

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



## Display/Operation

|          |                          |
|----------|--------------------------|
| Adjuster | Adjusting ring           |
|          | Key                      |
| Setting  | Teach-in reference image |
|          | Image sharpness          |

## Electrical connection

|                             |                             |
|-----------------------------|-----------------------------|
| Connection 1                | M12x1-Male, 8-pole, A-coded |
| Connection 2                | M12x1-Male, 4-pole, D-coded |
| Contact, surface protection | Gold plated                 |
| Short-circuit protection    | yes                         |

## Electrical data

|   |             |
|---|-------------|
| Line-induced noise                                    | 3 A         |
| MTTF (40 °C)  | 127 a       |
| No-load current I <sub>o</sub> max. at U <sub>e</sub> | 200 mA      |
| Operating voltage U <sub>b</sub>                      | 22...26 VDC |
| Polarity reversal protected                           | yes         |
| Rated operating current I <sub>e</sub> DC             | 100 mA      |
| Rated operating voltage U <sub>e</sub> DC             | 24 V        |
| Ready delay t <sub>v</sub> max.                       | 10 ms       |
| Ripple max. (% of U <sub>e</sub> )                    | 10 %        |
| Voltage drop U <sub>d</sub> max. at I <sub>e</sub>    | 1.8 V       |

## Environmental conditions

|                      |   |
|----------------------|---|
| Ambient temperature  | -10...55 °C   |
| EN 60068-2-27, Shock | Half-sinus, 30 gn, 11 ms, 3x6<br>Half-sinus, 100 gn, 2ms,<br>3x8000 |

EN 60068-2-6, Vibration

55 Hz, amplitude 1 mm, 3x30 min  
 10...2000 Hz, amplitude 1 mm,  
 30 gn, 3x5 h  
 IP54

Protection type IEC 60529

## Functional Characteristics

|                                      |           |
|--------------------------------------|-----------|
| Detection rate typ.                  | 3...50 Hz |
| Features per inspection, number max. | 255       |
| Inspections, number max.             | 20        |

## General data

|                     |                          |
|---------------------|--------------------------|
| Approval/Conformity | cULus<br>CE              |
| Style               | Square<br>Connection 90° |

## Material

|                                      |                              |
|--------------------------------------|------------------------------|
| Housing material                     | Aluminum, Die casting<br>ABS |
| Housing material, surface protection | painted                      |
| Material sensing surface             | PMMA                         |
| Surface protection                   | painted                      |

## Mechanical data

|                  |                   |
|------------------|-------------------|
| Dimension        | 51.5 x 70 x 40 mm |
| Fastening detail | Screw M4          |

## Optical data

|                    |              |
|--------------------|--------------|
| Field of view max. | 320 x 240 mm |
| Field of view min. | 16 x 12 mm   |

|                         |                                 |
|-------------------------|---------------------------------|
| Focal length            | 12.0 mm                         |
| Image resolution        | VGA 640 x 480 pixels            |
| LED group per IEC 62471 | Exempt Group                    |
| Light type              | LED Red light                   |
| Sensor type Vision      | CMOS image sensor black-white   |
| Special optical feature | Incident light, can be disabled |
| Wave length             | 630 nm                          |

### Range/Distance

|                    |              |
|--------------------|--------------|
| Operating Distance | 50...1000 mm |
|--------------------|--------------|

### 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 users guide.  
 Order accessories separately.

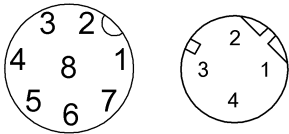
For further information on MTTF/B10d, please refer to the MTTF / B10d Certificate.

Specification of the MTTF value and the B10d value do not represent any binding quality and/or life expectancy guarantees.

### Output/Interface

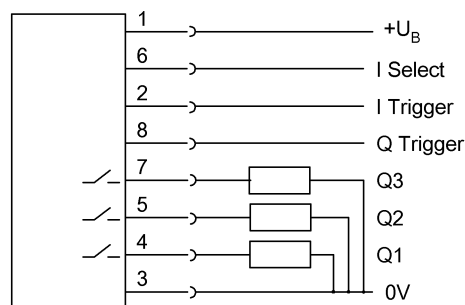
|                           |                               |
|---------------------------|-------------------------------|
| Duration of time function | Pulse 1...1000 ms or infinite |
| Input function            | Program select<br>Trigger     |
| Interface                 | Ethernet 10/100 Base T        |
| Supplementary output      | Trigger output PNP            |
| Switching output          | 3x PNP Normally open (NO)     |
| Time function             | On/off delay<br>Single pulse  |

### Connector view



### Wiring Diagram

Conn. "PWR IO"



Conn. "To PC"

