



## Background suppression sensor RL23-8-H-2000-IR/47/92

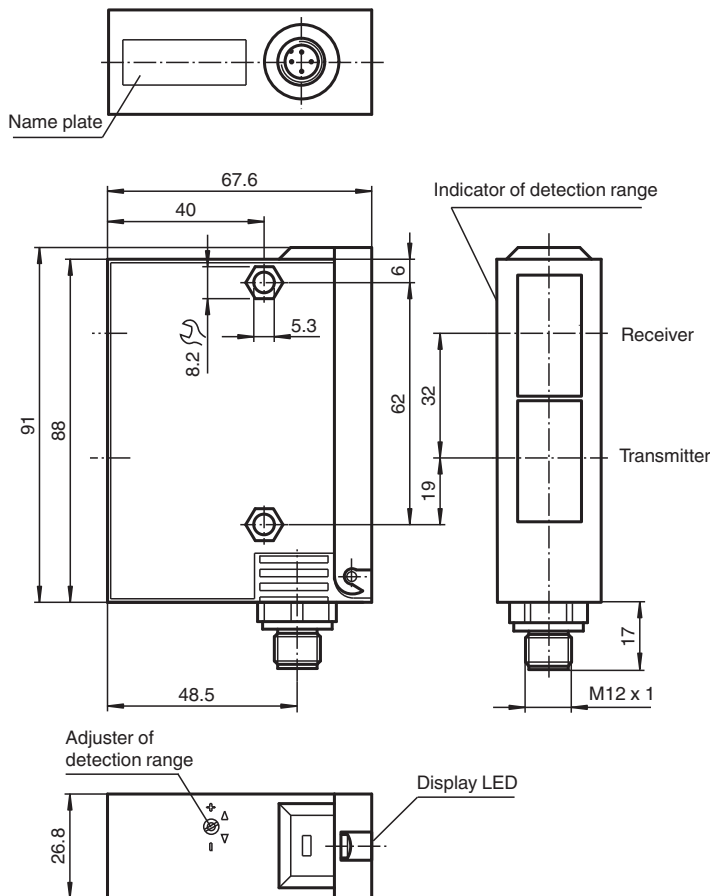


- Adjustable background suppression
- Infrared light
- Timer function
- Sturdy plastic housing
- Optical surface made of scratch-resistant glass

Background suppression sensor



### Dimensions



Terminal compartment  
RL23-8-H-1000  
RLK23-8-H-1000

Terminal compartment  
RL23-8-H-2000  
RLK23-8-H-2000

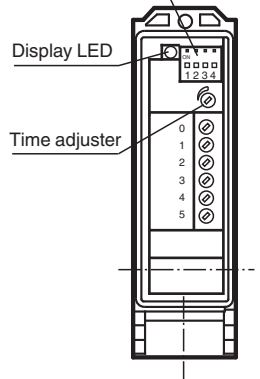
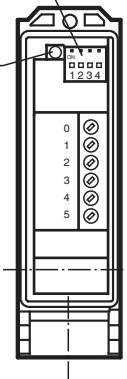
Programming  
switch light/dark

Programming  
switch light/dark;  
time functions

Display LED

Display LED

Time adjuster



## Technical Data

### General specifications

|                                   |                               |
|-----------------------------------|-------------------------------|
| Detection range                   | 50 ... 2000 mm                |
| Detection range min.              | 50 ... 150 mm                 |
| Detection range max.              | 50 ... 3000 mm                |
| Light source                      | IREd                          |
| Light type                        | modulated infrared light      |
| Black-white difference (6 %/90 %) | < 20 %                        |
| Diameter of the light spot        | 50 mm at 2000 mm sensor range |
| Opening angle                     | 1.5 °                         |
| Ambient light limit               | 5000 Lux                      |

### Functional safety related parameters

|                                |       |
|--------------------------------|-------|
| MTTF <sub>d</sub>              | 540 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 60 %  |

