only using SICK reflectors) / Damping of the object is < 20% / Check sensing range and adjust if necessary, see Graphic E / Distance between the sensor and the reflector is too long*
Il LED verde non si accende / *Green LED does not light up*	nessuna tensione o tensione al di sotto del valore soglia / *No voltage or voltage below the limit values*	Verificare la tensione di alimentazione e/o il collegamento elettrico / *Check the power supply, check all electrical connections (cables and plug connections)*
Il LED verde non si accende / *Green LED does not light up*	Interruzioni di tensione / *Voltage interruptions*	Assicurarsi che ci sia un'alimentazione di tensione stabile / *Ensure there is a stable power supply without interruptions*
Il LED verde non si accende / *Green LED does not light up*	Il sensore è guasto / *Sensor is faulty*	Se l'alimentazione di tensione è regolare, allora chiedere una sostituzione del sensore / *If the power supply is OK, replace the sensor*

Indicatore LED / figura di errore / *LED indicator/fault pattern*	Causa / *Cause*	Provvedimento / *Measures*
Interruzioni di segnale al momento del rilevamento dell'oggetto / *Signal interruptions when object is detected*	Proprietà depolarizzante della superficie dell'oggetto (ad es. pellicola), riflesso / *Depolarizing property of the object surface (e.g., tape), reflection*	Ridurre la sensibilità o variare la posizione del sensore / *Reduce sensitivity or change the position of the sensor*

48 Smontaggio e smaltimento

Lo smaltimento del sensore deve avvenire conformemente alle direttive previste specificatamente dal paese. Per i materiali riciclabili in esso contenuti (in particolare metalli nobili) si auspica un riciclaggio nell'ambito dello smaltimento.

49 Manutenzione

I sensori SICK sono esenti da manutenzione.

A intervalli regolari si consiglia di

- pulire le superfici limite ottiche
- Verificare i collegamenti a vite e gli innesti a spina

Non è consentito effettuare modifiche agli apparecchi.

Contenuti soggetti a modifiche senza preavviso. Le proprietà del prodotto e le schede tecniche indicate non costituiscono una dichiarazione di garanzia.

Barrera fotoeléctrica de reflexión

Instrucciones de uso

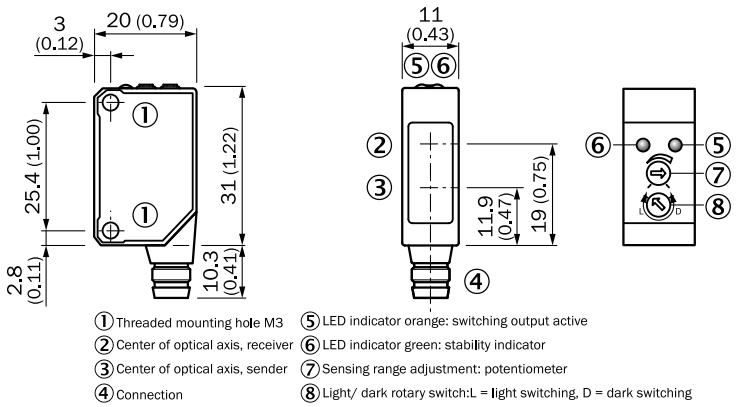
52 Instrucciones de seguridad

- Lea las instrucciones de uso antes de efectuar la puesta en servicio.
- La conexión, el montaje y el ajuste deben ser efectuados exclusivamente por técnicos especialistas.
- No se trata de un componente de seguridad según la Directiva de máquinas de la UE.
- Proteja el equipo contra la humedad y la suciedad durante la puesta en servicio.
- Las presentes instrucciones de uso contienen información que puede serle necesaria durante todo el ciclo de vida del sensor.

53 Uso conforme a lo previsto

Barrera fotoeléctrica de reflexión con opción adicional para detectar objetos transparentes

La WL100-2 es una barrera optoelectrónica de reflexión (en lo sucesivo llamada sensor) empleada para la detección óptica y sin contacto de objetos, animales y personas. Para que funcione es necesario un reflector. Cualquier uso diferente al previsto o modificación en el producto invalidará la garantía por parte de SICK AG.



54 Puesta en servicio

1 Comparar la distancia entre el sensor y el reflector con el diagrama correspondiente [véase fig. H] (x = distancia de conmutación, y = reserva de funcionamiento).

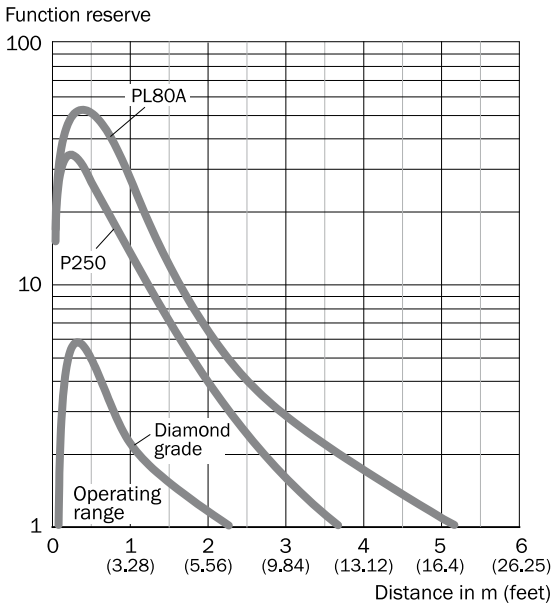


Image 26: H

2 Montar el sensor y el reflector en escuadras de fijación adecuadas (ver programa de accesorios SICK). Alinear el sensor y el reflector entre sí.

Respetar el par de apriete máximo admisible del sensor de < 0.5 Nm.

3 Los sensores deben conectarse sin tensión (V_S = 0 V). Debe tenerse en cuenta la información de las figuras [B] en función de cada tipo de conexión:

- Conexión de enchufes: asignación de pines
- Cable: color del hilo

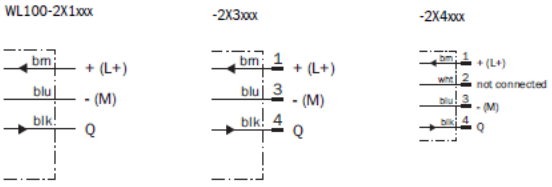


Image 27: B

No conectar o aplicar la fuente de alimentación (V_S > 0 V) hasta que no se hayan realizado todas las conexiones eléctricas. En el sensor se ilumina el LED indicador verde.

