Certificates

Device platform EAGLE

MT-xx6-A

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

STAHL
THE STRONGEST LINK.

HW-Rev. MT-xx6-A-FX:	**03.00.13**
HW-Rev. MT-xx6-A-TX:	**03.00.23**
HW-Rev. MT-xx6-A-FX-BT:	**03.00.18**
HW-Rev. MT-xx6-A-TX-BT:	**03.00.28**
HW-Rev. MT-3x6-A-FX-BS:	**03.00.19**
HW-Rev. MT-3x6-A-TX-BS:	**03.00.29**

Certificates version:	**03.00.20**
Issue date:	**28.08.2024**

Disclaimer

Publisher and copyright holder:

R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8
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Table of contents

1 Preface

NOTICE	This document contains all valid certificates for the MT-xx6-A product line. 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, 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 7103 X

(4) Equipment: **Operator Interface** **Type: MT-^^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 103.00 / 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**
EN 60079-15:2010			

(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 3 (2/3) G	Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc	for type code TX
II 3 (2/3) D	Ex ia tc [ibDb] [ic] IIIC T80°C Dc IP66	for type code TX
II 3 (2/3) G	Ex d e ia ib mb nA [ib op is Gb] [ic] IIC T4 Gc	for type code FX
II 3 (2/3) D	Ex ia tc [ib op is Db] [ic] IIIC T80°C Dc IP66	for type code FX

TÜV Zertifizierungsstelle für Explosionsschutz Cologne, 2011-08-17

Dipl.- Ing. Klaus Wettingfeld

0035

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

www.tuv.com

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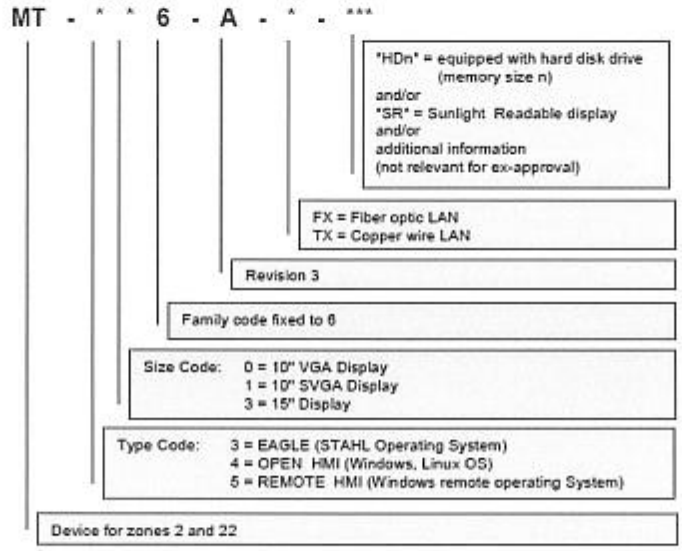
(13) Annex to

(14) **EC - Type Examination Certificate**

TÜV 11 ATEX 7103 X

(15) **Description of Equipment**

15.1 Article / Type Code



The Exicom MT-xx6-A devices are operator interfaces or panel PCs classified Cat. 3 for installation in Zones 2 and 22 hazardous locations with outputs for Zone 1 and Zone 21.

The entire devices are built in housings that are protected against liquids and dust without need to be installed in hazloc 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):

MT-3x6-A: STAHL operating system for user application;

MT-4x6-A: Standard operation system (e.g. Windows Embedded, Linux etc.) for standard applications;

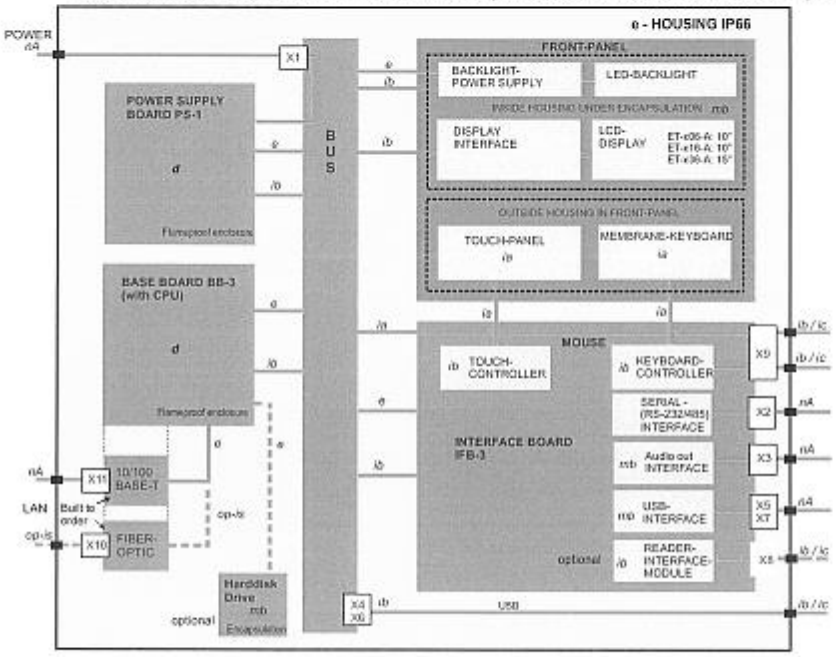
MT-5x6-A: Windows Embedded Standard operating system for remote applications.

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 are achieved by different interfaces (RS-232, RS-485, Ethernet fiber optic or copper wire Ethernet links) connected in the termination compartment at the back of the devices.

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



Picture 1: Block structure of MT - * * 6 - A - * - ***

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 (Ex nA)

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

LAN (X11)

Rated voltage	5 VDC
max. voltage Um	30 VAC

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.

The intrinsically safe circuits may be interfaced either to devices in Zone 1 / 21 as ib circuits or to devices in Zone 2 / 22 as ic circuits. The corresponding is parameters shall be regarded

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)

Uo = 5.9 V

Io = 2.18 A

Po = 1.24 W

a) 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	43	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

b) Maximum values calculated with ispark, rectangular source for Zone 2 Group IIC:

Li	=	0	mH	Lo	=	0.01	0.005	0.002	0.001	mH
Ci	=	0	µF	Co	=	12	24	74	670	µF

Maximum values calculated with ispark, rectangular source for Zone 2 Group IIB:

Li	=	0	mH	Lo	=	0.05	0.02	0.01	0.005	mH
Ci	=	0	µF	Co	=	37	92	200	790	µF

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

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

Uo	=	10.4	V
Io	=	220	mA
Po	=	2.29	W

a) 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 is already permitted with level IIC parameters.)

b) Maximum values calculated with ispark, rectangular source for Zone 2 Group IIC:

Li	=	0	mH	Lo	=	0.01	mH
Ci	=	1.72	µF	Co	=	4.68	µF

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

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

Ui	=	12.4	V
Ii	=	220	mA
Pi	=	2.29	W
Li	=	0	mH
Ci	=	25	nF

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

Uo = 5.36 V

Io = 220 mA

Po = 1.18 W

a) 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

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

b) Maximum values, rectangular source for Zone 2 Group IIC:

Li	=	0	mH	Lo	=	0.002	0.001	mH
Ci	=	5.3	µF	Co	=	124.7	994.7	µF

Maximum values, rectangular source for Zone 2 Group IIB:

Li	=	0	mH	Lo	=	0.02	0.01	mH
Ci	=	5.3	µF	Co	=	154.7	324.7	µF

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

Ui = 15 V Uo = 5.36 V

Ii = 500 mA Io = 46 mA

Pi = 2.5 W Po = 62 mW

a) 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

b) Maximum values, linear source for Zone 2 Group IIC:

Li	=	0	mH	Lo	=	0.002	mH
Ci	=	0	µF	Co	=	130	µF

Maximum values, linear source for Zone 2 Group IIB:

Li	=	0	mH	Lo	=	0.02	mH
Ci	=	0	µF	Co	=	160	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
Ii	=	200	mA
Pi	=	2.28	W
Li	=	0	mH
Ci	=	25	nF

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

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

a) Maximum values, rectangular source for Zone 1 Group IIC

Li	=	0	mH	Lo	=	0.002	0.001	mH
Ci	=	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
Ci	=	5.3	µF	Co	=	55.7	94.7	µF

b) Maximum values, rectangular source for Zone 2 Group IIC

Li	=	0	mH	Lo	=	0.002	0.001	mH
Ci	=	5.3	µF	Co	=	80.7	664.7	µF

Maximum values, rectangular source for Zone 2 Group IIB:

Li	=	0	mH	Lo	=	0.02	0.01	mH
Ci	=	5.3	µF	Co	=	114.7	234.7	µF

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

Ui	=	15	V	Uo	=	5.88	V
Ii	=	500	mA	Io	=	51	mA
Pi	=	2.5	W	Po	=	75	mW

a) Maximum values, linear source for Zone 1 Group IIC

Li	=	0	mH	Lo	=	0.002	mH
Ci	=	0	µF	Co	=	34	µF

Maximum values, linear source for Zone 1 Group IIB:

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

b) Maximum values, linear source for Zone 2 Group IIC

Li	=	0	mH	Lo	=	0.002	mH
Ci	=	0	µF	Co	=	87	µF

Maximum values, linear source for Zone 2 Group IIB:

Li	=	0	mH	Lo	=	0.02	mH
Ci	=	0	µF	Co	=	130	µF

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

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

a) 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

a) 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

b) Maximum values, rectangular source for Zone 2 Group IIC

Li	=	0	mH	Lo	=	0.002	0.001	mH
Ci	=	17.6	µF	Co	=	68.4	652.4	µF

Maximum values, rectangular source for Zone 2 Group IIB:

Li	=	0	mH	Lo	=	0.1	0.05	0.02	0.01	mH
Ci	=	17.6	µF	Co	=	33.4	53.4	102.4	222.4	µF

External inherently safe optical interface X10

Wavelength	=	1350 nm
radiant power	≤	35 mW

(16) **Test Report No.** 557 / Ex 103.00 / 11

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

For MT - * * 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**
Fulfilled

TÜV Zertifizierungsstelle für Explosionsschutz Cologne, 2011-08-17

Dipl.- Ing. Klaus Wettingfeld

2.1 1st supplement

1st Supplement

acc. to directive 94/9/EC, Appendix III, No 6

to the EC-Type Examination Certificate

TÜV 11 ATEX 7103 X

Device: Operator Interface MT - * * 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 1st supplement

Verwendete Normen / Standard basis: IEC 60079-0: 2011 ; IEC 60079-1: 2007; IEC 60079-7: 2006; IEC 60079-11: 2011 IEC 60079-15: 2010 ; IEC 60079-18: 2009; IEC 60079-28: 2006 ; IEC 60079-31: 2008 ;

