

# Vision Sensor

## B50S101

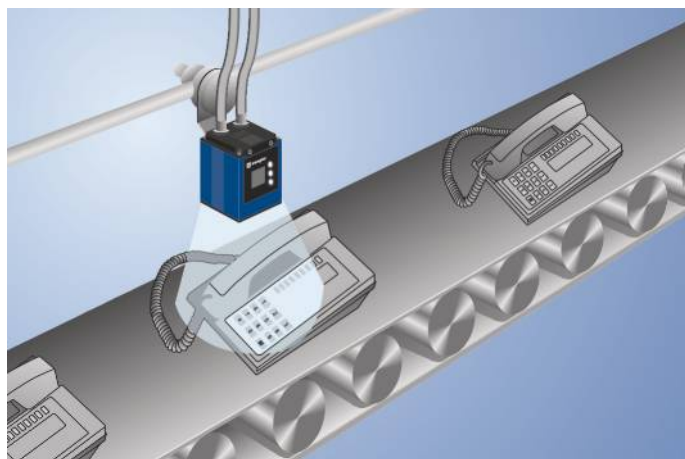
Part Number

weQubeVision



- Image processing functions
- MultiCore technology

The vision sensor weQubeVision is based on the weglor MultiCore technology. The functions autofocus, region of interest and tracking ensure optimal object detection. The following image processing modules are available: Dimensional accuracy check, sorting procedures, presence control, object counting, position output, pixel counting, filter options, and statistics evaluation.



### Technical Data

#### Optical Data

|                         |                 |
|-------------------------|-----------------|
| Working Range           | ≥ 20 mm         |
| Resolution              | 736 × 480 Pixel |
| Resolution              | 0,35 MP         |
| Focal distance          | 6,4 mm          |
| Image Chip              | monochrome      |
| Image chip size         | 1/3"            |
| Pixel Size              | 6 × 6 μm        |
| Light Source            | White Light     |
| Optics                  | Auto-focus      |
| Visual Field            | see Table 1     |
| Frame rate (fullframe)  | 25 fps          |
| Minimum object distance | 20 mm           |

#### Environmental conditions

|                      |                         |
|----------------------|-------------------------|
| Temperature Range    | -25...55 °C*            |
| Atmospheric humidity | 5...95%, non-condensing |

#### Electrical Data

|                                             |                    |
|---------------------------------------------|--------------------|
| Supply Voltage                              | 18...30 V DC       |
| Current Consumption (U <sub>b</sub> = 24 V) | < 200 mA           |
| Inputs/Outputs                              | 6                  |
| Switching Output Voltage Drop               | < 2,5 V            |
| Switching Output/Switching Current          | 100 mA             |
| Short Circuit Protection                    | yes                |
| Reverse Polarity Protection                 | yes                |
| Interface                                   | RS-232/Ethernet    |
| Industry protocols                          | EtherNet/IP™       |
| Industry protocols                          | PROFINET I/O, CC-A |
| General protocols                           | FTP                |
| General protocols                           | RS-232             |
| General protocols                           | TCP/IP             |
| General protocols                           | UDP                |
| Protection Class                            | III                |

#### Mechanical Data

|                             |                        |
|-----------------------------|------------------------|
| Housing Material            | Aluminum               |
| Degree of Protection        | IP67                   |
| UL Enclosure Type           | 1                      |
| Connection                  | M12 × 1; 12-pin        |
| Type of Connection Ethernet | M12 × 1; 8-pin, X-cod. |
| Optic Cover                 | Plastic, PMMA, ABS     |

#### Safety-relevant Data

|                        |         |
|------------------------|---------|
| MTTFd (EN ISO 13849-1) | 227,7 a |
|------------------------|---------|

#### Function

|                            |     |
|----------------------------|-----|
| Presence Check             | yes |
| Pixel Comparison           | yes |
| Reference Image Comparison | yes |
| Tracking                   | yes |
| Object detection           | yes |
| Dimensional accuracy check | yes |

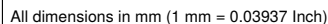
|                 |                       |
|-----------------|-----------------------|
| Web server      | yes                   |
| License package | weQubeVision Standard |

#### PNP NO

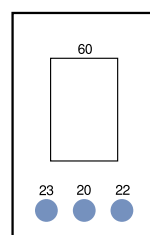
Display brightness may decrease with age. This does not result in any impairment of the sensor function.

