

Laser Distance Sensor

Time of Flight

P1KY001

LASER

Part Number

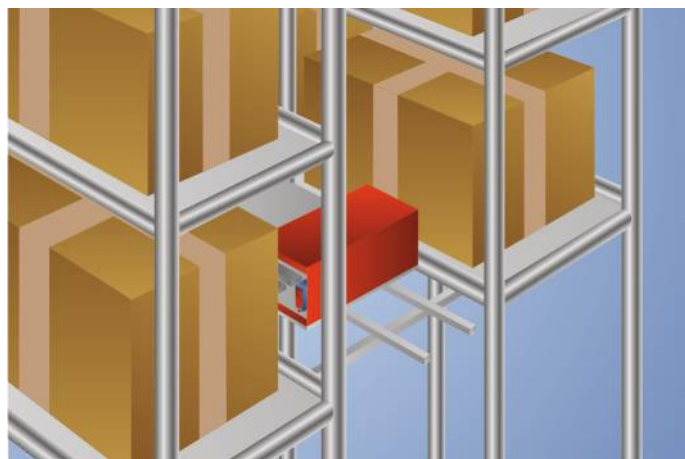
der wintec.



- Interference-free towards gloss in the background with wintec
- Miniature design
- No mutual interference with wintec
- Reliable in case of glossy objects with wintec
- Secure detection of black objects also in extremely inclined positions with wintec

These miniature sensors determine distance between the sensor and the object by means of transit time measurement.

wenglor's interference-free technology (wintec) is revolutionizing sensor technology: it prevents numerous sensors arranged directly opposite or next to each other from interfering with one another. The sensors reach a very high switching frequency and use laser class 1, which is safe for the human eye.



Technical Data

Optical Data

Working Range	0...1000 mm
Setting Range	100...1000 mm
Switching Hysteresis	< 20 mm
Light Source	Laser (red)
Wavelength	680 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Beam Divergence	< 16 mrad
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Triple Dot Laser	yes

Electrical Data

Supply Voltage	10...30 V DC
Current Consumption (U _b = 24 V)	< 30 mA
Switching Frequency	1000 Hz
Response Time	0,5 ms
Temperature Drift	< 2,5 %
Temperature Range	-40...50 °C
Number of Switching Outputs	2
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Protection Class	III
FDA Accession Number	1620293-001

Mechanical Data

Setting Method	Potentiometer
Housing Material	Plastic
Optic Cover	PMMA
Degree of Protection	IP67
Connection	M8 × 1; 4-pin

Safety-relevant Data

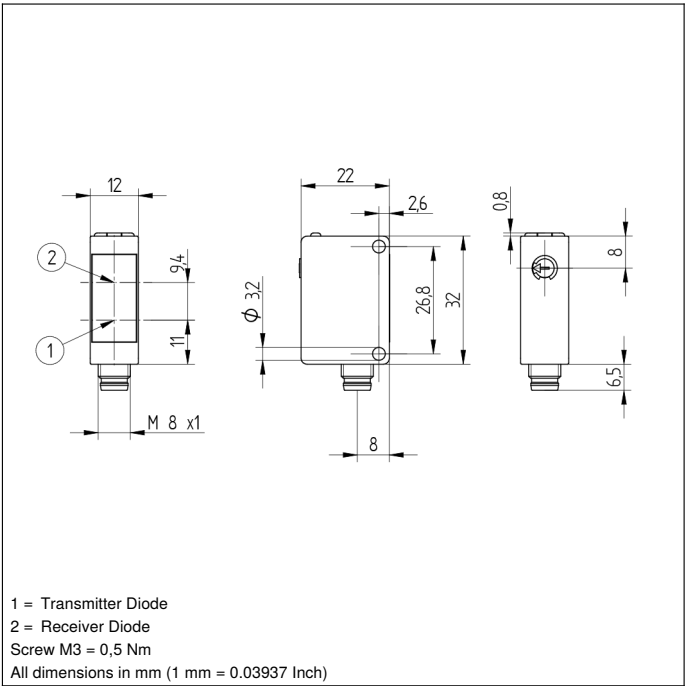
MTTFd (EN ISO 13849-1)	996,97 a
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PNP NC, PNP NO

Connection Diagram No.	101
Control Panel No.	1K1
Suitable Connection Equipment No.	7
Suitable Mounting Technology No.	400

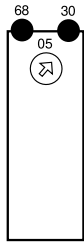
Complementary Products

PNP-NPN Converter BG7V1P-N-2M

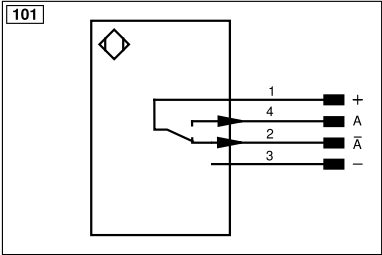


Ctrl. Panel

1K1



05 = Switching Distance Adjuster
30 = Switching Status/Contamination Warning
68 = supply voltage indicator



Legend			
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ů	Test Input inverted
A	Switching Output (NO)	W	Trigger Input
Ā	Switching Output (NC)	W-	Ground for the Trigger Input
V	Contamination/Error Output (NO)	O	Analog Output
Ȳ	Contamination/Error Output (NC)	O-	Ground for the Analog Output
E	Input (analog or digital)	BZ	Block Discharge
T	Teach Input	Amv	Valve Output
Z	Time Delay (activation)	a	Valve Control Output +
S	Shielding	b	Valve Control Output 0 V
RxD	Interface Receive Path	SY	Synchronization
TxD	Interface Send Path	SY-	Ground for the Synchronization
RDY	Ready	E+	Receiver-Line
GND	Ground	S+	Emitter-Line
CL	Clock	±	Grounding
E/A	Output/Input programmable	SnR	Switching Distance Reduction
IO-Link		Rx+/-	Ethernet Receive Path
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)
OSSD	Safety Output	La	Emitted Light disengageable
Signal	Signal Output	Mag	Magnet activation
BL_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation
ENo RS422	Encoder 0-pulse 0/0 (TTL)	EDM	Contact Monitoring
PT	Platinum measuring resistor	ENARIS422	Encoder A/Ā (TTL)
		ENBRS422	Encoder B/B̄ (TTL)
		ENA	Encoder A
		ENB	Encoder B
		AMIN	Digital output MIN
		AMAX	Digital output MAX
		ACK	Digital output OK
		SY In	Synchronization In
		SY OUT	Synchronization OUT
		OLT	Brightness output
		M	Maintenance
		rsv	Reserved
		Wire Colors according to DIN IEC 60757	
		BK	Black
		BN	Brown
		RD	Red
		OG	Orange
		YE	Yellow
		GN	Green
		BU	Blue
		VT	Violet
		GY	Grey
		WH	White
		PK	Pink
		GNYE	Green/Yellow

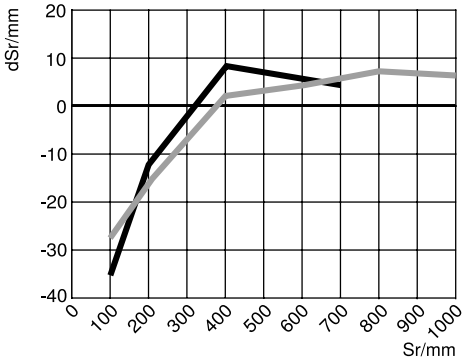
Table 1

Working Distance	100 mm	500 mm	1000 mm
Light Spot Diameter	4 mm	7 mm	15 mm

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission

P1KY0



Sr = Switching Distance
dSr = Switching Distance Change
— black 6 % remission
— grey 18 % remission