Schutzartkennzeichen / Code for type of protection

Type code -TX-		ⓔ II 3 (2/3) G Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc
	alterm.	ⓔ II 3 (2/3) G Ex db eb ia ib mb nA [ib ic] IIC T4
		ⓔ II 3 (2/3) D Ex ia tc [ib Db] [ic] IIIC T80°C Dc IP66
	alterm.	ⓔ II 3 (2/3) D Ex ia tc [ib ic] IIIC T80°C IP66
Type code -FX-		ⓔ II 3 (2/3) G Ex d e ia ib mb nA [ib op is Gb] [ic] IIC T4 Gc
	alterm.	ⓔ II 3 (2/3) G Ex db eb ia ib mb nA [ib ic op is] IIC T4
		ⓔ II 3 (2/3) D Ex ia tc [ib op is Db] [ic] IIIC T80°C Dc IP66
	alterm.	ⓔ II 3 (2/3) D Ex ia tc [ib ic op is] IIIC T80°C IP66

This 1st supplement to the EC-Type-Examination Certificate without signature and official stamp shall not be valid. The certifcate may be circulated only without alteration. Extracts or alterations are subject to approval by TÜV Zertifizierungsstelle of TÜV Rheinland Industrie Service GmbH
In case of dispute, the German text shall prevail
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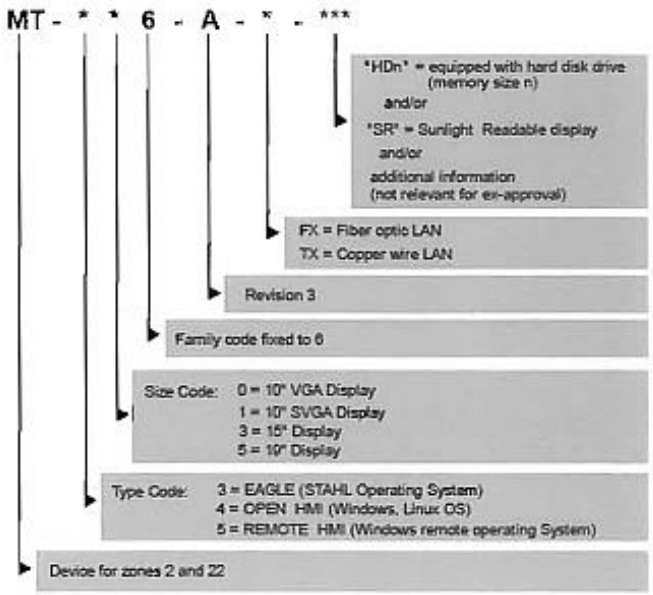
Relevant for user:

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

Internal changes not 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 MT-xx6-A devices are operator interfaces or panel PCs classified Cat. 3 for installation in Zones 2 and 22 hazardous locations with outputs for Zone 1 and 21.

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The entire devices are built in housings that are protected against liquids and dust without need to be installed in hazloc certified cabinets.

The different models vary in display size (10" to 15" and in 1st 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):

MT-3x6-A: STAHL operating system for user application;

MT-4x6-A: Standard operation system (e.g. Windows Embedded, Linux etc.) for standard applications;

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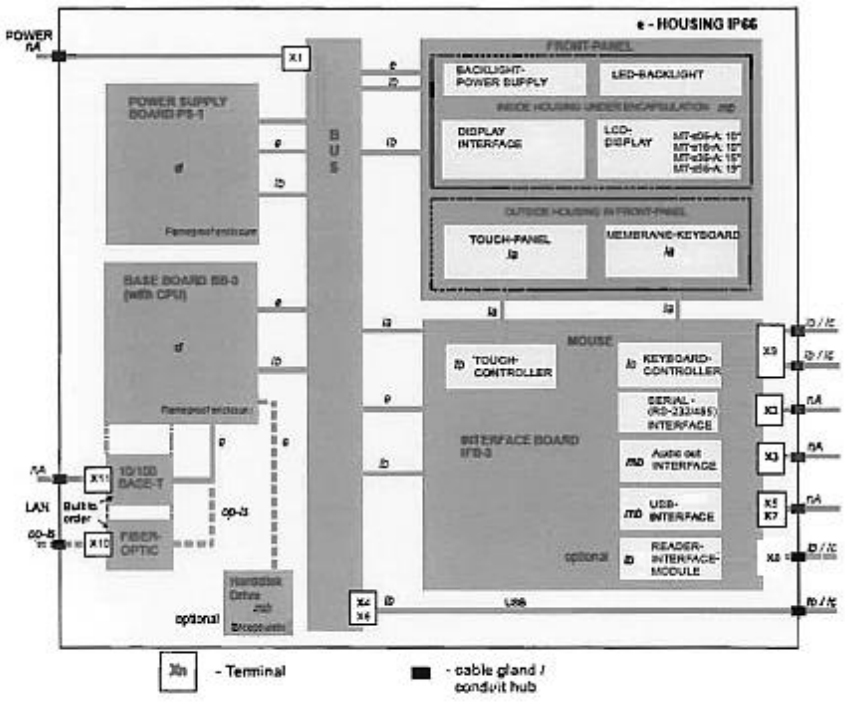

Picture 1: Block structure of MT - * * 6 - A - * - ***

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Technical data

All data unchanged.

(16) Test Report No. 557 / Ex 103.01 / 11

(17) Special conditions for safe use

For MT - * * 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, 2012-02-09

Dipl.-Ing. Klauspeter Gräfi

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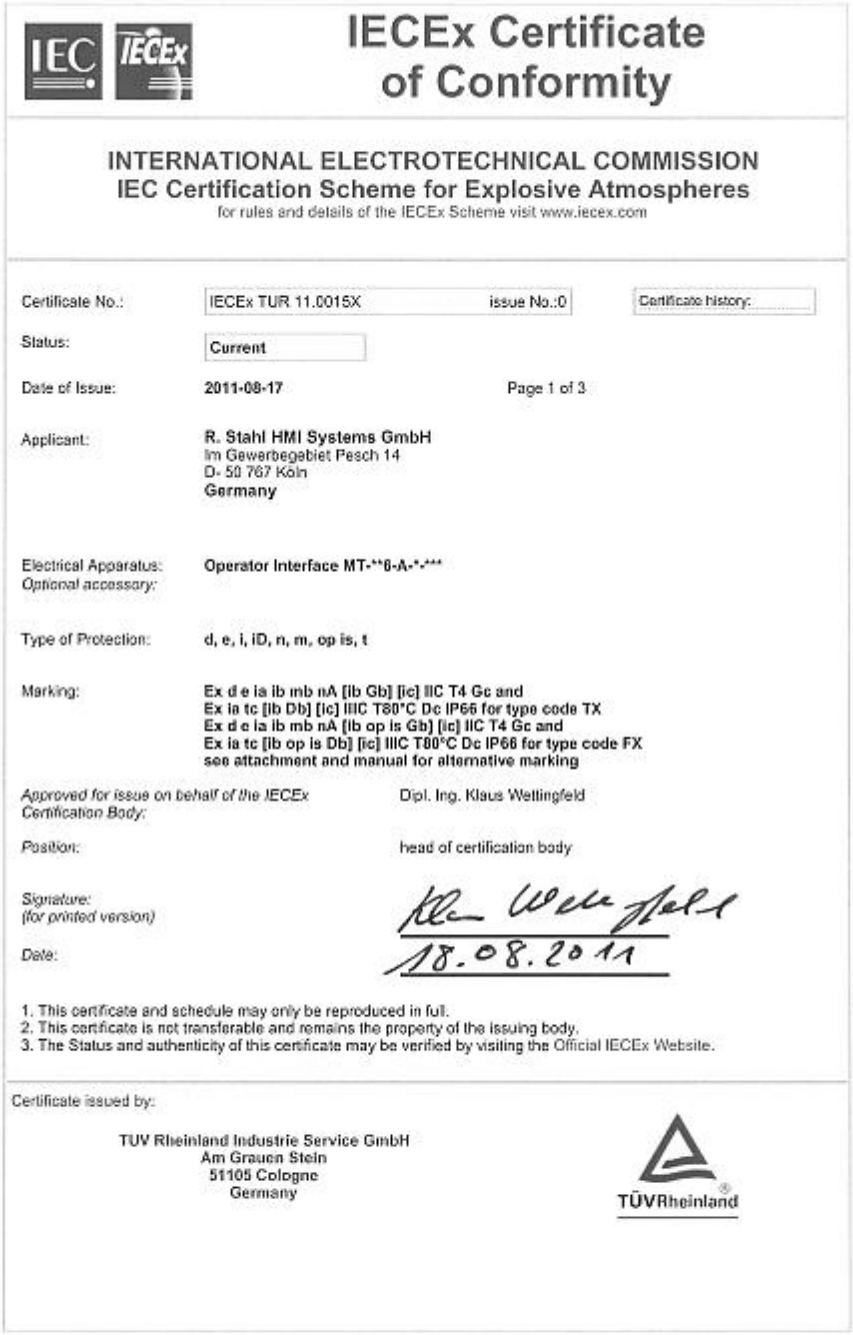
TÜV Zertifizierungsstelle of TÜV Rheinland Industrie Service GmbH
In case of dispute, the German text shall prevail
page 4 / 4

3 IECEx certificate



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx TUR 11.0015X issue No.:0 Certificate history:

Status: Current

Date of Issue: 2011-08-17 Page 1 of 3

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

Electrical Apparatus: Operator Interface MT-**6-A-*-***
Optional accessory:

Type of Protection: d, e, i, iD, n, m, op is, t

Marking: Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc and
Ex ia tc [ib Db] [ic] IIIC T80°C Dc IP66 for type code TX
Ex d e ia ib mb nA [ib op is Gb] [ic] IIC T4 Gc and
Ex ia tc [ib op is Db] [ic] IIIC T80°C Dc IP66 for type code FX
see attachment and manual for alternative marking

Approved for issue on behalf of the IECEx Certification Body: Dipl. Ing. Klaus Wettingfeld

Position: head of certification body

Signature: (for printed version)

Date: 18.08.2011

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

TÜVRheinland

IECEx Certificate of Conformity

Certificate No.: IECEx TUR 11.0015X

Date of Issue: **2011-08-17** Issue No.: **0**

Page 2 of 3

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 : 2007-10 Edition: 5	Explosive atmospheres - Part 0:Equipment - General requirements
IEC 60079-1 : 2007-04 Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2010 Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
IEC 60079-18 : 2009 Edition: 3	Explosive atmospheres Part 18: Equipment protection by encapsulation "m"
IEC 60079-28 : 2006-08 Edition: 1	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
IEC 60079-31 : 2008 Edition: 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
IEC 60079-7 : 2006-07 Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
IEC 61241-11 : 2005 Edition: 1	Electrical apparatus for use in the presence of combustible dusts - Part 11: Protection by intrinsic safety 'iD'

*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/ExTR11.0016/00

Quality Assessment Report:

DE/BVS/QAR10.0002/01

IECEx Certificate of Conformity

Certificate No.: IECEx TUR 11.0015X

Date of Issue: **2011-08-17** Issue No.: **0**

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Schedule

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

The Exicom MT-xx6-A devices are operator interfaces or panel PCs classified Cat. 3 for installation in Zones 2 and 22 hazardous locations with outputs for Zone 1 and 21.The entire devices are built in housings that are protected against liquids and dust without need to be installed in hazloc 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):MT-3x6-A: STAHL operating system for user application;MT-4x6-A: Standard operation system (e.g. Windows Embedded, Linux etc.) for standard applications;MT-5x6-A: Windows Embedded Standard operating system for remote applications.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 are achieved by different interfaces (RS-232, RS-485, Ethernet fiber optic or copper wire Ethernet links) connected in the termination compartment 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 MT-6-A-*-*SR*** (Sunlight readable display)
The fronts of the operator interfaces with a sunlight readable display (type code includes "SR") may be cleaned with a damp cloth only.

