

ENGLISH

Photoelectric Reflex Switch

with polarisation filter

Operating Instructions

Safety specifications

- 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.
- UL: The device shall be supplied from an isolating transformer having a secondary overcurrent protective device that complies with UL 248 to be installed in the field rated either:
 - a) max 5 amps for voltages 0 ~ 20 V (0 ~ 28.3 V peak), or
 - b) 100 / Vp for voltages of 20 ~ 30 V (28.3 ~ 42.4 V peak).Alternatively, they can be supplied from a Class 2 power supply.
- UL Environmental Rating: Enclosure type 1.
- When commissioning, protect the device from moisture and contamination.
- These operating instructions contain information required during the life cycle of the sensor.

8011960.1R1C 0225 SE-M-TCD

WL12G-3

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Detailed addresses and further locations at [www.sick.com](#)

Starting operation

1

WL12G-302431 only:
L: light-switching at light reception, output (Q) HIGH;
D: dark-switching, if light interrupted, output (Q) HIGH.
WL12G-3B2531 only:
Q_p, L = light-switching at light reception, output HIGH.
Q_p, D = dark-switching, if light interrupted, output HIGH.
Q_n, L = light-switching at light reception, output LOW.
Q_n, D = dark-switching, if light interrupted, output LOW.
Select desired operating mode externally and connect as per connection diagram **B** (Q / Q_p / Q_n).
L / D-control wire Q_p or unswitched = light-switching.
L / D-control wire Q_n = dark-switching.

2

With following connectors only:

Connect and secure cable receptacle tension-free.

Only for versions with connecting cable:
The following apply for connection in **B**: brn = brown, blu = blue, blk = black, gra = gray, wht = white.
Connect cables.

3

Mount suitable reflector opposite photoelectric sensor and align roughly. Adjust for scanning range (see technical data and diagram; x = scanning range, y = operating reserve).
Connect sensor to operating voltage (see type label).
Adjustment of light reception:
Set switch to max.
Determine on / off points of signal strength indicator by swivelling photoelectric sensor horizontally and vertically. Select middle position so that red sender beam hits center of reflector. With optimum light reception, signal strength indicator lights up. If it does not light up or if it flashes, not enough light is being received: readjust and / or clean photoelectric sensor and reflector.

4

Object detection check:
Move object into the beam; the strength indicator should switch off. If it does not switch off or continues to blink, reduce the sensitivity using the switch until it switches off. It should switch on again after the object is removed. If it does not switch on again, adjust the sensitivity until the switching threshold is set correctly.

Maintenance

SICK sensors are maintenance-free.
We recommend doing the following regularly:
- clean the external lens surfaces
- check the screw connections and plug-in connections
No modifications may be made to devices.
Subject to change without notice. Specified product properties and technical data are not written guarantees.

More representatives and agencies at [www.sick.com](#) · Subject to change without notice · The specified product features and technical data do not represent any guarantee.

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その他の営業所は[www.sick.com](#) よりご覧ください・予告なしに変更されることがあります・記載されている製品機能および技術データは保証を明示するものではありません。

CE

UL

US LISTED

IND. CONT. EQ. 4R97

UK

CA

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EN

60959

NO

2006/42/EC

SAFETY

25

°C

II

DEUTSCH

Reflexions-Lichtschranke

mit Polarisationsfilter

Betriebsanleitung

Sicherheitshinweise

- Vor der Inbetriebnahme die Betriebsanleitung lesen.
- Anschluss, Montage und Einstellung nur durch Fachpersonal.
- Kein Sicherheitsbauteil gemäß EU-Maschinenrichtlinie.
- UL: The device shall be supplied from an isolating transformer having a secondary overcurrent protective device that complies with UL 248 to be installed in the field rated either:
 - a) max 5 amps for voltages 0 ~ 20 V (0 ~ 28.3 V peak), or
 - b) 100 / Vp for voltages of 20 ~ 30 V (28.3 ~ 42.4 V peak).Alternatively, they can be supplied from a Class 2 power supply.
- UL Environmental Rating: Enclosure type 1.
- Gerät bei Inbetriebnahme vor Feuchte und Verunreinigung schützen.
- Diese Betriebsanleitung enthält Informationen, die während des Lebenszyklus des Sensors notwendig sind.

Bestimmungsgemäße Verwendung

Die Reflexions-Lichtschranke WL12G-3 ist ein optoelektronischer Sensor und wird zum optischen, berührungslosen Erfassen von Sachen, Tieren und Personen eingesetzt. Zum Betrieb ist ein Reflektor erforderlich.

Inbetriebnahme

1

Nur WL12G-302431:
L: hellerschaltend, bei Lichtempfang Ausgang (Q) HIGH;
D: dunkelschaltend, bei Lichtunterbrechung Ausgang (Q) HIGH.
Nur WL12G-3B2531:
Q_p, L = hellerschaltend bei Lichtempfang, Ausgang HIGH.
Q_p, D = dunkelschaltend bei Lichtunterbrechung, Ausgang HIGH.
Q_n, L = hellerschaltend bei Lichtempfang, Ausgang LOW.
Q_n, D = dunkelschaltend bei Lichtunterbrechung, Ausgang LOW.
Gewünschte Betriebsart extern wählen und laut Anschlusschema **B** anschließen (Q / Q_p / Q_n).
L / D-Steuerleitung Q_p oder unbeschaltet = hellerschaltend.
L / D-Steuerleitung Q_n = dunkelschaltend.

2

Nur bei den Steckversionen:

Leitungsdose spannungsfrei aufstecken und festschrauben.

Nur bei den Versionen mit Anschlussleitung:
Für Anschluss in **B** gilt: brn = braun, blu = blau, blk = schwarz, gra = grau, wht = weiß.
Leitungen anschließen.

