High-Performance Distance Sensor

OY2TA403AT235 LASER

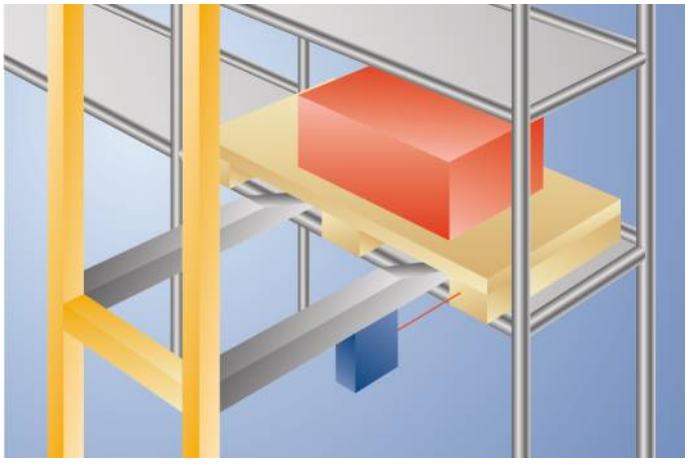
Part Number

- **Scratch-resistant optic cover**
- **Very high switching frequency**
- **Working range up to 4 m**

Technical Data

Optical Data	
Working Range	0...4000 mm
Adjustable Range	250...4000 mm
Switching Hysteresis	< 25 mm
Light Source	Laser (red)
Wavelength	660 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	2
Beam Divergence	< 2 mrad
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 70 mA
Switching Frequency	1000 Hz
Response Time	500 µs
Temperature Drift	< 2 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	200 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Protection Class	III
FDA Accession Number	0820345-001
Mechanical Data	
Setting Method	Teach-In
Housing Material	Plastic
Degree of Protection	IP68
Connection	M12 × 1; 4/5-pin
PNP NO/NC antivalent	●
Connection Diagram No.	760
Control Panel No.	TA2
Suitable Connection Equipment No.	2 35
Suitable Mounting Technology No.	340

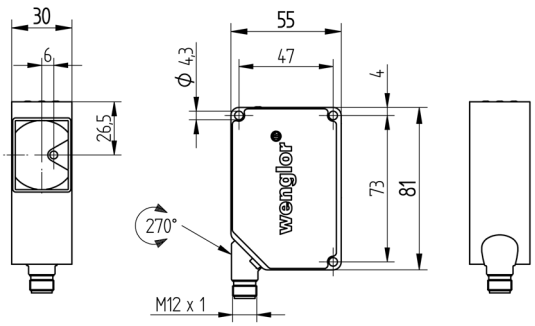
These sensors have scratch-resistant optics and measure the distance between the sensor and the object in accordance with the principle of transit time measurement. The sensor also reaches a very high switching frequency.
Artificial light (e.g. from an energy saving lamp) or the background does not influence the correct sensor function. The working range is also valid for dark objects.



Complementary Products

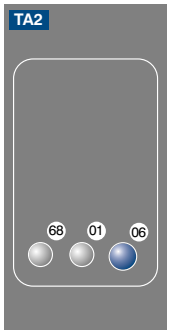
PNP-NPN Converter BG2V1P-N-2M

Set Protective Housing ZST-NN-02

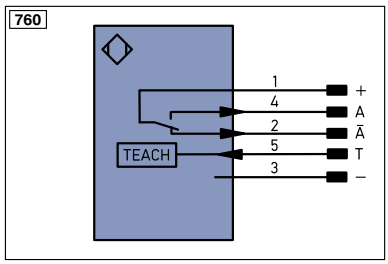


Screw M4 = 0,5 Nm
All dimensions in mm (1 mm = 0.03937 Inch)

Ctrl. Panel



01 = Switching Status Indicator
06 = Teach Button
68 = Supply Voltage Indicator



Legend

+	Supply Voltage +	PT	Platinum measuring resistor	$EN_{A\,RS422}$	Encoder A/Ā (TTL)
–	Supply Voltage 0 V	nc	not connected	$EN_{B\,RS422}$	Encoder B/B̄ (TTL)
~	Supply Voltage (AC Voltage)	U	Test Input	EN_A	Encoder A
A	Switching Output (NO)	Ū	Test Input inverted	EN_B	Encoder B
Ā	Switching Output (NC)	W	Trigger Input	A_{MIN}	Digital output MIN
V	Contamination/Error Output (NO)	W–	Ground for the Trigger Input	A_{MAX}	Digital output MAX
V̄	Contamination/Error Output (NC)	O	Analog Output	A_{OK}	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
Z	Time Delay (activation)	A_{NW}	Valve Output	O_{LT}	Brightness output
S	Shielding	a	Valve Control Output +	M	Maintenance
RxD	Interface Receive Path	b	Valve Control Output 0 V	rsv	reserved
TxD	Interface Send Path	SY	Synchronization	Wire Colors according to DIN IEC 757	
RDY	Ready	SY–	Ground for the Synchronization	BK	Black
GND	Ground	E+	Receiver-Line	BN	Brown
CL	Clock	S+	Emitter-Line	RD	Red
E/A	Output/Input programmable	⏚	Grounding	OG	Orange
	IO-Link	SnR	Switching Distance Reduction	YE	Yellow
PoE	Power over Ethernet	Rx+/–	Ethernet Receive Path	GN	Green
IN	Safety Input	Tx+/–	Ethernet Send Path	BU	Blue
OSSD	Safety Output	Bus	Interfaces-Bus A(+)/B(–)	VT	Violet
Signal	Signal Output	La	Emitted Light disengageable	GY	Grey
BI_D+/-	Ethernet Gigabit bidirect. data line (A-D)	Mag	Magnet activation	WH	White
$EN_{0\,RS422}$	Encoder 0-pulse 0-0̄ (TTL)	RES	Input confirmation	PK	Pink
		EDM	Contactor Monitoring	GNYE	Green/Yellow

Table 1

Working Distance	0 m	4 m
Light Spot Diameter	5 mm	< 8 mm

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission

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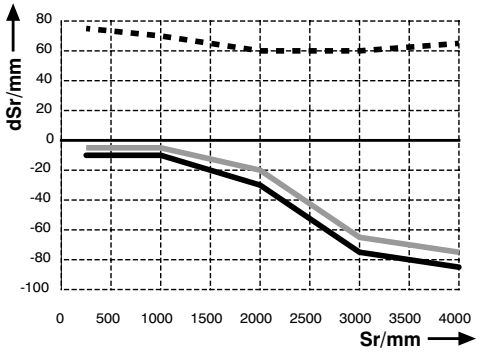

Sr = Switching Distance
dSr = Switching Distance Change

black 6 % remission
grey 18 % remission
Aluminum