

### INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

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

Surrent 021-07-15 <b>C. STAHL HMI Systems GmbH</b> dolf-Grimme Allee 8 0829 Köln Sermany an and Tilt Units, Models EC-940-PTZ-A* / E C-84* (with * other than 0) series and EC-95 lameproof "db", Dust Ignition Protection by	Issue No: 6 Issue No: 6 Issue 4 (2020-03-19) Issue 3 (2018-07-23) Issue 2 (2017-12-14) Issue 1 (2017-07-26) Issue 0 (2016-04-06) EC-940-PTZ-* / EC-940-DUA-*/ EC-94* (with * other than 0) / EC-98* / ** series.					
021-07-15 <b>C. STAHL HMI Systems GmbH</b> dolf-Grimme Allee 8 0829 Köln Sermany ran and Tilt Units, Models EC-940-PTZ-A* / E C-84* (with * other than 0) series and EC-95 lameproof "db", Dust Ignition Protection by	Issue 3 (2018-07-23) Issue 2 (2017-12-14) Issue 1 (2017-07-26) Issue 0 (2016-04-06) EC-940-PTZ-* / EC-940-DUA-*/ EC-94* (with * other than 0) / EC-98* / i* series.					
A. STAHL HMI Systems GmbH dolf-Grimme Allee 8 0829 Köln Sermany ran and Tilt Units, Models EC-940-PTZ-A* / E C-84* (with * other than 0) series and EC-95 lameproof "db", Dust Ignition Protection by	Issue 1 (2017-07-26) Issue 0 (2016-04-06) EC-940-PTZ-* / EC-940-DUA-*/ EC-94* (with * other than 0) / EC-98* / i* series.					
an and Tilt Units, Models EC-940-PTZ-A* / E C-84* (with * other than 0) series and EC-95 lameproof "db", Dust Ignition Protection by	EC-940-PTZ-* / EC-940-DUA-*/ EC-94* (with * other than 0) / EC-98* / i* series. / Enclosure "tb"					
lameproof "db", Dust Ignition Protection by	/ Enclosure "tb"					
lameproof "db", Dust Ignition Protection by	/ Enclosure "tb"					
0 040 DT7 A+ / F0 040 DT7 + / F0 0/0 DU4						
G-940-P1Z-A^ / EG-940-P1Z-* / EG-940-DUA ) series:	-* / EC-94* (with * other than 0) / EC-98* / EC-84* (with * other than					
x db IIC T6 Gb or						
x db IIC T6…T1 Gb						
nd						
Ex tb IIIC T85°C Db or						
Ex tb IIIC T85°CT450°C Db						
EC-940-PTZ-A* / EC-940-PTZ-* / EC-940-DUA-*:						
-40°C ≤ Ta ≤ +60°C						
EC-94* (with * other than 0) / EC-98* / EC-84* (with * other than 0):						
10°C ≤ Ta ≤ +50°C						
or +55°C, or +60°C, or +65°C						
or +70°C, or +75°C, or +80°C						
ehalf of the IECEx	Katy A. Holdredge					
	Senior Staff Engineer					
	Kety a. Hallbulge					
	2021-07-15					
dule may only be reproduced in full. sferable and remains the property of the issuing body. ity of this certificate may be verified by visiting www.iec	ex.com or use of this QR Code.					
	series: < db IIC T6 Gb or < db IIC T6T1 Gb 1d × tb IIIC T85°C Db or × tb IIIC T85°CT450°C Db C-940-PTZ-A* / EC-940-PTZ-* / EC-940-DUA $0°C \le Ta \le +60°C$ C-94* (with * other than 0) / EC-98* / EC-84* $0°C \le Ta \le +50°C$ or +55°C, or +60°C, or +65°C or +70°C, or +75°C, or +80°C shalf of the IECEx dule may only be reproduced in full. Isferable and remains the property of the issuing body. ity of this certificate may be verified by visiting www.lec					

UL International DEMKO A/S Borupvang 5A DK-2750 Ballerup Denmark





Certificate No.:

IECEx ULD 16.0005X

Page 2 of 5

Date of issue:

2021-07-15

Issue No: 6

EC-95\* series:

Ex db IIC T6...T4 Gb

Ex tb IIIC T85°C...T135°C Db

EC-95\*:

-40°C ≤ Ta ≤ +50°C

or +60°C, or +70°C, or +75°C

Please see Annex for additional information.