Explicaciones relativas al esquema de conexión (figura B)

Salida conmutada Q (según figura B):

WL100-2P (PNP: carga -> M)

L = conmutación en claro

D = conmutación en oscuro

4 Oriente el sensor hacia el reflector adecuado. Seleccione una posición que permita que el haz de luz roja del transmisor incida en el centro del reflector. El sensor debe tener una visión despejada del reflector, no puede haber ningún objeto en la trayectoria del haz [véase Figura E]. Hay que procurar que las aperturas ópticas del sensor y del reflector estén completamente libres.

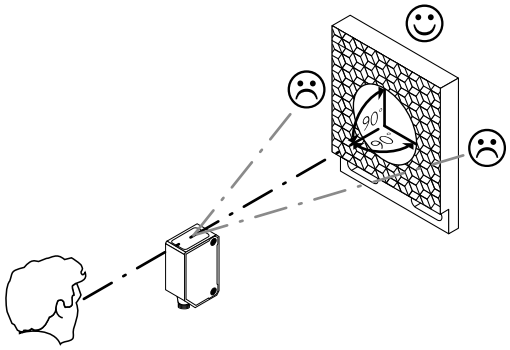


Image 28: E

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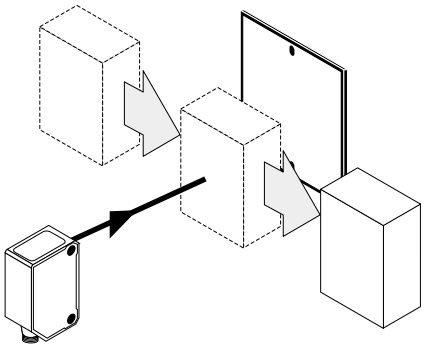


Sensor con potenciómetro:

Con el potenciómetro (tipo: 270°) se ajusta la sensibilidad. Giro hacia la derecha: aumenta la reserva de funcionamiento; giro hacia la izquierda: se reduce la reserva de funcionamiento. Ajuste para detectar objetos transparentes (> 20% de atenuación): colocar el objeto entre el sensor y el reflector. Reducir la sensibilidad hasta que se apague el LED indicador. Después de retirar el objeto, el LED debe iluminarse de nuevo. Si el LED indicador no se vuelve a iluminar, compruebe las condiciones de aplicación.

El sensor está ajustado y listo para su uso. Para verificar el funcionamiento, véanse las figuras C y G. Si la salida conmutada no se comporta según la figura C, comprobar las condiciones de aplicación. Véase la sección "Diagnóstico de fallos".

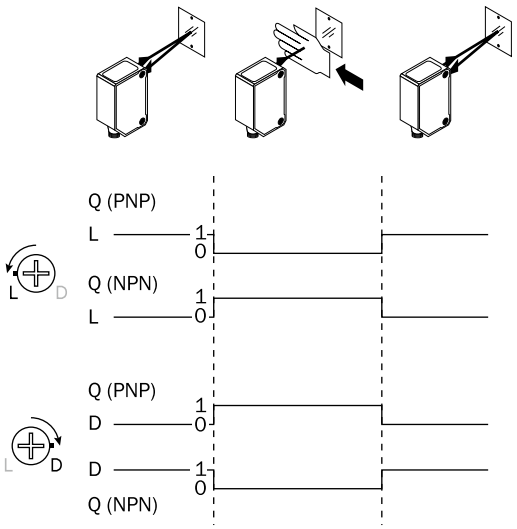


Image 29: C

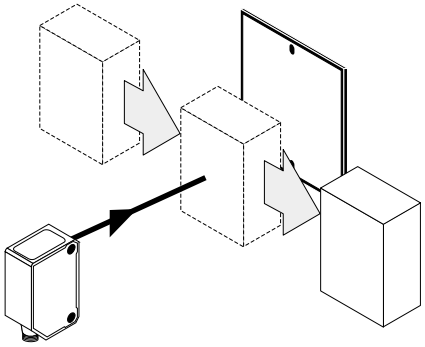


Image 30: G

56 Diagnóstico de fallos

La tabla I muestra las medidas que hay que tomar cuando ya no está indicado el funcionamiento del sensor.

57 Tabla_Diagnóstico de fallos

LED indicador / imagen de error / ***LED indicator/fault pattern***	**Causa /** ***Cause***	**Acción /** ***Measures***
El LED verde no se ilumina o parpadea / *Green LED does not light up or flickers*	El sensor aún está operativo, pero las condiciones de servicio no son óptimas (factor de reserva de funcionamiento entre 0,9 y 1,1) / *Sensor is still ready for operation, but the operating conditions are not ideal (operating reserve factor between 0.9 and 1.1)*	Comprobar las condiciones de servicio: Alinear el haz de luz (punto de luz) completamente con el reflector / Limpieza de las superficies ópticas (sensor y reflector) / Reajustar la sensibilidad (potenciómetro) / Si el potenciómetro está ajustado a la máxima distancia de conmutación, reducir la distancia entre el sensor y el reflector y comprobar el tipo de reflector con la figura E / El reflector no es adecuado para la aplicación seleccionada (recomendamos utilizar exclusivamente reflectores SICK) / La atenuación del objeto es < 20 % / Comprobar la distancia de conmutación y, si es necesario, adaptarla, véase figura E La distancia entre el sensor y el reflector es excesiva / *Check the operating conditions: Fully align the beam of light (light spot) with the reflector / Clean the optical surfaces (sensor and reflector) / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sensor and the reflector, and check the reflector type against Graphic E / Reflector is not suitable for the application in question (we recommend only using SICK reflectors) / Damping of the object is < 20% / Check sensing range and adjust if necessary, see Graphic E / Distance between the sensor and the reflector is too long*
El LED verde no se ilumina / *Green LED does not light up*	Sin tensión o tensión por debajo de los valores límite / *No voltage or voltage below the limit values*	Comprobar la fuente de alimentación, comprobar toda la conexión eléctrica (cables y conectores) / *Check the power supply, check all electrical connections (cables and plug connections)*
El LED verde no se ilumina / *Green LED does not light up*	Interrupciones de tensión / *Voltage interruptions*	Asegurar una fuente de alimentación estable sin interrupciones de tensión / *Ensure there is a stable power supply without interruptions*
El LED verde no se ilumina / *Green LED does not light up*	El sensor está defectuoso / *Sensor is faulty*	Si la fuente de alimentación no tiene problemas, cambiar el sensor / *If the power supply is OK, replace the sensor*

LED indicador / imagen de error / *LED indicator/fault pattern*	Causa / *Cause*	Acción / *Measures*
Interrupciones de la señal al detectar objetos / *Signal interruptions when object is detected*	Propiedad despolarizante de la superficie del objeto (p. ej., lámina plástica), reflexión / *Depolarizing property of the object surface (e.g., tape), reflection*	Reducir la sensibilidad o modificar la posición del sensor / *Reduce sensitivity or change the position of the sensor*

58 Desmontaje y eliminación

El sensor tiene que eliminarse siguiendo la normativa aplicable específica de cada país. Los materiales valiosos que contenga (especialmente metales nobles) deben ser eliminados considerando la opción del reciclaje.

