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# Certificates Device platform EAGLE

## ET-xx6-A

**SERIES 300 Operator Interfaces**  
**SERIES 400 Panel PC**  
**SERIES 500 Thin Clients**

**(valid for HW Rev. 3., 2. supplement)**

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R. STAHL HMI Systems GmbH  
Adolf-Grimme-Allee 8  
D 50829 Köln

HW-Rev. ET-xx6-A-FX:	03.02.12
HW-Rev. ET-xx6-A-TX:	03.02.22
HW-Rev. ET-xx6-A-FX-BT:	03.02.14
HW-Rev. ET-xx6-A-TX-BT:	03.02.24
HW-Rev. ET-3x6-A-FX-BS:	03.02.15
HW-Rev. ET-3x6-A-TX-BS:	03.02.25

Certificates version:	03.02.07
Issue:	27.11.2019

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# 1 Preface

 **NOTICE**

This document contains all valid certificates for the ET-xx6-A product line with the 2<sup>nd</sup> supplement.

All technical details contained in the EC type examination certificate are also part of the associated operating instructions.

All certificates are also available on [r-stahl.com](http://r-stahl.com), on the CD / DVD / USB stick included in the delivery or a copy can also be ordered from R. STAHL HMI Systems GmbH.

## 2 ATEX EC type examination certificate

### (1) EC - TYPE EXAMINATION CERTIFICATE

- (2) Equipment and Protective Systems intended for use in Potentially Explosive Atmosphere - Directive 94/9/EC
- (3) EC-Type Examination Certificate Number



## TÜV 11 ATEX 7041 X

- (4) Equipment: **Operator Interface** Type: ET-\*\*6-A-\*-\*\*\*
- (5) Manufacturer: **R. Stahl HMI Systems GmbH**
- (6) Address: **Im Gewerbegebiet Pesch 14 D – 50767 Köln**

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The TÜV Notified Body for ex-protected products of TÜV Rheinland Industrie Service GmbH, Notified Body No. 0035 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmosphere, given in Annex II to the Directive. The examination and test results are recorded in the confidential report: 557 / Ex 041.00 / 11

(9) Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

EN 60079-0: 2009	EN 60079-1: 2007	EN 60079-7: 2007	EN 60079-11: 2007
EN 60079-18: 2009	EN 60079-28: 2007	EN 60079-31: 2009	EN 61241-11: 2006

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EC-Type-Examination Certificate relates only to the design and specification for construction of the equipment or protective system. It does not cover the process for actual manufacture or supply of the equipment or protective system, for which further requirements of the directive are applicable.
- (12) The marking of the equipment shall include the following (alternative marking see manual):

	II 2 (2) G	Ex d e ia ib mb [Ia Ib] IIC T4 Gb	for type code TX
	II 2 (2) D	Ex ia tb [Ia Ib] IIIC T80°C Db IP66	for type code TX
	II 2 (2) G	Ex d e ia ib mb [Ia Ib op Is] IIC T4 Gb	for type code FX
	II 2 (2) D	Ex ia tb [Ia Ib op Is] IIIC T80°C Db IP66	for type code FX

TÜV Rheinland Ex Notified Body

Cologne, 25<sup>th</sup> May 2011

Dipl.- Ing. Heinz Farke



Translation  
This EC-Type Examination Certificate shall not be valid without signature and stamp.  
This EC-Type Examination Certificate may be circulated without alteration only.  
Extracts or alterations are subject to approval by the:  
TÜV Rheinland Industrie Service GmbH Am Grauen Stein 51105 Köln  
Tel. +49 (0) 221 806-0 Fax. +49 (0) 221 806 114

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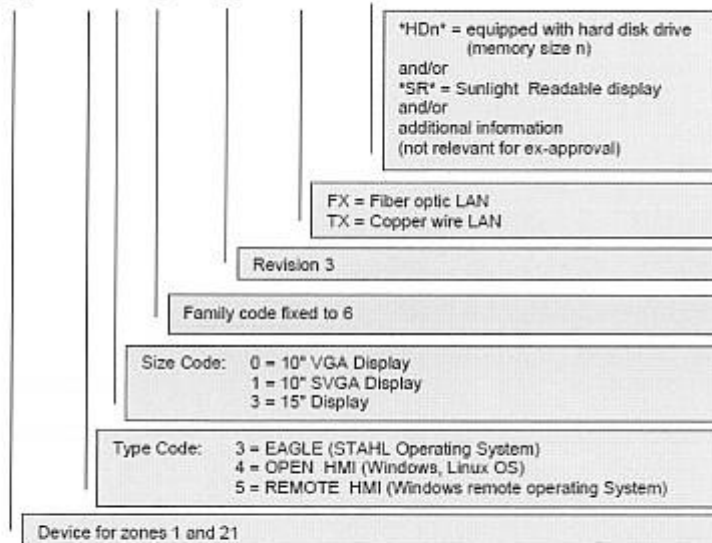
(13) Annex to

(14) **EC - Type Examination Certificate**  
**TÜV 11 ATEX 7041 X**

(15) **Description of Equipment**

15.1 Article / Type Code

ET - \* \* 6 - A - \* - \*\*\*



The Exicom ET-\*\*6-A-\*-\* devices are operator interfaces or panel PCs for installation in hazardous locations classified for zones 1, 2, 21 and 22. The entire devices are built in housings that are protected against liquids and dust without need to be installed in hazardous locations certified cabinets. The different models vary in display size (10" to 15") and overall size, front panel with or without keyboard and overall functionality. Three main functionalities are (characterized by the first type code number, not ex-relevant):

- ET-3\*6-A-\*-\*: STAHL operating system for user application;
- ET-4\*6-A-\*-\*: Standard operation system (e.g. Windows Embedded, Linux etc.) for standard applications;
- ET-5\*6-A-\*-\*: Windows Embedded Standard operating system for remote applications.

This Certificate may be circulated without alterations only. Extracts or alterations has to be approved by TÜV Rheinland Industrie Service GmbH.

TÜV, TÜV and TÜV are registered trademarks. Utilization and application requires prior approval.



Internal construction of all devices is equal for most parts for all models.  
 All models have several interfaces to connect external devices as keyboards, joysticks, trackballs, RFID- or barcode-scanner etc.  
 Communication with PLC networks and automation systems is achieved by different interfaces (RS-232, RS-485, Ethernet fiber optic or copper wire Ethernet links) connected in the "Ex-e"-area at the back of the devices.

Assembling of accessory as USB memory sticks and hard disk drives is previewed.

#### 15.2 Technical data / parameters

Operating temperature range: -20°C (Front -30°C) <= Ta <= + 55°C  
 IP Code of enclosure: IP 66

#### External, non-intrinsically safe circuits

##### **Input voltage (X1)**

Rated Voltage	24 VDC (+20% /-15%)
max. Voltage Um	30 VAC
Rated current	1.5 A

##### **RS-422/-232 COM 1 (X2)**

Rated voltage	
RS232:	±12 VDC
RS422:	5 VDC
max. Voltage Um	253 VAC

##### **Audio out (X3)**

Rated Voltage	5 VDC
max. Voltage Um	253 VAC

##### **USB-1 (X5)**

Rated Voltage	5 VDC
max. Voltage Um	253 VAC

##### **USB-3 (X7)**

Rated voltage	5 VDC
max. voltage Um	253 VAC

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**LAN (X11)**

Rated voltage                      5 VDC  
 max. voltage  $U_m$                 30 VAC

**External intrinsically safe circuits**

Co and Lo pairs directly above/underneath each other may be used.  
 If the operator interfaces are installed in Zone 21 the maximum values for L and C of Group IIB apply to the intrinsically safe circuits.

**USB-0 (X4) and USB-2 (X6)**

$U_o$  = 5.9 V  
 $I_o$  = 2.18 A  
 $P_o$  = 1.24 W

**Maximum values, rectangular source for Zone 1 Group IIC:**

$L_i$ = 0 mH	$L_o$ = 0.01	0.005	0.002	0.001	mH
$C_i$ = 0 $\mu$ F	$C_o$ = 5.1	11	28	43	$\mu$ F

**Maximum values, rectangular source for Zone 1 Group IIB:**

$L_i$ = 0 mH	$L_o$ = 0.05	0.02	0.01	0.005	mH
$C_i$ = 0 $\mu$ F	$C_o$ = 14	40	79	200	$\mu$ F

**ET-Reader-2-RSi1 and RSi2 (X8)**

Reader-2-RSi1 module supply (internal UB\_RDR output),  
 terminal X8.0 (bridged to X8.2)

$U_o$  = 10.4 V  
 $I_o$  = 220 mA  
 $P_o$  = 2.29 W

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**Maximum values, rectangular source for Zone 1 Group IIC:**

$$\begin{array}{ll}
 L_i = 0 \text{ mH} & L_o = 0.01 \text{ mH} \\
 C_i = 1.72 \text{ }\mu\text{F} & C_o = 0.8 \text{ }\mu\text{F}
 \end{array}$$

Remark:  
 No values for IIB available for connection to X8.2.  
 The level IIC provides sufficient parameters.

**Reader-2-RSi1 module supply input, terminal X8.2 (bridged to X8.0)**

$$\begin{array}{ll}
 U_i = 12.4 \text{ V} \\
 I_i = 220 \text{ mA} \\
 P_i = 2.29 \text{ W} \\
 L_i = 0 \text{ mH} \\
 C_i = 25 \text{ nF}
 \end{array}$$

**Reader-2-RSi1 power supply for reader, terminals X8.3 – 4**

$$\begin{array}{ll}
 U_o = 5.36 \text{ V} \\
 I_o = 220 \text{ mA} \\
 P_o = 1.18 \text{ W}
 \end{array}$$

**Maximum values, rectangular source for Zone 1 Group IIC:**

$$\begin{array}{ll}
 L_i = 0 \text{ mH} & L_o = 0.002 \text{ } | \text{ } 0.001 \text{ mH} \\
 C_i = 5.3 \text{ }\mu\text{F} & C_o = 40.7 \text{ } | \text{ } 59.7 \text{ }\mu\text{F}
 \end{array}$$

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**Maximum values, rectangular source for Zone 1 Group IIB:**

