

Photoelectric Proximity Sensor with background suppression Operating instructions

Safety specifications

- No safety component in accordance with EU machine guidelines.
- Read the operating instructions before starting operation.
- Connection, assembly, and settings only by competent technicians.
- Protect the device against moisture and soiling when operating.

Proper use

The WTB12-3 HGA Teach-in photoelectric proximity sensor is an optoelectronic sensor and is used for optical, non-contact detection of objects, animals, and people.

Starting operation

- Q** (light-switching): at status "Object detected", switches output (Q at PNP: HIGH, at NPN: LOW)
Q̄ (dark-switching): at status "Object not detected", switches output (Q at PNP: HIGH, at NPN: LOW).
- 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, wht = white.
Connect cables.
- Mount photoelectric proximity sensor to suitable holders (e. g. SICK mounting bracket).
Maintain direction in which object moves relative to sensor.
Connect photoelectric proximity sensor to operating voltage (see type label).
- Check application conditions such as scanning distance, size and reflectance of object to be detected as well as of background, and compare with characteristic in diagram. (x = scanning distance, y = transition range between set scanning distance and reliable background suppression(z) in % of scanning distance, Ro = reflectance of object, Rh = reflectance of background). Reflectance: 6% = black, 18% = gray, 90% = white (based on standard white to DIN 5033).
Adjustment of light reception:
Set scanning distance to max. Position object. Position light spot on object. Signal strength indicator should light up. If it does not light up, readjust and / or clean photoelectric proximity sensor and / or check application conditions.
- Setting the scanning range with double-teach key:**
Position object in light beam.
Press the "+" / "-" keys at the same time (approx. 2 s) until the yellow signal strength indicator blinks. Object is detected.
There is no Teach-in if the keys are pressed < 2 s = manipulation protection.
Release the keys; the yellow signal strength indicator lights continuously. Object is detected reliably.
If required, correct the scanning distance precisely for adaptation to the application conditions.
Press "+" button (approx. 0.5 s): scanning distance is increased.
Press "-" button (approx. 0.5 s): scanning distance is decreased.
There is no correction if the keys are pressed < 0.5 s = manipulation protection.
The yellow signal strength indicator lights 1x each time you press the keys. Set scanning range is stored. If the yellow signal strength indicator does not light, readjust the photoelectric proximity sensor, clean it and / or check the application conditions and then repeat the Teach-in procedure.

Scanning range setting WTB12C-3:

Press teach key until the yellow signal strength indicator blinks: object is detected.

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.

SICK

8011958.10DB 0419 COMAT

WTB12-3 HGA Teach-in

Australia
Phone +61 (3) 9457 0600
Austria
Phone +43 (0) 2236 62288-0
Belgium/Luxembourg
Phone +32 (0) 2 466 55 66
Brazil
Phone +55 11 3215-4900
Canada
Phone +1 905.771.1444
Czech Republic
Phone +420 2 57 91 18 50
Chile
Phone +56 (2) 2274 7430
China
Phone +86 20 2882 3600
Denmark
Phone +45 45 82 64 00
Finland
Phone +358-9-25 15 800
France
Phone +33 1 64 62 35 00
Germany
Phone +49 (0) 2 11 53 01
Hong Kong
Phone +852 2153 6300
Hungary
Phone +36 1 371 2680
India
Phone +91-22-6119 8900
Israel
Phone +972-4-6881000
Italy
Phone +39 02 27 43 41
Japan
Phone +81 3 5309 2112
Malaysia
Phone +603-8080 7425
Mexico
Phone +52 (472) 748 9451
Netherlands
Phone +31 (0) 30 229 25 44