\* -25 °C: Ambient conditions should not result in condensation; avoid the formation of ice on the front panel!

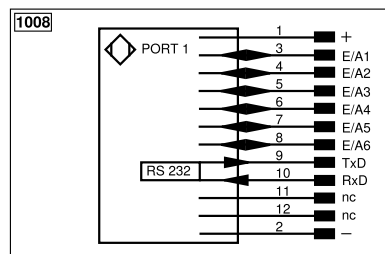
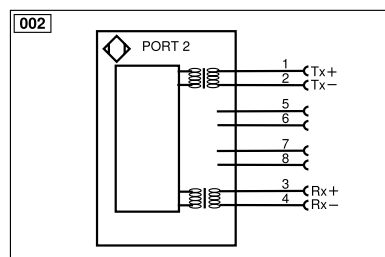
55 °C: Continuous illumination at max. 1% or flash mode at 100% brightness with an exposure time of ≤ 5 ms; may affect the service life of the product.



## X2



```
20 = Enter key
22 = Up key
23 = Down key
60 = display
```



| Legend                                                                              |                                            |                     |                                |                                        |                     |
|-------------------------------------------------------------------------------------|--------------------------------------------|---------------------|--------------------------------|----------------------------------------|---------------------|
| +                                                                                   | Supply Voltage +                           | nc                  | Not connected                  | EN <sub>BRG-022</sub>                  | Encoder B/B̄ (TTL)  |
| ~                                                                                   | Supply Voltage 0 V                         | U                   | Test Input                     | EN <sub>A</sub>                        | Encoder A           |
| ~                                                                                   | Supply Voltage (AC Voltage)                | Ü                   | Test Input inverted            | EN <sub>B</sub>                        | 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                  |                                        |                     |
| GND                                                                                 | Ground                                     | S+                  | Emitter-Line                   |                                        |                     |
| CL                                                                                  | Clock                                      | ≠                   | Grounding                      | OG                                     | Orange              |
| E/A                                                                                 | Output/Input programmable                  | SnR                 | Switching Distance Reduction   | YE                                     | Yellow              |
|  | IO-Link                                    | Rx+/-               | Ethernet Receive Path          | GN                                     | Green               |
| PoE                                                                                 | Power over Ethernet                        | Tx+/-               | Ethernet Send Path             | BU                                     | Blue                |
| IN                                                                                  | Safety Input                               | BUS                 | Interfaces-Bus A(+)/B(-)       | VT                                     | Violet              |
| OSSD                                                                                | Safety Output                              | La                  | Emitted Light disengageable    | GY                                     | Grey                |
| Signal                                                                              | Signal Output                              | Mag                 | Magnet activation              | WH                                     | White               |
| BI_D+/-                                                                             | Ethernet Gigabit bidirect. data line (A-D) | RES                 | Input confirmation             | PK                                     | Pink                |
| EN <sub>0 RS422</sub>                                                               | Encoder 0-pulse 0/0̄ (TTL)                 | EDM                 | Contactors Monitoring          | GNYE                                   | Green/Yellow        |
| PT                                                                                  | Platinum measuring resistor                | FN <sub>AS422</sub> | Encoder A/Ä (TTL)              |                                        |                     |

|                         |          |            |             |
|-------------------------|----------|------------|-------------|
| <b>Working Distance</b> | 20 mm    | 100 mm     | 200 mm      |
| <b>Visual Field</b>     | 9 × 6 mm | 65 × 42 mm | 134 × 87 mm |