

ENGLISH

Photoelectric Retro-reflective Sensor,
Photoelectric Retro-reflective Sensor
on reflector
with laser light
Operating Instructions

LASER CLASS 1	
	Laser 1
EN/IEC 60825-1:2014	
Maximum pulse power < 64 mW Puls length: 9 ns Wavelength: 650 nm	
Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 56, dated May 8, 2019	

WARNING: Interruption, manipulation or improper use can lead to hazardous exposure to laser radiation.

Safety Specifications

- Read the operating instructions before starting operation.
- Connection, assembly, and settings only by competent technicians.
- The radiation of the emitted light must not be focused by additional optical elements.
- Protect the device against moisture and soiling when operating.
- No safety component in accordance with EU machine guidelines.

Proper Use

The photoelectric retro-reflective sensor WTT280L-2 and WLT280L-2 are opto-electronic sensors used to optically detect objects and animals.

Starting Operation

WxT280L-2Pxxx: (PNP, load → M)

Light/dark switchover configurable per knob:

D: dark switching, object will not be detected, output HIGH,
L: light switching, object will be detected, output HIGH.

WxT280L-2Nxxx: (NPN, load → L+)

Light/dark switchover configurable per knob:

D: dark switching, object will not be detected, output LOW
L: light switching, object will be detected, output LOW.

The W280L-2 Long Range photoelectric retro-reflective sensor meets the interference suppression requirements (EMC) for industrial use (interference suppression class A). When used in residential areas it can cause interference.

DEUTSCH

Reflexions-Lichttaster,
Reflexions-Lichttaster auf Reflektor
mit Laserlicht
Betriebsanleitung

LASERKLASSE 1	
	Laser 1
EN/IEC 60825-1:2014	
Maximale Pulsleistung: < 64 mW Impulsdauer: 9 ns Wellenlänge: 650 nm	
Entspricht 21 CFR 1040.10 und 1040.11 mit Ausnahme von Abweichungen nach Laser-Hinweis 56, 08. Mai 2019	

ACHTUNG: Eingriffe oder Manipulationen oder nicht bestimmungsgemäße Verwendung kann zu gefährlicher Belastung durch Laser-Lichtstrahlung führen.

Sicherheitshinweis

- Vor der Inbetriebnahme die Betriebsanleitung lesen.
- Anschluss, Montage und Einstellung nur durch Fachpersonal.
- Die Strahlung des Sendelichtes darf nicht durch zusätzliche optische Bauteile fokussiert werden.
- Gerät bei der Inbetriebnahme vor Feuchte und Verunreinigung schützen.
- Kein Sicherheitsbauteil gemäß EU-Maschinenrichtlinie.

