



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 16.0032X Issue No: 0 Certificate history:
Status: Current Page 1 of 3 Issue No. 0 (2017-01-17)

Date of Issue: 2017-01-17

Applicant: R. STAHL Camera Systems GmbH
Adolf-Grimme-Allee 8
50829 Köln, GERMANY
Germany

Equipment: Camera
Optional accessory:

Type of Protection: "d", "e", "tb", "op is"

Marking: Ex db IIC T4, T5 resp. T6 Gb
Ex db eb IIC T4, T5 resp. T6 Gb
Ex db eb op is IIC T4, T5 resp. T6 Gb
Ex tb IIIC T135°C, T100°C resp. T85°C Db

Approved for issue on behalf of the IECEx
Certification Body:

Dr. D. Markus

Position:

Head of Department "Explosion Protection in Energy Technology"

Signature:
(for printed version)

Date:

76.01.17

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](http://www.iecex.com).

Certificate issued by:

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





IECEX Certificate of Conformity

Certificate No: IECEx PTB 16.0032X Issue No: 0
Date of Issue: 2017-01-17 Page 2 of 3
Manufacturer: **R. STAHL Camera Systems GmbH**
Adolf-Grimme-Allee 8
50829 Köln, GERMANY
Germany

Additional Manufacturing location(s):

R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8
50829 Köln, GERMANY
Germany

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 60079-28 : 2015 Edition:2	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2015 Edition:5.0	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/ExTR16.0044/00](#)

Quality Assessment Report:

[DE/BVS/QAR06.0007/08](#)

[DE/BVS/QAR12.0012/01](#)



IECEX Certificate of Conformity

Certificate No: IECEx PTB 16.0032X

Issue No: 0

Date of Issue: 2017-01-17

Page 3 of 3

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Camera Tube enclosure series EC-940-***-***-***-***

For further details please refer to the Annex!

CONDITIONS OF CERTIFICATION: YES as shown below:

Repair of flameproof joints has to be done solely according to the constructional values, defined by the manufacturer. Repair of flameproof joints acc. to table 1 and 2 of IEC 60079-1 is not allowed.

Annex:

[Annex IECEx PTB 16-0032X-00.pdf](#)



Applicant: R. STAHL Camera Systems GmbH
Adolf-Grimme-Allee 8
50829 Köln, GERMANY

Electrical Apparatus: Camera Tube Enclosures,
Type EC-940-***_***_***_***

Description of equipment:

Camera housings with type designation EC-940-***_***_***_*** are housings of protection type "db" or "tb" equipped with a camera and components as detailed in the nomenclature below. Cameras of type designation EC-940-***_***_***K-*** use a flameproof housing only, cameras of type designation EC-940-***_***_***H-***, EC-940-***_***_***J-*** or EC-940-***_***_***J-*** are in addition to the flameproof enclosure part equipped with a terminal box, protection type "e".

For operation at low temperatures an optional heater can be installed. The integrated control and limiting devices are such that the heater will only be switched on below 5 °C and switched off above 17 °C. The purpose of the heating element is to operate the device at ambient temperatures which are not covered by the service temperature range of internal components.

The enclosure is partly equipped with separately certified components. The therefor permissible components can be taken from the datasheet list under 3 c).

Technical data:

Electrical ratings:

Rated voltage	Max. wattage	Configuration
10 – 18 VDC	12 W	Camera only
20 – 40 VDC	22.5 W	Without heating system
	38 W	With heating system
100 – 240 VAC		

The electrical data of each single design variation of the camera enclosure type EC-940-***_***_***_*** are to be determined by the manufacturer in an electrical-thermal rating procedure!

