

# Laser Distance Sensor

## Time of Flight

# OY1P303P0102

# LASER

der wintec.

Part Number

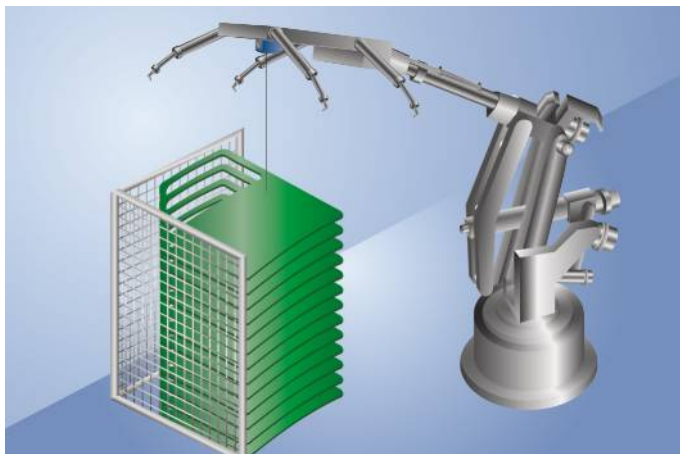


- 2 mutually independent switching outputs
- Analog output (0...10 V/4...20 mA)
- Graphical display for easy operation
- Reliable in case of glossy objects with wintec
- Secure detection of black objects also in extremely inclined positions with wintec

These sensors have scratch-resistant optics and the emitted light can be switched off. They use the transit time measurement principle to measure the distance between the sensor and the object.

wenglor interference-free technology (wintec) has revolutionized sensor technology:

It makes it possible to mount several sensors directly next to, or opposite each other without the sensors influencing each other. The sensors reach a very high switching frequency and use laser class 1, which is safe for the human eye.



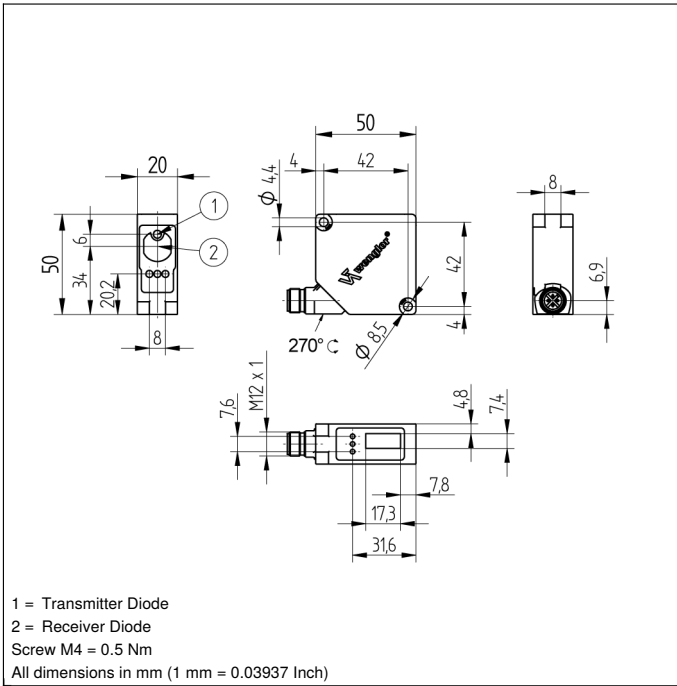
## Technical Data

Optical Data	
Working Range	50...3050 mm
Measuring Range	3000 mm
Reproducibility maximum	1 mm
Linearity Deviation (200...3050 mm)	7 mm
Linearity Deviation (50...200 mm)	15 mm
Switching Hysteresis	3...20 mm
Light Source	Laser (red)
Wavelength	660 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Max. Ambient Light	10000 Lux
Beam Divergence	< 2 mrad
Electrical Data	
Supply Voltage	18...30 V DC
Current Consumption (U <sub>b</sub> = 24 V)	< 70 mA
Switching Frequency	250 Hz
Measuring Rate	1...500 /s
On-/Off-Delay	0...10000 ms
Temperature Drift	< 0,4 mm/K
Temperature Range	-40...50 °C
Number of Switching Outputs	2
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	100 mA
Analog Output	4...20 mA
Short Circuit Protection	yes
Reverse Polarity and Overload Protection	yes
Teach Mode	HT, VT, FT, TP
Interface	IO-Link V1.1
Protection Class	III
Mechanical Data	
Setting Method	Menu (OLED)
Housing Material	Plastic
Optic Cover	PMMA
Degree of Protection	IP68
Connection	M12 × 1; 4-pin
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	349,73 a
Error Output	●
Analog Output	●
IO-Link	●
Connection Diagram No.	782
Control Panel No.	X2
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	380

Display brightness may decrease with age. This does not result in any impairment of the sensor function.

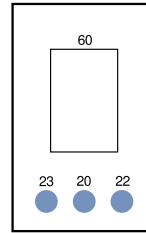
## Complementary Products

Analog Evaluation Unit AW02
IO-Link Master
Protective Housing ZSV-0x-01
Set Protective Housing ZSP-NN-02
Software

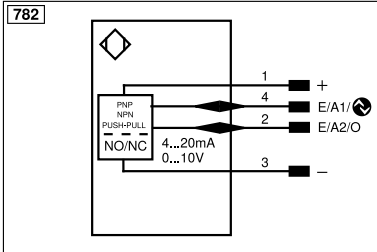


### Ctrl. Panel

X2



20 = Enter key  
 22 = Up key  
 23 = Down key  
 60 = display



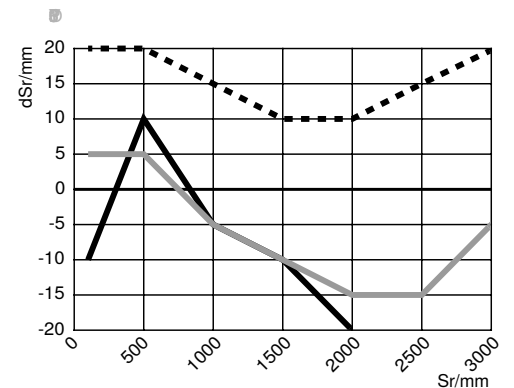
Legend			
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ü	Test Input inverted
A	Switching Output (NO)	W	Trigger Input
Ā	Switching Output (NC)	W-	Ground for the Trigger Input
V	Contamination/Error Output (NO)	O	Analog Output
V̄	Contamination/Error 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	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
BI_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation
ENo RS422	Encoder 0-pulse 0/0 (TTL)	EDM	Contactor Monitoring
PT	Platinum measuring resistor	ENARs422	Encoder A/A (TTL)
		ENBrs422	Encoder B/B (TTL)
		ENa	Encoder A
		ENb	Encoder B
		AMIN	Digital output MIN
		AMAX	Digital output MAX
		AOK	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	0 m	3 m
Light Spot Diameter	5 mm	9 mm

### Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission



Sr = Switching Distance

dSr = Switching Distance Change

— black 6 % remission

— grey 18 % remission

--- Aluminum