Li	=	0	mH	Lo	=	0.02	0.01	mH
Ci	=	5.3	μF	Co	=	70.7	124.7	μF

**Reader-2-Rsi1 and -Rsi2 signal input/output, terminals X8.5 – 8**

Ui	=	15	V	Uo	=	5.36	V
li	=	500	mA	lo	=	46	mA
Pi	=	2.5	W	Po	=	62	mW

**Maximum values, linear source for Zone 1 Group IIC:**

Li	=	0	mH	Lo	=	0.002	mH
Ci	=	0	μF	Co	=	46	μF

**Maximum values, linear source for Zone 1 Group IIB:**

Li	=	0	mH	Lo	=	0.02	mH
Ci	=	0	μF	Co	=	79	μF

**ET-Reader-2-WCR1 and WCR2 (X8)**

**Reader-2-WCR1 module supply (from external is-power supply) terminal X8.1 - 2**

Ui	=	11.4	V
li	=	200	mA
Pi	=	2.28	W

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$$L_i = 0 \text{ mH}$$

$$C_i = 25 \text{ nF}$$

**Reader-2-WCR1 power supply for reader, terminals X8.3 – 4**

$$U_o = 5.88 \text{ V}$$

$$I_o = 200 \text{ mA}$$

$$P_o = 1.18 \text{ W}$$

**Maximum values, rectangular source for Zone 1 Group IIC**

$$L_i = 0 \text{ mH} \qquad L_o = 0.002 \text{ | } 0.001 \text{ mH}$$

$$C_i = 5.3 \text{ } \mu\text{F} \qquad C_o = 27.7 \text{ | } 37.7 \text{ } \mu\text{F}$$

**Maximum values, rectangular source for Zone 1 Group IIB:**

$$L_i = 0 \text{ mH} \qquad L_o = 0.02 \text{ | } 0.01 \text{ mH}$$

$$C_i = 5.3 \text{ } \mu\text{F} \qquad C_o = 55.7 \text{ | } 94.7 \text{ } \mu\text{F}$$

**Reader-2-WCR1 and -WCR2 signal input/output, X8.5 – 8**

$$U_i = 15 \text{ V} \qquad U_o = 5.88 \text{ V}$$

$$I_i = 500 \text{ mA} \qquad I_o = 51 \text{ mA}$$

$$P_i = 2.5 \text{ W} \qquad P_o = 75 \text{ mW}$$

**Maximum values, linear source for Zone 1 Group IIC**

$$L_i = 0 \text{ mH} \qquad L_o = 0.002 \text{ mH}$$

$$C_i = 0 \text{ } \mu\text{F} \qquad C_o = 34 \text{ } \mu\text{F}$$

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**Maximum values, linear source for Zone 1 Group IIB:**

Li = 0 mH                      Lo = 0.02 mH  
 Ci = 0 µF                      Co = 63 µF

**Keyboard & Pointing device protection level "ib" (X9)**

Uo = 5.88 V  
 Io = 200 mA  
 Po = 1.18 W

**Maximum values, rectangular source for Zone 1 Group IIC**

Li = 0 mH                      Lo = 2 | 1 µH  
 Ci = 17.6 µF                      Co = 15.4 | 25.4 µF

**Maximum values, rectangular source for Zone 1 Group IIB:**

Li = 0 mH                      Lo = 100 | 50 | 20 | 10 µH  
 Ci = 17.6 µF                      Co = 10.4 | 20.4 | 43.4 | 82.4 µF

**Keyboard & Pointing device protection level "ia" (X9)**

Uo = 5.88 V  
 Io = 4.36 A  
 Po = 1.18 W

**Maximum values, linear source for Zone 1 Group IIC**

Li = 0 mH                      Lo = 2 | 1 µH  
 Ci = 17.6 µF                      Co = 13.4 | 25.4 µF

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**Maximum values, linear source for Zone 1 Group IIB:**

Li = 0	mH	Lo = 20	10	5	1	μH
Ci = 17.6	μF	Co = 32.4	74.4	202.4	982	μF

**External inherently safe optical interface X10**

Wavelength = 1350 nm  
 radiant power ≤ 35 mW

(16) **Test Report No.** 557 / Ex 041.00 / 11

(17) **Special Conditions for safe use**

For ET - \*\* 6 - A - \* - \*SR\* :

The front of the operator interface equipped with a sunlight readable display (type code includes "SR") may be cleaned with a damp cloth only.

(18) **Basic Safety and Health Requirements**

Fulfilled

TÜV Rheinland Ex Notified Body

Cologne, 25<sup>th</sup> May 2011

  
 Dipl.- Ing. Heinz Farke



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2.1 1<sup>st</sup> supplement

**1<sup>st</sup> Supplement**  
 acc. to directive 94/9/EC, Appendix III, No 6  
**to the EC-Type Examination Certificate**  
**TÜV 11 ATEX 7041 X**



**Device:** Operator Interface Type: ET-\*\*6-A-\*-\*\*\*  
**Manufacturer:** R. Stahl HMI Systems GmbH  
**Address:** Im Gewerbegebiet Pesch 14 D – 50767 Köln, Germany

Description of supplements and modifications:

(15) The following modifications are valid for this 1<sup>st</sup> supplement

**Verwendete Normen** IEC 60079-0: 2011 ; IEC 60079-1: 2007;  
 IEC 60079-7: 2006; IEC 60079-11: 2011  
**Standard basis** IEC 60079-18: 2009; IEC 60079-28: 2006  
 IEC 60079-31: 2008

**Schutzartkennzeichnung**

Code for type of protection

Type code -TX-	⊕	II 2 (2) G Ex d e ia ib mb [ia ib] IIC T4 Gb
	alternative ⊕	II 2 (2) G Ex db eb ia ib mb [ia ib] IIC T4
alternative	⊕	II 2 (2) D Ex ia tb [ia ib] IIIC T80°C Db IP66
	⊕	II 2 (2) D Ex ia tb [ia ib] IIIC T80°C IP66
Type code -FX-	⊕	II 2 (2) G Ex d e ia ib mb [ia ib op is] IIC T4 Gb
	alternative ⊕	II 2 (2) G Ex db eb ia ib mb [ia ib op is] IIC T4
alternative	⊕	II 2 (2) D Ex ia tb [ia ib op is] IIIC T80°C Db IP66
	⊕	II 2 (2) D Ex ia tb [ia ib op is] IIIC T80°C IP66

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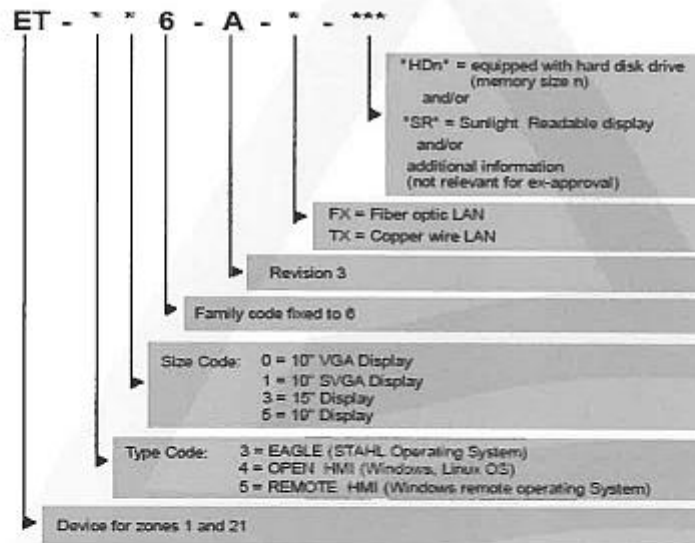
Relevant for user:

The system is supplemented by devices with 19inch displays, characterized by the second type code number "5": ET-356-A., ET-456-A. and ET-556-A..

Internal changes nor relevant for user:

- Standard editions have been adapted to current issues.
- Front panel and housing have been enlarged to fit the larger display.
- Power supply has been modified. Display supply voltage has been increased from 3.3 V to 5 V and USB shutdown function has been implemented.
- FX-Version of Base Board has been modified. A not ex-relevant resistor was eliminated.
- At Interface Board the audio output has been modified. Not ex-relevant resistors may be changed to adjust volume.
- Power into 19 inch display front has been assessed.
- Assignment of thermo cut-offs at CONV31 device have been clarified.

Type code:



The Exicom ET-xx6-A-\*\*\* devices are operator interfaces or panel PCs for installation in hazardous locations classified for zones 1, 2, 21 and 22.

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The different models vary in display size (10" ; 15" and in 1<sup>st</sup> Supplement now 19" ) and overall size, front panel with or without keyboard and overall functionality.

Three main functionalities are (characterized by the first type code number, not ex-relevant):

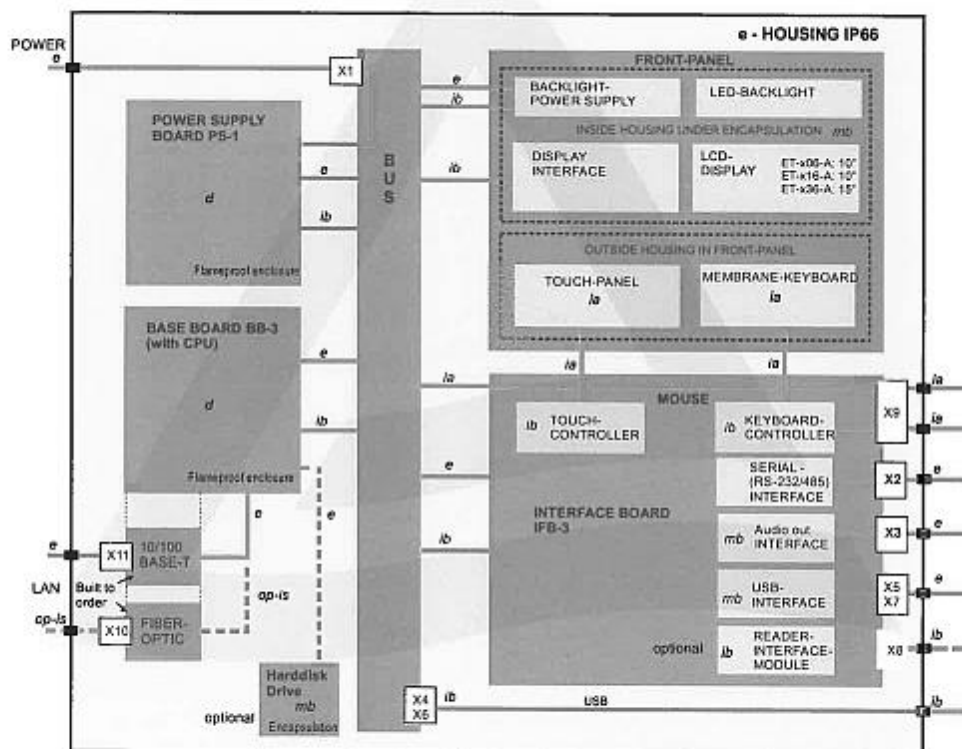
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Internal construction of all devices is equal for most parts for all models.

All models have several interfaces to connect external devices as keyboards, joysticks, trackballs, RFID- or barcode-scanner etc.

Communication with PLC networks and automation systems is achieved by different interfaces (RS-232, RS-485, Ethernet fiber optic or copper wire Ethernet links) connected in the "Ex-e"-area at the back of the devices.

Assembling of accessory as USB memory sticks and hard disk drives is previewed.



