

#### overview

- Universal Robots+ Certified (UR+) for UR3e, UR5e, UR10e, UR16e
- PROFINET and EtherNet/IP interface integrated
- FEX image processor
- FEXLoc 360° part location
- Flexible result conjunction
- Download VeriSens Application Suite: [www.baumer.com/vs-sw](http://www.baumer.com/vs-sw)



#### technical data

| general data                          |                                                                                                                                                                                               | electrical data   |                                                                                            |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------|
| resolution                            | 752 × 480 px                                                                                                                                                                                  | digital inputs    | 5 inputs<br>trigger<br>job selection<br>external teach-in<br>encoders (CH-A, CH-B) 500 kHz |
| sensor type                           | 1/3" CMOS, monochrome                                                                                                                                                                         | outputs           | PNP $I_{peak} = 100 \text{ mA}$ and $I_{eff} = 50 \text{ mA}$<br>(short-circuit proof)     |
| illumination                          | integrated, LED infrared (860 nm)                                                                                                                                                             | digital outputs   | 5 outputs<br>Pass / Fail<br>Flash Sync<br>Alarm<br>Camera Ready<br>Output Enable           |
| LED class                             | free group (risk free, EN 62471:2008)                                                                                                                                                         | initial setup     | Ethernet (10BASE-T / 100BASE-TX)                                                           |
| high-resolution mode                  | max. 50 inspections per second                                                                                                                                                                | process interface | PROFINET (CC-A)<br>EtherNet/IP™<br>TCP/UDP (Ethernet)<br>Universal Robot Mode              |
| high-speed mode (limited resolution)  | max. 100 inspections per second                                                                                                                                                               | visualization     | configurable web interface with <i>Mul-tiViewer</i> function                               |
| object distance min.                  | 50 mm                                                                                                                                                                                         | mechanical data   |                                                                                            |
| object distance max.                  | 450 mm                                                                                                                                                                                        | width             | 53 mm                                                                                      |
| number of jobs (products)             | ≤ 255                                                                                                                                                                                         | height            | 99,5 mm                                                                                    |
| features per job                      | 32                                                                                                                                                                                            | depth             | 38 mm                                                                                      |
| signal processing                     | Baumer FEX® 4.0                                                                                                                                                                               | weight            | ≤ 250 g                                                                                    |
| defect image memory                   | 32                                                                                                                                                                                            | material          | housing: aluminum<br>cover glass: PMMA, integrated daylight filter (780 nm)                |
| lens                                  | 8 mm                                                                                                                                                                                          |                   |                                                                                            |
| electrical data                       |                                                                                                                                                                                               |                   |                                                                                            |
| nominal voltage power supply          | 24 V +- 25%                                                                                                                                                                                   |                   |                                                                                            |
| nominal voltage power supply (add-on) | Class 2 according to NEC / protection class III                                                                                                                                               |                   |                                                                                            |
| nominal voltage power supply (info)   | The device is intended for supply from an isolated limited power source according to UL61010-1, 3rd ed cl. 9.4 or a limited energy source according to UL60950-1 or Class 2 according to NEC. |                   |                                                                                            |
| power consumption                     | max. 18 W (with I/O)                                                                                                                                                                          |                   |                                                                                            |
| inputs                                | 8 ... 30 V (polarity protected)                                                                                                                                                               |                   |                                                                                            |

## technical data

### environmental conditions

|                             |                                       |
|-----------------------------|---------------------------------------|
| operating temperature       | +5 ... +60 °C @ T = measurement point |
| storage temperature         | -20 ... +70 °C                        |
| humidity                    | 0 ... 90 % (non-condensing)           |
| protection class            | IP 67                                 |
| vibration load              | IEC 60068-2-6<br>IEC 60068-2-64       |
| mechanical shock resistance | EN 60068-2-27                         |

### code types

|             |                                                                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| barcode     | 2/5 Industrial<br>2/5 Interleaved<br>Codabar<br>Code 39<br>Code 93<br>Code 128<br>PharmaCode<br>EAN 8<br>EAN 13<br>UPC-A<br>UPC-E<br>GS1 DataBar<br>GS1 128 |
| matrix code | DataMatrix (ECC 200)<br>GS1-DataMatrix<br>QR-Code<br>PDF417                                                                                                 |
| font        | many font styles (recommended: sans serif, proportional)<br>Dot Matrix<br>characters: A-Z a-z 0-9 + - . : / ( )                                             |

### feature checks

|                    |                                                                                                                                                 |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| part location      | part location on contours<br>part location on edges<br>part location on circle<br>part location on text line                                    |
| geometry           | distance<br>circle<br>angle<br>count edges<br>point position<br>edge characteristics                                                            |
| feature comparison | count contour points<br>contour comparison<br>brightness<br>contrast<br>area size<br>count areas<br>pattern comparison<br>find object positions |
| identification     | barcode<br>matrix code<br>text                                                                                                                  |

### conformity

|            |                                                        |
|------------|--------------------------------------------------------|
| conformity | CE<br>RoHS<br>EAC<br>UL<br>KC (R-REI-BkRR-VeriSens-IP) |
|------------|--------------------------------------------------------|

### non-volatile memory

|                   |                                    |
|-------------------|------------------------------------|
| flash memory size | 2000 Mbit Flash S34ML02G100BHI0000 |
|-------------------|------------------------------------|

## Electrical connection



|                      |          |
|----------------------|----------|
| 1: PWR (+18-30 V DC) | 7: OUT3  |
| 2: Ground            | 8: IN3   |
| 3: IN1 (Trigger)     | 9: OUT4  |
| 4: OUT1              | 10: IN4  |
| 5: IN2               | 11: IN5  |
| 6: OUT2              | 12: OUT5 |



|        |        |
|--------|--------|
| 1: TD+ | 3: TD- |
| 2: RD+ | 4: RD- |

## dimension drawing