Quality Assessment Report:

DE/BVS/QAR06.0007/11



Certificate No.:

**IECEx ULD 16.0005X** 

Date of issue:

2021-07-15

Page 4 of 5

Issue No: 6

#### EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

EC-940-PTZ-A\* / EC-940-PTZ-\* / EC-940-DUA-\* / EC-94\* (with \* other than 0) / EC-98\* / EC-84\* (with \* other than 0) and EC-95\* series housings contain an integrated fully functional camera head system handling preset, autopan and patrol functions with an integrated wiper. The housings are comprised of the following compartments: a static terminal compartment base, a main body providing 360° continuous pan movement and either one or two camera housings with +90° to -90° tilt movement. The EC-940-PTZ-A, EC-940-DUA and EC-98\* series housings are fitted with a standard day/night camera. The EC-940-PTZ and EC-94\* (with \* other than 0) are fitted with a Full HD day/night camera. The EC-940-DUA and EC-98\* series housings are additionally fitted with an infra-red camera. The EC-95\* is additionally fitted with white light or infrared 850nm wavelength LEDs. The EC-84\* (with \* other than 0) series housing is fitted with an infra-red camera.

The terminal compartment provides one or two 3/4" NPT (M25 x 1.5 as an alternative) cable entry to the side of the projecting cylinder welded to its enclosure for end user connection to either cable connectors or a conduit system depended on application. Access to the terminal enclosure for termination of supply or replacement of either of the two fitted fuses or inputs and outputs is via a threaded cover closing off the projected cylinder. The top threaded cover provides a shaft for connection to the main enclosure body, which is fitted with a slip ring, providing cable connection from the terminal compartment into the main body enclosure.

The main body is cylindrical in shape with two externally welded cylindrical spigot arms with female threaded apertures projecting from it 180° apart that can be used for connection of either a camera housing, LED illuminator housing or closed off with a threaded cover. The EC-940-PTZ, EC-94\* (with \* other than 0) and EC-84\* (with \* other than 0) series are provided with only one externally welded cylindrical spigot arms. Internal circuitry consists of a thermostat board maintaining a minimum internal temperature when the equipment is powered. With one of two thermostats fitted in series switching off the circuit when the temperature is reached. The base of the main body provides a female thread for connection to the terminal compartment with the top of the main body closed off with a threaded cover.

The camera housing is cylindrical in shape with an externally projecting welded cylindrical spigot arm with a female threaded aperture. The aperture is fitted with a connecting shaft for connection to the main body. The ends of the housing are closed off with threaded covers. The front cover is fitted with a window cemented in place. The day/night camera housing is additionally fitted with an externally fitted window wiper and internally fitted with thermostat circuitry. The circuitry maintains a minimum internal temperature when the equipment is powered with one of two thermostats fitted in series switching off the circuit when the temperature is reached. The top of the housing is fitted with female threaded studs for connection of a sun shield. Internally the camera housing is fitted with an optical zoom.

Externally the equipment, other than the cemented windows, is manufactured from passivated, electro-polished AiSi 316L stainless steel.

#### Please see Annex for additional information.

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

- Contact the manufacturer for information on the dimensions of the flameproof joints.
- The unit can be only installed in standard or inverted position.
- Ambient temperature and Surface temperature see instructions.
- Care shall be taken to prevent accumulation of electrostatic charges. See installation instructions.



Certificate No.: IECEx ULD 16.0005X

Date of issue:

2021-07-15

Page 5 of 5

Issue No: 6

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

Issue 1: Standards updated to latest editions.

Issue 2: Change of Applicant and Manufacturer's designation from R. STAHL Camera Systems GmbH to R. STAHL HMI Systems GmbH. Modified routine testing and updated QAR.

Issue 3: Addition of new HD night/day camera for model EC-940-PTZ-\*.

Issue 4: Addition of new series EC-94\* (with \* other than 0), EC-98\* and EC-84\*; Increase of maximum ambient temperature up to +80°C; Determination of maximum service temperature and maximum surface temperature; Update of IEC 60079-0 from 6th Edition to 7th Edition.

