

# Background suppression sensor

## RL23-8-H-1000-IR/49/92/104

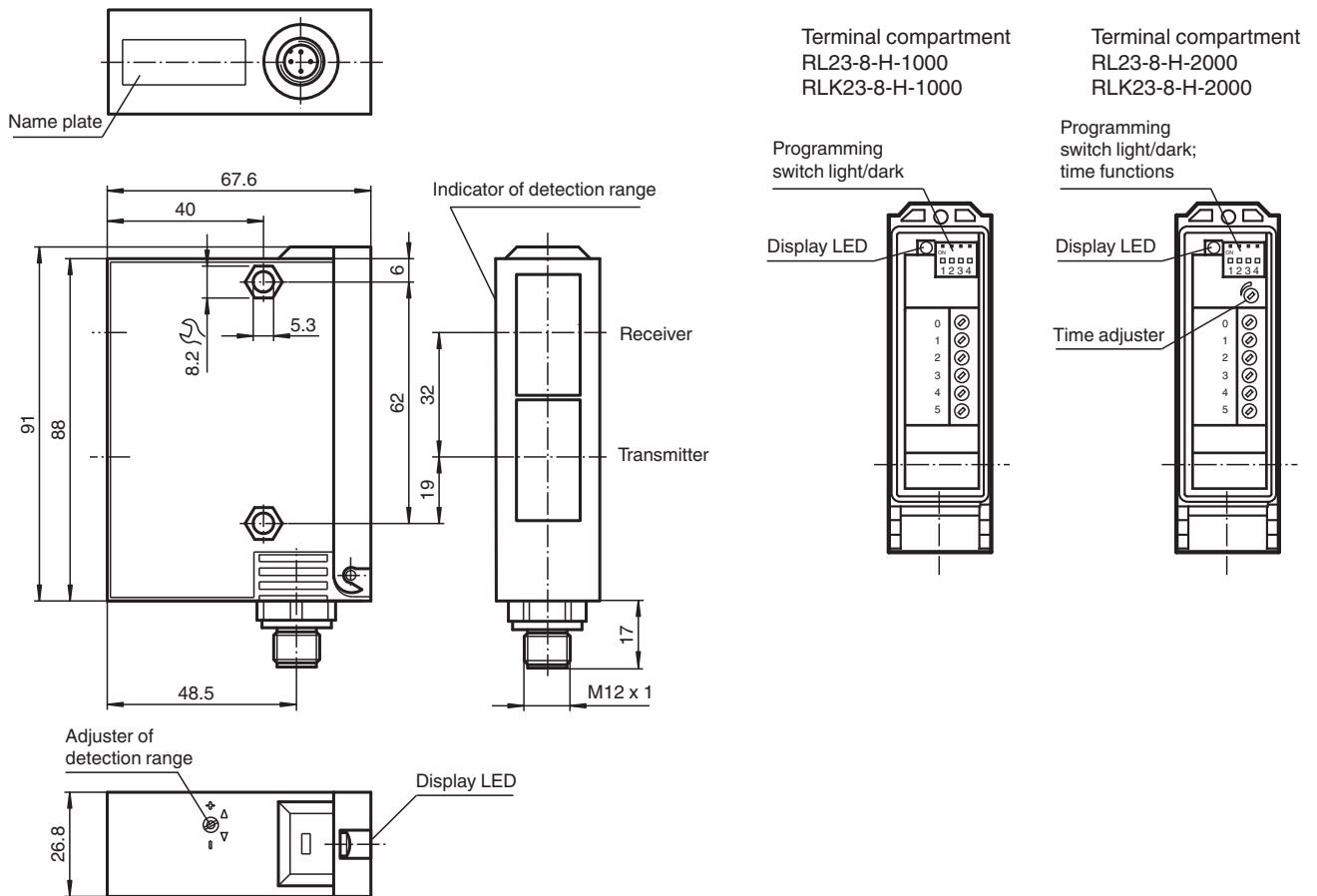


- Adjustable background suppression
- Infrared light
- Sturdy plastic housing
- Optical surface made of scratch-resistant glass
- Protected against mutual interference (no cross-talk)

Background suppression sensor



### Dimensions



Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 419451\_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

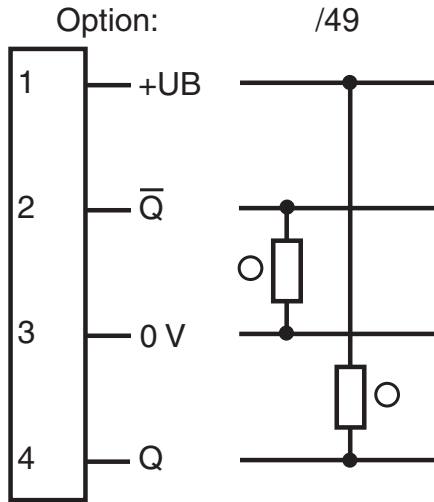
Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**PF** PEPPERL+FUCHS

