



GRSE18

Operating Instruction
DE/EN/FR/PT/IT/ES/ZH/JA/RU

8016954

SICK
Sensor Intelligence.

**Through-beam photoelectric 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. Only for use in applications in accordance with NFPA 79. UL-listed adapters with connecting cables are available. Enclosure type 1
- 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

The GRSE18 is an opto-electronic through-beam photoelectric sensor (referred to as "sensor" in the following) for the optical, non-contact detection of objects, animals, and persons. A sender (WS) and a receiver (WE) are required for operation. If the product is used for any other purpose or modified in any way, any warranty claim against SICK AG shall become void.

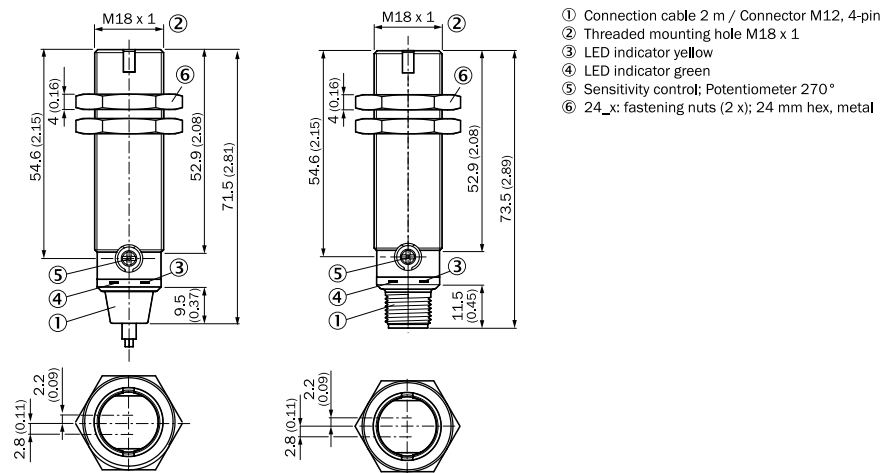


Image 1: GRSE18-xxxx2

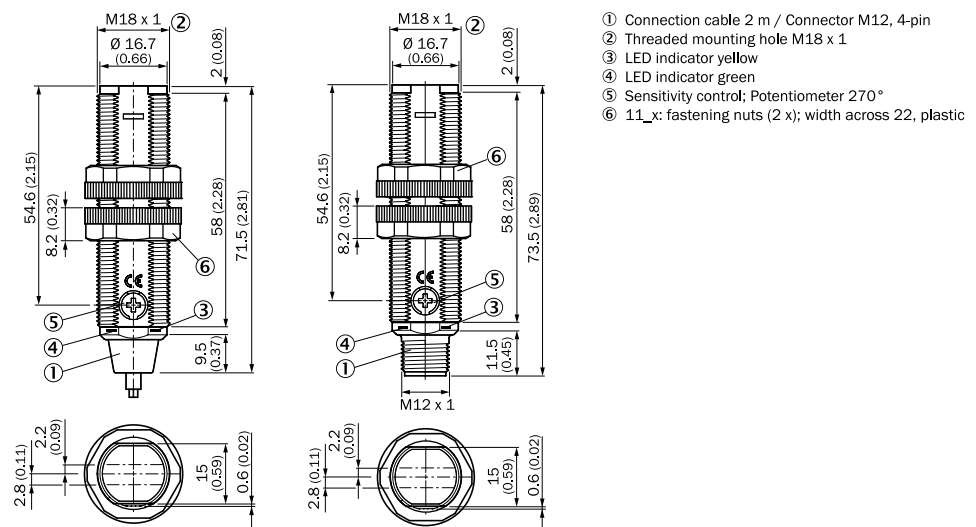


Image 2: GRSE18-xxxx7

4 Commissioning

- 1 Observe the application conditions: Adjust the distance between the sender and the receiver according to the corresponding diagram (x = sensing range, y = operating reserve). If several through-beam photoelectric sensors which are installed next to one another are to be used, we recommend swapping the sender/receiver arrangement at every second through-beam photoelectric sensor and ensuring that there is sufficient distance between the through-beam photoelectric sensors. By doing this, mutual interference can be prevented.

Operating reserve

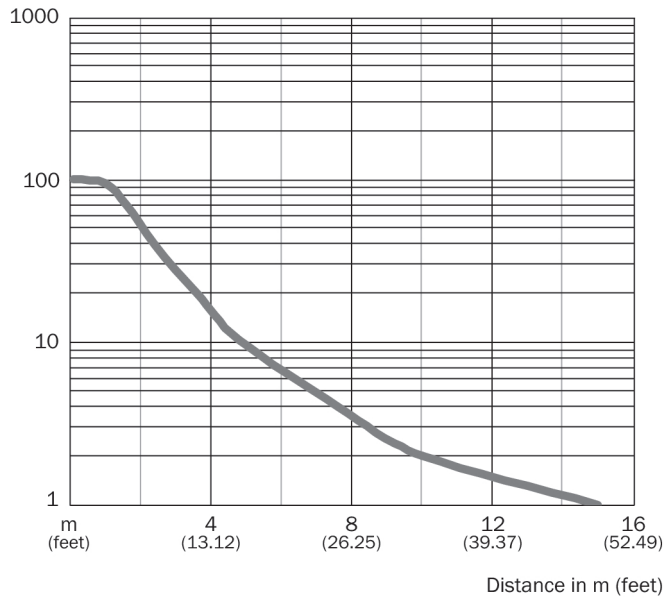


Image 3: H

- 2 Mount sensors (sender and receiver) using suitable mounting brackets (see the SICK range of accessories). Align the sender and receiver with each other [K].
Observe the maximum permissible tightening torque of the sensor of 2.0 Nm for metal/0.9 Nm for plastic [K].

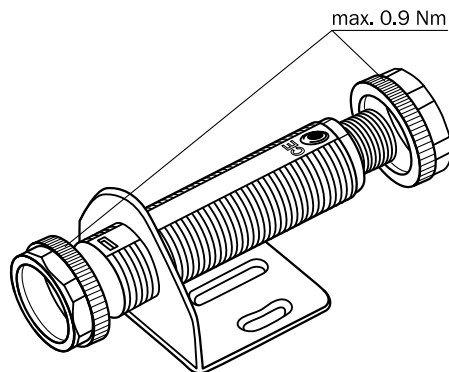


Image: K: GRSE18-x24x7

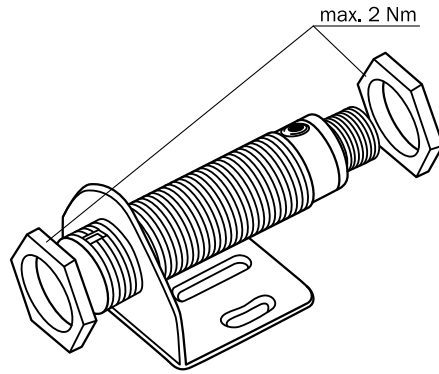


Image: K: GRSE18-x24x2

- 3 The sensors must be connected in a voltage-free state ($V_S = 0\text{ V}$). The information in the graphics [B] must be observed, depending on the type of connection:
- Male connector connection: pin assignment
 - Cable: core color

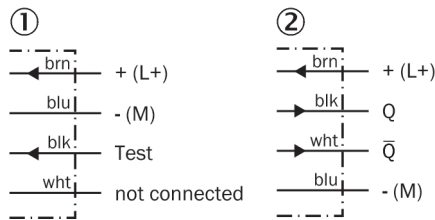


Image: B: GRSE18-x11xx

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

Explanations of the connection diagram (Graphic B):

Switching outputs Q and /Q (according to Graphic B):

GRSE18-P (PNP: load -> M)

GRSE18-N (NPN: load -> L+)

TI = test input (see Additional functions)

- 4 Align the sender with the receiver. Select the position so that the red emitted light beam hits the receiver. Tip: Use white paper or a reflector as an alignment aid. No light spot is visible with infrared devices. The correct alignment can only be detected via the LED indicators. Please refer to Graphics C and E in relation to this. The sender must have a clear view of the receiver, and no object may be in the optical path. You must ensure that the optical openings (front screen) of the sensors are completely clear.

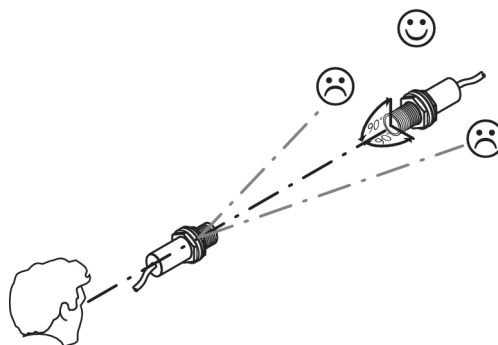
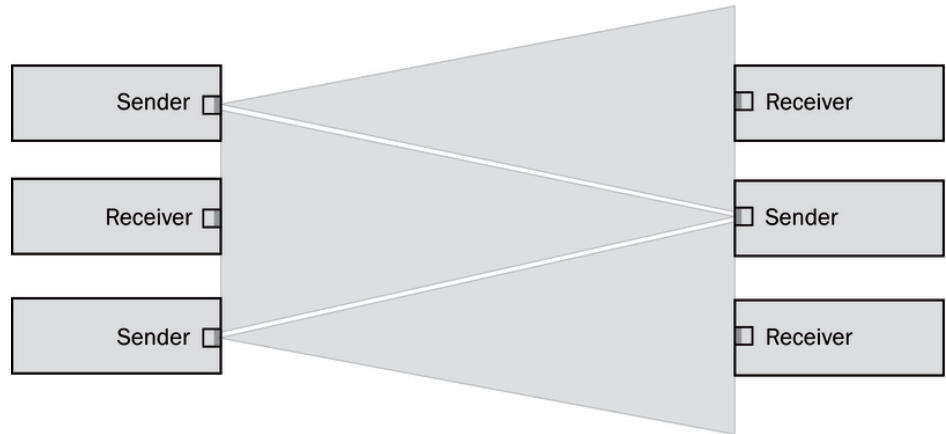


Image 4: E

5



Sensor with potentiometer:

The sensitivity is adjusted with the potentiometer (type: 270°). Clockwise rotation: operating reserve increased; counterclockwise rotation: operating reserve reduced. We recommend setting the potentiometer to "Maximum."

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.

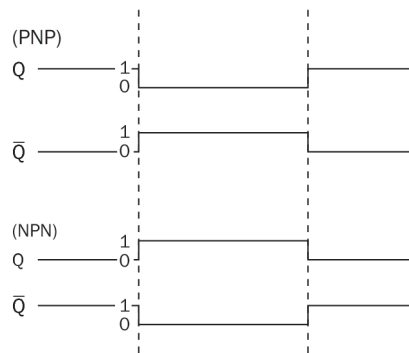
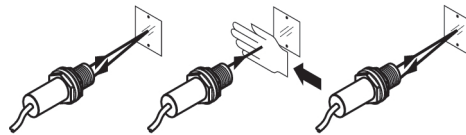


Image 5: C

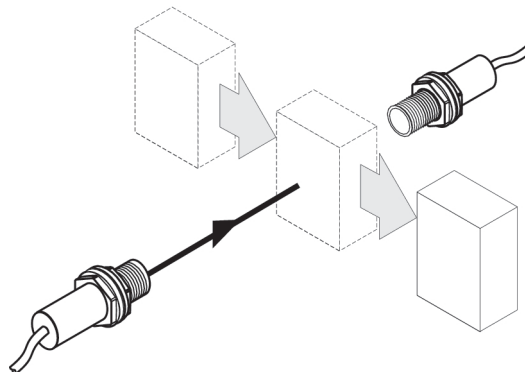


Image 6: G

6 Additional functions

The GRSE18 sensor features a test input ("TI" on the connection diagram [B]), which can be used to check that the sensor is functioning correctly: If cable sockets with LED indicators are used, you must ensure that the TI is assigned accordingly.

There must be no object between the sender and receiver; activate the test input (see the connection diagram [B], TI at 0 V). The send LED is shut down or the detection of an object is simulated. 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.

7 Fault diagnosis

Table 8 indicates which measures are to be taken if the sensor stops working.

8 Tab_Fault diagnosis

LED indicator/fault pattern / <i>LED indicator/fault pattern</i>	Cause / <i>Cause</i>	Measures / <i>Measures</i>
Green LED does not light up / <i>Green LED does not light up</i>	No voltage or voltage below the limit values / <i>No voltage or voltage below the limit values</i>	Check the power supply, check all electrical connections (cables and plug connections) / <i>Check the power supply, check all electrical connections (cables and plug connections)</i>
Green LED does not light up / <i>Green LED does not light up</i>	Voltage interruptions / <i>Voltage interruptions</i>	Ensure there is a stable power supply without interruptions / <i>Ensure there is a stable power supply without interruptions</i>
Green LED does not light up / <i>Green LED does not light up</i>	Sensor is faulty / <i>Sensor is faulty</i>	If the power supply is OK, replace the sensor / <i>If the power supply is OK, replace the sensor</i>
Green LED lights up, no output signal when object is detected / <i>Green LED lights up, no output signal when object is detected</i>	Test input (TI) is not connected properly / <i>Test input (TI) is not connected properly</i>	See the note on connecting the TI / <i>See the note on connecting the TI</i>
Yellow LED flashes / <i>Yellow LED flashes</i>	Sensor is still ready for operation, but the operating conditions are not ideal / <i>Sensor is still ready for operation, but the operating conditions are not ideal</i>	Check the operating conditions: Fully align the beam of light (light spot) with the receiver. / Clean the optical surfaces / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sender and the receiver, and check against Graphic E / Check sensing range and adjust if necessary, see Graphic E / <i>Check the operating conditions: Fully align the beam of light (light spot) with the receiver. / Clean the optical surfaces / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sender and the receiver, and check against Graphic E / Check sensing range and adjust if necessary, see Graphic E</i>

LED indicator/fault pattern / <i>LED indicator/fault pattern</i>	Cause / <i>Cause</i>	Measures / <i>Measures</i>
Yellow LED lights up, no object in the path of the beam / <i>Yellow LED lights up, no object in the path of the beam</i>	The beam of light of a photoelectric through-beam sensor hits the receiver of another (neighboring) photoelectric through-beam sensor / <i>The beam of light of a photoelectric through-beam sensor hits the receiver of another (neighboring) photoelectric through-beam sensor</i>	Swap the sender and receiver arrangement at every second photoelectric through-beam sensor and ensure that there is sufficient distance between the through-beam photoelectric sensors / <i>Swap the sender and receiver arrangement at every second photoelectric through-beam sensor and ensure that there is sufficient distance between the through-beam photoelectric sensors</i>

9 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).

10 Maintenance

SICK sensors are maintenance-free.

We recommend doing the following regularly:

1. Clean the external lens surfaces
2. 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.

Einweg-Lichtschanke Betriebsanleitung

13 Sicherheitshinweise

- Vor der Inbetriebnahme die Betriebsanleitung lesen.
- Anschluss, Montage und Einstellung nur durch Fachpersonal.
- Kein Sicherheitsbauteil gemäß EU-Maschinenrichtlinie. Nur zur Verwendung in Anwendungen gemäß NFPA 79. Von UL gelistete Adapter mit Anschlusskabeln sind verfügbar. Enclosure type 1
- Gerät bei Inbetriebnahme vor Feuchte und Verunreinigung schützen.
- Diese Betriebsanleitung enthält Informationen, die während des Lebenszyklus des Sensors notwendig sind.

14 Bestimmungsgemäße Verwendung

Die GRSE18 ist eine optoelektronische Einweg-Lichtschanke (im Folgenden Sensor genannt) und wird zum optischen, berührungslosen Erfassen von Sachen, Tieren und Personen eingesetzt. Zum Betrieb ist ein Sender (WS) und ein Empfänger (WE) erforderlich. Bei jeder anderen Verwendung und bei Veränderungen am Produkt verfällt jeglicher Gewährleistungsanspruch gegenüber der SICK AG.