SICK

W280L-2 Long Range WTT280L-2 WLT280L-2

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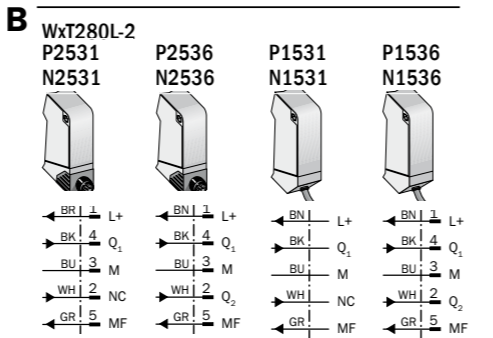
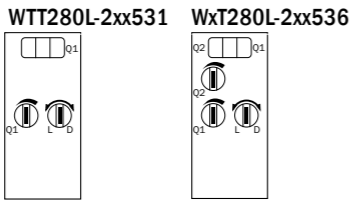
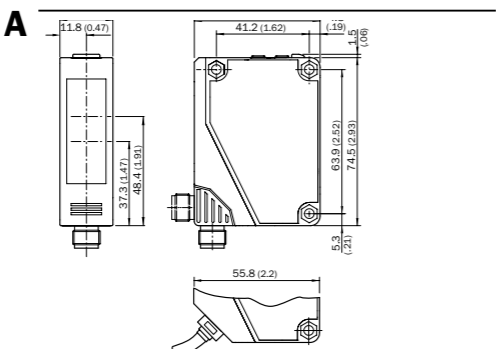
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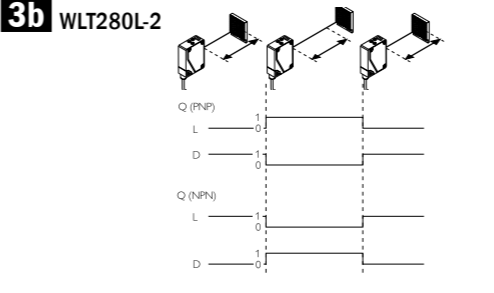
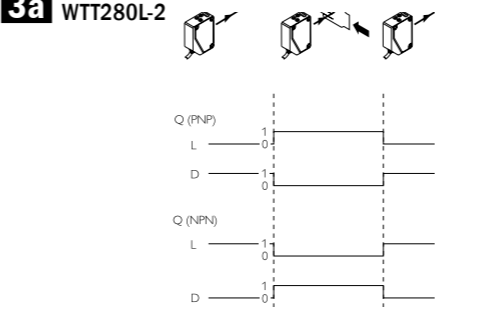
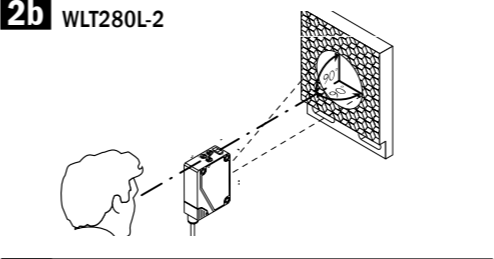
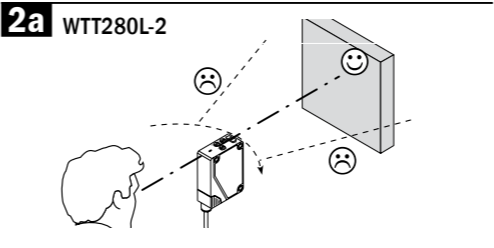
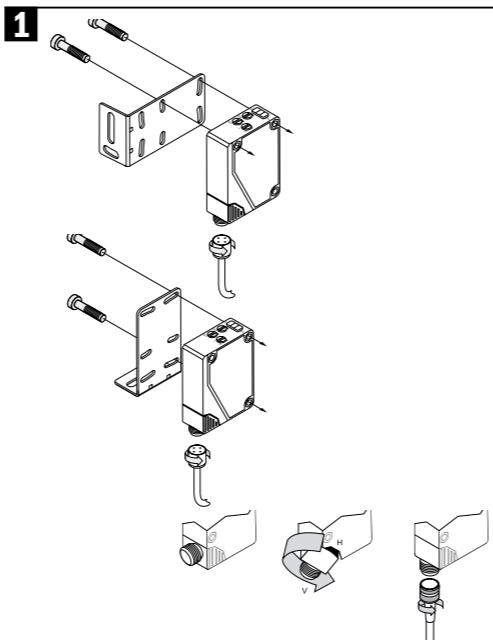
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MF = multi-function; /MF = Multifunktion:
PNP: approx. < 3.9 V DC;
NPN: approx. < 1.5 V DC; Laser LED is switched on;
PNP: approx. > 3.9 V DC;
NPN: approx. > 1.5 V DC; Laser LED is switched off.
PNP: ca. < DC 3,9 V; NPN: ca. < DC 1,5 V; Laser-LED ist eingeschaltet
PNP: ca. > DC 3,9 V; NPN: ca. > DC 1,5 V; Laser-LED ist abgeschaltet



	WTT280L-2xxxx	WLT280L-2xxxx
Sensing distance TW ¹⁾ , max.	0,2 ... 4 m	0,2 ... 18 m/P250
Operating distance, adjustable ¹⁾	0,2 ... 4 m	0,2 ... 18 m/P250
Light spot diameter/distance	~12 mm/3 m	~50 mm/18 m
Supply voltage U _B	10 ... 30 V DC ²⁾	
Output current I _{max}	< 100 mA	
Switching frequency ³⁾	1000 Hz	250 Hz
Response time ⁴⁾	0,5 ms	2 ms
Enclosure rating (IEC 60529)	IP 67	
Protection class	◆	
Circuit protection ⁵⁾	A, B, C, D ⁵⁾	
Ambient operating temperature ⁶⁾	-10 °C ... +50 °C	

¹⁾ Object 90 % reflection according to DIN 5033
²⁾ Limits: Operation in short-circuit protected network max. 8 A; Residual ripple max. 5 V_{pp}
³⁾ With light/dark ratio 1:1
⁴⁾ Signal transit time with resistive load
⁵⁾ A = U_B connections reverse polarity protected
B = outputs protected against short circuits
C = interference pulse suppression
D = outputs overcurrent and short-circuit protected
⁶⁾ Do not bend cable below 0 °C

