Reflex Sensor

TF88PA3S201

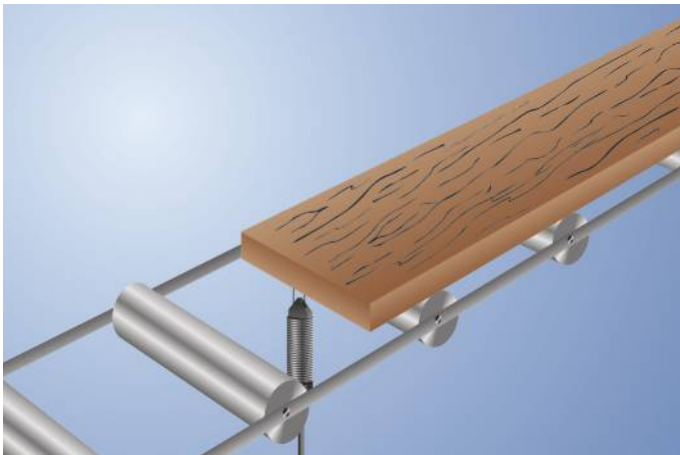Part Number

- **For applications in dusty and moist environments**
- **No optical crosstalk**
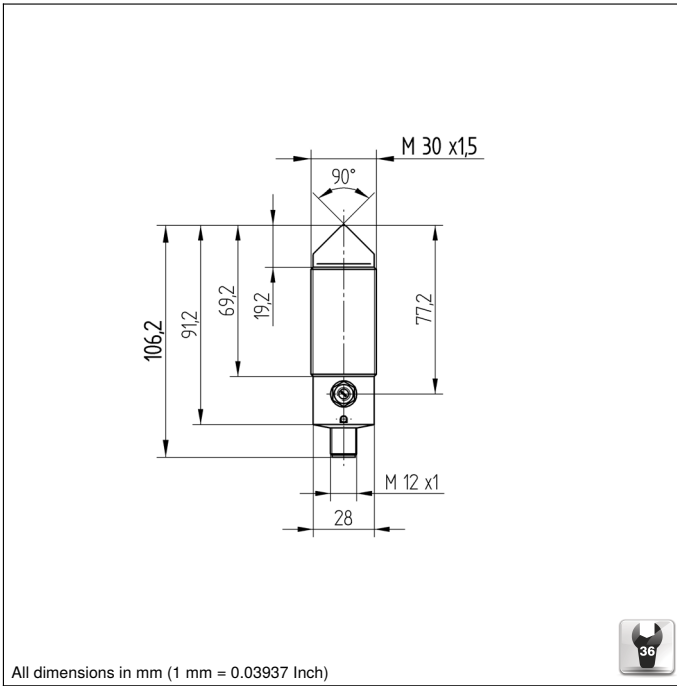
Technical Data

Optical Data	
Range	2000 mm
Switching Hysteresis	< 15 %
Light Source	Infrared Light
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Opening Angle	12 °
Electrical Data	
Supply Voltage	10...30 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Switching Frequency	150 Hz
Response Time	3300 µs
Temperature Drift	< 10 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	200 mA
Residual Current Switching Output	< 50 µA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Protection Class	III
Mechanical Data	
Setting Method	Potentiometer
Housing Material	CuZn, nickel-plated
Full Encapsulation	yes
Degree of Protection	IP65
Connection	M12 × 1; 4-pin
PNP NO/NC antivalent	●
Connection Diagram No.	101
Control Panel No.	F2
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	130

The transmitter and receiver in these sensors are located in a single housing. The sensor evaluates transmitted light reflected back from the object. The output is switched as soon as an object passes the selected range. Bright objects reflect more light than dark objects, and can thus be recognized from greater distances.
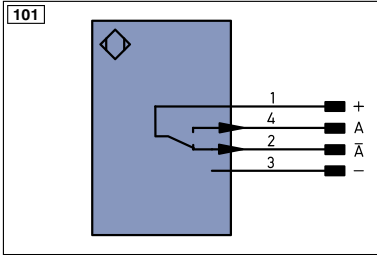
Complementary Products

PNP-NPN Converter BG2V1P-N-2M

Photoelectronic Sensors

All dimensions in mm (1 mm = 0.03937 Inch)

M 30 x1,5

90°

106,2
91,2
69,2
19,2
77,2

M 12 x1
28

36

Ctrl. Panel

05
30

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

101

1 +
4 A
2 Ā
3 −

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)
EN0RS422	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
AMW	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/Ā (TTL)
ENBRS422	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