

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



IND. CONT. EQ  
 1TD4  
 for use in the secondary of  
 a class 2 source of supply



## Basic features

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

## Display/Operation

<b>Adjuster</b>	Adjusting ring button
<b>Setting</b>	Teach-in reference image Image sharpness

## Electrical connection

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

## Electrical data

<b>Input function</b>	Program select Trigger
<b>Line-induced noise</b>	3A
<b>No-load current I<sub>o</sub> max. at U<sub>e</sub></b>	200 mA
<b>Operating voltage U<sub>b</sub></b>	22...26 VDC
<b>Rated operating current I<sub>e</sub></b>	100 mA
<b>Rated operating voltage U<sub>e</sub> DC</b>	24 V
<b>Ready delay t<sub>v</sub> max.</b>	10 ms
<b>Voltage drop U<sub>d</sub> max. at I<sub>e</sub></b>	1.8 V

**Machine Vision**  
**BVS OI-3-053-E**  
**Order Code: BVS000K**



**Environmental conditions**

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

**Functional Characteristics**

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

**Material**

<b>Housing material</b>	Aluminum, Die casting, Painted ABS
<b>Housing material, surface protection</b>	Painted
<b>Material sensing surface</b>	PMMA
<b>Surface protection</b>	Painted

**Mechanical data**

<b>Dimension</b>	51.5 x 70 x 40 mm
<b>Mounting</b>	Screw M4

**Output/Interface**

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

**Range/Distance**

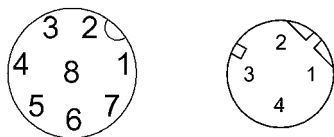
<b>Operating Distance</b>	50...1000 mm
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**Remarks**

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

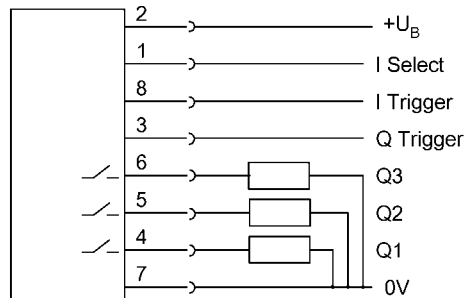
Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

**Connector Drawings**



## Wiring Diagrams

Conn. "PWR IO"



Conn. "To PC"