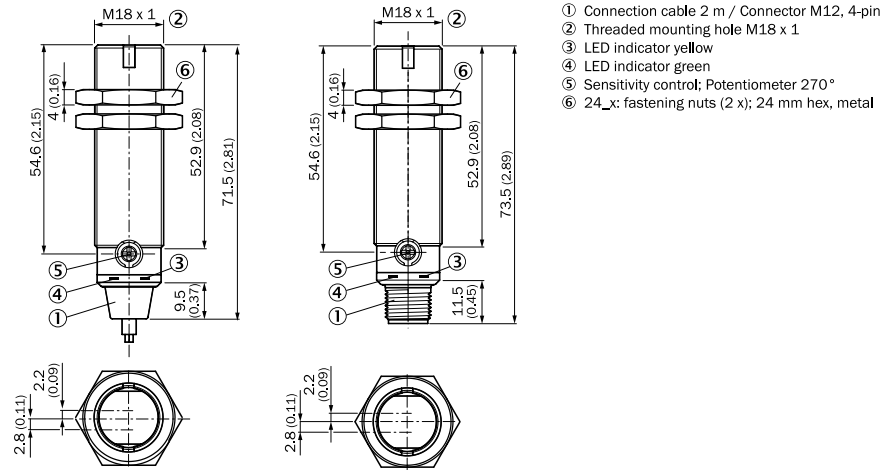


Abb. 7: GRSE18-xxxx2

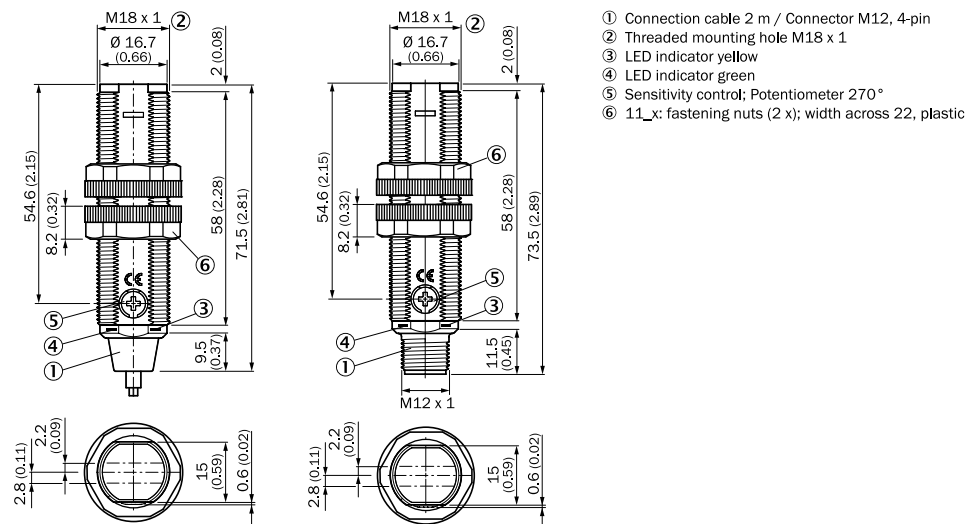


Abb. 8: GRSE18-xxxx7

15 Inbetriebnahme

- 1 Einsatzbedingungen beachten: Distanz zwischen Sender und Empfänger mit dem zugehörigen Diagramm [vgl. H] abgleichen (x = Schaltabstand, y = Funktionsreserve). Beim Einsatz von mehreren Einweg-Lichtschanken, die nebeneinander installiert werden, empfehlen wir, bei jeder zweiten Einweg-Lichtschanke die Anordnung von Sender und Empfänger zu tauschen, bzw. genügend Abstand zwischen den Einweg-Lichtschanken einzuhalten. Damit können gegenseitige Beeinflussungen vermieden werden [vgl. I].

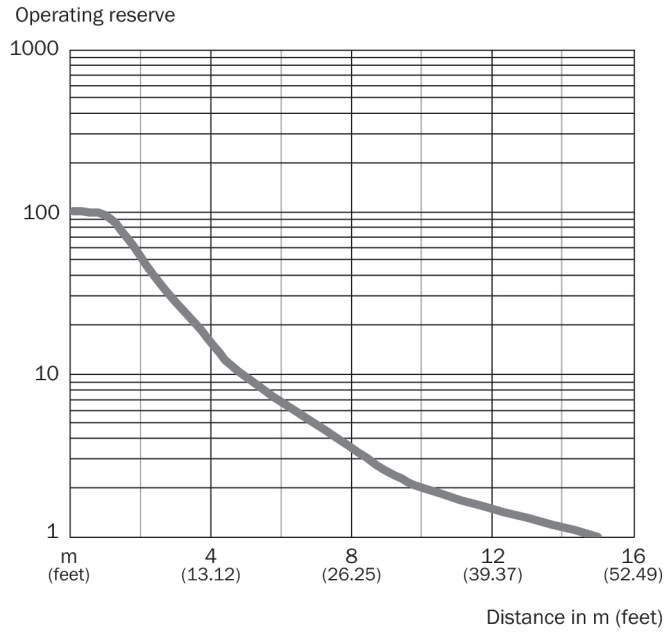


Abb. 9: H

- 2 Sensoren (Sender und Empfänger) an geeignete Befestigungswinkel montieren (siehe SICK-Zubehör-Programm). Sender und Empfänger zueinander ausrichten [vgl. K].

Maximal zulässiges Anzugsdrehmoment des Sensors von 2,0 Nm für Metall / 0,9 Nm für Kunststoff beachten [vgl. K].

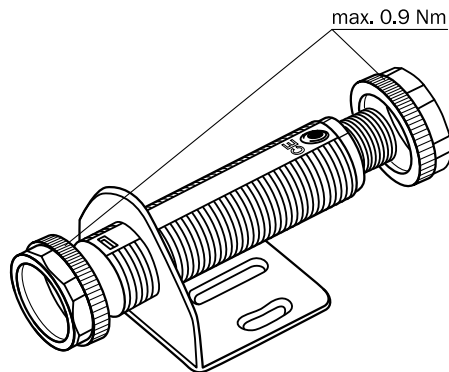


Abb.: K: GRSE18-x24x7

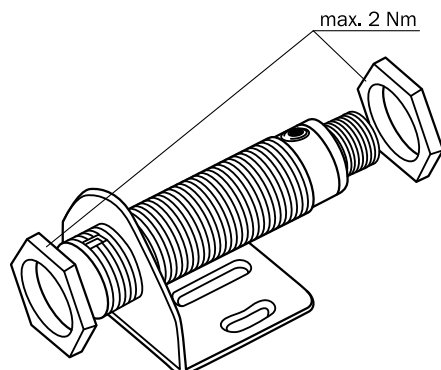


Abb.: K: GRSE18-x24x2

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

- Steckeranschluss: Pinbelegung
- Leitung: Adernfarbe

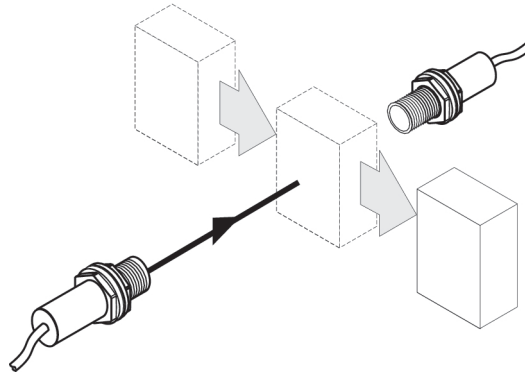


Abb.: B: GRSE18-x24xx

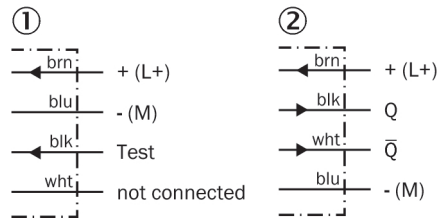


Abb.: B: GRSE18-x11xx

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

Erläuterungen zum Anschlussschema (Grafik B):

Schaltausgänge Q bzw. \bar{Q} (gemäß Grafik B):

GRSE18-P (PNP: Last -> M)

GRSE18-N (NPN: Last -> L+)

TE = Testeingang (siehe Zusatzfunktionen)

- 4 Sender auf Empfänger ausrichten. Positionierung so wählen, dass der rote Sendelichtstrahl auf den Empfänger auftrifft. Tipp: weißes Papier oder Reflektor als Ausrichthilfe verwenden. Bei Infrarotgeräten ist kein Lichtfleck sichtbar. Die korrekte Ausrichtung kann nur über die Anzeige-LEDs erkannt werden. Siehe dazu Grafiken C und E. Der Sender muss freie Sicht auf den Empfänger haben, es darf sich kein Objekt im Strahlengang befinden. Es ist darauf zu achten, dass die optischen Öffnungen (Frontscheiben) der Sensoren vollständig frei sind.

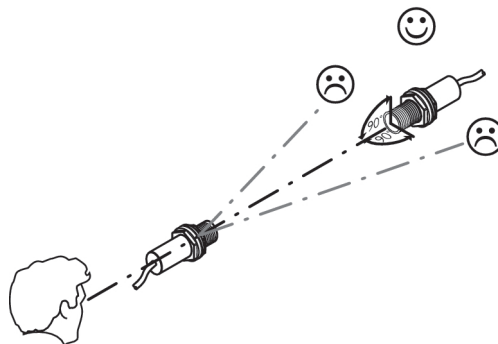
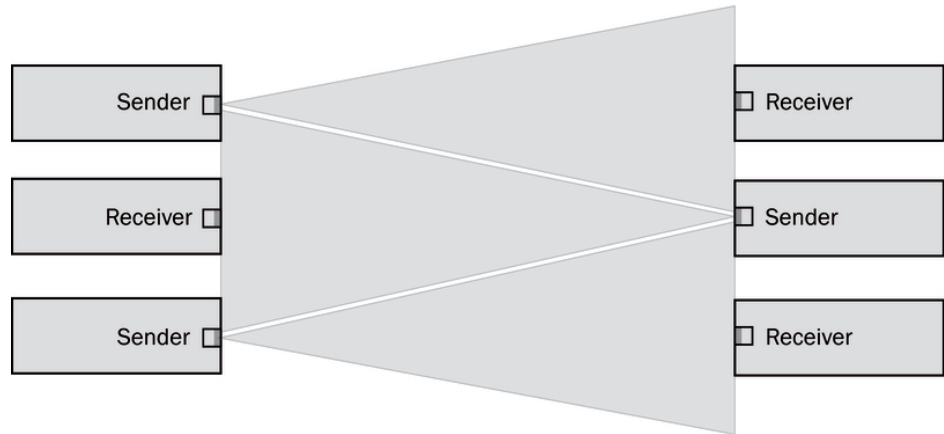


Abb. 10: E

5



Sensor mit Potentiometer:

Mit dem Potentiometer (Art: 270°) wird die Empfindlichkeit eingestellt. Drehung nach rechts: Erhöhung der Funktionsreserve, Drehung nach links: Verringerung der Funktionsreserve. Wir empfehlen, das Potentiometer auf "Maximal" zu stellen.

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.

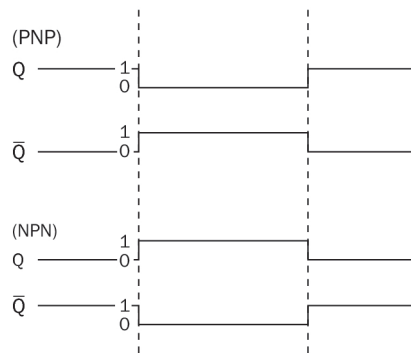
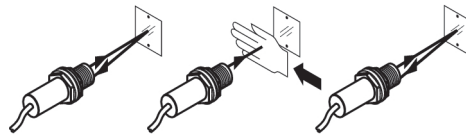


Abb. 11: C

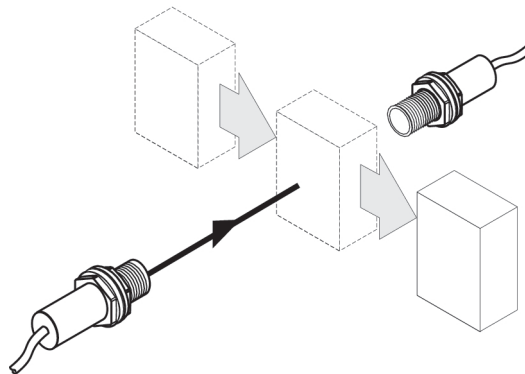


Abb. 12: G

17 Zusatzfunktionen

Der Sensor GRSE18 verfügt über einen Testeingang („TE“ im Anschlussschema [B]), mit dem die ordnungsgemäße Funktion des Sensors überprüft werden kann: bei Verwendung von Leitungsdosen mit LED-Anzeigen ist darauf zu achten, dass der TE entsprechend belegt ist.

Es darf sich kein Objekt zwischen Sender und Empfänger befinden, Testeingang aktivieren (siehe Anschlussschema [B], TE nach 0 V). Sende-LED wird abgeschaltet, bzw. es wird simuliert, dass ein Objekt erkannt wird. Zur Überprüfung der Funktion Grafik C und G heranziehen. Verhält sich der Schaltausgang nicht gemäß Grafik C, Einsatzbedingungen prüfen. Siehe Abschnitt Fehlerdiagnose.

18 Fehlerdiagnose

Tabelle 19 zeigt, welche Maßnahmen durchzuführen sind, wenn die Funktion des Sensors nicht mehr gegeben ist.

19 Tab_Fehlerdiagnose

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
grüne LED leuchtet, kein Ausgangssignal bei Objektdetektion / Green LED lights up, no output signal when object is detected	Testeingang (TE) ist nicht korrekt angeschlossen / Test input (TI) is not connected properly	Siehe Hinweis für Anschluss des TE / See the note on connecting the TI

Anzeige-LED / Fehlerbild / LED indicator/fault pattern	Ursache / Cause	Maßnahme / Measures
gelbe LED blinkt / Yellow LED flashes	Sensor ist noch betriebsbereit, aber die Betriebsbedingungen sind nicht optimal / <i>Sensor is still ready for operation, but the operating conditions are not ideal</i>	Betriebsbedingungen prüfen: Lichtstrahl (Lichtfleck) vollständig auf den Empfänger ausrichten / Reinigung der optischen Flächen / Empfindlichkeit (Potentiometer) neu einstellen / falls Potentiometer auf max. Schaltabstand eingestellt: Abstand zwischen Sender und Empfänger verringern und mit Grafik E überprüfen / Schaltabstand überprüfen und ggfs. anpassen, siehe Grafik E / <i>Check the operating conditions: Fully align the beam of light (light spot) with the receiver. / Clean the optical surfaces / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sender and the receiver, and check against Graphic E / Check sensing range and adjust if necessary, see Graphic E</i>
gelbe LED leuchtet, kein Objekt im Strahlengang / Yellow LED lights up, no object in the path of the beam	Der Lichtstrahl einer Einweg-Lichtschranke trifft auf den Empfänger einer anderen (benachbarten) Einweg-Lichtschranke / <i>The beam of light of a photoelectric through-beam sensor hits the receiver of another (neighboring) photoelectric through-beam sensor</i>	Bei jeder zweiten Einweg-Lichtschranke die Anordnung von Sender und Empfänger tauschen, bzw. genügend Abstand zwischen den Einweg-Lichtschranken einhalten. / <i>Swap the sender and receiver arrangement at every second photoelectric through-beam sensor and ensure that there is sufficient distance between the through-beam photoelectric sensors</i>

20 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.

21 Wartung

SICK-Sensoren sind wartungsfrei.

Wir empfehlen, in regelmäßigen Abständen

1. die optischen Grenzflächen zu reinigen
2. 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 émetteur-récepteur

Notice d'instruction

24 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. Utilisation uniquement pour des applications selon la NFPA 79 Des adaptateurs listés UL avec câbles de connexion sont disponibles. Enclosure type 1
- 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.

25 Utilisation conforme

GRSE18 est une barrière émetteur-récepteur optoélectronique (appelée capteur dans ce document) qui permet la détection optique sans contact d'objets, d'animaux et de personnes. Un émetteur (WS) et un récepteur (WE) sont nécessaires à son fonctionnement. Toute autre utilisation ou modification du produit annule la garantie de SICK AG.

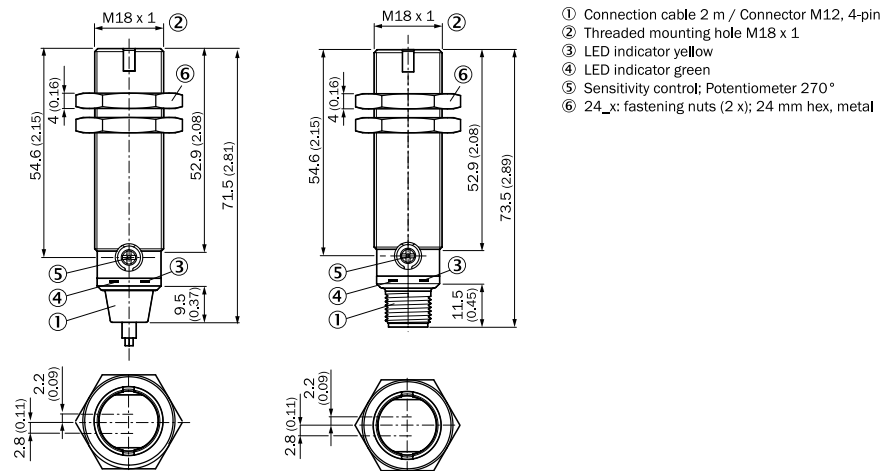


Image 13: GRSE18-xxxx2

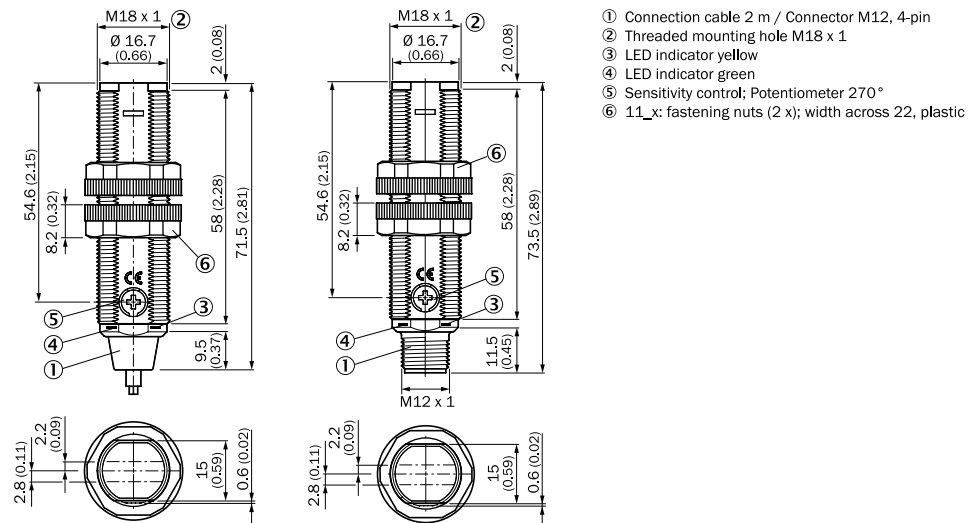


Image 14: GRSE18-xxxx7

26 Mise en service

- 1 Respecter les conditions d'utilisation : comparer la distance entre l'émetteur et le récepteur avec le diagramme correspondant [voir H] (x = portée, y = réserve de fonctionnement). Si plusieurs barrières émetteur-récepteur sont installées les unes à côté des autres, nous recommandons d'invertir la place de l'émetteur et du récepteur une fois sur deux ou de laisser suffisamment d'espace entre les barrières émetteur-récepteur. Ceci permet d'éviter les interférences mutuelles [voir I].

