

1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus



Basic features

Additional features	Detection of the angular position
Application	360° detection
Approval/Conformity	cULus CE EAC WEEE
Frame rate	3...40 Hz
Image resolution	640 x 480 pixels
Pixel size	6.0 x 6.0 µm
Sensor type Vision	CMOS image sensor black-white
Style	Square Connection 90°

Display/Operation

Adjuster	Adjusting ring button
Setting	Teach-in reference image Image sharpness

Electrical connection

Connection 1	M12x1-Male, 8-pin, A-coded
Connection 2	M12x1-Male, 4-pin, D-coded
Contact, surface protection	Gold plated
Polarity reversal protected	yes
Short-circuit protection	yes

Electrical data

Input function	Program select Trigger
Line-induced noise	3A
No-load current I_{o max.} at U_e	200 mA
Operating voltage U_b	22...26 VDC
Rated operating current I_e	100 mA
Rated operating voltage U_{e DC}	24 V
Ready delay t_{v max.}	10 ms
Voltage drop U_{d max.} at I_e	1.8 V

Environmental conditions

Ambient temperature	-10...55 °C
EN 60068-2-27, Shock	Half-sinus, 30 gn, 11 ms, 3x6 Half-sinus, 100 gn, 2 ms, 3x8000
EN 60068-2-6, Vibration	55 Hz, amplitude 1 mm, 3x30 min 10...2000 Hz, amplitude 1 mm, 30 gn, 3x5 h
IP rating	IP54

Functional Characteristics

Features per inspection, number max.	255
Field of view max.	320 x 240 mm
Field of view min.	16 x 12 mm
Focal length	12.0 mm
Inspections, number max.	20
LED group per IEC 62471	Exempt Group
Light type	LED, red light
MTTF (40 °C)	127 a
Special optical feature	Incident light, can be disabled
Wave length	630 nm

Interface

Duration of time function	Impulse 1...1000 ms or infinite
Interface	Ethernet 10/100 Base T
Supplementary output	Trigger output PNP
Switching output	3x PNP normally open (NO)
Time function	On/off delay Single pulse

Remarks

Do not press key using a pointed tool.
 Detection rate is dependent on the evaluation function.
 Do not use sensor where object is exposed to strong ambient light.
 Use of external illumination recommended for working distances greater than 300 mm .
 Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Appropriate connectors can be obtained from Balluff.
 Interface plug, if n.c. protect against ingress of dust, dirt and liquids. Cover cap included.
 For additional information, refer to user's guide.
 Order accessories separately.
 For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

Material

Housing material	Aluminum, Die casting, Painted ABS
Material sensing surface	PMMA
Surface protection	Painted

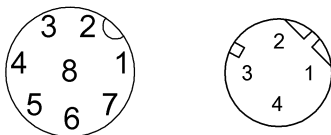
Mechanical data

Dimension	51.5 x 70 x 40 mm
Mounting part	Screw M4

Range/Distance

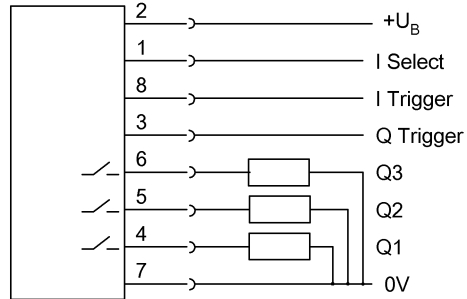
Operating Distance	50...1000 mm
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Connector Drawings



Wiring Diagrams

Conn. "PWR IO"



Conn. "To PC"