New Zealand
Phone +64 9 415 0459
Norway
Phone +47 67 81 50 00
Poland
Phone +48 22 539 41 00
Romania
Phone +40 356-17 11 20
Russia
Phone +7 495 283 09 90
Singapore
Phone +65 6744 3732
Slovakia
Phone +421 482 901 201
Slovenia
Phone +386 591 78849
South Africa
Phone +27 (0)11 472 3733
South Korea
Phone +82 2 786 6321
Spain
Phone +34 93 480 31 00
Sweden
Phone +46 10 110 10 00
Switzerland
Phone +41 41 619 29 39
Taiwan
Phone +886-2-2375-6288
Thailand
Phone +66 2 645 0009
Turkey
Phone +90 (216) 528 50 00
United Arab Emirates
Phone +971 (0) 4 88 65 878
United Kingdom
Phone +44 (0)17278 31121
USA
Phone +1 800.325.7425
Vietnam
Phone +65 6744 3732

SICK AG, Erwin-Sick-Strasse 1, D-79183 Waldkirch
Please find detailed addresses and further locations in all major industrial nations at www.sick.com

DE-19468

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Reflexions-Lichttaster mit Hintergrundausblendung Betriebsanleitung

Sicherheitshinweise

- Kein Sicherheitsbauteil gemäß EU-Maschinenrichtlinie.
- Vor der Inbetriebnahme die Betriebsanleitung lesen.
- Anschluss, Montage und Einstellung nur durch Fachpersonal.
- Gerät bei Inbetriebnahme vor Feuchte und Verunreinigung schützen.

Bestimmungsgemäße Verwendung

Der Reflexions-Lichttaster WTB12-3 HGA Teach-in ist ein optoelektronischer Sensor und wird zum optischen, berührungslosen Erfassen von Sachen, Tieren und Personen eingesetzt.

Inbetriebnahme

- Q** (hellschaltend): bei Status "Objekt erkannt" schaltet Ausgang (Q bei PNP: HIGH, bei NPN: LOW)
Q̄ (dunkelschaltend): bei Status "Objekt nicht erkannt" schaltet Ausgang (Q bei PNP: HIGH, bei NPN: LOW).

Nur bei den Steckerversionen:

Leitungsdose spannungsfrei aufstecken und festschrauben.

Nur bei den Versionen mit Anschlussleitung:

Für Anschluss in **B** gilt: brn = braun, blu = blau, blk = schwarz, wht = weiß.

Leitungen anschließen.

- Lichttaster mit Befestigungsbohrungen an geeignete Halter montieren (z. B. SICK-Haltewinkel).

Bewegungsrichtung des Objektes relativ zum Taster einhalten.

Lichttaster an Betriebsspannung legen (s. Typenaufdruck).

- Einsatzbedingungen wie Tastweite, Objektgröße und Remissionsvermögen des Tastgutes sowie des Hintergrundes überprüfen und mit der Kennlinie im Diagramm vergleichen. (x = Tastweite, y = Übergangsbereich zwischen eingestellter Tastweite und sicherer Hintergrundausblendung(z) in % der Tastweite, Ro = Remission Objekt, Rh = Remission Hintergrund).

Remission: 6% = schwarz, 18% = grau, 90% = weiß (bezogen auf Standardweiß nach DIN 5033).

Justage Lichtempfang:

Objekt positionieren. Lichtfleck auf Objekt ausrichten. Empfangsanzeige muss leuchten. Leuchtet sie nicht, Lichttaster neu justieren, reinigen bzw. Einsatzbedingungen überprüfen.

