Color Sensor

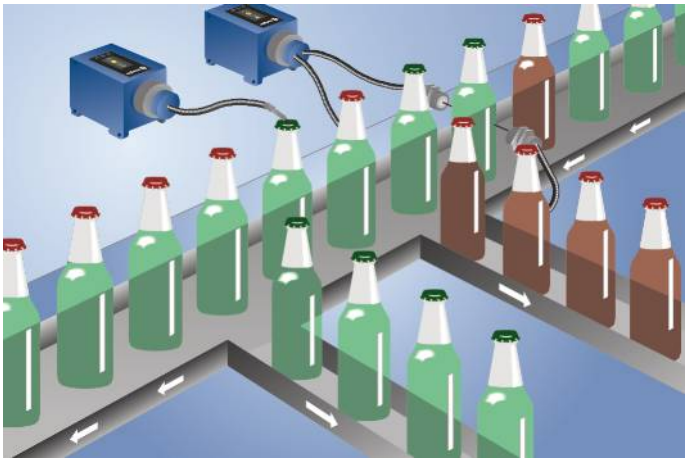
P1XF001

Part Number

6 Channel Multi Spectral Sensor

- **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.



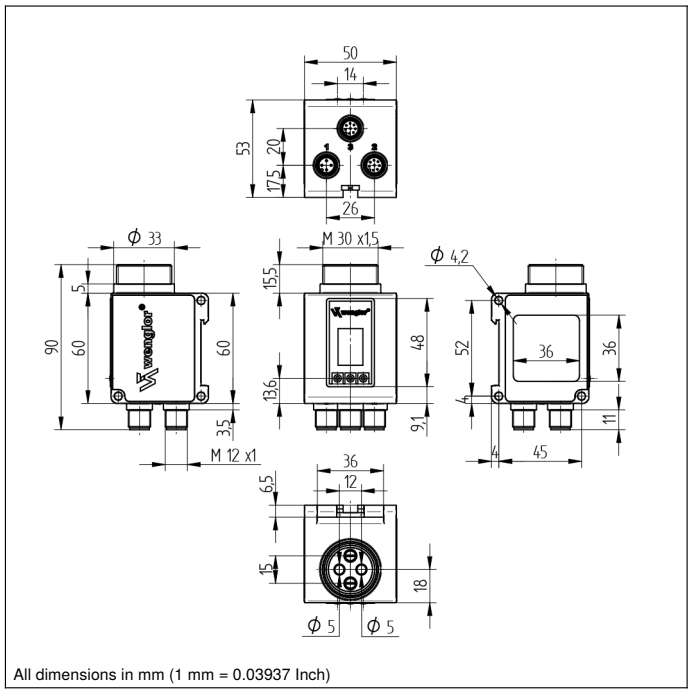
Technical Data

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 × 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 × 1; 4+8-pin
DIN-Rail mounting	35 mm
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	345,43 a
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.

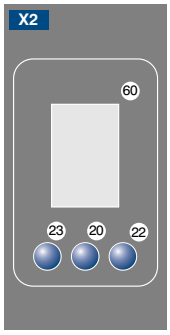
Complementary Products

Glass Fiber-Optic Cable
Interface Cable S232W3
IO-Link Master
Lens LA27
Plastic Fiber-Optic Cable
Software

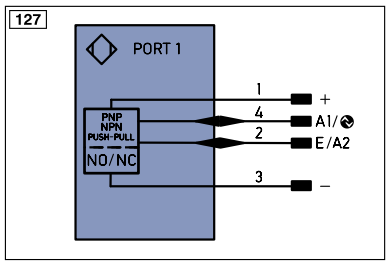


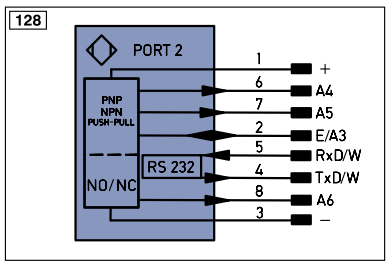
All dimensions in mm (1 mm = 0.03937 Inch)

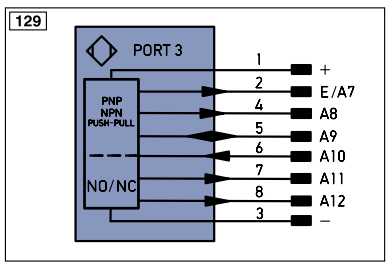
Ctrl. Panel



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







Legend

+	Supply Voltage +		PT	Platinum measuring resistor		ENA RS422	Encoder A/Ā (TTL)
–	Supply Voltage 0 V		nc	not connected		ENB RS422	Encoder B/B̄ (TTL)
~	Supply Voltage (AC Voltage)		U	Test Input		ENA	Encoder A
A	Switching Output	(NO)	Ū	Test Input inverted		ENB	Encoder B
Ā	Switching Output	(NC)	W	Trigger Input		AMIN	Digital output MIN
V	Contamination/Error Output	(NO)	W–	Ground for the Trigger Input		AMAX	Digital output MAX
V̄	Contamination/Error Output	(NC)	O	Analog Output		AOK	Digital output OK
E	Input (analog or digital)		O–	Ground for the Analog Output		SY In	Synchronization In
T	Teach Input		BZ	Block Discharge		SY OUT	Synchronization OUT
Z	Time Delay (activation)		AMV	Valve Output		OLT	Brightness output
S	Shielding		a	Valve Control Output +		M	Maintenance
RxD	Interface Receive Path		b	Valve Control Output 0 V		rsv	reserved
TxD	Interface Send Path		SY	Synchronization		Wire Colors according to DIN IEC 757	
RDY	Ready		SY–	Ground for the Synchronization		BK	Black
GND	Ground		E+	Receiver-Line		BN	Brown
CL	Clock		S+	Emitter-Line		RD	Red
E/A	Output/Input programmable		⏚	Grounding		OG	Orange
	IO-Link		SnR	Switching Distance Reduction		YE	Yellow
PoE	Power over Ethernet		Rx+/–	Ethernet Receive Path		GN	Green
IN	Safety Input		Tx+/–	Ethernet Send Path		BU	Blue
OSSD	Safety Output		Bus	Interfaces-Bus A(+)/B(–)		VT	Violet
Signal	Signal Output		La	Emitted Light disengageable		GY	Grey
BI_D+/-	Ethernet Gigabit bidirect. data line (A-D)		Mag	Magnet activation		WH	White
EN0 RS422	Encoder 0-pulse 0-0̄ (TTL)		RES	Input confirmation		PK	Pink
			EDM	Contactor Monitoring		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		