Certificates

Device platform MANTA

ET-xx7

SERIES 400 Panel PC
SERIES 500 Thin Clients
SERIES 600 KVM Systems

THE STRONGEST LINK.

HW-Rev. ET-6x7:	**01.03.07**
HW-Rev. ET-4x7-*-BT:	**01.03.07**
HW-Rev. ET-5x7-*-BT:	**01.03.07**
HW-Rev. ET-4x7-*-P2:	**01.03.07**
HW-Rev. ET-5x7-*-P2:	**01.03.07**

Certificates version:	**01.03.12**
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Disclaimer

Publisher and copyright holder:

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1 Preface

NOTICE	This document contains all valid certificates for the HMI T-Ex (ET-xx7) device series. All certificates are also available on R. STAHL's website and on the CDs / DVDs / USB sticks included in the delivery and a copy can also be ordered from R. STAHL HMI Systems GmbH.

2 Type allocation

Since the beginning of 2013, the T-series devices have been allocated new type names according to the following pattern:
To avoid the bother of having to re-write certifications, the names in the certificates remain the same, but the devices receive new names.
In the interest of a clear link between device type and certificate, both device names are listed on the type plate from 01.04.2013 onwards.

2.1 Type marking

Old (certificate)	New
T-Ex-##*-CAT7*-R2	ET-##7*-TX*
T-Ex-##*-CAT7*-R2	ET-##7*-CAT*
T-Ex-##*-MM*-R2	ET-##7*-MM*
T-Ex-##*-SM*-R2	ET-##7*-SM*

* = random alphanumeric or symbolic characters without relevance to explosion protection.
\# = random numeric character without relevance to explosion protection.

NOTICE	For the exact new device name and model please refer to the type code in the operating instructions.

3 ATEX EC type examination certificate

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

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) No. of EC-Type Examination Certificate: **BVS 11 ATEX E 102 X**

(4) Equipment: **Terminal type T-Ex**

(5) Manufacturer: **R. STAHL HMI Systems GmbH**

(6) Address: **50767 Köln, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that 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 atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test and assessment report BVS PP 11.2174 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2009	**General requirements**
EN 60079-5:2007	**Powder filling `p'**
EN 60079-7:2007	**Increased safety ´e´**
EN 60079-11:2007	**Intrinsic safety ´i´**
EN 60079-26:2007	**Equipment with EPL Ga**
EN 60079-28:2004	**Optical radiation**
EN 60079-31:2009	**Protection by enclosures ´t´**
EN 61241-11:2006	**Intrinsic safety ´i´**

(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 appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2(1) G Ex e q [ia op is Ga] IIC T4 Gb **II 2(1) D Ex tb IIIC [ia op is Da] IP64 T110°C Db**	Display Unit
II 1 G Ex ia IIC T4 Ga **II 1 D Ex ia IIIB T110°C Da**	Keyboard/pointing device Unit
II (1) G [Ex op is Ga] IIC **II (1) D [Ex op is Da] IIIB**	Transmission Unit

DEKRA EXAM GmbH
Bochum, dated 01. July 2011

Certification body

Special services unit

Page 1 of 5 to BVS 11 ATEX E 102 X
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(13) Appendix to

(14) **EC-Type Examination Certificate**
BVS 11 ATEX E 102 X

(15) 15.1 Subject and type

T-Ex Terminal
consists of:
Display Unit type T-Ex -##*
Transmission Unit type Typ T-Ex –KVM*-MM* or T-Ex –KVM*-SM*
one of the following Pointing Devices
Keyboard Trackball Unit Type T-Ex *-KB-TB*
Keyboard Mouse Unit Type T-Ex *-KB-M*
Keyboard Pad Unit Type T-Ex *-KB-P*
Keyboard Joystick Unit Type T-Ex *-KB-J*

*=any alphanumeric or symbolic character, without relevance for explosion protection
#=one numeric character, without relevance for explosion protection

15.2 Description

The T-Ex Terminal is designed to operate, visualize and control processes in hazardous areas. The system contains a display unit, a keyboard/trackball unit and an optional transmission unit which is installed outside the potentially hazardous area.

The display unit is carried out in type of protection Powder Filling "q" to cover the power supply and in type of protection Intrinsic Safety "ia" for various circuits. The terminal box is in type of protection Increased Safety "e".

The keyboard/pointing device unit is designed to be connected to intrinsically safe interfaces. The keyboard- and the pointing device electronics are separated inside the keyboard/pointing device unit and are separately connected via pre mounted connection cables.
Four Pointing Devices are possible: type T-Ex *-KB-TB*, type T-Ex *-KB-M*, type T-Ex *-KB-P* and type T-Ex *-KB-J*.The Pointing Devices are usable independent from the Display Unit.

The transmission unit covers a fibre optic transceiver and is mounted outside the hazardous area.

The display unit as well as the keyboard/pointing device unit fulfils as well the requirements for Protection by enclosures „t".

15.3 Parameters

15.3.1 Electrical data

15.3.1.1 Display unit

"PWR" interface parameter for X10 (Ex e):

U	AC	100... 250	V
I ≤	5		A
P≤	150		W

Maximum r.m.s. a.c. voltage Um ≤ 250V

"USB" interface parameter for X13 (Ex e):

U	AC/DC	5	V + 10%

Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250V

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"12V" interface parameter for X14 (Ex e):

U AC/DC 12 V+ 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250V

"CAT7 1" interface parameter for X16 (Ex e):

U AC/DC 5 V + 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250V

Connector X11 (Ex ia) Keyboard:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Connector X12 (Ex ia) Pointing device:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Connector X24 (Ex ia) USB1i:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Connector X25 (Ex ia) USB2i:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Only for the type T-EX-##*-MM* and type T-EX-##*-SM*

"FO 1" interface parameter for X18 (Ex op is):

Type T-EX-##*-MM*

Wavelength	850	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

Type T-EX-##*-SM*

Wavelength	1310	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

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15.3.1.2 Interface parameter of Transmission unit type T-EX-KVM*-MM* and type T-EX-KVM*-SM*

Input

Maximum r.m.s. a.c. voltage Um ≤ 250 V AC

Output for the Transmission unit type T-EX-KVM*-MM* and type T-EX-KVM*-SM*

FO1 parameter for X70 (Ex op is):

Transmission unit type T-EX-KVM*-MM*		
Wavelength	850	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW
Transmission unit type T-EX-KVM*-SM*		
Wavelength	1310	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

15.3.1.3 Keyboard Trackball Unit type T-Ex *-KB-TB*

15.3.1.3.1 Keyboard Interface(X72) Ex ia

Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

15.3.1.3.2 Trackball Interface (X73) Ex ia

Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

15.3.1.4 Keyboard Mouse Unit type T-Ex *-KB-M*

15.3.1.4.1 Keyboard Interface(X72) Ex ia

Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

15.3.1.4.2 Mouse Interface (X94) Ex ia

Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

15.3.1.5 Keyboard Pad Unit type T-Ex *-KB-P*

15.3.1.5.1 Keyboard Interface(X72) Ex ia

Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

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15.3.1.5.2	Pad Interface (X95) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	
15.3.1.6	Keyboard Joystick Unit type T-Ex *-KB-J*				
15.3.1.6.1	Kebord Interface(X72) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	
15.3.1.6.2	Joystick Interface (X96) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		40	µF
	Effective internal inductance	Li		negligible	

15.3.2 Thermal Data

Ta = -30°C ... +60°C
Permitted ambient temperature rate

Temperature class T4

Max. surface temperature T with thermo fuse limited to 110°C

15.3.3 Degrees of protection according to IEC 60529

Display unit	IP64
Keyboard/Trackball	IP20

(16) Test and assessment report
BVS PP 11.2174 EG as of 01.07.2011

(17) Special conditions for safe use

17.1 Along the intrinsically safe circuits between Display Unit and Pointing Device potential equalisation must exist.

17.2 The Pointing Device shall not be used in areas where charging mechanism creating propagating brush discharges have to be regarded.

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3.1 1. Supplement

(1) **1. Supplement to the EC-Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) No. of EC-Type Examination Certificate: **BVS 11 ATEX E 102 X**

(4) Equipment: **Terminal type T-Ex**

(5) Manufacturer: **R. STAHL HMI Systems GmbH**

(6) Address: **50767 Cologne, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that 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 atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test and assessment report BVS PP 11.2174 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2009	**General requirements**
EN 60079-5:2007	**Powder filling `p`**
EN 60079-7:2007	**Increased safety ´e´**
EN 60079-11:2007	**Intrinsic safety ´i´**
EN 60079-26:2007	**Equipment with EPL Ga**
EN 60079-28:2004	**Optical radiation**
EN 60079-31:2009	**Protection by enclosures ´t´**
EN 61241-11:2006	**Intrinsic safety ´i´**

(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 appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2(1) G Ex e q [ia op is Ga] IIC T4 Gb **II 2(1) D Ex tb IIIC [ia op is Da] IP64 T110°C Db**	Display Unit
II 1 G Ex ia IIC T4 Ga **II 1 D Ex ia IIIB T110°C Da**	Keyboard/pointing device Unit
II (1) G [Ex op is Ga] IIC **II (1) D [Ex op is Da] IIIB**	Transmission Unit

DEKRA EXAM GmbH
Bochum, dated 28th July 2011

Certification body

Special services unit

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(13) Appendix to

(14) **1. Supplement to the EC-Type Examination Certificate**
BVS 11 ATEX E 102 X

(15) 15.1 Subject and type

T-Ex Terminal
consists of:
Display Unit type T-Ex -##*
Transmision Unit type Typ T-Ex –KVM*-MM* or T-Ex –KVM*-SM*
one of the following Pointing Devices
Keyboard Trackball Unit Type T-Ex *-KB-TB*
Keyboard Mouse Unit Type T-Ex *-KB-M*
Keyboard Pad Unit Type T-Ex *-KB-P*
Keyboard Joystick Unit Type T-Ex *-KB-J*

*=any alphanumeric or symbolic character, without relevance for explosion protection
#=one numeric character, without relevance for explosion protection

15.2 Description

The data of the “PWR” interface parameter for X10 (Ex e) changed.

