

Contrast Sensor

P1MW001

Part Number



- Compact housing
- Small light spot
- Teach-in, external teach-in
- White light for recognition of any print mark combinations

These sensors have been specially designed to recognize print marks. They have a very small spot and use a white light LED with long service life. Only one sensor is required for the recognition of all color combinations, as well as the difference in brightness between print marks and the background.

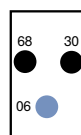
Technical Data

Optical Data	
Working Range	10...30 mm
Working Distance	20 mm
Resolution (Gray Scale)	20
Switching Hysteresis	< 2 %
Light Source	White Light
Wavelength	400...700 nm
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	2 × 2,5 mm
Electrical Data	
Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (U _b = 24 V)	< 30 mA
Switching Frequency	14 kHz
Response Time	50 µs
Off-Delay	20 ms
Temperature Drift	< 5 %
Temperature Range	-25...60 °C
Switching Output Voltage Drop	< 2,5 V
PNP Switching Output/Switching Current	100 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Interface	IO-Link V1.1
IO-Link transmission speed	COM2
Protection Class	III
IO-Link Version	1.1
Mechanical Data	
Setting Method	Teach-In
Housing Material	Plastic, ABS/GF
Optic Cover	Plastic, PMMA
Degree of Protection	IP67
Degree of Protection	IP68
Connection	M12 × 1; 4-pin
PNP NO	●
External teach-in input	●
IO-Link	●
Connection Diagram No.	374
Control Panel No.	A48
Suitable Connection Equipment No.	2

Complementary Products

IO-Link Master
Protective Housing ZSV-0x-01
Set Protective Housing ZSM-NN-02
Software

A 48



06 = Teach Button

30 = Switching Status/Contamination Warning

68 = Power LED

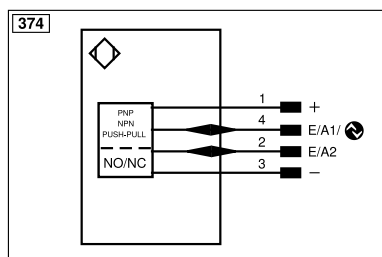


2 = Receiver Diode

Screw M4 = 1 Nm

All dimensions in mm

All dimensions in mm (1 mm = 0.03937 Inch)



Legend					
+	Supply Voltage +	nc	Not connected	EN _{BRG-022}	Encoder B/B̄ (TTL)
~	Supply Voltage 0 V	U	Test Input	ENa	Encoder A
~	Supply Voltage (AC Voltage)	Ü	Test Input inverted	ENb	Encoder B
A	Switching Output (NO)	W	Trigger Input	AMIN	Digital output MIN
Ä	Switching Output (NC)	W-	Ground for the Trigger Input	AMAX	Digital output MAX
V	Contamination/Error Output (NO)	O	Analog Output	AOK	Digital output OK
Ṽ	Contamination/Error Output (NC)	O-	Ground for the Analog Output	SY In	Synchronization In
E	Input (analog or digital)	BZ	Block Discharge	SY OUT	Synchronization OUT
T	Teach Input	ÄMV	Valve Output	OLt	Brightness output
Z	Time Delay (activation)	a	Valve Control Output +	M	Maintenance
S	Shielding	b	Valve Control Output 0 V	rsv	Reserved
RxD	Interface Receive Path	SY	Synchronization	Wire Colors according to DIN IEC 60757	
TxD	Interface Send Path	SY-	Ground for the Synchronization		
RDY	Ready	E+	Receiver-Line	BK	Black
GND	Ground	S+	Emitter-Line	BN	Brown
CL	Clock	≠	Grounding	RD	Red
E/A	Output/Input programmable	SnR	Switching Distance Reduction	OG	Orange
	IO-Link	Rx+/-	Ethernet Receive Path	YE	Yellow
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path	GN	Green
IN	Safety Input	BUS	Interfaces-Bus A(+)/B(-)	BU	Blue
OSSD	Safety Output	La	Emitted Light disengageable	VT	Violet
Signal	Signal Output	Mag	Magnet activation	GY	Grey
BI_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation	WH	White
EN _{0 RS422}	Encoder 0-pulse 0/0̄ (TTL)	EDM	Contactor Monitoring	PK	Pink
PT	Platinum measuring resistor	FN _{AS422}	Encoder A/Ä (TTL)	GNYE	Green/Yellow