Picture 1: Block structure of ET - \*\* 6 - A - \* - \*\*\*

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Technical data

All data unchanged.

(16) Test Report No. 557 / Ex 041.01 / 11

(17) Special conditions for safe use

For ET-\*\*6-A-\*-\*SR\*:

The fronts of the operator interfaces with a sunlight readable display (type code includes "SR") may be cleaned with a damp cloth only.

(18) Basic Safety and Health Requirements  
Covered by mentioned standards in the original certificate.

TÜV Rheinland - Zertifizierungsstelle

Cologne, 2011-12-16

  
Dipl.-Ing. Heinz Farke



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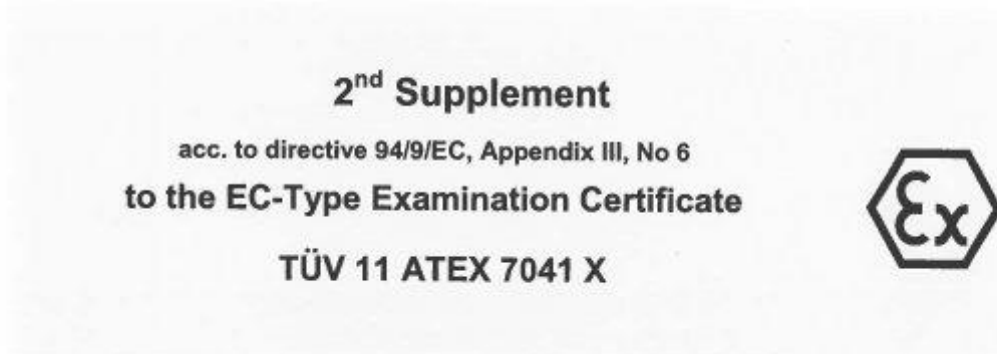
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2.2 2<sup>nd</sup> supplement



**Device:** Operator Interface Type: ET-\*\*6-A\*-\*\*\*  
**Manufacturer:** R. Stahl HMI Systems GmbH  
**Address:** Im Gewerbegebiet Pesch 14 D – 50767 Köln, Germany

Description of supplements and modifications:

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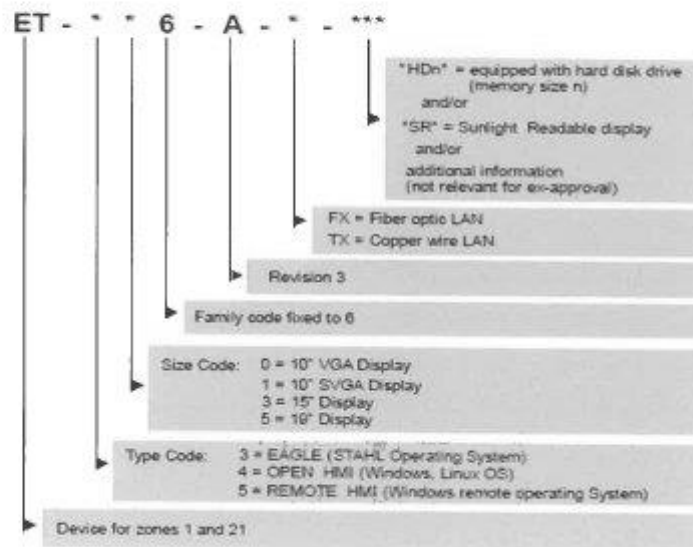
Relevant for user:

- Additional COM 2-3 interface (X22)
- New electrical parameter of interfaces applicable for products builds from 2013.

Internal changes nor relevant for user:

- Functional changes at internal units Base Board, Interface Board, Conv-31; Power Supply
- Alternative safety-glass in front
- Improvement for touch cable wiring

**Type code:**



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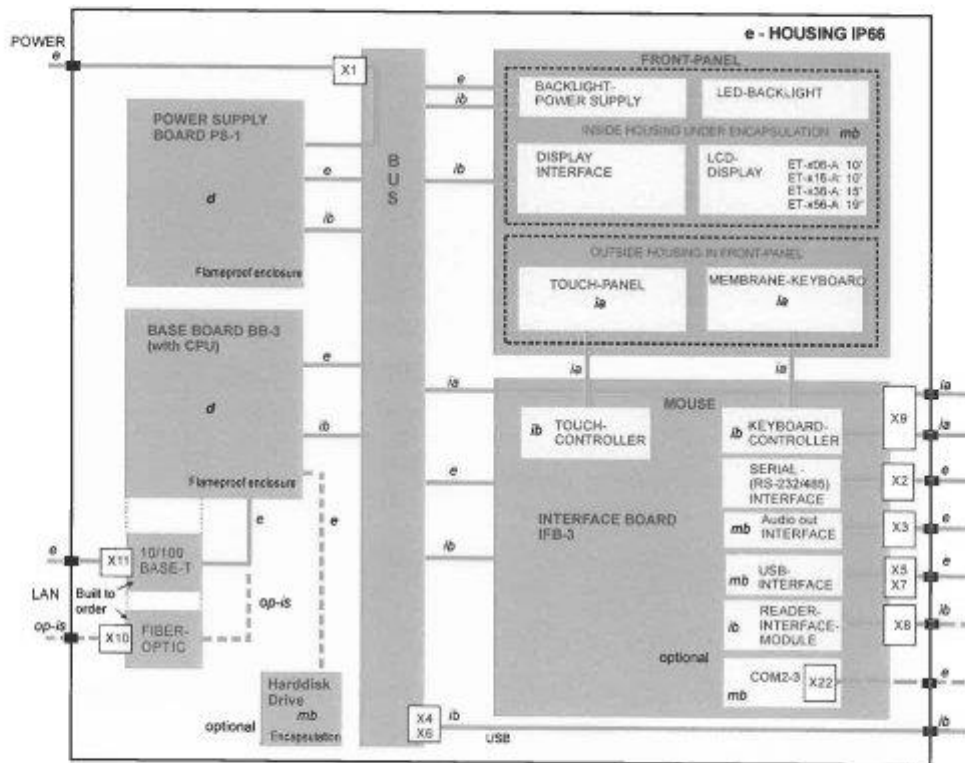
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Assembling of accessory as USB memory sticks and hard disk drives is previewed.

Block structure is internal only:



Picture 1: Block structure of ET - \* \* 6 - A - \* - \*\*\*

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### Technical data

Operating temperature range:  $-30^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$  at front of unit  
 $-20^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$  at rear of unit

IP Code of enclosure: IP 66

The device may be installed and operated in any position

### 3.1 Electrical Parameter:

#### 3.1.1 External, non-intrinsically safe circuits

##### Input voltage (X1)

Rated voltage	24 VDC (+20% /-15%)
max. voltage $U_m$	30 VAC
Rated current	1.5 A

##### RS-422/-232 COM 1 (X2)

Rated voltage	
RS232:	$\pm 12$ VDC
RS422:	5 VDC
max. voltage $U_m$	253 VAC

##### Audio out (X3)

Rated voltage	5 VDC
max. voltage $U_m$	253 VAC

##### USB-1 (X5)

Rated voltage	5 VDC
max. voltage $U_m$	253 VAC

##### USB-3 (X7)

Rated voltage	5 VDC
max. voltage $U_m$	253 VAC

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 In case of dispute, the German text shall prevail  
 page 4 / 11



LAN (X11)  
 Rated voltage 5 VDC  
 max. voltage  $U_m$  30 VAC

RS-422/-232 COM 2-3 (X22)  
 Rated voltage RS232:  $\pm 12$  VDC  
 RS422: 5 VDC  
 max. voltage  $U_m$  253 VAC

**3.1.2 External intrinsically safe circuits**

Superposed L and C values are allowed combinations, the results in table below were calculated with software ispark (provided by German Notified Body PTB).

$C_o$  and  $L_o$  pairs directly above/underneath each other may be used.

If the operator interfaces are installed in Zone 21 the maximum values for L and C of Group IIB apply to the intrinsically safe circuits.

**USB-0 (X4) and USB-2 (X6)**

$U_o$	=	5.9	V	
$I_o$	=	2.69	A	Summed current when all connections from USB-0 (USB-2) are short-circuited to GND.
$P_o$	=	6.02	W	Power available when all connections from USB-0 (USB-2) are short-circuited to GND.

Maximum values calculated with ispark, rectangular source for Zone 1 Group IIC:

$L_i$	=	0	mH	$L_o$	=	0.01	0.005	0.002	0.001	mH
$C_i$	=	0	$\mu F$	$C_o$	=	5.1	11	28	40	$\mu F$

Maximum values calculated with ispark, rectangular source for Zone 1 Group IIB:

$L_i$	=	0	mH	$L_o$	=	0.05	0.02	0.01	0.005	mH
$C_i$	=	0	$\mu F$	$C_o$	=	14	40	79	200	$\mu F$

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 In case of dispute, the German text shall prevail  
 page 5 / 11

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**ET-Reader-2-RSi1 and RSi2 (X8)**

Reader-2-RSi1 module supply (internal UB\_RDR output), terminal X8.0 (bridged to X8.2)

$$U_o = 10.4 \text{ V}$$

$$I_o = 220 \text{ mA}$$

$$P_o = 2.29 \text{ W}$$

Maximum values calculated with ispark, rectangular source for Zone 1 Group IIC:

$$L_i = 0 \text{ mH} \qquad L_o = 0.01 \text{ mH}$$

$$C_i = 1.72 \text{ }\mu\text{F} \qquad C_o = 0.8 \text{ }\mu\text{F}$$

(Remark: no values for IIB as connection to X8.2 are already permitted with level IIC parameters.)

