

# Print Mark Reader

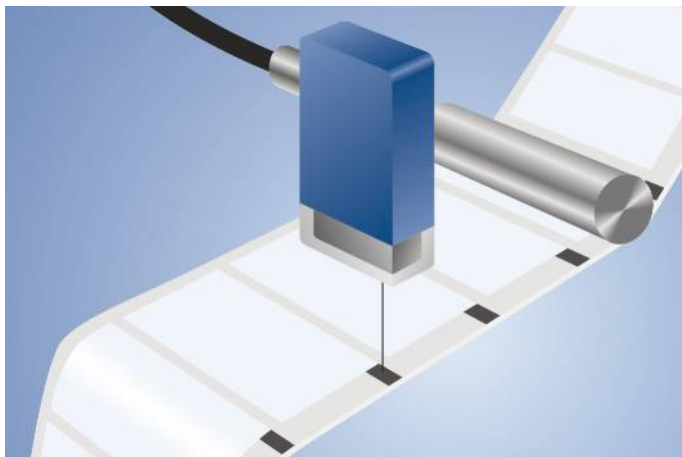
## WM03NCT2

Part Number



- 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

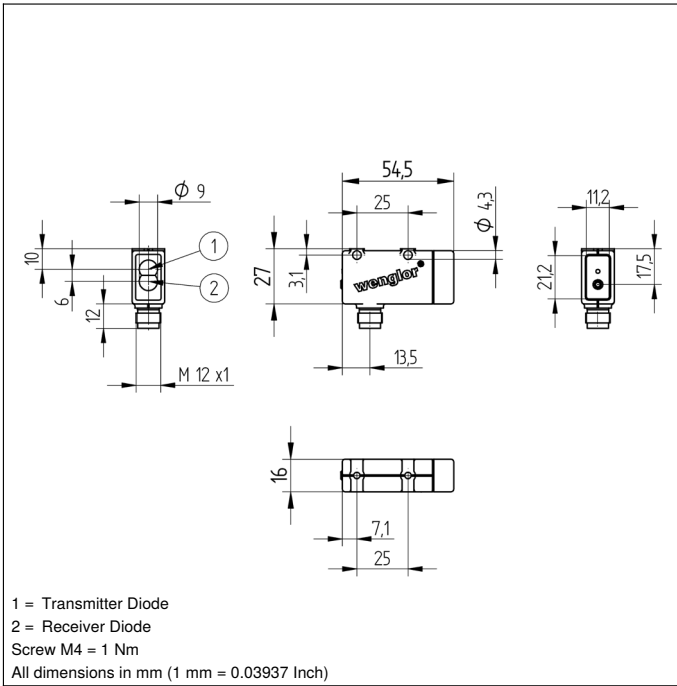
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (U <sub>b</sub> = 24 V)	< 30 mA
Switching Frequency	5 kHz
Response Time	100 μs
Off-Delay	20 ms
Off-Delay (RS-232)	0...2 s
Temperature Drift	< 2 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
NPN Switching Output/Switching 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

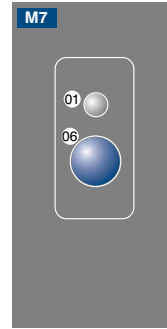
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	2164,07 a
NPN NO/NC switchable	●
RS-232 with Adapterbox	●
Connection Diagram No.	<b>352</b>
Control Panel No.	<b>M7</b>
Suitable Connection Equipment No.	<b>2</b>
Suitable Mounting Technology No.	<b>360</b>

### Complementary Products

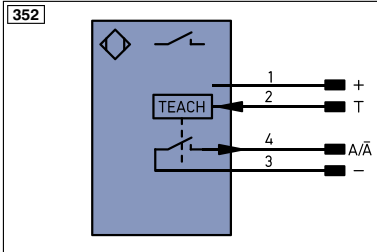
Adapterbox A232	
Protective Housing ZSV-0x-01	
Set Protective Housing ZSM-NN-02	
Software	



### Ctrl. Panel

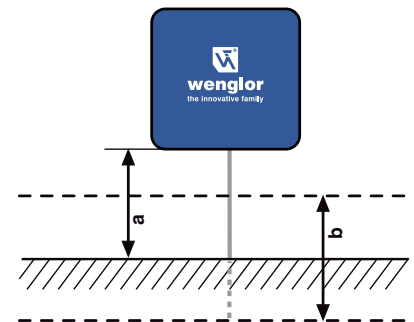


01 = Switching Status Indicator  
 06 = Teach Button



Legend			
+	Supply Voltage +	PT	Platinum measuring resistor
-	Supply Voltage 0 V	nc	not connected
~	Supply Voltage (AC Voltage)	U	Test Input
A	Switching Output (NO)	Ū	Test Input inverted
Ā	Switching Output (NC)	W	Trigger Input
V	Contamination/Error Output (NO)	W-	Ground for the Trigger Input
ṽ	Contamination/Error Output (NC)	O	Analog Output
E	Input (analog or digital)	O-	Ground for the Analog Output
T	Teach Input	BZ	Block Discharge
Z	Time Delay (activation)	AMV	Valve Output
S	Shielding	a	Valve Control Output +
RxD	Interface Receive Path	b	Valve Control Output 0 V
TxD	Interface Send Path	SY	Synchronization
RDY	Ready	SY-	Ground for the Synchronization
GND	Ground	E+	Receiver-Line
CL	Clock	S+	Emitter-Line
E/A	Output/Input programmable	±	Grounding
	IO-Link	SnR	Switching Distance Reduction
PoE	Power over Ethernet	Rx+/-	Ethernet Receive Path
IN	Safety Input	Tx+/-	Ethernet Send Path
OSSD	Safety Output	Bus	Interfaces-Bus A(+)/B(-)
Signal	Signal Output	La	Emitted Light disengageable
Bl-D+/-	Ethernet Gigabit bidirect. data line (A-D)	Mag	Magnet activation
EN0.65422	Encoder 0-pulse 0-0 (TTL)	RES	Input confirmation
		EDM	Contactur Monitoring
		EN0.65422	Encoder A/Ā (TTL)
		EN0.65422	Encoder B/B̄ (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 757
		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

### Ideal Working Distance



a = Working Distance  
 b = Working Range

