

## Lumiglas Signalling Device M55-BD-Ex



II 2G Ex d IIC T6 Gb  
II 2D Ex tb IIIC T80°C Db

### The smart motion detector/twilight switch:

- The smart motion detector/twilight switch: The M55-BD-Ex automatically switches the light or other users in potentially explosive (Ex) indoor or outdoor areas on and off again.
- Although it has been designed for explosion-protected environments, it can also be used in non-hazardous areas.
- The motion detector is equipped with radar sensor technology and the twilight switch is operated by an optical sensor.
- Implementing the M55-BD-Ex ensures energy-saving operation.
- Numerous applications are feasible thanks to the wide variety of sensor setting options. For instance, the motion detector and twilight switch can be used either separately or in combination.
- Typical applications are:
  - Alarm when entering hazardous areas
  - Switching lights on and off depending on brightness and/or motion
  - Useful as a signal generator for acoustic and optical devices (e.g. horns, warning lamps)
  - Leakage detector on or below container and/or installations (responds to drops)
- Potential-free contact means that the M55-BD-Ex can also be used to generate signals for other control units.
- Stainless steel body: 1.4404

- **Protection class:** IP 65 and IP 67

### • Operating conditions:

Under no circumstances should the movement/brightness detector M55-BD-Ex be used to replace the cover flange or the complete sight glass fitting nor on its own as a closure for a vessel port.

- **For use in ambient temperatures:** -20°C to +40°C

- **EC type examination certificate:** BVS 15 ATEX E 057 X



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- **Operating voltage:** 230 V AC or 24 V AC/DC

### • Special conditions to ensure safe use:

- Minimum length of connecting cable: at least 1 meter
- The connecting cable should be installed to ensure that no electrostatic hazard can occur

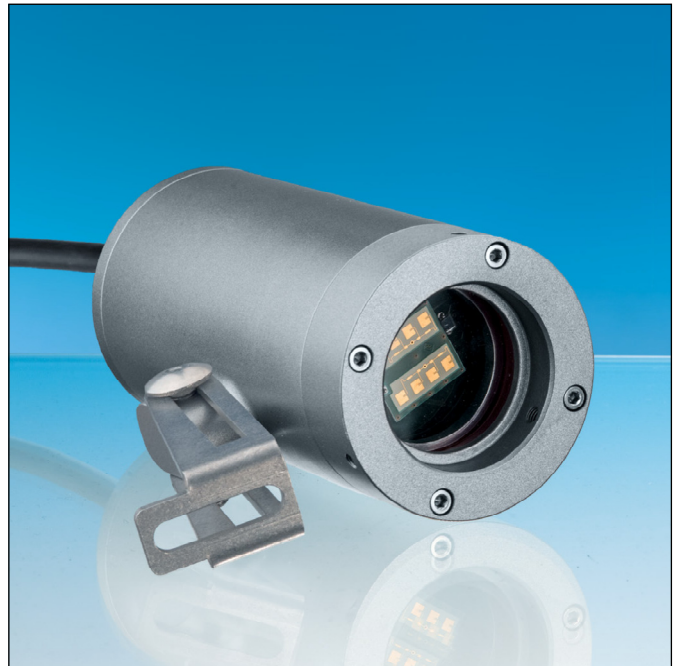
- **Convenient electrical connection with integrated connecting cable**

### • Mounting options:

- Attachment using the hinged bracket included in the scope of supply, stainless steel 1.4301
- Alternative securing options on request