Annexe: 557-Ex-103-00-11--ExTR_Attachment.pdf

3.1 Issue No1

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx TUR 11.0015X issue No.:1	Certificate history: Issue No. 1 (2012-2-9) Issue No. 0 (2011-8-17)
Status:	**Current**	
Date of Issue:	**2012-02-09**	Page 1 of 4
Applicant:	**R. Stahl HMI Systems GmbH** Im Gewerbegebiet Pesch 14 D- 50 767 Köln **Germany**	
Electrical Apparatus: *Optional accessory:*	**Operator Interface MT-**6-A-*-***	
Type of Protection:	**d, e, i, iD, n, m, op is, t**	
Marking:	Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc and Ex ia tc [ib Db] [ic] IIIC T80°C Dc IP66 for type code TX Ex d e ia ib mb nA [ib op is Gb] [ic] IIC T4 Gc and Ex ia tc [ib op is Db] [ic] IIIC T80°C Dc 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 Graffi	
Position:	head of certification body	
Signature: *(for printed version)*	_____	
Date:	_____	

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

Certificate issued by:

TUV Rheinland Industrie Service GmbH
Am Grauen Stein
51105 Cologne
Germany

TÜVRheinland®

IECEx Certificate of Conformity

Certificate No.: IECEx TUR 11.0015X

Date of Issue: **2012-02-09** Issue No.: **1**

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 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2007-04 Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011-06 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2010 Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
IEC 60079-18 : 2009 Edition: 3	Explosive atmospheres Part 18: Equipment protection by encapsulation "m"
IEC 60079-28 : 2006-08 Edition: 1	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
IEC 60079-31 : 2008 Edition: 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
IEC 60079-7 : 2006-07 Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
IEC 61241-11 : 2005 Edition: 1	Electrical apparatus for use in the pressence of combustible dusts - Part 11: Protection by intrinsic safety 'iD'

*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/ExTR11.0016/01

Quality Assessment Report:

DE/BVS/QAR10.0002/02

IECEx Certificate of Conformity

Certificate No.: IECEx TUR 11.0015X

Date of Issue: **2012-02-09** Issue No.: **1**

Schedule

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

The Exicom MT-xx6-A devices are operator interfaces or panel PCs classified Cat. 3 for installation in Zones 2 and 22 hazardous locations with outputs for Zone 1 and 21.The entire devices are built in housings that are protected against liquids and dust without need to be installed in hazloc 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):MT-3x6-A: STAHL operating system for user application;MT-4x6-A: Standard operation system (e.g. Windows Embedded, Linux etc.) for standard applications;MT-5x6-A: Windows Embedded Standard operating system for remote applications.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 are achieved by different interfaces (RS-232, RS-485, Ethernet fiber optic or copper wire Ethernet links) connected in the termination compartment 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 MT - * * 6 - A - * - *SR* (Sunlight readable display)
The fronts of the operator interfaces with a sunlight readable display (type code includes “SR”) may be cleaned with a damp cloth only.

IECEx Certificate of Conformity

Certificate No.: IECEx TUR 11.0015X

Date of Issue: **2012-02-09** Issue No.: **1**

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

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

Annexe: DE-TUR-ExTR 11.0015X-01_Attachment.pdf

4 NEC certificate

CERTIFICATE OF COMPLIANCE

Certificate Number	20130611-E202379
Report Reference	E202379-20101105
Issue Date	2013-JUNE-11
Issued to:	R STAHL HMI SYSTEMS GMBH IM GEWERBEGEBIET PESCH 14 50767 COLOGNE GERMANY
This is to certify that representative samples of	PROGRAMMABLE CONTROLLERS FOR USE IN HAZARDOUS LOCATIONS See Addendum Page
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	ANSI/ISA 12.12.01, 2012, Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations; UL 508, Industrial Control Equipment; UL 50E, Enclosures for Electrical Equipment, Environmental Considerations
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Listing Mark should be considered as being covered by UL's Listing and Follow-Up Service.

The UL Listing Mark generally includes the following elements: the symbol UL in a circle: (UL) with the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.

William R. Carney

William R. Carney, Director, North American Certification Programs

UL LLC

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Page 1 of 2

CERTIFICATE OF COMPLIANCE

Certificate Number	20130611-E202379
Report Reference	E202379-20101105
Issue Date	2013-JUNE-11

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Class I, Division 2, Groups A, B, C and D; Class II, Division 2, Groups F and G; Class III Hazardous Locations

ProVicom Open HMI, Model Nos. MT-306, -316, -336, may be followed by S–Fx, S-Tx, S-RSi or S–WCRi; MT-406, -416, -436 or
-456, may be followed by –Fx, -Tx, -4GB, -8GB, -16GB, -60GB,
-120GB, -HB (MT-436 only), -RS or –WCR; MT-536 or –556 may be followed by –Fx, -Tx, -HB, -RSi, -VA or –WCR; provides nonincendive field wiring per Control Drawing No. 20101170000.

Exicom Open HMI, Model Nos. ET-306, -316 or -336, may be followed by –Fx, -Tx, -RSi or –WCRi; ET-406, -416, -436 or
-456, may be followed by –Fx, -Tx, -4GB, -8GB, -16GB, -60GB,
-120GB, -HB (ET-436 only), -RSi or –WCRi; ET-536 or –556, may be followed by –Fx, -Tx, -HB, -RSi, -VA or –WCRi; provides nonincendive field wiring per Control Drawing No. 20101170000.

Exicom Open HMI, Model Nos. ET, followed by -3, -4, or -5, followed by 0, 1, 3, or 5, followed by 6, followed by –A, followed by -FX or -TX, followed by -*SR* or -*HDn*, may be followed by additional numbers, letters, and characters that are not safety critical, provides nonincendive field wiring per Control Drawing No. 201133510.

Exicom Open HMI, Model Nos. MT, followed by -3, -4, or -5, followed by 0, 1, 3, or 5, followed by 6, followed by –A, followed by -FX or -TX, followed by -*SR* or -*HDn*, may be followed by additional numbers, letters, and characters that are not safety critical, provides nonincendive field wiring per Control Drawing No. 201133510.

William R. Carney

William R. Carney, Director, North American Certification Programs

UL LLC

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5 CEC certificate

CSA Group

Certificate of Compliance

Certificate: 2512677 **Master Contract:** 213004

Project: 2512677 **Date Issued:** July 25, 2012

Issued to: **R. STAHL HMI Systems GmbH**

Im Gewerbegebiet Pesch 14
Koeln, 50767
Germany
Attention: Werner Bertges

The products listed below are eligible to bear the CSA Mark shown

Andrew Sargent

Issued by: Andrew Sargent

PRODUCTS
CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations

Ex d e ia ib mb [ia ib] IIC T4 Gb, Type 4X, IP66.

Class II, Division 1, Groups E, F, G, T80°C;Ex ia tb [ia ib] IIIC T80°C Db, IP66.

Exicom Operator Interface – Models ET-ab6-A-cc-ddd. Rated 24V dc, 1.5A.

Ambient temperature rated -30°C to 55°C at front of unit, and -20°C to 55°C at rear of unit.

Where:

a = Operating System

3 Stahl Eagle operating system

4 Standard operating system – Open HMI (Windows embedded, Linux, etc.)

5 Standard operating system – Remote HMI (Windows embedded)

b = Display type

0 10 inch VGA display

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Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

1 10 inch SVGA display

3 15 inch display

5 19 inch display

cc = Ethernet Communications

FX Fiber-optic Ethernet

TX Copper Ethernet

ddd = Options

HDn Hard disk of size "n"

SR Sunlight readable display

May be followed by additional alphanumeric characters, not relevant to certification.

Intrinsically Safe Entity Parameters:

NOTES:

1) Co/Lo pairs shown directly above/underneath each other in the following specifications may be used.

2) When used in Class II areas, maximum values for L and C are as specified for Group IIB applications.