¹⁾ Objekt 90 % Remission nach DIN 5033
²⁾ Grenzwerte; Betrieb im kurzschlussgeschützten Netz max. 8 A; Restwelligkeit max. 5 V_{SS}
³⁾ Bei Hell/Dunkelverhältnis 1:1
⁴⁾ Signallaufzeit bei ohmscher Last
⁵⁾ A = U_B-Anschlüsse verpolsicher
B = Ausgänge kurzschlussfest
C = Störimpulsunterdrückung
D = Ausgänge überstrom- und kurzschlussgeschützt
⁶⁾ Unter 0°C Leitung nicht verformen

¹⁾ Objet Luminance de 90 % selon DIN 5033
²⁾ Valeurs limites; Service dans un réseau protégé contre les courts-circuits 8 A au maximum; Ondulation résiduelle max. 5 V_{SS}
³⁾ Pour un rapport clair/sombre 1:1
⁴⁾ Durée du signal en charge ohmique
⁵⁾ A = Raccordements U_B protégés contre les inversions de polarité
B = Sorties protégées contre les courts-circuits
C = Suppression des impulsions parasites
D = Sorties protégées contre les surcharges et les courts-circuits
⁶⁾ Ne pas déformer le conducteur au-dessous de 0 °C

¹⁾ Objeto: 90 % de remissão segundo DIN 5033
²⁾ Valores limite; Operação em rede protegida contra curto-circuitos máx. 8 A; Ondulação residual máx. 5 V_{SS}
³⁾ Com uma relação luminoso/escuro de 1:1
⁴⁾ Tempo de transição do sinal com carga ôhmica
⁵⁾ A = Conexões U_B protegidas contra inversão de polos
B = Saídas protegidas contra curto circuito
C = Supressão de impulsos parasitas
D = Saídas protegidas contra sobrecarga e curto circuito
⁶⁾ Não dar forma ao condutor abaixo de 0 °C

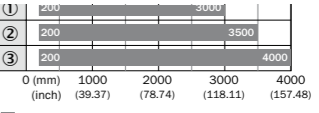
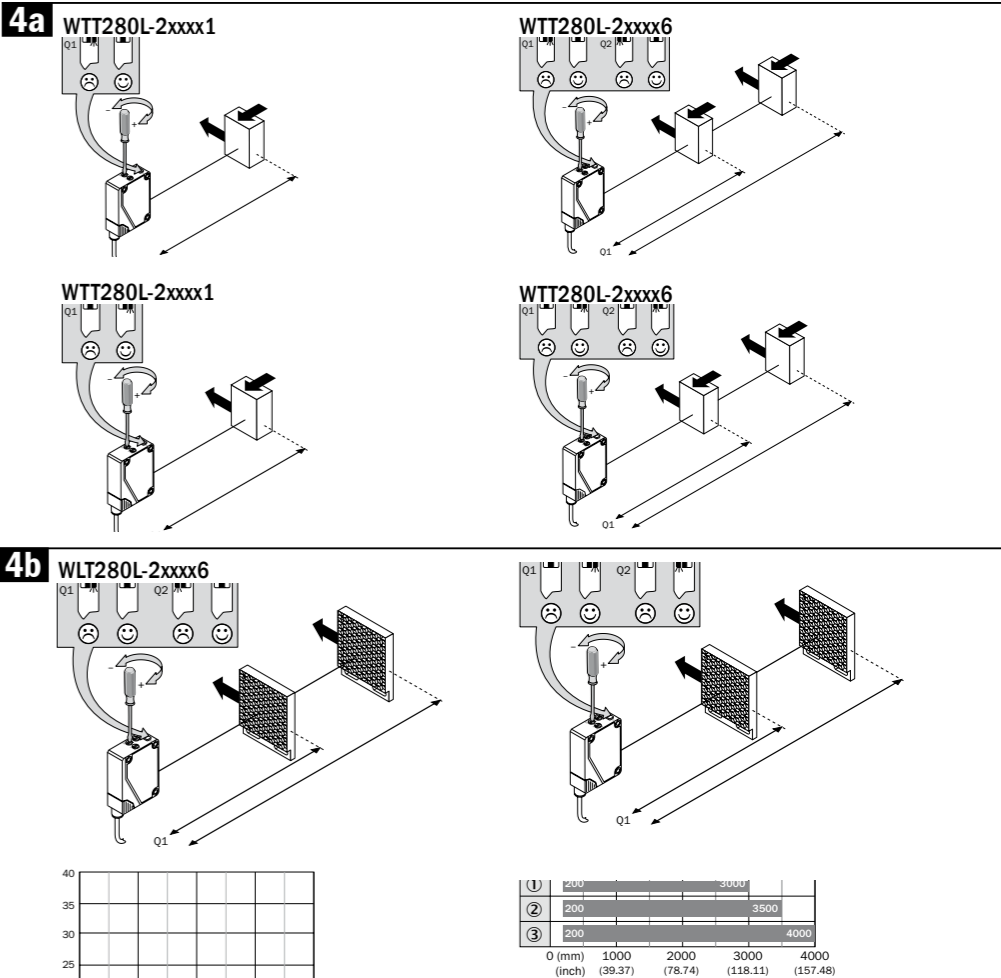
	WTT280L-2xxxx	WLT280L-2xxxx
Portata di ricezione TW ¹⁾ , max.	0,2 ... 4 m	0,2 ... 18 m/P250
Distanza di ricezione, registrabile ¹⁾	0,2 ... 4 m	0,2 ... 18 m/P250
Diametro punto luminoso/distanza	~12 mm/3 m	~50 mm/18 m
Tensione di alimentazione U _B	10 ... 30 V DC ²⁾	
Corrente di uscita max. I _{max}	< 100 mA	
Sequenza segnali min. ³⁾	1000 Hz	250 Hz
Tempo di risposta ⁴⁾	0,5 ms	2 ms
Tipo di protezione (IEC 60529)	IP 67	
Classe di protezione	◆	
Commutazioni di protezione ⁵⁾	A, B, C, D ⁵⁾	
Temperatura ambiente circostante ⁶⁾	-10 °C ... +50 °C	

