



## Photoelectric slot sensor GL5-U/28a/155



- Miniature design
- Optimized for the detection of small parts
- High switching frequency
- Simple and fast mounting
- Clearly visible LED functional display

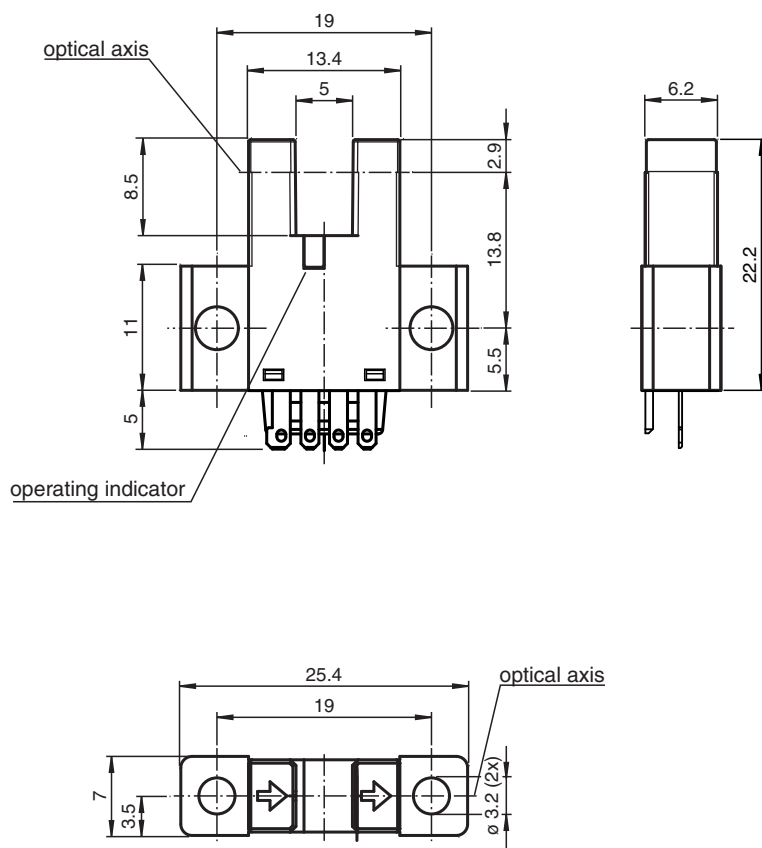
Miniature photoelectric slot sensor for the detection of small parts, U design, fork width 5 mm, infrared light, NPN outputs, flat connector



### Function

The GL5 miniature slot sensor compares a high optical performance in a small housing and is optimized to the requirements in semiconductors industry for small part detection. A wide voltage range of 5 - 24 V DC and the fastest switching frequency of 5 kHz in its class stands for the quality of this sensor. The integrated aperture allows the small part detection with a minimum object size of 0.8 x 1.8 mm. The sensor offers antivalent npn or pnp outputs. Due to a variety of different housings and an optimized housing concept offers the sensor a maximum of freedom in a crowded mounting environment.