Operating reserve

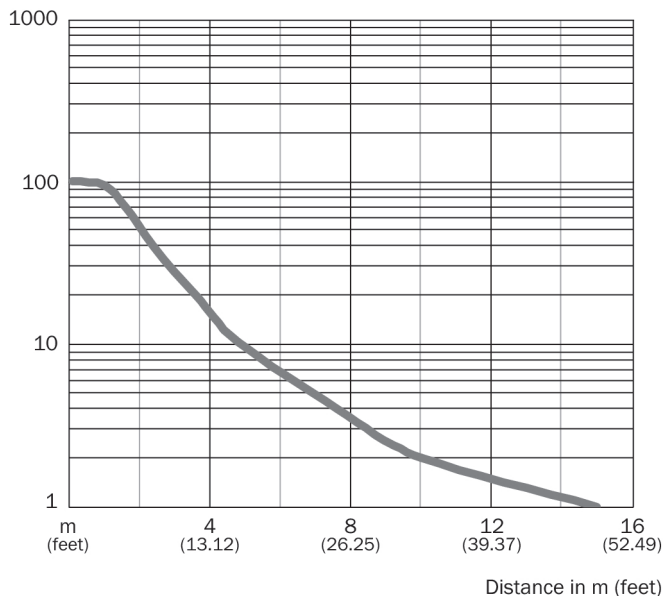


Image 15: H

- 2 Monter les capteurs (émetteur et récepteur) sur des équerres de fixation adaptées (voir la gamme d'accessoires SICK). Aligner l'émetteur sur le récepteur [voir K]. Respecter le couple de serrage maximal admissible du capteur de 2,0 Nm pour métal / 0,9 Nm pour plastique [voir K].

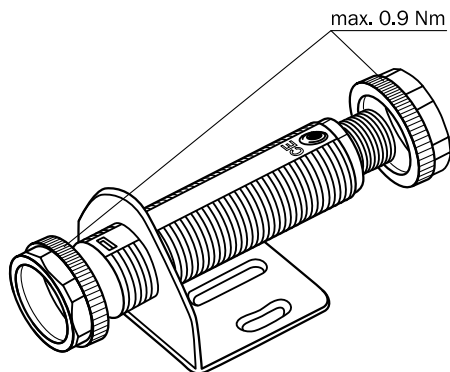


Image: K: GRSE18-x24x7

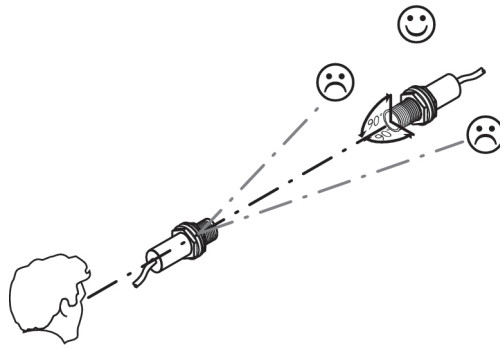
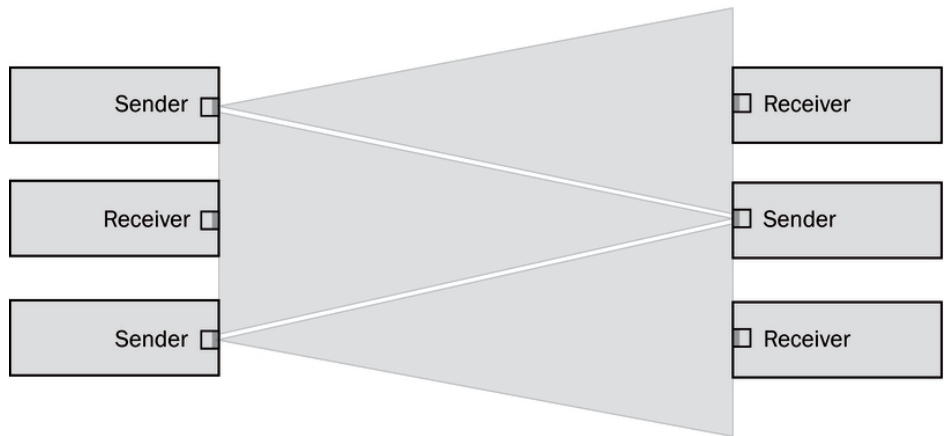


Image 16: E

5



Capteur avec potentiomètre :

Le potentiomètre (réf. : 270°) permet de régler la sensibilité. Rotation vers la droite : augmentation de la réserve de fonctionnement, rotation vers la gauche : réduction de la réserve de fonctionnement. Nous recommandons de régler le potentiomètre sur "Maximum".

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.

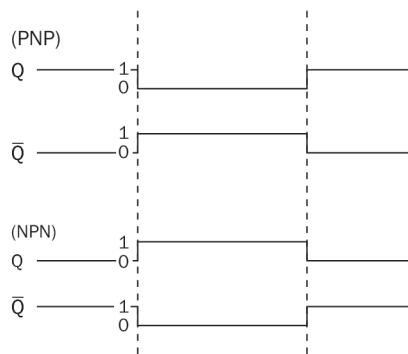
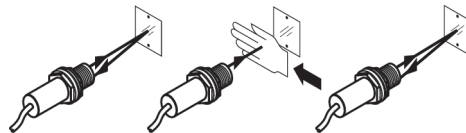


Image 17: C

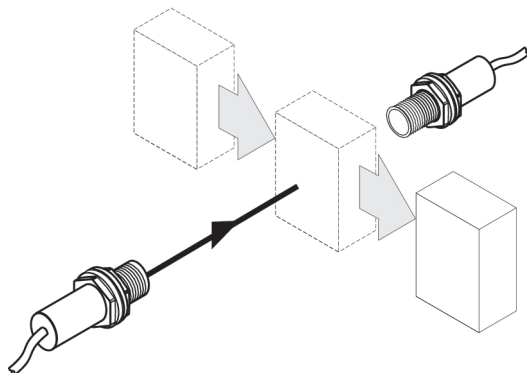


Image 18: G

28 Fonctions supplémentaires

Le capteur GRSE18 dispose d'une entrée test (« TE » dans le schéma de raccordement [B]) qui permet de contrôler le bon fonctionnement du capteur : lorsque des connecteurs femelles équipés de DEL sont utilisés, s'assurer que l'entrée TE est correctement affectée.

Aucun objet ne doit se trouver entre l'émetteur et le récepteur ; activer l'entrée test (voir le schéma de raccordement [B], TE sur 0 V). La LED d'émission est arrêtée ou une détection d'objet est simulée. 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.

29 Diagnostic

Le tableau 30 présente les mesures à appliquer si le capteur ne fonctionne plus.

30 Tab_Diagnostic

LED d'état / image du défaut / LED indicator/fault pattern	Cause / Cause	/ Measures
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
La LED verte s'allume, pas de signal de sortie en cas de détection d'objet / Green LED lights up, no output signal when object is detected	L'entrée test (TE) n'est pas correctement raccordée / Test input (TI) is not connected properly	Voir les informations sur le raccordement de l'entrée test / See the note on connecting the TI

LED d'état / image du défaut / LED indicator/fault pattern	Cause / Cause	/ Measures
La LED jaune clignote / Yellow LED flashes	Le capteur est encore opérationnel, mais les conditions d'utilisation ne sont pas idéales / <i>Sensor is still ready for operation, but the operating conditions are not ideal</i>	Vérifier les conditions d'utilisation : Diriger le faisceau lumineux (spot lumineux) entièrement sur le récepteur / Nettoyage des surfaces optiques / Régler à nouveau la sensibilité (potentiomètre) / Si le potentiomètre est réglé sur la portée max. : réduire la distance entre l'émetteur et le récepteur et contrôler avec le schéma E / Contrôler la portée et éventuellement l'adapter, voir le schéma E / <i>Check the operating conditions: Fully align the beam of light (light spot) with the receiver. / Clean the optical surfaces / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sender and the receiver, and check against Graphic E / Check sensing range and adjust if necessary, see Graphic E</i>
La LED jaune s'allume, pas d'objet dans la trajectoire du faisceau / Yellow LED lights up, no object in the path of the beam	Le faisceau lumineux d'une barrière émetteur-récepteur atteint le récepteur d'une autre barrière émetteur-récepteur (voisine) / <i>The beam of light of a photoelectric through-beam sensor hits the receiver of another (neighboring) photoelectric through-beam sensor</i>	Pour une barrière émetteur-récepteur sur deux, intervertir la place de l'émetteur et du récepteur ou laisser suffisamment d'espace entre les barrières émetteur-récepteur. / <i>Swap the sender and receiver arrangement at every second photoelectric through-beam sensor and ensure that there is sufficient distance between the through-beam photoelectric sensors</i>

31 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).

32 Maintenance

Les capteurs SICK ne nécessitent aucune maintenance.

Nous vous recommandons de procéder régulièrement

1. au nettoyage des surfaces optiques
2. 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.

35 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. Somente na utilização em aplicações de acordo com NFPA 79. Estão disponíveis adaptadores listados pela UL com cabos de conexão. Enclosure type 1
- 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.

36 Especificações de uso

O GRSE18 é uma barreira de luz unidirecional optoeletrônica (doravante denominada "sensor") utilizada para a detecção óptica, sem contato, de objetos, animais e pessoas. Para a operação, são necessários um emissor (WS) e um receptor (WE). Qualquer utilização diferente ou alterações do produto provocam a perda da garantia da SICK AG.

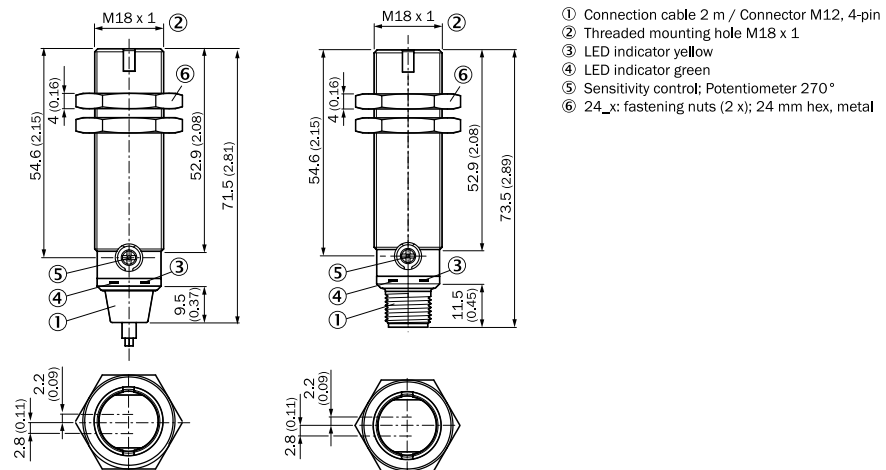


Image 19: GRSE18-xxxx2

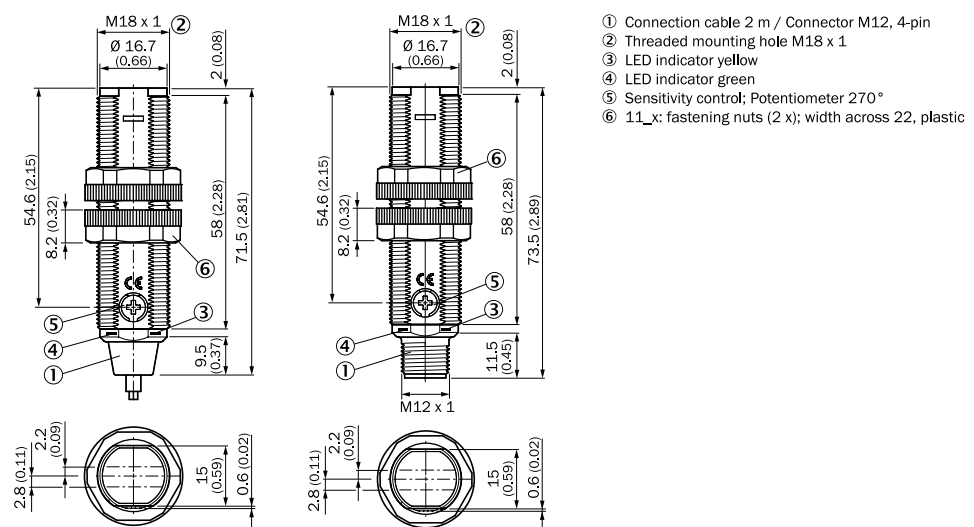


Image 20: GRSE18-xxxx7

37 Colocação em funcionamento

- 1 Observar as condições de uso: equiparar a distância entre o emissor e o receptor com o respectivo diagrama [cp. H] (x = distância de comutação, y = reserva de função). Na utilização de várias barreiras de luz unidireccionais, instaladas lado a lado, recomendamos trocar a disposição do emissor e do receptor a cada duas barreiras de luz ou manter uma distância suficiente entre as barreiras de luz unidireccionais. Isto permite evitar interferências recíprocas [cp. I].

Operating reserve

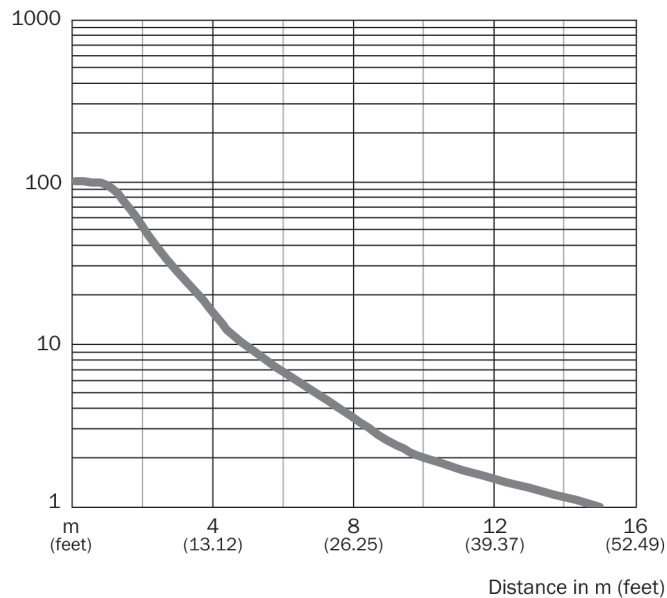


Image 21: H

- 2 Montar os sensores (emissor e receptor) em cantoneiras de fixação adequadas (ver linha de acessórios da SICK). Alinhar o emissor e o receptor entre si [cp. K].

Observar o torque de aperto máximo permitido do sensor de 2,0 Nm para metal / 0,9 Nm para plástico [cp. K].

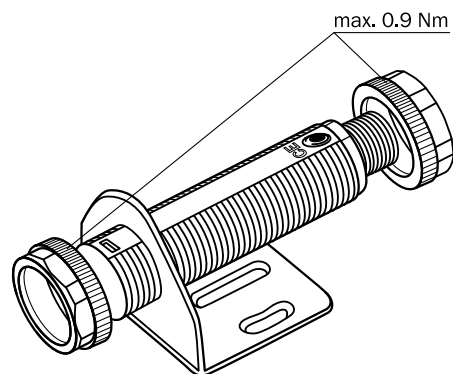


Image: K: GRSE18-x24x7

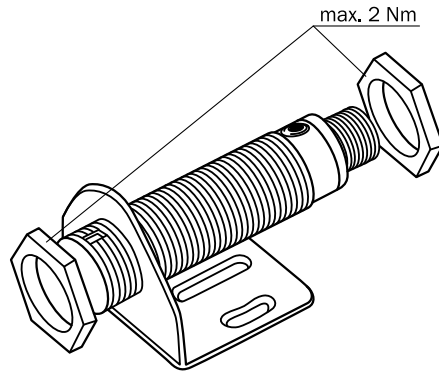


Image: K: GRSE18-x24x2

- 3 A conexão dos sensores deve ser realizada em estado desenergizado ($V_S = 0\text{ V}$). Conforme o tipo de conexão, devem ser observadas as informações contidas nos gráficos [cp. B]:
- Conector: Pin-out
 - Cabo: Cor dos fios

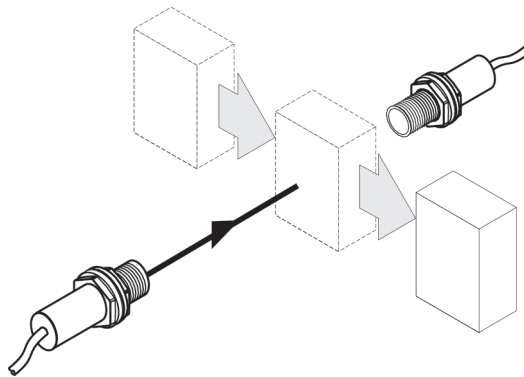


Image: B: GRSE18-x24xx

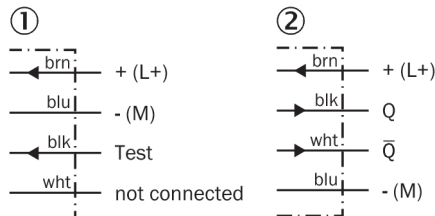


Image: B: GRSE18-x11xx

Instalar ou ligar a alimentação de tensão ($V_S > 0\text{ V}$) 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):

Saídas de comutação Q ou /Q (conforme o gráfico B):

GRSE18-P (PNP: carga -> M)

GRSE18-N (NPN: carga -> L+)

ET = Entrada de teste (ver Funções adicionais)

- 4 Alinhar o emissor ao receptor. Posicionar, de forma que o feixe da luz de emissão vermelha incida sobre o receptor. Dica: Utilizar um papel branco ou o refletor para auxiliar o alinhamento. Em caso de dispositivos infravermelhos, o ponto de luz não é visível. O alinhamento correto só pode ser verificado através dos indicadores LED. Ver os gráficos C e E. O espaço entre o emissor e o receptor deve estar desimpedido, não pode haver nenhum objeto no caminho óptico. Certificar-se de que as aberturas ópticas (vidros frontais) dos sensores refletor estejam completamente livres.