### Indicators/operating means

|                    |                                             |
|--------------------|---------------------------------------------|
| Function indicator | LED yellow, lights up with receiver lit     |
| Control elements   | Programming switch for light/dark switching |
| Control elements   | Sensing range adjuster                      |
| Control elements   | Time adjuster                               |

### Electrical specifications

|                        |                |                |
|------------------------|----------------|----------------|
| Operating voltage      | U <sub>B</sub> | 10 ... 30 V DC |
| Ripple                 |                | 10 %           |
| No-load supply current | I <sub>0</sub> | 100 mA         |

### Output

|                     |   |                                                                                             |
|---------------------|---|---------------------------------------------------------------------------------------------|
| Switching type      |   | light/dark on                                                                               |
| Signal output       |   | 2 PNP, complementary, short-circuit protected, reverse polarity protected                   |
| Switching voltage   |   | 30 V DC                                                                                     |
| Switching current   |   | max. 200 mA                                                                                 |
| Switching frequency | f | 70 Hz                                                                                       |
| Response time       |   | 5 ms                                                                                        |
| Timer function      |   | ON delay (GAN), OFF delay (GAB), one shot (IAB), programmable, adjustment range 0.1 ...10 s |

### Conformity

|                  |              |
|------------------|--------------|
| Product standard | EN 60947-5-2 |
|------------------|--------------|

### Approvals and certificates

|                |                                                              |
|----------------|--------------------------------------------------------------|
| EAC conformity | TR CU 020/2011                                               |
| UL approval    | cULus                                                        |
| CCC approval   | CCC approval / marking not required for products rated ≤36 V |

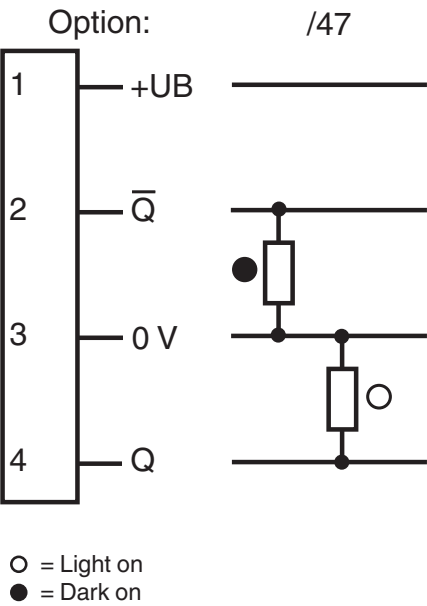
### Ambient conditions

|                     |                               |
|---------------------|-------------------------------|
| Ambient temperature | -20 ... 60 °C (-4 ... 140 °F) |
| Storage temperature | -20 ... 75 °C (-4 ... 167 °F) |

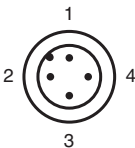
### Mechanical specifications

|                      |                          |
|----------------------|--------------------------|
| 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 |
| Material             |                          |
| Housing              | Terluran® GV15           |
| Optical face         | glass                    |
| Mass                 | 180 g                    |

