

Laser Distance Sensor

Time of Flight

P1KY002

Part Number

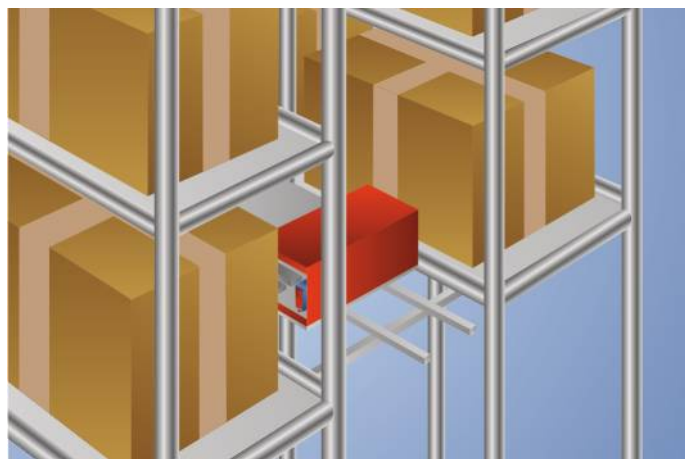
der wintec.



- 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
Reflector required	no

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, ABS/PC
Housing Material	Plastic, PC
Optic Cover	Plastic, PMMA
Degree of Protection	IP67
Connection	M12 × 1; 4-pin
Cable length (L)	200 mm

Safety-relevant Data

MTTFd (EN ISO 13849-1)	996,97 a
Scope of delivery	1 × initial start-up instructions 1 × sensor

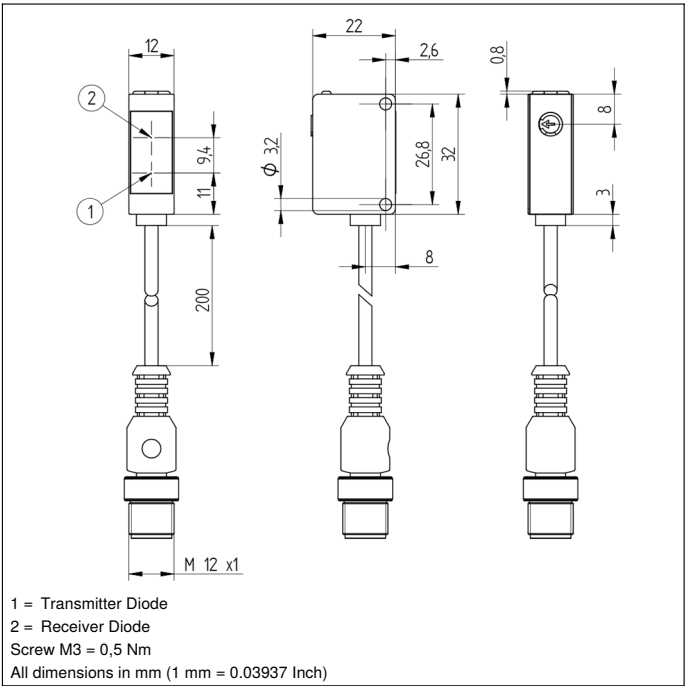
PNP NC, PNP NO

Connection Diagram No.	101
Control Panel No.	1K1
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	400

* Temperature range with permanently installed cable, bending radius: > 20 mm

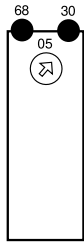
Complementary Products

PNP-NPN Converter BG2V1P-N-2M

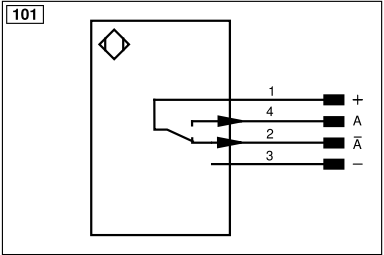


Ctrl. Panel

1K1



05 = Switching Distance Adjuster
30 = Switching Status/Contamination Warning
68 = Power LED



Legend					
+	Supply Voltage +	PT	Platinum measuring resistor	ENAR5422	Encoder A/Ä (TTL)
-	Supply Voltage 0 V	nc	Not connected	ENBR5422	Encoder B/ß (TTL)
~	Supply Voltage (AC Voltage)	U	Test Input	ENa	Encoder A
A	Switching Output (NO)	Ü	Test Input inverted	ENb	Encoder B
Ä	Switching Output (NC)	W	Trigger Input	AMIN	Digital output MIN
V	Contamination/Error Output (NO)	W-	Ground for the Trigger Input	AMAX	Digital output MAX
V̄	Contamination/Error Output (NC)	O	Analog Output	AOK	Digital output OK
E	Input (analog or digital)	O-	Ground for the Analog Output	SY In	Synchronization In
T	Teach Input	BZ	Block Discharge	SY OUT	Synchronization OUT
R	Reset input	Amv	Valve Output	OLT	Brightness output
Z	Time Delay (activation)	a	Valve Control Output +	M	Maintenance
S	Shielding	b	Valve Control Output 0 V	rsv	Reserved
RxD	Interface Receive Path	SY	Synchronization	Wire Colors according to DIN IEC 60757	
TxD	Interface Send Path	SY-	Ground for the Synchronization		
RDY	Ready	E+	Receiver-Line	BK	Black
GND	Ground	S+	Emitter-Line	BN	Brown
CL	Clock	≡	Grounding	RD	Red
E/A	Output/Input programmable	SnR	Switching Distance Reduction	OG	Orange
IO-Link	IO-Link	Rx+/-	Ethernet Receive Path	YE	Yellow
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path	GN	Green
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)	BU	Blue
OSSD	Safety Output	La	Emitted Light disengageable	VT	Violet
Signal	Signal Output	Mag	Magnet activation	GY	Grey
BL_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation	WH	White
EN RS422	Encoder 0-pulse 0/0 (TTL)	EDM	Contactor Monitoring	PK	Pink
				GNYE	Green/Yellow

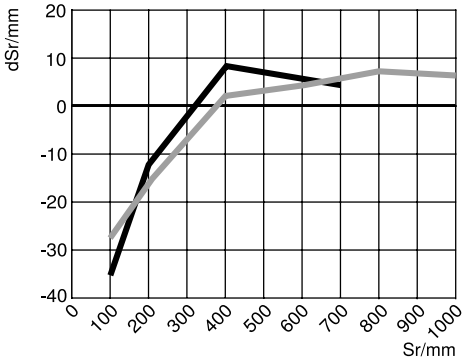
Table 1

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