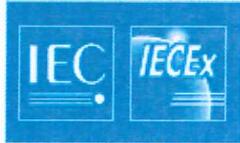


Nomenclature:

Type code: EC-940-aaa-bbc-def-ggh

a	Type	AFZ-	Auto Focus Zoom camera	*
b	Camera	00	without camera	*
		pre-installed camera:		
		HD	HD Camera day/night, 32x optical Zoom	
		HF	HD Camera day/night, 10x optical Zoom	
c	Video output	A	analog Video	*
		I	IP Copper port	*
		F	IP Fiber Optic port	*
d	Accessory	O	no wiper - with heating - with sun roof	
		V	with wiper - with heating - with sun roof	*
		W	with wiper - no heating - with sun roof	*
		X	no wiper - no heating - with sun roof	
		Y	no wiper - no heating - no sun roof	*
		Z	with wiper - no heating - no sun roof	*
e	Voltage	4	100 - 240 VAC	
		5	10 - 40 VDC	
		6	POE (Power over Ethernet)	
f	Connection	H	Ex-'e' junction box with terminals	
		I	Ex-'e' junction box with terminals and Fiber optic connection	
		J	Ex 'e' junction box with post type bushings	
		K	without Ex 'e' junction box, direct cable inlet	
		n	other connection devices	
g	Variation		empty or for internal use	*
h	Variation		empty or for internal use	*

Note: * For information only, not within the scope of the certification!



Temperature data:

Max. Ambient temperature range is $-55^{\circ}\text{C} \leq T_a \leq +80^{\circ}\text{C}$. It can be reduced according to tables of Temperature Classes / max. temperatures as detailed below.

Temperature Classes / max. temperatures

Explosive gas atmospheres:

For all possible configurations according to the nomenclature the following Temperature Classes are applicable:

P [W]	Temperature Class	Max. T_a [$^{\circ}\text{C}$]
45	T4	80
	T5	50
30	T5	60
	T6	50
12	T5	70
	T6	60

Explosive dust atmospheres:

For all possible configurations according to the nomenclature the following Max. temperatures are applicable:

P [W]	Max. Temperature [$^{\circ}\text{C}$]	Max. T_a [$^{\circ}\text{C}$]
45	135	80
	100	50
30	100	60
	85	50
12	100	70
	85	60

The temperature range may be limited by a lower maximal allowable ambient temperature range of components used. In this case the marking of the maximum applicable ambient temperature range will be adjusted by the applicant under the responsibility of the applicant.

Notes for manufacturing

The subject cameras contain separately certified components and equipment such as connection compartments, bushings, cable glands or connecting parts. Therefore, only components may be used which technically comply with the standard editions, mentioned on the cover sheet and which are suitable for the actual operating conditions. Special conditions, when present, are to be taken into account and when necessary, the end user has to be informed about certain special conditions of the components or equipment within the scope of the instruction manual and / or by warning notices on the enclosure. When necessary, the components are to be included into the type test. This also applies to the components, already mentioned in the technical description.



Connecting conditions

1. The Camera Enclosure of the type family EC-940-***-***-**K-*** (assembling completely in the type of protection "Flameproof enclosures") shall be connected with suitable cable glands or conduit systems that meet the requirements set forth in EN 60079-1, sections 13.1 and 13.2, and for which a separate test certificate has been issued. If the Camera Enclosure EC-940-***-***-**K-*** is connected to conduit systems, the required sealing device shall be provided immediately at the enclosure.
2. Openings that are not used shall be sealed in compliance with the specifications in EN 60079-1, section 11.9.
3. If connection is made in the potentially explosive area, the connecting wire of the Camera Enclosure shall be connected in an enclosure that meets the requirements of an approved type of protection in accordance with IEC 60079-0, section 1.
4. The connecting wire of the Camera Enclosure shall be fixed and routed so that it will be adequately protected against mechanical damage.
5. If the temperature at entry fittings exceeds 70 °C, temperature-resistant connecting cables shall be used.
6. The Camera Enclosure shall be included into the local equipotential bonding solution (contact resistance $\leq 1\text{M}\Omega$) of the potentially explosive location.

These notes and instructions shall accompany each apparatus in an adequate form.

Warning notes

DO NOT OPEN WHEN ENERGIZED!

AFTER DE-ENERGIZING, DELAY 15 MINUTES BEFORE OPENING!

THE CAMERA SHALL NOT BE INSTALLED IN LOCATIONS WHERE ELECTROSTATIC CHARGING HIGHER THAN MANUAL RUBBING MAY OCCUR!

DO NOT OPEN, MAINTAIN OR SERVICE IN AN AREA WHERE AN EXPLOSIVE ATMOSPHERE IS PRESENT!