Connection Assignment



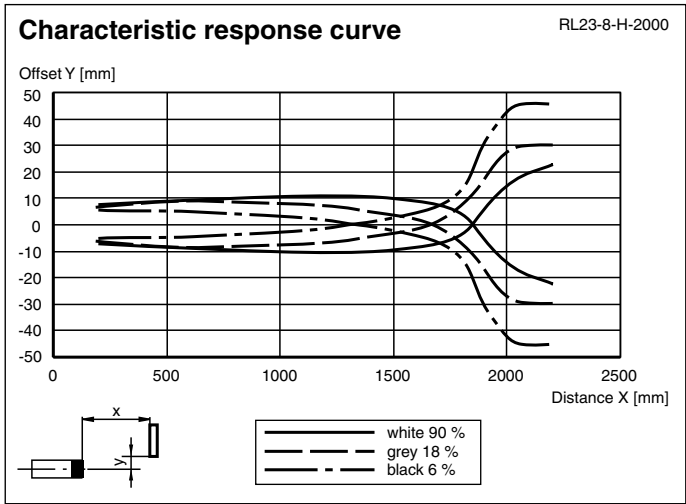
Connection Assignment



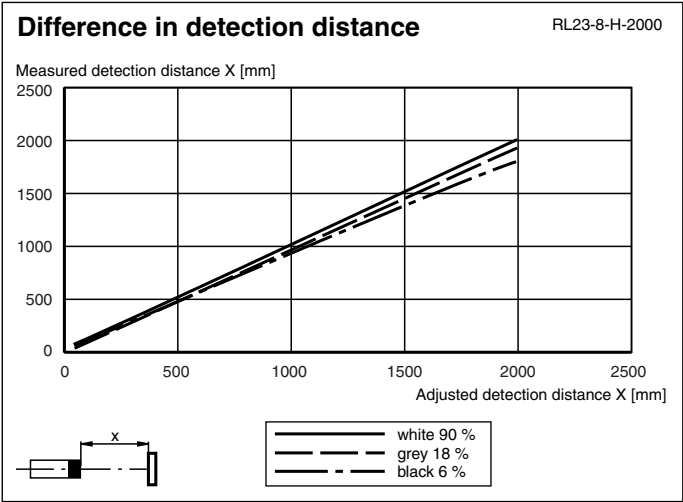
Wire colors in accordance with EN 60947-5-2

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

Characteristic Curve



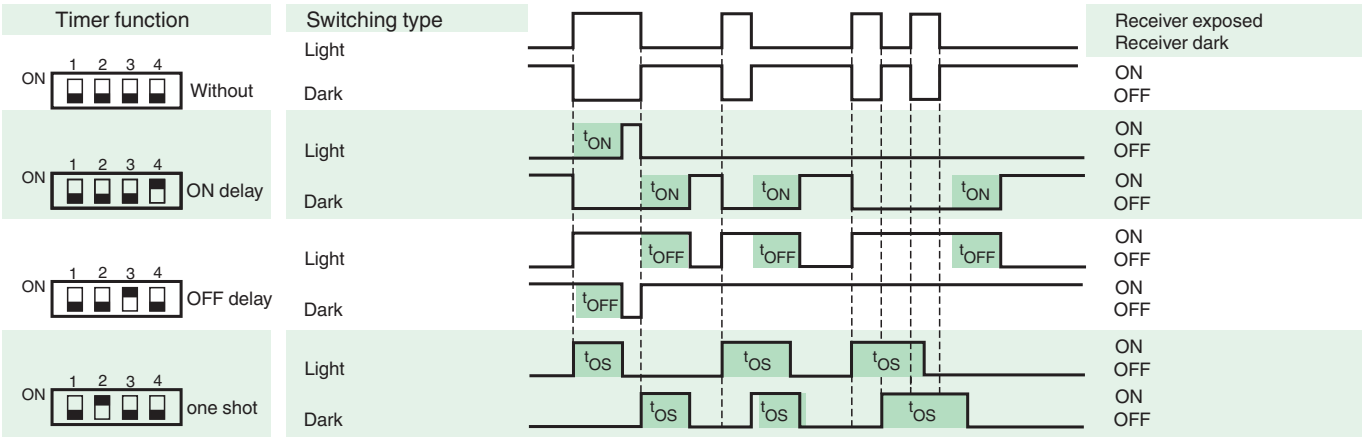
Characteristic Curve



Accessories

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

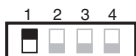
Timer functions



Time  $t_{ON}$ ,  $t_{OFF}$  and  $t_{OS}$  are adjustable from 0.1 to 10 seconds.  
The Light-/Dark-Switch (Left, outer switch) is shown in the "Dark ON" position.

| Type | Description     | Notes                                   |
|------|-----------------|-----------------------------------------|
| -Z   | OFF delay timer | Adjustable time interval (0.1 s - 10 s) |
|      | one shot timer  |                                         |
|      | ON delay timer  |                                         |

Light-on/dark-on changeover switch

|                                                                                        |          |
|----------------------------------------------------------------------------------------|----------|
| ON  | Dark on  |
| ON  | Light on |