Laser Distance Sensor
Time of Flight

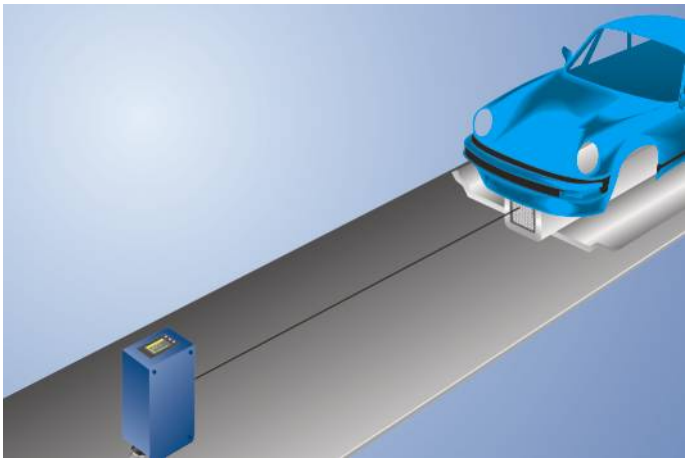
X1TA100QXT3 LASER

Part Number



- **Emitted light disengageable**
- **Graphical display for easy operation**
- **Switching output A1 as analog output switchable (0...10 V/4...20 mA)**
- **Temperature drift eliminable**

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. Using a suitable reflector at the object, a highly accurate position measurement at large distances is also possible.
The configurations are selected using a menu and can be protected by a password.



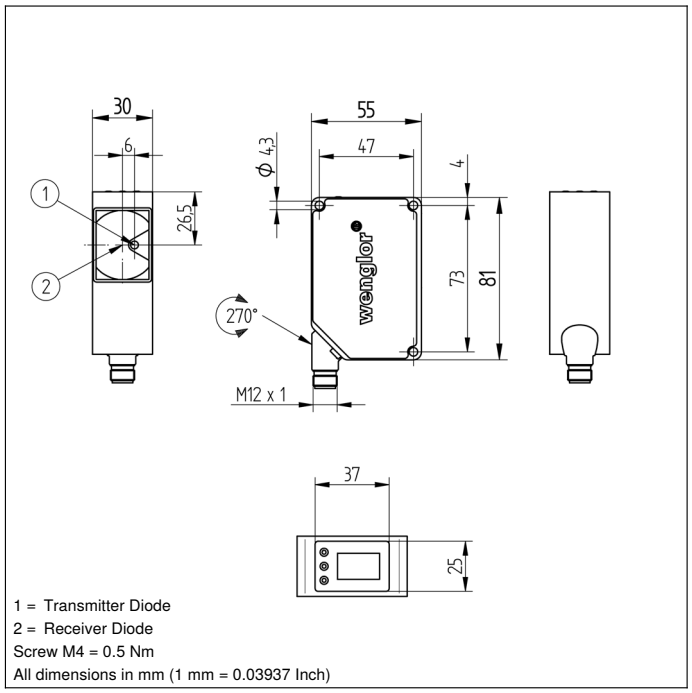
Technical Data

Optical Data	
Working Range	0,1...10,2 m
Analog Working Range	0,2...10,2 m
Measuring Range	10 m
Reference Reflector/Reflector Foil	RF508
Resolution	2...6 mm
Linearity	0,5 %
Linearity Deviation	50 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
Reflector required	yes
Electrical Data	
Supply Voltage	18...30 V DC
Current Consumption (Ub = 24 V)	< 100 mA
Switching Frequency	50 Hz
Measuring Rate	1...100 /s
Response Time	10...200 ms
On-/Off-Delay	0...10000 ms
Temperature Drift (-10 °C < Tu < 50 °C)	< 0,2 mm/K
Temperature Drift (Tu < -10 °C, Tu > 50 °C)	< 0,4 mm/K
Temperature Range	-25...60 °C
Number of Switching Outputs	2
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	200 mA
Analog Output	0...10 V
Short Circuit Protection	yes
Reverse Polarity and Overload Protection	yes
Protection Class	III
FDA Accession Number	0920382-000
Mechanical Data	
Setting Method	Menu (OLED)
Housing Material	Plastic
Degree of Protection	IP68
Connection	M12 × 1; 4-pin
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	346,68 a
Error Output	●
PNP NC	●
Analog Output	●
Connection Diagram No.	755
Control Panel No.	TA1
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	340

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

Complementary Products

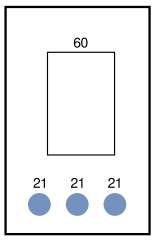
Analog Evaluation Unit AW02
Reflector, Reflector Foil
Set Protective Housing ZST-NN-02



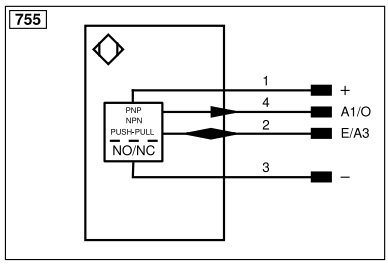
1 = Transmitter Diode
2 = Receiver Diode
Screw M4 = 0.5 Nm
All dimensions in mm (1 mm = 0.03937 Inch)

Ctrl. Panel

TA1



21 = Mode Button
60 = display



Legend					
+	Supply Voltage +	nc	Not connected	ENBRS422	Encoder B/B̄ (TTL)
–	Supply Voltage 0 V	U	Test Input	ENA	Encoder A
~	Supply Voltage (AC Voltage)	Ū	Test Input inverted	ENB	Encoder B
A	Switching Output (NO)	W	Trigger Input	AMIN	Digital output MIN
Ā	Switching Output (NC)	W–	Ground for the Trigger Input	AMAX	Digital output MAX
V	Contamination/Error Output (NO)	O	Analog Output	AOK	Digital output OK
V̄	Contamination/Error Output (NC)	O–	Ground for the Analog Output	SY In	Synchronization In
E	Input (analog or digital)	BZ	Block Discharge	SY OUT	Synchronization OUT
T	Teach 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	BK	Black
RDY	Ready	E+	Receiver-Line	BN	Brown
GND	Ground	S+	Emitter-Line	RD	Red
CL	Clock	⏚	Grounding	OG	Orange
E/A	Output/Input programmable	SnR	Switching Distance Reduction	YE	Yellow
	IO-Link	Rx+/–	Ethernet Receive Path	GN	Green
PoE	ower over Ethernet	Tx+/–	Ethernet Send Path	BU	Blue
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(–)	VT	Violet
OSSD	Safety Output	La	Emitted Light disengageable	GY	Grey
Signal	Signal Output	Mag	Magnet activation	WH	White
BI_D+/–	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation	PK	Pink
EN0 RS422	Encoder 0-pulse 0/0̄ (TTL)	EDM	Contactor Monitoring	GNYE	Green/Yellow
PT	Platinum measuring resistor	ENARS422	Encoder A/Ā (TTL)		

Table 1

Working Distance	0 m	10 m
Light Spot Diameter	5 mm	< 20 mm

Feasible reflector distance

Reflector type, mounting distance

RF505	0,1...10 m	**ZRAF07K01**	0,1...10 m
RF508	0,1...10 m	**ZRAF08K01**	0,1...10 m
RF258	0,1...10 m	**ZRDF__K01**	0...10 m

Specifications are subject to change without notice V0-27.03.2023