Issue 5: For all models: Addition of alternate components. For EC-94\* (with \* other than 0), EC-98\* and EC-84\* series only: Addition of input rating and extension of maximum dissipated power (W) within each camera housing.

Issue 6: Addition of new model EC-95\*.

Annex:

Annex to IECEx ULD 16.0005X Issue 6.pdf



Certificate No .:

IECEx ULD 16.0005X

Issue No.: 6 Page 1 of 11

### TYPE DESIGNATION

Product Nomenclature:

EC-940-PTZ-A\*, EC-940-PTZ-\* and EC-940-DUA-\* series.

Model: EC-940-PTZ-Aaa-bcd-ee

Where:

		3P	36x optical zoom, PAL
	Comoro	2P	28x optical zoom, PAL
аа	Camera	3N	36x optical zoom, NTSC
		2N	28x optical zoom, NTSC
b	Accessory	W	With wiper
c Voltage	1	230Vac	
	Voltage	2	24Vac
		3	120Vac
		0	Analog version
		Х	Integrated MPEG4 video server to control all functions via IP
d	Video output	F	Integrated Single Mode video and data fiber optic transmitter
		G	Integrated Multi Mode video and data fiber optic transmitter
		Z	Integrated H264 video server to control all functions via IP
ee	Variation	**	Empty or for internal use

#### Model: EC-940-PTZ-aab-cdeff

	co Comoro		HD Camera day/night, 30x optical Zoom	
aa Camera		HF	HD Camera day/night, 30x high sensitivity	
b	Video output	-	Integrated H264 video server to control all functions via IP	
с	Accessory	W	With wiper	
d Voltage	1	230Vac		
	2	24Vac		
	3	120Vac		
			Empty – first release	
e Release	В	Second release		
ff	Variation	**	Empty or for internal use	



Certificate No .:

IECEx ULD 16.0005X

Issue No.: 6 Page 2 of 11

Model: EC-940-DUA-abb-cdd-eef-ghi-ll Where:

а	Type of camera	А	Analog camera day/night
		3P	36x optical zoom, PAL
	0	2P	28x optical zoom, PAL
dd	Camera	3N	36x optical zoom, NTSC
		2N	28x optical zoom, NTSC
с	Type of camera	А	Analog TIC camera
		35	35mm lens
		25	25mm lens
dd	Lens size thermal camera	19	19mm lens
		13	13mm lens
		09	9mm lens
		16	Tau 160
00	Thormal comora	32	Tau 320
ee		33	Tau 336
		64	Tau 640
f	Wiper	W	With wiper
		1	230Vac
g	Voltage	2	24Vac
		3	120Vac
		0	Analog version
		Х	Integrated MPEG4 video server to control all functions via IP
h	Video output	F	Integrated Single Mode video and data fiber optic transmitter
		G	Integrated Multi Mode video and data fiber optic transmitter
		Z	Integrated H264 video server to control all functions via IP
i	Thermal camera	No code	7.5-8.3 Hz
	пециенсу	Н	25-30 Hz
П	Variation	**	Empty or for internal use



Certificate No .:

IECEx ULD 16.0005X

Issue No.: 6

Page 3 of 11

#### EC-94\* (with \* other than 0), EC-98\* and EC-84\* (with \* other than 0) series.

#### Model: EC-94a-bbcccddeeee

Where:

а	Release	*	For internal use (one alphanumeric character other than 0)
		V1	230V ac
		V2	24V ac
bb	bb Voltage	V3	120V ac
		V5	220V ac
	V6	100V ac	
ссс	Visible camera	***	Pre-installed visible camera (three alphanumeric character)
dd	Temperature	**	T CLASS and Ambient Temperature (two alphanumeric character)
eeee	Variation	****	For internal use (four alphanumeric character)

#### Model: EC-98a-bbcccddddeeffgggg

а	Release	*	For internal use (one alphanumeric character other than 0)
		V1	230Vac
		V2	24Vac
bb	Voltage	V3	120Vac
		V5	220V ac
		V6	100V ac
ссс	Visible camera	***	Pre-installed visible camera (three alphanumeric character)
dddd	Thermal camera	****	Pre-installed thermal camera (four alphanumeric character)
ee	Temperature	**	T CLASS and Ambient Temperature (two alphanumeric character)
#	Thermal camera	Y0	7.5 Hz
" frequency	frequency	Y1	30 Hz
<u>aaaa</u>	Variation	****	For internal use (four alphanumeric character)



