

Grounding Technology

Grounding monitoring device Single-channel



8485/311-42 Art. No. 294010



- Continuous monitoring of correct earthing
- Potential operator errors are prevented thanks to object detection (on truck)
- Water-jet-proof IP65 stainless steel or aluminum enclosure
- Up to four potential-free change-over contacts for signaling
- Ambient temperature -55 °C to +60 °C
- Auxiliary power: 24 V DC – 230 V AC
- Parameterisation when enclosure is closed

MY R. STAHL 8485A



The ground monitoring device ensures the electrostatic grounding of road tankers, rail cars and Big Bag (Rev. C) while loading flammable liquids and powder.

The device provides a conductive connection to the ground and monitors in parallel the quality of the electrostatic grounding. This guarantees that the electrostatic charge remains at a safe level and that no explosion hazard is generated by uncontrolled energy discharge.

The following recommendation requires grounding during loading and recommends interrupting loading in case of incorrect grounding:

- CLC/TR 60079-32-1 recommendation for avoiding ignition hazards due to electrostatic charges.
- TRBS 727 rules for avoiding 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 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 explosion protection	Ex II 2 G Ex db ib [ib] IIB+H2 T4 Gb
ATEX dust certificate	FTZU 09 ATEX 0059X
ATEX dust explosion protection	Ex II 2 D Ex ib [ib] tb IIIC T130 °C Db
Declaration of Conformity	ATEX (EUK)

Safety Data

Max. voltage U_o/V_{oc}	15.75 V
Max. current I_o/I_{sc}	45 mA
Max. permissible external capacitance C_o/C_a for IIB	2.88 μ F
Max. permissible external inductance L_o/L_a for IIB	0.6 mH
Max. voltage U_i signaling contacts	50 V DC

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Safety Data

Max. current I, signaling contact	200 mA
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Electrical Data

Number of channels	1
Connections	Maximum diameter, single-wire - rigid 2.5 mm ² - flexible 2.5 mm ² - flexible, cable end sleeves with plastic cover 1.5 mm ² - flexible, cable end sleeves without plastic cover 2.5 mm ²
Operating mode selection	Road tanker, rail vehicle, FIBC (big bag), automatic grounding Selection via DIP switch
Parameterisation	IrDA and Bluetooth
Frequency range	47 – 63Hz

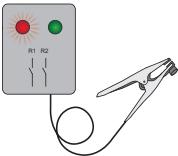
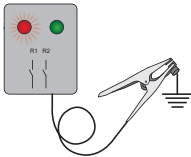
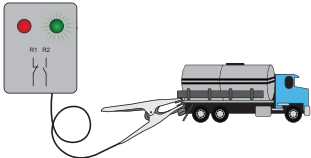
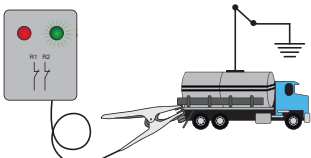
Auxiliary Power

Nominal voltage range AC	20-230 V
Nominal voltage range DC	20.0-230 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 • Red indicator lamp ON • Green indicator lamp OFF • Relays R1 and R2 are de-energised
	Connect clamp directly to ground, for example via the loading platform	Grounding defective • Red indicator lamp ON • Green indicator lamp OFF • Relays R1 and R2 are de-energised
	Clamp connected to tanker	Grounding OK • Red indicator lamp OFF • Green indicator lamp ON • Relay R1 is energised and relay R2 is de-energised
	Clamp connected to tanker Tanker is grounded subsequently (e.g. via the filling arm)	Grounding OK • Red indicator lamp OFF • Green indicator lamp ON • 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 °C	-55 °C ... 60 °C
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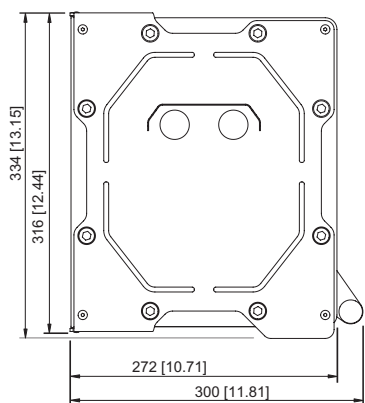
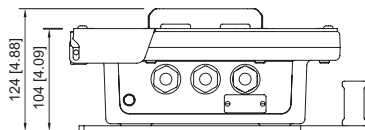
Ambient Conditions

Ambient temperature °F	-67°F ... +140°F
Storage temperature °C	-55 °C ... 60 °C
Storage temperature °F	-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, inches	13.15 in
Depth	124 mm
Mounting depth, inches	4.88 in
Weight	12.1 kg
Weight	26.68 lb

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



Type 8485/111-42

Accessories

Grounding clamp with cable



10 m SiHF-J cable for 8485/111-42
 Clamp made from stainless steel 1.4404
 Ambient temperature: -55 °C to +60 °C

Art. No.


306763

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	10 m ÖLFLEX cable for 8485/111-42 Clamp made from stainless steel 1.4301 Ambient temperature: -40 °C to +60 °C	306710
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Grounding clamp with spiral cable

Art. No.

	10 m ÖLFLEX cable for 8485/111-42 Clamp made from stainless steel 1.4301 Ambient temperature: -30 °C to +60 °C	306761
	10 m ÖLFLEX cable for 8485/111-42 Clamp made from stainless steel 1.4404 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 Roofing must be provided when installing the unit outside. Installation in Zone 1, IIC, T6; Zone 21, IIIC, 135 °C Temperature range: -20 °C to +70 °C Degree of protection (IP): IP42 Certificates: ATEX, IECEx	247660
	Automatic winder with 20 m of oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug, aluminum enclosure, protected cable duct with stopper	247671
	Automatic winder with 12 m of oil and petrol resistant cable with robust ergonomic grounding clamp of stainless steel, and fast-action plug, aluminum enclosure, protected cable duct with stopper	269915


Protective roof

Art. No.

	Protective roof 8298/05-111 for additional protection against the elements, such as rain and sunlight. Material: Stainless steel 1.4404	226972
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Configuration set


Art. No.

	Configuration set consisting of infrared adapter with USB port and USB stick with configuration software	263097
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Spare Parts

Grounding clamp with fast-action plug

Art. No.

	Robust, ergonomic grounding clamp with 150 mm cable and fast-action plug Spare part for self retracting reels (247660, 269915 and 247671), cable and spiral cable	247675
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We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.