Wartung

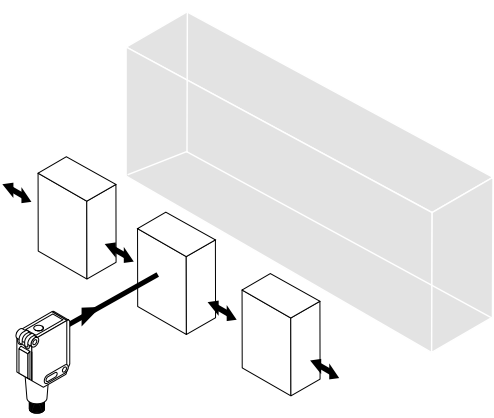
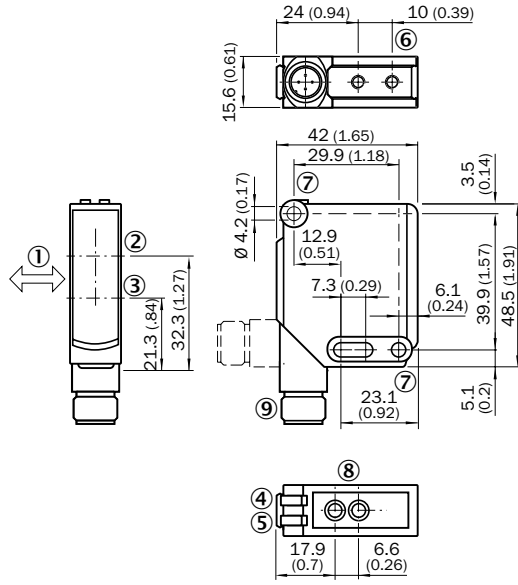
SICK-Sensoren sind wartungsfrei.

Wir empfehlen, in regelmäßigen Abständen

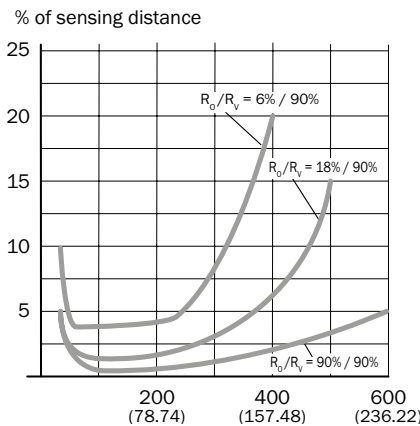
- die optischen Grenzflächen zu reinigen
- Verschraubungen und Steckverbindungen zu überprüfen

Veränderungen an Geräten dürfen nicht vorgenommen werden.

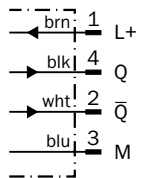
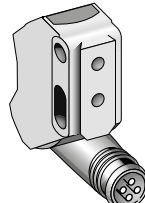
Irrtümer und Änderungen vorbehalten. Angegebene Produkteigenschaften und technische Daten stellen keine Garantieerklärung dar.



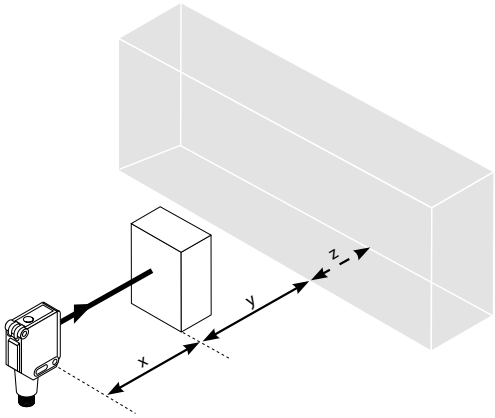
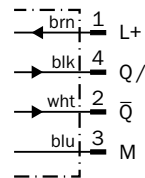
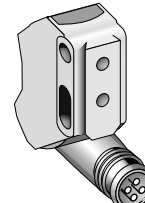
WTB12-3x2413 / WTB12C-3P2412



