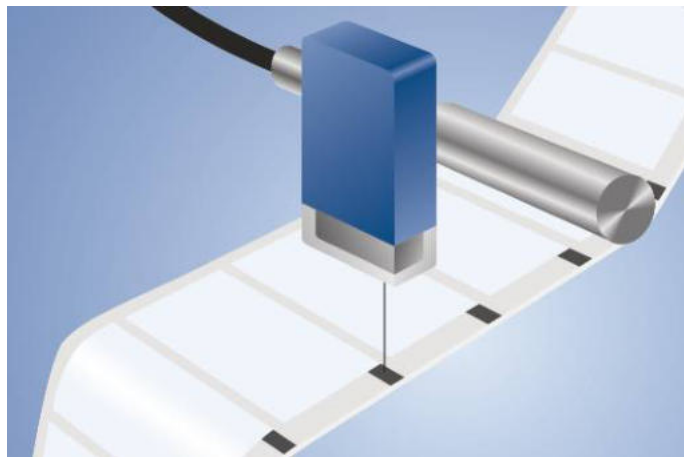




- Compact housing
- Small light spot
- Teach-in, external teach-in
- White light for recognition of any print mark combinations

These sensors have been specially designed to recognize print marks. They have a very small spot and use a white light LED with long service life. Only one sensor is required for the recognition of all color combinations, as well as the difference in brightness between print marks and the background.

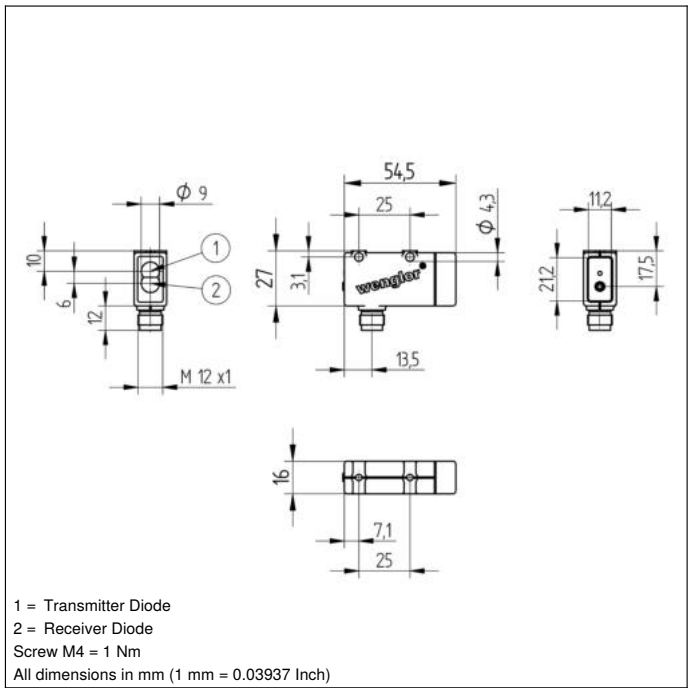


Technical Data

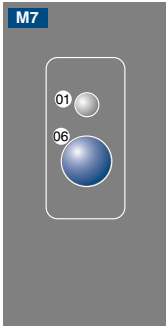
Optical Data	
Working Range	12...18 mm
Working Distance	15 mm
Resolution	20 Gray Scale
Switching Hysteresis	< 2 %
Light Source	White Light
Wavelength	400...700 nm
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	1,5 × 2,5 mm
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (U _b = 24 V)	< 30 mA
Switching Frequency	5 kHz
Response Time	100 µs
Off-Delay	20 ms
Off-Delay (RS-232)	0...2 s
Temperature Drift	< 2 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
NPN Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Teach Mode	ZT, FT
Protection Class	III
Mechanical Data	
Setting Method	Teach-In
Housing Material	Plastic
Full Encapsulation	yes
Degree of Protection	IP67
Connection	M12 × 1; 4-pin
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	2164,07 a
NPN NO/NC switchable	●
RS-232 with Adapterbox	●
Connection Diagram No.	352
Control Panel No.	M7
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	360

Complementary Products

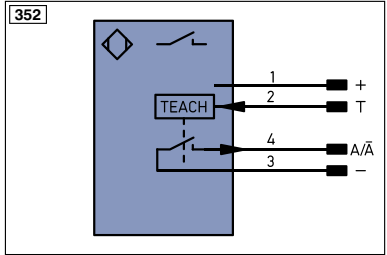
Adapterbox A232	
Protective Housing ZSV-0x-01	
Set Protective Housing ZSM-NN-02	
Software	



Ctrl. Panel



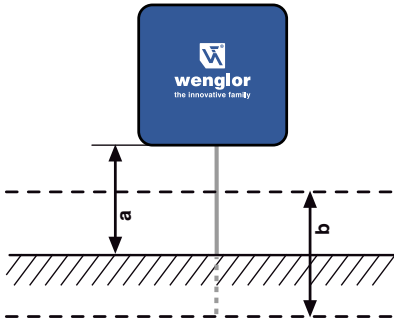
01 = Switching Status Indicator
06 = Teach Button



Legend

+	Supply Voltage +	PT	Platinum measuring resistor	ENAR5422	Encoder A/Ä (TTL)
-	Supply Voltage 0 V	nc	not connected	ENB5422	Encoder B/B (TTL)
~	Supply Voltage (AC Voltage)	U	Test Input	ENa	Encoder A
A	Switching Output (NO)	U	Test Input inverted	ENb	Encoder B
Ä	Switching Output (NC)	W	Trigger Input	AMIN	Digital output MIN
V	Contamination/Error Output (NO)	W-	Ground for the Trigger Input	AMAX	Digital output MAX
Ä	Contamination/Error Output (NC)	O	Analog Output	AOK	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)	AWV	Valve Output	OLT	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	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
EN05422	Encoder 0-pulse 0-0 (TTL)	RES	Input confirmation	PK	Pink
		EDM	Contactur Monitoring	GNYE	Green/Yellow

Ideal Working Distance



a = Working Distance
b = Working Range