Reader-2-RSi1 module supply input, terminal X8.2 (bridged to X8.0)

$$U_i = 12.4 \text{ V}$$

$$I_i = 220 \text{ mA}$$

$$P_i = 2.29 \text{ W}$$

$$L_i = 0 \text{ mH}$$

$$C_i = 25 \text{ nF}$$

Reader-2-RSi1 power supply for reader, terminals X8.3 – 4

$$U_o = 5.36 \text{ V}$$

$$I_o = 220 \text{ mA}$$

$$P_o = 1.18 \text{ W}$$

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In case of dispute, the German text shall prevail  
page 6 / 11



Maximum values, rectangular source for Zone 1 Group IIC:

$$\begin{array}{ll} \text{Li} = 0 \text{ mH} & \text{Lo} = 0.002 \text{ 0.001 mH} \\ \text{Ci} = 5.3 \text{ } \mu\text{F} & \text{Co} = 40.7 \text{ 59.7 } \mu\text{F} \end{array}$$

Maximum values, rectangular source for Zone 1 Group IIB:

$$\begin{array}{ll} \text{Li} = 0 \text{ mH} & \text{Lo} = 0.02 \text{ 0.01 mH} \\ \text{Ci} = 5.3 \text{ } \mu\text{F} & \text{Co} = 70.7 \text{ 124.7 } \mu\text{F} \end{array}$$

Reader-2-Rsi1 and -Rsi2 signal input/output, terminals X8.5 – 8

$$\begin{array}{ll} \text{Ui} = 15 \text{ V} & \text{Uo} = 5.36 \text{ V} \\ \text{Ii} = 500 \text{ mA} & \text{Io} = 46 \text{ mA} \\ \text{Pi} = 2.5 \text{ W} & \text{Po} = 62 \text{ mW} \end{array}$$

Maximum values, linear source for Zone 1 Group IIC:

$$\begin{array}{ll} \text{Li} = 0 \text{ mH} & \text{Lo} = 0.002 \text{ mH} \\ \text{Ci} = 0 \text{ } \mu\text{F} & \text{Co} = 46 \text{ } \mu\text{F} \end{array}$$

Maximum values, linear source for Zone 1 Group IIB:

$$\begin{array}{ll} \text{Li} = 0 \text{ mH} & \text{Lo} = 0.02 \text{ mH} \\ \text{Ci} = 0 \text{ } \mu\text{F} & \text{Co} = 79 \text{ } \mu\text{F} \end{array}$$

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**ET-Reader-2-WCR1 and WCR2 (X8)**

Reader-2-WCR1 module supply (from external is-power supply) terminal X8.1 - 2

$U_i$	=	11.4	V
$I_i$	=	200	mA
$P_i$	=	2.28	W
$L_i$	=	0	mH
$C_i$	=	25	nF

Reader-2-WCR1 power supply for reader, terminals X8.3 – 4

$U_o$	=	5.88	V
$I_o$	=	200	mA
$P_o$	=	1.18	W

Maximum values, rectangular source for Zone 1 Group IIC

$L_i$	=	0	mH	$L_o$	=	0.002	0.001	mH
$C_i$	=	5.3	$\mu$ F	$C_o$	=	27.7	37.7	$\mu$ F

Maximum values, rectangular source for Zone 1 Group IIB:

$L_i$	=	0	mH	$L_o$	=	0.02	0.01	mH
$C_i$	=	5.3	$\mu$ F	$C_o$	=	55.7	94.7	$\mu$ F

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In case of dispute, the German text shall prevail  
page 8 / 11





Reader-2-WCR1 and -WCR2 signal input/output, X8.5 – 8

$U_i$	=	15	V	$U_o$	=	5.88	V
$I_i$	=	500	mA	$I_o$	=	51	mA
$P_i$	=	2.5	W	$P_o$	=	75	mW

Maximum values, linear source for Zone 1 Group IIC

$L_i$	=	0	mH	$L_o$	=	0.002	mH
$C_i$	=	0	$\mu$ F	$C_o$	=	34	$\mu$ F

Maximum values, linear source for Zone 1 Group IIB:

$L_i$	=	0	mH	$L_o$	=	0.02	mH
$C_i$	=	0	$\mu$ F	$C_o$	=	63	$\mu$ F

Keyboard & Pointing device protection level "ib" (X9)

$U_o$	=	5.88	V
$I_o$	=	200	mA
$P_o$	=	1.18	W

Maximum values, rectangular source for Zone 1 Group IIC

$L_i$	=	0	mH	$L_o$	=	2	1	$\mu$ H
$C_i$	=	17.6	$\mu$ F	$C_o$	=	15.4	25.4	$\mu$ F

Maximum values, rectangular source for Zone 1 Group IIB:

$L_i$	=	0	mH	$L_o$	=	100	50	20	10	$\mu$ H
$C_i$	=	17.6	$\mu$ F	$C_o$	=	10.4	20.4	43.4	82.4	$\mu$ F

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 In case of dispute, the German text shall prevail  
 page 9 / 11

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**Keyboard & Pointing device protection level "ia" (X9)**

Uo = 5.88 V  
 Io = 4.36 A  
 Po = 1.18 W

Maximum values, linear source for Zone 1 Group IIC

Li = 0 mH	Lo = 2	1	μH
Ci = 17.6 μF	Co = 13.4	25.4	μF

Maximum values, linear source for Zone 1 Group IIB:

Li = 0 mH	Lo = 20	10	5	1	μH
Ci = 17.6 μF	Co = 32.4	74.4	202.4	982	μF

**3.1.2 External inherently safe optical interface X10**

Wavelength = 1350 nm  
 radiant power ≤ 35 mW

(16) Test Report No. 557 / Ex 041.02 / 12

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(17) Special conditions for safe use

For ET - \*\* 6 - A - \* - \*SR\* :

The fronts of the operator interfaces with a sunlight readable display (type code includes "SR") may be cleaned with a damp cloth only.

(18) Basic Safety and Health Requirements

Covered by mentioned standards in the original certificate.

TÜV Rheinland - Zertifizierungsstelle


Cologne, 2012-11-21


  
 Dipl.-Ing. Klauspeter Graff


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 In case of dispute, the German text shall prevail  
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### 3 IECEX certificate

		<h2>IECEX Certificate of Conformity</h2>	
<p><b>INTERNATIONAL ELECTROTECHNICAL COMMISSION</b>  <b>IEC Certification Scheme for Explosive Atmospheres</b>  <small>for rules and details of the IECEX Scheme visit <a href="http://www.iecex.com">www.iecex.com</a></small></p>			
Certificate No.:	IECEX TUR 11.0006X	Issue No.:D	Certificate history:
Status:	Current		
Date of Issue:	2011-05-25	Page 1 of 3	
Applicant:	<b>R. Stahl HMI Systems GmbH</b> Im Gewerbegebiet Pesch 14 D- 50 767 Köln Germany		
Electrical Apparatus: Optional accessory:	<b>Operator Interface ET-**6-A-**-**</b>		
Type of Protection:	<b>d, e, i, iD, m, op is, t</b>		
Marking:	<b>Ex d e ia ib mb [ia ib] IIC T4 Gb and</b> <b>Ex ia tb [ia lb] IIIC T80°C Db IP66 for type code TX</b> <b>Ex d e ia ib mb [ia ib op is] IIC T4 Gb and</b> <b>Ex ia tb [ia lb op is] IIIC T80°C Db IP66 for type code FX</b> see attachment and manual for alternative marking		
Approved for issue on behalf of the IECEX Certification Body:	Dipl.-Ing. Heinz Farke		
Position:	Deputy of ExCB		
Signature: (for printed version)			
Date:	2011-05-25		
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:			
TÜV Rheinland Industrie Service GmbH Am Grauen Stein 51105 Cologne Germany			

		<h2>IECEX Certificate of Conformity</h2>	
Certificate No.:	IECEX TUR 11.0006X		
Date of Issue:	2011-05-25	Issue No.:	0
			Page 2 of 3
Manufacturer:	<b>R. Stahl HMI Systems GmbH</b> Im Gewerbegebiet Pesch 14 D- 50 767 Köln Germany		
Manufacturing location(s):			
<p>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.</p>			
<p><b>STANDARDS:</b>          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:</p>			
<b>IEC 60079-0 : 2007-10</b> Edition: 5	Explosive atmospheres - Part 0: Equipment - General requirements		
<b>IEC 60079-1 : 2007-04</b> Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"		
<b>IEC 60079-11 : 2006</b> Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"		
<b>IEC 60079-18 : 2009</b> Edition: 3	Explosive atmospheres Part 18: Equipment protection by encapsulation "m"		
<b>IEC 60079-28 : 2006-08</b> Edition: 1	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation		
<b>IEC 60079-31 : 2008</b> Edition: 1	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"		
<b>IEC 60079-7 : 2006-07</b> Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"		
<b>IEC 61241-11 : 2005</b> Edition: 1	Electrical apparatus for use in the presence of combustible dusts - Part 11: Protection by intrinsic safety "iD"		
<p><i>This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.</i></p>			
<p><b>TEST &amp; ASSESSMENT REPORTS:</b>          A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in</p>			
<p><u>Test Report:</u></p>			
DE/TUR/ExTR11.0006/00			
<p><u>Quality Assessment Report:</u></p>			
DE/BVS/QAR10.0002/01			

	<h2 style="margin: 0;">IECEX Certificate of Conformity</h2>
Certificate No.: <b>IECEX TUR 11.0006X</b>	Issue No.: <b>0</b>
Date of Issue: <b>2011-05-25</b>	Page 3 of 3
<b>Schedule</b>	
<b>EQUIPMENT:</b> <i>Equipment and systems covered by this certificate are as follows:</i>	
<p>The Exicom ET-xx6-A-xxx devices are operator interfaces or panel PCs for installation in hazardous locations classified for zones 1, 2, 21 and 22. The entire devices are built in housings that are protected against liquids and dust without need to be installed in hazardous locations certified cabinets. The different models vary in display size (10" to 15") and overall size, front panel with or without keyboard and overall functionality. Three main functionalities are (characterized by the first type code number): ET-3*6-A-xxx: STAHL operating system for user application; ET-4*6-A-xxx: Standard operation system (e.g. Windows Embedded, Linux etc.) ET-5*6-A-xxx: Windows Embedded Standard operating system for remote applications.</p> <p>Internal construction of all devices is equal for most parts for all models.</p> <p>All models have several interfaces to connect external devices as keyboards, joysticks, trackballs, RFID- or barcode-scanner etc. Communication with PLC networks and automation systems is achieved by different interfaces (RS-232, RS-485, Ethernet fiber optic or copper wire Ethernet links) connected in the "Ex-e"-area at the back of the devices. Assembling of accessory as USB memory sticks and hard disk drives is previewed</p>	
<b>CONDITIONS OF CERTIFICATION: YES as shown below:</b>	
<p>For ET-xx6-A-xx-SR: The front of the operator interface equipped with a sunlight readable display (type code includes "SR") may be cleaned with a damp cloth only.</p>	

3.1 Issue No1

		<h1>IECEX Certificate of Conformity</h1>	
<p><b>INTERNATIONAL ELECTROTECHNICAL COMMISSION</b>  <b>IEC Certification Scheme for Explosive Atmospheres</b>  <small>for rules and details of the IECEX Scheme visit <a href="http://www.iecex.com">www.iecex.com</a></small></p>			
Certificate No.:	IECEX TUR 11.0006X	Issue No.:1	<div style="border: 1px solid black; padding: 2px;"> <b>Certificate history:</b>                  Issue No. 1 (2011-12-16)                  Issue No. 0 (2011-5-25)             </div>
Status:	Current		
Date of Issue:	2011-12-16	Page 1 of 5	
Applicant:	<b>R. Stahl HMI Systems GmbH</b> Im Gewerbegebiet Pesch 14 D- 50 767 Köln Germany		
Electrical Apparatus: Optional accessory:	<b>Operator Interface ET-**6-A-*.***</b>		
Type of Protection:	<b>d, e, i, ID, m, op is, t</b>		
Marking:	<b>Ex d e ia ib mb [ia ib] IIC T4 Gb and</b> <b>Ex ia tb [ia ib] IIC T80°C Db IP66 for type code TX</b> <b>Ex d e ia ib mb [ia ib op is] IIC T4 Gb and</b> <b>Ex ia tb [ia ib op is] IIC T80°C Db IP66 for type code FX</b> see attachment and manual for alternative marking		
Approved for issue on behalf of the IECEX Certification Body:	Dipl.-Ing. Heinz Farke		
Position:	Deputy of ExCB		
Signature: (for printed version)			
Date:	2011-12-16		
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:			
TUV Rheinland Industrie Service GmbH Am Grauen Stein 51105 Cologne Germany			