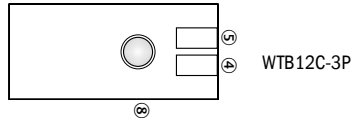
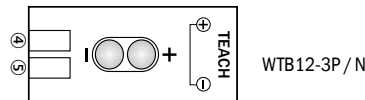
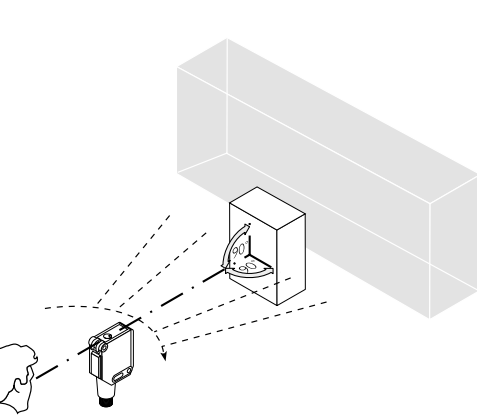
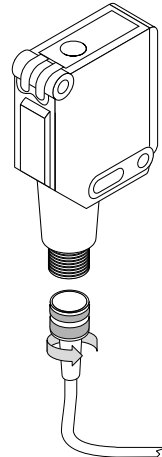
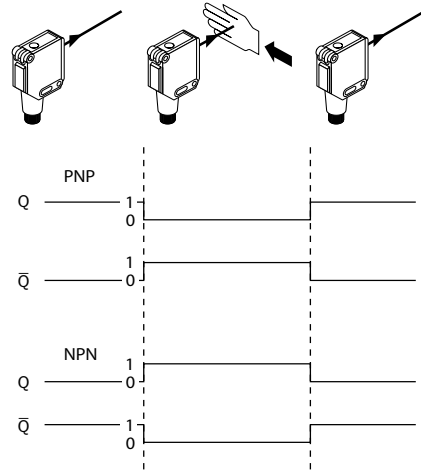
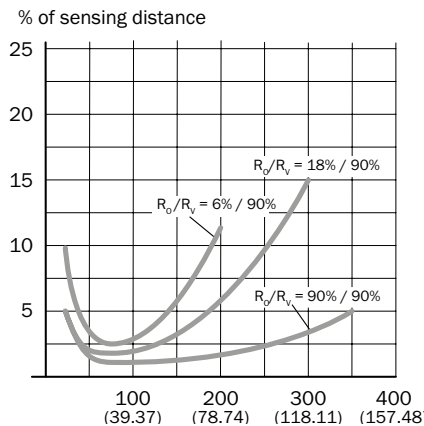
WTB12-3x24x3



WTB12C-3P24x2



WTB12-3x2433 / WTB12C-3P2432



WTB12-3 HGA Teach-in

	-3P2433 -3N2433 -3P2432	-3P2413 -3N2413 -3P2412
Sensing range max.	20 ... 350 mm ¹⁾	20 ... 600 mm ¹⁾
Light spot diameter / distance	6 mm / 200 mm	15 x 15 mm / 600 mm
Supply voltage U _s	DC 10 ... 30 V ²⁾	DC 10 ... 30 V ²⁾
Output current I _{max}	≤ 100 mA	≤ 100 mA
Max. switching frequency	1500 / s ³⁾	1500 / s ³⁾
Max. response time	≤ 330 μs ³⁾	≤ 330 μs ³⁾
Enclosure rating	IP 66, IP 67	IP 66, IP 67
Protection class	Class 2	Class 2
Circuit protection	Class 2	Class 2
Ambient operating temperature	-40 °C ... +60 °C	-40 °C ... +60 °C

- Object with 90 % remission DIN 5033
- Limit values
residual ripple max. 5 Vss
operation in short-circuit protection max. 8 A
- Reference voltage 50 V DC
- A = U_s connections reverse polarity protected
B = Outputs short-circuit protected
C = Polarity protected
- With light / dark ratio 1:1

- Tastgut mit 90 % Remission DIN 5033
- Grenzwerte
Restwelligkeit max. 5 Vss
Betrieb im Kurzschlussgeschützten Netz max. 8 A
- Bemessungsspannung DC 50 V
- A = U_s Anschlüsse verpolsicher geschützt
B = Ausgänge Kurzschlussfest
C = Störimpulsunterdrückung
- Bei Hell / Dunkelverhältnis 1:1