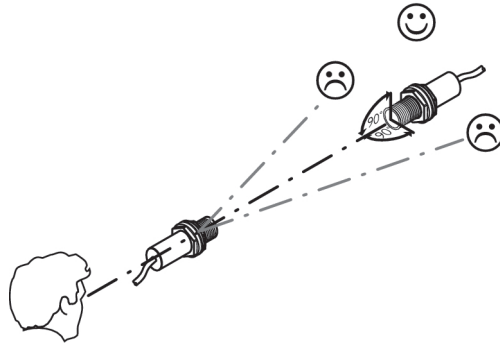
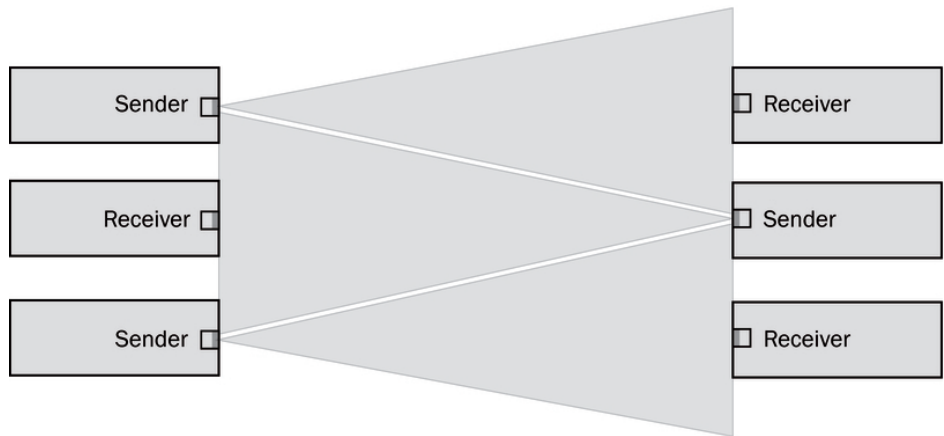


Image 22: E

5



Sensor com potenciômetro:

O potenciômetro (tipo: 270°) permite o ajuste da sensibilidade. Giro para direita: aumento da reserva de função; giro para esquerda: redução da reserva de função. Recomendamos ajustar o potenciômetro para "Máximo".

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.

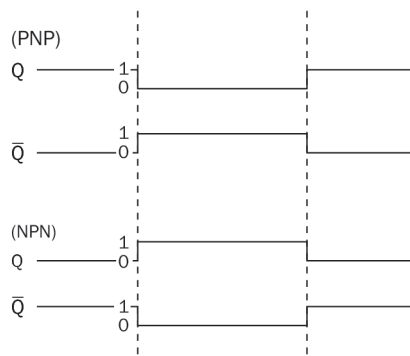
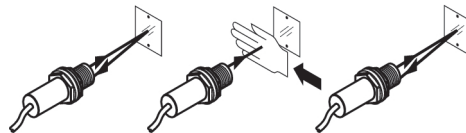


Image 23: C

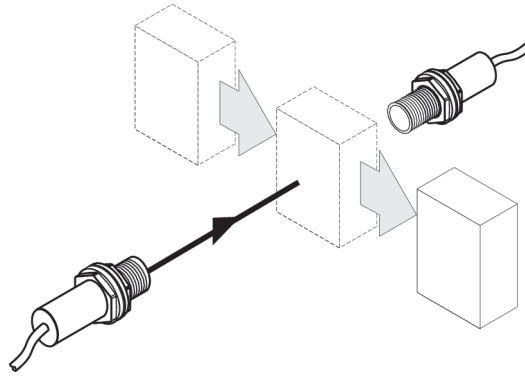


Image 24: G

39 Funções adicionais

O sensor GRSE18 dispõe de uma entrada de teste ("ET" no esquema de conexões [B]), através da qual é possível verificar o seu funcionamento correto: ao utilizar conectores fêmea com indicadores LED, certificar-se de que a ET tenha o pin-out adequado.

Não pode haver nenhum objeto entre o emissor e o receptor, ativar a entrada de teste (ver o esquema de conexões [B], ET com 0V). O LED de emissão é desligado ou há a simulação de que um objeto foi detectado. 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.

40 Diagnóstico de erros

A tabela 41 mostra as medidas a serem executadas, quando o sensor não estiver funcionando.

41 Tab_Diagnóstico de erros

Indicador LED / padrão de erro / LED indicator/fault pattern	Causa / Cause	Medida / Measures
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
LED verde aceso, sem sinal de saída na detecção de objetos / Green LED lights up, no output signal when object is detected	Entrada de teste (ET) não está conectada corretamente / Test input (TI) is not connected properly	Ver observação relativa à conexão da ET / See the note on connecting the TI

Indicador LED / padrão de erro / LED indicator/fault pattern	Causa / Cause	Medida / Measures
LED amarelo intermitente / Yellow LED flashes	Sensor ainda está operacional, mas as condições de operação não são ideais / <i>Sensor is still ready for operation, but the operating conditions are not ideal</i>	Verificar as condições de operação: Alinhar o feixe de luz (ponto de luz) completamente ao receptor / Limpeza das superfícies ópticas / reajustar a sensibilidade (potenciômetro) / Se o potenciômetro estiver ajustado para a máx. distância de comutação: reduzir a distância entre o emissor e o receptor e verificar com o gráfico E / Verificar e, se necessário, adaptar a distância de comutação, ver gráfico E / <i>Check the operating conditions: Fully align the beam of light (light spot) with the receiver. / Clean the optical surfaces / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sender and the receiver, and check against Graphic E / Check sensing range and adjust if necessary, see Graphic E</i>
LED amarelo aceso, nenhum objeto no caminho óptico / Yellow LED lights up, no object in the path of the beam	O feixe de luz de uma barreira de luz unidirecional está incidindo sobre o receptor de uma outra barreira de luz unidirecional (vizinha) / <i>The beam of light of a photoelectric through-beam sensor hits the receiver of another (neighboring) photoelectric through-beam sensor</i>	Trocar a disposição do sensor e do receptor a cada duas barreiras de luz unidirecionais ou manter distância suficiente entre as barreiras de luz unidirecionais. / <i>Swap the sender and receiver arrangement at every second photoelectric through-beam sensor and ensure that there is sufficient distance between the through-beam photoelectric sensors</i>

42 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).

43 Manutenção

Os sensores SICK não requerem manutenção.

Recomendamos que se efetue em intervalos regulares

1. uma limpeza das superfícies ópticas
2. 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 unidirezionale

Istruzioni per l'uso

46 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. Solo per l'utilizzo in applicazioni ai sensi di NFPA 79. Sono a disposizione adattatori con cavo di connessione dell'elenco UL. Enclosure type 1
- 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

47 Uso conforme alle prescrizioni

La GRSE18 è un relè fotoelettrico unidirezionale a riflessione optoelettronica (di seguito nominato sensore) utilizzato per il rilevamento ottico senza contatto di oggetti, animali e persone. Per il funzionamento sono necessari un emettitore (WS) e un ricevitore (WE). Se viene utilizzata diversamente e in caso di modifiche sul prodotto, decade qualsiasi diritto alla garanzia nei confronti di SICK.

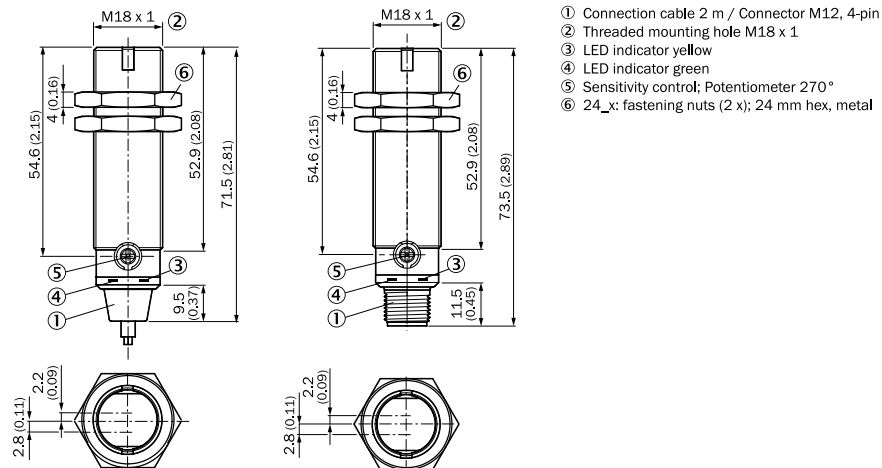


Image 25: GRSE18-xxxx2

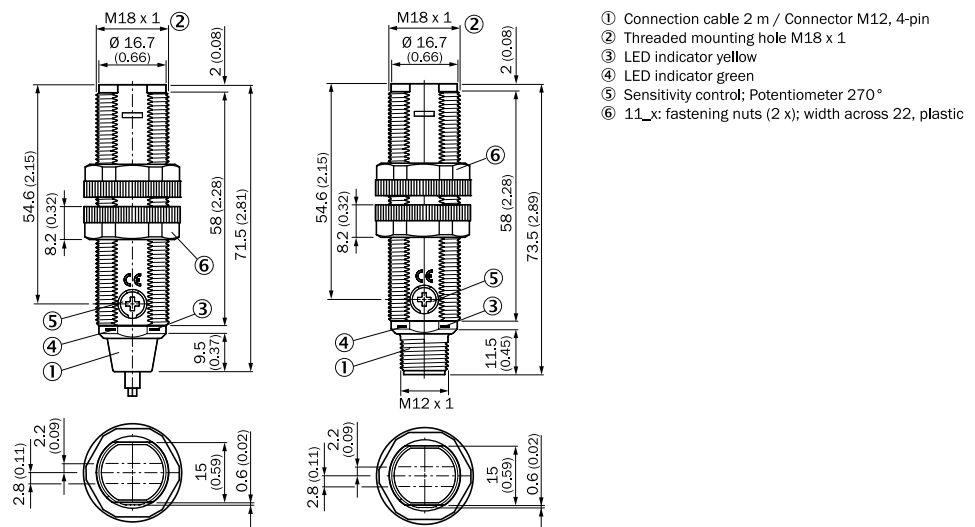


Image 26: GRSE18-xxxx7

48 Messa in funzionamento

- 1 Rispettare le condizioni d'impiego: predisporre la distanza tra emettitore e ricevitore in base al relativo diagramma (x = distanza di commutazione, y = riserva di funzionamento) [cfr. H]. Se si impiegano diversi relè fotoelettrici unidirezionali installati uno accanto all'altro, si consiglia di scambiare la disposizione di emettitore e ricevitore di ogni relè fotoelettrico unidirezionale, ovvero di rispettare una distanza sufficiente fra di essi. In tal modo si possono evitare influssi reciproci [cfr. I].

Operating reserve

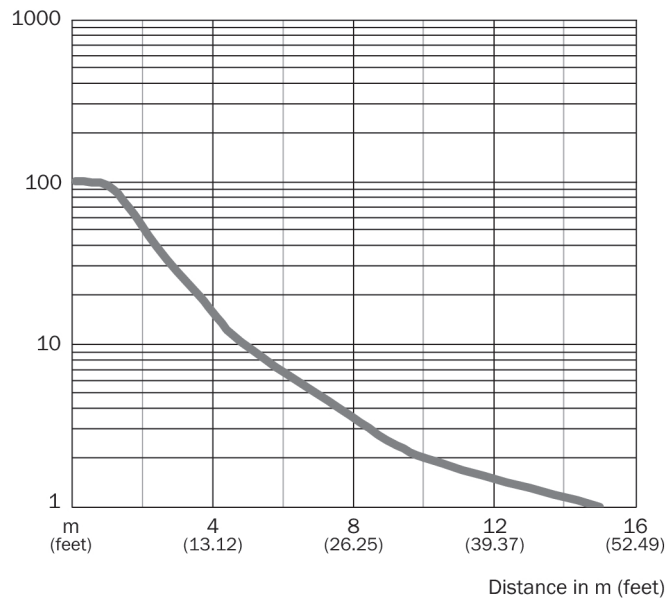


Image 27: H

- 2 Montare il sensore e il riflettore su dei punti di fissaggio adatti (vedi il programma per accessori SICK). Orientare reciprocamente l'emettitore e il rispettivo ricevitore [cfr. K].

Rispettare il momento torcente massimo consentito del sensore di 2,0 Nm per il metallo / 0,9 Nm per la plastica [cfr. K].

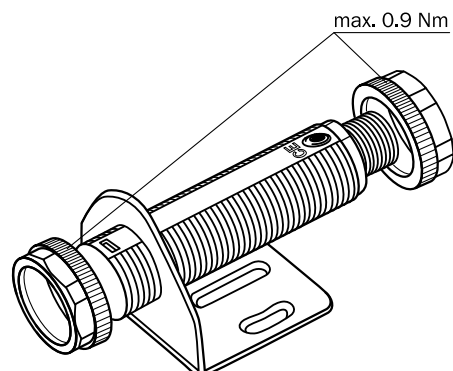


Image: K: GRSE18-x24x7

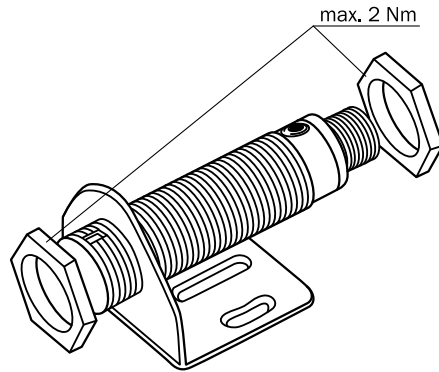


Image: K: GRSE18-x24x2

- 3 Il collegamento dei sensori deve avvenire in assenza di tensione ($V_S = 0\text{ V}$). In base al tipo di collegamento si devono rispettare le informazioni nei grafici [cfr. B]:
- Collegamento a spina: assegnazione pin
 - Conduttore: colore filo

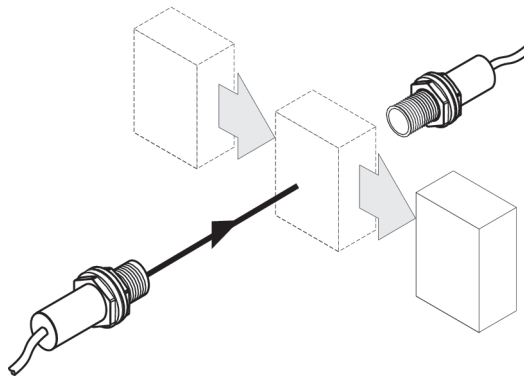


Image: B: GRSE18-x24xx

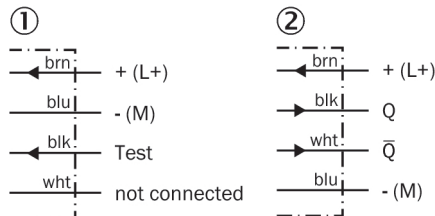


Image: B: GRSE18-x11xx

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

Spiegazioni dello schema di collegamento (grafico B):

Uscite di commutazione Q ovvero \bar{Q} (conformemente al grafico B):

GRSE18-P (PNP: carico -> M)

GRSE18-N (NPN: carico -> L+)

TE = entrata di prova (vedi funzioni supplementari)

- 4 Orientare reciprocamente l'emettitore sul rispettivo ricevitore. Scegliere la posizione in modo tale che il raggio di luce rosso emesso colpisca il ricevitore. Suggerimento: usare della carta bianca o il riflettore come ausilio per l'orientamento. Con dispositivi a raggi infrarossi non è visibile nessun punto luminoso. L'orientamento corretto può essere rilevato solo tramite l'indicatore LED. Vedi grafici C ed E. L'emettitore deve avere una visuale libera sul ricevitore, non ci deve essere nessun oggetto nella traiettoria del raggio. Fare attenzione che le aperture ottiche dei sensori (finestrelle frontali) siano completamente libere.

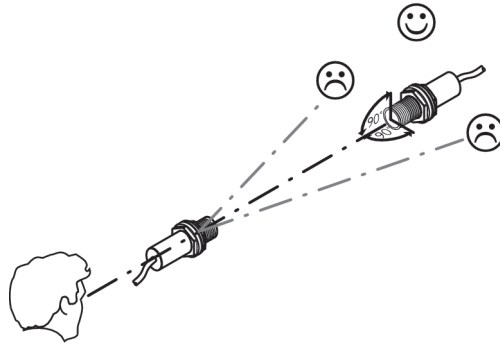
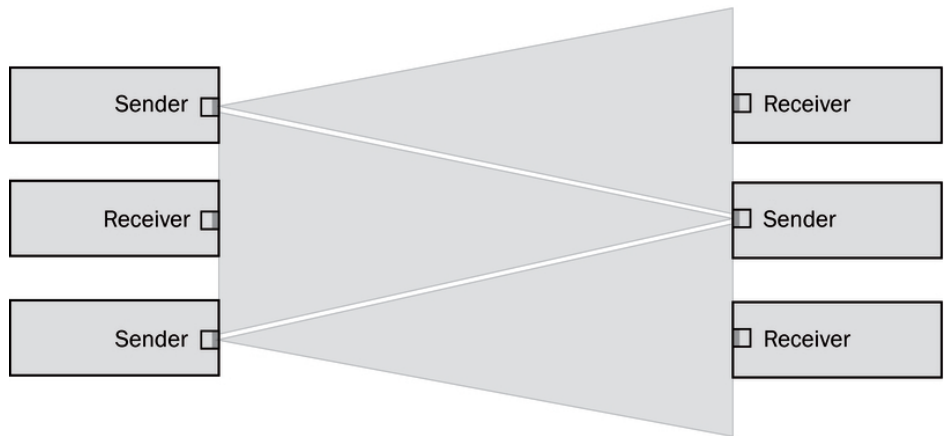


Image 28: E

5



Sensore con potenziometro:

Con il potenziometro (tipo: 270°) si imposta la sensibilità. Rotazione verso destra: innalzamento della riserva della soglia operativa, rotazione verso sinistra: riduzione della soglia operativa Si consiglia di impostare il potenziometro su "massimo".