15.3 Parameters

15.3.1 Electrical data

15.3.1.1 Display unit

“PWR” interface parameter for X10 (Ex e):

U	AC/DC	20...240	V
I ≤		5	A
P≤		150	W

Maximum r.m.s. a.c. voltage Um ≤ 250V

“USB” interface parameter for X13 (Ex e):

U	AC/DC	5	V + 10%

Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250V

“12V” interface parameter for X14 (Ex e):

U	AC/DC	12	V+ 10%

Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250V

“CAT7 1” interface parameter for X16 (Ex e):

U	AC/DC	5	V + 10%

Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250V

Connector X11 (Ex ia) Keyboard:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

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Connector X12 (Ex ia) Pointing device:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Connector X24 (Ex ia) USB1i:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Connector X25 (Ex ia) USB2i:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Only for the type T-EX-##*-MM* and type T-EX-##*-SM*

"FO 1" interface parameter for X18 (Ex op is):

Type T-EX-##*-MM*

Wavelength	850	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

Type T-EX-##*-SM*

Wavelength	1310	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

15.3.1.2 Interface parameter of Transmission unit type T-EX-KVM*-MM* and type T-EX-KVM*-SM*
Input
Maximum r.m.s. a.c. voltage Um ≤ 250V AC

Output for the Transmission unit type T-EX-KVM*-MM* and type T-EX-KVM*-SM*
FO1 parameter for X70 (Ex op is):

Transmission unit type T-EX-KVM*-MM*

Wavelength	850	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

Transmission unit type T-EX-KVM*-SM*

Wavelength	1310	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

15.3.1.3 Keyboard Trackball Unit type T-Ex *-KB-TB*

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15.3.1.3.1	Keyboard Interface(X72) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	
15.3.1.3.2	Trackball Interface (X73) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	
15.3.1.4	Keyboard Mouse Unit type T-Ex *-KB-M*				
15.3.1.4.1	Keyboard Interface(X72) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	
15.3.1.4.2	Mouse Interface (X94) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	
15.3.1.5	Keyboard Pad Unit type T-Ex *-KB-P*				
15.3.1.5.1	Keyboard Interface(X72) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	
15.3.1.5.2	Pad Interface (X95) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	
15.3.1.6	Keyboard Joystick Unit type T-Ex *-KB-J*				
15.3.1.6.1	Keybord Interface(X72) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	

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15.3.1.6.2 Joystick Interface (X96) Ex ia

Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		40	µF
Effective internal inductance	Li		negligible	

15.3.2 Thermal Data

Ta = -30°C ... +60°C
Permitted ambient temperature rate

Temperature class T4

Max. surface temperature T with thermo fuse limited to 110 °C

15.3.3 Degrees of protection according to IEC 60529

Display unit	IP64
Keyboard/Trackball	IP20

(16) Test and assessment report

BVS PP 11.2174 EG as of 28.07.2011

(17) Special conditions for safe use

17.1 Along the intrinsically safe circuits between Display Unit and Pointing Device potential equalisation must exist.

17.2 The Pointing Device shall not be used in areas where charging mechanism creating propagating brush discharges have to be regarded.

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3.2 2. Supplement

(1) **2. Supplement to the EC-Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) No. of EC-Type Examination Certificate: **BVS 11 ATEX E 102 X**

(4) Equipment: **Terminal type T-Ex**

(5) Manufacturer: **R. STAHL HMI Systems GmbH**

(6) Address: **50767 Cologne, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that 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 atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test and assessment report BVS PP 11.2174 EG.

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EN 60079-7:2007	**Increased safety ´e´**
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(12) The marking of the equipment shall include the following:

Ex	**II 2(1) G Ex e q [ia op is Ga] IIC T4 Gb** **II 2(1) D Ex tb IIIC [ia op is Da] IP64 T110°C Db**	Display Unit Type T-Ex -##*
Ex	**II 2(1) G Ex e q [ia op is Ga] IIC T4 Gb** **II 2(1) D Ex tb IIIC [ia op is Da] IP65 T110°C Db**	Display Unit Type T-Ex -##*-R2
Ex	**II 1 G Ex ia IIC T4 Ga** **II 1 D Ex ia IIIB T110°C Da**	Keyboard/pointing device Unit
Ex	**II (1) G [Ex op is Ga] IIC** **II (1) D [Ex op is Da] IIIB**	Transmission Unit

DEKRA EXAM GmbH
Bochum, dated 19.08.2011

Certification body

Special services unit

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(13) Appendix to

(14) **2. Supplement to the EC-Type Examination Certificate**
BVS 11 ATEX E 102 X

(15) 15.1 Subject and type

T-Ex Terminal
consists of:
Display Unit type T-Ex -##* and type T-Ex -##*-R2
Transmision Unit type Typ T-Ex –KVM*-MM* or T-Ex –KVM*-SM*
one of the following Pointing Devices
Keyboard Trackball Unit Type T-Ex *-KB-TB*
Keyboard Mouse Unit Type T-Ex *-KB-M*
Keyboard Pad Unit Type T-Ex *-KB-P*
Keyboard Joystick Unit Type T-Ex *-KB-J*

one alphanumeric character, without relevance for explosion protection
* any alphanumeric or symbolic character, without relevance for explosion protection

15.2 Description

Terminal type T-Ex -##*-R2 is added which is modified according to the documentation below.
For the type the degrees of protection change to IP65.

15.3 Parameters

15.3.1 Electrical data
15.3.1.1 Display unit

"PWR" interface parameter for X10 (Ex e):

U	AC/DC	20...	240	V
I	≤	5		A
P	≤	150		W

Maximum r.m.s. a.c. voltage Um ≤ 250 V

"USB" interface parameter for X13 (Ex e):

U AC/DC 5 V + 10 %
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"12V" interface parameter for X14 (Ex e):

U AC/DC 12 V + 10 %
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"CAT7 1" interface parameter for X16 (Ex e):

U AC/DC 5 V + 10 %
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"SER" interface parameter for X97 (Ex e):

U AC/DC 15 V + 10 %
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"CAM" interface parameter for X101 (Ex e):

U AC/DC 5 V + 10 %
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"AUD" interface parameter for X105 (Ex e):

U AC/DC 100 V + 10 %
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

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Connector X11 (Ex ia) Keyboard:

Uo	DC	5.5	V	Ui	5.5 V
Io		309	mA	Ii	3 A
Po		629	mW	Pi	2 W
Co		50	uF	Ci	negligible
Lo		40	uH	Li	negligible

Connector X12 (Ex ia) Trackball:

Uo	DC	5.5	V	Ui	5.5 V
Io		309	mA	Ii	3 A
Po		629	mW	Pi	2 W
Co		50	uF	Ci	negligible
Lo		40	uH	Li	negligible

Connector X24 (Ex ia) USB1i:

Uo	DC	5.5	V	Ui	5.5 V
Io		309	mA	Ii	3 A
Po		629	mW	Pi	2 W
Co		50	uF	Ci	negligible
Lo		40	uH	Li	negligible

Connector X25 (Ex ia) USB2i:

Uo	D	5.5	V	Ui	5.5 V
Io		309	mA	Ii	3 A
Po		629	mW	Pi	2 W
Co		50	uF	Ci	negligible
Lo		40	uH	Li	negligible

Only for the type T-Ex-##*-MM* and type T-Ex-##*-SM*

"FO 1" interface parameter for X18 (Ex op is):

Type T-Ex-##*-MM*

Wavelength	850	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

Type T-Ex-##*-SM*

Wavelength	1310	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

15.3.1.2 Interface parameter of Transmission unit type T-Ex-KVM*-MM* and type T-Ex-KVM*-SM*

Input
Maximum r.m.s. a.c. voltage Um ≤ 250V AC

Output
for the Transmission unit type T-Ex-KVM*-MM* and type T-Ex-KVM*-SM*
FO1 parameter for X70 (Ex op is):

Transmission unit type T-Ex-KVM*-MM*

Wavelength	850	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

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Transmission unit type T-Ex-KVM*-SM*					
Wavelength		1310	nm		
Nominal optical radiated power		0.22	mW		
Max. optical radiated power under fault conditions		35	mW		
15.3.1.3	Keyboard Trackball Unit type T-Ex *-KB-TB*				
	Keyboard X72 (Ex ia)				
	Voltage	U_I	DC	5.5	V
	Current	I_I		1	A
	Power	P_I		650	mW
	Effective internal capacitance	C_I		20	uF
	Effective internal inductance	L_I		negligible	
	Trackball X73 (Ex ia)				
	Current	U_I	DC	5.5	V
	Current	I_I		1	A
	Power	P_I		650	mW
	Effective internal capacitance	C_I		20	uF
	Effective internal inductance	L_I		negligible	
15.3.1.4	Keyboard Mouse Unit type T-Ex *-KB-M*				
15.3.1.4.1	Keyboard Interface(X72) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	
15.3.1.4.2	Mouse Interface (X94) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	
15.3.1.5	Keyboard Pad Unit type T-Ex *-KB-P*				
15.3.1.5.1	Keyboard Interface(X72) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	
15.3.1.5.2	Pad Interface (X95) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	
15.3.1.6	Keyboard Joystick Unit type T-Ex *-KB-J*				
15.3.1.6.1	Kebord Interface(X72) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		20	µF
	Effective internal inductance	Li		negligible	

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15.3.1.6.2	Joystick Interface (X96) Ex ia				
	Voltage	Ui	DC	5.5	V
	Current	Ii		1	A
	Power	Pi		650	mW
	Effective internal capacitance	Ci		40	µF
	Effective internal inductance	Li		negligible	

15.3.2 Thermal Data

Permitted ambient temperature rate Ta = -30 °C ... +60 °C

Temperature class T4

Max. surface temperature T with thermo fuse limited to 110 °C

15.3.3 Degrees of protection according to IEC 60529

Display unit type T-Ex -##*-R2	IP65
Display unit type T-Ex -##*	IP64
Keyboard/Trackball	IP20

(16) Test and Assessment Report

BVS PP 11.2174 EG as of 19.08.2011

(17) Special conditions for safe use

17.1 Along the intrinsically safe circuits between Display Unit and Pointing Device potential equalisation must exist.

17.2 The Pointing Device shall not be used in areas where charging mechanism creating propagating brush discharges have to be regarded.