- Objet avec 90 % de réémission DIN 5033
- Valores límites
ondulation résiduelle max. 5 Vss
fonctionnement sur réseau protégé contre les courts-circuits max. 8 A
- Tension de calcul 50 V c.c.
- A = Raccordements U_s protégés contre les inversions de polarité
B = Sorties protégées contre les courts-circuits
C = Inversions de polarité
- Pour un rapport clair / sombre 1:1

- Objeto a ser detectado com 90% de luminância DIN 5033
- Valores limite
ondulação residual máx. 5 Vss
funcionamento com rede à prova de curto-circuito máx. 8 A
- Tensão de dimensionamento DC 50 V
- A = Conexões U_s protegidas contra inversão de polos
B = Saídas protegidas contra curto circuito
C = Contra curto-circuito
- Com uma relação luminoso / escuro de 1:1

WTB12-3 HGA Teach-in

	-3P2433 -3N2433 -3P2432	-3P2413 -3N2413 -3P2412
Distanza di commutazione max.	20 ... 350 mm ¹⁾	20 ... 600 mm ¹⁾
Diametro punto luminoso / distanza	6 mm / 200 mm	15 x 15 mm / 600 mm
Tensione di alimentazione U _s	DC 10 ... 30 V ²⁾	DC 10 ... 30 V ²⁾
Corrente di uscita I _{max}	≤ 100 mA	≤ 100 mA
Sequenza di commutazione max.	1500 / s ³⁾	1500 / s ³⁾
Tempo di reazione	≤ 330 μs ³⁾	≤ 330 μs ³⁾
Tipo di protezione	IP 66, IP 67	IP 66, IP 67
Classe di protezione	Class 2	Class 2
Commutazioni di protezione	Class 2	Class 2
Temperatura ambientale di funzionamento	-40 °C ... +60 °C	-40 °C ... +60 °C

- Objetto con il 90% di remissione DIN 5033
- Valori limite
ondulation residual máx. 5 Vss
funcionamento en red protegida contra cortocircuitos máx. 8 A
- Tensión de taratura DC 50 V
- A = U_s collegamenti con protez contro inversione di poli
B = Uscite a provadi corto circuito
C = soppressione impulsi di disturbo
- Con relatio chiaro / scuro 1:1

- Material con un 90% de reflexión DIN 5033
- Valores limite
ondulation residual máx. 5 Vss
funcionamento en red protegida contra cortocircuitos máx. 8 A
- Tensión tolerable DC 50 V
- A = Conexiones U_s a prueba de inversión de polaridad
B = Salidas a prueba de cortocircuitos
C = Represión de impulso de interferencia
- Con una relación claro / oscuro de 1:1

- 具有 90 % 反射比的扫描对象 DIN 5033
- 极限值余波
最大余波 5 Vss
在防短路电网中运行，最大 8 A
- 限定电压DC50V
- A = U_s 接头防反接
B = 输出短路保护
C = 消除干扰脉冲
- 亮/暗比 1 : 1

- 反射率 90 % 的対象物 DIN 5033
- 限界値
最大余波 5 Vss
短絡保護の操作は最大 8 A
- 基準電圧 50VDC
- A = U_s コネクタ 逆接保護
B = 出力回路逆接保護
C = ライノダークの比率 1:1
- 亮 / 暗比 1 : 1

- Сканируемый объект – реMISSION 90 % DIN 5033
- Предельные значения
остаточная воианность макс. 5 Vss
эксплуатация в защищенной от короткого замыкания сети макс. 8 A
- Расчетное напряжение DC 50 V
- A = U_s подключения с защитой от перепутывания полюсов
B = выходы и выводы с защитой от перепутывания полюсов
C = подавление импульсных помех
- Соотношение светлых и темных участков изображения 1:1

WTB12-3P / N

WTB12C-3P