USB-0 (X4) and USB2 (X6)

Uo = 5.9V

Io = 2.18A

Po = 1.24W

Maximum values, rectangular source for Zone 1 Group IIC:

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Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

Li = 0 mH Lo = 0.01, 0.005, 0.002, 0.001 mH

Ci = 0 uF Co = 5.1, 11, 28, 43 uF

Maximum values, rectangular source for Zone 1 Group IIB:

Li = 0 mH Lo = 0.05, 0.02, 0.01, 0.005 mH

Ci = 0 uF Co = 14, 40, 79, 200 uF

ET-Reader-2-RSi1, and –Rsi2 (X8)

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

Uo = 10.4V

Io = 220 mA

Po = 2.29W

Maximum values, rectangular source for Zone 1 Group IIC and Group IIB:

Li = 0 mH Lo = 0.01 mH

Ci = 1.72 uF Co = 0.8 uF

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

Ui = 12.4 V

Ii = 220 mA

Pi = 2.29 W

Li = 0 mH

Ci = 25 nF

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

Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

Uo = 5.36 V

Io = 220 mA

Po = 1.18 W

Maximum values, rectangular source for Zone 1 Group IIC:

Li = 0 mH Lo = 0.002, 0.001 mH

Ci = 5.3 uF Co = 40.7, 59.7 uF

Maximum values, rectangular source for Zone 1 Group IIB:

Li = 0 mH Lo = 0.02, 0.01 mH

Ci = 5.3 uF Co =70.7, 124.7 uF

Reader-2-RSi1 and –RSi2 signal input/output, terminals X8.5 through X8.8

Ui = 15 V Uo = 5.36 V

Ii = 500 mA Io = 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 uF Co = 46 uF

Maximum values, linear source for Zone 1 Group IIB:

Li = 0 mH Lo = 0.02 mH

Ci = 0 uF Co = 79 uF

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Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

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

Reader-2-WCR1 module supply (from external I.S. power supply), terminals X8.1 and X8.2

Ui = 11.4 V

Ii = 200 mA

Pi = 2.28 W

Li = 0 mH

Ci = 25 nF

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

Uo = 5.88 V

Io = 200 mA

Po = 1.18 W

Maximum values, rectangular source for Zone 1 Group IIC:

Li = 0 mH Lo = 0.002, 0.001 mH

Ci = 5.3 uF Co = 27.7, 37.7 uF

Maximum values, rectangular source for Zone 1 Group IIB:

Li = 0 mH Lo = 0.02, 0.01 mH

Ci = 5.3 uF Co = 55.7, 94.7 uF

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

Ui = 15 V Uo = 5.88 V

Ii = 500 mA Io = 51 mA

Pi = 2.5 W Po = 75 mW

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Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

Maximum values, linear source for Zone 1 Group IIC:

Li = 0 mH Lo = 0.002 mH

Ci = 0 uF Co = 34 uF

Maximum values, linear source for Zone 1 Group IIB:

Li = 0 mH Lo = 0.02 mH

Ci = 0 uF Co = 63 uF

Keyboard and 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 uH

Ci = 17.6 uF Co = 15.4, 25.4 uF

Maximum values, rectangular source for Zone 1 Group IIB:

Li = 0 mH Lo = 100, 50, 20, 10 uH

Ci = 17.6 uF Co = 10.4, 20.4, 43.4, 82.4 uF

Keyboard and pointing device, protection level "ia" (X9)

Uo = 5.88 V

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Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

Io = 4.36 A

Po = 1.18 W

Maximum values, linear source for Zone 1 Group IIC:

Li = 0 mH Lo = 2, 1 uH

Ci = 17.6 uF Co = 13.4, 25.4 uF

Maximum values, linear source for Zone 1 Group IIB:

Li = 0 mH Lo = 20, 10, 5, 1 uH

Ci = 17.6 uF Co = 32.4, 74.4, 202.4, 982 uF

External non-intrinsically safe circuits:

Input power (X1)

Rated voltage = 24 Vdc (+20% / -15%)

Maximum Voltage, Um = 30 Vac

Rated current = 1.5 A

RS-422/-232 COM 1 (X2)

Rated voltage = RS232: ± 12 Vdc, RS422: 5 Vdc

Maximum Voltage, Um = 253 Vac

Audio out (X3)

Rated voltage = 5 Vdc

Maximum Voltage, Um = 253 Vac

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Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

USB-1 (X5)

Rated voltage = 5 Vdc

Maximum Voltage, Um = 253 Vac

USB-3 (X7)

Rated voltage = 5 Vdc

Maximum Voltage, Um = 253 Vac

LAN (X11)

Rated voltage = 5 Vdc

Maximum Voltage, Um = 30 Vac

NOTES (Special Conditions of Safe Use):

1) Models with Sunlight Readable display option (SR option code) must be cleaned only with a damp cloth.

Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc, Type 4X, IP66.

Class II, Division 2, Groups E, F, G, T80°C; Ex ia tc [ib ic] IIIC T80°C Dc, IP66.

Exicom Operator Interface – Models MT-ab6-A-cc-ddd. Rated 24V dc, 1.5A.

Ambient temperature rated -30°C to 55°C at front of unit, and -20°C to 55°C at rear of unit.

Where:

a = Operating System

3 Stahl Eagle operating system

4 Standard operating system – Open HMI (Windows embedded, Linux, etc.)

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Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

5 Standard operating system – Remote HMI (Windows embedded)

b = Display type

0 10 inch VGA display

1 10 inch SVGA display

3 15 inch display

5 19 inch display

cc = Ethernet Communications

FX Fiber-optic Ethernet

TX Copper Ethernet

ddd = Options

HDn Hard disk of size "n"

SR Sunlight readable display

May be followed by additional alphanumeric characters, not relevant to certification.

Intrinsically Safe Entity Parameters:

NOTES:

1) Co/Lo pairs shown directly above/underneath each other in the following specifications may be used.

2) When used in Class II areas, maximum values for L and C are as specified for Group IIB applications.

USB-0 (X4) and USB2 (X6)

Uo = 5.9V

DQD 507 Rev. 2012-05-22 Page: 9

Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

Io = 2.18A

Po = 1.24W

Maximum values, rectangular source for Zone 1 Group IIC:

Li = 0 mH Lo = 0.01, 0.005, 0.002, 0.001 mH

Ci = 0 uF Co = 5.1, 11, 28, 43 uF

Maximum values, rectangular source for Zone 1 Group IIB:

Li = 0 mH Lo = 0.05, 0.02, 0.01, 0.005 mH

Ci = 0 uF Co = 14, 40, 79, 200 uF

Maximum values, rectangular source for Zone 2 Group IIC:

Li = 0 mH Lo = 0.01, 0.005, 0.002, 0.001 mH

Ci = 0 uF Co = 12, 24, 74, 670 uF

Maximum values, rectangular source for Zone 2 Group IIB:

Li = 0 mH Lo = 0.05, 0.02, 0.01, 0.005 mH

Ci = 0 uF Co = 37, 92, 200, 790 uF

ET-Reader-2-RSi1, and –Rsi2 (X8)

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

Uo = 10.4V

Io = 220 mA

Po = 2.29W

DQD 507 Rev. 2012-05-22 Page: 10

Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

Maximum values, rectangular source for Zone 1 Group IIC and Group IIB:

Li = 0 mH Lo = 0.01 mH

Ci = 1.72 uF Co = 0.8 uF

Maximum values, rectangular source, for Zone 2, Group IIC and Group IIB:

Li = 0 mH Lo = 0.01 mH

Ci = 1.72 uF Co = 4.68 uF

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

Ui = 12.4 V

Ii = 220 mA

Pi = 2.29 W

Li = 0 mH

Ci = 25 nF

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

Uo = 5.36 V

Io = 220 mA

Po = 1.18 W

Maximum values, rectangular source for Zone 1 Group IIC:

Li = 0 mH Lo = 0.002, 0.001 mH

Ci = 5.3 uF Co = 40.7, 59.7 uF

Maximum values, rectangular source for Zone 1 Group IIB:

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Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

Li = 0 mH Lo = 0.02, 0.01 mH

Ci = 5.3 uF Co =70.7, 124.7 uF

Maximum values, rectangular source for Zone 2 Group IIC:

Li = 0 mH Lo = 0.002, 0.001 mH

Ci = 5.3 uF Co = 124.7, 994.7 uF

Maximum values, rectangular source for Zone 2 Group IIB:

Li = 0 mH Lo = 0.02, 0.01 mH

Ci = 5.3 uF Co =154.7, 324.7 uF

Reader-2-RSi1 and –RSi2 signal input/output, terminals X8.5 through X8.8

Ui = 15 V Uo = 5.36 V

Ii = 500 mA Io = 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 uF Co = 46 uF

Maximum values, linear source for Zone 1 Group IIB:

Li = 0 mH Lo = 0.02 mH

Ci = 0 uF Co = 79 uF

Maximum values, linear source for Zone 2 Group IIC:

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Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

Li = 0 mH Lo = 0.002 mH

Ci = 0 uF Co = 130 uF

Maximum values, linear source for Zone 2 Group IIB:

Li = 0 mH Lo = 0.02 mH

Ci = 0 uF Co = 160 uF

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

Reader-2-WCR1 module supply (from external I.S. power supply), terminals X8.1 and X8.2

Ui = 11.4 V

Ii = 200 mA

Pi = 2.28 W

Li = 0 mH

Ci = 25 nF

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

Uo = 5.88 V

Io = 200 mA

Po = 1.18 W

Maximum values, rectangular source for Zone 1 Group IIC:

Li = 0 mH Lo = 0.002, 0.001 mH

Ci = 5.3 uF Co = 27.7, 37.7 uF

Maximum values, rectangular source for Zone 1 Group IIB:

DQD 507 Rev. 2012-05-22 Page: 13

Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

Li = 0 mH Lo = 0.02, 0.01 mH

Ci = 5.3 uF Co = 55.7, 94.7 uF

Maximum values, rectangular source for Zone 2 Group IIC:

Li = 0 mH Lo = 0.002, 0.001 mH

Ci = 5.3 uF Co = 80.7, 664.7 uF

Maximum values, rectangular source for Zone 2 Group IIB:

Li = 0 mH Lo = 0.02, 0.01 mH

Ci = 5.3 uF Co = 114.7, 234.7 uF

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

Ui = 15 V Uo = 5.88 V

Ii = 500 mA Io = 51 mA

Pi = 2.5 W Po = 75 mW

Maximum values, linear source for Zone 1 Group IIC:

Li = 0 mH Lo = 0.002 mH

Ci = 0 uF Co = 34 uF

Maximum values, linear source for Zone 1 Group IIB:

Li = 0 mH Lo = 0.02 mH

Ci = 0 uF Co = 63 uF

Maximum values, linear source for Zone 2 Group IIC:

DQD 507 Rev. 2012-05-22 Page: 14

Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

Li = 0 mH Lo = 0.002 mH

Ci = 0 uF Co = 87 uF

Maximum values, linear source for Zone 2 Group IIB:

Li = 0 mH Lo = 0.02 mH

Ci = 0 uF Co = 130 uF

Keyboard and 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 uH

Ci = 17.6 uF Co = 15.4, 25.4 uF

Maximum values, rectangular source for Zone 1 Group IIB:

Li = 0 mH Lo = 100, 50, 20, 10 uH

Ci = 17.6 uF Co = 10.4, 20.4, 43.4, 82.4 uF

Keyboard and pointing device, protection level "ia" (X9)

Uo = 5.88 V

Io = 4.36 A

Po = 1.18 W

DQD 507 Rev. 2012-05-22 Page: 15

Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

Maximum values, linear source for Zone 1 Group IIC:

Li = 0 mH Lo = 2, 1 uH

Ci = 17.6 uF Co = 13.4, 25.4 uF

Maximum values, linear source for Zone 1 Group IIB:

Li = 0 mH Lo = 20, 10, 5, 1 uH

Ci = 17.6 uF Co = 32.4, 74.4, 202.4, 982 uF

Maximum values, linear source for Zone 2 Group IIC:

Li = 0 mH Lo = 0.002, 0.001 mH

Ci = 17.6 uF Co = 68.4, 652.4 uF

Maximum values, linear source for Zone 2 Group IIB:

Li = 0 mH Lo = 0.1, 0.05, 0.02, 0.01 mH

Ci = 17.6 uF Co = 33.4, 53.4, 102.4, 222.4 uF

External non-intrinsically safe circuits:

Input power (X1)

Rated voltage = 24 Vdc (+20% / -15%)

Maximum Voltage, Um = 30 Vac

Rated current = 1.5 A

RS-422/-232 COM 1 (X2)

Rated voltage = RS232: ± 12 Vdc, RS422: 5 Vdc

Maximum Voltage, Um = 253 Vac

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Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

Audio out (X3)

Rated voltage = 5 Vdc

Maximum Voltage, Um = 253 Vac

USB-1 (X5)

Rated voltage = 5 Vdc

Maximum Voltage, Um = 253 Vac

USB-3 (X7)

Rated voltage = 5 Vdc

Maximum Voltage, Um = 253 Vac

LAN (X11)

Rated voltage = 5 Vdc

Maximum Voltage, Um = 30 Vac

NOTES (Special Conditions of Safe Use):

1) Models with Sunlight Readable display option (SR option code) must be cleaned only with a damp cloth.

APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 0-10 *August 2011*	General requirements — Canadian Electrical Code, Part II
CAN/CSA-C22.2 No. 94.1-07 *First Edition*	Enclosures for Electrical Equipment, Non-Environmental Considerations
CSA C22.2 No. 94.2-07 *First Edition*	Enclosures for Electrical Equipment, Environmental Considerations

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Certificate: 2512677 **Master Contract:** 213004

Project: 2512677 **Date Issued:** July 25, 2012

CAN/CSA-C22.2 No. 60529:05 *(July 2005)*	Degrees of protection provided by enclosures (IP Code)
CAN/CSA-C22.2 No. 61010-1-04 *(Reaffirmed 2009)*	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use — Part 1: General Requirements
CAN/CSA-C22.2 No. 60079-0:11 *(December 2011)*	Explosive atmospheres – Part 0: Equipment – General requirements
CAN/CSA-C22.2 No. 60079-1:11 *(December 2011)*	Explosive atmospheres – Part 1: Equipment protection by flameproof enclosures "d"
CAN/CSA-C22.2 No. 60079-7:12 *(February 2012)*	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"
CAN/CSA-C22.2 No. 60079-11:11 *(December 2011)*	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i"
CAN/CSA-C22.2 No. 60079-15:12 *(January 2012)*	Electrical apparatus for explosive gas atmospheres — Part 15: Construction, test and marking of type of protection "n" electrical apparatus
CAN/CSA-C22.2 No. 60079-18:12 *(February 2012)*	Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"
CAN/CSA-C22.2 No. 60079-31:12 *(January 2012)*	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"

MARKINGS

The following markings are provided on a CSA Accepted (Class 7923.01) or UL Recognized to Canadian requirements (PGJI8) adhesive nameplate, used with the printer and ribbon specified in the Listing, and is suitable for indoor and outdoor use on stainless steel, at a maximum service temperature of 70°C or higher. Nameplate is affixed to the rear surface of the enclosure.

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Certificate:	2512677	**Master Contract:**	213004
Project:	2512677	**Date Issued:**	July 25, 2012

- Manufacturer's name: "R. Stahl HMI Systems GmbH", or CSA Master Contract Number "213004", adjacent to the CSA Mark in lieu of manufacturer's name.
- Model number: As specified in the PRODUCTS section, above.
- The words: "See operating instructions", or equivalent, in lieu of marked electrical ratings.
- Ambient temperature rating: As specified in the PRODUCTS section, above.
- Manufacturing date in MMYY format, or serial number, traceable to year and month of manufacture.
- Enclosure rating: As specified in the PRODUCTS section, above.
- Enclosure IP rating: As specified in the PRODUCTS section, above.
- The CSA Mark, as shown on the Certificate of Conformity.
- The Year and CSA Certificate Number "12.2512677" adjacent to the CSA Mark.
- The designation "Exia" adjacent to the CSA mark.
- Method of Protection markings (Ex nomenclature):As specified in the PRODUCTS section, above.
- Temperature code: As specified in the PRODUCTS section, above.
- ISO 60417, Symbol 5019, or the word "Ground" or "GND" adjacent to the equipment ground (protective conductor) terminal.
- The words: "WARNING: Substitution of components may impair intrinsic safety."
- On models ET-xx6-A-xx-xxx: The words "Install per drawing 2012 09 52 0", or equivalent.
- On models MT-xx6-A-xx-xxx: The words "Install per drawing 2012 09 53 0", or equivalent.

Note - Jurisdictions in Canada may require these markings to also be provided in French language. It is the responsibility of the manufacturer to provide bilingual marking, where applicable, in accordance with the requirements of the Provincial Regulatory Authorities. It is the responsibility of the manufacturer to determine this requirement and have bilingual wording added to the "Markings".

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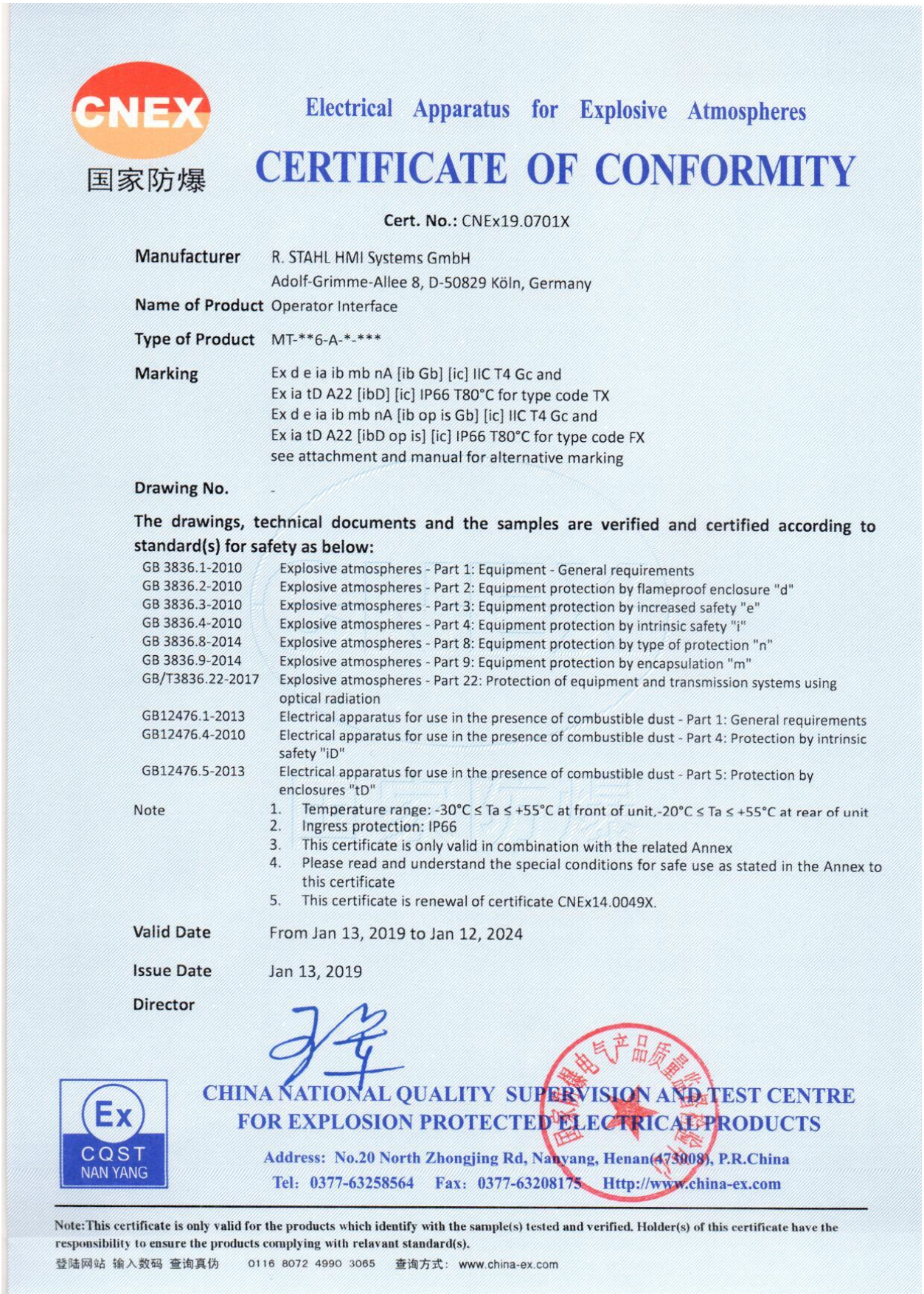
6 CNEx certificate



国家防爆

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Cert. No.: CNEx19.0701X

Manufacturer	R. STAHL HMI Systems GmbH Adolf-Grimme-Allee 8, D-50829 Köln, Germany
Name of Product	Operator Interface
Type of Product	MT-**6-A-*-***
Marking	Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc and Ex ia tD A22 [ibD] [ic] IP66 T80°C for type code TX Ex d e ia ib mb nA [ib op is Gb] [ic] IIC T4 Gc and Ex ia tD A22 [ibD op is] [ic] IP66 T80°C for type code FX see attachment and manual for alternative marking
Drawing No.	-

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 3836.8-2014	Explosive atmospheres - Part 8: Equipment protection by type of protection "n"
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
GB12476.1-2013	Electrical apparatus for use in the presence of combustible dust - Part 1: General requirements
GB12476.4-2010	Electrical apparatus for use in the presence of combustible dust - Part 4: Protection by intrinsic safety "iD"
GB12476.5-2013	Electrical apparatus for use in the presence of combustible dust - Part 5: Protection by enclosures "tD"

Note
1. Temperature range: -30°C ≤ Ta ≤ +55°C at front of unit,-20°C ≤ Ta ≤ +55°C at rear of unit
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 CNEx14.0049X.

Valid Date From Jan 13, 2019 to Jan 12, 2024

Issue Date Jan 13, 2019

Director

Ex CQST NAN YANG

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Annex to Cert. No.: CNEx19.0701X

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This Annex to certificate CNEx 19.0701X covers the following model: Type ET-**6-A-*-***.
This product has been certified, under certificate number IECEx TUR 11.0015X, issue 2, dated 2013-07-03.

