

Print Mark Reader

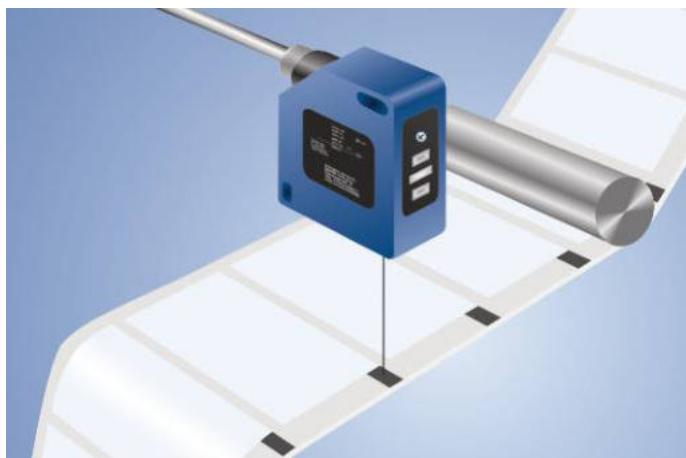
WP02PAT80

Part Number



- Digital read-out of gray-scale values via the RS-232 interface
- Teach-in, dynamic teach-in, external teach-in, RS-232 interface
- Very high contrast resolution
- Very small light spot: 0,7 x 2 mm

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...16 mm
Working Distance	14 mm
Resolution	100 Gray Scale
Switching Hysteresis	< 1 %
Light Source	White Light
Wavelength	400...700 nm
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	0,7 x 2 mm

Electrical Data

Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 5 mA
Switching Frequency	25 kHz
Response Time	20 µs
On-/Off-Delay	0...100 ms
Temperature Drift	< 1 %
Temperature Range	-25...60 °C
Number of Switching Outputs	2
Switching Output Voltage Drop	1,5 V
Switching Output/Switching Current	200 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Lockable	yes
Teach Mode	ZT, DT, TP
Interface	RS-232
Baud Rate	38400 Bd
Number of Digital Inputs	2
Protection Class	III

Mechanical Data

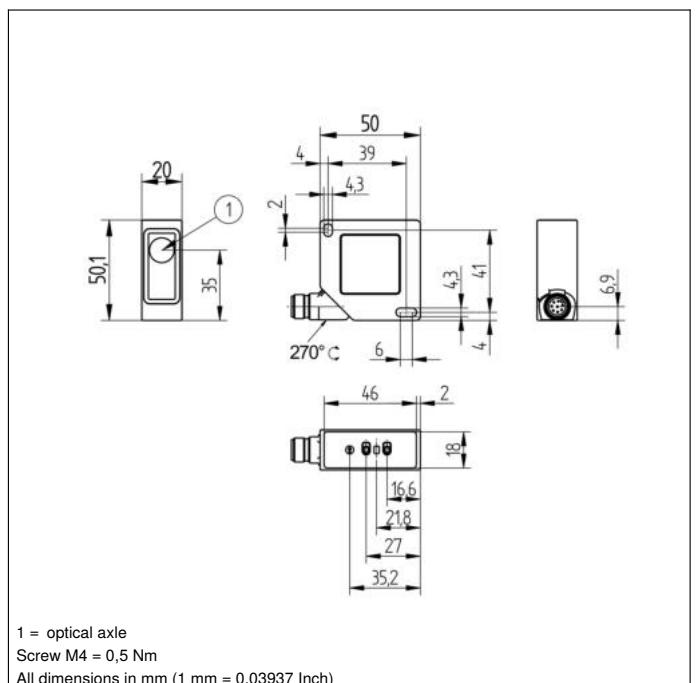
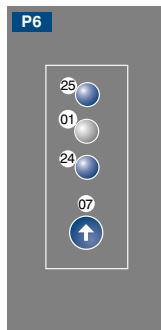
Setting Method	Teach-In
Housing Material	Plastic
Degree of Protection	IP67
Connection	M12 x 1; 8-pin

Safety-relevant Data

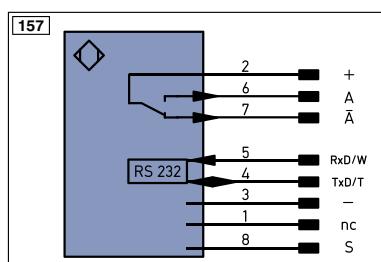
MTTFd (EN ISO 13849-1)	1094,91 a
PNP NO/NC antivalent	●
RS-232 Interface	●
Connection Diagram No.	157
Control Panel No.	P6
Suitable Connection Equipment No.	80
Suitable Mounting Technology No.	380

Complementary Products

Fieldbus Gateway ZAGxxxN01, EPGG001
Interface Cable S232W3
Protective Housing ZSV-0x-01
Set Protective Housing ZSP-NN-02
Software


Ctrl. Panel


01 = Switching Status Indicator
07 = Selector Switch
24 = Plus Button
25 = Minus Button

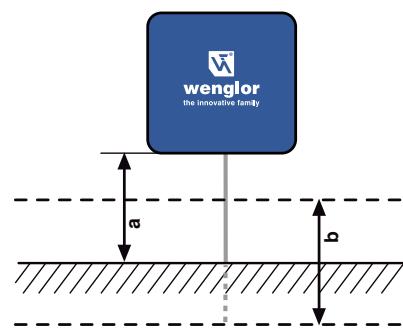

Legend

PT	Platinum measuring resistor
nc	not connected
U	Test Input
Ü	Test Input inverted
W	Trigger Input
W-	Ground for the Trigger Input
O	Analog Output
O-	Ground for the Analog Output
BZ	Block Discharge
Awv	Valve Output
a	Valve Control Output +
b	Valve Control Output 0 V
SY	Synchronization
SY-	Ground for the Synchronization
E+	Receiver-Line
E-	Emitter-Line
±	Grounding
SnR	Switching Distance Reduction
Rx+/-	Ethernet Receive Path
Tx+/-	Ethernet Send Path
Bus	Interfaces-Bus A(+)/B(-)
La	Emitted Light disengageable
Mag	Magnet activation
RES	Input confirmation
EDM	Contactor Monitoring

EN_{RS422} Encoder A/Ä (TTL)
EN_{BRS422} Encoder B/ß (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

