



THE STRONGEST LINK.



GROUNDING MONITORING DEVICES AND SYSTEMS

FOR EVERY APPLICATION

PREVENTION OF ELECTROSTATIC CHARGE

An explosive risk frequently underestimated in hazardous areas is the generation of electrostatic charge when mixing/stirring liquids, filling tanks and at loading bays.

The discharge can cause an explosion, a low-speed deflagration or a fire with catastrophic consequences.

R. STAHL has an optimum grounding plan for each application, and a great many grounding devices and accessories in its portfolio, enabling us to configure customised grounding systems for each individual application.



ACTIVE AND PASSIVE GROUNDING

In principle, there are two types of grounding: passive grounding (direct grounding), and active grounding (monitored grounding).

PASSIVE GROUNDING

Passive grounding systems have a direct connection to the grounded object, in the form of a cable with a clamp, frequently also with battery clamps or electrode holders.

Since the passive grounding is not being monitored, control of the contacts is essential – they must be clean and not be corroded or contaminated with product deposits.

ACTIVE GROUNDING

Active grounding monitoring devices featuring the additional option of optic/acoustic monitoring have been developed for large hazards in particular.

They monitor the connection to the object at risk of electrostatic charge, signalling to staff whether the connection to grounding is secure.

The grounding monitoring device consists of a grounding device and a clamp that is connected to the earthing point of the system with a strong cable.





R. STAHL GROUNDING SYSTEMS

R. STAHL's grounding monitoring devices provide electrostatic grounding for barrels, tank containers, road tankers, rail cars,

IBCs and big bags while flammable liquids and powders are being loaded.

OVERVIEW

APPLICATIONS						
	Product type	Tank wagon	Road tanker	Barrels, IBCs, tank containers	Big bag	Ambient temperature
	8146/5075	✓	✓	✓		-20 °C ... +55 °C
	8150/5-V75	✓	✓	✓		-20 °C ... +55 °C
	8485/111-42 Rev. B	✓*	✓			-55 °C ... +60 °C
	8485/111-42 Rev. C	✓*	✓		✓	-55 °C ... +60 °C
	8485/121-42 Rev. C **	✓*	✓		✓	-55 °C ... +60 °C
	8485/112-42 Rev. B	✓*	✓			-55 °C ... +60 °C
	7485/111-42 Rev. C	✓*	✓		✓	-50 °C ... +60 °C

*) with object recognition in road (tanker mode) **) in stainless steel

ACCESSORIES

FROM SIMPLE CABLES TO AUTOMATIC CABLE WINDERS



10 m cable
with grounding clamp



5 m / 10 m spiral cable
with grounding clamp



20 m cable winder
with grounding clamp



9 m cable winder
with grounding clamp

Different cable lengths available on request



GROUNDING WHILST LOADING AND UNLOADING FLAMMABLE LIQUIDS



8146 AND 8150 GROUNDING MONITORING DEVICE

The Ex e grounding devices for all applications, our standard 8146 and 8150 devices, are extremely versatile. They can be used with IBCs, barrels and tank containers as well as road tankers, rail cars and even helicopters.

Both devices can be used with SIL2 applications. Visible in sunlight, the indicator lamps clearly signal the correct connection to the earthing point. Both grounding devices are also particularly suited to system-specific applications.

Highlights

- For use in Zone 1, 21.
- Use in SIL2 applications.
- Indicator lamp visible in sunlight.
- 1 potential-free changeover contact.
- Degree of protection IP66.
- Temperature range: -20 °C ... +55 °C.
- Integrated hanging point for clamp.

GROUNDING WITH OBJECT RECOGNITION



8485 GROUNDING MONITORING DEVICE

The series 8485 grounding monitoring devices are designed in Ex d and intended for road tankers, rail cars and big bags.

The dual-channel device has been developed for combined applications. During the loading process from road tanker to tank wagon as well as during the simultaneous loading of two tankers, the devices guarantee continuous monitoring of electrostatic grounding.

