

Contrast Scanner Operating Instructions

Safety Specifications

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

Proper Use

The KT5-2 contrast scanner is an opto-electronic sensor and is used for optical, non-contact detection of contrast marks.

Starting Operation

- Equipment plug horizontally (H) and vertically (V) adjustable. Connect and secure cable receptacle tension-free. The following apply for connection in **B**: brn = brown, blu = blue, blk = black, gra = gray, wht = white. Outputs: Q_p or Q_N . Connect the scanner according to the **B** connection chart.
- Release delay see: Timing element (corresponding to type label, see below). Select light emission side; replace the lens with a dummy screwed connection if necessary.
- Select the insertion position so that the light spot enters the marking vertically. Pay attention to the key; see below: **A** = vertical, **B** = horizontal.
- Mount the sensor with mounting holes at the place (e. g., deflection roller) where the test object has the least horizontal and vertical movement. Pay attention to the scanning range when doing this (see technical data and chart: x = scanning range; y = relative sensitivity). Align the horizontal and vertical movements of the test object using correspondingly long markings.
Make sure that sensor movement does not influence the scanning distance.
- In the case of objects with reflective or shiny surface, tilt sensor by 10° to 15° relative to surface.
Connect cables.
- KT5W-2XXXX3 only:**
ET: External teach input for programming the switching threshold using an external signal.
Saving the settings:
Set light and dark switch or via control cable: D: dark mark on light background, L: light mark on dark background.
High signal at ET. Move the format with the mark into the scanning distance of the light spot of the KT. Input ET switched with LOW signal. The switch threshold is permanently stored. The sensor selects the light source (red, blue or green) automatically. Material speed during teach-in procedure: min. 25 mm / s - max. 300 mm / s.
Lock the teach-in button against unintentional activation with "RUN". teach-in can be triggered if the switch setting is not defined.
- KT5G-2XXXX4 only:**
The switching threshold of the contrast scanner tracks the existing contrast dynamically. A teach-in process is not required.
Set light and dark switch and the contrast (F: fine; C: coarse) resolved by means of a switch on the operating panel or via control line: dark: dark mark on light background; light: light mark on dark background.
At switch position LINE, the operating panel is blocked.
Only settings which are made via the control line F / C and L / D are accepted. The example shows the method of function for setting "coarse" in the dark mode.

Key					
KT5W-	2P	1	1	1	3
Light source	Output	Light spot	Scanning distance / Light spot	Timing element	Teach-in
G = green light W = Red-green-blue	P = PNP N = NPN	1 = horizontal 2 = vertical	1 = 10 mm / 1.2 x 4.2 mm 2 = 20 mm / 1.5 x 5 mm 3 = 40 mm / 1.1 x 4.2 mm	1 = without 2 = 20 ms Time delay	3 = dynamic teach-in 4 = automatic function

Maintenance

SICK light barriers 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.

DEUTSCH

Kontrasttaster Betriebsanleitung

Sicherheitshinweise

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

Bestimmungsgemäße Verwendung

Der Kontrasttaster KT5-2 ist ein optoelektronischer Sensor und wird zum optischen, berührungsfreien Erfassen von Kontrastmarken eingesetzt.