Product Description:

The Exicom MT-xx6-A devices are operator interfaces or panel PCs for installation in Zones 2 and 22 hazardous locations with outputs for Zone 1 and 21. The entire devices are built in housings that are protected against liquids and dust without need to be installed in hazloc certified cabinets.The different models vary in display size (10" to 15" and 19") and overall size, front panel with or without keyboard and overall functionality. Three main functionalities are (characterized by the first type code number):
MT-3x6-A: STAHL operating system for user application;
MT-4x6-A: Standard operation system (e.g. Windows Embedded, Linux etc.) for standard applications;
MT-5x6-A: Windows Embedded Standard operating system for remote applications.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 are achieved by different interfaces (RS-232, RS-485, Ethernet fiber optic or copper wire Ethernet links) connected in the termination compartment 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 nA [ib Gb] [ic] IIC T4 Gc
	Ex ia tD A22 [ibD] [ic] IP66 T80°C
Type code -FX-	Ex d e ia ib mb nA [ib op is Gb] [ic] IIC T4 Gc
	Ex ia tD A22 [ibD op is] [ic] IP66 T80°C

Issue Date Jan 13, 2019

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Annex to Cert. No.: CNEx19.0701X

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:

MT	-	*	*	6	-	A	-	*	-	***
1		2	3	4		5		6		7

1	Device for zone 2 and 22	
2	Type Code:	3=EAGLE(STAHL Operating System)
		4=OPEN HMI(Windows, Linux OS)
		5=REMOTE HMI(Windows remote operating system)
3	Size Code:	0=10" VGA display
		1=10" SVGA display
		3=15" display
		5=19" display
4	Family code fixed to 6	
5	Reversion 3	
6	FX=Fiber optic LAN TX=Copper wire LAN	
7	*HDn*=equipped with hard disk drive(memory size n) and or *SR*=Sunlight Readable display and or additional information(not relevant to Ex)	

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Electrical data:

External, non-intrinsically safe circuit

1. Input voltage (X1)
   Rated voltage 24 VDC (+20% /-15%)
   max. voltage Um 30 VAC
   Rated current 1.5 A
2. RS-422/-232 COM 1 (X2)
   Rated voltage RS232: ±12 VDC RS422: 5 VDC
   max. voltage Um 253 VAC
3. Audio out (X3)
   Rated voltage 5 VDC
   max. voltage Um 253 VAC
4. USB-1 (X5)
   Rated voltage 5 VDC
   max. voltage Um 253 VAC
5. USB-3 (X7)
   Rated voltage 5 VDC
   max. voltage Um 253 VAC
6. LAN (X11)
   Rated voltage 5 VDC
   max. voltage Um 30 VAC
7. RS-422/-232 COM 2-3 (X22)
   Rated voltage RS232: ±12 VDC RS422: 5 VDC
   max. voltage Um 253 VAC

Issue Date Jan 13, 2019

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Annex to Cert. No.: CNEx19.0701X

External intrinsically safe circuits

(Superposed L and C values are allowed combinations, calculated with ispark.) The intrinsically safe circuits may be interfaced either to devices in Zone 1 / 21 as ib circuits or to devices in Zone 2 / 22 as ic circuits. The corresponding is parameters shall be regarded:

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

Uo = 5.9 V

Io = 2.69 A Summed current when all connections from USB-0 (USB- 2) are short-circuited to GND.

Po = 6.02 W Power available when all connections from USB-0 (USB- 2) are short-circuited to GND.

a) 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

b) Maximum values calculated with ispark, rectangular source for Zone 2 Group IIC:

Li	=	0	mH	Lo	=	0.01	0.005	0.002	0.001 mH
Ci	=	0	µF	Co	=	10	22	72	670 µF

Maximum values calculated with ispark, rectangular source for Zone 2 Group IIB:

Li	=	0	mH	Lo	=	0.05	0.02	0.01	0.005 mH
Ci	=	0	µF	Co	=	29	84	190	770 µF

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

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

Uo	=	10.4	V	Io	=	220	mA	Po	= 2.29 W

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a) 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.)

b) Maximum values calculated with ispark, rectangular source for Zone 2 Group IIC:

Li	=	0	mH	Lo	=	0.01	mH
Ci	=	1.72	μF	Co	=	4.68	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)

Ui	=	12.4	V	Ii	=	220	mA	Pi	=	2.29 W
Li	=	0	mH	Ci	=	25	nF			

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

Uo	=	5.36	V	Io	=	220	mA	Po	=	1.18 W

a)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

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

b)Maximum values, rectangular source for Zone 2 Group IIC:

Li	=	0	mH	Lo	=	0.002	0.001	mH
Ci	=	5.3	μF	Co	=	124.7	994.7	μF

Maximum values, rectangular source for Zone 2 Group IIB:

Li	=	0	mH	Lo	=	0.002	0.001	mH
Ci	=	5.3	μF	Co	=	154.7	324.7	μF

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

Ui	=	15	V	Uo	=	5.36	V
Ii	=	500	mA	Io	=	46	mA
Pi	=	2.5	W	Po	=	62	mW

a) 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

b)Maximum values, linear source for Zone 2 Group IIC:

Li	=	0	mH	Lo	=	0.002	mH
Ci	=	0	µF	Co	=	130	µF

Maximum values, linear source for Zone 2 Group IIB:

Li	=	0	mH	Lo	=	0.002	mH
Ci	=	0	µF	Co	=	160	µF

3. 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	Ii	=	200	mA	Pi	=	2.28	W
Li	=	0	mH	Ci	=	25	nF				

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

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

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Annex to Cert. No.: CNEx19.0701X

a)Maximum values, rectangular source for Zone 1 Group IIC:

Li	=	0	mH	Lo	=	0.002	0.001	mH
Ci	=	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
Ci	=	5.3	μF	Co	=	55.7	94.7	μF

b)Maximum values, rectangular source for Zone 2 Group IIC:

Li	=	0	mH	Lo	=	0.002	0.001	mH
Ci	=	5.3	μF	Co	=	80.7	664.7	μF

Maximum values, rectangular source for Zone 2 Group IIB:

Li	=	0	mH	Lo	=	0.002	0.001	mH
Ci	=	5.3	μF	Co	=	114.7	234.7	μF

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

Ui	=	15	V	Uo	=	5.88	V
Ii	=	500	mA	Io	=	51	mA
Pi	=	2.5	W	Po	=	75	mW

a) Maximum values, linear source for Zone 1 Group IIC:

Li	=	0	mH	Lo	=	0.002	mH	
Ci	=	0	μF	Co	=	34	μF	

Maximum values, linear source for Zone 1 Group IIB:

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

b)Maximum values, linear source for Zone 2 Group IIC:

Li	=	0	mH	Lo	=	0.002	mH	
Ci	=	0	μF	Co	=	87	μF	

Maximum values, linear source for Zone 2 Group IIB:

Li	=	0	mH	Lo	=	0.002	mH	
Ci	=	0	μF	Co	=	130	μF	

Issue Date Jan 13, 2019

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Annex to Cert. No.: CNEx19.0701X

Keyboard & Pointing device (X9)

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

a)Maximum values, rectangular source for Zone 1 Group IIC:

Li	=	0	mH	Lo	=	0.002	0.001	mH	
Ci	=	17.6	μF	Co	=	15.4	25.4	μF	

Maximum values, rectangular source for Zone 1 Group IIB:

Li	=	0	mH	Lo	=	0.1	0.05	0.02	0.01	mH
Ci	=	17.6	μF	Co	=	10.4	20.4	43.4	82.4	μF

b)Maximum values, rectangular source for Zone 2 Group IIC:

Li	=	0	mH	Lo	=	0.002	0.001	mH	
Ci	=	17.6	μF	Co	=	68.4	652.4	μF	

Maximum values, rectangular source for Zone 2 Group IIB:

Li	=	0	mH	Lo	=	0.1	0.05	0.02	0.01	mH
Ci	=	17.6	μF	Co	=	33.4	53.4	102.4	222.4	μF

External inherently safe optical interface X10

Wavelength = 1350 nm
radiant power ≤ 35 mW

Special conditions for safe use

The fronts of the operator interfaces with a sunlight readable display (type code includes "SR") and the other models if an additional film is applied to the front may be cleaned with a damp cloth only. The additional warning advice label shall be applied at or near the device.

Issue Date Jan 13, 2019

Director

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7 Marine certification ABS

Electronically published by ABS Hamburg.
Reference T1895092, dated 09-OCT-2019.

CERTIFICATE NUMBER 19-HG1895092-PDA
EFFECTIVE DATE 09-Oct-2019
EXPIRATION DATE 08-Oct-2024
ABS TECHNICAL OFFICE Hamburg Engineering Department

CERTIFICATE OF

Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

R. STAHL HMI SYSTEMS GMBH

located at

EMC LABORATORY, ADOLF-GRIMME-ALLEE 8, D-50829 KOELN, Germany

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product **Monitor, Panel PC and TFT Monitor Units**

Model **ET/MT-xy6-A-z-BS/BT (See description for x, y & z)**

This Product Design Assessment (PDA) Certificate remains valid until 08/Oct/2024 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau of Shipping

Efstratios Maliatsos, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

Certificate of Product Design Assessment Rev.3 Page 1 of 1

Electronically published by ABS Hamburg.
Reference T1895092, dated 09-OCT-2019.

R. STAHL HMI SYSTEMS GMBH
EMC LABORATORY
ADOLF-GRIMME-ALLEE 8
D-50829 KOELN
Germany
Telephone: +49 (0)221 59808-200
Fax: +49 (0)221 59808-260
Email: office@stahl-hmi.de
Web: www.stahl-hmi.de

Tier: 5 - Unit Certification Required

Product: **Monitor, Panel PC and TFT Monitor Units**
Model: **ET/MT-xy6-A-z-BS/BT (See description for x, y & z)**
Intended Service:
Panels PC for monitoring and control functions on AMS, ACC, ACCU, ABCU Classed Vessels.

Description:
The ET/MT-xx6-A HMI devices are explosion-proof equipment for installation in hazardous areas and can be installed in zones 2 and 22 with outputs for zones 1 and 21.

