

Color Sensor

P1XF001

Part Number



- **12 switching outputs for evaluation of detailed color analysis thanks to spectral measurement in ROYGBV color space**
- **Ready for Industrie 4.0 with IO-Link version 1.1**
- **Reliable evaluation of measured values even with distance fluctuation**

The spectral composition of the colors of objects can be measured and metamerism effects can be compensated for with the 6-channel Multispectral Sensor. Innovative color chip technology divides the selected color spectrum into six spectral ranges (ROYGBV color space) with separately adjustable tolerance ranges. In combination with fiber-optic cables, the sensor adapts itself to the specific requirements of any given application and can be operated in the scanning as well as the through-beam mode. The P1XF001 is equipped with twelve switching outputs and integrated LED technology, which automatically ensures ideal adjustment of light intensity. Sensor settings can be selected directly at the graphical display (OLED), via the RS-232 port or via the IO-Link interface.



6 Channel Multi Spectral Sensor

Technical Data

Optical Data

Spectral Sensitivity	450...700 nm
Light Source	White Light
Service Life (T = +25 °C)	50000 h
Max. Ambient Light	10000 Lux

Electrical Data

Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (Ub = 24 V)	~ 260 mA
Switching Frequency	2 kHz
Response Time	~ 500 µs x filter
On-/Off-Delay	0...10000 ms
Temperature Range	-25...60 °C
Number of Switching Outputs	12
Switching Output Voltage Drop	1,5 V
PNP Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Teach Mode	FT
Interface	IO-Link V1.1/RS-232
Number of Digital Inputs	3
Protection Class	III

Mechanical Data

Setting Method	Menu (OLED)
Housing Material	Plastic
Degree of Protection	IP67
Connection	M12 x 1; 4+8-pin
DIN-Rail mounting	35 mm

Safety-relevant Data

MTTFd (EN ISO 13849-1)	345,43 a
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Function

Selectable menu language	yes
Switchable to NC/NO	
Configurable as PNP/NPN/Push-Pull	
RS-232 Interface	
IO-Link	
Error Output	
Contamination Output	
Connection Diagram No.	127
Control Panel No.	X2
Suitable Connection Equipment No.	2 89

Display brightness may decrease with age. This does not result in any impairment of the sensor function.

Complementary Products

Glass Fiber-Optic Cable

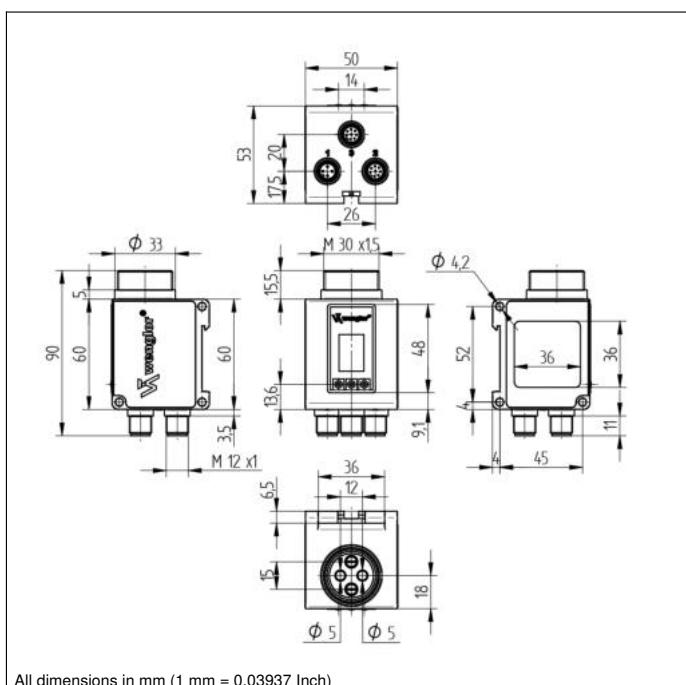
Interface Cable S232W3

IO-Link Master

Lens LA27

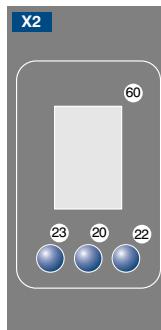
Plastic Fiber-Optic Cable

Software

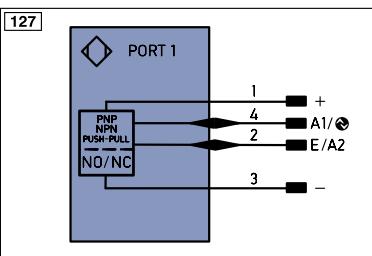


All dimensions in mm (1 mm = 0.03937 Inch)

Ctrl. Panel



20 = Enter Button
22 = UP Button
23 = Down Button
60 = Display

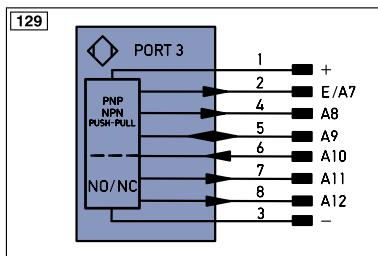
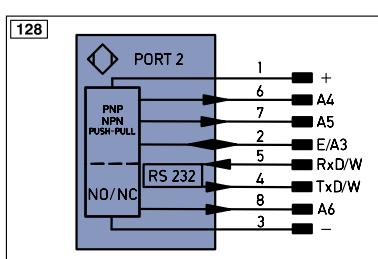


Legend

+	Supply Voltage +
-	Supply Voltage 0 V
~	Supply Voltage (AC Voltage)
A	Switching Output (NO)
Ā	Switching Output (NC)
V	Contamination/Error Output (NO)
ĀV	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	IO-Link
PoE	Power over Ethernet
IN	Safety Input
OSD	Safety Output
Signal	Signal Output
BLD	Ethernet Gigabit bidirec. data line (A-D)
EN _{RS422}	Encoder 0-pulse 0-0 (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
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

EN _{RS422}	Encoder A/Ā (TTL)
EN _{BR422}	Encoder B/Ā (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



Range

When the following fiber-optic cable is used

FL200_	600 mm	161-256-10_	0...25 mm
FL210_	50 mm	301-251-10_	0...50 mm
FL30/50	0...50 mm	Z96D001	0...10 mm
FL330_	18 mm	Z96D001+LA27	0...30 mm
FL340_	100 mm		