¹⁾ Oggetto 90 % remissione sec. DIN 5033
²⁾ Valori limite Funzionamento in rete con protezione dai cortocircuiti máx. 8 A;ondulazione residua máx. 5 V_{SS}
³⁾ Con relatio chiaro/scuro 1:1
⁴⁾ Tempo di continuare de segnale a resistenza ohmica
⁵⁾ A = U_B-collegamenti con protezione contro inversione di poli
B = uscite a prova di corto circuito
C = soppressione impulsi
D = uscite a prova di sovracorrente e corto circuito
⁶⁾ Non deformare il cavo a temperature sotto 0 °C.

¹⁾ Objeto con 90 % de remisión según DIN 5033
²⁾ Valores límite; funcionamiento en red protegida contra cortocircuito máx. 8 A;ondulación residual máx. 5 V_{SS}
³⁾ Con una relación claro/oscuro de 1:1
⁴⁾ Duración de la señal con carga ôhmica
⁵⁾ A = conexiones U_B con protección contra polarización inversa
B = salidas a prueba de cortocircuitos
C = supresión de impulsos parásitos
D = Salidas de corriente de sobreintensidad y resistentes al cortocircuito
⁶⁾ No deformar el conductor por debajo de 0 °C

¹⁾ 对表面反射率为90 %物体(基于DIN 5033)
²⁾ 限定值,在短路保护下电源极性反接,电流最大为8A,纹波电压最大为5V_{pp}
³⁾ 亮/暗比:1:1
⁴⁾ 电阻性负载时,传感器检测到变化时输出信号的转换时间
⁵⁾ A = U_B极性反接保护
B = 输出短路保护
C = 抑制脉冲干扰
D = 输出端抗过流及短路
⁶⁾ 0°C以下导线不宜变形(弯曲)

¹⁾ DIN 5033 に準じた反射率 90%の対象物
²⁾ 限界値:短絡保護された回路での使用最大 8 A,リップル 最大 5 V_{SS}
³⁾ ライト/ダークの比率 1:1
⁴⁾ 負荷のある信号経過時間
⁵⁾ A = U_B 電源電圧逆接保護
B = 出力短絡保護
C = 干渉パルス抑制
D = 出力 過電流および短絡防止
⁶⁾ 氷点下ではケーブルを曲げないこと



① Sensing distance on black, 6% remission
② Sensing distance on gray, 18 % remission
③ Sensing distance on white, 90 % remission