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4 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 BVS 11.0075X issue No.:0	Certificate history:
Status:	Current	
Date of Issue:	2011-11-03 Page 1 of 3	
Applicant:	**R. Stahl HMI Systems GmbH** Im Gewerbegebiet Pesch 14 50767 Cologne **Germany**	
Electrical Apparatus: *Optional accessory:*	**Terminal type T-Ex**	
Type of Protection:	**Intrinsic safety "i", Protection of equipment and transmission systems using optical radiation, Protection by enclosure 't', Powder filling "q", Increased safety "e", Intrinsic safety 'iD'**	
Marking:	**Display Unit Type T-Ex -##*-R2** **Ex e q [ia op is Ga] IIC T4 Gb** **Ex tb IIIC [ia op is Da] IP65 T110°C Db** **Display Unit Type T-Ex -##*** **Ex e q [ia op is Ga] IIC T4 Gb** **Ex tb IIIC [ia op is Da] IP64 T110°C Db** **Keyboard Trackball Unit Type T-Ex *-KB-TB*** **Keyboard Mouse Unit Type T-Ex *-KB-M*** **Keyboard Pad Unit Type T-Ex *-KB-P*** **Keyboard Joystick Unit Type T-Ex *-KB-J*** **Ex ia IIC T4 Ga, Ex ia IIIB T110°C Da** **Transmission Unit Type T-Ex –KVM*-MM* or T-Ex –KVM*-SM*** **[Ex op is Ga] IIC, [Ex op is Da] IIIB**	
Approved for issue on behalf of the IECEx Certification Body:	H.-Ch. Simanski	
Position:	Head of Certification Body	
Signature: *(for printed version)*	H.-Ch. Simanski	
Date:	03/11/2011	

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:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA EXAM GmbH

IECEx Certificate of Conformity

Certificate No.: IECEx BVS 11.0075X

Date of Issue: **2011-11-03** Issue No.: **0**

Page 2 of 3

Manufacturer: **R. Stahl HMI Systems GmbH**
Im Gewerbegebiet Pesch 14
50767 Cologne
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 60079-11 : 2006 Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-28 : 2006-08 Edition: 1	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
IEC 60079-31 : 2008 Edition: 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
IEC 60079-5 : 2007-03 Edition: 3	Explosive atmospheres - Part 5: Equipment protection by powder filling "q"
IEC 60079-7 : 2006-07 Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
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/BVS/ExTR11.0105/00

Quality Assessment Report:

DE/BVS/QAR06.0007/05

IECEx Certificate of Conformity

Certificate No.: IECEx BVS 11.0075X

Date of Issue: **2011-11-03** Issue No.: **0**

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Schedule

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

Description

The T-Ex Terminal is designed to operate, visualize and control processes in hazardous areas. The system contains a display unit, a keyboard/trackball unit and an optional transmission unit which is installed outside the potentially hazardous area.
The display unit is carried out in type of protection Powder Filling "q" to cover the power supply and in type of protection Intrinsic Safety "ia" for various circuits. The terminal box is in type of protection Increased Safety "e".
The keyboard/ pointing device unit is designed to be connected to intrinsically safe interfaces. The keyboard- and the pointing device electronics are separated inside the keyboard/ pointing device unit and are separately connected via pre mounted connection cables.
Four Pointing Devices are possible: type T-Ex *-KB-TB*, type T-Ex *-KB-M*, type T-Ex *-KB-P* and type T-Ex *-KB-J*.
The Pointing Devices are usable independent from the Display Unit.
The transmission unit covers a fibre optic transceiver and is mounted outside the hazardous area.
The display unit as well as the keyboard/ pointing device unit fulfils as well the requirements for Protection by enclosures „t".

Parameters

See Annex

Subject and type

See Annex

CONDITIONS OF CERTIFICATION: YES as shown below:

Special conditions for safe use

1. Along the intrinsically safe circuits between display unit and keyboard/trackball unit potential equalisation must exist.

2. The Keyboard/Trackball Unit shall not be used in areas where charging mechanism creating propagating brush discharges have to be regarded.

Annexe: BVS_11_0075X_R_STAHL HMI_Annex.pdf

IECEx Certificate of Conformity

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Certificate No.: **IECEx BVS 11.0075X**
Annex
Page 1 of 4

Parameters

Electrical data

Display unit

"PWR" interface parameter for X10 (Ex e):

U	AC/DC	20…240 V
I	≤	5 A
P	≤	150 W

Maximum r.m.s. a.c. voltage Um ≤ 250 V

"USB" interface parameter for X13 (Ex e):

U	AC/DC	5 V + 10%

Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"12V" interface parameter for X14 (Ex e):

U	AC/DC	12 V+ 10%

Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"CAT7 1" interface parameter for X16 (Ex e):

U	AC/DC	5 V + 10%

Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"SER" interface parameter for X97 (Ex e):

U	AC/DC	15 V + 10%

Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"CAM" interface parameter for X101 (Ex e):

U	AC/DC	5 V + 10%

Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"AUD" interface parameter for X105 (Ex e):

U	AC/DC	100 V + 10%

Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

Connector X11 (Ex ia) Keyboard:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

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Connector X12 (Ex ia) Trackball:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Connector X24 (Ex ia) USB1i:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Connector X25 (Ex ia) USB2i:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Only for the type T-Ex-##*-MM* and type T-Ex-##*-SM*

"FO 1" interface parameter for X18 (Ex op is):

Type T-Ex-##*-MM*

Wavelength	850	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

Type T-Ex-##*-SM*

Wavelength	1310	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

Interface parameter of Transmission unit type T-Ex-KVM*-MM* and type T-Ex-KVM*-SM* Input
Maximum r.m.s. a.c. voltage Um ≤ 250V AC

Output for the Transmission unit type T-Ex-KVM*-MM* and type T-Ex-KVM*-SM*
FO1 parameter for X70 (Ex op is):

Transmission unit type T-Ex-KVM*-MM*

Wavelength	850	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

Transmission unit type T-Ex-KVM*-SM*

Wavelength	1310	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

IECEx Certificate of Conformity

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Keyboard Trackball Unit type T-Ex *-KB-TB*
Keyboard X72 (Ex ia):

U_I DC	5.5	V
I_I	1	A
P_I	650	mW
C_I	20	uF
L_I	negligible	

Trackball X73 (Ex ia)

U_I DC	5.5	V
I_I	1	A
P_I	650	mW
C_I	20	uF
L_I	negligible	

Keyboard Mouse Unit type T-Ex *-KB-M*

Keyboard Interface(X72) Ex ia

Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

Mouse Interface (X94) Ex ia

Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

Keyboard Pad Unit type T-Ex *-KB-P*

Keyboard Interface(X72) Ex ia

Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

Pad Interface (X95) Ex ia

Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

Keyboard Joystick Unit type T-Ex *-KB-J*

Keyboard Interface(X72) Ex ia

Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

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Joystick Interface (X96) Ex ia

Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		40	µF
Effective internal inductance	Li		negligible	

Thermal Data

Ta = -30 °C ... +60 °C
Permitted ambient temperature rate

Temperature class T4

Max. surface temperature T with thermo fuse limited to 110 °C

Degrees of protection according to IEC 60529

Display unit type T-Ex -##*-R2	IP65
Display unit type T-Ex -##*	IP64
Keyboard/Trackball	IP20

Subject and type

T-Ex Terminal
consists of:
Display Unit type T-Ex -##* and type T-Ex -##*-R2
Transmission Unit type T-Ex –KVM*-MM* or T-Ex –KVM*-SM*
one of the following Pointing Devices
Keyboard Trackball Unit type T-Ex *-KB-TB*
Keyboard Mouse Unit type T-Ex *-KB-M*
Keyboard Pad Unit type T-Ex *-KB-P*
Keyboard Joystick Unit type T-Ex *-KB-J*

one alphanumeric character, without relevance for explosion protection
* any alphanumeric or symbolic character, without relevance for explosion protection

5 EAC certificate

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

СЕРТИФИКАТ СООТВЕТСТВИЯ

EAC

№ ЕАЭС RU C-DE.HA91.B.00166/20

Серия RU № 0287220

ОРГАН ПО СЕРТИФИКАЦИИ 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.11HA91, дата регистрации аттестата аккредитации 23.11.2018; номер телефона: +7 (495) 799-07-93; адрес электронной почты: info@ccendce.com

ЗАЯВИТЕЛЬ Общество с ограниченной ответственностью «Р. ШТАЛЬ».
Место нахождения (адрес юридического лица) и адрес места осуществления деятельности: 129085, Россия, Москва, улица Звездный бульвар, дом 21, строение 1, этаж 6, помещение I, комната 12. Основной государственный регистрационный номер: 5087746541493. Номер телефона: +7(495)616-32-52, адрес электронной почты: info@stahl.ru.com.

ИЗГОТОВИТЕЛЬ R. Stahl HMI Systems GmbH. Место нахождения (адрес юридического лица) и адрес места осуществления деятельности по изготовлению продукции: 50829, Koeln, Adolf-Grimme-Allee, 8, Германия.

ПРОДУКЦИЯ Взрывозащищенные терминалы типов ET-208, T-Ex (ET-##7*-**-*), MT-##7*-*. Продукция изготовлена в соответствии с технической документацией предприятия-изготовителя R. Stahl HMI Systems GmbH.
Серийный выпуск.

КОД ТН ВЭД ЕАЭС 8471 90 000 0

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ Технического регламента Таможенного союза ТР ТС 012/2011 "О безопасности оборудования для работы во взрывоопасных средах".

СЕРТИФИКАТ СООТВЕТСТВИЯ ВЫДАН НА ОСНОВАНИИ Протокола испытаний № А0082.1.СТ/20 от 10.08.2020 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 I_ET_208_ru_V_01_0, OI_MT_xx7_ru_V_01_02_15, OI_ET_xx7_ru_V_01_03_16; комплект конструкторской документации.
Схема сертификации 1с.

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ Стандарты, в результате применения которых на добровольной основе обеспечивается соблюдение требований технического регламента, указаны в Приложении (бланк № 0734461). Условия, сроки хранения и эксплуатации указаны в инструкциях по эксплуатации. Описание конструкции и средств обеспечения взрывозащиты, а также иная информация, идентифицирующая продукцию, указаны в Приложении (бланки №№ 0734462, 0734463, 0734464, 0734465, 0776203, 0776204).
Настоящий сертификат соответствия выдан взамен сертификата соответствия № ЕАЭС RU C-DE.HA91.B.00145/20.