## Technical Data

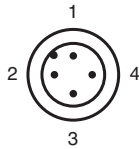
| <b>General specifications</b>               |                |   |
|---|----------------|---|
| Detection range                             |                | 50 ... 1000 mm  |
| Detection range min.                        |                | 50 ... 150 mm   |
| Detection range max.                        |                | 50 ... 1000 mm  |
| Light source                                |                | IREd  |
| Light type                                  |                | modulated infrared light  |
| Black-white difference (6 %/90 %)           |                | < 10 %  |
| Diameter of the light spot                  |                | 25 mm at 1000 mm sensor range                                       |
| Opening angle                               |                | 1.5 °   |
| Ambient light limit                         |                | 12000 Lux   |
| <b>Functional safety related parameters</b> |                |   |
| MTTF <sub>d</sub>                           |                | 540 a   |
| Mission Time (T <sub>M</sub> )              |                | 20 a  |
| Diagnostic Coverage (DC)                    |                | 60 %  |
| <b>Indicators/operating means</b>           |                |   |
| Function indicator                          |                | LED yellow, lights up with receiver lit                             |
| Control elements                            |                | Programming switch for light/dark switching                         |
| Control elements                            |                | Sensing range adjuster  |
| <b>Electrical specifications</b>            |                |   |
| Operating voltage                           | U <sub>B</sub> | 10 ... 30 V DC  |
| Ripple                                      |                | 10 %  |
| No-load supply current                      | I <sub>0</sub> | 100 mA  |
| <b>Output</b>                               |                |   |
| Switching type                              |                | light/dark on   |
| Signal output                               |                | 1 PNP and 1 NPN short-circuit protected, reverse polarity protected |
| Switching voltage                           |                | 30 V DC   |
| Switching current                           |                | max. 200 mA   |
| Switching frequency                         | f              | 10 Hz   |
| Response time                               |                | 50 ms   |
| <b>Conformity</b>                           |                |   |
| Product standard                            |                | EN 60947-5-2  |
| <b>Approvals and certificates</b>           |                |   |
| UL approval                                 |                | cULus   |
| CCC approval                                |                | CCC approval / marking not required for products rated ≤36 V        |
| <b>Ambient conditions</b>                   |                |   |
| Ambient temperature                         |                | -20 ... 60 °C (-4 ... 140 °F)                                       |
| Storage temperature                         |                | -20 ... 75 °C (-4 ... 167 °F)                                       |
| <b>Mechanical specifications</b>            |                |   |
| Housing width                               |                | 26.8 mm   |
| Housing height                              |                | 91 mm   |
| Housing depth                               |                | 67.6 mm   |
| Degree of protection                        |                | IP65  |
| Connection                                  |                | 4-pin, M12 x 1 connector  |
| <b>Material</b>                             |                |   |
| Housing                                     |                | Terluran® GV15  |
| Optical face                                |                | glass   |
| Mass  |                | 180 g   |

**Connection Assignment**



○ = Light on  
 ● = Dark on

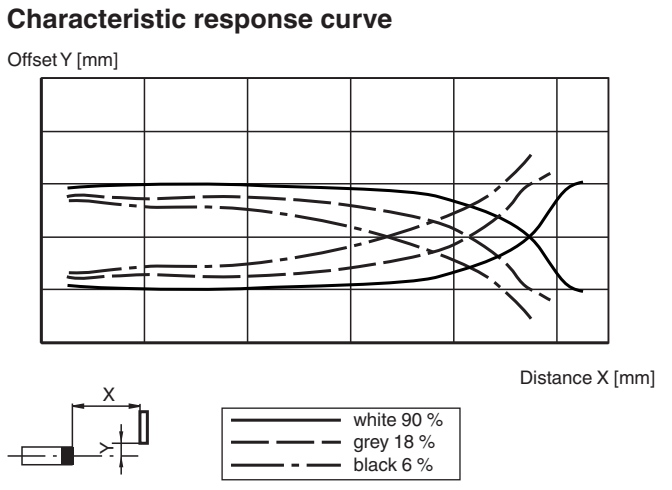
**Connection Assignment**



Wire colors in accordance with EN 60947-5-2

|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |

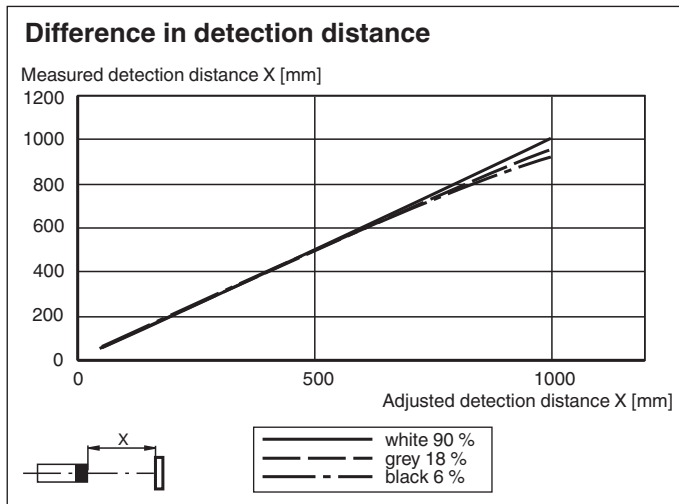
**Characteristic Curve**







Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 419451\_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".



## Characteristic Curve



## Accessories

|   |                     |   |
|---|---------------------|---|
|    | <b>OMH-05</b>       | Mounting aid for round steel $\varnothing$ 12 mm or sheet 1.5 mm ... 3 mm |
|    | <b>OMH-22</b>       | Mounting aid for RL* series   |
|   | <b>OMH-21</b>       | Mounting bracket: mounting aid for sensors in the RL* series              |
|  | <b>OMH-RLK29-HW</b> | Mounting bracket for rear wall mounting                                   |

**Light-on/dark-on changeover switch**

|   |                 |
|---|-----------------|
|  | <p>Dark on</p>  |
|  | <p>Light on</p> |

Release date: 2023-03-28 Date of issue: 2023-03-28 Filename: 419451\_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com