For offshore applications we have developed a special stainless-steel version that can be parameterised like the others via the Bluetooth function.

Highlights

- Dual-channel devices for combined loading stations for road tankers and tank wagons as well for the simultaneous unloading of two tankers.
- Bluetooth communication.
- Object recognition (in road tanker mode).
- 2 potential-free changeover contacts (Ex i or Ex e).
- Temperature range: -55 °C ... +60 °C.
- For use in Zone 1, 21.
- Auxiliary power: 24 V DC – 230 V AC.

GROUNDING FOR BIG BAGS AND CLEAN ROOMS ZONE 2, 21



7485 GROUNDING MONITORING DEVICE

The series 7485 grounding monitoring devices were specifically developed for clean room and big bag applications. They feature object recognition in road tanker mode and are also suitable for rail cars.

The devices can be parameterised via the Bluetooth function, feature two potential-free changeover contacts and are suitable for extreme temperatures (-50 °C to +60 °C).

Highlights

- Can be installed in clean rooms.
- Bluetooth communication.
- Object recognition (in road tanker mode).
- 2 potential-free changeover contacts (Ex i or Ex e).
- Temperature range: -50 °C ... +60 °C.
- For use in Zone 2, 21.
- Auxiliary power: 24 V DC – 230 V AC.



NAOCO

A	B	C
1	2	3
136	144	152
1201	1201	1201

Ladegut:
Staubförmige Güter

73000l

27 400 kg

32.5t

GmbH - PARIS LA CHAPELLE

R 35 m

+ 11.04m

1.80m

SOLUTIONS FOR CABINETS AND IN THE FIELD IN ZONE 2, 22

9170 SWITCHING REPEATER



IN CABINETS (OUTSIDE OF HAZARDOUS AREAS)

The dual-channel 9170 switching repeater can be installed inside a cabinet or a control centre.

- 1 potential-free change-over contact for signalisation to process control systems or external signalling devices.
- Continuous monitoring for correct grounding.
- For use in Zone 2, 22.
- Temperature range: -20 °C ... +70 °C.
- Auxiliary power: 24 V DC.