# IECEX Certificate of Conformity

Certificate No.: IECEX TUR 11.0006X  
 Date of Issue: 2011-12-16 Issue No.: 1  
 Page 2 of 5

Manufacturer: **R. Stahl HMI Systems GmbH**  
 Im Gewerbegebiet Pesch 14  
 D- 50 767 Köln  
 Germany

**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** Explosive atmospheres - Part 0: General requirements  
Edition: 6.0
- IEC 60079-1 : 2007-04** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition: 6
- IEC 60079-11 : 2011-06** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition: 6.0
- IEC 60079-18 : 2009** Explosive atmospheres Part 18: Equipment protection by encapsulation "m"  
Edition: 3
- IEC 60079-28 : 2006-08** Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation  
Edition: 1
- IEC 60079-31 : 2008** Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"  
Edition: 1
- IEC 60079-7 : 2006-07** Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition: 4

*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/TUR/EXTR11.0006/01

Quality Assessment Report:  
 DE/BVS/QAR10.0002/01





# IECEX Certificate of Conformity

Certificate No.: IECEX TUR 11.0006X

Date of Issue: 2011-12-16

Issue No.: 1

Page 3 of 5

### Schedule

**EQUIPMENT:**

*Equipment and systems covered by this certificate are as follows:*

[Empty box for equipment details]

**CONDITIONS OF CERTIFICATION: YES as shown below:**

For ET-xx6-A-SR: The front of the operator interface equipped with a sunlight readable display (type code includes "SR") may be cleaned with a damp cloth only.

[Empty box for conditions of certification]



# IECEX Certificate of Conformity

Certificate No.: IECEX TUR 11.0006X  
 Date of Issue: 2011-12-16  
 Issue No.: 1  
 Page 4 of 5

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

The Exicom ET-\*\*6-A-\*.\*\*\* devices are operator interfaces or panel PCs for installation in hazardous locations classified for zones 1, 2, 21 and 22. The entire devices are built in housings that are protected against liquids and dust without need to be installed in hazardous locations certified cabinets. The different models vary in display size (10" ; 15" and in 1<sup>st</sup> Supplement now 19" ) and overall size, front panel with or without keyboard and overall functionality. Three main functionalities are (characterized by the first type code number, not ex-relevant): ET-3\*6-A-\*.\*\*\*: STAHL operating system for user application; ET-4\*6-A-\*.\*\*\*: Standard operation system (e.g. Windows Embedded, Linux etc.) for standard applications;

ET-5\*6-A-\*.\*\*\*: Windows Embedded Standard operating system for remote applications.

The Exicom ET-\*\*6-A-\*.\*\*\* devices are operator interfaces or panel PCs for installation in hazardous locations classified for zones 1, 2, 21 and 22. The entire devices are built in housings that are protected against liquids and dust without need to be installed in hazardous locations certified cabinets. The different models vary in display size (10" ; 15" and in 1<sup>st</sup> Supplement now 19" ) and overall size, front panel with or without keyboard and overall functionality. Three main functionalities are (characterized by the first type code number, not ex-relevant): ET-3\*6-A-\*.\*\*\*: STAHL operating system for user application; ET-4\*6-A-\*.\*\*\*: Standard operation system (e.g. Windows Embedded, Linux etc.) for standard applications; ET-5\*6-A-\*.\*\*\*: Windows Embedded Standard operating system for remote applications.

Details see attachment.



# IECEX Certificate of Conformity

Certificate No.: IECEx TUR 11.0006X

Date of Issue: 2011-12-16

Issue No.: 1

Page 5 of 5

**Additional information:**

Annexe: 557-Ex-041-01-11-ExTR\_Attachment\_101214.pdf

3.2 Issue No2

		<h2 style="margin: 0;">IECEX Certificate of Conformity</h2>	
<p><b>INTERNATIONAL ELECTROTECHNICAL COMMISSION</b>  <b>IEC Certification Scheme for Explosive Atmospheres</b>  <small>for rules and details of the IECEX Scheme visit <a href="http://www.iecex.com">www.iecex.com</a></small></p>			
Certificate No.:	IECEX TUR 11.0006X	Issue No.:2	Certificate history: Issue No. 2 (2012-11-28) Issue No. 1 (2011-12-18) Issue No. 0 (2011-5-25)
Status:	Current		
Date of Issue:	2012-11-28	Page 1 of 4	
Applicant:	<b>R. Stahl HMI Systems GmbH</b> Im Gewerbegebiet Pesch 14 D- 50 767 Köln Germany		
Electrical Apparatus: Optional accessory:	<b>Operator Interface ET-16-A-1-111</b>		
Type of Protection:	<b>d, e, i, ID, m, op is, t</b>		
Marking:	Ex d e ia ib mb [ia ib] IIC T4 Gb and, Ex ia tb [ia ib] IIIC T80°C Db IP66 for type code TX, Ex d e ia ib mb [ia ib op is] IIC T4 Gb and, Ex ia tb [ia ib op is] IIIC T80°C Db IP66 for type code FX, see attachment and manual for alternative marking		
Approved for issue on behalf of the IECEX Certification Body:	Dipl.-Ing. Klauspeter Graff		
Position:	Head of Certification Body		
Signature: (for printed version)			
Date:	<u>2012-11-28</u>		
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:			
TÜV Rheinland Industrie Service GmbH Am Grauen Stein 51105 Cologne Germany			



## IECEX Certificate of Conformity

Certificate No.: IECEx TUR 11.0006X  
 Date of Issue: 2012-11-28  
 Issue No.: 2  
 Page 2 of 4

Manufacturer: **R. Stahl HMI Systems GmbH**  
 Im Gewerbegebiet Pesch 14  
 D- 50 767 Köln  
 Germany

**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:

<b>IEC 60079-0 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2007-04</b> Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-11 : 2011-06</b> Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>IEC 60079-18 : 2009</b> Edition: 3	Explosive atmospheres Part 18: Equipment protection by encapsulation "m"
<b>IEC 60079-28 : 2006-08</b> Edition: 1	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
<b>IEC 60079-31 : 2008</b> Edition: 1	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "l"
<b>IEC 60079-7 : 2006-07</b> 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/TUR/EXTR11.0006/02

Quality Assessment Report:  
 DE/BVS/QAR10.0002/02



# IECEX Certificate of Conformity

Certificate No.: IECEX TUR 11.0006X  
 Date of Issue: 2012-11-26  
 Issue No.: 2  
 Page 3 of 4

**Schedule**

**EQUIPMENT:**

*Equipment and systems covered by this certificate are as follows:*

All models have several interfaces to connect external devices as keyboards, joysticks, trackballs, RFID- or barcode-scanner etc. Communication with PLC networks and automation systems is achieved by different interfaces (RS-232, RS-485, Ethernet fiber optic or copper wire Ethernet links) connected in the "Ex-e"-area at the back of the devices. Assembling of accessory as USB memory sticks and hard disk drives is previewed.

**CONDITIONS OF CERTIFICATION: YES as shown below:**

For ET-xx6-A-\*\*-SR\*: The front of the operator interface equipped with a sunlight readable display (type code includes "SR") may be cleaned with a damp cloth only.

		<h2 style="margin: 0;">IECEX Certificate of Conformity</h2>	
Certificate No.:	IECEX TUR 11.0006X	Issue No.:	2
Date of Issue:	2012-11-28	Page	4 of 4
<p><b>DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):</b></p> <p><u>Content of 2<sup>nd</sup> Supplement:</u>                  Relevant for User:                  -Additional COM 2-3 interface (X22)                  -New electrical parameter of interfaces.                  Internal changes not relevant for User:                  -Functional changes at internal units Base Board, Interface Board, Conv-31; Power Supply                  -Alternative safety-glass in front                  -Improvement for touch cable wiring .</p>			
<p><b>Annexe:</b> Attachment_IECEX TUR 11-0006X_02_12-11-21.pdf</p>			



## 4 EAC certificate

Russia / Kazakh / Belarus certification

<b>ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ</b>	
<b>СЕРТИФИКАТ СООТВЕТСТВИЯ</b>	
№ ЕАЭС RU C-DE.НА91.В.00085/19	
Серия <b>RU</b> № <b>0110932</b>	
<p><b>ОРГАН ПО СЕРТИФИКАЦИИ</b> Орган по сертификации продукции Общества с ограниченной ответственностью Сертификационный центр «ЭНДЬЮРЕНС». Место нахождения (адрес юридического лица) и адрес места осуществления деятельности: 115114, Россия, город Москва, 2-й Павелецкий проезд, дом 5, строение 1, этаж 5, помещение VII, комната 11. Регистрационный номер аттестата аккредитации RA.RU.11НА91, дата регистрации аттестата аккредитации 23.11.2018; номер телефона: +7 (495) 799-07-93; адрес электронной почты: info@ccendce.com</p>	
<p><b>ЗАЯВИТЕЛЬ</b> Общество с ограниченной ответственностью «Р. ШТАЛЬ». Место нахождения (адрес юридического лица) и адрес места осуществления деятельности: 129085, Россия, город Москва, Звёздный бульвар, дом 21, строение 1. Основной государственный регистрационный номер: 5087746541493, номер телефона: +7(495)615-04-73, адрес электронной почты: info@stahl.ru.com.</p>	
<p><b>ИЗГОТОВИТЕЛЬ</b> R. STAHL HMI Systems GmbH. Место нахождения (адрес юридического лица) и адрес места осуществления деятельности по изготовлению продукции: Adolf-Grimme-Allee 8, 50829 Koeln, Германия.</p>	
<p><b>ПРОДУКЦИЯ</b> Терминалы управления серий ET и MT во взрывозащищенном исполнении. Продукция изготовлена в соответствии с технической документацией предприятия-изготовителя R. STAHL HMI Systems GmbH. Серийный выпуск.</p>	
<p><b>КОД ТН ВЭД ЕАЭС</b> 8537 10 990 0</p>	
<p><b>СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ</b> Технического регламента Таможенного союза ТР ТС 012/2011 "О безопасности оборудования для работы во взрывоопасных средах".</p>	
<p><b>СЕРТИФИКАТ СООТВЕТСТВИЯ ВЫДАН НА ОСНОВАНИИ</b> Протокола испытаний № А0025.1.СТ/19 от 25.10.2019 г. Испытательный центр промышленной продукции Федерального государственного унитарного предприятия "Российский федеральный ядерный центр - Всероссийский научно-исследовательский институт экспериментальной физики" (ФГУП "РФЯЦ-ВНИИЭФ"), аттестат аккредитации № RA.RU.21ME17; Акта о результатах анализа состояния производства № 0084-СС/А от 11.09.2019; документов предоставленных заявителем в качестве доказательства соответствия требованиям ТР ТС 012/2011: Инструкции по эксплуатации ОI_ET_xx6_A, ОI_MT_xx6_A, комплект чертежей и электрических схем. Схема сертификации 1с.</p>	
<p><b>ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ</b> Стандарты, в результате применения которых на добровольной основе обеспечивается соблюдение требований технического регламента, указаны в Приложении (бланк № 0708284). Условия хранения, назначенный срок хранения и назначенный срок службы согласно эксплуатационной документации изготовителя. Описание конструкции и средств обеспечения взрывозащиты, а также иная информация, идентифицирующая продукцию, указаны в Приложении (бланки № 0708285, 0708286, 0708287).</p>	
<p><b>СРОК ДЕЙСТВИЯ С</b> 25.11.2019</p>	<p><b>ПО</b> 24.11.2024</p>
<p><b>ВКЛЮЧИТЕЛЬНО</b></p>	
<p>Руководитель (уполномоченное лицо) органа по сертификации</p>	<p>Ворвейко Татьяна Юрьевна (Ф.И.О.)</p>
<p>Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))</p>	<p>Хлопин Станислав Юрьевич (Ф.И.О.)</p>



**ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ**

лист 1

**ПРИЛОЖЕНИЕ**

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-DE.HA91.B.00085/19

Серия **RU** № **0708284**

Сведения о стандартах, применяемых на добровольной основе для соблюдения требований технического регламента Таможенного союза ТР ТС 012/2011 "О безопасности оборудования для работы во взрывоопасных средах"

Обозначение стандартов	Наименование стандартов
ГОСТ 31610.0-2014 (IEC 60079-0:2011)	Взрывоопасные среды. Часть 0. Оборудование. Общие требования.
ГОСТ IEC 60079-1-2011	Взрывоопасные среды. Часть 1. Оборудование с видом взрывозащиты "взрывонепроницаемые оболочки "d"
ГОСТ 31610.7-2012/ IEC 60079-7:2006	Электрооборудование для взрывоопасных газовых сред. Часть 7. Повышенная защита вида "е"
ГОСТ 31610.11-2014 (IEC 60079-11:2011)	Взрывоопасные среды. Часть 11. Оборудование с видом взрывозащиты "искробезопасная электрическая цепь "i"
ГОСТ 31610.15-2014/IEC 60079-15:2010	Взрывоопасные среды. Часть 15. Оборудование с видом взрывозащиты "n"
ГОСТ Р МЭК 60079-18-2012	Взрывоопасные среды. Часть 18. Оборудование с видом взрывозащиты "герметизация компаундом "m"
ГОСТ 31610.28-2012/IEC 60079-28:2006	Взрывоопасные среды. Часть 28. Защита оборудования и передающих систем, использующих оптическое излучение
ГОСТ IEC 60079-31-2013	Взрывоопасные среды. Часть 31. Оборудование с защитой от воспламенения пыли оболочками "t"

Руководитель (уполномоченное лицо) органа по сертификации

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))

*(подпись)*  
*(подпись)*



Верески Татьяна Юрьевна (Ф.И.О.)

Хлюпин Станислав Юрьевич (Ф.И.О.)



**ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ**

лист 2

**ПРИЛОЖЕНИЕ**

**К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-DE.HA91.B.00085/19**

Серия **RU** № **0708285**

**1. НАЗНАЧЕНИЕ И ОБЛАСТЬ ПРИМЕНЕНИЯ**

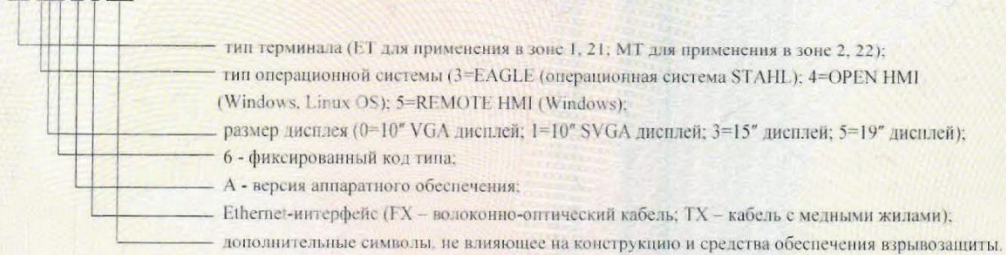
Терминалы управления серий ET и MT во взрывозащищенном исполнении (далее по тексту - терминалы) предназначены для приема входных сигналов, визуального отображения их на экране дисплея, задания оператором необходимых параметров, передачи полученных данных и заданий оператора в систему управления технологическими процессами.

Область применения – взрывоопасные зоны помещений и наружных установок, в соответствии с присвоенной маркировкой взрывозащиты, требованиями ГОСТ IEC 60079-14-2013 и отраслевых Правил безопасности, регламентирующих применение данного оборудования во взрывоопасных зонах.

**2. ОСНОВНЫЕ ТЕХНИЧЕСКИЕ ДАННЫЕ**

2.1 Структура условного обозначения терминалов:

ET-\*\*-A-\*.\*\*\*



2.2 Основные технические данные терминалов приведены в таблице 2.1.

Таблица 2.1

Наименование параметра	Значение
Маркировка взрывозащиты по ГОСТ 31610.0-2014 (IEC 60079-0:2011): - терминалы управления типа ET-**-A-TX - терминалы управления типа ET-**-A-FX - терминалы управления типа MT-**-A-TX - терминалы управления типа MT-**-A-FX	1Ex d e ia ib mb [ia ib] IIC T4 Gb X Ex ia tb [ia ib] IIC T80°C Db 1Ex d e ia ib mb [ia ib op is] IIC T4 Gb X Ex ia tb [ia ib op is] IIC T80°C Db 2Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Ge X Ex ia tc [ib Db] [ic] IIC T80°C Dc 2Ex d e ia ib mb nA [ib op is Gb] [ic] IIC T4 Ge X Ex ia tc [ib op is Db] [ic] IIC T80°C Dc 1Ex ib IIC T4 Gb
- клавиатура типа KBD(i)-PS2-***	
Напряжение питания постоянного тока, В	24
Ток, А	1,5
Внешний искробезопасный оптоволоконный интерфейс (оптоволоконный кабель (X10): - длина волны, нм - мощность излучения, не более, мВт	1350 35
Степень защиты обеспечиваемая оболочкой от внешних воздействий по ГОСТ 14254-2015 (IEC 60529:2013)	IP66
Диапазон температуры окружающей среды при эксплуатации, °С: - терминалы управления типа ET-xx6-A-*, MT-xx6-A- - лицевая панель терминала управления типа ET-xx6-A-*, MT-xx6-A- - Клавиатура типа KBD(i)-PS2-***	от минус 20 до плюс 55 от минус 30 до плюс 55 от минус 10 до плюс 60

Руководитель (уполномоченное лицо) органа по сертификации

(подпись)

Вербенко Татьяна Юрьевна (Ф.И.О.)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))

(подпись)

Хлопин Станислав Юрьевич (Ф.И.О.)





# ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

лист 3

## ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-DE.HA91.B.00085/19

Серия RU № 0708286

2.3 Параметры искробезопасных электрических цепей приведены в таблице 2.2.

Таблица 2.2

Наименование модуля, цепи и обозначение клеммного терминала	U <sub>i</sub> /U <sub>o</sub> , В	I <sub>i</sub> /I <sub>o</sub> , А	P <sub>i</sub> /P <sub>o</sub> , Вт	C <sub>i</sub> /L <sub>i</sub> мкФ/мГн	C <sub>o</sub> /L <sub>o</sub> мкФ/мГн	
					Подгруппа ПС	Подгруппа ПВ
USB-0 (X4), USB-2 (X6)	-/5,9	-/2,69	-/6,02	0/0	5,1/0,01 11,0/0,05 28,0/0,02 40,0/0,01	14,0/0,05 40,0/0,02 79,0/0,01 200,0/0,05
Считывающее устройство RSi1 (X8) + Uint 1 (цепь электропитания, X8.0, при перемычке после X8.2)	-/10,4	-/0,22	-/2,29	1,72/0	0,8/0,01	-
Считывающее устройство RSi1 (X8) + U_ex1 (цепь электропитания, X8.2, при перемычке X8.0)	12,4/-	0,22/-	2,29/-	0,025/0	-	-
Считывающее устройство RSi1 (электропитание считывающего устройства, X8.3-4)	-/5,36	-/0,22	-/1,18	5,3/0	40,7/0,002 59,7/0,001	70,7/0,02 124,7/0,01
Считывающие устройства RSi1 и RSi2 (сигнальные входы и выходы, X8.5-8)	15/5,36	0,5/0,046	2,5/0,062	0/0	46/0,002	79/0,02
Считывающее устройство WCR1 (X8) (подключение напряжения питания, X8.1-2)	11,4/-	0,2/-	2,28/-	0,025/0	-	-
Считывающее устройство WCR1 (электропитание считывающего устройства, X8.3-4)	-/5,88	-/0,2	-/1,18	5,3/0	27,7/0,002 37,7/0,001	55,7/0,02 94,7/0,01
Считывающие устройства WCR1 и WCR2 (сигнальные входы и выходы, X8.5-8)	15/5,88	0,5/0,051	2,5/0,075	0/0	34/0,002	63/0,02
Интерфейс PS2 (клавиатура типа KBD(i) (X9)	-/5,88	-/0,2	-/1,18	17,6/0	15,4/0,002 25,4/0,001	10,4/0,1 20,4/0,05 43,4/0,02 82,4/0,01
Клавиатура типа KBD(i)-PS2-***	-/6	-/0,35	-/1,2	14/0	-	-

### 3. ОПИСАНИЕ КОНСТРУКЦИИ И СРЕДСТВ ОБЕСПЕЧЕНИЯ ВЗРЫВОЗАЩИТЫ

#### 3.1 Описание конструкции

Конструктивно терминалы управления выполнены в виде единого блока. Внутри корпуса размещены платы электронной схемы и вспомогательные устройства. Устройство подсветки экрана, плата интерфейсов и другие электронные компоненты, размещены непосредственно в основном корпусе. На передней панели корпуса размещена клавиатура и имеется окно для экрана сенсорного дисплея, на задней стенке выполнено отделение для размещения клеммных терминалов и установки кабельных вводов.