A WL12G-3

24 (0.94)

10 (0.39)

4

15.6 (0.61)

32 (1.26)

1

42 (1.65)

29.9 (1.18)

3.5 (0.14)

6.1 (0.24)

39.9 (1.57)

48.5 (1.91)

5.1 (0.2)

23.1 (0.91)

7.3 (0.29)

12.9 (0.51)

0.42 (0.91)

5

6

3

2

19.4 (0.76)

B WL12G-302431 WL12G-3B2531

← brn 1 L+

→ blk 4 Q_p

← wht 2 L / D

→ blu 3 M

← brn 1 L+

→ blu 3 M

→ blk 4 Q_p

→ wht 2 Q_n

← gra 5 L / D

← brn 1 L+

→ blk 4 Q_p

← wht 2 L / D

→ blu 3 M

← brn 1 L+

→ blu 3 M

→ blk 4 Q_p

→ wht 2 Q_n

← gra 5 L / D

1 2 3 4 5 6 7 8

0

1.0 (3.28)

2.0 (6.56)

3.0 (9.84)

4.0 (13.12)

Distance in m (feet)

WL12G-3

Sensing range (with reflector PL80A)

Light spot diameter / distance

Supply voltage

Output current I_{max}

Signal sequence min.

Response time

Enclosure rating (IEC 60529)

Protection class

Circuit protection

Ambient operating temperature

Schaltabstand (mit Reflektor PL80A)

Lichtfleckdurchmesser / Entfernung

Versorgungsspannung

Ausgangsstrom I_{max}

Signalfolge min.

Ansprechzeit

Schutzart (IEC 60529)

Schutzklasse

Schutzschaltungen

Betriebsumgebungstemperatur

Portée (avec réflecteur PL80A)

Lichtfleckdurchmesser / Distance

Tension d'alimentation

Courant de sortie I_{max}

Fréquence mini

Temps de réponse

Type de protection (IEC 60529)

Classe de protection

Circuits de protection

Température ambiante

Distância de comutação (com refletor PL80A)

Diâmetro do ponto de luz

Tensão de força

Corrente de saída I_{max}

Sequência mín. de sinais

Tempo de reação

Tipo de proteção (IEC 60529)

Classe de proteção

Circuitos protetores

Temperatura ambiente de operação

1) Typ. Maximum sensing range

2) Limit values

3) residual ripple max. 5 Vss

4) Reference voltage DC 50 V

5) A = V_s connections reverse polarity protected

6) B = Inputs and outputs reverse

7) C = Polarity protected

1) Typische Maximalreichweite

2) Grenzwerte

3) Restwelligkeit max. 5 Vss

4) Bemessungsspannung DC 50 V

5) A = U_s-Anschlüsse verpolsicher

6) B = Ausgänge kurzschlussfest

7) C = Störpulsunterdrückung

1) Portée maximale typ.

2) Valeurs limites

3) ondulation résiduelle max. 5 Vcc

4) Tension assignée 50 V CC

5) A = Raccordements U_s protégés contre les inversions de polarité

6) B = Sorties protégées contre les

7) C = Inversions de polarité

1) Tip. Distância de comutação máxima

2) Valores limite

3) ondulação residual máx. 5 Vss

4) Tensão de dimensionamento CC 50 V

5) A = Conexões U_s protegidas contra inversão de polos

6) B = Saída Q e Q_p protegidas

7) C = Contra curto-circuito

WL12G-3

Distanza di lavoro (con riflettore PL80A)

Diametro punto luminoso

Tensione di alimentazione

Corrente di uscita max. I_{max}

Sequenza segnali min.

Tempo di risposta

Tipo di protezione (IEC 60529)

Classe di protezione

Commutazioni di protezione

Temperatura ambiente circostante

Distancia de conmutación (con reflector PL80A)

Diámetro / distancia de mancha de luz

Tensión de alimentación

Corriente de salida I_{max}

Secuencia de señales min.i

Tiempo de reacción

Tipo de protección (IEC 60529)

Protección clase

Circuitos de protección

Temperatura ambiente de servicio

触発感应距离(带反射器 PL80A)

光点直径

电源电压

输出电流 I_{max}

信号流min

触发时间

保护种类(IEC 60529)

保护级别

保护电路

工作环境-温度

検出距離 (リフレクタPL80A使用)

スポット径 / 距離

供給電圧

最大出力電流 I_{max}

信号伝達時間 min.

応答時間

保護等級 (IEC 60529)

保護クラス

保護回路

動作周囲温度

1) Tip. Distancia di lavoro massima

2) Valori limite

3) ondulazione residua máx. 5 Vss

4) Tensione di misurazione DC 50 V

5) A = U_s-collegamenti con protez contro inversione di poli

6) B = uscite Q e Q_p a prova di corto circuito

7) C = soppressione impulsi di disturbo

1) Tip. Distancia de conmutación máxima

2) Valores limite

3) ondulación residual máx. 5 Vss

4) Tensión asignada DC 50 V

5) A = Conexiones U_s prueba de inversión de polaridad

6) B = Salida Q y Q_p protegida contra cortocircuito

7) C = Represión de impulso de interferencia

1) 典型値最大触発感应距离

2) 极限值剩余波

3) 最大余波 5 Vss

4) 额定电压 DC 50 V

5) A = U_s-コネクタ 逆接保護

6) B = 入力および出力 逆接保護

7) C = 消除干扰脉冲

1) Тип. Максимальное расстояние срабатывания

2) Предельные значения

3) остаточная волнистость макс. 5 Bss

4) Расчетное напряжение постоянного тока 50 В

5) A = UV-подключения с защитой от переутыпания полюсов

6) B = входы и выходы с защитой от перепутывания полюсов

7) C = подавление импульсных помех