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.

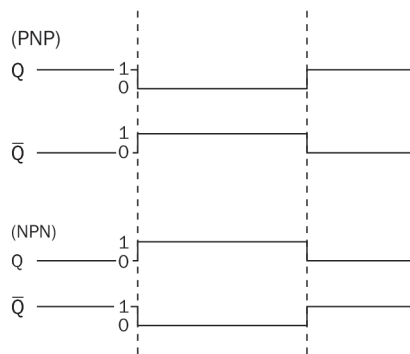
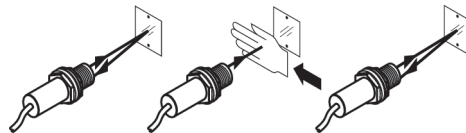


Image 29: C

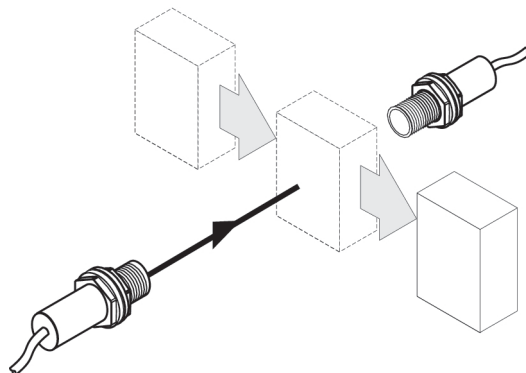


Image 30: G

50 Funzioni supplementari

Il sensore GRSE18 dispone di un'entrata di prova („TE“ nello schema di collegamento [B]), tramite la quale il funzionamento regolare del sensore può venire controllato: in caso di uso di connettori di linea con indicatori LED si deve prestare attenzione che TE sia relativamente inserita.

Non ci deve essere nessun oggetto tra emettitore e ricevitore, attivare l'entrata di prova (vedi schema di collegamento [B], TE verso 0V). Il LED di emissione si spegne, ovvero viene simulato il rilevamento di un oggetto. 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.

51 Diagnostica delle anomalie

Tabella 52 mostra quali provvedimenti si devono adottare quando il sensore non funziona più.

52 Tabulatore diagnostica delle anomalie

Indicatore LED / figura di errore / LED indicator/fault pattern	Causa / Cause	Provvedimento / Measures
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
il LED verde si accende, nessun segnale in uscita al momento di rilevamento dell'oggetto / Green LED lights up, no output signal when object is detected	L'entrata di prova (TE) non è collegata correttamente / Test input (TI) is not connected properly	Vedi le indicazioni per il collegamento della TE / See the note on connecting the TI

Indicatore LED / figura di errore / LED indicator/fault pattern	Causa / Cause	Provvedimento / Measures
il LED giallo lampeggia / Yellow LED flashes	Il sensore è ancora pronto per il funzionamento, ma le condizioni di esercizio non sono ottimali / Sensor is still ready for operation, but the operating conditions are not ideal	Controllare le condizioni di esercizio: Dirigere il raggio di luce (il punto luminoso) completamente sul ricevitore / Pulizia delle superfici ottiche / Sensibilità (potenziometro) / se il potenziometro è impostato sulla distanza di commutazione massima: diminuire la distanza tra emettitore e ricevitore e verificare nuovamente con il grafico E / Controllare la distanza di commutazione e, se necessario, adattarla, vedi grafico E / Check the operating conditions: Fully align the beam of light (light spot) with the receiver. / Clean the optical surfaces / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sender and the receiver, and check against Graphic E / Check sensing range and adjust if necessary, see Graphic E
il LED giallo si accende, nessun oggetto nella traiettoria del raggio / Yellow LED lights up, no object in the path of the beam	Il fascio di luce dell'emettitore colpisce il ricevitore di un altro relè fotoelettrico unidirezionale (vicino) / The beam of light of a photoelectric through-beam sensor hits the receiver of another (neighboring) photoelectric through-beam sensor	Scambiare la disposizione di emettitore e ricevitore, o rispettare una distanza sufficiente fra i relè fotoelettrici. / Swap the sender and receiver arrangement at every second photoelectric through-beam sensor and ensure that there is sufficient distance between the through-beam photoelectric sensors

53 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.

54 Manutenzione

I sensori SICK sono esenti da manutenzione.

A intervalli regolari si consiglia di

1. pulire le superfici limite ottiche
2. 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 unidireccional

Instrucciones de uso

57 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. Solo para utilizar en aplicaciones según NFPA 79. Se encuentran disponibles adaptadores con cables de conexión listados por UL. Enclosure type 1
- 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.

58 Uso conforme a lo previsto

La GRSE18 es una barrera optoelectrónica monohaz (en lo sucesivo llamada sensor) empleada para la detección óptica y sin contacto de objetos, animales y personas. Para que funcione se precisa un transmisor (WS) y un receptor (WE). Cualquier uso diferente al previsto o modificación en el producto invalidará la garantía por parte de SICK AG.

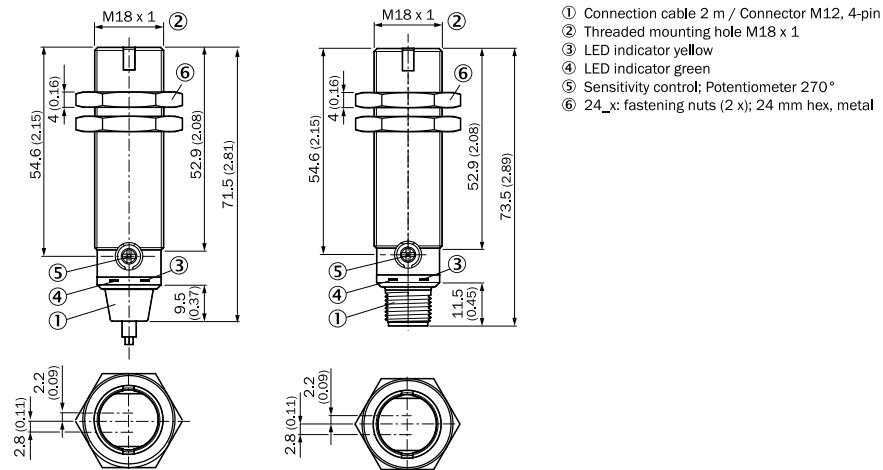


Image 31: GRSE18-xxxx2

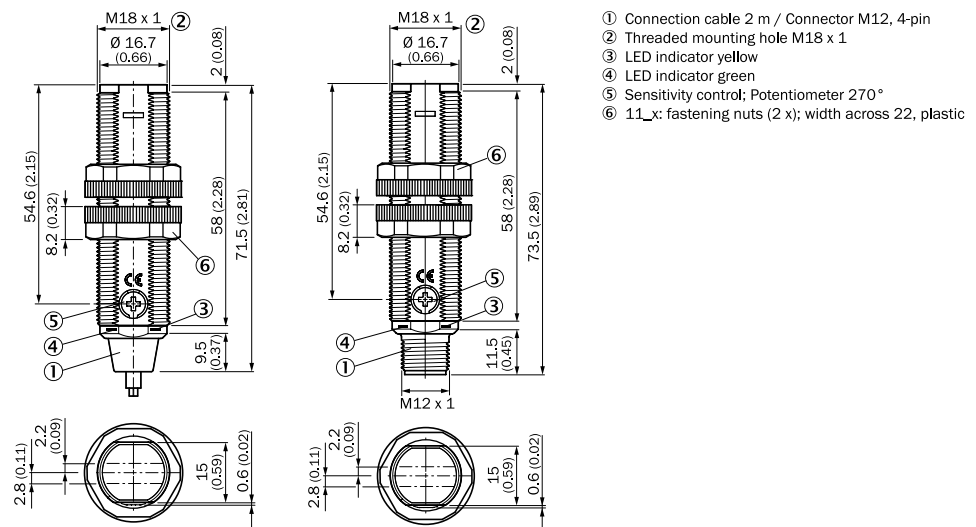


Image 32: GRSE18-xxxx7

59 Puesta en servicio

- 1 Respetar las condiciones de aplicación: comparar la distancia entre el transmisor y el receptor con el diagrama correspondiente [véase fig. H] (x = distancia de conmutación, y = reserva de funcionamiento).

Si se usan varias barreras fotoeléctricas unidireccionales instaladas una al lado de otra, recomendamos cambiar la disposición de transmisores y receptores cada dos barreras, o mantener una distancia suficiente entre ellas. De este modo se evitarán las interferencias mutuas [véase fig. I].

Operating reserve

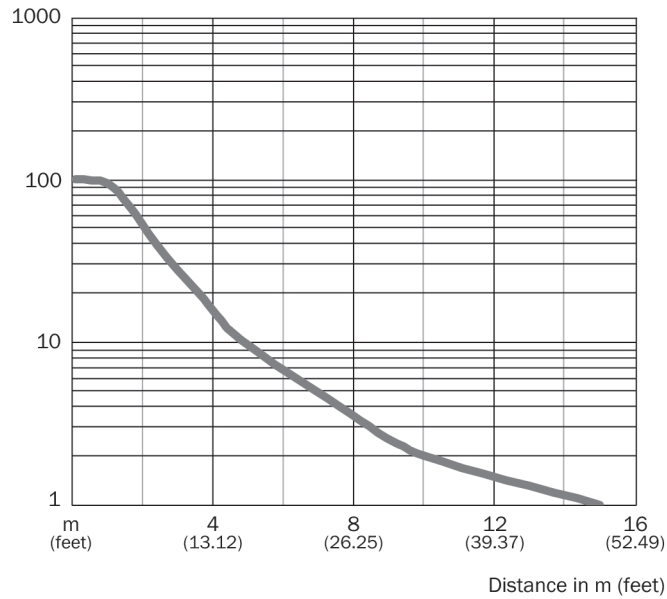


Image 33: H

- 2 Montar los sensores (transmisores y receptores) en escuadras de fijación adecuadas (véase el programa de accesorios SICK). Alinear el transmisor y el receptor entre sí [véase K]

Respetar el par de apriete máximo admisible del sensor de 2,0 Nm para metal y 0,9 Nm para plástico [véase K].

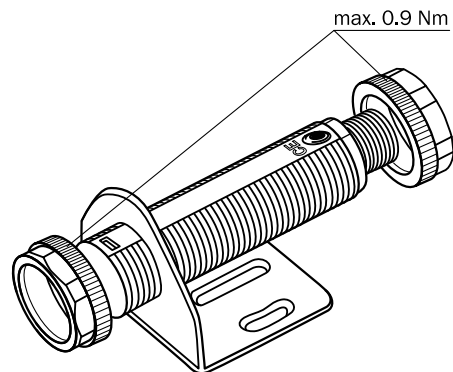


Image: K: GRSE18-x24x7

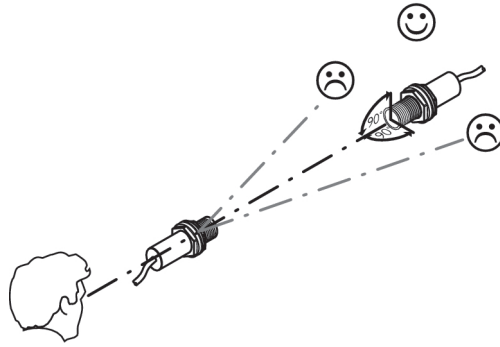
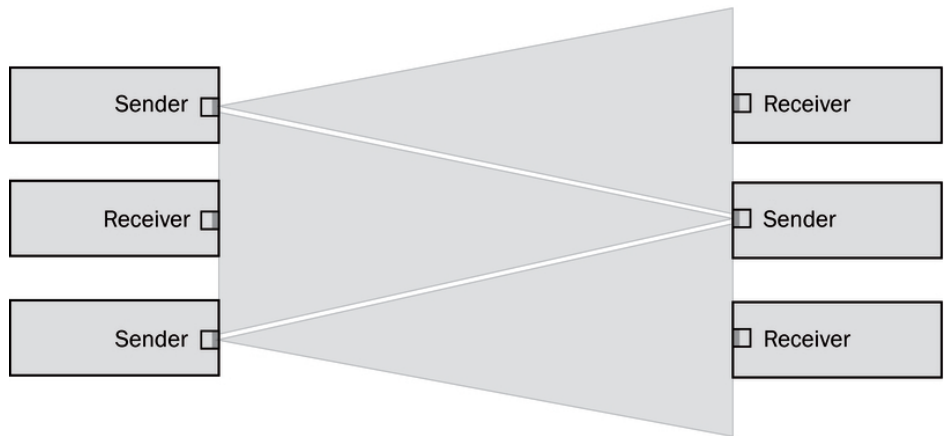


Image 34: E

5



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. Recomendamos poner el potenciómetro a su nivel "máximo".

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".

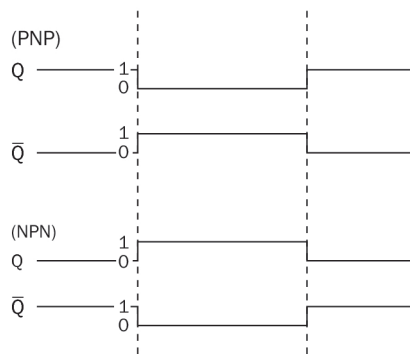
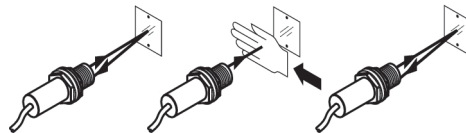


Image 35: C

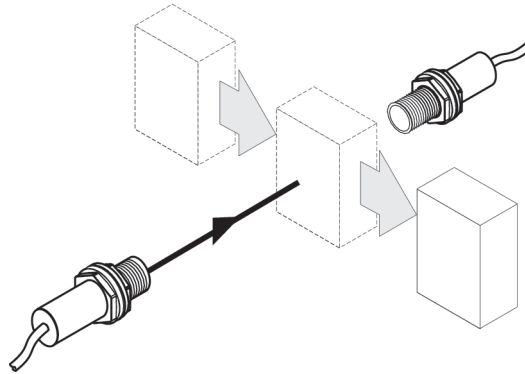


Image 36: G

61 Funciones adicionales

El sensor GRSE18 dispone de una entrada de prueba ("TE" en el esquema de conexión [B]), con la que puede comprobarse el buen funcionamiento del sensor: si se utilizan tomas de red con indicadores LED hay deberá procurarse que la TE esté asignada como corresponde.

No se puede encontrar ningún objeto entre transmisor y receptor, activar la entrada de prueba (véase esquema de conexión [B], TE tras 0 V). El LED emisor se desconecta o se simula que se ha detectado un objeto. 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".

62 Diagnóstico de fallos

La tabla 63 muestra las acciones que hay que tomar cuando ya no está indicado el funcionamiento del sensor.

63 Tabla_Diagnóstico de fallos

LED indicador / imagen de error / LED indicator/fault pattern	Causa / Cause	Acción / Measures
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
El LED verde se ilumina, no hay señal de salida cuando se detecta un objeto / Green LED lights up, no output signal when object is detected	La entrada de prueba (TE) no está correctamente conectada / Test input (TI) is not connected properly	Ver indicaciones para conectar la entrada de prueba (TE) / See the note on connecting the TI

LED indicador / imagen de error / <i>LED indicator/fault pattern</i>	Causa / <i>Cause</i>	Acción / <i>Measures</i>
El LED amarillo parpadea / <i>Yellow LED flashes</i>	El sensor aún está operativo, pero las condiciones de servicio no son óptimas / <i>Sensor is still ready for operation, but the operating conditions are not ideal</i>	Comprobar las condiciones de servicio: Alinear el haz de luz (punto de luz) completamente con el receptor / Limpieza de las superficies ópticas / Reajustar la sensibilidad (potenciómetro) / Si el potenciómetro está ajustado a la máxima distancia de conmutación, reducir la distancia entre el transmisor y el receptor y comprobar con la figura E / Comprobar la distancia de conmutación y, si es necesario, adaptarla, véase figura E / <i>Check the operating conditions: Fully align the beam of light (light spot) with the receiver. / Clean the optical surfaces / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sender and the receiver, and check against Graphic E / Check sensing range and adjust if necessary, see Graphic E</i>
El LED amarillo se ilumina, no hay ningún objeto en la trayectoria del haz / <i>Yellow LED lights up, no object in the path of the beam</i>	El haz de luz de una barrera fotoeléctrica monohaz incide sobre el receptor de otra barrera fotoeléctrica monohaz (vecina) / <i>The beam of light of a photoelectric through-beam sensor hits the receiver of another (neighboring) photoelectric through-beam sensor</i>	Cada dos barreras fotoeléctricas monohaz, cambiar la disposición de transmisores y receptores o mantener una distancia suficiente entre ellas. / <i>Swap the sender and receiver arrangement at every second photoelectric through-beam sensor and ensure that there is sufficient distance between the through-beam photoelectric sensors</i>

64 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.

