Reflex Sensor
with Background Suppression

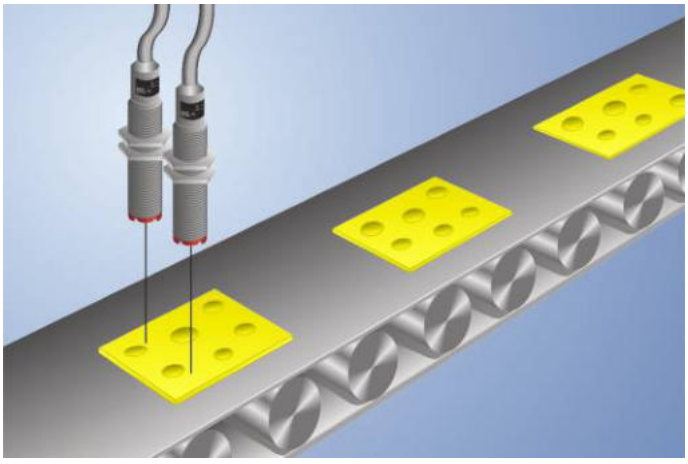
HD11PA3
Part Number

- **Adjustable switching distance**
- **Electronic background suppression**
- **Red light**
- **Stainless steel housing**

Technical Data

Optical Data	
Range	120 mm
Adjustable Range	35...120 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	600 Hz
Response Time	833 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
Mechanical Data	
Setting Method	Potentiometer
Housing Material	Stainless Steel
Full Encapsulation	yes
Degree of Protection	IP67
Connection	M12 × 1; 4-pin
PNP NO/NC antivalent	●
Connection Diagram No.	101
Control Panel No.	D6
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	150

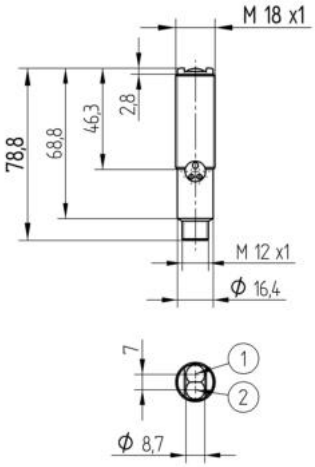
These sensors detect distance by measuring angles. They are particularly good at recognizing objects in front of any background. The color, shape and surface characteristics of the object have practically no influence on sensor switching performance.



Complementary Products

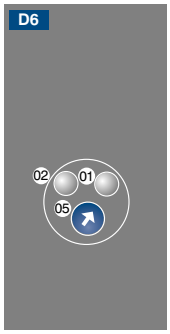
Dust Extraction Tube STAUBTUBUS-01

PNP-NPN Converter BG2V1P-N-2M

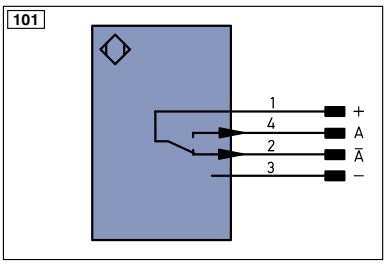


1 = Transmitter Diode
2 = Receiver Diode
All dimensions in mm (1 mm = 0.03937 Inch)

Ctrl. Panel



01 = Switching Status Indicator
02 = Contamination Warning
05 = Switching Distance Adjuster



Legend

+	Supply Voltage +		
–	Supply Voltage 0 V		
~	Supply Voltage (AC Voltage)		
A	Switching Output	(NO)	
Ā	Switching Output	(NC)	
V	Contamination/Error Output	(NO)	
V̄	Contamination/Error Output	(NC)	
E	Input (analog or digital)		
T	Teach Input		
Z	Time Delay (activation)		
S	Shielding		
RxD	Interface Receive Path		
TxD	Interface Send Path		
RDY	Ready		
GND	Ground		
CL	Clock		
E/A	Output/Input programmable		
	IO-Link		
PoE	Power over Ethernet		
IN	Safety Input		
OSSD	Safety Output		
Signal	Signal Output		
BI_D+/-	Ethernet Gigabit bidirect. data line (A-D)		
EN0 RS422	Encoder 0-pulse 0-0̄ (TTL)		
PT	Platinum measuring resistor		
nc	not connected		
U	Test Input		
Ū	Test Input inverted		
W	Trigger Input		
W–	Ground for the Trigger Input		
O	Analog Output		
O–	Ground for the Analog Output		
BZ	Block Discharge		
AW	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		
ENA RS422	Encoder A/Ā (TTL)		
ENB RS422	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

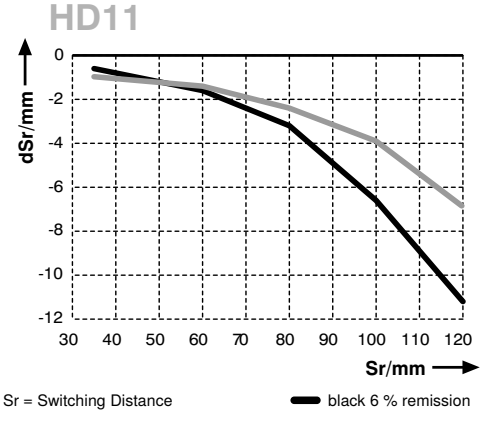
BK	Black
BN	Brown
RD	Red
OG	Orange
YE	Yellow
GN	Green
BU	Blue
VT	Violet
GY	Grey
WH	White
PK	Pink
GNYE	Green/Yellow

Table 1

Detection Range	60 mm	120 mm
Light Spot Diameter	2,5 mm	5 mm

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission



Sr = Switching Distance
dSr = Switching Distance Change
black 6 % remission
grey 18 % remission