СРОК ДЕЙСТВИЯ С 06.11.2020 **ПО** 11.08.2025 **ВКЛЮЧИТЕЛЬНО**

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АО «Опцион», Москва, 2020 г., «Б», ТЗ № 334

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ПРИЛОЖЕНИЕ

Лист 1

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-DE.HA91.B.00166/20

Серия RU № 0734461

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 Р МЭК 60079-5-2012	Взрывоопасные среды. Часть 5. Оборудование с видом взрывозащиты "кварцевое заполнение оболочки "q"
ГОСТ Р МЭК 60079-7-2012	Взрывоопасные среды. Часть 7. Оборудование. Повышенная защита вида "e"
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 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"

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ПРИЛОЖЕНИЕ

Лист 2

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-DE.HA91.B.00166/20

Серия RU № 0734462

1. НАЗНАЧЕНИЕ И ОБЛАСТЬ ПРИМЕНЕНИЯ

Взрывозащищенные терминалы типов ET-208, T-Ex (ET-##7*-**-*), MT-##7*-* (далее по тексту - терминалы) предназначены для управления и визуализации процессов управления различными устройствами и объектами.

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

2.1.1 Структура условного терминалов типа ET-208

ET-208-TX-W00-**-GL*
1

1 = Тип питающего тока (AC = переменный ток; DC = постоянный ток)
*-дополнительные символы, не влияющие на взрывозащиту

2.1.2 Структура условного терминалов типа T-Ex (ET-##7*-**-*)

Терминал

T-Ex * * - * * - * * (ET-##7 *-**-*) или T-Ex * * - * * - * * -R2 (ET-##7 *-**-*)
1 2 3 4 5 6 a b c d 1 2 3 4 5 6 a b c d

1 = размер дисплея (22 = 22″ дисплей; 24 = 24″ дисплей; 24WU = 24WU″ дисплей)
2 = дополнительные символы, не влияющие на конструкцию и взрывозащиту
3 = типа системы (IP/PC = панельный ПК/Тонкий клиент; KVM/ DVI1/DVI2/DVI3 = KVM система
4 = дополнительные символы, не влияющие на конструкцию и взрывозащиту
5 = тип интерфейса (CAT/ CAT*/CAT-FO/TX/2TX = медный интерфейс; MM/MM*/MM-FO/SX = многорежимный оптоволоконный интерфейс; SM/SM*/SM-FO/LX = однорежимный оптоволоконный интерфейс)
*-дополнительные символы, не влияющие на взрывозащиту
6 = дополнительные символы, не влияющие на конструкцию и взрывозащиту
a = Тип системы и дисплей
1-й символ = тип системы (4 = панельный ПК; 5 = тонкий клиент (thin client); 6 = KVM система)
2-й символ = размер дисплея (6 = 22″ дисплей; 7 = 24″ дисплей; 8 = 24WU″ дисплей)
b = дополнительные символы, не влияющие на конструкцию и взрывозащиту
c = тип интерфейса (CAT/CAT*/CAT-FO/TX/2TX = медный интерфейс; MM/MM*/MM-FO/SX = многорежимный оптоволоконный интерфейс; SM/SM*/SM-FO/LX = однорежимный оптоволоконный интерфейс)
*-дополнительные символы, не влияющие на взрывозащиту
d = дополнительные символы, не влияющие на конструкцию и взрывозащиту

Клавиатура

T-Ex * - ** - * * * (KBDi-USB-** - *)
1 2 3 4 a b

1 = дополнительные символы, не влияющие на конструкцию и взрывозащиту
2 = KB = клавиатура
3 = тип дополнительного встроенного устройства управления (TB * = трекбол; M = мышь; P = тачпад; J = джойстик)
*-дополнительные символы, не влияющие на взрывозащиту
4 = дополнительные символы, не влияющие на конструкцию и взрывозащиту
a = тип дополнительного встроенного устройства управления (TB * = трекбол; M = мышь; P = тачпад; J = джойстик)
*-дополнительные символы, не влияющие на взрывозащиту
b = дополнительные символы, не влияющие на конструкцию и взрывозащиту

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ПРИЛОЖЕНИЕ

Лист 3

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Блок передачи
T-Ex –KVM * - ** - * (KVM - * - *** *)
1 2 3 a b c

1 = дополнительные символы, не влияющие на конструкцию и взрывозащиту
2 = тип интерфейса (CAT/ CAT* - медный интерфейс ; MM/MM*/MM-FO = многорежимный оптоволоконный интерфейс; SM/SM*/SM-FO = однорежимный оптоволоконный интерфейс)
*-дополнительные символы, не влияющие на взрывозащиту
3 = дополнительные символы, не влияющие на конструкцию и взрывозащиту
a = дополнительные символы, не влияющие на конструкцию и взрывозащиту
b = тип интерфейса (CAT/ CAT* - медный интерфейс ; MM/MM*/MM-FO = многорежимный оптоволоконный интерфейс; SM/SM*/SM-FO
*-дополнительные символы, не влияющие на взрывозащиту
c = дополнительные символы, не влияющие на конструкцию и взрывозащиту

2.1.3 Структура условного терминалов типа MT-##7*-*
MT - ## 7 * - * - *
1 2 3 4

1 = Технология
1 символ = тип системы (4 = панельный ПК; 5 = тонкий клиент (thin client); 6 = KVM система)
2 символ = размер дисплея (6 = 22″ дисплей; 7 = 24″ дисплей; 8 = 24WU″ дисплей)
2 = дополнительные символы, не влияющие на конструкцию и взрывозащиту
3 = тип интерфейса (CAT/ CAT*/CAT-FO/TX/2TX = медный интерфейс; MM/MM*/MM-FO/SX = многорежимный оптоволоконный интерфейс; SM/SM*/SM-FO/LX = однорежимный оптоволоконный интерфейс)
*-дополнительные символы, не влияющие на взрывозащиту
4 = дополнительные символы, не влияющие на конструкцию и взрывозащиту

2.2 Основные технические данные терминалов
2.2.1 Основные технические данные терминалов типа ET-208 приведены в таблице 2.1

Таблица 2.1

Наименование параметра	Значение
Ex-маркировка по ГОСТ 31610.0-2014 (IEC 60079-0:2011)	1Ex e ib q [ib] IIC T4 Gb X Ex tb ib [ib] IIIA T115^{0}C Db X
Диапазон температур окружающей среды при эксплуатации, ^{0}C	от минус 40 до плюс 65
Степень защиты оболочками по ГОСТ 14254-2015 (IEC 60529:2013)	IP54/IP65
Параметры питания (терминал X1) для модели ET-208-TX-W00-AC-GL	
Номинальное напряжение переменного тока, В	115/230
Максимальное допустимое напряжение питания, В	253
Номинальный ток, не более, А	2
Номинальная потребляемая мощность, ВА	18 (при отключенном обогревателе) 36 (при включенном обогревателе)
Параметры питания (терминал X1) для модели ET-208-TX-W00-DC-GL	
Номинальное напряжение постоянного тока, В	24
Максимальное допустимое напряжение питания, В	253
Номинальный ток, не более, А	1,6
Номинальная потребляемая мощность, ВА	12 (при отключенном обогревателе) 22 (при включенном обогревателе)
Параметры интерфейсов Com1 RS-422 (терминал X2), Com2 RS-422 (терминал X3), Ethernet TP (терминал X5), USB (терминал X4)	
Номинальное напряжение, В	5
Максимальное допустимое напряжение, В	30
Параметры искробезопасного USB интерфейса (подключение через терминал X7 или USB-разъем X8. X7 и X8 не должны использоваться одновременно.)	
Максимальное выходное напряжение Uo, В	5,45

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Лист 4

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-DE.HA91.B.00166/20

Серия RU № 0734464

Наименование параметра	Значение
Максимальный выходной ток Io, мА	755
Максимальная выходная мощность Po, Вт	2,5
Предельно допустимые комбинированные значения внешней индуктивности/ёмкости - для подгруппы IIC - для подгруппы IIB и группы III	 4,8мкГн / 4,7мкФ или 1,8мкГн / 27,7мкФ 49,8мкГн / 20,7мкФ или 19,8мкГн / 51,7мкФ или 9,8мкГн / 107,7мкФ
Искробезопасный интерфейс для подключения клавиатуры (подключение через терминал X9)	
Максимальное выходное напряжение Uo, В	4,96
Максимальный выходной ток Io, мА	60
Максимальная выходная мощность Po, мВт	75
Предельно допустимые комбинированные значения внешней индуктивности Lo и ёмкости Co - для подгруппы IIC - для подгруппы IIB и группы III	 100мкГн / 6,7мкФ или 50мкГн / 8,5мкФ или 20мкГн / 11,9мкФ 100мкГн / 42мкФ или 50мкГн / 49мкФ или 20мкГн / 95мкФ

2.2.2 Основные технические данные терминалов типа T-Ex (ET-##7*-**-*) приведены в таблице 2.2

