

Reflex Sensor with Background Suppression

HM24PA2

Part Number



- Electronic background suppression
- Red light

Technical Data

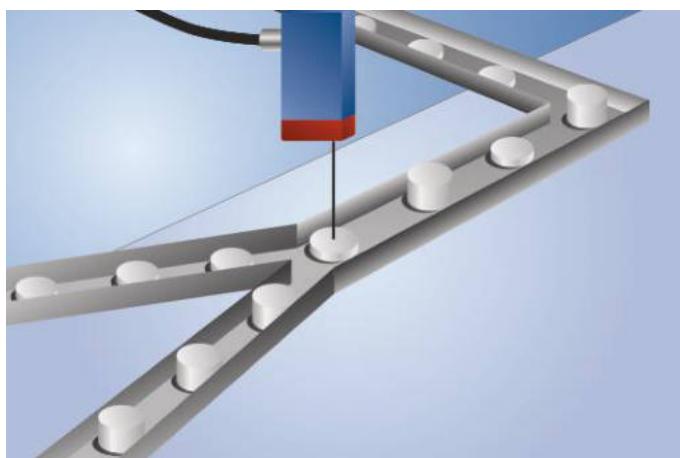
Optical Data

Range	150 mm
Adjustable Range	40...150 mm
Switching Hysteresis	< 5 %
Light Source	Red Light
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1

Electrical Data

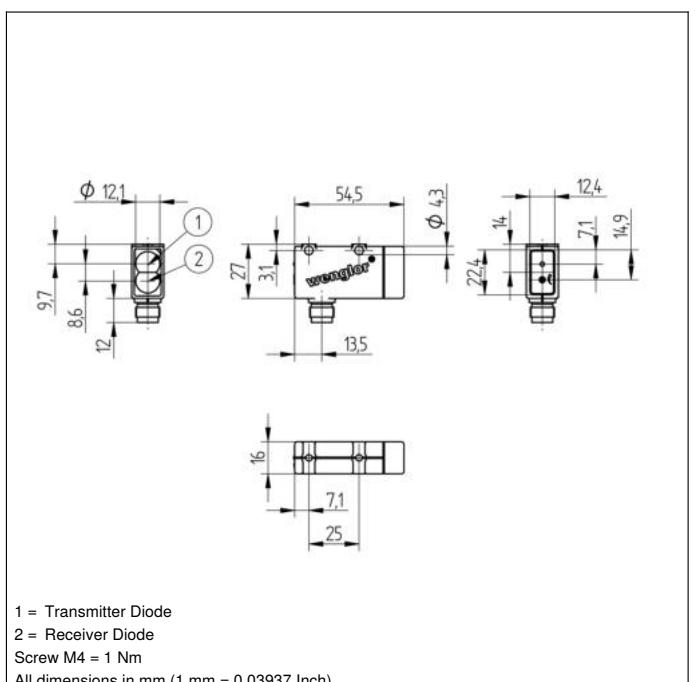
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 30 mA
Switching Frequency	900 Hz
Response Time	555 µs
Temperature Drift	< 5 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	200 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Protection Class	III
Setting Method	Potentiometer
Housing Material	Plastic
Full Encapsulation	yes
Degree of Protection	IP67
Connection	M12 x 1; 4-pin
PNP NO/NC antivalent	●
Connection Diagram No.	101
Control Panel No.	M4
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	360

These sensors detect distance by measuring angles. They are particularly good at recognizing objects in front of any background. The color, shape and surface characteristics of the object have practically no influence on sensor switching performance.

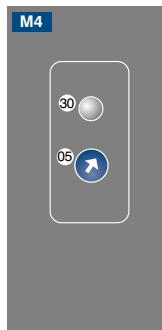


Complementary Products

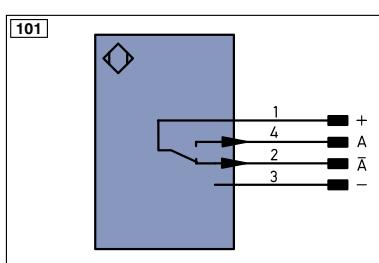
PNP-NPN Converter BG2V1P-N-2M
Protective Housing ZSV-0x-01
Set Protective Housing ZSM-NN-02



Ctrl. Panel



05 = Switching Distance Adjuster
30 = Switching Status/Contamination Warning



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
AVW	Valve Output
a	Valve Control Output +
b	Valve Control Output 0 V
SY	Synchronization
SY-	Ground for the Synchronization
E+	Receiver-Line
S+	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

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 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

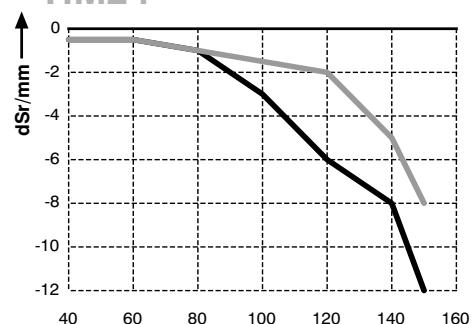
Table 1

Detection Range	60 mm	100 mm	150 mm
Light Spot Diameter	4 mm	5 mm	12 mm

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission

HM24



Sr = Switching Distance

dSr = Switching Distance Change

black 6 % remission
grey 18 % remission