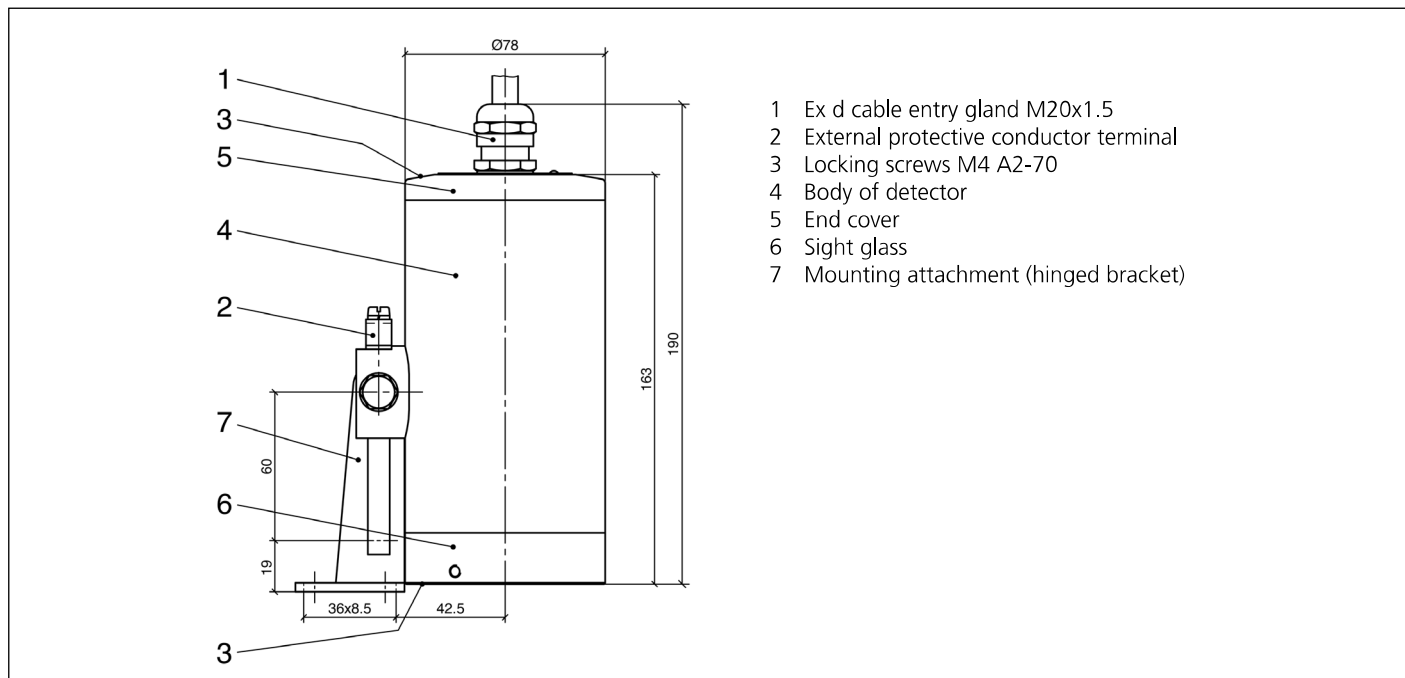
CE 0158

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Lumiglas signalling device M55-BD-Ex