59 Mantenimiento

Los sensores SICK no precisan mantenimiento.

A intervalos regulares, recomendamos:

- Limpiar las superficies ópticas externas
- Comprobar las uniones roscadas y las conexiones.

No se permite realizar modificaciones en los aparatos.

Sujeto a cambio sin previo aviso. Las propiedades y los datos técnicos del producto no suponen ninguna declaración de garantía.

镜反射式光电传感器
操作说明

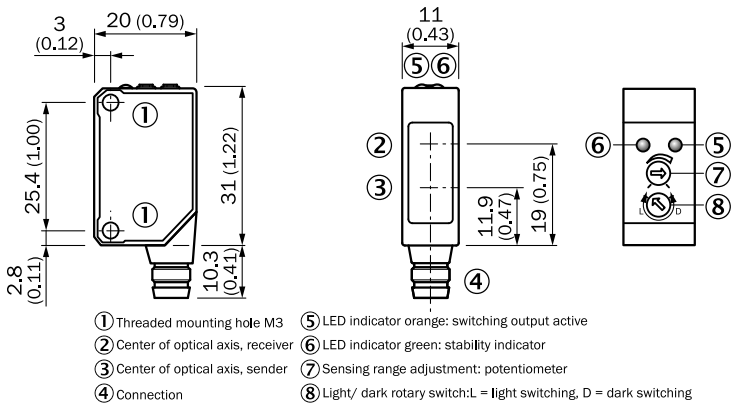
62 安全须知

- **调试**前**请阅读**操作**说**明。
- **仅**允**许**由**专业**人**员进**行接**线**、安装和**设**置。
- 本**设备**非欧盟机械指令中定**义**的安全部件。
- **调试**前防止**设备**受潮或**污**染。
- 本操作**说**明中包含了**传**感器生命周期中必需的各**项**信息。

63 拟定用途

配有可**识别**透明物体的**选**配件

WL100-2 是一种光**电**反射式光**栅**（下文**简**称**为**“**传**感器”），用于物体、**动**物和人体的非接触式光学**检测**。配**备**反射**镜**或者胶**贴**。如果**滥**用本**产**品或擅自更改**产**品，则 SICK AG 公司所作之**质**保承**诺**均将失效。



64 调试

1 使用随附的**图**表 [参照 H] **调**整**发**射器和反射器之**间**的距离（x = 开关距离，y = 信号冗余）。

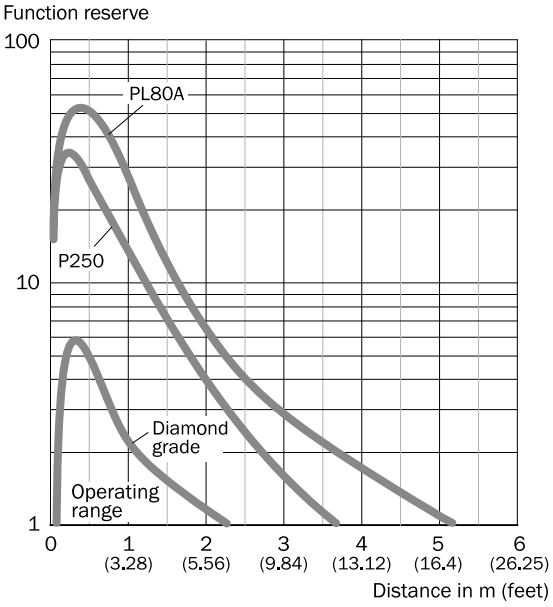


Image 31: H

2 将**传**感器和反射器安装在合适的安装托架上（参**见** SICK 附件**说**明**书**）。相互**对**准**传**感器和反射器。

注意**传**感器的最大允**许拧紧**扭矩**为** < 0.5 Nm。

3 必**须**在无**电压**状**态** (V_S = 0 V) **连**接**传**感器。依据不同**连**接**类**型，注意**图** [参照 B] 中的信息：

- 插**头连**接：引**线**分配
- **导线**：芯**线颜**色

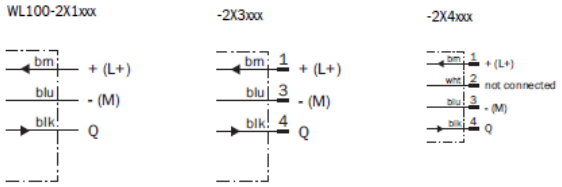


Image 32: B

完成所有**电**子**连**接后，才敷**设**或接通**电**源 (V_S > 0 V)。**传**感器上的**绿**色 LED 指示灯亮起。

接**线图**（**图** B）**说**明：

开关**输**出端 Q（根据**图** B）：

WL100-2P（PNP：负载 -> M）

L = 开灯

D = 关灯

4 将传感器对准合适的反射器。选择定位，确保红色发射光束射中反射器的中间。传感器应无遮挡地观察到反射器，光路中不得有任何物体 [参照 E]。此时应注意传感器和反射器的光学开口处应无任何遮挡。

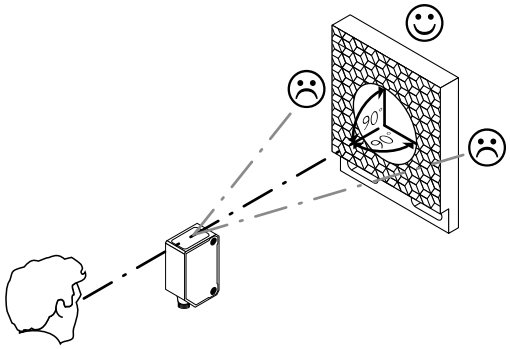


Image 33: E

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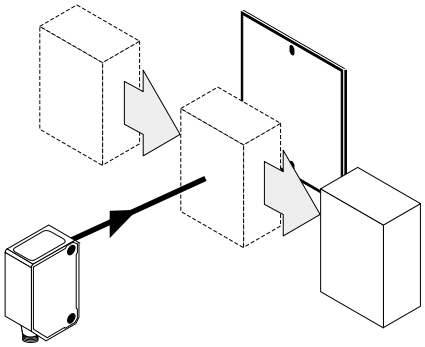


