



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx PTB 06.0090 issue No.:2
 Status: **Current**
 Date of Issue: **2015-02-25** Page 1 of 4

Certificate history:
 Issue No. 2 (2015-2-25)
 Issue No. 1 (2012-2-9)
 Issue No. 0 (2006-10-24)

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

Electrical Apparatus: **Control and distribution panel, type 8146/5***.****
 Optional accessory:

Type of Protection: **"d", "e", "ia", "ib", "mb", "q", "op pr", "op is", "tb"**

Marking: Ex db e ia ib [ja Ga] mb op pr op is q IIA, IIB, IIC, T6... T3 Gb
 Ex tb IIIA, IIIB, IIIC T80 °C... T130 °C Db

Approved for issue on behalf of the IECEx
 Certification Body:

Dr.-Ing. Uwe Klausmeyer

Position:

Head of Department Explosion Protection in Energy Technology

Signature:
 (for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

Physikalisch-Technische Bundesanstalt (PTB)
 Bundesallee 100
 38116 Braunschweig
 Germany



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

Additional Manufacturing location
(s):

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 electrical apparatus 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 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition: 7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-18 : 2009 Edition: 3	Explosive atmospheres Part 18: Equipment protection by encapsulation "m"
IEC 60079-28 : 2006-08 Edition: 1	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
IEC 60079-31 : 2008 Edition: 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
IEC 60079-5 : 2007-03 Edition: 3	Explosive atmospheres - Part 5: Equipment protection by powder filling "q"
IEC 60079-7 : 2006-07 Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical 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 Report:

DE/PTB/ExTR06.0106/02

Quality Assessment Report:

DE/PTB/QAR06.0001/00



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Description of equipment

The control and distribution panel, type 8146/5***-** consist of an glass fiber reinforced enclosure made of polyester of type of protection Increased Safety "e" or Protection by Enclosure "tb" which can be equipped with flanges if necessary. Several boxes can be combined with one another.

It is used for the installation of control, regulating and measuring devices as well as terminals for intrinsically safe and non-intrinsically safe circuits and can be equipped with actuators, indicating lamps, and inspection windows, if required.

The panel area intended for intrinsically safe circuits will be marked e.g. by a specific color (light-blue) or a warning label.

Connection will be by means of explosion-proof cable entries.

All built-in and add-on components have been tested and certified under a separate test certificate.

Technical data, Nomenclature and Notes for manufacturing and operation: see Annex

CONDITIONS OF CERTIFICATION: NO



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

- 1) Additional Ex components were added to the list of built in component.
- 2) Series / Customized versions added: "8146/5-C***; /5-E***; /5-K***; /5-V****"
- 3) The temperature class T3 is added.
- 4) Revision of marking to show "op pr" and "op is".

Annex: Annex-IECEx PTB 06.0090 Issue 2.pdf



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

Electrical Apparatus: Control and Distribution Panel
Type 8146/5***-**

Description

The control and distribution panel, type 8146/5***-** consist of an glass fiber reinforced enclosure made of polyester of type of protection Increased Safety "e" or Protection by Enclosure "tb" which can be equipped with flanges if necessary. Several boxes can be combined with one another.

It is used for the installation of control, regulating and measuring devices as well as terminals for intrinsically safe and non-intrinsically safe circuits and can be equipped with actuators, indicating lamps, and inspection windows, if required.

The panel area intended for intrinsically safe circuits will be marked e.g. by a specific color (light-blue) or a warning label.

Connection will be by means of explosion-proof cable entries.

All built-in and add-on components have been tested and certified under a separate test certificate.

Nomenclature

General type code:

8146	/	5	*	*	*	-	*	*
a	/	b	c	d	-	e		

a	Type / Series		
b	Design	5	= Control and distribution panel Ex e...
c	Enclosure length x width [mm]:	00	= Combination
		03	= 112.5 x 112.5
		04	= 170. 0 x 112.5
		24	= 227.0 x 112.5
		05	= 170.0 x 170.0
		06	= 227.0 x 170.0
		07	= 340.5 x 170.0
		B7	= 340.5 x 170.0
		S7	= 340.5 x 170.0
		08	= 340.5 x 340.5
		09	= 681.5 x 340.5



d	Enclosure, height [mm]:	0	= Combination
		1	= 91
		2	= 131
		3	= 150
		4	= 171
		5	= 190
		6	= 230
e	Further information without reference to explosion protection		

Serial type code:

8146	/	*
a	/	b

a Type / Series

b Design

5-C***	= customized series product
5-E***	= modular construction (enclosure combination)
5-K***	= configured control panel
5-V***	= Series product such as
	5-V11 = Load and Motor Switches
	5-V37 = Safety Switch
	5-V* = other

Technical data

Rated voltage* up to 1100 V

Rated current* max. 630 A

Rated cross section* max. 300 mm²

*) depending on the type of terminal and Ex-components used

Ambient temperature $-60\text{ °C} \leq T_{\text{amb}} \leq +100\text{ °C}$

The maximum ambient temperature range depends on the maximum ambient temperatures and the power dissipations of the built-in components and of the temperature class rating.

Protection against contact,
foreign bodies and water IP66 acc. to EN 60529



The rated values are maximum values; the actual electrical values depend on the electrical equipment incorporated. Within the scope of these maximum permissible values and with due regard to the standards, the manufacturer specifies the final rated values dependent on the system conditions, mode of operation, utilization category, etc. The characteristic values of the intrinsically safe circuits are to be given by the manufacturer on his own responsibility. The maximum permissible ambient temperature range of the terminal housing can be limited by the maximum permissible ambient temperature ranges of the separately certified equipment.

The composition of the protection symbol will be based on the types of protection of components actually used.

Notes for manufacturing and operation

Equipment of the type of protection intrinsic safety “i” is to be installed in such a way that the distances, creepage distances and clearances between intrinsically safe circuits and non-intrinsically safe circuits comply with the requirements of IEC 60079-11.

When more than one intrinsically safe circuit is used, the rules for interconnection are to be observed.

The Control and Distribution Panel with a coating of polyester powder must not be used in areas affected by charge-producing processes, mechanical friction and separation processes, electron emission (e.g. in the vicinity of electrostatic coating equipment), and pneumatically conveyed dust.

The type of protection can only be provided by following the information and instructions provided by the manufacturer and also the components are properly installed in the enclosure, the enclosures cover or rather the electrical equipment.

When installing the components in the electrical equipment, measures shall be taken to ensure that the temperatures at the place of installation remain within the permitted operation temperature range of the components.

Determination of the temperature class

The temperature class T6, T5, T4 or T3 will be defined during the routine test depending on the self heating of the components and the ambient temperature.

List of separately certified components

See description

Any built-in and add-on components have to be of a technical standard that complies with the specifications on the cover sheet. They must be suited for the operating conditions, and be covered by a separate examination certificate.