## • Dimensions and technical data for Lumiglas signalling device M55-BD-Ex:

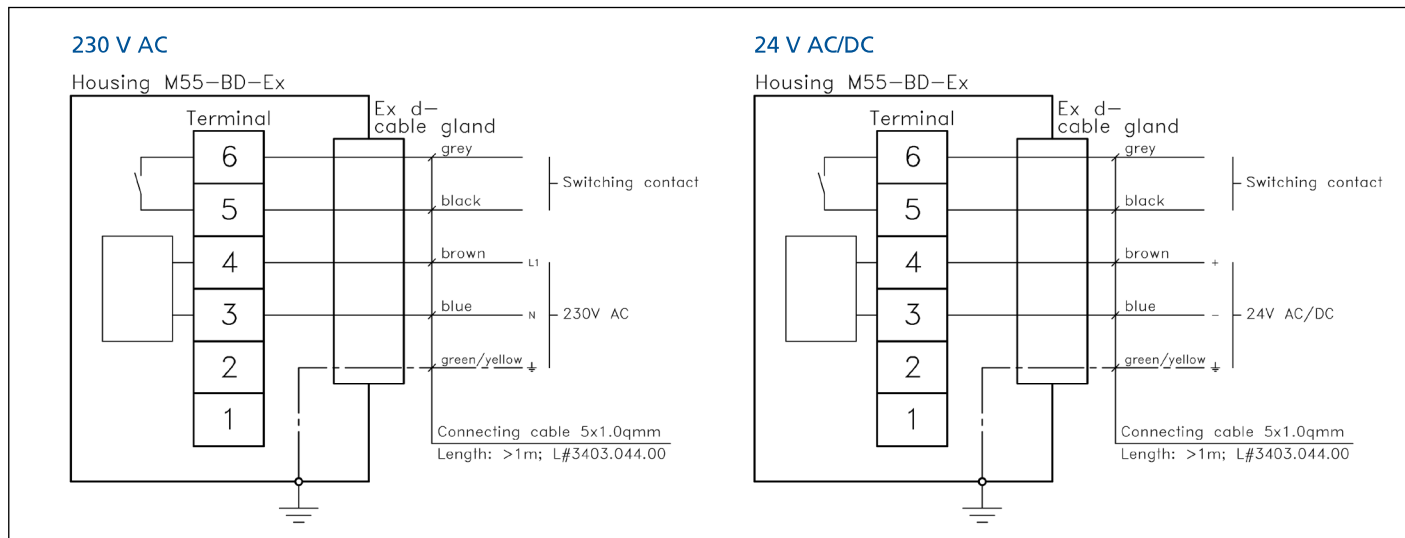


## • Parts, description and materials:

- Body: stainless steel 1.4404
- Hinged bracket for attachment: stainless steel 1.4301
- Aperture for the sensors: borosilicate glass

- Weight incl. hinged bracket and 3 m connecting cable 5 x 1 mm<sup>2</sup>: 3.9 kg

## • Electrical connection:



- Rated power of electronics: 5 W
- The potential-free contact (relay) switches up to 250 V AC / 5 A / 1250 VA
- Coverage of radar sensor: 72° horizontal and 60° vertical
- Radar sensor range: approx. 10 m
- Sensitivity of radar sensor is adjustable via switch
- Signalling time of switching contact is adjustable via potentiometer (between 5 sec. and 3 min. – other times possible)
- Twilight sensor range adjustable via potentiometer (1-1400 Lux)

Item	Type	Voltage V	Part no.
1	M55-BD-Ex	230 V AC	1702.702.00
2	M55-BD-Ex	24 V AC/DC	1702.701.00

• **Accessories:** Ex-e terminal box 8118, part no. 2507.020.00  
Protective hood for outdoor applications, part no. 1988.026.00

• **Order data:** M55-BD-Ex, 230 V AC (part no. 1702.702.00),  
5 m connecting cable, protective hood (part no. 1988.026.00)

All dimensions in mm unless stated otherwise. Subject to change without prior notice. 07.17

## Installation and Operating Instructions **CE** 0158

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### Lumiglas Signalling Device M55-BD-Ex

**Ex** II 2G Ex d IIC T6 Gb  
II 2D Ex tb IIIC T80°C Db

The M55-BD-Ex automatically switches the light or other users in potentially explosive (Ex) indoor or outdoor areas on and off again. Although it has been designed for explosion-protected environments, it can also be used in non-hazardous areas.

#### • Important, please note:

Under no circumstances should the movement/brightness detector M55-BD-Ex be used to replace the cover flange or the complete sight glass fitting nor on its own as a closure of a vessel port.

#### • Design and field of application:

- Flameproof stainless steel housing with built-in radar and brightness sensors
- Typical applications are:  
Alarm when entering hazardous areas, for switching lights on and off depending on the brightness and/or motion, can be used as a signal generator for acoustic and optical devices (e.g. horns, warning lamps), leakage detector on or below container and/or installations (responds to drops).
- Potential-free contact means that the M55-BD-Ex can also be used to generate signals for other control units.