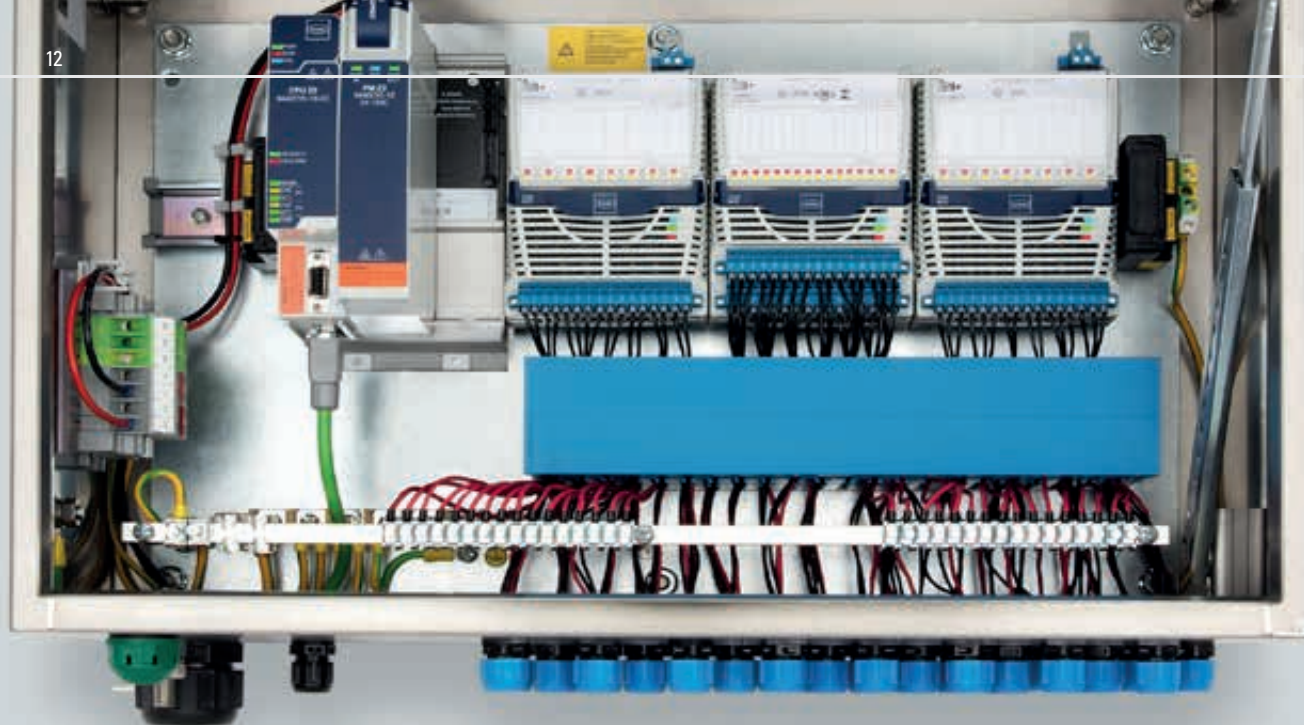
8510 CONTROL UNIT



INSTALLATION IN ZONE 1, 2, 21, 22

The 8510 control unit is intended for installation in enclosures or control systems with an "Increased safety e" type of protection.

- 2 potential-free changeover contacts for signalling to process control systems or external signalling devices.
- Continuous monitoring for correct grounding.
- For use in Zone 1, 21.
- Temperature range: -20 °C ... +55 °C.
- Auxiliary power: 230 V AC.



CUSTOMISED SOLUTIONS

As a leading provider of explosion-protected products and a great many grounding monitoring systems we are always able to adapt our systems to suit individual, customer-specific requirements.

At the same time we ensure compliance with the various legal requirements relevant for each project since we have international certifications and approvals available worldwide.

EXAMPLES OF CUSTOMER-SPECIFIC SOLUTIONS



Multi-channel grounding monitoring device

Multi-point grounding monitoring device according to ATEX and IECEx for the active grounding of several objects.



8265 acc. to NEC (USA) in Ex d enclosure

Specifically for US applications, the grounding monitoring device can be installed acc. to NEC in an Ex d enclosure also in Class 1, Div. 1.



8265 Ex d enclosure with connection box

This grounding monitoring device combines types of protection Ex i, Ex d and Ex e with compact design, cable holder and Ex i contacts.



OUR EXPERTS ARE HERE TO ASSIST YOU

BY TELEPHONE



Our experts are happy to contact you by phone to discuss the various grounding options in hazardous areas.

ON-SITE



Should you require our expertise on-site, our colleagues are happy to visit your site to talk to you about the ideal grounding system.

R. STAHL: YOUR GLOBAL PARTNER

FOR THE SAFETY OF YOUR EMPLOYEES AND PROJECTS WORLDWIDE

We are at your service around the globe at seven production facilities, subsidiaries in 23 countries and more than 50 international agencies.

Our international employees understand your needs and offer you R. STAHL quality – no matter where you need it.

Thanks to this global presence, we realise international joint projects with customers, planners, installation specialists and operators from many different countries.





We take care of the needs of everyone involved in the project – right on-site.

At the same time we ensure compliance with the various legal stipulations applicable at each project since we have international certifications and approvals available worldwide.



OUR PRODUCTION FACILITIES:

R. STAHL

- | | |
|---|--|
|  Headquarters |  Subsidiary |
|  Production facility |  Agency |



Germany - Waldenburg

Germany - Weimar



Germany - Cologne

The Netherlands

Norway

India

USA



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