

1) Ultrasonic transducer axis, 2) Exit direction 90° connector, 3) Display and control panel



**Basic features**

|                            |                                                                                                                                  |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Application</b>         | Distance measurement<br>Object detection                                                                                         |
| <b>Approval/Conformity</b> | cULus<br>CE<br>WEEE<br>UKCA                                                                                                      |
| <b>Operating mode</b>      | Retro-reflector<br>Refl.light scanner (window)<br>Reflectionlight scanner (switching point)<br>Analog measurement (output curve) |
| <b>Series</b>              | M30E1                                                                                                                            |

**Display/Operation**

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Adjuster</b> | Key (2x)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Display</b>  | Distance value - segment display<br>Output function- LED yellow<br>Object not in range - LED red<br>Object in range - LED green<br>Sensor settings - segment display                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Setting</b>  | Synchronous/Multiplex mode<br>Segment displ. bright/dark/off<br>Filter strength (10 levels)<br>Response delay 0 to 20 s<br>Foreground suppression range<br>Multiplex sensor address<br>Sensor calibration<br>Temperature comp. on/off<br>Output curve rising/falling<br>Analog output U/I/Auto<br>Segment display mode<br>Synchronization on/off<br>Multiplex speed<br>Measured value filter<br>Hysteresis<br>Factory setting (Reset)<br>Key disable on/off<br>Normally open/Normally closed<br>Switching distance, 2 values<br>Operating mode<br>Detection range (3 levels)<br>Teach-in mode display/button<br>Output curve window |

Ultrasonic Sensors  
**BUS M30E1-PPC-20/130-S92K**  
Order Code: **BUS0037**

**BALLUFF**

**Electrical connection**

|                             |                   |
|-----------------------------|-------------------|
| Connection                  | M12x1-Male, 5-pin |
| Polarity reversal protected | yes               |
| Short-circuit protection    | yes               |

**Electrical data**

|                                    |                                              |
|------------------------------------|----------------------------------------------|
| Current draw max.                  | 80 mA                                        |
| Hysteresis H max.                  | 20 mm                                        |
| Input function                     | Synchronization signal                       |
| Load resistance RL max. (Analog I) | 500 Ohm at UB > 20 V<br>100 Ohm at UB < 20 V |
| Load resistance RL min. (Analog V) | 100 kOhm at UB > 15 V                        |
| Operating voltage Ub               | 9...30 VDC                                   |
| Output current max.                | 200 mA                                       |
| Rated operating voltage Ue DC      | 24 V                                         |
| Switching frequency                | 8 Hz                                         |
| Synchronization                    | internal, max. 10 sensors                    |
| Ultrasonic Frequency               | 200 kHz                                      |

**Environmental conditions**

|                     |             |
|---------------------|-------------|
| Ambient temperature | -25...70 °C |
| IP rating           | IP67        |
| Storage temperature | -40...85 °C |

**Remarks**

The sensor is functional again after the overload has been eliminated.  
Reference object for Sn: tube  $\varnothing$ 27mm. Max. range refers to the aligned plate.  
Do not press key using a pointed tool.  
Order accessories separately.  
For additional information, refer to user's guide.  
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.

**Functional safety**

|              |        |
|--------------|--------|
| MTTF (40 °C) | 1483 a |
|--------------|--------|

**Interface**

|                       |                                                       |
|-----------------------|-------------------------------------------------------|
| Analog output         | Analog, voltage/Analog, current<br>0...10 V/4...20 mA |
| Output characteristic | linear rising/falling                                 |
| Switching output      | PNP normally open/normally closed (NO/NC)             |

**Material**

|                          |                             |
|--------------------------|-----------------------------|
| Housing material         | Stainless steel<br>PBT, TPU |
| Material sensing surface | PU foam/Epoxy resin/Glass   |

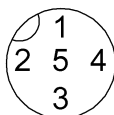
**Mechanical data**

|               |                            |
|---------------|----------------------------|
| Dimension     | $\varnothing$ 30 x 94.5 mm |
| Mounting part | Nut M30x1.5                |

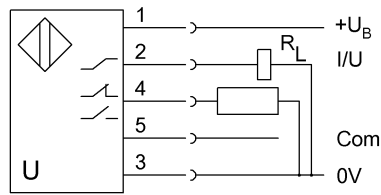
**Range/Distance**

|                             |                 |
|-----------------------------|-----------------|
| Measuring range             | 200...2000 mm   |
| Rated operating distance Sn | 1300 mm         |
| Repeat accuracy             | $\pm$ 0.15 %FS  |
| Resolution                  | $\leq$ 0.180 mm |

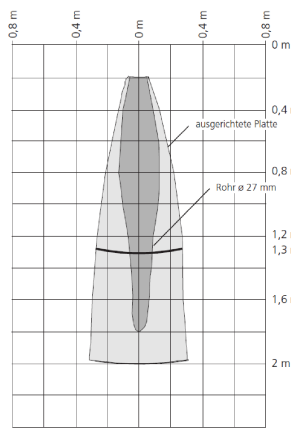
**Connector Drawings**



## Wiring Diagrams



## Technical Drawings



## Help Views

