

Laser Distance Sensor

Time of Flight

X1TA101MHV80

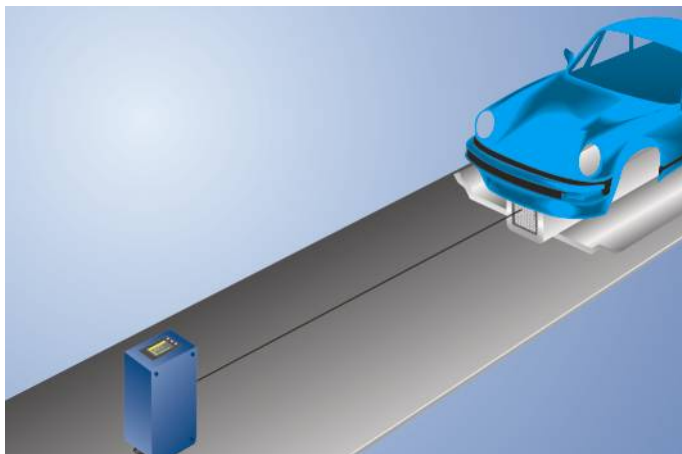
Part Number

LASER



- Analog output (0...10 V/4...20 mA)
- Emitted light disengageable
- Graphical display for easy operation
- 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	0,2...100,2 m
Measuring Range	100 m
Reference Reflector/Reflector Foil	4 × RQ100BA
Resolution	4...20 mm
Linearity	0,05 %
Linearity Deviation	50 mm
Switching Hysteresis	13...50 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
Light Spot Diameter	see Table 1
Reflector required	yes

Electrical Data

Supply Voltage	18...30 V DC
Current Consumption (U _b = 24 V)	< 100 mA
Switching Frequency	50 Hz
Measuring Rate	1...100 /s
On-/Off-Delay	0...10000 ms
Temperature Drift	0,5 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; 8-pin

Safety-relevant Data

MTTFd (EN ISO 13849-1)	345,65 a
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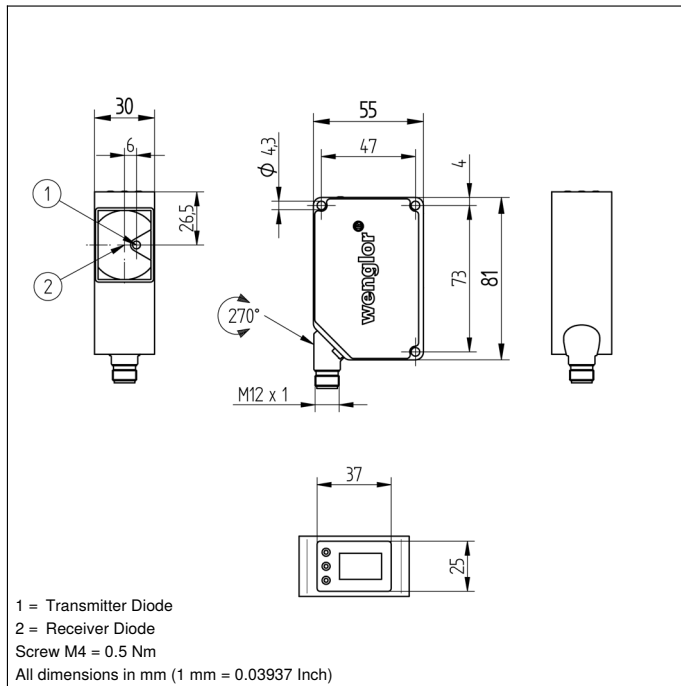
Error Output	●
PNP NO	●
Analog Output	●

Connection Diagram No.	514
Control Panel No.	TA1
Suitable Connection Equipment No.	80
Suitable Mounting Technology No.	340

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

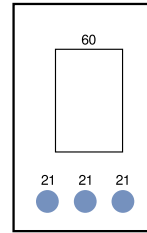
Complementary Products

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

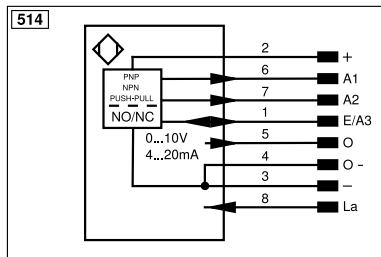


Ctrl. Panel

TA1



21 = Mode Button
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
Ä	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
BI_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation
ENo RS422	Encoder 0-pulse 0/Ü (TTL)	EDM	Contact Monitoring
PT	Platinum measuring resistor	ENAR422	Encoder A/Ä (TTL)
		ENBR422	Encoder B/B (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	0 m	40 m	100 m
Light Spot Diameter	5 mm	80 mm	< 200 mm

Feasible reflector distance

Reflector type, mounting distance

RQ100BA	5...100 m	ZRAF07K01	0,2...40 m
RF505	0,2...40 m	ZRAF08K01	0,2...40 m
RF508	0,2...40 m	ZRDF03K01	0,2...40 m
RF258	0,2...40 m	ZRDF10K01	0,2...100 m