Таблица 2.2

Наименование параметра	Значение
Ex-маркировка по ГОСТ 31610.0-2014 (IEC 60079-0:2011) - дисплеи типов T-Ex -##*, T-Ex -##*-R2 (ET-##7*-**-*)	 1Ex e q [ia op is Ga] IIC T4 Gb X Ex tb IIIC [ia op is Da] T110^{0}C Db X
- клавиатура с трекболом типа T-Ex *-KB-TB* (KBDi-USB-TB-*,), клавиатура с тачпадом типа T-Ex *-KB-P* (KBDi-USB-P-*), клавиатура с мышью T-Ex *-KB-M* (KBDi-USB-M-*), клавиатура с джойстиком T-Ex *-KB-J* KBDi-USB-J-*), - блоки передачи типов T-Ex -KVM*-MM* (KVM -*-MM*), T-Ex -KVM*-SM* (KVM -*-SM*)	0Ex ia IIC T4 Ga X, Ex ia IIIB T110°C Da X [Ex op is Ga] IIC [Ex op is Da] IIIB
Диапазон температур окружающей среды при эксплуатации, 0C	от минус 30 до плюс 60
Степень защиты оболочками по ГОСТ 14254-2015 (IEC 60529:2013) - дисплей для T-Ex -##*-R2 (ET-##7*-**-*) - дисплей для T-Ex -##* (ET-##7*-**-*) - клавиатуры с трекболом	 IP65 IP64 IP20
Параметры интерфейса "PWR" (терминал X10)	
Диапазон рабочих напряжений, В	20…240 постоянного или переменного тока
Номинальный ток, А	5
Номинальная мощность, Вт	150
Параметры интерфейса "USB" (терминал X13)	
Номинальное напряжение, В	5 + 10%
Параметры интерфейса "12V" (терминал X14)	
Номинальное напряжение, В	12 + 10%
Параметры интерфейса "CAT7 1" (терминал X16)	
Номинальное напряжение, В	5 + 10%
Параметры интерфейса "SER" (терминал X97)	
Номинальное напряжение, В	15 + 10%
Параметры интерфейса "CAM" (терминал X101)	
Номинальное напряжение, В	5 + 10%
Параметры интерфейса "AUD" (терминал X105)	
Номинальное напряжение, В	100 + 10%
Максимально допустимое напряжение терминалов X10, X13, X14, X16, X97, X101, X105, В	250

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ПРИЛОЖЕНИЕ

Лист 5

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-DE.HA91.B.00166/20

Серия RU № 0734465

Наименование параметра	Значение
Искробезопасные параметры клавиатуры (коннектор X11), трекбола (коннектор X12), интерфейса USB1i (коннектор X24), интерфейса USB2i (коннектор X25)	
Максимальное входное напряжение Ui, В	5,5
Максимальный входной ток Ii, А	3
Максимальная входная мощность Pi, Вт	2
Максимальная внутренняя индуктивность, Li, мкГн	пренебрежимо мала
Максимальная внутренняя ёмкость Ci, мкФ	пренебрежимо мала
Максимальное выходное напряжение Uo, В	5,5
Максимальный выходной ток Io, мА	309
Максимальная выходная мощность Po, мВт	629
Максимальная внешняя индуктивность Lo, мкГн	40
Максимальная внешняя ёмкость Co, мкФ	50
Параметры интерфейса "FO1" (терминал X18) и выходные параметры блока передачи данных (терминал X70)	
Длина волны, нм - для T-Ex-##*-MM* ((ET-##7 *- MM/MM*/MM-FO/SX -*) и блока передачи T-Ex-KVM*-MM* (KVM - * - MM/MM*/MM-FO*) - для T-Ex-##*-SM* ((ET-##7 *- SM/SM*/SM-FO/LX -*) и блока терминала T-Ex-KVM*-SM (KVM - * - SM/SM*/SM-FO*)	850 1310
Номинальная оптическая мощность, мВт	0,22
Максимальная оптическая мощность, в условиях неисправности, мВт	35
Параметры клавиатуры с трекболом типа T-Ex *-KB-TB* (KBDi-USB-TB* - **) (терминалы X72, X73), клавиатуры с мышью типа T-Ex *-KB-M** (KBDi-USB-M - *) ***(терминалы X72, X94), клавиатуры с тачпадом типа T-Ex *-KB-P** (KBDi-USB-P- *) (терминал X72, X95)***	
Максимальное входное напряжение Ui, В	5,5
Максимальный входной ток Ii, А	1
Максимальная входная мощность Pi, мВт	650
Максимальная внутренняя индуктивность, Li, мкГн	пренебрежимо мала
Максимальная внутренняя ёмкость Ci, мкФ	20
Параметры клавиатуры с джойстиком типа T-Ex *-KB-J* (KBDi-USB-J - **) (терминалы X72, X96)***	
Максимальное входное напряжение Ui, В	5,5
Максимальный входной ток Ii, А	1
Максимальная входная мощность Pi, мВт	650
Максимальная внутренняя индуктивность, Li, мкГн	пренебрежимо мала
Максимальная внутренняя ёмкость Ci, мкФ	40

2.2.3 Основные технические данные терминалов типа MT-##7*-* приведены в таблице 2.3

Таблица 2.3

Наименование параметра	Значение
Ex-маркировка по ГОСТ 31610.0-2014 (IEC 60079-0:2011)	2Ex nA nR [ia op is Ga] IIC T4 Gc X Ex tc IIIC [ia op is Da] T110°C Dc X
Диапазон температур окружающей среды при эксплуатации, °C	от минус 30 до плюс 60
Степень защиты оболочками по ГОСТ 14254-2015 (IEC 60529:2013)	IP66
Параметры интерфейса "PWR" (терминал X10)	
Диапазон рабочих напряжений, В	20…240 постоянного или переменного тока
Номинальный ток, А	5
Номинальная мощность, Вт	150
Параметры интерфейса "USB" (терминал X13)	
Номинальное напряжение, В	5 + 10%
Параметры интерфейса "12V" (терминал X14)	
Номинальное напряжение, В	12 + 10%
Параметры интерфейса "CAT7 1" (терминал X16)	

Руководитель (уполномоченное лицо) органа по сертификации (подпись) Вервейко Александр Юрьевич (Ф.И.О.)

М.П.

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) (подпись) Зубрев Евгений Олегович (Ф.И.О.)

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

ПРИЛОЖЕНИЕ

Лист 6

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-DE.HA91.B.00166/20

Серия RU № 0776203

Наименование параметра	Значение
Номинальное напряжение, В	5 + 10%
Параметры интерфейса "SER" (терминал X97)	
Номинальное напряжение, В	15 + 10%
Параметры интерфейса "CAM" (терминал X101)	
Номинальное напряжение, В	5 + 10%
Параметры интерфейса "AUD" (терминал X105)	
Номинальное напряжение, В	100 + 10%
Максимально допустимое напряжение терминалов X10, X13, X14, X16, X97, X101, X105, В	250
Искробезопасные параметры клавиатуры (коннектор X11), трекбола (коннектор X12), интерфейса USB1i (коннектор X24), интерфейса USB2i (коннектор X25)	
Максимальное входное напряжение Ui, В	5,5
Максимальный входной ток Ii, А	3
Максимальная входная мощность Pi, Вт	2
Максимальная внутренняя индуктивность, Li, мкГн	пренебрежимо мала
Максимальная внутренняя ёмкость Ci, мкФ	пренебрежимо мала
Максимальное выходное напряжение Uo, В	5,5
Максимальный выходной ток Io, мА	309
Максимальная выходная мощность Po, мВт	629
Максимальная внешняя индуктивность Lo, мкГн	40
Максимальная внешняя ёмкость Co, мкФ	50
Параметры интерфейса "FO1" (терминал X18)	
Длина волны, нм - для MT-##7*- MM/MM*/MM-FO/SX - для MT-#/#7*- SM/SM*/SM-FO/LX	 850 1310
Номинальная оптическая мощность, мВт	0,22
Максимальная оптическая мощность, в условиях неисправности, мВт	35

3. ОПИСАНИЕ КОНСТРУКЦИИ И СРЕДСТВ ОБЕСПЕЧЕНИЯ ВЗРЫВОЗАЩИТЫ

3.1 Описание конструкции

3.1.1 Терминалы оператора ET-208 состоят из металлического корпуса со стеклянной панелью, встроенной в переднюю крышку. За стеклянной панелью находится дисплей с сенсорным экраном. Корпус содержит модуль питания, модуль центрального процессора и дисплей. Терминалы подключаются к внешним цепям через клеммы, которые расположены в двух отдельных клеммных коробках на задней стороне корпуса терминала. Первая клеммная коробка содержит искробезопасный интерфейс USB и искробезопасный интерфейс для подключения к внешней клавиатуре. Вторая клеммная коробка служит для подключения цепей питания, а также неискробезопасных цепей. Внутри корпуса терминала используются обогрев для обеспечения функционирования устройства при работе ниже минус 10 ^{0}C. Ввод кабелей в устройство происходит с помощью кабельных вводов.

3.1.2 Терминалы типа T-Ex (ET-##7*-**-*) состоят из корпуса с блоком дисплея, блока клавиатуры, трекбола, мыши, джойстика и дополнительного блока передачи данных, который устанавливается за пределами взрывоопасной зоны. Устройства управления могут использоваться независимо от дисплея. На задней стенке корпуса устройства располагается клеммная коробка для подключения к внешним цепям. Ввод кабелей осуществляется с помощью кабельных вводов. Внутри корпуса устройства размещаются элементы электронной схемы, центральный процессор, блок питания.

3.1.3 Терминалы типа MT-##7*-* состоят из корпуса с дисплеем. Внутри корпуса располагаются элементы электронной схемы устройства. Подключение к внешним цепям происходит через клеммную коробку. Ввод кабелей в устройство происходит с помощью кабельных вводов.

Подробное описание конструкции терминалов приведено в технической и эксплуатационной документации изготовителя.

3.2 Описание средств обеспечения взрывозащиты

3.2.1 Взрывозащищенность терминалов типа ET-208 обеспечивается видами взрывозащиты "кварцевое заполнение оболочки "q" по ГОСТ Р МЭК 60079-5-2012, повышенная защита вида "e" по ГОСТ Р МЭК 60079-7-2012, "искробезопасная электрическая цепь "i" по ГОСТ 31610.11-2014 (IEC 60079-11:2011), защитой от воспламенения пыли оболочками "t" по ГОСТ IEC 60079-31-2013 и выполнением конструкции в соответствии с ГОСТ 31610.0-2014 (IEC 60079-0:2011).

Руководитель (уполномоченное лицо) органа по сертификации — (подпись) — Вервейко Александр Юрьевич (Ф.И.О.)

М.П.

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) — (подпись) — Зубрев Евгений Олегович (Ф.И.О.)

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

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Серия RU № 0776204

3.2.2 Взрывозащищенность терминалов типа Т-Ех (ET-##7*-**-*) обеспечивается видами взрывозащиты "кварцевое заполнение оболочки "q" по ГОСТ Р МЭК 60079-5-2012, повышенная защита вида "e" по ГОСТ Р МЭК 60079-7-2012, "искробезопасная электрическая цепь "i" по ГОСТ 31610.11-2014 (IEC 60079-11:2011), искробезопасным оптическим излучением "op is" по ГОСТ 31610.28-2012/IEC 60079-28:2006, защитой от воспламенения пыли оболочками "t" по ГОСТ IEC 60079-31-2013 и выполнением конструкции в соответствии с ГОСТ 31610.0-2014 (IEC 60079-0:2011).