配电位计的传感器：

使用电位计（型号：270°）设置灵敏度。向右旋转：提高信号冗余，向左旋转：降低信号冗余。设置待探测透明物体（> 20% 阻尼）：调整传感器和反射器之间的物体。降低灵敏度，直至 LED 指示灯熄灭。移开物体后，该 LED 指示灯应再次亮起。如果 LED 指示灯未亮起，则须检查使用条件。

传感器已设置并准备就绪。参照图 C 和 G 检查功能。如果输出信号开关装置的动作不符合图 C，则须检查使用条件。参见故障诊断章节。

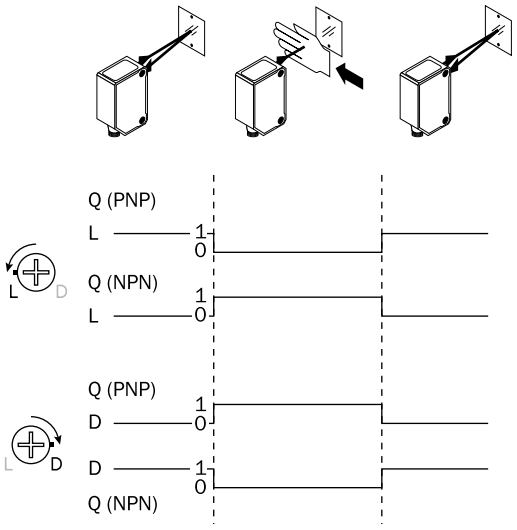


Image 34: C

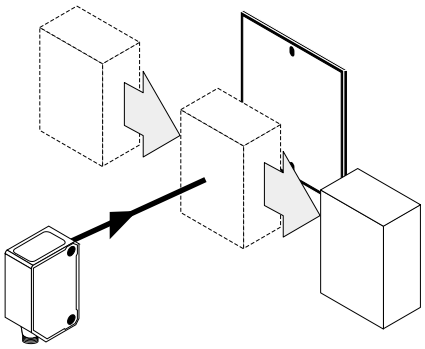


Image 35: G

66 故障诊断

表 I 中罗列了传感器无法执行某项功能时应采取的各项措施。

67 表_故障诊断

LED 指示灯 / 故障界面 / *LED indicator/fault pattern*	原因 / *Cause*	措施 / *Measures*
绿色 LED 未亮起或闪烁 / *Green LED does not light up or flickers*	尽管传感器准备就绪，但运行条件不佳（信号冗余因数处于 0.9 至 1.1 之间 ） / *Sensor is still ready for operation, but the operating conditions are not ideal (operating reserve factor between 0.9 and 1.1)*	检查运行条件： 光束（光斑）完全对准反射器 / 清洁光学表面（传感器和反射器） / 重新设置灵敏度（电位计） / 如果已将电位计设置到最大开关距离：减小传感器和反射器之间的间距并使用图 E 检查反射器类型 / 反射器不适用于所选应用（我们建议仅使用 SICK 反射器） / 物体阻尼 < 20 % / 检查开关距离，必要时调整；参见图 E / 传感器和反射器之间的间距过大 / *Check the operating conditions: Fully align the beam of light (light spot) with the reflector / Clean the optical surfaces (sensor and reflector) / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sensor and the reflector, and check the reflector type against Graphic E / Reflector is not suitable for the application in question (we recommend only using SICK reflectors) / Damping of the object is < 20% / Check sensing range and adjust if necessary, see Graphic E / Distance between the sensor and the reflector is too long*
绿色 LED 未亮起 / *Green LED does not light up*	无电压或电压低于极限值 / *No voltage or voltage below the limit values*	检查电源，检查整体电气连接（导线和插头连接） / *Check the power supply, check all electrical connections (cables and plug connections)*
绿色 LED 未亮起 / *Green LED does not light up*	电压中断 / *Voltage interruptions*	确保电源稳定无中断 / *Ensure there is a stable power supply without interruptions*

LED 指示灯 / 故障界面 / *LED indicator/fault pattern*	原因 / *Cause*	措施 / *Measures*
绿色 LED 未亮起 / *Green LED does not light up*	传感器损坏 / *Sensor is faulty*	如果电源正常，则更换传感器 / *If the power supply is OK, replace the sensor*
探测物体时信号中断 / *Signal interruptions when object is detected*	物体表面的去极化特性（例如：薄膜），折射 / *Depolarizing property of the object surface (e.g., tape), reflection*	降低灵敏度或更改传感器位置 / *Reduce sensitivity or change the position of the sensor*

68 拆卸和废弃处理

必须根据当地特定的法律法规废弃处理传感器。如果其中含有可回收材料（尤其是贵金属），则必须在废弃处理时回收利用。

69 保养

SICK 传感器无需保养。

我们建议，定期：

- 清洁镜头检测面
- 检查螺栓连接和插头连接

不得对设备进行任何改装。

如有更改,不另行通知。所给出的产品特性和技术参数并非质保声明。

リフレクタ形光電センサ
取扱説明書

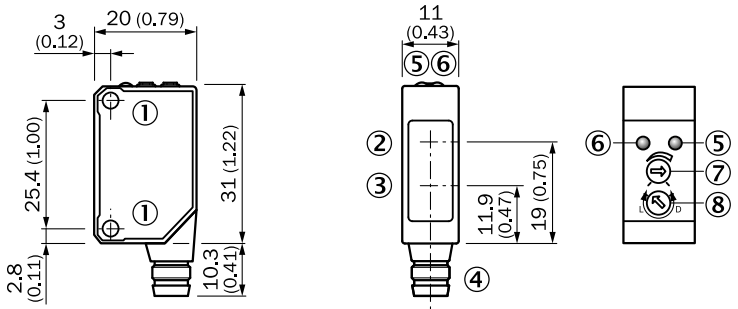
72 安全上の注意事項

- ご使用前に必ず取扱説明書をお読みください。
- 本製品の接続・取り付け・設定は、訓練を受けた技術者が行って下さい。
- 本製品は EU 機械指令の要件を満たす安全コンポーネントではありません。
- 使用開始前に、湿気や汚れから機器を保護して下さい。
- 本取扱説明書には、センサのライフサイクル中に必要となる情報が記載されています。

73 正しいご使用方法

透明体検出の追加オプション付きリフレクタ形光電センサ

WL100-2 はリフレクタ形光電センサ（以下「センサ」）で、物体、動物または人物などを光学的技術により非接触で検知するための装置です。この製品が機能するためにはリフレクタが必要です。本製品が本来の使用用途以外の目的に使用されたり、何らかの方法で改造された場合、SICK AG に対するいかなる保証要求も無効になります。



