

Laser Distance Sensor

Time of Flight

Y1TA100QXT3

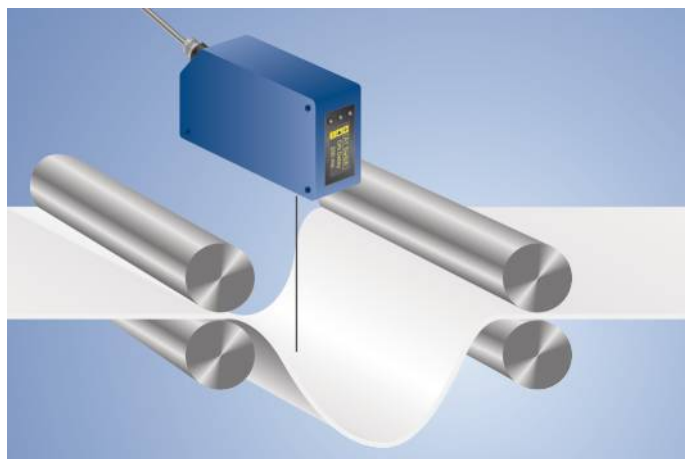
LASER

Part Number



- 2 mutually independent switching outputs
- 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. For this reason, the object's color, shape and surface characteristics have practically no influence on measurement results. Even dark objects can be reliably recognized.



Technical Data

Optical Data

Working Range	0,1...10,1 m
Measuring Range	10 m
Resolution	1...12 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)	2
Max. Ambient Light	10000 Lux
Beam Divergence	< 2 mrad
Light Spot Diameter	see Table 1

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
Response Time	10...200 ms
On-/Off-Delay	0...10000 ms
Temperature Drift (-10 °C < T _u < 50 °C)	< 0,2 mm/K
Temperature Drift (T _u < -10 °C, T _u > 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	0710891-002

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
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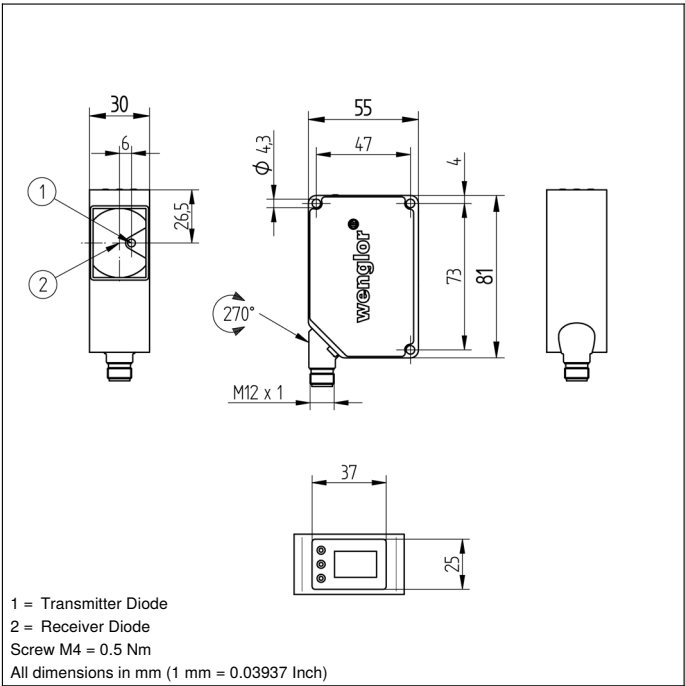
Error Output	●
PNP NO	●
Configurable as PNP/NPN/Push-Pull	●
Analog Output	●
Connection Diagram No.	755
Control Panel No.	TA1
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	340

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

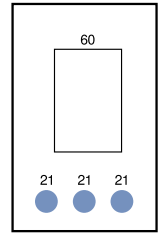
Complementary Products

Analog Evaluation Unit AW02

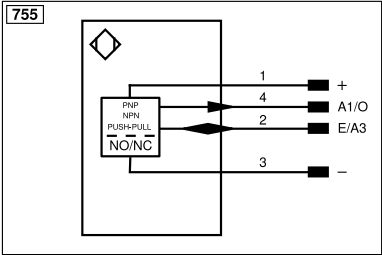
Set Protective Housing ZST-NN-02



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
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	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	10 m
Light Spot Diameter	5 mm	< 20 mm