3.2.3 Взрывозащищенность терминалов типа MT-##7*-* обеспечивается видами взрывозащиты "n" по ГОСТ 31610.15-2014/IEC 60079-15:2010, "искробезопасная электрическая цепь "i" по ГОСТ 31610.11-2014 (IEC 60079-11:2011), искробезопасным оптическим излучением "op is" по ГОСТ 31610.28-2012/IEC 60079-28:2006, защитой от воспламенения пыли оболочками "t" по ГОСТ IEC 60079-31-2013 и выполнением конструкции в соответствии с ГОСТ 31610.0-2014 (IEC 60079-0:2011).

4. СПЕЦИАЛЬНЫЕ УСЛОВИЯ ПРИМЕНЕНИЯ «X» и ШКАЛА ОГРАНИЧЕНИЙ

4.1 Знак X в маркировке взрывозащиты терминалов типа ET-208 означает специальные условия применения, заключающиеся в следующем:

- искробезопасные цепи должны быть заземлены. По всей длине искробезопасных цепей должно быть обеспечено выравнивание потенциалов;
- для использования во взрывоопасных газовых средах терминалы должны быть установлены в корпус, отвечающий требованиям ГОСТ 31610.0 (IEC 60079-0).

4.2 Знак X в маркировке взрывозащиты терминалов типа Т-Ех (ET-##7*-**-*) означает специальные условия применения, заключающиеся в следующем:

- по всей длине искробезопасных цепей между блоком индикации и блоком клавиатуры/трекбола должно быть обеспечено выравнивание потенциалов;
- блок клавиатуры/трекбола не должен использоваться в местах, где существует риск заряда, создающий распространяющиеся кистевые разряды.

4.3 Знак X в маркировке взрывозащиты терминалов типа MT-##7*-* означает специальные условия применения, заключающиеся в следующем:

- по всей длине внешних искробезопасных цепей между блоками, например клавиатурой или трекболом, должно быть обеспечено выравнивание потенциалов.

5. МАРКИРОВКА

Маркировка, наносимая на оборудование, должна включать следующие данные:

- наименование изготовителя или его зарегистрированный товарный знак;
- наименование изделия;
- Ех-маркировку;
- 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 Александр Юрьевич (Ф.И.О.)

М.П.

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) _____ (подпись) Зубрев Евгений Олегович (Ф.И.О.)

6 DNV certificate

NOTICE	NB: Only the HMI devices type: ET-667-DVI3-yM-FO-TFT-TG-AC-O30-AL ET-677-DVI3-yM-FO-TFT-TG-AC-O30-AL ET-687-DVI3-yM-FO-TFT-TG-AC-O30-AL have DNV / GL certification! with y: M = FO direct connection multi-mode S = FO direct connection single mode

DNV·GL

Certificate No:
TAA00000BK
Revision No:
1

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
KVM Systems Series 600

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.

Temperature	**D**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**Required protection according to the Rules shall be provided upon installation on board.**

This Certificate is valid until **2026-12-01**.
Issued at **Hamburg** on **2021-12-02**

DNV GL local station: **Magdeburg**

Approval Engineer: **Heinz Scheffler**

for **DNV GL**

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.

Form code: TA 1411a Revision: 2015-05 www.dnvgl.com Page 1 of 3

Job Id: **262.1-021174-2**
Certificate No: **TAA00000BK**
Revision No: **1**

Product description

The KVM Systems Series 600 transfer technology is used for the point-to-point connection between a PC and ET-6x7 Display.

Display:

Function / equipment	ET-667	ET-677	ET-687
Window	Glass		
Display type	TFT color display 16.7 million colors		
Display Size	56 cm (22")	61 cm (24")	61 cm (24"WU)
Resolution in pixels	WSXGA+ 1680 x 1050	Full HD 1920 x 1080	WUXGA 1920 x 1200
Picture format	16:10	16:09	16:10
LVDS Clock [MHz]	60	74.25	77
Frame Rate [Hz]	60	60	59.95
Power supply	100 - 240 VAC, 50 - 60 Hz		

Data transfer via KVM-DVI3 Switch
Point-to-point data connection from a PC outside to HMI ET-667 / ET-677 / ET 687.
Power IEC connector power supply:100 - 240 VAC
DVI / VGA in: DVI-I connector (connection to the PC)
DVI / VGA out: DVI-I connector (connection to the screen)
USB: USB plug type B USB (connection to the PC)
Serial Interface: Sub-D 9 pin socket (RS-232,)
Audio out: 3.5mm TRS socket
Audio in: 3.5mm TRS socket
Data: Optical fibre connection type LC Duplex connector.

Maximal cable length:

- USB, RS-232 and Audio: max. 3 m
- Data optical fibre MM: up to 500 m via 50/125 µm optical fibre cable, up to 300 m via 62.5/125 µm optical fibre cable
- Data optical fibre SM: up to 10,000 m via a 9/125 µm optical fibre cable

Application/Limitation

Please observe the "Marking of product".

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.

Type Approval documentation

Test Reports: U154383E1; E154383E1; E212213E1
Documents Overview: Type Approval documentation_TAA00000BK_20211202.
Operating instructions: OI_MT_xx7_en_V_01_02_18; OI_ET_xx7_en_V_01_03_22; OI_KVM_units_en_V_01_00_05

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Job Id: **262.1-021174-2**
Certificate No: **TAA00000BK**
Revision No: **1**

Marking of product

The products to be marked with:

- Model name: Display ET/MT-6*x*7-DVI3-*y*M-FO-TFT-TG-AC-O30-AL
  KVM Switch 6*x*7-KVM-DVI3-*y*M-FO
  x: 6 = 56 cm / 22" display; 7 = 61 cm / 24" display; 8 = 61 cm / 24"WU display.
  y: M=with direct optical fibre connection multi-mode;
  S=with direct optical fibre connection single mode.
- 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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE

7 Korean certification

7.1 KCS certificate

NOTICE	In order to be able to operate these terminals in Korea, each device type additionally requires a KCC certificate. Actually the following devices has such a certificate: T-Ex-22 (ET-x67), T-Ex-22-DVI3 (ET-667-DVI3), T-Ex-24T (ET-x77 with Touch screen (foil)), T-Ex-KVM-DVI3 (6x7-KVM-DVI3)

제12-0617호

안 전 인 증 서

R. STAHL HMI Systems GmbH

Im Gewerbegebiet Pesch 14, 50767 Cologne Germany

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제34조 및 같은 법 시행규칙 제58조의4제4항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목

Terminal

형식 · 모델 / 용량 · 등급 / 인증번호

형식·모델	용량 · 등급	인증번호
T-Ex	첨부 인증조건(12-617) 참조 Ex e q IIC T4 Ex tb IIIC IP64 T110℃ Ex ia IIC T4 Ex ia IIIB T110℃	12-GA4BO-0617X

인 증 기 준

방호장치 의무안전인증 고시(고용노동부고시 제2010-36호)

인 증 조 건

첨부 인증조건(12-617) 참조

2012 년 10 월 8 일

한국가스안전공사 사장

인 증 조 건

1. 제조공장:

   Im Gewerbegebiet Pesch 14, 50767 Cologne Germany에 위치한 R. STAHL HMI Systems GmbH 공장에서 생산한 제품 중 아래 인증범위의 제품에 한함.

2. 제품개요

   The T-Ex Terminal is designed to operate, visualize and control processes in hazardous areas. The system contains a display unit, a keyboard/trackball unit and an optional transmission unit which is installed outside the potentially hazardous area.

   The display unit is carried out in type of protection Powder Filling "q" to cover the power supply and in type of protection Intrinsic Safety "ia" for various circuits. The terminal box is in type of protection Increased Safety "e".

   The keyboard/ pointing device unit is designed to be connected to intrinsically safe interfaces. The keyboard- and the pointing device electronics are separated inside the keyboard/ pointing device unit and are separately connected via pre mounted connection cables.

   Four Pointing Devices are possible: type T-Ex *-KB-TB*, type T-Ex *-KB-M*, type T-Ex *-KB-P* and type T-Ex *-KB-J*.

   The Pointing Devices are usable independent from the Display Unit.

   The transmission unit covers a fibre optic transceiver and is mounted outside the hazardous area.

   The display unit as well as the keyboard/ pointing device unit fulfils as well the requirements for Protection by enclosures 't'.

3. 인증범위: 본 인증서는 아래의 형식번호에 한하여 유효함

   품목 명 Terminal, 모델 명 T-Ex에 한하여 인증함.

   첨부 인증조건(12-617) 참조.

4. 안전한 사용을 위한 조건

   1. Along the intrinsically safe circuits between display unit and keyboard/trackball unit potential equalisation must exist.
   2. The Keyboard/Trackball Unit shall not be used in areas where charging mechanism creating propagating brush discharges have to be regarded.