#### • Electrical data:

- Supply voltage:  
24 V AC/DC +/- 10% or 230 V AC +/- 10%
- Protection class:  
IP 65 and IP 67 acc. to EN 60529/DIN VDE 0470 Part 1
- Rated power of electronics: 5 W
- The potential-free contact (relay) switches up to 250 V/5 A (max. 1250 VA)
- Approved for use in ambient temperatures: -20°C to +40°C
- EC type examination certificate:  
BVS 15 ATEX E 057 X
- Ex** II 2G Ex d IIC T6 Gb  
II 2D Ex tb IIIC T80°C Db

#### • Markings:

- The device has a permanent type plate which is clearly visible and easy to read. It bears the following data:
- Name and address of manufacturer
  - Device type: M55-xx-Ex  
xx:  
M55-B-Ex = with movement detector  
M55-D-Ex = with twilight switch  
M55-BD-Ex = both combined
  - Ambient temperature range: -20°C ≤ Ta ≤ +40°C
  - Certification number
  - Warning note:  
Caution – do not open when live – after deactivation, wait 4 minutes before opening! A2-70 screws must be used!
  - Serial No./year of manufacture
  - Supply voltage
  - Protection class IP 65
  - CE mark/number of certifying body

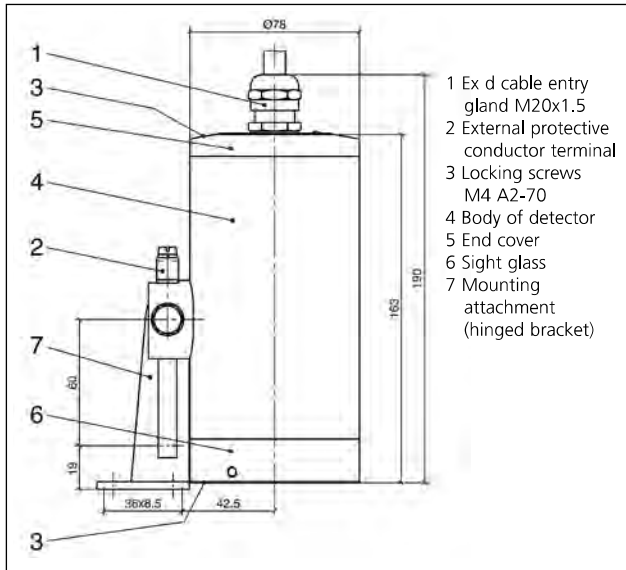


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#### • Parts, description and materials:

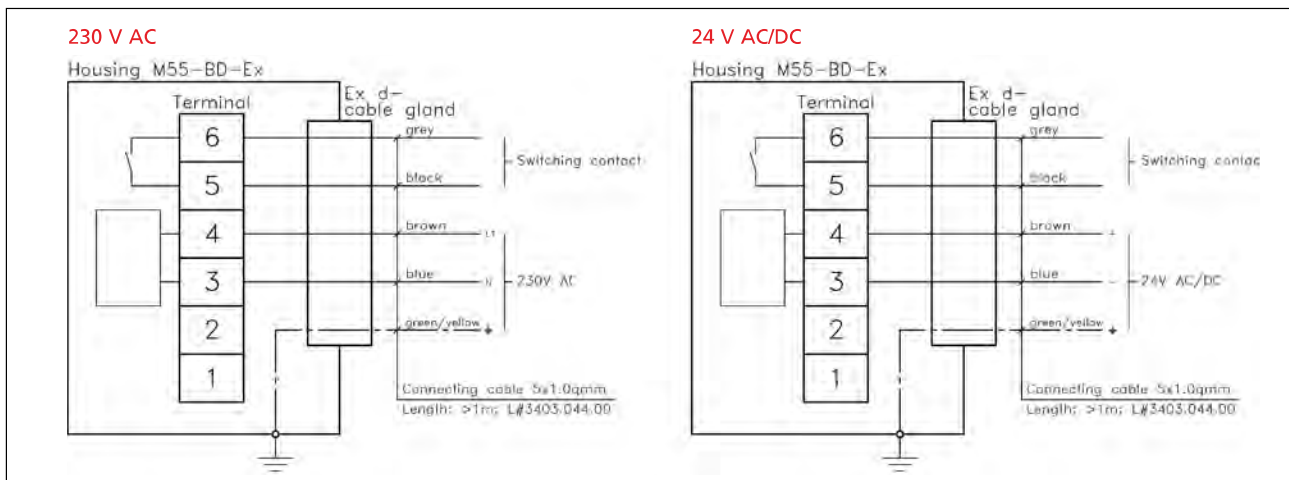
- Body: stainless steel 1.4404, hinged bracket: 1.4301
- Weight with 3 m connecting cable 5x1 mm<sup>2</sup>: 3.9 kg
- Aperture for the sensors: borosilicate glass
- Mounting with the relevant hinged bracket (other attachment options on request)