ET/MT-xy6-A-z-(BS/BT) where: -
x = Type code (3 = EAGLE, 4 = Open HMI panel PC, 5 = Remote HMI thin client)
y = Size code (0,1 = 10.4" display, 3 = 15" display, 5 = 19" display)
z - Ethernet interface (FX = Fiber optic, TX = Copper cable)
BS = Single-core processor
BT = Quad-core processor

Hardware Revision: 03

Rating:
Power supply: 24V DC (20.4 ~ 28.8 VDC),
Ambient Temperature: -20° C (-30° C with heater) to 55° C
Degree of protection: IP66 (front and back side)

Explosion proof rating for ET-xx6-A-TX (TUV 11 ATEX 7041 X):
- II 2 (2) G Ex d e ia ib mb [ia ib] IIC T4 Gb
- II 2 (2) D Ex ia tb [ia ib] IIIC T80°C Db IP66

Explosion proof rating for ET-xx6-A-FX (TUV 11 ATEX 7041 X):
- II 2 (2) G Ex d e ia ib mb [ia ib op is] IIC T4 Gb
- II 2 (2) D Ex ia tb [ia ib op is] IIIC T80°C Db IP66

Explosion proof rating for MT-xx6-A-TX (TUV 11 ATEX 7103 X):
- II 3 (2/3) G Ex d e ia ib mb nA [ib Gb] [ic] IIC T4 Gc
- II 3 (2/3) D Ex ia tc [ib Db] [ic] IIIC T80°C Dc IP66

Explosion proof rating for MT-xx6-A-FX (TUV 11 ATEX 7103 X):
- II 3 (2/3) G Ex d e ia ib mb nA [ib op is Gb] [ic] IIC T4 Gc
- II 3 (2/3) D Ex ia tc [ib Db] [ic] IIIC T80°C Dc IP66

Service Restriction:
1. Unit Certification is required for this product if it is incorporated in a Category II or Category III system as detailed in 4-9-3/Table 1 of the ABS Marine Vessel Rules. The required evidence is to be kept by the manufacturer in accordance with 4-9-3/Table 2 of ABS Marine Vessel Rules.
2. Installation of the units, as per manufacturer's instructions.
3. ATEX certified equipment is not to be installed in hazardous areas on U.S vessels unless it can be prove to have ~~been tested to the applicable IEC 60079 series standards by an independent laboratory accepted by the U.S coast~~ Guard. USCG notice 01-12 (February 7, 2012).

Comments:
1. Each application/ installation and the user operating software is to be specifically approved in conjunction with the relevant system in which the units are being used.
2. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:
Design Documents:

Electronically published by ABS Hamburg.
Reference T1895092, dated 09-OCT-2019.

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Web: www.stahl-hmi.de

Tier: 5 - Unit Certification Required

Drawing No. 12100020, ET-xx6-Q72ETX-1 CPU-Cooler, Revision: 01, Pages: 1
Drawing No. 12100021, ET-xx6-Q72ETX-1 Heat Spreader, Revision: 01, Pages: 1
Drawing No. 2004 11 01 2 L_HWR2-xx, BRICK Power Supply- Eagle-PS1-2 HWR 2- xx Layout, Revision: 0, Pages: 6
Drawing No. 2004 11 01 2 S, BRICK Power Supply- EAGLE-PS-1-2_SCHEMATIC_HwRev 2_24, Revision: 0, Pages: 12
Drawing No. 2004 11 01 2_Eagle PS-1, BRICK Power Supply- EAGLE-PS-1_Bestueckungsplan, Revision: 0, Pages: 2
Drawing No. 2005 26 01 0 S_HWR01x, EAGLE-TADAPT-1_HWR01x_Schematic, Revision: 0, Pages: 1
Drawing No. 2005 41 53 2_ET-MT, ET-MT-xx6-A_Moaufbau, Revision: 0, Pages: 1
Drawing No. 2005 41 54 2, ET-MT-xx6-A_Moaufbau, Revision: 0, Pages: 1
Drawing No. 2005 47 01 0 S, EAGLE-ENET-1 HWR 0-xx Shematic, Revision: 0, Pages: 1
Drawing No. 2009 19 04 1 S_HWR11X, EAGLE-BUS-31_HWR11X_SCHEMATIC_Standard, Revision: 0, Pages: 1
Drawing No. 2009 19 05 1 S_HWR11X, EAGLE-BUS-32_HWR11X_SCHEMATIC_Standard, Revision: 0, Pages: 1
Drawing No. 2009 19 07 2 FX S_HWR214, BRICK CPU- EAGLE-BB-3_HWR214_Schematic-100BaseFX, Revision: 0, Pages: 9
Drawing No. 2009 19 07 2 FX S_HWR222, BRICK CPU- EAGLE-BB-3_HWR222_Schematic-100BaseTX, Revision: 0, Pages: 8
Drawing No. 2009 19 09 2 P_HWR 2-1X, EAGLE-IFB-3 HWR 2-1X Bestueckung, Revision: 0, Pages: 2
Drawing No. 2009 19 09 2 S, EAGLE-IFB-3_HWR211_Shematic, Revision: 0, Pages: 8
Drawing No. 2010 10 01 3 S_HWR31X, EAGLE-DISPX-3_HWR31X_DualLVDS_SCHEMATIC, Revision: 0, Pages: 2
Drawing No. 2010 13 7003 0, Block Structure For Operator Panels, Type: ET-xx6-A, Revision: 0, Pages: 1
Drawing No. 2010 23 01 0 P_HW 0-XX, EAGLE-CONV-31 HWR 0-XX Bestueckung, Revision: 0, Pages: 1
Drawing No. 2010 23 01 0 S, EAGLE-CONV-31_HWR032_SHEMATIC_SXGA, Revision: 0, Pages: 1
Drawing No. 2010 30 7002 0, Eagle3_ET-MT-xx6-A_Blockdiagram, Revision: 3, Pages: 8
Drawing No. 2010 47 7000 0_Eagle, EAGLE-REV3_Internal-Wiring, Revision: 3, Pages: 1
Drawing No. 2011 02 52 1, CPU Brick-Module- ET-MT-xx6-A_LX800-N270-BSBT_, Revision: 0, Pages: 3
Drawing No. 2011 37 50 0, ET-MT-x56-A Front Panel Connection, Revision: 0, Pages: 2
Drawing No. 2011 37 51 0_Front, ET-MT-x56-A Front Design, Revision: 0, Pages: 1
Drawing No. 2011 37 52 0, ET-MT-x56-A Polyester design foil, Revision: 0, Pages: 1
Drawing No. 2011 37 53 0_Eagle 19, ET-MT-x56-A Eagle 19-Display, Revision: 0, Pages: 4
Drawing No. 2017 41 7000 0, CPU Brick modul- Montage- ET-xx6-A-TX-BT-M2, Revision: 0, Pages: 9
Drawing No. LY101036602VC04, BRICK CPU- Q72ETX-1_M 2, Revision: 1, Pages: 1

Test Reports:
Drawing No. E190844E1, ET-436-A EMC Test by Phoenix Testlab, Dated: 01 August 2019, Revision: 0, Pages: 41
Drawing No. ETMT-436-A-TX-BSBT, Monitoring for EMC & Environmental Testing, Revision: 02, Pages: 11
Drawing No. TR_2019207001, LR Witness_Humidity-Test, Dated: 13 June 2019, Revision: -, Pages: 7
Drawing No. TR_2019217001, LR Witness_Dry-Heat-Test, Dated: 03 June 2019, Revision: -, Pages: 8
Drawing No. TR_2019227001, LR Witness_Low Temperature Test, Dated: 27 June 2019, Revision: -, Pages: 5
Drawing No. TR_2019237001, LR Witness_Low Temperature Test, Dated: 21 June 2019, Revision: -, Pages: 7

Terms of Validity:
This Product Design Assessment (PDA) Certificate remains valid until 08/Oct/2024 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

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Tier: 5 - Unit Certification Required

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

STANDARDS

ABS Rules:
Rules for Conditions of Classification (2019) – 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:
2019 Marine Vessel Rules: 4-9-3/ 5.1.1 to 5.1.5, 4-9-3/11.3, 4-9-3/11.5, 4-9-9/7, 4-9-9/13
2019 Steel Vessel Rules: 4-9-3/ 5.1.1 to 5.1.5, 4-9-3/11.3, 4-9-3/11.5, 4-9-8/7, 4-9-8/13
2019 Offshore Support Vessel Rules: 4-9-3/ 5.1.1 to 5.1.5, 4-9-3/11.3, 4-9-3/11.5, 4-9-8/7, 4-9-8/13

National:
NA

International:
NA

Government:
NA

EUMED:
NA

OTHERS:
NA

8 Marine certification DNV

DNV

TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00000WA
Revision No:
2

This is to certify:

That the Peripheral Equipment

with type designation(s)
SERIES 300 Operator Interfaces, SERIES 400 Panel PC, SERIES 500 Thin Clients

Issued to
R. Stahl HMI Systems GmbH
Köln, Nordrhein-Westfalen, Germany

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Location classes:

Temperature	**A**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**B**

Issued at **Hamburg** on **2021-12-06**

This Certificate is valid until **2026-12-05**.
DNV local station: **Essen**

Approval Engineer: **Heinz Scheffler**

for **DNV**
Digitally Signed By: Papanuskas, Joannis
Location: DNV GL SE Hamburg, Germany

Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Job Id: **262.1-001689-11**
Certificate No: **TAA00000WA**
Revision No: **2**

Product description

SERIES 300 Operator Interfaces

Classification product key	Description
MT-3x6-A-aa-BS-bb-Rx-dd-ee-ff	HMI devices are explosion-proof equipment for installation in hazardous areas and can be installed in zones 2 and 22 with outputs for zones 1 and 21.
ET-3x6-A-aa-BS-bb-Rx-dd-ee-ff	HMI devices are explosion-proof equipment for installation in hazardous areas and can be installed in zones 1, 2, 21 and 22 according to ATEX directive.
MT/ET-3**0**6-A-aa-BS-bb-Rx-dd-ee-ff	10.4" display
MT/ET-3**1**6-A-aa-BS-bb-Rx-dd-ee-ff	10.4" display
MT/ET-3**3**6-A-aa-BS-bb-Rx-dd-ee-ff	15" display
MT/ET-3x6-A-**FX**-BS-bb-Rx-dd-ee-ff	Optical fiber Ethernet interface 100Base-FX (Ex op is)
MT/ET-3x6-A-**TX**-BS-bb-Rx-dd-ee-ff	Copper Ethernet interface 10/100Base-TX (Ex nA)
MT/ET-3x6-A-aa-BS-**TFT**-Rx-dd-ee-ff	TFT Display (Standard)
MT/ET-3x6-A-aa-BS-**SR**-Rx-dd-ee-ff	Sunlight readable Display 1000 cd/m²
MT/ET-3x6-A-aa-BS-bb-**R2**-dd-ee-ff	2 GB RAM
MT/ET-3x6-A-aa-BS-bb-Rx-**16GB**-ee-ff	16 GB Solid State Drive
MT/ET-3x6-A-aa-BS-bb-Rx-dd-**RSi1**-ff	Plug-in module for reader with RS-232 interface, power supply via HMI device
MT/ET-3x6-A-aa-BS-bb-Rx-dd-ee-**PES**	Polyester front plate