#### 3.2 Описание средств обеспечения взрывозащиты

Взрывозащищенность терминалов управления в зависимости от исполнения обеспечивается видом взрывозащиты "взрывонепроницаемые оболочки "d" по ГОСТ IEC 60079-1-2011, "повышенная защита вида "e" по ГОСТ 31610.7-2012/ IEC 60079-7-2006, "искробезопасная электрическая цепь "i" по ГОСТ 31610.11-2014 (IEC 60079-11:2011), оборудование с видом взрывозащиты "n" по ГОСТ 31610.15-2014/IEC 60079-15:2010, "герметизация компаундом "m" по ГОСТ Р МЭК 60079-18-2012, защита оборудования и передающих систем, использующих оптическое излучение по ГОСТ 31610.28-2012/IEC 60079-28:2006, оборудование с защитой от воспламенения пыли оболочками "t" по ГОСТ IEC 60079-31-2013, а также выполнением конструкции в соответствии с требованиями ГОСТ 31610.0-2014 (IEC 60079-0:2011).

### 4. СПЕЦИАЛЬНЫЕ УСЛОВИЯ ПРИМЕНЕНИЯ «X»

Знак «X» в маркировке взрывозащиты терминалов управления указывает на их специальные условия применения, заключающиеся в следующем:

- элементы и схемы, обеспечивающие искробезопасное исполнение, ремонту не подлежат и при выходе из строя должны заменяться новыми, поставляемыми изготовителем;
- при подключении заземления должно быть обеспечено уравнивание потенциалов между всеми блоками, объединенными в единую искробезопасную цепь;
- чистку от нанесенной на дисплеи терминалов защитной пленки разрешается производить только с помощью влажной ветоши;
- монтаж, эксплуатация и техническое обслуживание должно осуществляться в соответствии с требованиями эксплуатационной документации, ГОСТ IEC 60079-14-2013 и другими нормативными документами, регламентирующими правила по установке и обслуживанию оборудования для использования в потенциально взрывоопасных зонах (средах).

Руководитель (уполномоченное лицо) органа по сертификации

(подпись)

Вервейко Татьяна Юрьевна (Ф.И.О.)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))

(подпись)

Хлопкин Станислав Юрьевич (Ф.И.О.)





**ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ**

лист 4

**ПРИЛОЖЕНИЕ**

**К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-DE.HA91.B.00085/19**

Серия **RU** № **0708287**

**5. МАРКИРОВКА**

Маркировка, наносимая на оборудование, должна включать следующие данные:

- наименование изготовителя или его зарегистрированный товарный знак;
- наименование изделия, маркировку взрывозащиты, предупредительные надписи;
- диапазон температур окружающей среды при эксплуатации;
- единый знак обращения продукции на рынке Евразийского экономического союза, утвержденный Решением Комиссии Таможенного союза от 15.07.2011 № 711, при условии соответствия оборудования требованиям всех Технических регламентов Таможенного союза и Технических регламентов ЕАЭС, действие которых распространяется на заявленное оборудование;
- специальный знак взрывобезопасности «Ех», согласно Приложению 2 Технического регламента Таможенного союза 012/2011 «О безопасности оборудования для работы во взрывоопасных средах»;
- дату выпуска и порядковый номер изделия по системе нумерации предприятия-изготовителя;
- номер сертификата соответствия и наименование органа по сертификации;
- другие данные, которые должен отразить изготовитель, если это требуется технической документацией.

Внесение в конструкцию и техническую документацию изменений, влияющих на показатели взрывобезопасности оборудования, должны быть согласованы с ОС ООО СЦ «ЭНДЬЮРЕНС».

Руководитель (уполномоченное  
лицо) органа по сертификации

*(подпись)*

Вервейко Татьяна Юрьевна  
(И.О.)

Эксперт (эксперт-аудитор)  
(эксперты (эксперты-аудиторы))

*(подпись)*

Хлопко Станислав Юрьевич  
(И.О.)



## 4.1 Declaration of conformity



### ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ



**Заявитель:** Общество с ограниченной ответственностью «Р. ШТАЛЬ».  
Основной государственный регистрационный номер: 5087746541493.  
Место нахождения (адрес юридического лица) и адрес (адреса) места осуществления деятельности:  
129085, Россия, Бульвар звездный, дом 21, строение 1; номер телефона: +74956150473, адрес  
электронной почты: info@stahl.ru.com.

**в лице** генерального директора Махмудова Александра Джамаледдиновича

**заявляет, что** Терминалы управления серий ET и MT: ET-\*\*6-A-FX-\*\*, ET-\*\*6-A-TX-\*\*, MT-\*\*6-A-TX-\*\*, MT-\*\*6-A-FX-\*\*

**изготовитель:** R.STAHL HMI Systems GmbH,

Место нахождения и адрес места осуществления деятельности по изготовлению продукции: Adolf-Grimme-Allee 8, 50829 Koeln, Германия.

Продукция изготовлена в соответствии с технической документацией изготовителя R.STAHL HMI Systems GmbH.

Код ТН ВЭД ЕАЭС: 8537109900

Серийный выпуск.

**соответствует требованиям**

Технического регламента Таможенного союза ТР ТС 020/2011 "Электромагнитная совместимость технических средств"

**Декларация о соответствии принята на основании** Протоколов заводских испытаний № 1156 от 02.08.2019, 1187 от 07.08.2019 испытательной лаборатории R.STAHL HMI Systems GmbH; руководства по эксплуатации.

Схема декларирования 1д.

**Дополнительная информация**

Стандарты, в результате применения которых на добровольной основе обеспечивается соблюдение требований технического регламента: раздел 8 ГОСТ 30804.6.2-2013 "Совместимость технических средств электромагнитная. Устойчивость к электромагнитным помехам технических средств, применяемых в промышленных зонах. Требования и методы испытаний"; раздел 7 ГОСТ 30804.6.4-2013 "Совместимость технических средств электромагнитная. Электромагнитные помехи от технических средств, применяемых в промышленных зонах. Нормы и методы испытаний". Условия хранения, срок хранения и срок службы в соответствии с эксплуатационной документацией изготовителя.

**Декларация о соответствии действительна с даты регистрации по 08.09.2024 включительно.**



Махмудов Александр Джамаледдинович

(Ф.И.О. заявителя)

**Регистрационный номер декларации о соответствии:** ЕАЭС № RU Д-ДЕ.НА91.В.00014/19

**Дата регистрации декларации о соответствии:** 09.09.2019





**EURASIAN ECONOMIC UNION  
DECLARATION OF CONFORMITY**



**Applicant:** Limited Liability Company «R.Stahl».

The main state registration number is 5087746541493.

Location (address of the legal entity) and the address of the place of business: 129085, Russia, Moscow, Zvezdny Boulevard, building 21, building 1; phone number: +74956150473, E-mail address: info@stahl.ru.com.

represented by General Director Makhmudov Alexander Dzhamaleddinovich

declares that Control terminals of series ET and MT: ET-\*\*6-A-FX-\*\*, ET-\*\*6-A-TX-\*\*, MT-\*\*6-A-TX-\*\*, MT-\*\*6-A-FX-\*\*

**manufacturer:** R.STAHL HMI Systems GmbH,

Location (address of the legal entity) and address of the place of business activity: Adolf-Grimme-Allee 8, 50829 Koeln, Germany.

Products manufactured in accordance with the technical documentation R.STAHL HMI Systems GmbH.

**HS Code:** 8537109900

Serial release.

**meets the requirements**

Technical Regulations of the Customs Union TR CU 020/2011 " Electromagnetic compatibility of technical means".

**The declaration of conformity was adopted on the basis of** Test Reports № 1156 от 02.08.2019, 1187 от 07.08.2019 of the Testing Laboratory of the R.STAHL HMI Systems GmbH; operation manuals.

Declaration scheme 1d.

**Additional Information**

Standards, as a result of which voluntary compliance with technical regulation requirements is ensured: Section 8 GOST 30804.6.2-2013 "Electromagnetic compatibility of technical equipment. Immunity to electromagnetic interference of technical equipment used in industrial zones. Requirements and test methods"; Section 7 GOST 30804.6.4-2013 "Electromagnetic compatibility of technical equipment. Electromagnetic interference from technical equipment used in industrial zones. Standards and test methods." Storage conditions, shelf life and service life in accordance with the manufacturer's operational documentation.

**The declaration of conformity is valid from the date of registration to 08.09.2024 inclusive.**

(Signature)



Makhmudov Alexander Dzhamaleddinovich


(full name the Applicant)

**Registration number of the declaration of conformity: EAЭС № RU Д-DE.HA91.B.00014/19**

**Date of registration of the declaration of conformity: 09.09.2019**



## 5 CNEX certificate



**国家防爆**

Electrical Apparatus for Explosive Atmospheres

## CERTIFICATE OF CONFORMITY

Cert. No.: CNEx18.5523X

<b>Manufacturer</b>	R. STAHL HMI Systems GmbH Adolf-Grimme-Allee 8, D-50829 Köln, Germany
<b>Name of Product</b>	Operator Interface
<b>Type of Product</b>	ET-**6-A-*.***
<b>Marking</b>	Ex d e ia ib mb [ia ib] IIC T4 Gb, Ex ia tb [ia ib] III C T80°C Db IP66 for code TX Ex d e ia ib mb [ia ib op is] IIC T4 Gb and, Ex ia tb [ia ib op is] III C T80°C Db IP66 for code FX
<b>Drawing No.</b>	-


The drawings, technical documents and the samples are verified and certified according to standard(s) for safety as below:


GB 3836.1-2010	Explosive atmospheres - Part 1: Equipment - General requirements
GB 3836.2-2010	Explosive atmospheres - Part 2: Equipment protection by flameproof enclosure "d"
GB 3836.3-2010	Explosive atmospheres - Part 3: Equipment protection by increased safety "e"
GB 3836.4-2010	Explosive atmospheres - Part 4: Equipment protection by intrinsic safety "i"
GB 3836.9-2014	Explosive atmospheres - Part 9: Equipment protection by encapsulation "m"
GB/T3836.22-2017	Explosive atmospheres - Part 22: Protection of equipment and transmission systems using optical radiation
IEC60079-31: 2013	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

**Note**

1. Temperature range - 20 °C to + 55 °C or - 30 °C to + 55 °C
2. Ingress protection: IP66
3. This certificate is only valid in combination with the related Annex
4. Please read and understand the special conditions for safe use as stated in the Annex to this certificate
5. This certificate is renewal of certificate CNEx14.0065X.