65 Mantenimiento

Los sensores SICK no precisan mantenimiento.

A intervalos regulares, recomendamos:

1. Limpiar las superficies ópticas externas
2. 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.

**对射式光电传感器
操作说明**

68 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。仅限用于符合 NFPA 79 的应用。可用 UL 所列出的含连接线缆的连接器. Enclosure type 1
- 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。

69 拟定用途

GRSE18 是一种光电式单向光栅（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。须配有一个发射器 (ws) 和一个接收器 (WE) 才可正常运行。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。

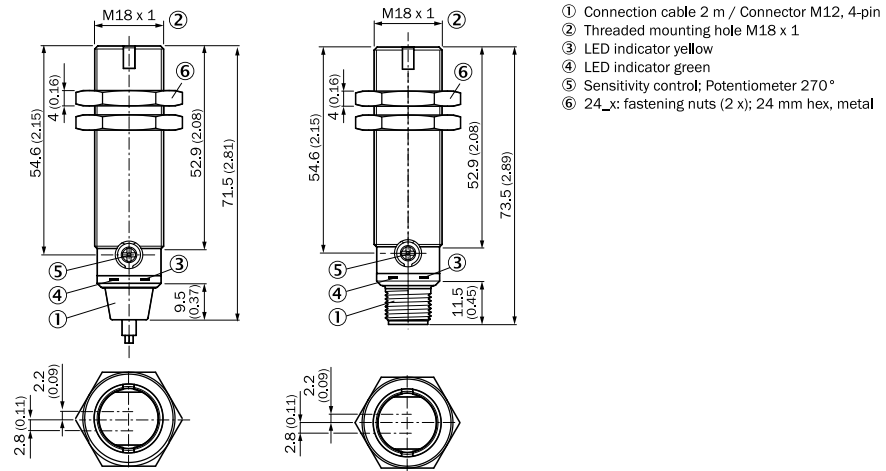


Image 37: GRSE18-xxxx2

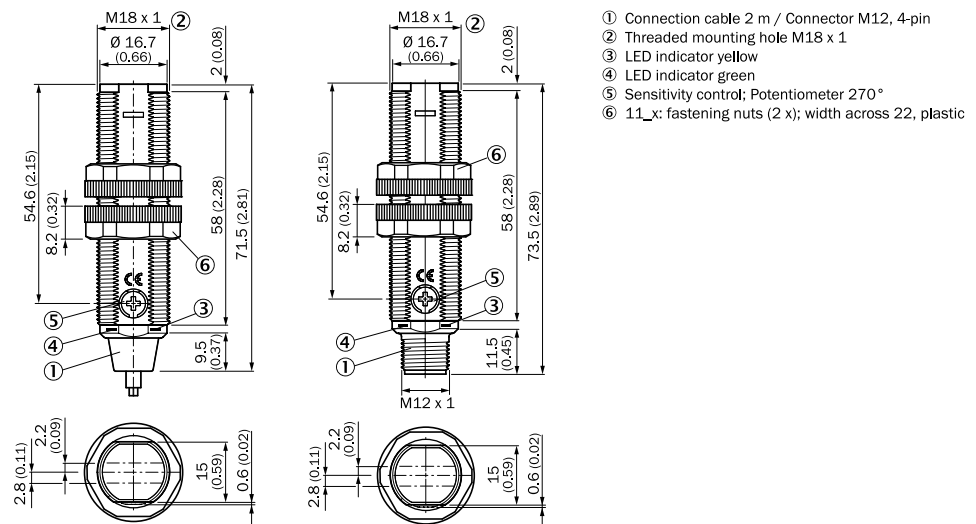


Image 38: GRSE18-xxxx7

70 调试

- 1 注意使用条件：使用随附的图表 [参照 H] 调整发射器和接收器之间的距离（ x = 开关距离， y = 信号冗余）。使用多个采用相邻方式安装的单向光栅时，我们建议每隔一个光栅即交换发射器和接收器的顺序或按规定在各个单向光栅之间保留足够间距。由此可避免相互间的影响 [参照 I]。

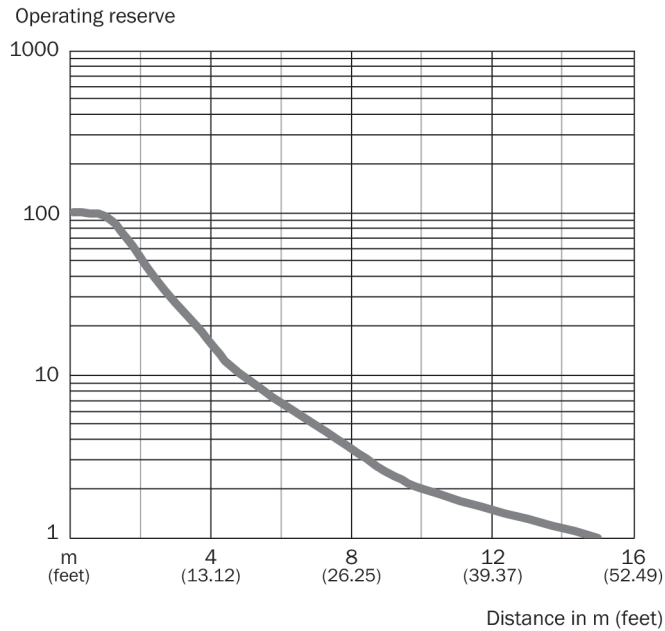


Image 39: H

- 2 将传感器（反射器和接收器）安装在合适的安装托架上（参见 SICK 附件说明书）。相互对准反射器和接收器 [根据 K]。传感器金属部件的拧紧扭矩为 2.0 NM，塑料部件的拧紧扭矩为 0.9 NM [根据 K]。

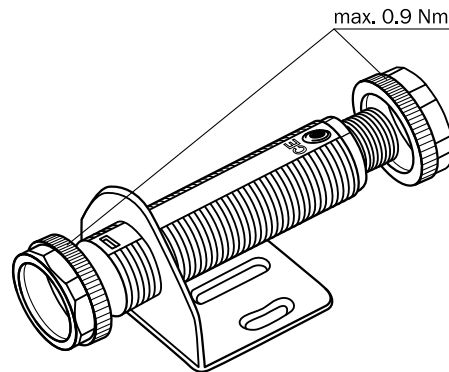


Image: K: GRSE18-x24x7

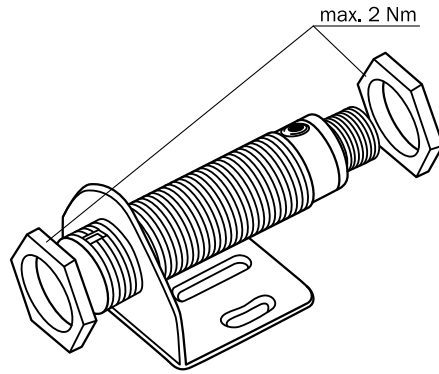


Image: K: GRSE18-x24x2

- 3 必须在无电压状态 ($V_S = 0\text{ V}$) 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

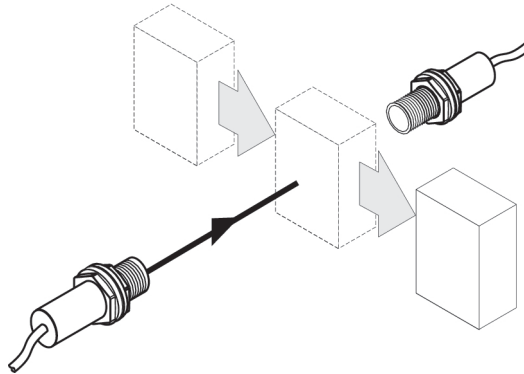


Image: B: GRSE18-x24xx

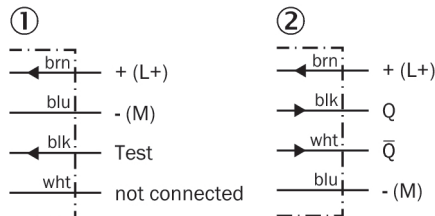


Image: B: GRSE18-x11xx

完成所有电子连接后, 才敷设或接通电源 ($V_S > 0\text{ V}$)。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 或 \bar{Q} (根据图 B):

GRSE18-P (PNP: 负载 -> M)

GRSE18-N (NPN: 负载 -> L+)

TE = 测试输入端 (参见附加功能)

- 4 将发射器对准接收器。选择定位, 确保红色发射光束射中接收器。提示: 可使用白纸或反射器作为校准参考。在红外仪器中不能发现光斑。仅可通过 LED 指示灯辨别校准是否正确。为此, 请参见图 C 和 E。发射器应当无遮挡地观察到接收器, 在光路中不得有任何物体。此时, 应注意传感器的光学开口 (前部玻璃) 处应无任何遮挡。

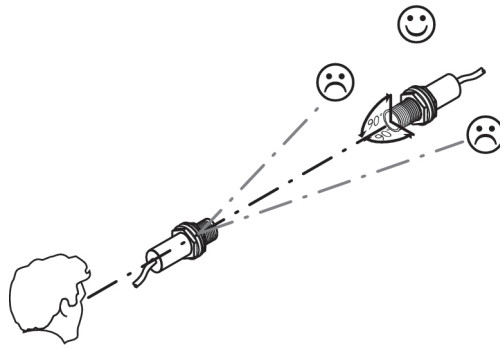
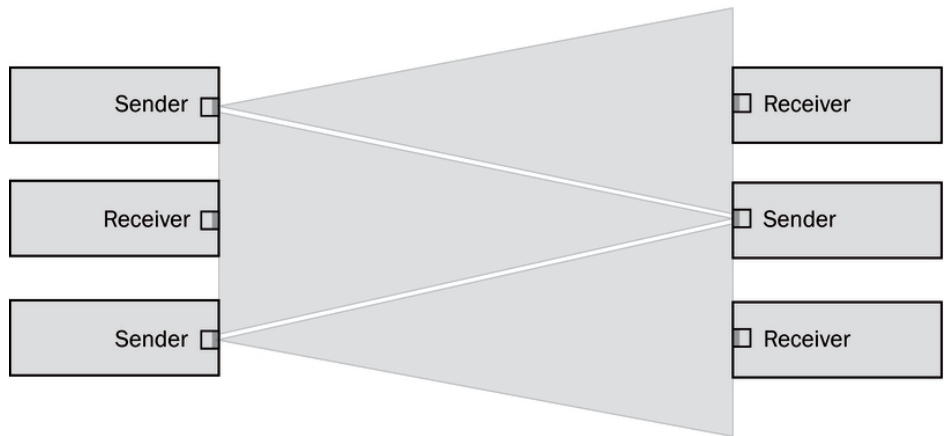


Image 40: E

5



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。我们建议将电位计调为“最大”。

传感器已设置并准备就绪。参照图 C 和 G 检查功能。如果开关输出端的动作不符合图 C，则须检查使用条件。参见故障诊断章节。

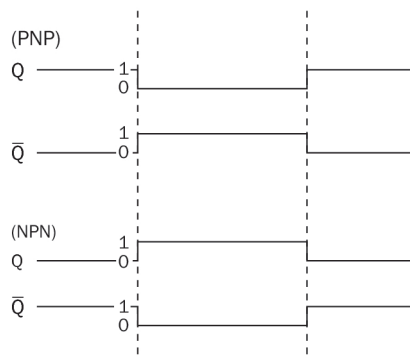
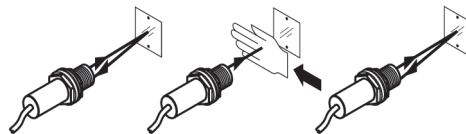


Image 41: C

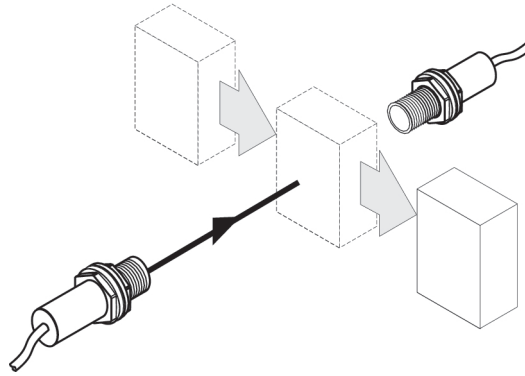


Image 42: G

72 附加功能

传感器 GRSE18 通过测试输入端（接线图 [B] 中的 "TE"），使用该输入端检查传感器功能是否正确：使用配备 LED 指示灯的母插头时应注意相应分配 TE。

激活测试输入端时，发送器和接收器之间不得出现任何物体（参见接线图 [B]，TE 为 0V）。将关闭或模拟 LED 发送信号，以便识别物体。参照图 C 和 G 检查功能。如果开关输出端的动作不符合图 C，则须检查使用条件。参见故障诊断章节。

73 故障诊断

表 74 中罗列了传感器无法执行某项功能时应采取的各项措施。

74 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 / 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
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
绿色 LED 亮起，探测物体时无输出信号 / Green LED lights up, no output signal when object is detected	未正确连接测试输入端 (TE) / Test input (TI) is not connected properly	参见 TE 的连接提示 / See the note on connecting the TI

LED 指示灯 / 故障界面 / LED indicator/fault pattern	原因 / Cause	措施 / Measures
， 黄色 LED 闪烁 / Yellow LED flashes	尽管传感器准备就绪，但运行条件不佳 / Sensor is still ready for operation, but the operating conditions are not ideal	检查运行条件：光束（光斑）完全对准接收器 / 清洁光学表面 / 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：减小发射器和接收器之间的间距并使用图 E 检查 / 检查开关距离，必要时调整；参见图 E / Check the operating conditions: Fully align the beam of light (light spot) with the receiver. / Clean the optical surfaces / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sender and the receiver, and check against Graphic E / Check sensing range and adjust if necessary, see Graphic E
黄色 LED 亮起，光路中无物体 / Yellow LED lights up, no object in the path of the beam	某个单向光栅的光束照射到另一个（相邻）单向光栅的接收器上 / The beam of light of a photoelectric through-beam sensor hits the receiver of another (neighboring) photoelectric through-beam sensor	每隔一个单向光栅即交换发射器和接收器的顺序或在各个单向光栅之间保留足够间距。 / Swap the sender and receiver arrangement at every second photoelectric through-beam sensor and ensure that there is sufficient distance between the through-beam photoelectric sensors

75 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。

76 保养

SICK 传感器无需保养。

我们建议，定期：

1. 清洁镜头检测面
2. 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。

透過形光電センサ 取扱説明書

79 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 の機械指令を満たす人体保護の為の安全コンポーネントではありません。NFPA 79 に準拠した用途にのみ使用してください。接続ケーブル付き UL 規格のアダプタも使用できます。 Enclosure type 1
- 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。

80 正しいご使用方法

GRSE18 は透過形光電センサ（以下「センサ」）で、物体、動物または人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。操作には投光器（WS）および受光器（WE）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。

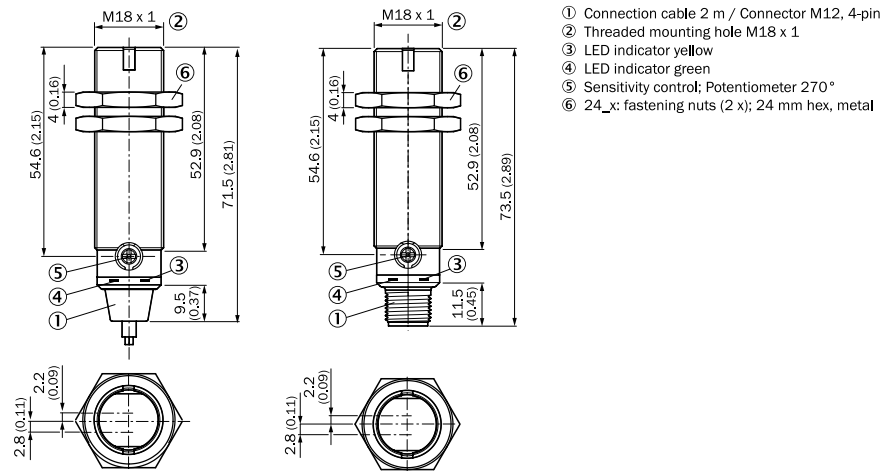


Image 43: GRTE18-xxxx2

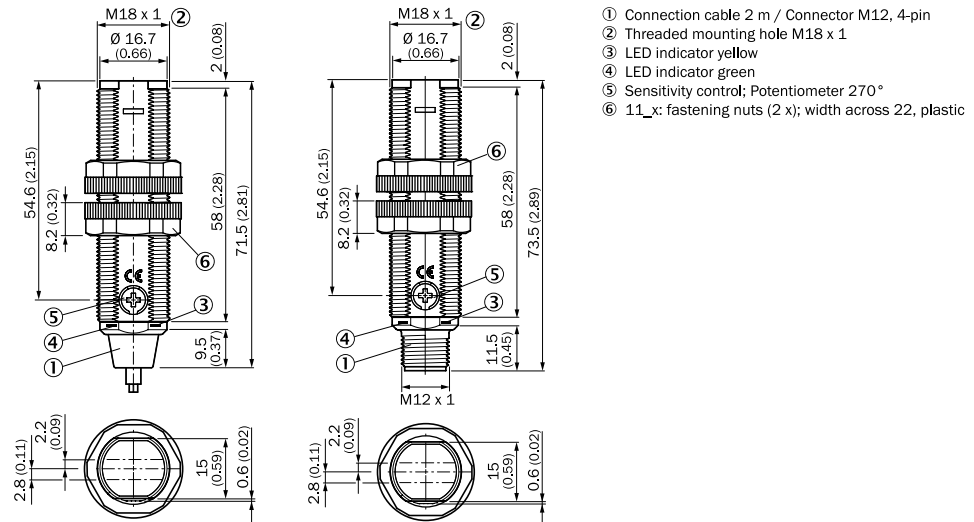


Image 44: GRTE18-xxxx7

81 コミッショニング

- 1 使用条件に従ってください：対応する図に従って、投光器と受光器間の距離を設定します（x = 検出範囲、y = 動作余裕度）。複数の透過形光電センサを隣り合わせに取り付けて使用する場合、透過形光電センサひとつおきに投光器/受光器の配置を入れ替え、また透過形光電センサ同士に十分な間隔を空けることをお勧めしています。それにより相互干渉を防止することができます。