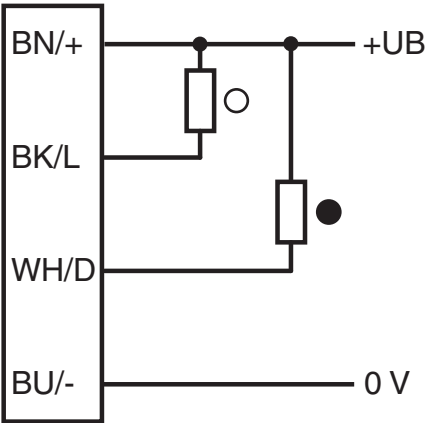
### Dimensions



## Technical Data

|                                                 |                |                                                                        |
|-------------------------------------------------|----------------|------------------------------------------------------------------------|
| <b>General specifications</b>                   |                |                                                                        |
| Light source                                    |                | IRE D                                                                  |
| Light type                                      |                | Infrared, continuous light , 940 nm                                    |
| Target size                                     |                | 0.8 x 1.8 mm                                                           |
| Slot width                                      |                | 5 mm                                                                   |
| Slot depth                                      |                | 8.5 mm                                                                 |
| Ambient light limit                             |                | 1000 Lux                                                               |
| <b>Functional safety related parameters</b>     |                |                                                                        |
| MTTF <sub>d</sub>                               |                | 3760 a                                                                 |
| Mission Time (T <sub>M</sub> )                  |                | 20 a                                                                   |
| Diagnostic Coverage (DC)                        |                | 0 %                                                                    |
| <b>Indicators/operating means</b>               |                |                                                                        |
| Function indicator                              |                | red LED lights up when receiving the light beam                        |
| <b>Electrical specifications</b>                |                |                                                                        |
| Operating voltage                               | U <sub>B</sub> | 5 ... 24 V DC , class 2                                                |
| No-load supply current                          | I <sub>0</sub> | max. 20 mA                                                             |
| Time delay before availability                  | t <sub>v</sub> | < 2 ms                                                                 |
| <b>Output</b>                                   |                |                                                                        |
| Switching type                                  |                | light/dark on                                                          |
| Signal output                                   |                | 2 NPN complementary , overvoltage protected                            |
| Switching voltage                               |                | max. 30 V DC                                                           |
| Switching current                               |                | max. 50 mA , resistive load                                            |
| Voltage drop                                    | U <sub>d</sub> | max. 0.2 V at 10 mA max. 0.6 V at 50 mA                                |
| Switching frequency                             | f              | max. 5 kHz                                                             |
| Response time                                   |                | 40 µs Light beam is not interrupted<br>80 µs Light beam is interrupted |
| Repeat accuracy                                 | R              | 0.03 mm                                                                |
| <b>Compliance with standards and directives</b> |                |                                                                        |
| Directive conformity                            |                |                                                                        |
| EMC Directive 2004/108/EC                       |                | EN 60947-5-2:2007+A1:2012                                              |
| Standard conformity                             |                |                                                                        |
| Standards                                       |                | UL 60947-5-2                                                           |
| <b>Approvals and certificates</b>               |                |                                                                        |
| EAC conformity                                  |                | TR CU 020/2011                                                         |
| UL approval                                     |                | cULus Recognized, Class 2 Power Source                                 |
| CCC approval                                    |                | CCC approval / marking not required for products rated ≤36 V           |
| <b>Ambient conditions</b>                       |                |                                                                        |
| Ambient temperature                             |                | -25 ... 55 °C (-13 ... 131 °F)                                         |
| Storage temperature                             |                | -30 ... 80 °C (-22 ... 176 °F)                                         |
| Pollution degree                                |                | 2                                                                      |
| <b>Mechanical specifications</b>                |                |                                                                        |
| Housing width                                   |                | 7 mm                                                                   |
| Housing height                                  |                | 25.4 mm                                                                |
| Degree of protection                            |                | IP50                                                                   |
| Connection                                      |                | 4-pin flat connector                                                   |
| Material                                        |                |                                                                        |
| Housing                                         |                | PBT                                                                    |
| Mass                                            |                | 3 g                                                                    |
| Tightening torque, fastening screws             |                | 0.6 Nm                                                                 |

Connection Assignment



○ = Light on  
● = Dark on

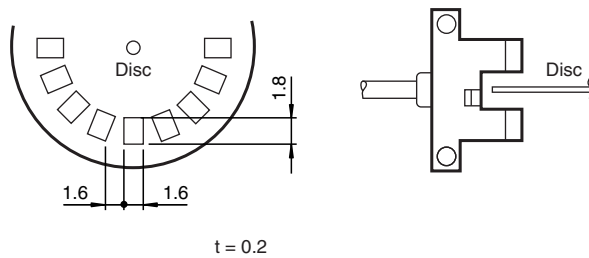
Accessories

|                                                                                   |                    |                                 |
|-----------------------------------------------------------------------------------|--------------------|---------------------------------|
|  | <b>CBL SET GL5</b> | Connection cable for GL5 series |
|-----------------------------------------------------------------------------------|--------------------|---------------------------------|

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## Response frequency

The response frequency is the value when the disc, given in the figure below, is rotated.



### Applications

The GL5 is suited for applications in the semiconductor and electronic industrial environment.

Typical applications include:

1. Detection of lead frames
2. Detection of cam positions
3. Detection of limit positions of moving objects
4. Position detection of wafer cases