74 使用開始

1 センサとリフレクタの間隔を対応する図 [H を参照] に従って調整します (x = 検出距離、y = 機能リザーブ)。

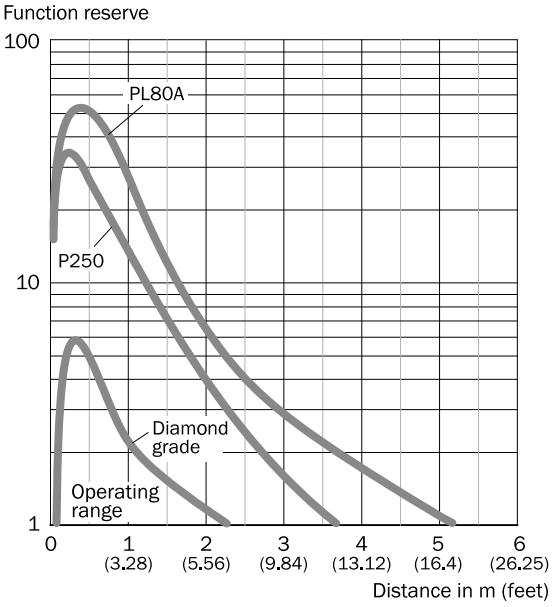


Image 36: H

2 適切なブラケットを使用してセンサとリフレクタを取り付けます（SICK 付属品カタログを参照）。センサとリフレクタを互いに方向調整します。

センサの締め付けトルクの最大許容値 < 0.5 Nm に注意してください。

3 センサの接続は必ず無電圧状態（V_S = 0 V）で行ってください。接続タイプに応じて、図 [B] の情報に注意する必要があります：

- オスコネクタ接続：ピン割り当て
- ケーブル：芯の色

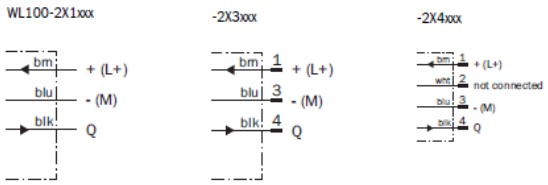


Image 37: B

まずすべての電気接続を確立してから、電源（V_S > 0 V）をオンにしてください。緑色の LED 表示灯がセンサ上で点灯します。

接続図の説明（図 B）。

スイッチング出力 Q（図 B に準拠）：

WL100-2P（PNP：負荷 -> M）

L = ライトオン

D = ダークオン

4 センサを適切なリフレクタの方向に合わせます。赤色の投光軸がリフレクタの中央に照射されるように位置を選択します。センサでの読み取りを可能にするため、リフレクタが遮らぎられたり、照射経路に対象物があったりしてはなりません [E を参照]。センサとリフレクタの光開口部が全く遮らぎられることがないよう、注意してください。

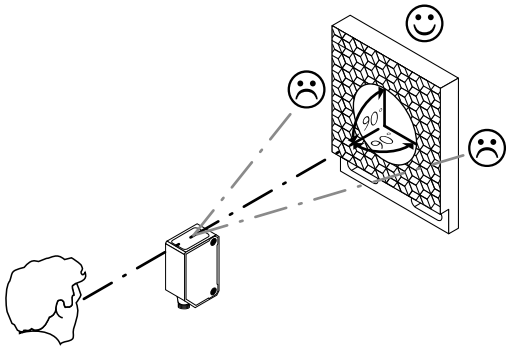


Image 38: E

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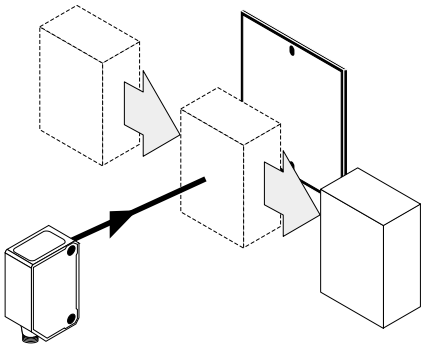


ポテンショメータ付きセンサ:

ポテンショメータ (タイプ: 270°) で感度を設定します。右へ回すと機能リザーブが増大、左へ回すと機能リザーブが減少します。透明な対象物を検出するための設定（> 20 % 減衰）：対象物をセンサとリフレクタの間に置いてください。LED 表示灯が消えるまで感度を低減してください。検出対象物を取り除いた後、再び LED 表示灯が点灯するはずです。LED 表示灯が再び点灯しない場合は、使用条件を点検してください。

これでセンサは設定され動作準備が整いました。機能を点検するために、グラフ C および G を使用します。スイッチング出力がグラフ C に従った動作を示さない場合は、使用条件を点検してください。故障診断の章を参照。