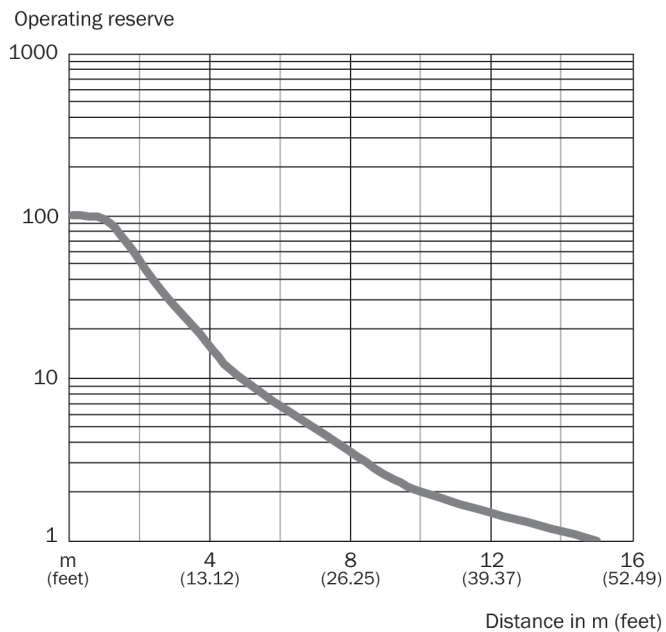


Image 45: H: Sensing range 115 mm

- 1) Sensing range on black, 6 % remission
- 2) Sensing range on gray, 20 % remission
- 3) Sensing range on white, 90 % remission

- 2 適切なブラケットを使用してセンサ（投光器と受光器）を取り付けます（SICK 付属品カタログを参照）。投光器と受光器を互いに方向調整します [K]。
センサの最大許容締付トルク 2.0 Nm（金属）／0.9 Nm（プラスチック）に注意してください [K]。

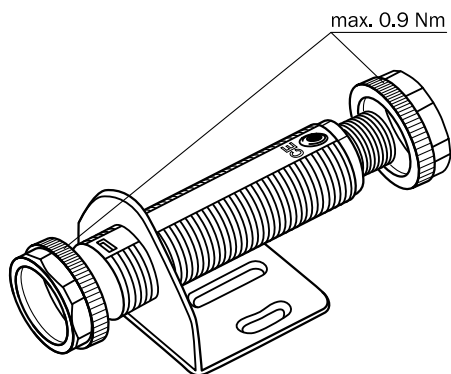


Image: K: GRTE18-x24x7

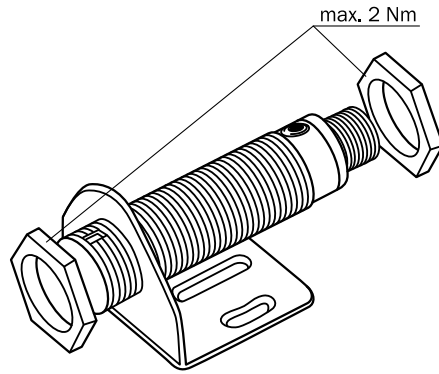


Image: K: GRTE18-x24x2

- 3 センサの接続は必ず無電圧状態 ($V_S = 0\text{ V}$) 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

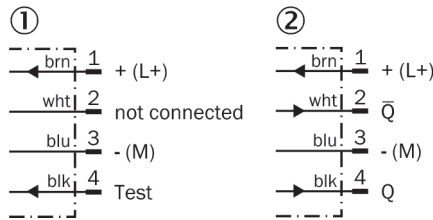


Image: B: GRTE18-x24xx

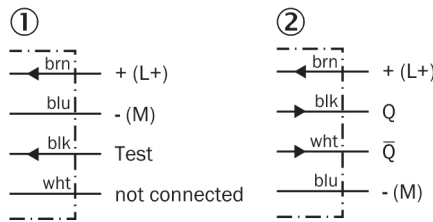


Image: B: GRTE18-x11xx

まずすべての電気接続を確立してから、電源 ($V_S > 0\text{ V}$) 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 および /Q (図 B に準拠)：

GRTE18-P (PNP : 負荷 -> M)

GRTE18-N (NPN : 負荷 -> L+)

TI = テスト入力 (追加機能を参照)

- 4 投光器を受光器の方向に合わせます。赤色光投光スポットが受光器の受光レンズ部分に照射されるように位置を調整します。ヒント：光軸調整の補助として白い紙やリフレクタ (反射シート) 等を使用することができます。投光器から受光器への視界が遮られたり、光軸に対象物がないようにして下さい [E を参照]。投受光器の光学部分 (フロントレンズ部分) の視界を遮るものが一切ないことを確認してください。

投光器を受光器の方向に合わせます。赤外光 (不可視) が受光器の受光レンズ部分に照射されるように位置を調整します。ヒント：光軸調整の補助として白い紙やリフレクタ (反射シート) 等を使用することができます。光軸調整が適切かどうかは、LED 表示灯の点灯状態によって行って下さい。これに関連して図 C および E を参照してください。投光器から受光器への視界が遮られたり、光軸に対象物があることはありません。投受光器の光学部分 (フロントレンズ部分) の視界を遮るものが一切ないことを確認してください。

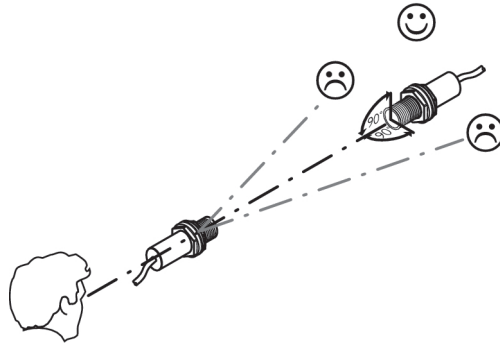
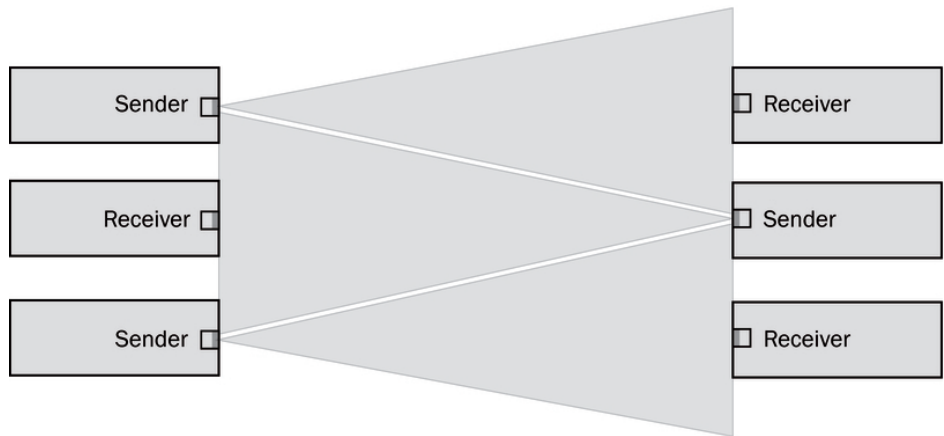


Image 46: E

5



感度調整ボリューム付きセンサ :

感度は感度調整ボリューム（タイプ：270°）で調整します。右回転：検出感度増加；左回転：検出感度減少。感度調整ボリュームを「最大」に設定することをお勧めします。

センサは調整済みで、操作できる状態です。図 C および G を参照し、機能点検してください。スイッチング出力が図 C のように動作しない場合、使用条件を確認して下さい。故障診断の項を参照してください。

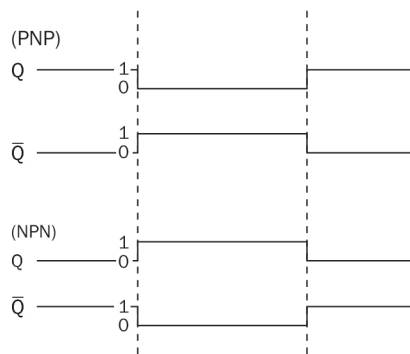
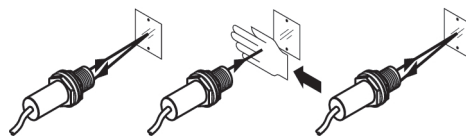


Image 47: C

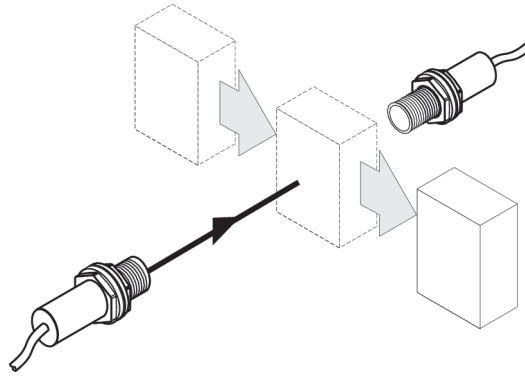


Image 48: G

83 追加機能

GRSE18 センサにはテスト入力（接続図 [B] では「TI」）機能があり、これでセンサが正常に動作しているかどうか確認することができます：LED 表示灯付きのケーブルソケットを使用する場合、TI がそれに応じて割り当てられていることを確認してください。

投光器と受光器の間に対象物があってはなりません。テスト入力を有効にします（接続図 [B] を参照、TI は 0 V）。投光 LED がオフになる、または対象物の検出がシミュレートされます。図 C および G を参照し、機能点検してください。スイッチング出力が図 C のように動作しない場合、使用条件を確認して下さい。故障診断の項を参照してください。

84 故障診断

表 85 には、センサが動作しなくなった場合の対策が示されています。

85 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 / Acción
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
緑色の LED が点灯、対象物が検出された際に出力信号がない / Green LED lights up, no output signal when object is detected	テスト入力 (TI) が正しく接続されていない / Test input (TI) is not connected properly	TI の接続に関する注意事項を参照してください / See the note on connecting the TI

LED 表示灯/故障パターン / LED indicator/fault pattern	原因 / Cause	対策 / Acción
黄色い LED が点滅 / Yellow LED flashes	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 / Sensor is still ready for operation, but the operating conditions are not ideal	動作条件を確認します： 投光光軸（投光スポット）が受光器の受光部分に当たるようにします / 光学面を清掃する / 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： 投光器と受光器の間隔を狭めて、図 E と照合して確認します / 検出範囲を確認し必要に応じて調整します、図 E を参照 / Check the operating conditions: Fully align the beam of light (light spot) with the receiver. / Clean the optical surfaces / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sender and the receiver, and check against Graphic E / Check sensing range and adjust if necessary, see Graphic E
黄色い LED が点灯、光軸に対象物がない / Yellow LED lights up, no object in the path of the beam	透過形光電センサの投光光軸が、別の（隣接する）透過形光電センサの受光器にあたる / The beam of light of a photoelectric through-beam sensor hits the receiver of another (neighboring) photoelectric through-beam sensor	透過形光電センサひとつおきに、投光器と受光器の配置を入れ替え、透過形光電センサ同士の間には十分な間隔を空けます / Swap the sender and receiver arrangement at every second photoelectric through-beam sensor and ensure that there is sufficient distance between the through-beam photoelectric sensors

86 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）。

87 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：

1. 外部レンズの表面を清掃する
2. ねじ接続およびコネクタプラグの接続状態を点検する

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。

Однолучевой фоторелейный барьер Руководство по эксплуатации

90 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 «Машины и машинное оборудование». Только для использования в областях применения согласно NFPA 79. Адаптеры с соединительными кабелями из списка UL доступны. Enclosure type 1
- 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.

91 Использование по назначению

GRSE18 является оптоэлектронным однолучевым световым барьером (в дальнейшем называемым "сенсор") и используется для оптической бесконтактной регистрации вещей, животных и людей. Для эксплуатации необходимы передатчик (WS) и приемник (WE). При ином использовании и при внесении изменений в изделие подача любых гарантийных претензий к SICK AG исключена.

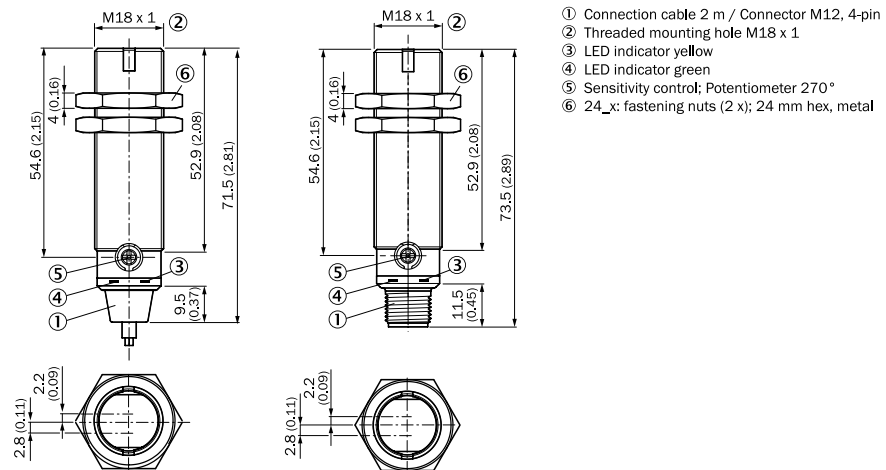


Image 49: GRSE18-xxxx2

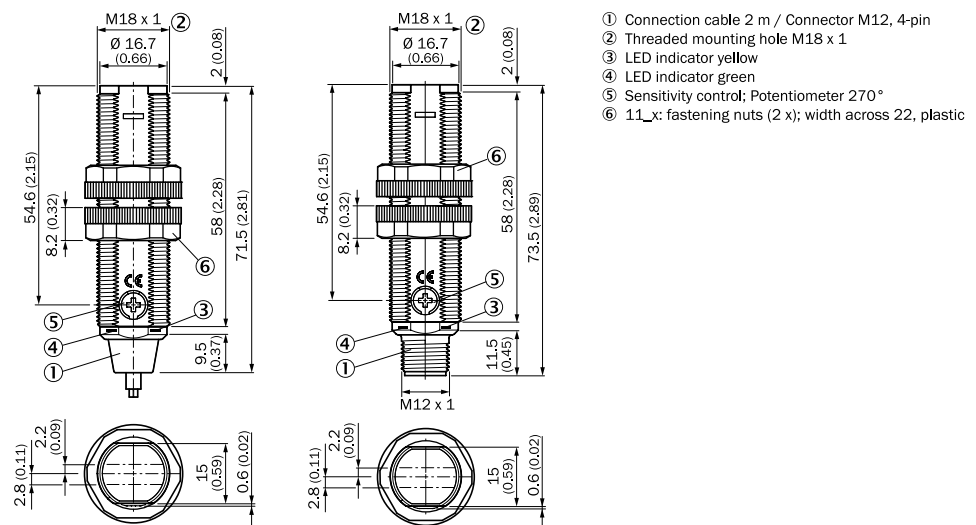


Image 50: GRSE18-xxxx7

92 Ввод в эксплуатацию

- 1 Учет условий применения: скорректировать дистанцию между сенсором и отражателем с помощью соответствующей диаграммы [см. H] (x = дистанция переключения, y = функциональный резерв).

При применении нескольких однолучевых фоторелейных барьеров, которые устанавливаются рядом друг с другом, рекомендуется поменять местами передатчик и приемник каждого второго однолучевого фоторелейного барьера или же выдержать достаточное расстояние между однолучевыми фоторелейными барьерами. Таким образом можно избежать взаимного воздействия [см. I].

Operating reserve

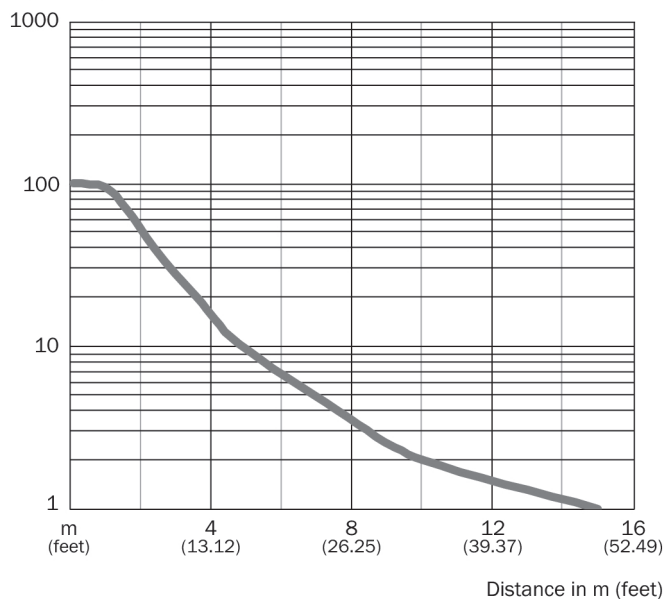


Image 51: H

- 2 Установите сенсоры (передатчик и приемник) на подходящем крепежном уголке (см. программу принадлежностей от SICK). Выровняйте передатчик и приемник друг относительно друга [см. K].