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## • Electrical connection:

- In its standard version, the movement/brightness detector is supplied with tested Ex-d cable entry glands combined with the prescribed cable.
- Lines and cables must meet temperature resistance requirements of between at least -20°C and +80°C
- The standard cable has already been connected in the device by the manufacturer and is ready for use
- The movement/brightness detector is internally protected on the power supply card by an 0.5 A miniature fuse.
- The external protective conductor terminal (2) is to be connected to a separate operational ground.
- The wires of the cable of the movement/brightness detector must be terminated in housings that comply with one of the standard ignition protection classes acc. to EN 60079-0 section 1.
- The connecting cable must be at least 1 meter long and should be caught up after max. 1 meter.
- The connecting cable should be installed to ensure that no electrostatic hazard can occur.
- Caution: voltage surges can cause failure in the device.



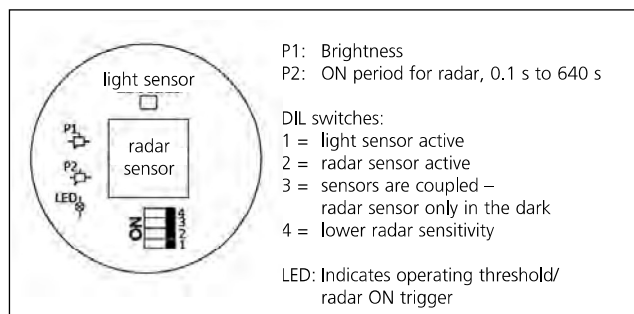
## • Function and setting:

The sensor card incorporates a radar-based brightness sensor and movement sensor. These sensors can be used individually or coupled. The two functional blocks – light sensor and radar sensor – can be individually activated (DIP switches 1 and 2) for this purpose. The two functions would overlap if the functions were not coupled (DIP switch 3). In most cases, this configuration is not practical because the relay would switch if there is movement or once it gets dark. In the coupled configuration, the relay does not switch until there is movement in the dark.

**Brightness sensor:** The brightness threshold can be adjusted using the trimmer P1. When doing this, only the light sensor should be activated before setting the trimmer to the point just before the display LED switches. The output is then in operation as long as the brightness falls below the set level.

**Movement sensor:** This sensor functions with radar waves (24,1 GHz) and a max. output of 16 dBm. Once there is a movement (within a distance of 10 meters), the relay switches for the length of time set with trimmer P2 (between 5 sec. and 3 min. – other times possible). The trigger sensitivity can be reduced with DIP switch 4.

**Radar sensor range:** Approx. 72° horizontal, approx 60° vertical; distance approx. 10 meters  
 Sensitivity of brightness sensor: 1-1400 Lux



## • Maintenance:

- The movement/brightness detector should be kept clean. To ensure optimum function, the glass plate should be cleaned at regular intervals.
- After opening the device, the surfaces of the cylindrical gap should be cleaned, checked for damage and freshly greased (e.g. with AEMA-SOL 6B, made by A.E. Matthes)

## • Replacement parts/accessories:

- |   |                      |
|---|----------------------|
| Sight glass (light aperture)                          | Part no. 1773.013.00 |
| O-ring seal   | 0862.090.00          |
| Mounting attachment (hinged bracket)                  | 0354.025.00          |
| Protective hood for outdoor applications (rain cover) | 1988.926.00          |
- Please use original replacement parts only!

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