Inbetriebnahme

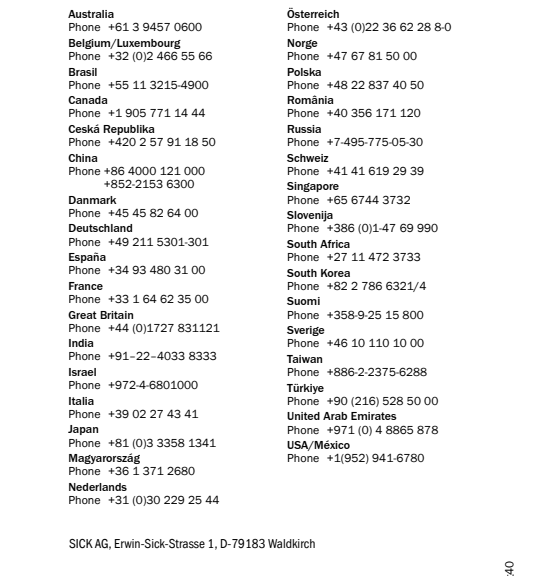
- Geräterestecker nach horizontal (H) und vertikal (V) schwenkbar. Leitungsdose spannungsfrei aufstecken und festschrauben. Für Anschluss in **B** gilt: brn = braun, blu = blau, blk = schwarz, gra = grau, wht = weiß. Ausgänge: Q_p oder Q_N . Taster laut Anschlusschema **B** anschließen.
- Abfallverzögerung: Zeitglied (entspr. Typenschlüssel, s. u.). Lichtausrittsseite wählen, ggf. Objektiv gegen Blindverschraubung austauschen.
- Einbaulage so wählen, dass Lichtfleck längs in die Markierung eintritt. Dabei Typenschlüssel beachten, s. u.; **A** = längs, **B** = quer.
- Sensor mit Befestigungsbohrungen an Stelle (z. B. Umlenkrolle) montieren, an der das Prüfobjekt die geringsten Seiten- und Höhenbewegungen ausführt. Dabei Tastweite beachten (s. technische Daten und Diagramm, x=Tastweite, y=relative Empfindlichkeit).
Seiten- und Höhenbewegungen des Prüfobjektes durch entsprechend lange Markierungen ausgleichen.
Bewegungen des Sensors mit Tastweiteinfluss ausschließen.
- Bei spiegelnden oder glänzenden Objektoberflächen Sensor um 10° bis 15° zur Materialoberfläche neigen.
Leitungen anschließen.
- Nur KT5W-2XXXX3:**
ET: Eingang Extern Teach, zur Programmierung der Schaltschwelle über externes Signal.
Einstellung Speicherung:



8008976.XM24 0813 CV

KT 5W-2P / NXXX3

KT 5G-2P / NXXX4



SICK AG, Erwin-Sick-Strasse 1, D-79183 Waldkirch

Please find detailed addresses and additional representatives and agencies in all major industrial nations at www.sick.com

BE IN40

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.

Weitere Niederlassungen finden Sie unter www.sick.com · Irrtümer und Änderungen vorbehalten · Angegebene Produkteigenschaften und technische Daten stellen keine Garantieerklärung dar.

Plus de représentations et d'agences à l'adresse www.sick.com · Sujet à modification sans préavis · Les caractéristiques de produit et techniques indiquées ne constituent pas de déclaration de garantie.

Para mais representantes e agências, consulte www.sick.com · Alterações poderão ser feitas sem prévio aviso · As características do produto e os dados técnicos apresentados não constituem declaração de garantia.

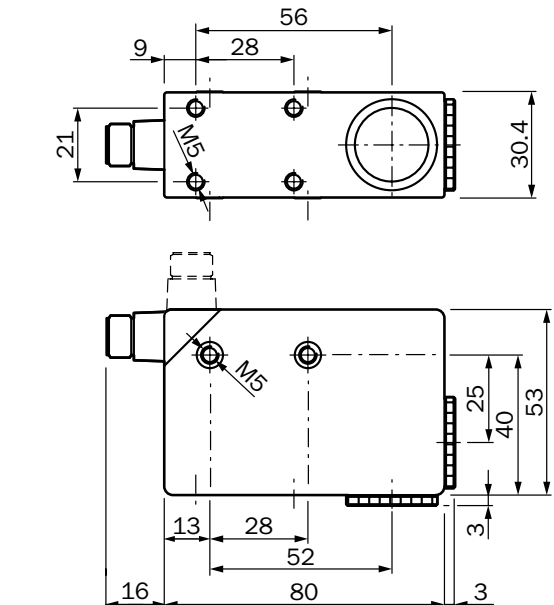
Altri rappresentanti ed agenzie si trovano su www.sick.com · Contenuti soggetti a modifiche senza preavviso · Le caratteristiche del prodotto e i dati tecnici non rappresentano una dichiarazione di garanzia.

Más representantes y agencias en www.sick.com · Sujeto a cambio sin previo aviso · Las características y los datos técnicos especificados no constituyen ninguna declaración de garantía.