Выдерживайте максимально допустимый момент затяжки сенсора в 2,0 Нм для металла / 0,9 Нм для пластмассы [см. K].

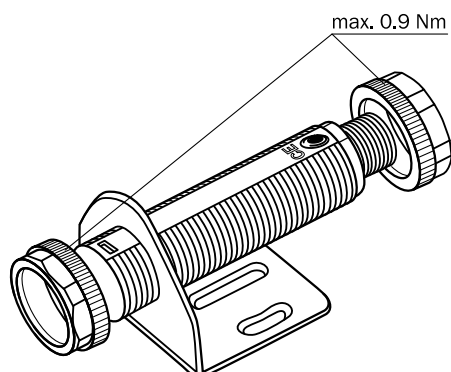


Image: K: GRSE18-x24x7

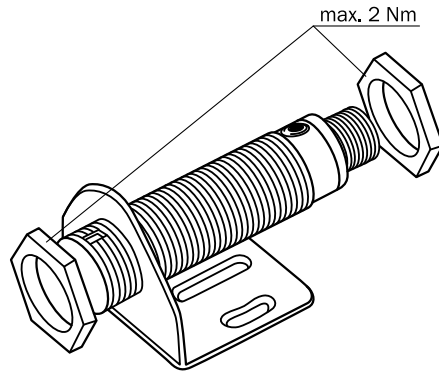


Image: K: GRSE18-x24x2

- 3 Подключайте сенсоры при отключенном напряжении питания ($V_S = 0\text{ V}$). В зависимости от типа подключения следует принять во внимание информацию с графиков [см. В]:
- Штекерный разъем: назначение контактов
 - Проводник: цвет жилы

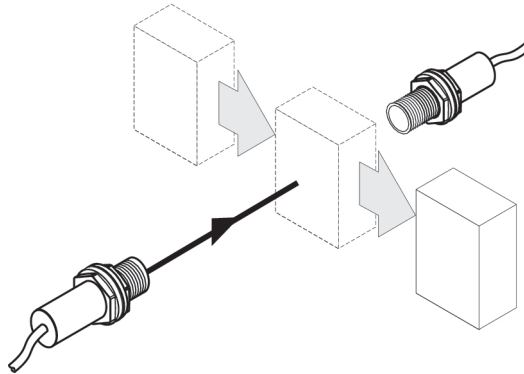


Image: B: GRSE18-x24xx

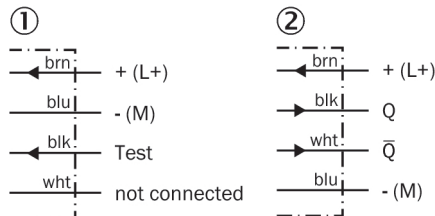


Image: B: GRSE18-x11xx

Подавайте и включайте напряжение питания только после завершения подключения всех электрических соединений ($V_S > 0\text{ V}$). На сенсоре включается зеленый светодиодный индикатор.

Пояснения к схеме электрических соединений (график В):

Коммутирующие выходы Q или \bar{Q} (согласно графику В):

GRSE18-P (PNP: нагрузка -> M)

GRSE18-N (NPN: нагрузка -> L+)

TE = тестовый вход (см. дополнительные функции)

- 4 Направьте сенсор на приемник. Выберите такую позицию, чтобы красный луч передатчика попадал на приемник. Совет: в качестве приспособления для выравнивания используйте лист белой бумаги или отражатель. У инфракрасных устройств не видно светового пятна. Корректное выравнивание можно определить с помощью светодиодных индикаторов. См. графики С и Е. Передатчик должен иметь свободную траекторию до приемника, нахождение объектов на пути луча не допускается. Оптические отверстия (фронтальное стекло) на сенсорах должны быть полностью свободными.

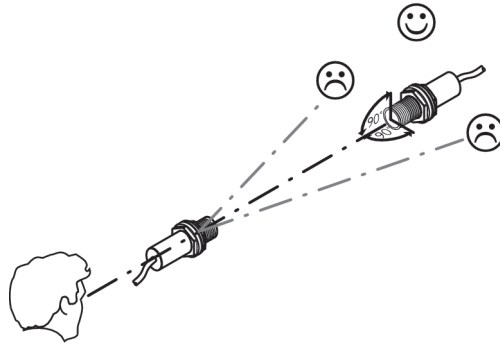
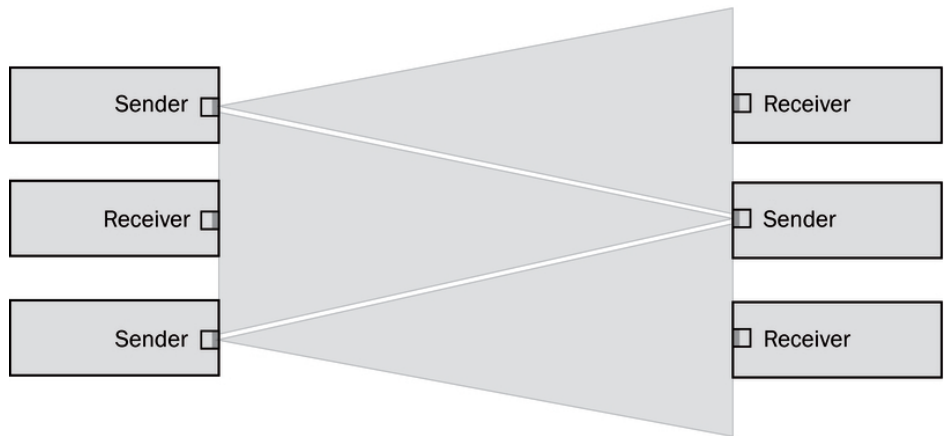


Image 52: E

5



Сенсор с потенциометром:

С помощью потенциометра (тип: 270°) регулируется чувствительность. Вращение вправо: увеличение функционального резерва, вращение влево: уменьшение функционального резерва. Рекомендуется устанавливать потенциометр на "Maximal".

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

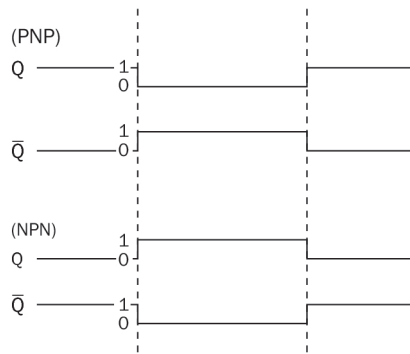
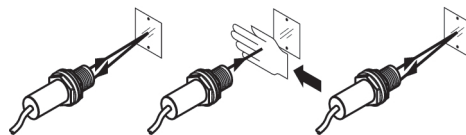


Image 53: C

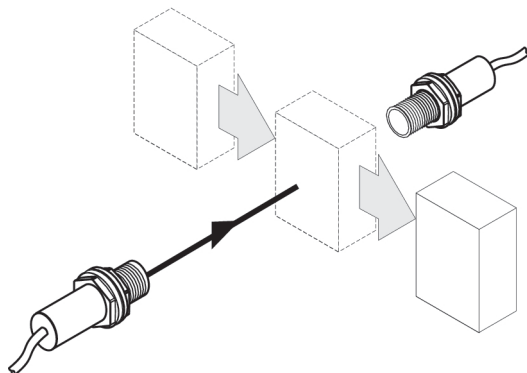


Image 54: G

94 Дополнительные функции

Сенсор GRSE18 имеет тестовый вход („TE“ на схеме электрических соединений [B]), с помощью которого можно проверить надлежащее функционирования сенсора: при использовании розеток со светодиодными индикаторами следите за правильным подключением TE.

Объектов между передатчиком и приемником быть не должно, активируйте тестовый вход (см. схему электрических соединений [B], TE по 0 В). Светодиод передатчика отключается или моделируется распознавание объекта. Для проверки функционирования воспользуйтесь графиками С и G. Если характер поведения коммутирующего выхода не соответствует графику С, проверить условия применения. См. раздел "Диагностика неисправностей".

95 Диагностика неисправностей

В таблице 96 показано, какие меры нужно предпринять, если сенсоры не работают.

96 Таб_диагностики неисправностей

Светодиодный индикатор / картина неисправности / LED indicator/fault pattern	Причина / Cause	Меры по устранению / Measures
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
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
зеленый светодиод горит, выходной сигнал детектирования объекта отсутствует / Green LED lights up, no output signal when object is detected	Тестовый вход (TE) неверно подключен / Test input (TI) is not connected properly	См. указания по подключению TE / See the note on connecting the TI

Светодиодный индикатор / картина неисправности / <i>LED indicator/fault pattern</i>	Причина / <i>Cause</i>	Меры по устранению / <i>Measures</i>
<p>желтый светодиод мигает / <i>Yellow LED flashes</i></p>	<p>Сенсор пока еще готов к работе, но эксплуатационные условия неоптимальны / <i>Sensor is still ready for operation, but the operating conditions are not ideal</i></p>	<p>Проверка эксплуатационных условий: Полностью сориентировать световой луч (световое пятно) на приемник / чистка оптических поверхностей / заново настроить чувствительность (потенциометром) / если потенциометр уже установлен на макс. дистанцию переключения: уменьшить расстояние между передатчиком и приемником и проверить с помощью графика E / проверить и, при необходимости, скорректировать дистанцию срабатывания, см. график E / <i>Check the operating conditions: Fully align the beam of light (light spot) with the receiver. / Clean the optical surfaces / Readjust the sensitivity (potentiometer) / If the potentiometer is set to the max. sensing range: Reduce the distance between the sender and the receiver, and check against Graphic E / Check sensing range and adjust if necessary, see Graphic E</i></p>
<p>желтый светодиод горит, объект на пути луча отсутствует / <i>Yellow LED lights up, no object in the path of the beam</i></p>	<p>Световой луч однолучевого фоторелейного барьера попадает на приемник другого (соседнего) однолучевого фоторелейного барьера / <i>The beam of light of a photoelectric through-beam sensor hits the receiver of another (neighboring) photoelectric through-beam sensor</i></p>	<p>На каждом втором однолучевом фоторелейном барьере поменять местами передатчик и приемник каждого второго однолучевого фоторелейного барьера или же выдержать достаточное расстояние между однолучевыми фоторелейными барьерами. / <i>Swap the sender and receiver arrangement at every second photoelectric through-beam sensor and ensure that there is sufficient distance between the through-beam photoelectric sensors</i></p>

97 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).

98 Техобслуживание

Датчики SICK не нуждаются в техобслуживании.

Рекомендуется регулярно

1. очищать оптические ограничивающие поверхности
2. 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.

								GRSE18-xxx4x	GRSE18-xxx2x
Light source	Lichtquelle	Source lumineuse	Fonte de luz	Fonte luminosa	Fuente de luz	光源	光源	redlight	infraredlight
Sensing range	Schaltabstand	Distance de commutation	Distância de comutação	Distanza di commutazione	Distancia de conmutación	开关距离	検出範囲		
Sensing range max.	Schaltabstand max.	Portée max.	Distância de comutação máx.	Distanza max. di commutazione	Distancia de conmutación máx.	最大开关距离	最大検出範囲	0 ... 15 m ¹⁾	0 ... 15 m ¹⁾
Light spot diameter/distance	Lichtflekdurchmesser/Entfernung	Diamètre spot / distance	Diâmetro do ponto de luz/distância	Diámetro del punto luminoso/distancia	Diámetro del punto luminoso/distancia	光斑直径/距离	光点のスポット径/距離	250 mm / 10 m	250 mm / 10 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 ²⁾	DC 10 ... 30 V ²⁾
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 ³⁾	100 mA ³⁾
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 / s ⁴⁾	1,000 / s ⁴⁾
Response time	Ansprechzeit	Temps de réponse	Tempo de resposta	Tempo di reazione	Tiempo de respuesta	响应时间	応答時間	< 0,5 ms ⁵⁾	< 0,5 ms ⁵⁾
Test input	Testeingang	Entrée test	Entrada de teste	Ingresso test	Entrada de prueba	测试输入端	テスト入力	✓	✓
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	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	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 ⁶⁾	A,B,D ⁶⁾
Ambient operating temperature	Betriebsumgebungstemperatur	Température de service	Temperatura ambiente de funcionamento	Temperatura ambiente di funzionamento	Temperatura ambiente de servicio	工作环境温度	周辺温度 (作動中)	-25 °C ... +55 °C ⁷⁾	-25 °C ... +55 °C ⁷⁾
1) Object with 90 % remission (based on standard white DIN 5033) 2) Limit value: operation in short-circuit protection mains max.	1) Tastgut mit 90 % Remission (bezogen auf Standard-Weiß DIN 5033) 2) Grenzwerte: Betrieb im Kurzschlussgeschützten Netz max. 8	1) Objet avec 90 % de réémission (par rapport au blanc standard selon DIN 5033) 2) Valeurs limites : fonctionnement sur réseau pro-	1) Objeto a ser detectado com 90% de luminância (com base no padrão branco DIN 5033) 2) Valores limite: funcionamento com rede à	1) Oggetto con il 90% di remissione (riferito al bianco standard DIN 5033) 2) Valori limite: funzionamento in rete protetta da cortocircuito	1) Material con un 90% de reflexión (sobre el blanco estándar según DIN 5033) 2) Valores límite: funcionamiento en red protegida	1) 具有 90 % 反射比的扫描对象 (指 DIN 5033 规定的标准白) 2) 极限值: 在防短路电网中运行, 最大 8 A; 最大余波 5 Vss	1) 反射率 90 % の対象物 (DIN 5033 に準拠した白色) 2) 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		

								GRSE18-xxx4x	GRSE18-xxx2x
<p>8 A; residual ripple max. 5 Vss</p> <p>3) When UV > 24 V and ambient temperature > 49°C IAmax. = 50 mA.</p> <p>4) With light / dark ratio 1:1</p> <p>5) Signal transit time with resistive load</p> <p>6) A = UV-connections reverse polarity protected B = inputs and output reverse-polarity protected</p> <p>D = outputs overcurrent and short-circuit protected</p> <p>7) When UV 24 V and IA < 50 mA</p>	<p>A; Restwelligkeit max. 5 Vss</p> <p>3) Bei UV > 24 V und Umgebungstemperatur > 49°C IAmax. = 50 mA.</p> <p>4) Mit Hell- / Dunkelverhältnis 1:1</p> <p>5) Signallaufzeit bei ohmscher Last</p> <p>6) A = UV-Anschlüsse verpolsicher B = Ein- und Ausgänge verpolsicher</p> <p>D = Ausgänge überstrom- und kurzschlussfest</p> <p>7) Bei UV 24 V und IA < 50 mA</p>	<p>tégé contre les courts-circuits max. 8 A ; ondulation résiduelle max. 5 Vcc</p> <p>3) Pour Uv > 24 V ou température ambiante > 49 °C, IAmax. = 50 mA.</p> <p>4) Pour un rapport clair/sombre de 1:1</p> <p>5) Temps de propagation du signal sur charge ohmique</p> <p>6) A = raccords UV protégés contre les inversions de polarité B = entrées et sorties protégées contre les inversions de polarité</p> <p>D = sorties protégées contre les courts-circuits et les surcharges</p> <p>7) Pour Uv > 24 V et IA < 50 mA</p>	<p>prova de curto-circuito máx. 8 A; ondulação residual máx. 5 Vss</p> <p>3) Com UV > 24 V e temperatura ambiente > 49°C IAmax. = 50 mA.</p> <p>4) Com proporção sombra/luz 1:1</p> <p>5) Tempo de funcionamento do sinal com carga ôhmica</p> <p>6) A = conexões protegidas contra inversão de pólos UV B = Entradas e saídas protegidas contra polaridade inversa</p> <p>D = Saídas protegidas contra sobrecorrente e curto-circuito</p> <p>7) Com UV > 24 V e IA < 50 mA</p>	<p>max. 8 A; ondulazione residua max. 5 Vss</p> <p>3) Con UV > 24 V e temperatura d'ambiente > 49°C IAmax. = 50 mA.</p> <p>4) Con rapporto chiaro / scuro 1:1</p> <p>5) Durata segnale con carico ohmico</p> <p>6) A = UV-Allacciamenti protetti dall'inversione di polarità B = entrate e uscite protette da polarità inversa</p> <p>D = uscite protette da sovracorrente e da cortocircuito.</p> <p>7) Con UV 24 V e IA < 50 mA</p>	<p>contra cortocircuitos máx. 8 A; ondulación residual máx. 5 Vss</p> <p>3) Con UV > 24 V y temperatura ambiente > 49 °C IAmax. = 50 mA.</p> <p>4) Con una relación claro/oscuro de 1:1</p> <p>5) Duración de la señal con carga ôhmica</p> <p>6) Conexiones A = UV protegidas contra polarización inversa B = Entradas y salidas protegidas contra polarización incorrecta</p> <p>D=Salidas a prueba de sobrecorriente y cortocircuitos.</p> <p>7) Con UV 24 V e IA < 50 mA</p>	<p>3) UV > 24 V , 且环境温度 > 49°C IAmax.= 50 mA。</p> <p>4) 明暗比为 1:1</p> <p>5) 信号传输时间 (电阻负载时)</p> <p>6) 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</p> <p>D = 抗过载电流和抗短路输出端</p> <p>7) 当 UV 24 V 和 IA < 50 mA 时</p>	<p>3) UV > 24 V、および周囲温度 > 49°C IAmax.= 50 mA の場合。</p> <p>4) ライト/ダークの比率 1:1</p> <p>5) 負荷のある信号経過時間</p> <p>6) A = UV 接続は逆接保護 B = 入力および出力は逆接保護</p> <p>D = 出力過電流および短絡保護</p> <p>7) UV 24 V、IA < 50 mA の場合</p>		