



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.:	<b>IECEx FTZU 15.0031X</b>	Page 1 of 5	<u>Certificate history:</u>
Status:	<b>Current</b>	Issue No: 3	Issue 2 (2022-08-16)
Date of Issue:	2024-04-23		Issue 1 (2017-09-29)
Applicant:	<b>R.STAHL Schaltgeräte GmbH</b> Am Bahnhof 30 74638 Waldenburg Germany		Issue 0 (2015-09-29)
Equipment:	<b>Ground monitoring device type 8485/**-.**</b>		
Optional accessory:			
Type of Protection:	<b>flameproof enclosure "db", intrinsic safety "ib", protection by enclosure "tb"</b>		
Marking:	Ex db ib [ib] IIB T4 Gb	- for types 8485/111-42 rev.D; 8485/121-42 rev.D; 8485/111-42 rev.E, 8485/121-42 rev.E, 8485/311-42	
	Ex db ib [ib] IIB+H <sub>2</sub> T4 Gb	- for type 8485/311-42	
	Ex ib [ib] tb IIIC T130 °C Db	- for types 8485/111-42 rev.D; 8485/121-42 rev.D; 8485/111-42 rev.E, 8485/121-42 rev.E, 8485/311-42	

Approved for issue on behalf of the IECEx  
Certification Body:

**Dipl. Ing. Lukáš Martinák**

Position:

**Head of the Certification Body**

Signature:  
(for printed version)

Date:  
(for printed version)

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Certificate issued by:

**Fyzikálně technický zkusební ústav**  
(Physical -Technical Testing Institute)  
Pikartská 7, 71607 Ostrava - Radvanice  
Czech Republic





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Manufacturer: **R.STAHL Schaltgeräte GmbH**  
Am Bahnhof 30  
74638 Waldenburg  
**Germany**

Manufacturing  
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

## STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-1:2014](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

[IEC 60079-11:2023](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:7.0

[IEC 60079-31:2022](#) Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:3.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

## TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[CZ/FTZU/ExTR15.0031/00](#)  
[CZ/FTZU/ExTR15.0031/03](#)

[CZ/FTZU/ExTR15.0031/01](#)

[CZ/FTZU/ExTR15.0031/02](#)

Quality Assessment Report:

[DE/BVS/QAR10.0002/19](#)



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## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Ground monitoring device type 8485/\*\*\*-\*\* is designed to prevent uncontrolled electrostatic discharges in hazardous areas which could lead to ignition hazardous when loading and unloading flammable liquids and powder from, road trucks and tankers, railway wagons, containers, barrels, drums and big bags.

The electronic circuits of the equipment are installed in a die-cast aluminium flameproof enclosure or stainless steel flameproof enclosure. The clamp circuit is designed as intrinsically safe.

The relays contacts can be connected to either intrinsically safe or non-intrinsically safe circuits. The cover plate with either two or four lights is secured with six hexagon screws, placed in protecting shrouds. Certified flameproof cable glands are used for the supply cable, operative cable and output clamp cable. The clamp cable can be equipped with a connector to enable easy interchange of clamps. An arctic clamp cable is available for ambient temperatures -55 °C.

Maximum length of the grounding clamp cable is 20 m.

Marking: - Ex „ib“ – earth cable with clamp,  
- Ex „[ib]“ - associated apparatus inside of enclosure

Two PCB's are mounted inside the flameproof enclosure. The Control PCB includes the supply terminals, the IS relay input terminals and the IS grounding clamp terminals. There are also non-IS circuits for power supply and relay controls. The Display PCB includes only non-IS circuits.

## SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Ambient temperature range:  $-55\text{ °C} \leq T_a \leq +60\text{ °C}$
2. Verified values of the maximum gaps and minimum constructional length of flameproof joints of the enclosure for type 8485/\*\*\*-\*\* differ from relevant minimum and maximum values mentioned in standard. To obtain information about joints dimension it is necessary to contact the manufacturer.
3. There is prohibited combine intrinsically safe voltage with other voltage on the terminals XC2, XC4 and XC7, XC8.
4. The enclosure shall be installed to avoid a risk from propagating brush discharges for application in explosive dust atmosphere.



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**Equipment (continued):**

Parameters:

Power input:  $U_n = 20\text{ V} - 230\text{ V AC/DC}$   
Relay contacts:  $U_i = 50\text{ V}$ ,  $I_i = 200\text{ mA}$   
Ingress protection: IP 65  
Rated ambient temperature range:  $-55\text{ °C}$  to  $+60\text{ °C}$



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## DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 3:

- 1) There are no design changes for 8485/111-42 rev.D, 8485/121-42 rev.E.  
The explosion proof group (IIB) and Ex ib output parameters remain unchanged.
- 2) There is the change of Display board ExESDS 01036-52-002 from version A to B for 8485/111-42 rev.E, 8485/121-42 rev.E.  
The explosion proof group (IIB) and Ex ib output parameters remain unchanged.
- 3) Version of the new type 8485/311-42 for group IIB+H<sub>2</sub>.  
The explosion proof group and IS output parameters were changed it is based on the type 8485/111-42 rev. E.  
On the type 8485/311-42 were changed:
  - Cemented joint of sight glass.  
The sight glass for variant IIB+H<sub>2</sub>, was proposed with cement joint This sight glass replaced the original cylindrical joint sight glass.
  - Change of the flanged joint of enclosure for group IIB+H<sub>2</sub>  
Gap of flanged joint was modified to 0.04 mm.
  - Change of Ex ib output parameters for group IIB+H<sub>2</sub>  
U<sub>o</sub> = 15.75 V    I<sub>o</sub> = 45 mA  
C<sub>o</sub> = 0.478 μF    L<sub>o</sub> = 150 μH
- 4) Updating complete documentation for all types 8485/111-42 rev.D; 8485/121-42 rev.D; 8485/111-42 rev.E, 8485/121-42 rev. E, 8485/311-42 – see list of documentation.
- 5) Verification according to the newest standards IEC 60079-11:2023, Edition 7.0 and IEC 60079-31:2022, Edition 3.0