

8485/311-42 Art. No. 294010



- Continuous monitoring of correct grounding
- Object recognition prevents potential operator errors (for road tanker)
- Aluminium enclosure with IP65 degree of protection (protected against water jets)
- Up to four potential-free change-over contacts for signalling
- Ambient temperature -55 °C to +60 °C
- Auxiliary power: 24 V DC – 230 V AC
- Parameterisation when the enclosure is closed

MY R. STAHL 8485A



The grounding monitoring device ensures that road tankers, rail vehicles and big bags are electrostatically grounded while combustible liquids and powders are being loaded.

The device simultaneously monitors electrostatic grounding. This guarantees that an electrostatic charge remains at a safe level and that there is no explosion hazard caused by the uncontrolled discharge of this energy.

The following recommendations and directives require grounding during loading and recommend disconnecting the load if the grounding is defective:

- CLC/TR 60079-32-1 Explosive atmospheres – Part 32-1: Electrostatic hazards, guidance.
- TRBS 727 Avoidance of ignition hazards as a result of electrostatic charges.

### Technical Data

#### Explosion Protection

|                                 |  |
|---------------------------------|--|
| Application range (zones)       | 1, 2, 22                               |
| Ex interface zone               | 1, 2, 21, 22                           |
| IECEX gas certificate           | IECEX FTZU 15.0031X                    |
| IECEX gas certificate           | IECEX FTZU 15.0031X                    |
| IECEX gas explosion protection  | Ex db ib [ib] IIB+H2 T4 Gb             |
| IECEX dust certificate          | IECEX FTZU 15.0031X                    |
| IECEX dust explosion protection | Ex ib [ib] tb IIIC T130 °C Db          |
| ATEX gas certificate            | FTZU 09 ATEX 0059X                     |
| ATEX gas certificate            | FTZU 09 ATEX 0059X                     |
| ATEX gas explosion protection   | ⊕ II 2 G Ex db ib [ib] IIB+H2 T4 Gb    |
| ATEX dust certificate           | FTZU 09 ATEX 0059X                     |
| ATEX dust explosion protection  | ⊕ II 2 D Ex ib [ib] tb IIIC T130 °C Db |
| Certificates                    | ATEX (FTZU), IECEX (FTZU)              |

#### Safety Data

|  |              |
|--|--------------|
| Max. voltage $U_o$                                 | 15.75 V      |
| Max. current $I_o$                                 | 45 mA        |
| Max. permissible external capacity $C_o$ for IIB   | 2.88 $\mu$ F |
| Max. permissible external inductance $L_o$ for IIB | 0.6 mH       |
| Max. voltage $U_i$ limit contacts                  | 50 V DC      |
| Max. current $I_i$ limit contacts                  | 200 mA       |

# Grounding monitoring devices and systems

## Grounding monitoring device Single-channel



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### Electrical Data

|                          |   |
|--------------------------|---|
| Number of channels       | 1   |
| Connections              | Single-wire connecting capacity<br>- rigid 2.5 mm <sup>2</sup><br>- flexible 2.5 mm <sup>2</sup><br>- flexible with core end sleeves with plastic sleeve 1.5 mm <sup>2</sup><br>- flexible with core end sleeves without plastic sleeve 2.5 mm <sup>2</sup> |
| Operating mode selection | Road tanker, rail vehicle, FIBC (big bag), automatic grounding<br>Selection via DIP switch  |
| Parameterisation         | IrDA and Bluetooth  |
| Frequency range          | 47 – 63Hz   |

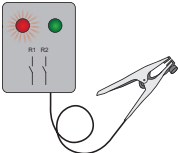
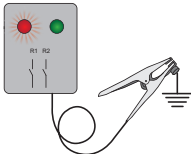
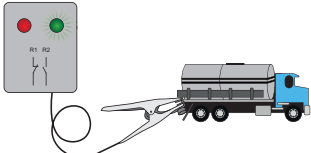
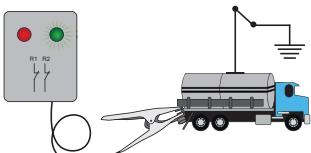
### Auxiliary Power

|                          |            |
|--------------------------|------------|
| Nominal voltage range AC | 20 – 230 V |
| Nominal voltage range DC | 20 – 230 V |
| Nominal current          | 50 mA      |
| Power consumption        | 10 VA      |

### Output

|                               |                                  |
|-------------------------------|----------------------------------|
| Limit contact                 | Up to 4 change-over contacts     |
| Min. output load condition    | 10 V DC/100 mA                   |
| Max. output DC load condition | 230 V DC / 0.25 A, 40 V DC / 3 A |
| Max. output AC load condition | 230 V AC / 3 A                   |

### Operating principle:

| LED display  | State of grounding  | Reaction of the grounding monitoring device   |
|--|---|---|
|  | Clamp is not connected, device not in use   | Grounding defective<br>• Red indicator lamp ON<br>• Green indicator lamp OFF<br>• Relays R1 and R2 are de-energised           |
|  | Connect clamp directly to ground, for example via the loading platform                          | Grounding defective<br>• Red indicator lamp ON<br>• Green indicator lamp OFF<br>• Relays R1 and R2 are de-energised           |
|  | Clamp connected to road tanker  | Grounding OK<br>• Red indicator lamp OFF<br>• Green indicator lamp ON<br>• Relay R1 is energised and relay R2 is de-energised |
|  | Clamp connected to road tanker. Road tanker is grounded subsequently (e.g. via the filling arm) | Grounding OK<br>• Red indicator lamp OFF<br>• Green indicator lamp ON<br>• Relays R1 and R2 are energised                     |

If the resistance of the grounding loop of the tanker is < 10 Ω, relay R2 is energised.