5. 인증(변경)사항

6. 그 밖의 사항

   안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수

[첨 부]

인 증 조 건(12-617)

Parameters

Electrical data

Display unit

"PWR" interface parameter for X10 (Ex e):

U AC/DC 20…240 V
I ≤ 5 A
P ≤ 150 W
Maximum r.m.s. a.c. voltage Um ≤ 250 V

"USB" interface parameter for X13 (Ex e):

U AC/DC 5 V + 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"12V" interface parameter for X14 (Ex e):

U AC/DC 12 V+ 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"CAT7 1" interface parameter for X16 (Ex e):

U AC/DC 5 V + 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"SER" interface parameter for X97 (Ex e):

U AC/DC 15 V + 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"CAM" interface parameter for X101 (Ex e):

U AC/DC 5 V + 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

"AUD" interface parameter for X105 (Ex e):

U AC/DC 100 V + 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V

(1/5)

인 증 조 건(12-617)

Connector X11 (Ex ia) Keyboard:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Connector X12 (Ex ia) Trackball:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Connector X24 (Ex ia) USB1i:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Connector X25 (Ex ia) USB2i:

Uo	DC	5.5	V	Ui	5.5	V
Io		309	mA	Ii	3	A
Po		629	mW	Pi	2	W
Co		50	uF	Ci	negligible	
Lo		40	uH	Li	negligible	

Only for the type T-Ex-##*-MM* and type T-Ex-##*-SM*

"FO 1" interface parameter for X18 (Ex op is):

Type T-Ex-##*-MM*

Wavelength	850	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

Type T-Ex-##*-SM*

Wavelength	1310	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

(2/5)

인 증 조 건(12-617)

Interface parameter of Transmission unit type T-Ex-KVM*-MM* and type T-Ex-KVM*-SM* Input
Maximum r.m.s. a.c. voltage Um ≤ 250V AC

Output for the Transmission unit type T-Ex-KVM*-MM* and type T-Ex-KVM*-SM*
FO1 parameter for X70 (Ex op is):

Transmission unit type T-Ex-KVM*-MM*		
Wavelength	850	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

Transmission unit type T-Ex-KVM*-SM*		
Wavelength	1310	nm
Nominal optical radiated power	0.22	mW
Max. optical radiated power under fault conditions	35	mW

Keyboard Trackball Unit type T-Ex *-KB-TB*
Keyboard X72 (Ex ia):

U_I DC	5.5	V
I_I	1	A
P_I	650	mW
C_I	20	uF
L_I	negligible	

Trackball X73 (Ex ia)

U_I DC	5.5	V
I_I	1	A
P_I	650	mW
C_I	20	uF
L_I	negligible	

Keyboard Mouse Unit type T-Ex *-KB-M*

Keyboard Interface(X72) Ex ia				
Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

Mouse Interface (X94) Ex ia				
Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

(3/5)

인 증 조 건(12-617)

Keyboard Pad Unit type T-Ex *-KB-P*

Keyboard Interface(X72) Ex ia				
Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	
Pad Interface (X95) Ex ia				
Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	

Keyboard Joystick Unit type T-Ex *-KB-J*

Keyboard Interface(X72) Ex ia				
Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		20	µF
Effective internal inductance	Li		negligible	
Joystick Interface (X96) Ex ia				
Voltage	Ui	DC	5.5	V
Current	Ii		1	A
Power	Pi		650	mW
Effective internal capacitance	Ci		40	µF
Effective internal inductance	Li		negligible	

Thermal Data

Ta = -30 °C ... +60 °C
Permitted ambient temperature rate

Temperature class T4

Max. surface temperature T with thermo fuse limited to 110 °C

Degrees of protection according to IEC 60529

Display unit type T-Ex -##*-R2	IP65
Display unit type T-Ex -##*	IP64
Keyboard/Trackball	IP20

(4/5)

인 증 조 건(12-617)

Subject and type

T-Ex Terminal
consists of:
Display Unit type T-Ex -##* and type T-Ex -##*-R2
Transmission Unit type T-Ex –KVM*-MM* or T-Ex –KVM*-SM*
one of the following Pointing Devices
Keyboard Trackball Unit type T-Ex *-KB-TB*
Keyboard Mouse Unit type T-Ex *-KB-M*
Keyboard Pad Unit type T-Ex *-KB-P*
Keyboard Joystick Unit type T-Ex *-KB-J*

one alphanumeric character, without relevance for explosion protection
* any alphanumeric or symbolic character, without relevance for explosion protection

(5/5)

7.2 KCC certificate

7.2.1 T-Ex-22 (ET-x67)

5122-9931-49BD-91CE

방송통신기자재등의 적합등록 필증

Registration of Broadcasting and Communication Equipments

상호 또는 성명 *Trade Name or Registrant*	R. STAHL HMI Systems GmbH
기기 명칭 *Equipment Name*	Operator HMI Panel
기본모델명 *Basic Model Number*	T-Ex-22
파생모델명 *Series Model Number*	
등록번호 *Registration No.*	KCC-REM-RS3-T-Ex-22
제조자/제조(조립)국가 *Manufacturer/Country of Origin*	R. STAHL HMI Systems GmbH / 독일
등록연월일 *Date of Registration*	2013-03-04
기타 *Others*	

위 기기는「전파법」제58조의2 제3항에 따라 등록되었음을 증명합니다.

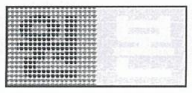
It is verified that foregoing equipment has been registered under the Clause 3, Article 58-2 of Radio Waves Act.

2013년(Year) 03월(Month) 04일(Date)

국립전파연구원장 국립전파연구원장인

Director General of Radio Research Agency
Korea Communications Commission Republic of Korea

※ 적합등록 방송통신기자재는 반드시 "적합성평가표시"를 부착하여 유통하여야 합니다.
위반시 과태료 처분 및 등록이 취소될 수 있습니다.



7.2.2 T-Ex-22-DVI3 (ET-667-DVI3)

42CE-2851-1C8B-B4B7

방송통신기자재등의 적합등록 필증

Registration of Broadcasting and Communication Equipments

상호 또는 성명 *Trade Name or Registrant*	R. STAHL HMI Systems GmbH
기자재 명칭 *Equipment Name*	Remote Operator Interface
기본모델명 *Basic Model Number*	ET-667-DVI3
파생모델명 *Series Model Number*	T-EX-22-DVI3, MT-667-DVI3
등록번호 *Registration No.*	MSIP-REM-RS3-ET-667-DVI3
제조자/제조(조립)국가 *Manufacturer/Country of Origin*	R. STAHL HMI Systems GmbH / 독일
등록연월일 *Date of Registration*	2013-08-20
기타 *Others*	

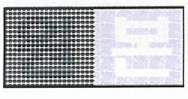
위 기자재는「전파법」제58조의2 제3항에 따라 등록되었음을 증명합니다.
It is verified that foregoing equipment has been registered under the Clause 3, Article 58-2 of Radio Waves Act.

2013년(Year) 08월(Month) 20일(Date)

국립전파연구원장 국립전파연구원장인

Director General of National Radio Research Agency

※ 적합등록 방송통신기자재는 반드시 "적합성평가표시"를 부착하여 유통하여야 합니다.
위반시 과태료 처분 및 등록이 취소될 수 있습니다.



7.2.3 T-Ex-24T (ET-x77 with Touch screen (foil))

8DC6-AD19-CC95-E279

방송통신기자재등의 적합등록 필증

Registration of Broadcasting and Communication Equipments

상호 또는 성명 *Trade Name or Registrant*	R. STAHL HMI Systems GmbH
기기 명칭 *Equipment Name*	Operator HMI Panel
기본모델명 *Basic Model Number*	T-Ex-24T
파생모델명 *Series Model Number*	
등록번호 *Registration No.*	KCC-REM-RS3-T-Ex-24T
제조자/제조(조립)국가 *Manufacturer/Country of Origin*	R. STAHL HMI Systems GmbH / 독일
등록연월일 *Date of Registration*	2012-11-06
기타 *Others*	

위 기기는「전파법」제58조의2 제3항에 따라 등록되었음을 증명합니다.

It is verified that foregoing equipment has been registered under the Clause 3, Article 58-2 of Radio Waves Act.

2012년(Year) 11월(Month) 06일(Date)

국립전파연구원장 국립전파연구원장인

Director General of Radio Research Agency
Korea Communications Commission Republic of Korea

※ 적합등록 방송통신기자재는 반드시 "적합성평가표시"를 부착하여 유통하여야 합니다.
위반시 과태료 처분 및 등록이 취소될 수 있습니다.

7.2.4 T-Ex-KVM-DVI3 (6x7-KVM-DVI3)

C6C1-5F1D-5664-816E

방송통신기자재등의 적합등록 필증

Registration of Broadcasting and Communication Equipments

상호 또는 성명 *Trade Name or Registrant*	R. STAHL HMI Systems GmbH
기자재 명칭 *Equipment Name*	Transmit Unit
기본모델명 *Basic Model Number*	KVM-DVI3
파생모델명 *Series Model Number*	T-EX-KVM-DVI3
등록번호 *Registration No.*	MSIP-REM-RS3-KVM-DVI3
제조자/제조(조립)국가 *Manufacturer/Country of Origin*	R. STAHL HMI Systems GmbH / 독일
등록연월일 *Date of Registration*	2013-08-20
기타 *Others*	

위 기자재는「전파법」제58조의2 제3항에 따라 등록되었음을 증명합니다.

It is verified that foregoing equipment has been registered under the Clause 3, Article 58-2 of Radio Waves Act.

2013년(Year) 08월(Month) 20일(Date)

국립전파연구원장 국립전파연구원장인

Director General of National Radio Research Agency

※ 적합등록 방송통신기자재는 반드시 "적합성평가표시"를 부착하여 유통하여야 합니다.
위반시 과태료 처분 및 등록이 취소될 수 있습니다.

7.3 Customer confirmation letter

Customer confirmation letter
납품처 확인서

1. Delivery Overview/ 납품 개요

   - Target company name / 대상 회사명: (exporter/(수출자)
   - Usage / 용도: (product name / 제품명)
   - Model and quantity / 모델 및 수량:

     (product number / type number) - (quantity) / (제품 품번 / 타입번호) - (수량)

2. Overview of domestic imports of products / 제품의 국내 수입 개요

   The above (product name, model, quantity) are imported from (company name) and then delivered to the supplier (company name) (if there is an intermediary seller), the products are all overseas (country name) will be re-exported.
   상기의 (제품명, 모델, 수량)은 제조사(회사명), (중간판매상이 있을 경우 기입,) 납품처 (회사명) 로 납품하는 것으로서, 해당 제품은 모두 해외(나라이름)로 재 수출되는 것입니다.

3. According to the contract between (importer), (if there is an intermediary seller), and the supplier (company name), the product has been imported, and according to the contract of the (supplier), all are re-exported abroad. I will confirm.

   (수입자), (중간판매상 있을경우 기입), 납품처(회사명) 간 계약에 따라, 해당 제품 수입진행 하였으며, (납품처)의 계약서에 따라, 모두 해외로 재 수출되는 것임을 확인 드립니다.