欲了解更多代表机构和代理商信息，请登录 www.sick.com · 如有更改，不另行通知 · 对所给出的产品特性和技术参数 的正确性不予保证。

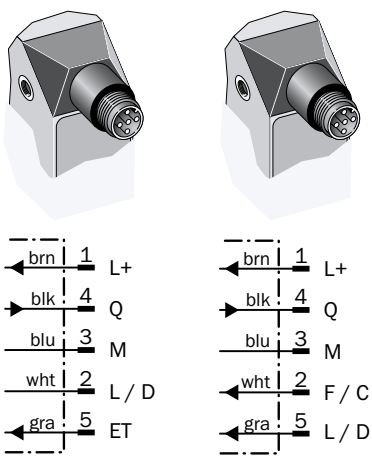
その他の営業所は www.sick.com よりご覧ください · 予告なしに変更されることがあります · 記載されている製品機能および技術データは保証を明示するものではありません。

A

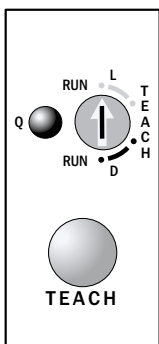


B

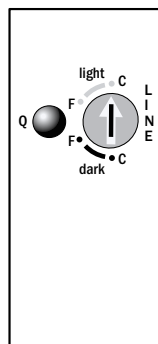
KT 5W-2P / NXXX3 KT 5G-2P / NXXX4



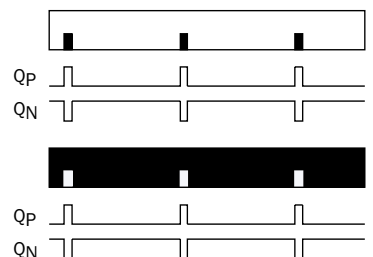
KT 5W-2P / NXXX3



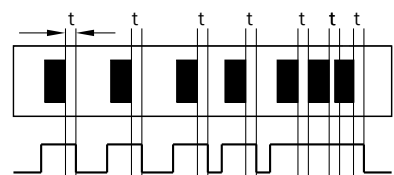
KT 5G-2P / NXXX4



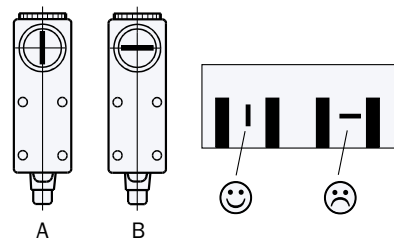
1



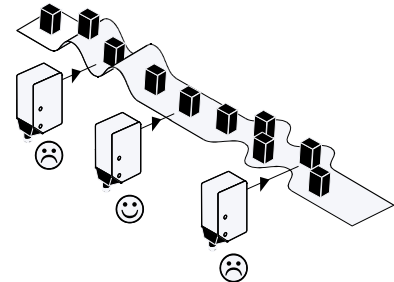
2



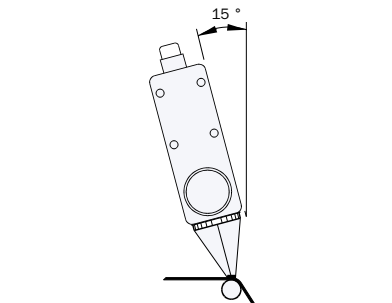
3



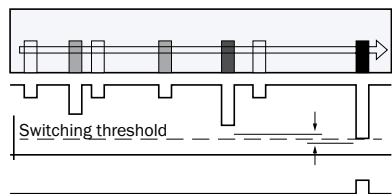
4



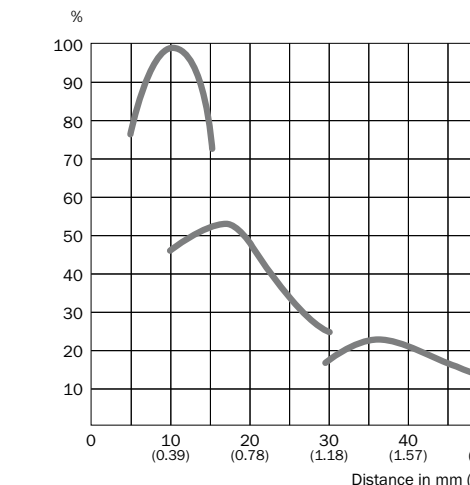
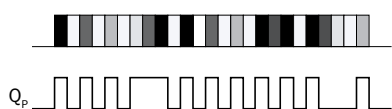
5