### Ambient Conditions

|                     |                    |
|---------------------|--------------------|
| Ambient temperature | -55 °C ... 60 °C   |
| Ambient temperature | -67 °F ... +140 °F |
| Storage temperature | -55 °C ... 60 °C   |

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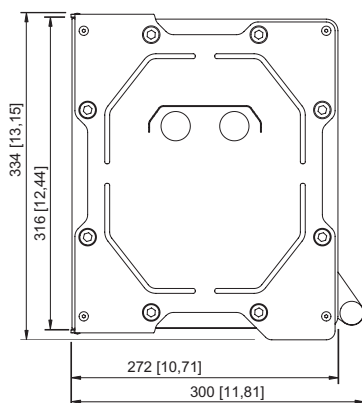
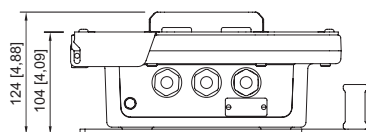
### Ambient Conditions

|                     |                  |
|---------------------|------------------|
| Storage temperature | -67°F ... +140°F |
|---------------------|------------------|

### Mechanical Data

|  |                             |
|--|-----------------------------|
| Degree of protection (IP)              | IP65                        |
| Enclosure version                      | Flameproof enclosure (Ex d) |
| Enclosure material                     | Aluminium                   |
| Silicone-free                          | No                          |
| Terminal range of cable glands         | 6.5 – 11.2 mm               |
| Cable connection terminal area, inches | 0.26 – 4.4 in               |
| Width                                  | 300 mm                      |
| Width, inches                          | 11.811 in                   |
| Height                                 | 334 mm                      |
| Height in inches                       | 13.15 in                    |
| Depth                                  | 124 mm                      |
| Mounting depth in inches               | 4.88 in                     |
| Weight                                 | 26.68 lb                    |



### Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



Type 8485/311-42

### Accessories

#### Grounding clamp with cable


|  |   | Art. No. |
|--|---|----------|
|  | 10 m SiHF-J cable for 8485/311-42<br>Clamp made from stainless steel 1.4404 (offshore)<br>Ambient temperature: -55 °C to +60 °C | 306763   |
|  | 10 m ÖLFLEX cable for 8485/311-42<br>Clamp made from stainless steel 1.4301<br>Ambient temperature: -40 °C to +60 °C            | 306710   |




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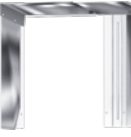
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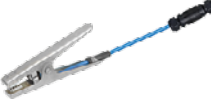
| Grounding clamp with spiral cable  |   | Art. No. |
|--|---|----------|
|  | 10 m ÖLFLEX cable for 8485/311-42<br>Clamp made from stainless steel 1.4301<br>Ambient temperature: -30 °C to +60 °C            | 306761   |
|  | 10 m ÖLFLEX cable for 8485/311-42<br>Clamp made from stainless steel 1.4404 (offshore)<br>Ambient temperature: -30 °C to +60 °C | 306762   |

| Grounding clamp with automatic retractor for cable                                 |  | Art. No. |
|--|--|----------|
|    | Self retracting reel with 9 m oil- and petrol-resistant cable with robust, ergonomic grounding clamp made from stainless steel, and fast-action plug, plastic enclosure<br>Roofing must be provided when installing the unit outside.<br><br>Installation in Zone 1, IIC, T6; Zone 21, IIIC, 135 °C<br>Temperature range: -20 °C to +70 °C<br>Degree of protection (IP): IP42<br>Certificates: ATEX, IECEx | 247660   |
|   | Self retracting reel with 20 m oil- and petrol-resistant cable with robust, ergonomic grounding clamp made from stainless steel, and fast-action plug, aluminium enclosure, protected cable duct with stopper<br>Installation in Zone 1, IIC, T6; Zone 21, IIIC, 135 °C<br>Temperature range: -40 °C to +70 °C<br>Degree of protection (IP): IP43<br>Certificates: ATEX, IECEx                             | 247671   |
|  | Self retracting reel with 12 m oil- and petrol-resistant cable with robust, ergonomic grounding clamp made from stainless steel, and fast-action plug, aluminium enclosure, protected cable duct with stopper<br>Installation in Zone 1, IIC, T6; Zone 21, IIIC, 135 °C<br>Temperature range: -40 °C to +70 °C<br>Degree of protection (IP): IP42<br>Certificates: ATEX, IECEx                             | 269915   |

| Protective roof  |  | Art. No. |
|--|--|----------|
|  | Protective roof 8298/05-111 for additional protection against the elements, such as rain and sunlight.<br>Material: Stainless steel 1.4404 | 226972   |

| Configuration set  |  | Art. No. |
|--|--|----------|
|  | Configuration set consisting of infrared adapter with USB port and USB stick with configuration software | 263097   |

## Spare Parts

| Grounding clamp with fast-action plug  |  | Art. No. |
|--|--|----------|
|  | Robust, ergonomic grounding clamp with 150 mm cable and fast-action plug<br>Spare part for self retracting reels (247660, 269915 and 247671), cable and spiral cable | 247675   |

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