

Grounding Monitoring Devices Made of Aluminium

Series 8485 with object recognition

STAHL



- 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

A7

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.

	IECEX / ATEX					
	0	1	2	20	21	22
Zone						
Ex interface		•	•		•	•
Installation in		•	•			•

Selection Table				
Product Description	Grounding monitoring device Single-channel			
Enclosure material	Product Type	Art. No.	Weight	
Aluminium	8485/311-42	294010	12.1 kg	

Technical Data	
Explosion Protection	
IECEX gas explosion protection	Ex db ib [ib] IIB+H2 T4 Gb
IECEX dust explosion protection	Ex ib [ib] tb IIIC T130 °C Db
ATEX gas explosion protection	⊕ II 2 G Ex db ib [ib] IIB+H2 T4 Gb
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 _i limit contacts	50 V DC
Max. current I _i limit contacts	200 mA

Technical Data
Electrical Data

Connections	Single-wire connecting capacity - rigid 2.5 mm ² - flexible 2.5 mm ² - flexible with core end sleeves with plastic sleeve 1.5 mm ² - flexible with core end sleeves without plastic sleeve 2.5 mm ²
Operating mode selection	Road tanker, rail vehicle, FIBC (big bag), automatic grounding Selection via DIP switch
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

Ambient Conditions

Ambient temperature	-55 °C ... 60 °C
Storage temperature	-55 °C ... 60 °C






Mechanical Data

Degree of protection (IP)	IP65
Enclosure version	Flameproof enclosure (Ex d)
Terminal range of cable glands	6.5 – 11.2 mm


Accessories

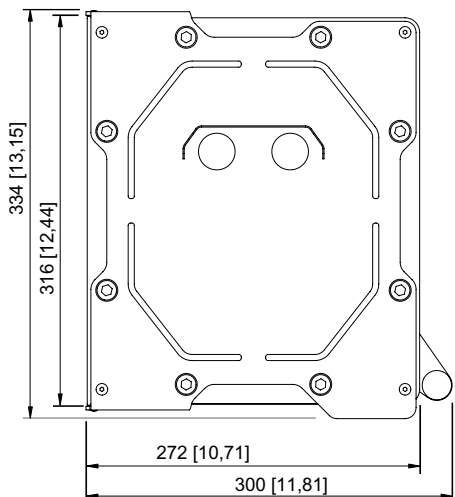
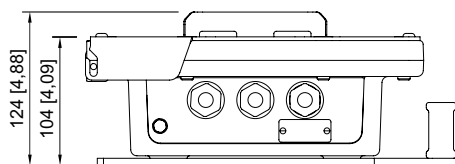
Figure	Description	Art. No.	Weight
Grounding clamp with cable			
	10 m SiHF-J cable for 8485/311-42 Clamp made from stainless steel 1.4404 (offshore) Ambient temperature: -55 °C to +60 °C	306763	4 kg
	10 m ÖLFLEX cable for 8485/311-42 Clamp made from stainless steel 1.4301 Ambient temperature: -40 °C to +60 °C	306710	4 kg
Grounding clamp with spiral cable			
	10 m ÖLFLEX cable for 8485/311-42 Clamp made from stainless steel 1.4301 Ambient temperature: -30 °C to +60 °C	306761	4 kg
	10 m SiHF-J cable for 8485/311-42 Clamp made from stainless steel 1.4404 (offshore) Ambient temperature: -30 °C to +60 °C	306762	4 kg

Accessories

Figure	Description	Art. No.	Weight
Grounding clamp with automatic retractor for cable			
	<p>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.</p> <p>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</p>	247660	4.5 kg
	<p>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 Installation in Zone 1, IIC, T6; Zone 21, IIIC, 135 °C Temperature range: -40 °C to +70 °C Degree of protection (IP): IP43 Certificates: ATEX, IECEx</p>	247671	14.5 kg
	<p>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 Installation in Zone 1, IIC, T6; Zone 21, IIIC, 135 °C Temperature range: -40 °C to +70 °C Degree of protection (IP): IP42 Certificates: ATEX, IECEx</p>	269915	6.2 kg
Protective roof			
	<p>Protective roof 8298/05-111 for additional protection against the elements, such as rain and sunlight. Material: Stainless steel 1.4404</p>	226972	5.25 kg
Configuration set			
	<p>Configuration set consisting of infrared adapter with USB port and USB stick with configuration software</p>	263097	1 kg

Spare Parts

Figure	Description	Art. No.	Weight
Grounding clamp with fast-action plug			
	<p>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</p>	247675	600 g



Type 8485/311-42

Operating principle

LED display	State of grounding	Reaction of the grounding monitoring device
	Clamp is not connected, device not in use	Grounding defective <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Red indicator lamp ON • Green indicator lamp OFF • Relays R1 and R2 are de-energised
	Clamp connected to road tanker	Grounding OK <ul style="list-style-type: none"> • Red indicator lamp OFF • Green indicator lamp ON • 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 <ul style="list-style-type: none"> • 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 <math>< 10 \Omega</math>, relay R2 is energised.