Certificate No .:

IECEx ULD 16.0005X

Issue No.: 6

Page 4 of 11

### Model: EC-84a-bbccccddeefffff

Where:

а	Release	*	For internal use (one alphanumeric character other than 0)
		V1	230Vac
		V2	24Vac
bb	Voltage	V3	120Vac
	V5	220V ac	
		V6	100V ac
cccc	Thermal camera	****	Pre-installed thermal camera (four alphanumeric character)
dd	Temperature	**	T CLASS and Ambient Temperature (two alphanumeric character)
	Thermal camera	Y0	7.5 Hz
frequency	Y1	30 Hz	
ffff	Variation	****	For internal use (four alphanumeric character)

#### EC-95\*: EC-95a-bbcccddeeffgggg

Where:

а	Release	*	For internal use (one alphanumeric character other than 0)
		V1	220-230V ac
<b>b</b> b	Voltago	V2	24V ac
dd	vonage	V3	120V ac
	V6	100V ac	
ссс	Visible light camera	***	Pre-installed visible camera (three alphanumeric character)
ما ما	licht	L8	850 nm
aa	aa Light		White
ee	Illuminator lens	**	Pre-installed illuminator lens (two alphanumeric character)
ff	Temperature	**	T CLASS and Ambient Temperature (two alphanumeric character)
gggg	Variation	****	For internal use (four alphanumeric character)

### PARAMETERS RELATING TO THE SAFETY

Electrical Ratings:

EC-940-PTZ-A\* / EC-940-PTZ-\* / EC-940-DUA-\*:

Supply Voltage	Electrical ratings
230V ac	0.52A, 50/60Hz, 120W
24V ac	5A, 50/60Hz, 120W
120V ac	1A, 50/60Hz, 120W



Certificate No .:

IECEx ULD 16.0005X

Issue No.: 6 Page 5 of 11

EC-94\* (with \* other than 0) / EC-98\* / EC-84\* (with \* other than 0):

Supply Voltage	Electrical ratings
230V ac	0.52A, 50/60Hz, 120W
24V ac	5A, 50/60Hz, 120W
120V ac	1A, 50/60Hz, 120W
220V ac	0.54A, 50/60Hz, 120W
100V ac	1.2A, 50/60Hz, 120W

EC-95\*:

Supply Voltage	Electrical ratings
220-230V ac	0.54A max, 50/60Hz, 120W
24V ac	5A, 50/60Hz, 120W
120V ac	1A, 50/60Hz, 120W
100V ac	1.2A, 50/60Hz, 120W

Environmental Ratings:

The relation between ambient temperature and the assigned temperature class is as follow: <u>EC-940-PTZ-A\* / EC-940-PTZ-\* / EC-940-DUA-\*:</u>

Ambient temperature	Temperature Class / Max.
range	Surface Temperature
<u>-40°C ≤ Ta ≤ +60°C</u>	<u>T6/T85°C</u>

EC-94\* (with \* other than 0) / EC-98\* / EC-84\* (with \* other than 0):

Ambient temperature range:

-40°C ≤ Ta ≤ +80°C.

Cable entries and field wiring must be suitable for an operating temperature as specified in the following table. The relation between maximum ambient temperature, maximum dissipated power (W) within camera housings, cable entry/branching point temperatures and the assigned temperature class/maximum surface temperature is as follows.

For maximum dissipated power (W) within each camera housings ≤ 12W:

Temperature Class				T6/T85°C			
T Ambient	50°C	55°C	60°C	65°C	70°C	75°C	80°C
Max. dissipated Power [W] for each camera housing	12.0	11.0	8.2	5.3	2.5	-	-
T Cable [°C]	60.9	65.3	68.7	72.1	75.5	-	-



Certificate No .:

IECEx ULD 16.0005X

Issue No.: 6

Page 6 of 11

Note: All models which meet the requirements for T6/T85°C are also permitted to be marked T5/T100°C, T4/T135°C, T3/T200°C, T2/T300°C or T1/T450°C.