<b>Valid Date</b>	From Jan 13, 2019 to Jan 12, 2024
<b>Issue Date</b>	Jan 13, 2019
<b>Director</b>	



**Ex**  
CQST  
NAN YANG

**CHINA NATIONAL QUALITY SUPERVISION AND TEST CENTRE  
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Tel: 0377-63258564 Fax: 0377-63208175 [Http://www.china-ex.com](http://www.china-ex.com)



Note: This certificate is only valid for the products which identify with the sample(s) tested and verified. Holder(s) of this certificate have the responsibility to ensure the products complying with relevant standard(s).

登陆网站 输入数码 查询真伪 5482 0203 0395 1543 查询方式: [www.china-ex.com](http://www.china-ex.com)





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Electrical Apparatus for Explosive Atmospheres

# CERTIFICATE OF CONFORMITY

Annex to Cert. No.: CNEx18.5523X

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This Annex to certificate CNEx 18.5523X covers the following model: Type ET-\*\*6-A-\*-\*  
 This product has been certified, under certificate number IECEx TUR 11.0006X, issue 2, dated 2012-11-28.

**Product Description:**

All models have several interfaces to connect external devices as keyboards, joysticks, trackballs, RFID- or barcode-scanner etc. Communication with PLC networks and automation systems is achieved by different interfaces (RS-232, RS-485, Ethernet fiber optic or copper wire Ethernet links) connected in the "Ex-e"-area at the back of the devices. Assembling of accessory as USB memory sticks and hard disk drives is previewed.

**Code for type of protection:**

Type code -TX-	Ex d e ia ib mb [ia ib] IIC T4 Gb
	Ex ia tb [ia ib] IIIC T80°C IP66
Type code -FX-	Ex d e ia ib mb [ia ib op is] IIC T4 Gb
	Ex ia tb [ia ib op is] IIIC T80°C IP66

**Technical data:**

Operating temperature range: -30°C ≤ Ta ≤ +55°C at front of unit  
 -20°C ≤ Ta ≤ +55°C at rear of unit  
 IP code pf enclosure IP66  
 The device may be installed and operated in any position

**Electrical Parameters:**

**External, non-intrinsically safe circuit**

Input voltage(X1):  
 rated voltage: 24VDC(+20%/-15%), max. voltage Um: 30VAC, Rated current: 1.5A

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Electrical Apparatus for Explosive Atmospheres  
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RS-422/-232 COM1(X2):  
 Rated voltage: RS232: ±12VDC, RS422: 5VDC, max. voltage Um: 253VAC

Audio output(X3):  
 Rated voltage: 5VDC, max. voltage Um: 253VAC

USB-1(X5):  
 Rated voltage: 5VDC, max. voltage Um: 253VAC

USB-3(X7):  
 Rated voltage: 5VDC, max. voltage Um: 253VAC

LAN(X11):  
 Rated voltage: 5VDC, max. voltage Um: 30VAC

RS-422/-232 COM 2-3(X22)  
 Rated voltage: RS232: ±12VDC, RS422: 5VDC, max. voltage Um: 253VAC

**External Intrinsically safe circuit**

Superposed L and C values are allowed combinations, the results see the table bellow.  
 Co and Lo pairs directly above/underneath each other may be used.  
 If the operator interfaces are installed in Zone 21 the maximum values for L and C of Group IIB apply to the intrinsically safe circuits.

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# Electrical Apparatus for Explosive Atmospheres

## CERTIFICATE OF CONFORMITY

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**USB-0(X4) and USB-2(X6)**

U<sub>o</sub> = 5.9 V  
 I<sub>o</sub> = 2.69 A Summed current when all connections from USB-0(USB-2) are short circuited to GND.  
 P<sub>o</sub> = 6.02 W Power available when all connections from USB-0(USB-2) are short circuited to GND.

Maximum values calculated with ispark, rectangular source for Zone 1 Group IIC:

Li = 0	mH	Lo =	0.01	0.005	0.002	0.001	mH
Ci = 0	µF	Co =	5.1	11	28	40	µF

Maximum values calculated with ispark, rectangular source for Zone 1 Group IIB:

Li = 0	mH	Lo =	0.05	0.02	0.01	0.005	mH
Ci = 0	µF	Co =	14	40	79	200	µF

**ET-Reader-2-RSi1 and RSi2(X8)**

Reader-2-RSi1 module supply (internal UB\_RDR output), terminal X8.0(bridged to X8.2)

U<sub>o</sub> = 10.4 V I<sub>o</sub> = 220 mA P<sub>o</sub> = 2.29 W

Maximum values calculated with ispark, rectangular source for Zone 1 Group IIC:

Li = 0	mH	Lo =	0.01	mH
Ci = 1.72	µF	Co =	0.8	µF

(Remark: no values for IIB as connection to X8.2 are already permitted with level IIC parameters.)

Reader -2-RSi1 module supply input , terminal X8.2(bridged to X8.0)

U<sub>i</sub> = 12.4 V I<sub>i</sub> = 220 mA P<sub>i</sub> = 2.29 W  
 Li = 0 mH Ci = 25 nF

Reader-2-RSi1 power supply for reader, terminals X8.3-4

U<sub>o</sub> = 5.36 V I<sub>o</sub> = 220 mA P<sub>o</sub> = 1.18 W

Maximum values, rectangular source for Zone 1 Group IIC:

Li = 0	mH	Lo =	0.002	0.001	mH
Ci = 5.3	µF	Co =	40.7	59.7	µF

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# Electrical Apparatus for Explosive Atmospheres

## CERTIFICATE OF CONFORMITY

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Maximum values, rectangular source for Zone 1 Group IIB:

Li = 0	mH	Lo = 0.02	0.01	mH
Cl = 5.3	µF	Co = 70.7	124.7	µF

Reader-2-Rsi1 and -Rsi2 signal input/output, terminals X8.5-8

Ui = 15	V	li = 500	mA	Pi = 2.5	W
Uo = 5.36	V	lo = 46	mA	Po = 62	mW

Maximum values, linear source for Zone 1 Group IIC:

Li = 0	mH	Lo = 0.002	mH
Cl = 0	µF	Co = 46	µF

Maximum values, linear source for Zone 1 Group IIB:

Li = 0	mH	Lo = 0.02	mH
Cl = 0	µF	Co = 79	µF

**ET-Reader-2WCR1 and WCR2(X8)**

Reader-2-WCR1 ,module supply(from external is -power supply) terminal X8.1-2

Ui = 11.4	V	li = 200	mA	Pi = 2.28	W
Li = 0	mH	Cl = 25	nF		

Reader-2-WCR1 power supply for reader, terminals X8.3-4

Uo = 5.88	V	lo = 200	mA	Po = 1.18	W
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Maximum values, rectangular source for Zone 1 Group IIC:

Li = 0	mH	Lo = 0.002	0.001	mH
Cl = 5.3	µF	Co = 27.7	37.7	µF

Maximum values, rectangular source for Zone 1 Group IIB:

Li = 0	mH	Lo = 0.02	0.01	mH
Cl = 5.3	µF	Co = 55.7	94.7	µF

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# Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

Annex to Cert. No.: CNEx18.5523X

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Reader-2-WCR1 and -WCR2 signal input/output, terminals X8.5-8

U <sub>i</sub> = 15 V	l <sub>i</sub> = 500 mA	P <sub>i</sub> = 2.5 W
U <sub>o</sub> = 5.88 V	l <sub>o</sub> = 51 mA	P <sub>o</sub> = 75 mW

Maximum values, linear source for Zone 1 Group IIC:

L <sub>i</sub> = 0 mH	L <sub>o</sub> = 0.002 mH
C <sub>i</sub> = 0 μF	C <sub>o</sub> = 34 μF

Maximum values, linear source for Zone 1 Group IIB:

L <sub>i</sub> = 0 mH	L <sub>o</sub> = 0.02 mH
C <sub>i</sub> = 0 μF	C <sub>o</sub> = 63 μF

Keyboard & Pointing device protection level "ib"(X9)

U <sub>o</sub> = 5.88 V	l <sub>o</sub> = 200 mA	P <sub>o</sub> = 1.18 W
-------------------------	-------------------------	-------------------------

Maximum values, rectangular source for Zone 1 Group IIC:

L <sub>i</sub> = 0 mH	L <sub>o</sub> = 2	1	μH
C <sub>i</sub> = 17.6 μF	C <sub>o</sub> = 15.4	25.4	μF

Maximum values, rectangular source for Zone 1 Group IIB:

L <sub>i</sub> = 0 mH	L <sub>o</sub> = 100	50	20	10	μH
C <sub>i</sub> = 17.6 μF	C <sub>o</sub> = 10.4	20.4	43.4	82.4	μF

Keyboard & Pointing device protection level "ia"(X9)

U <sub>o</sub> = 5.88 V	l <sub>o</sub> = 4.36 A	P <sub>o</sub> = 1.18 W
-------------------------	-------------------------	-------------------------

Maximum values, rectangular source for Zone 1 Group IIC:

L <sub>i</sub> = 0 mH	L <sub>o</sub> = 2	1	μH
C <sub>i</sub> = 17.6 μF	C <sub>o</sub> = 13.4	25.4	μF

Maximum values, rectangular source for Zone 1 Group IIB:

L <sub>i</sub> = 0 mH	L <sub>o</sub> = 20	10	5	1	μH
C <sub>i</sub> = 17.6 μF	C <sub>o</sub> = 32.4	74.4	202.4	982	μF

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## 6 Release Notes

The chapter entitled "Release Notes" contains all the changes made in every version of the certificates.

### Version 03.02.00

- First edition for devices HW-Rev. 3. with 2<sup>nd</sup> supplement

### Version 03.02.01

- Rename document file including with "RS2" for a better differentiation

### Version 03.02.02

- Addition of EC-Declaration of Conformity
- Addition of Hardware revision part "12" and "22" (5-wire touch) at first page

### Version 03.02.03

- Addition of CNEX certificate

### Version 03.02.04

- Addition of TR (Russia / Kazakhstan / Belarus) certificate instead of CKT
- Removal of CKT certificate and operating licence
- Formal corrections

### Version 03.02.05

- Changing HW Rev. style at titel page
- Addition of HW Rev. for BS at titel page
- Changing address and phone numbers

### Version 03.02.06

- Update of CNEX certificate
- Removal of EC Declaration of conformity, because it's in the operating instruction

### Version 03.02.07

- Update of EAC certificate
- Addition of EAC Declaration of conformity
- Formal changes

R. STAHL HMI Systems GmbH  
Adolf-Grimme-Allee 8  
D 50829 Köln

T:	(switchboard)	+49 221 76 806	- 1000
	(Hotline)	+49 221 76 806	- 5000
F:		+49 221 76 806	- 4100
E:	(switchboard)	office@stahl-hmi.de	
	(hotline)	support@stahl-hmi.de	

[r-stahl.com](http://r-stahl.com)  
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