6



7



KT5		W-2 P1XXX3	W-2 NXXX3	G-2 PXXX4	G-2N XXX4
Supply voltage U_v	Versorgungsspannung U_v	Tension d'alimentation U_v	Tensão de força U_v	DC 10 ... 30 V ¹⁾	DC 10 ... 30 V ¹⁾
Switching output	Schaltausgang	Sortie logique	Saída de circuito	PNP	NPN
Signal sequence	Signalfolge	Sequência de sinais	Sequência do sinais	10 000 / s ²⁾	10 000 / s ²⁾
Response time	Ansprechzeit	Temps de réponse	Tempo de reação	50 ms	50 ms
Enclosure rating	Schutzart	Type de protection	Tipo de proteção	IP 67	IP 67
Ambient operating temperature	Betriebsumgebungstemperatur	Température ambiante	Temperatura ambiente de operação	-10 ... +55 °C	-10 ... +55 °C
¹⁾ Limit values Residual ripple max. 5 V _{pp} V _c connections reverse polarity protected	¹⁾ Grenzwerte Restwelligkeit max. 5 V _{pp} U _c -Anschlüsse verpolischer	¹⁾ Valeurs limites Ondulation résiduelle max 5 V _{pp} U _c -Anschlüsse verpolsicher	¹⁾ Valores limite ondulação residual máx. 5 V _{pp} Conexões U _c protegidas contra inversão de polos	¹⁾ Valores limite ondulação residual máx. 5 V _{pp}	¹⁾ Valores limite ondulação residual máx. 5 V _{pp}
²⁾ Scanning ratio 1:1	²⁾ Tastverhältnis 1:1	²⁾ Rapport de détection 1:1	²⁾ Relação de exploração 1:1	²⁾ Relação de exploração 1:1	²⁾ Relação de exploração 1:1

KT5		W-2 P1XXX3	W-2 NXXX3	G-2 PXXX4	G-2N XXX4
Tensione di alimentazione U_v	Tensión de alimentación U_v	電源電圧 U_v	供給電圧 U_v	DC 10 ... 30 V ¹⁾	DC 10 ... 30 V ¹⁾
Uscita di commutazione	Salida de conexión	輸出電流 I_{out}	最大出力電流 I_{out}	PNP	NPN
Sequenza signal	Sequencia de señales	最小信号序列	最小信号シーケンス	10 000 / s ²⁾	10 000 / s ²⁾
Tempo di risposta	Tiempo de reacción	触发时间	応答時間	50 ms	50 ms
Tipo di protezione	Tipo de protección	保护种类	保護等級	IP 67	IP 67
Temperatura ambiente circostante	Temperatura ambiente de servicio	工作环境-溫度	使用周圍溫度	-10 ... +55 °C	-10 ... +55 °C
¹⁾ Valori limite ondulation residua max. 5 V _{pp} U _c -collegamenti con protezione contro inversione di poli	¹⁾ Valores limite ondulación residual max. 5 V _{pp} Conexiones U _c a prueba de inversión de polaridad	¹⁾ 极限值 剩余波紋度 max. 5 V _{pp} U _c -接头防反接	¹⁾ 界限値 残留リップル最大 5 V _{pp} U _c 接続逆接保護	¹⁾ Valores limite ondulação residual máx. 5 V _{pp}	¹⁾ Valores limite ondulação residual máx. 5 V _{pp}
²⁾ Rapporto di rizezione 1:1	²⁾ Relación de exploración 1:1	²⁾ 感应比 1:1	²⁾ 検出比 1:1	²⁾ Relação de exploração 1:1	²⁾ Relação de exploração 1:1

Typenschlüssel					
KT5W-	2P	1	1	1	3
Lichtquelle	Ausgang Q	Lichtfleck	Tastweite / Lichtfleck	Zeitglied	Teach-in
G = Grünlicht W = Rot-grün-blau	P = PNP N = NPN	1 = längs 2 = quer	1 = 10 mm / 1,2 x 4,2 mm 2 = 20 mm / 1,5 x 5 mm 3 = 40 mm / 1,1 x 4,2 mm	1 = ohne 2 = 20 ms Abfallverzögerung	3 = dynamisches Teach-in 4 = automatische Funktion

Wartung

SICK-Lichtschranken sind wartungsfrei.
Wir empfehlen, in regelmäßigen Abständen
– die optischen Grenzflächen zu reinigen,
– Verschraubungen und Steckverbindungen zu überprüfen.

Veränderungen an Geräten dürfen nicht vorgenommen werden.