SERIES 400 Panel PC

Classification product key	Description
MT-4x6-A-aa-BS-bb-Rx-dd-ee-ff	HMI devices are explosion-proof equipment for installation in hazardous areas and can be installed in zones 2 and 22 with outputs for zones 1 and 21.
ET-4x6-A-aa-BS-bb-Rx-dd-ee-ff	HMI devices are explosion-proof equipment for installation in hazardous areas and can be installed in zones 1, 2, 21 and 22 according to ATEX directive.
MT/ET-**40**6-A-aa-BT-Rx-BB-cc-dd-ee	10.4" display with number / number block to the right of the display
MT/ET-**41**6-A-aa-BT-Rx-BB-cc-dd-ee	10.4" display
MT/ET-**43**6-A-aa-BT-Rx-BB-cc-dd-ee	15" display
MT/ET-**45**6-A-aa-BT-Rx-BB-cc-dd-ee	19" display
MT/ET-4x6-A-**FX**-BT-Rx-bb-cc-dd-ee	Optical fiber Ethernet interface 100Base-FX (Ex op is)
MT/ET-4x6-A-**TX**-BT-Rx-bb-cc-dd-ee	Copper Ethernet interface 10/100Base-TX (Ex nA)
MT/ET-4x6-A-aa-BT-**R3**-bb-cc-dd-ee	4 GB RAM
MT/ET-4x6-A-aa-BT-Rx-**TFT**-cc-dd-ee	TFT Display (Standard)
MT/ET-4x6-A-aa-BT-Rx-**SR**-cc-dd-ee	Sunlight readable Display 1000 cd/m²
MT/ET-4x6-A-aa-BT-Rx-bb-**64GB**-ee	64 GB Solid State Drive
MT/ET-4x6-A-aa-BT-Rx-bb-1**28GB**-ee	128 GB Solid State Drive
MT/ET-4x6-A-aa-BT-Rx-bb-cc-**RSi1**	Plug-in module for reader with RS-232 interface, power supply via HMI device
MT/ET-4x6-A-aa-BT-Rx-bb-cc-dd-**PES**	Polyester front plate
MT/ET-4x6-A-aa-BT-Rx-bb-cc-dd-**VA**	Stainless steel front plate (436 and 456 only), NOT SR type

Job Id: **262.1-001689-11**
Certificate No: **TAA00000WA**
Revision No: **2**

SERIES 500 Thin Clients

Classification product key	Description
MT-5x6-A-aa-BS-bb-Rx-dd-ee-ff	HMI devices are explosion-proof equipment for installation in hazardous areas and can be installed in zones 2 and 22 with outputs for zones 1 and 21.
ET-5x6-A-aa-BS-bb-Rx-dd-ee-ff	HMI devices are explosion-proof equipment for installation in hazardous areas and can be installed in zones 1, 2, 21 and 22 according to ATEX directive.
MT/ET-5**1**6-A-aa-BT-Rx-BB-cc-dd-ee	10.4" display
MT/ET-5**3**6-A-aa-BT-Rx-BB-cc-dd-ee	15" display
MT/ET-5**5**6-A-aa-BT-Rx-BB-cc-dd-ee	19" display
MT/ET-5x6-A-**FX**-BT-Rx-bb-cc-dd-ee	Optical fiber Ethernet interface 100Base-FX (Ex op is)
MT/ET-5x6-A-**TX**-BT-Rx-bb-cc-dd-ee	Copper Ethernet interface 10/100Base-TX (Ex nA)
MT/ET-5x6-A-aa-BT-**R3**-bb-cc-dd-ee	4 GB RAM
MT/ET-5x6-A-aa-BT-Rx-**TFT**-cc-dd-ee	TFT Display (Standard)
MT/ET-5x6-A-aa-BT-Rx-**SR**-cc-dd-ee	Sunlight readable Display 1000 cd/m²
MT/ET-5x6-A-aa-BT-Rx-bb-**64GB**-ee	64 GB Solid State Drive
MT/ET-5x6-A-aa-BT-Rx-bb-1**28GB**-ee	128 GB Solid State Drive
MT/ET-5x6-A-aa-BT-Rx-bb-cc-**RSi1**	Plug-in module for reader with RS-232 interface, power supply via HMI device
MT/ET-5x6-A-aa-BT-Rx-bb-cc-dd-**PES**	Polyester front plate
MT/ET-5x6-A-aa-BT-Rx-bb-cc-dd-**VA**	Stainless steel front plate (536 and 556 only), NOT SR type

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Product certificate
Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system according to an approved test program before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

Clause for application software control
All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation

Test Reports:
Test Report No.: E61616; U61616; E71865; U71865; E110562E1; U110562E1; E120850E1, U120850E1; 2019 22 7001 R.Stahl HMI, 2019 21 7001 R.Stahl HMI; 2019 20 7001 R.Stahl HMI; E190844E1 2nd version.

Documentation:
List of Type Approval documentation-TAA00000WA_20211126; Manuals: OI_ET_xx6_A_en_V_03_00_36; OI_MT_xx6_A_en_V_03_00_27; Ex Certificate IECEx TUR 11.0006X; IECEx TUR 11.0015X; 20155070016 Konformitätserklärung ET-xx6-A; 20155070026 Konformitätserklärung MT-xx6-A

Job Id: **262.1-001689-11**
Certificate No: **TAA00000WA**
Revision No: **2**

Tests carried out

Applicable tests according to Class Guidance DNV-CG-0339, August 2021.

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Serial number

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.
The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE

9 Marine certification LR

Lloyd's Register

Page 1 of 2
Certificate No: LR21402888TA
Issue Date: 28/10/2021
Expiry Date: 28/09/2026

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer **R. Stahl HMI Systems GmbH**

Address Im Gewerbegebiet Pesch 14, Köln, 50767, Germany

Type Computer Systems

Description Panel PC

TYPE Ex-devices:
ET-306-A ET-316-A, ET-336-A, ET-406-A, ET-416-A, ET-436-A, ET-536-A
ET- 306-A-*-BS, 316-A-*-BS, 336-A-*-BS
ET- 406-A-*-BT, 416-A-*-BT, 436-A-*-BT, 536-A-*-BT

Non Ex-devices:
MT-306-A, MT-316-A, MT-336-A, MT-406-A, MT-416-A, MT-436-A, MT-536-A
MT- 306-A-*-BS, 316-A-*-BS, 336-A-*-BS
MT- 406-A-*-BT, 416-A-*-BT, 436-A-*-BT, 536-A-*-BT

Processortype:
(BS) = Single-Core
(BT) = Quad-Core

(*) Ethernet interface:
FX = Fibre optic
TX = Copper cable

Thorsten Wolff
Senior Specialist to Lloyd's Register EMEA
A member of the Lloyd's Register group

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

TA01 1.0.0

Certificate No: LR21402888TA
Issue Date: 28/10/2021
Expiry Date: 28/09/2026

Type Approval Certificate

Trade Name	ET (Ex-devices) and MT (non Ex-devices)
Application	Marine and offshore applications for use in environmental categories ENV1 and ENV2 as defined in Lloyd's Register's Type Approval System Test Specification No. 1 - 2002.
Specified Standard	Manufacturer's Specification IACS Unified Requirements E10 (Rev.7 Oct 2018)
Ratings	Power supply: 24VDC Degree of protection: IP66 (front and backside)
Other Conditions	Ratings of Panel PC type ET-xx6-A for application in hazardous areas are to be obtained from the applicable Ex Certificates.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: 11-20035(E1)-02

The Design Appraisal Document HTS/ETS 41839-21/HN/TW and its supplementary Type Approval Terms and Conditions form part of this Certificate.

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

TA01 1.0.0

Lloyd's Register

Page 1 of 2
Certificate No: R21402888TA
Issue Date: 28.10.2021
Expiry Date: 28.09.2026
Reference: HTS/ETS 41839_21/HN/TW

LLOYD'S REGISTER TYPE APPROVAL – DESIGN APPRAISAL DOCUMENT
ISSUED BY: HAMBURG TECHNICAL SUPPORT OFFICE (HPC 1762082)
ISSUED TO: R. STAHL HMI SYSTEMS GMBH
FOR: PANEL PC - COMPUTER SYSTEMS,
TYPES: ET (Ex-devices) und MT (non Ex-devices) ET-306-A ET-316-A, ET-336-A, ET-406-A, ET-416-A, ET-436-A, ET-536-A, ET- 306-A-*-BS, 316-A-*-BS, 336-A-*-BS, ET-406-A-*-BT, 416-A-*-BT, 436-A-*-BT, 536-A-*-BT, MT-306-A, MT-316-A, MT-336-A, MT-406-A, MT-416-A, MT-436-A, MT-536-A, MT- 306-A-*-BS, 316-A-*-BS, 336-A-*-BS, MT- 406-A-*-BT, 416-A-*-BT, 436-A-*-BT, 536-A-*-BT

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register Type Approval System Procedure TA14 Version 04 (September 2020) and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Unnumbered	Type Approval Application Checklist	13.09.2021
SQ 25661	Request for Marine Services	17.09.2021
11-20035(E1)-02	Type Approval Certificate	29.05.2020
40028-20	Design Appraisal Document (11-20035(E1)-02)	29.05.2020
HPC 1762082	Production Quality Assessment	26.10.2021
unnumbered	Declaration of Typecode	undated

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Lloyd's Register

Page	2 of 2
Certificate No:	R21402888TA
Issue Date:	28.10.2021
Expiry Date:	28.09.2026
Reference:	HTS/ETS 41839_21/HN/TW

Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations. Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the Lloyd's Register Type Approval System Procedure.

10 Release Notes

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

Version 03.00.17

- Removal of previous release notes
- Changing HW rev. at cover
- Update of INMETRO certificate
- Formal changes

Version 03.00.18

- Shifting CCC certificate into operating instructions

Version 03.00.19

- Update of DNV / GL certificate
- Update of LR certificate

Version 03.00.20

- Removal of EAC certificate
- Removal of INMETRO certificate
- Changing DNV / GL -> into DNV
- Formal changes

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