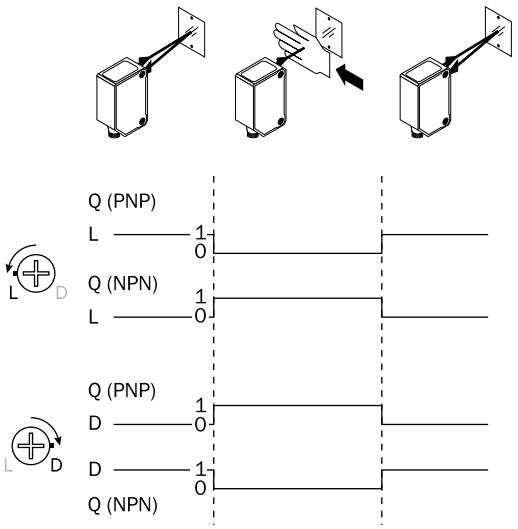


Image 39: C

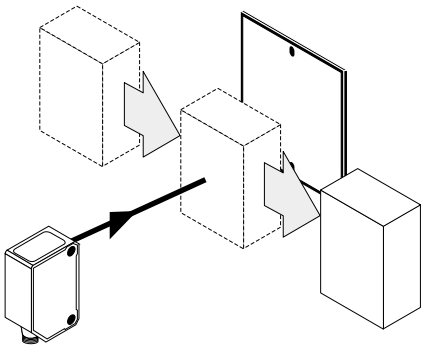


Image 40: G

76 故障診断

表 I は、センサが機能しなくなった場合に、どのような対策を講じるべきかを示しています。

77 Tab_エラー診断

LED 表示灯/故障パターン / ***LED indicator/fault pattern***	原因 / ***Cause***	対策 / ***Measures***
緑色の LED が点灯しない、またはちらつく / *Green LED does not light up or flickers*	センサは操作可能状態ですが、動作条件に問題があります（動作余裕度係数 0.9～1.1）。 / *Sensor is still ready for operation, but the operating conditions are not ideal (operating reserve factor between 0.9 and 1.1)*	動作条件を確認します： 投光光軸（投光スポット）をリフレクタの中心に合わせます / 光学面を清掃する （センサおよびリフレクタ） / 感度を再調整する （感度調整ボリューム） / 感度調整ボリュームが最大感度に設定されている場合：センサとリフレクタの間隔を狭めて、リフレクタのタイプを図 E と照合して確認します / このリフレクタは本アプリケーションに適していません（SICK 製リフレクタのみ使用することをお勧めします） / 対象物の減衰率は < 20% / 検出範囲を確認し必要に応じて調整します、図 E を参照 / センサとリフレクタの間隔が長すぎる / *Check the operating conditions: Fully align the beam of light (light spot) with the reflector / Clean the optical surfaces (sensor and reflector) / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sensor and the reflector, and check the reflector type against Graphic E / Reflector is not suitable for the application in question (we recommend only using SICK reflectors) / Damping of the object is < 20% / Check sensing range and adjust if necessary, see Graphic E / Distance between the sensor and the reflector is too long*
緑色の LED が点灯しない / *Green LED does not light up*	無電圧、または電圧が限界値以下 / *No voltage or voltage below the limit values*	電源を確認し、すべての電気接続（ケーブルおよびプラグ接続）を確認します / *Check the power supply, check all electrical connections (cables and plug connections)*
緑色の LED が点灯しない / *Green LED does not light up*	電圧がきていない又は不安定 / *Voltage interruptions*	安定した電源電圧が供給されていることを確認します / *Ensure there is a stable power supply without interruptions*
緑色の LED が点灯しない / *Green LED does not light up*	センサの異常 / *Sensor is faulty*	電源に問題がなければ、センサを交換します / *If the power supply is OK, replace the sensor*
対象物検出時の出力信号が不安定 / *Signal interruptions when object is detected*	反射に偏りのある対象物表面（例：テープ等）からの反射光を無くします / *Depolarizing property of the object surface (e.g., tape), reflection*	感度を下げるか、またはセンサの位置を変えて下さい / *Reduce sensitivity or change the position of the sensor*

78 解体および廃棄

センサは必ず該当国の規制にしたがって処分してください。廃棄処理の際には、できるだけ構成材料をリサイクルするよう努めてください（特に貴金属類）。

79 メンテナンス

SICK センサはメンテナンスフリーです。

定期的に以下を行うことをお勧めしています：

- レンズ境界面の清掃
- ネジ締結と差込み締結の点検

機器を改造することは禁止されています。

記載内容につきましては予告なしに変更する場合がございますのであらかじめご了承ください。指定された製品特性および技術データは保証書ではありません。

Отражательный фоторелейный барьер

Руководство по эксплуатации

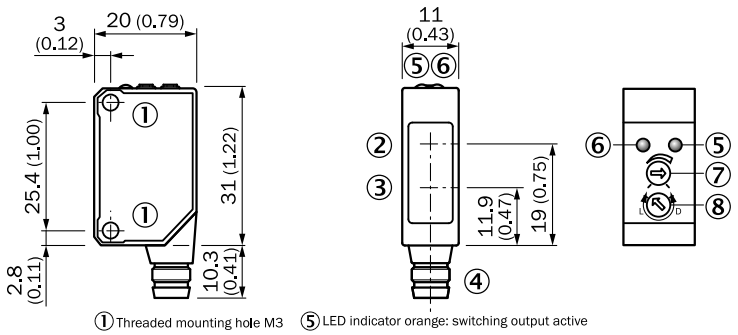
82 Указания по безопасности

- Перед вводом в эксплуатацию изучите руководство по эксплуатации.
- Подключение, монтаж и установку поручать только специалистам.
- Не является оборудованием для обеспечения безопасности в соответствии с Директивой ЕС по работе с машинным оборудованием.
- При вводе в эксплуатацию защищать устройство от попадания грязи и влаги.
- Данное руководство по эксплуатации содержит информацию, которая необходима во время всего жизненного цикла сенсора.

83 Использование по назначению

Отражательный световой барьер с дополнительной опцией распознавания прозрачных объектов

WL100-2 является оптоэлектронным отражательным световым барьером (в дальнейшем называемым "сенсор") и используется для оптической бесконтактной регистрации вещей, животных и людей. Для функционирования необходим отражатель. При ином использовании и при внесении изменений в изделие подача любых гарантийных претензий к SICK AG исключена.



84 Ввод в эксплуатацию

1 Скорректировать дистанцию между сенсором и отражателем с помощью соответствующей диаграммы (x = дистанция переключения, y = функциональный резерв).

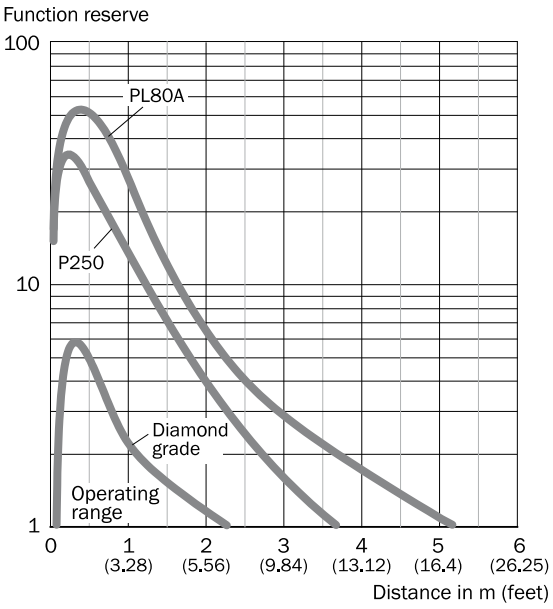


Image 41: H

2 Установите сенсор и отражатель на подходящем крепежном уголке (см. программу принадлежностей от SICK). Выровняйте сенсор и отражатель друг относительно друга.

Выдерживайте максимально допустимый момент затяжки сенсора в < 0.5 Нм.

3 Подключайте сенсоры при отключенном напряжении питания (V_S = 0 В). В зависимости от типа подключения следует принять во внимание информацию с графиков [см. B]:

- Штекерный разъем: назначение контактов
- Проводник: цвет жилы

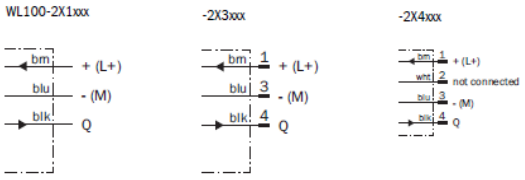


Image 42: B

Подавайте и включайте напряжение питания только после завершения подключения всех электрических соединений (V_S > 0 В). На сенсоре включается зеленый светодиодный индикатор.