Temperature Class		T5/T100°C					
T Ambient [°C]	50°C	55°C	60°C	65°C	70°C	75°C	80°C
Max. dissipated Power [W] for each camera housing	12.0	12.0	12.0	12.0	11.0	8.2	5.3
T Cable [°C]	60.9	65.9	70.9	75.9	80.3	83.7	87.1

Note: All models which meet the requirements for T5/T100°C are also permitted to be marked T4/T135°C, T3/T200°C, T2/T300°C or T1/T450°C.

Temperature Class		T4/T135°C					
T Ambient	50°C	55°C	60°C	65°C	70°C	75°C	80°C
Max. dissipated Power [W] for each camera housing	12.0	12.0	12.0	12.0	12.0	12.0	9.6
T Cable [°C]	60.9	65.9	70.9	75.9	80.9	85.9	89.5

Note: All models which meet the requirements for T4/T135°C are also permitted to be marked T3/T200°C, T2/T300°C or T1/T450°C.

For maximum dissipated power (W) within each camera housings of  $12 \le W \le 16$ :

Temperature Class / Max. Surface Temperature	T5/T100°C	T4/T135°C
T Ambient	50°C	60°C
Max. dissipated Power [W] for each camera housing	12 < W ≤ 16	12 < W ≤ 16
T Cable [°C]	80°C	80°C



Certificate No .:

IECEx ULD 16.0005X

Issue No.: 6 Page 7 of 11

EC-95\*:

Ambient temperature range:

-40°C ≤ Ta ≤ +75°C.

Cable entries and field wiring must be suitable for an operating temperature as specified in the following table. The relation between ambient temperature range, cable entry/branching point temperatures and the assigned temperature class/maximum surface temperature is as follows.

For maximum dissipated power (W) within visible camera housing  $\leq$  12W:

<u>Temperature Class / Max.</u> <u>Surface Temperature</u>	<u>T6 / T85°C</u>	<u>T5 / T100°C</u>	<u>T4 / T135°C</u>	<u>T4 / T135°C</u>
<u>T Ambient max. [°C]</u>	<u>50°C</u>	<u>60°C</u>	<u>70°C</u>	<u>75°C</u>
Max. dissipated Power [W] for visible camera housing		<u>₩ ≤</u>	12	
T Cable [°C]	<u>66.8°C</u>	<u>76.8°C</u>	<u>86.8°C</u>	<u>91.8°C</u>

For maximum dissipated power (W) within visible camera housing of 12 < W ≤ 16:

<u>Temperature Class / Max.</u> <u>Surface Temperature</u>	<u>T6 / T85°C</u>	<u>T5 / T100°C</u>	<u>T4 / T135°C</u>
T Ambient max. [°C]	<u>40°C</u>	<u>50°C</u>	<u>60°C</u>
Max. dissipated Power [W] for visible camera housing		<u>12 &lt; W ≤ 16</u>	
T Cable [°C]	<u>56.8°C</u>	<u>66.8°C</u>	<u>76.8°C</u>



Certificate No .:

IECEx ULD 16.0005X

Issue No.: 6 Page 8 of 11

### MARKING

Marking has to be readable and indelible; it has to include the following indications:

#### EC-940-PTZ-A\* / EC-940-PTZ-\* / EC-940-DUA-\*.

<ul> <li>Model: (i) -40°C ≤ Ta ≤ +60°C</li> <li>Serial N°: (i) ECEX ULD 16.0005X Ex db IIC T6 Gb Ex tb IIIC T85°C Db</li> <li>Cable entry size: 3/4" NPT</li> <li>Warning! Do not open when an explosive atmosphere is present Potential electrostatic charging hazard - see instructions</li> </ul>	STAHL STAHL HMI Systems GmbH Adolf-Grimme Allee 8 50829 Köln 1 Germany	<ul> <li>DEMKO 16 ATEX 1674X</li> <li>IP66</li> <li>I 2 G Ex db IIC T6 Gb</li> <li>II 2 D Ex tb IIIC T85°C Db</li> </ul>
Image: Serial N°:       Image: Serial N°:         Image: Serial N°:       Image: Serial N°:	Model:	① -40°C ≤ Ta ≤ +60°C
<ul> <li> <b>Ex db IIC T6 Gb Ex tb IIIC T85°C Db</b> </li> <li> <b>S Cable entry size:</b> 3/4" NPT         </li> <li> <b>Warning!</b> </li> <li>             Do not open when an explosive atmosphere is present      </li> <li> <b>Potential electrostatic charging hazard - see instructions</b> </li> </ul>	Serial N°:	IECEx ULD 16.0005X
S Cable entry size: 3/4" NPT S Warning! Do not open when an explosive atmosphere is present Potential electrostatic charging hazard - see instructions	④Electrical:	Ex db IIC T6 Gb Ex tb IIIC T85°C Db
Warning! Do not open when an explosive atmosphere is present Potential electrostatic charging hazard - see instructions	Scable entry size: 3/4" NPT	
Do not open when an explosive atmosphere is present Potential electrostatic charging hazard - see instructions	© Warning!	
	Do not open when an explosive atmosphere is present Potential electrostatic charging hazard - see instructions	
Where:	Where:	

1	Name and address of manufacturer
2	Model
3	The serial number consists in 12 numeric characters, the second and third digits define the last 2 numbers of the year of manufacture
4	Electrical rating
5	Type and size of cable entry
6	Warnings
7	Notified body number providing quality assessment
8	ATEX marking
9	IECEx marking
10	IP protection
11	Ambient temperature



Certificate No .:

IECEx ULD 16.0005X

Issue No.: 6

Page 9 of 11

EC-94* (with * other than 0)	) / EC-98* / EC-84* (with * other than 0).
<b>STAHL</b> R. STAHL HMI S Adolf-Grimme A 50829 Köln 1 Germany	ystems GmbH Allee 8 3 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Model: 2	IP66/IP68
Serial N°: 3	
Electrical: (4)	
Cable entry size: 5	
Image: Warning - Do not oper           Image: Warning - Potential ele           Image: Warning - Potentiale           Image: Warning - P	n when an explosive atmosphere is present ectrostatic charging hazard - see instructions as ouvrir en prèsence d'une atmosphére explosive er potentiel de charges èlectrostatiques - Voir instructions
9 DEMKO 16 ATEX 1674X	10 IECEx ULD 16.0005X
( II 2G Ex db IIC 12 Gb	Ex db IIC 12 Gb Ex tb IIIC 13 Db
-40°C ≤ Ta ≤	Cable entry temperature: 6

1	Name and address of manufacturer
2	Model
3	QAR code for serial number. The serial number consists in 12 numeric characters, the second and third digits define the last 2 numbers of the year of manufacture
4	Electrical rating
5	Type, size and number of cable entries
6	Cable entry temperature
7	Warnings
8	Notified body number providing quality assessment
9	ATEX marking
10	IECEx marking
11	IP protection
12	T Class
13	Maximum surface temperature
14	Maximum ambient temperature



Certificate No.:

IECEx ULD 16.0005X

Issue No.: 6 Page 10 of 11

EC-95\*.



1	Name and address of manufacturer
2	Model
3	QAR code for serial number. The serial number consists in 12 numeric characters, the second and third digits define the last 2 numbers of the year of manufacture
4	Electrical rating
5	Type, size and number of cable entries
6	Cable entry temperature
7	Warnings
8	Notified body number providing quality assessment
9	ATEX marking
10	IECEx marking
11	IP protection
12	T Class
13	Maximum surface temperature
14	Ambient temperature



Certificate No.:

IECEx ULD 16.0005X

Issue No.: 6 Page 11 of 11

#### **ROUTINE EXAMINATIONS AND TESTS**

Routine overpressure tests in accordance with IEC 60079-1, 7th Edition, clause 16.3, are required in production of the following component parts:

- Main body enclosure, except upper and lower covers;
- Standard camera enclosure, body and front cover only;
- Infra-red camera enclosure, body and front cover only;
- Illuminator enclosure, body and front cover only; and
- Terminal compartment housing and welded upper cover.

Each enclosure component shall be subjected to a routine overpressure test value of a pressure of 31.3 bar for a duration of not less than 10 seconds. There shall be no sign of damage, deformation or rupture that will invalidate the concept of protection.