Пояснения к схеме электрических соединений (график B):

Коммутирующий выход Q (согласно графику B):

WL100-2P (PNP: нагрузка -> M)

L = срабатывание при наличии света

D = срабатывание при отсутствии света

4 Направьте сенсор на подходящий отражатель. Выберите такую позицию, чтобы красный луч передатчика попадал в центр отражателя. Сенсор должен иметь свободную траекторию до отражателя, нахождение объектов на пути луча не допускается [см. E]. Оптические отверстия на сенсоре и отражателе должны быть свободными.

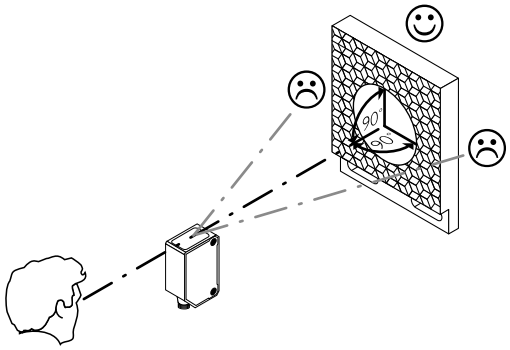
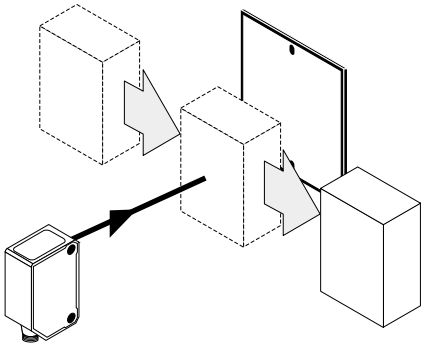


Image 43: E

5



Сенсор с потенциометром:

С помощью потенциометра (тип: 270°) регулируется чувствительность. Вращение вправо: увеличение функционального резерва, вращение влево: уменьшение функционального резерва. Настройка детектирования прозрачных объектов (> 20 % демпфирование): установите объект между сенсором и отражателем. Уменьшайте чувствительность, пока не погаснет светодиодный индикатор. После удаления объекта светодиодный индикатор должен снова гореть постоянно. Если светодиодный индикатор не включается, то проверьте условия применения.

Сенсор настроен и готов к эксплуатации. Для проверки функционирования воспользуйтесь графиками C и G. Если характер поведения коммутирующего выхода не соответствует графику C, проверить условия применения. См. раздел "Диагностика неисправностей".

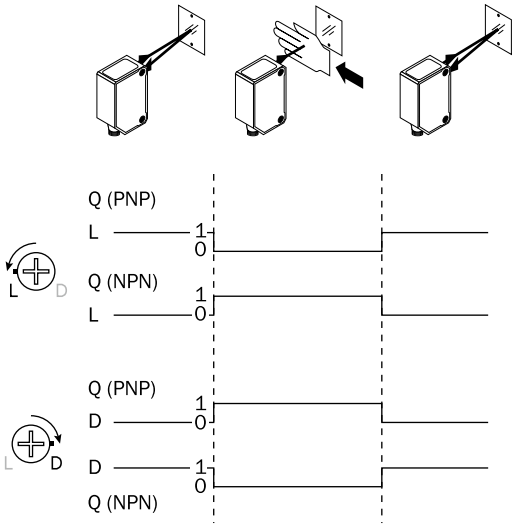


Image 44: C

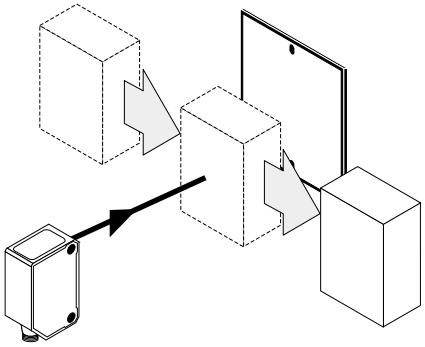


Image 45: G

86 Диагностика неисправностей

В таблице I показано, какие меры нужно предпринять, если сенсоры не работают.

87 Таб_диагностики неисправностей

Светодиодный индикатор / картина неисправности / ***LED indicator/fault pattern***	**Причина /** ***Cause***	**Меры по устранению /** ***Measures***
зеленый светодиод не горит или мигает / *Green LED does not light up or flickers*	Сенсор пока еще готов к работе, но эксплуатационные условия неоптимальны (коэффициент функционального резерва между 0,9 и 1,1) / *Sensor is still ready for operation, but the operating conditions are not ideal (operating reserve factor between 0.9 and 1.1)*	Проверка эксплуатационных условий: Полностью сориентировать световой луч (световое пятно) на отражатель / чистка оптических поверхностей (сенсор и отражатель) /заново настроить чувствительность (потенциометром) / если потенциометр уже установлен на макс. дистанцию переключения: уменьшить расстояние между сенсором и отражателем, а также проверить тип отражателя с помощью графика E / отражатель не подходит для выбранного применения (рекомендуется использовать исключительно отражатели SICK) / демпфирование объекта < 20 % /проверить и, при необходимости, скорректировать дистанцию срабатывания, см. график E / слишком велико расстояние между сенсором и отражателем / *Check the operating conditions: Fully align the beam of light (light spot) with the reflector / Clean the optical surfaces (sensor and reflector) / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sensor and the reflector, and check the reflector type against Graphic E / Reflector is not suitable for the application in question (we recommend only using SICK reflectors) / Damping of the object is < 20% / Check sensing range and adjust if necessary, see Graphic E / Distance between the sensor and the reflector is too long*
зеленый светодиод не горит / *Green LED does not light up*	нет напряжения питания или оно ниже нижнего предельного значения / *No voltage or voltage below the limit values*	Проверить напряжения питания, всю схему электроподключения (проводку и разъемные соединения) / *Check the power supply, check all electrical connections (cables and plug connections)*
зеленый светодиод не горит / *Green LED does not light up*	Пропадание напряжения питания / *Voltage interruptions*	Обеспечить надежную подачу напряжения питания без его пропадания / *Ensure there is a stable power supply without interruptions*

Светодиодный индикатор / картина неисправности / ***LED indicator/fault pattern***	**Причина /** ***Cause***	**Меры по устранению /** ***Measures***
зеленый светодиод не горит / *Green LED does not light up*	Сенсор неисправен / *Sensor is faulty*	Если напряжение питания в порядке, то заменить сенсор / *If the power supply is OK, replace the sensor*
Пропадание сигнала при детектировании объекта / *Signal interruptions when object is detected*	Деполяризующие свойства поверхности объекта (например, пленка), переотражение / *Depolarizing property of the object surface (e.g., tape), reflection*	Уменьшить чувствительность или изменить позицию сенсора / *Reduce sensitivity or change the position of the sensor*

88 Демонтаж и утилизация

Утилизацию сенсоров следует проводить согласно национальным предписаниям по утилизации. Следует стремиться к повторному использованию содержащихся в них материалов (прежде всего, драгоценных металлов).

89 Техобслуживание

Датчики SICK не нуждаются в техобслуживании.

Рекомендуется регулярно

- очищать оптические ограничивающие поверхности
- проверять прочность резьбовых и штекерных соединений

Запрещается вносить изменения в устройства.

Право на ошибки и внесение изменений сохранено. Указанные свойства изделия и технические характеристики не являются гарантией.

								WL100-2Xxx 2x
Sensing range (with reflector PL80A)	Schaltabstand (mit Reflektor PL80A)	Portée (avec réflecteur PL80A)	Distância de comutação (com refletor PL80A)	Distanza di commutazione (con riflettore PL80A)	Distancia de conmutación (con reflector PL80A)	开关距离（带反射器 PL80A）	最大検出範囲	0.01 ... 2.5 m
Sensing range max. (with reflector PL80A)	Schaltabstand max. (mit Reflektor PL80A)	Portée max. (avec réflecteur PL80A)	Distância de comutação máx. (com refletor PL80A)	Distanza max. di commutazione (con riflettore PL80A)	Distancia de conmutación máx. (con reflector PL80A)	最大开关距离（带反射器 PL80A）	最大検出範囲（リフレクタを用いた場合 PL80A）	0.01 ... 3.0 m
Light spot diameter/ distance	Lichtfleckdurchmesser/Entfernung	Diamètre spot / distance	Diâmetro do ponto de luz/ distância	Diametro punto luminoso/ distanza	Diámetro del punto luminoso/distancia	光斑直径/距离	光点のスポット径/距離	140 mm / 2 m
Supply voltage U_V	Versorgungsspannung U_V	Tension d'alimentation U_V	Tensão de alimentação U_V	Tensione di alimentazione U_V	Tensión de alimentación U_V	供电电压 U_V	供給電圧 U_V	DC 10 ... 30 V[1]
Output current $I_{max.}$	Ausgangsstrom $I_{max.}$	Courant de sortie $I_{max.}$	Corrente de saída $I_{max.}$	Corrente di uscita $I_{max.}$	Intensidad de salida $I_{max.}$	输出电流 $I_{max.}$	出力電流 $I_{max.}$	100 mA
Max. switching frequency	Schaltfolge max.	Commutation max.	Sequência máx. de comutação	Sequenza di commutazione max.	Secuencia de conmutación máx.	最大开关操作顺序	最大スイッチング周波数	1.000 Hz[2]

								WL100-2Xxx 2x
Max. response time	Ansprechzeit max.	Temps de réponse	Tempo de resposta	Tempo di reazione	Tiempo de respuesta	响应时间	応答時間	≤ 0.5 ms[3]
Enclosure rating	Schutzart	Indice de protection	Tipo de proteção	Tipo di protezione	Tipo de protección	防护类型	保護等級	IP 67
Protection class	Schutzklasse	Classe de protection	Classe de proteção	Classe di protezione	Clase de protección	防护等级	保護クラス	III
Circuit protection	Schutzschaltungen	Protections électriques	Circuitos de proteção	Commutazioni di protezione	Circuitos de protección	保护电路	回路保護	A,B,D[4]
Ambient operating temperature	Betriebsumgebungstemperatur	Température de service	Temperatura ambiente de funcionamento	Temperatura ambientale di funzionamento	Temperatura ambiente de servicio	工作环境温度	周辺温度 (作動中)	-25 ... +55 °C
[1] Limit value: operation in short-circuit protection mains max. 8 A; residual ripple max. 5 Vss [2] With light / dark ratio 1:1 [3] Signal transit time with resistive load [4] A = UV-connections reverse polarity protected B = inputs and output reverse-polarity protected D = outputs overcurrent and short-circuit protected	[1] Grenzwerte: Betrieb im kurzschlussgeschützten Netz max. 8 A; Restwelligkeit max. 5 Vss [2] Mit Hell- / Dunkelverhältnis 1:1 [3] Signallaufzeit bei ohmscher Last [4] A = UV-Anschlüsse verpolsicher B = Ein- und Ausgänge verpolsicher D = Ausgänge überstrom- und kurzschlussfest	[1] Valeurs limites : fonctionnement sur réseau protégé contre les courts-circuits max. 8 A ; ondulation résiduelle max. 5 Vcc [2] Pour un rapport clair/sombre de 1:1 [3] Temps de propagation du signal sur charge ohmique [4] A = raccordements UV protégés contre les inversions de polarité B = entrées et sorties protégées contre les inversions de polarité D = sorties protégées contre les courts-circuits et les surcharges	[1] Valores limite: funcionamento com rede à prova de curto-circuito máx. 8 A; ondulação residual máx. 5 Vss [2] Com proporção sombra/luz 1:1 [3] Tempo de funcionamento do sinal com carga ôhmica [4] A = conexões protegidas contra inversão de pólos UV B = Entradas e saídas protegidas contra polaridade inversa D = Saídas protegidas contra sobrecorrente e curto-circuito	[1] Valori limite: funzionamento in rete protetta da cortocircuito max. 8 A; ondulazione residua max. 5 Vss [2] Con rapporto chiaro / scuro 1:1 [3] Durata segnale con carico ohmico [4] A = UV-Allacciamenti protetti dall'inversione di polarità B = entrate e uscite protette da polarità inversa D = uscite protette da sovracorrente e da cortocircuito.	[1] Valores límite: funcionamiento en red protegida contra cortocircuitos máx. 8 A; ondulación residual máx. 5 Vss [2] Con una relación claro/oscuro de 1:1 [3] Duración de la señal con carga óhmica [4] Conexiones A = UV protegidas contra polarización inversa B = Entradas y salidas protegidas contra polarización incorrecta D=Salidas a prueba de sobrecorriente y cortocircuitos.	[1] 极限值：在防短路电网中运行，最大 8 A；最大余波 5 Vss [2] 明暗比为 1:1 [3] 信号传输时间（电阻负载时） [4] A = UV 接口（已采取反极性保护措施） B = 具有反极性保护的输入端和输出端 D = 抗过载电流和抗短路输出端	[1] 限界値：短絡保護の操作は最大 8 A；残留リップルは最大 5 Vss [2] ライト/ダークの比率 1:1 [3] A = UV 接続は逆接保護 B = 入力および出力は逆接保護 D = 出力過電流および短絡保護	