   Year Month Day / 년 월 일
   Manager / 담당자 :
   contact / 연락처 :
   (Company Name) / (회사명)

4. Attachments:

- Customer PO / 고객 PO
- Owner PO of customer (in case of re-exporter) / 고객의 소유자 PO(재수출자의 경우)
- Product photo / 제품 사진
- Catalogue / 카탈로그
- Invoice / Packing list / B/L / 송장 / 포장 목록 / B/L
- Business registration / 사업자 등록

8 CEC / NEC / CSA certificate

CSA Group

Certificate of Compliance

Certificate: 70011698 **Master Contract:** 213004

Project: 70011727 **Date Issued:** 2015-06-24

Issued to: **R. STAHL HMI Systems GmbH**
Im Gewerbegebiet Pesch 14
Koeln, 50767
GERMANY
Attention: Alexander Jung

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

C US

Issued by: David Malloy
David Malloy

PRODUCTS

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

CLASS - 2258 84 PROCESS CONTROL EQUIPMENT – Intrinsically Safe, Entity - For Hazardous Locations – Certified to US Standards

Ex ia IIC T4 Ga
Ex ia IIIB T110°C Da
Class I, Zone 0 AEx ia IIC T4 Ga
Zone 20 AEx ia IIIB T110°C Da

Keyboard Trackball Unit type T-Ex*-KB-TB*
Keyboard Mouse Unit type T-Ex*-KB-M*
Keyboard Pad Unit type T-Ex*-KB-P*
Keyboard Joystick Unit type T-Ex*-KB-J*

Ratings: ambient temperature range -30°C to +60°C, IP20, Entity Parameters Described in table below providing associated intrinsically safe circuits when installed per control drawing 11100024 and operating instructions 6000076.

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Certificate: 70011698 **Master Contract:** 213004
Project: 70011727 **Date Issued:** 2015-06-24

Voltage Ui	5.5Vdc
Current Ii	1A
Power Pi	650mW
Effective internal capacitance Ci	20uf
Effective internal inductance Li	Negligible

Conditions of Safe Use:

1. The Pointing Device shall not be used in areas where charging mechanism creating propagating brush discharges have to be regarded.

CLASS - 2258 02 PROCESS CONTROL EQUIPMENT – For Hazardous Locations
CLASS - 2258 82 PROCESS CONTROL EQUIPMENT – For Hazardous Locations – Certified to US Standards

Ex e q [ia] IIC T4 Gb (Canada)
Class I, Zone 1 AEx e q [ia] IIC T4 Gb (US)

HMI Terminal Series ET-xx7, rated 20-30VDC (Class 2 supply), 5A or 100-240 VAC, 1A amps max, 150 watts max, ambient temperature range -30°C to +60°C, providing associated intrinsically safe circuits when installed per control drawing 11100024 and operating instructions 6000076.

Where:

ET-4x7-a-b-c-d-e-f-g-h	**ET-5x7-a-b-c-d-e-f**	**ET-6x7-a-b-c-d-e-f**
x=Display Size (6 (22"), 7 (24"), or 8 (24"WU)) **a**=Ethernet Interface (SX=fiber optic interface or TX=copper interface) **b**=Display Type (TFT) **c**=Touch Screen (T=foil or TG=glass) **d**=Main Memory (R1=1GB or R2=2GB) **e**=Data Memory (4GB, 16GB, 128GBM, 128GBS, or 100GB) **f**=Power Supply (AC or DC) **g**=Outdoor Option (O30= -30°C) **h**=Front Design (AL=aluminum front or RM=rear mounted)	**x**= Display Size (6 (22"), 7 (24"), or 8 (24"WU)) **a**=Ethernet Interface (SX=fiber optic or TX=copper interface) **b**=Display Type (TFT) **c**=Touch Screen (T=foil or TG=glass) **d**=Power Supply (AC or DC) **e**=Outdoor Option (O30=-30°C) **f**=Front Design (AL=aluminum front or RM=rear mounted)	**x**= Display Size (6 (22"), 7 (24"), or 8 (24"WU)) **a**=Transfer Technology (DVI1-CAT, DVI1-MM, DVI1-SM, DVI2-CAT, DVI3-CAT, DVI3-MM-FO, or DVI3-SM-FO) **b**=Display Type (TFT) **c**=Touch Screen (T=foil or TG=glass) **d**=Power Supply (AC or DC) **e**=Outdoor Option (O30=-30°C) **f**=Front Design (AL=aluminum front or RM=rear mounted)

Conditions of Safe Use:

1. Along the intrinsically safe circuits between the display unit and the keyboard/pointing device unit potential equalization must exist.

2. Any non-metallic parts of the HMI Terminal that can accumulate static electricity must be cleaned only with a damp cloth.

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Certificate: 70011698 **Master Contract:** 213004
Project: 70011727 **Date Issued:** 2015-06-24

3. Application supporting devices connected to the intrinsically safe input/outputs of connection points X101, X105, X97, X13, X14, and X16 shall be installed in a non-hazardous location (see control drawing 11100024) or must be suitable protected by an explosionproof or Ex p enclosure.

4. Connection point X10 shall be connected to a Class 2 supply for the DC model.

5. All connections to the display unit shall be installed using a CSA certified or usULc listed Ex e cable gland suitable for the end installation and shall carry a minimum IP rating of IP65.

Entity Parameters:

Display unit:

X11 (Keyboard Ex ia), X12 (pointing device Ex ia), X24 (USB1 Ex ia), X25 (USB2 Ex ia)	
U_o = 5.5 VDC	U_i = 5.5 VDC
I_o = 309 mA	I_i = 3A
P_o = 629 mW	P_i = 2 W
L_o = 40 µH	L_i = negligible
C_o = 50 µF	C_i = negligible

Input Output Terminal Ratings:

"PWR" interface parameter for X10 (Ex e):	
U	100-240Vac 50/60Hz or 20-30Vdc
I	≤ 5A
P	≤ 150W
Maximum r.m.s. a.c. voltage Um ≤ 250V	

"USB" interface parameter for X13 (Ex e):	
U	AC/DC 5 V + 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250V	

"12V" interface parameter for X14 (Ex e):	
U	AC/DC 12V + 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250V	

"CAT7 1" interface parameter for X16 (Ex e):	
U	AC/DC 5 V + 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V	

"SER" interface parameter for X97 (Ex e):	
U	AC/DC 15 V + 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V	

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Certificate: 70011698 **Master Contract:** 213004
Project: 70011727 **Date Issued:** 2015-06-24

"CAM" interface parameter for X101 (Ex e):	
U	AC/DC 5 V + 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V	

"AUD" interface parameter for X105 (Ex e):	
U	AC/DC 100 V + 10%
Maximum r.m.s. a.c. or d.c. voltage Um ≤ 250 V	

Output Terminal Ratings:

Keyboard/pointing device Units

Keyboard Interface (X72) (Ex ia)	
Voltage U_i	5.5Vdc
Current I_i	1A
Power P_i	650mW
Effective internal capacitance Ci	20uf
Effective internal inductance Li	Negligible
Trackball Interface X73 (Ex ia) type T-Ex *-KB-TB* Mouse Interface X94 (Ex ia) type T-Ex *-KB-M* Pad Interface X95 (Ex ia) type T-Ex *-KB-P*	
Voltage Ui	5.5Vdc
Current Ii	1A
Power Pi	650mW
Effective internal capacitance Ci	20uf
Effective internal inductance Li	Negligible
Joystick Interface X96 (Ex ia) type T-Ex *-KB-J*	
Voltage Ui	5.5Vdc
Current Ii	1A
Power Pi	650mW
Effective internal capacitance Ci	40uf
Effective internal inductance Li	Negligible

Interface parameter of Transmission unit type T-Ex-KVM*-MM* and type T-Ex-KVM*-SM* Input Maximum r.m.s. a.c. voltage Um ≤ 250V AC	
Output for the Transmission unit type T-Ex-KVM*-MM* and type T-Ex-KVM*-SM*:	
X70 (FO1) – Single Mode type T-Ex-KVM*-SM*	
Wavelength	1310 nm
Nominal optical radiated power	0.22 mW
Maximum optical radiated power under fault conditions	35 mW
X70 (FO1) – Multi mode type T-Ex-KVM*-MM*	

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Certificate: 70011698 **Master Contract:** 213004
Project: 70011727 **Date Issued:** 2015-06-24

Wavelength	850 nm
Nominal optical radiated power	0.22 mW
Maximum optical radiated power under fault conditions	35 mW

Electrical data - Display unit
Thermal Data:
Temperature class: T4

Degrees of protection according to IEC 60529:
Display unit type T-Ex -##*-R2 IP65
Display unit type T-Ex -##* IP64
Keyboard/Trackball IP20

APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 0-10 August 2011	General requirements — Canadian Electrical Code, Part II
CAN/CSA-C22.2 No. 61010-1-12	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements (Third Edition)
CAN/CSA-C22.2 No. 60079-0:11 (December 2011)	Explosive atmospheres – Part 0: Equipment – General requirements
CAN/CSA-C22.2 No. 60079-5:11 (December 2011)	Explosive atmospheres – Part 5: Equipment protection by powder filling “q”
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. 60529:05 (Reaffirmed 2010)	Degrees of protection provided by enclosures (IP Code)
ANSI/UL 61010-1:2012	Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements (Third Edition)
ANSI/UL 60079-0 Sixth Edition (July 26, 2013)	Explosive atmospheres – Part 0: Equipment – General requirements
ANSI/UL 60079-5 Third Edition (November 22, 2013)	Explosive Atmospheres – Part 5: Equipment protection by powder filling “q”
ANSI/UL 60079-7 Fourth Edition (May 31, 2013)	Explosive Atmospheres – Part 7: Equipment protection by increased safety “e”
ANSI/UL 60079-11 Sixth Edition (March 28, 2014)	Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety “i”
ANSI/IEC 60529-2004	Degrees of Protection Provided by Enclosures (IP Code)

DQD 507 Rev. 2012-05-22 Page 5

Certificate: 70011698 **Master Contract:** 213004
Project: 70011727 **Date Issued:** 2015-06-24

MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Nameplate adhesive label material approval information:

The following markings are provided on labels that are applied legibly and permanently by means of stickers printed using a suitable procedure, engraving or laser-printing, according to applicable standards. It can be engraved, laser marked, printed and laminated to foil material used from Avery-Zweckform Typ 3480 or similar. If a sticker is used, the material will be temperature-resistant up to ≥120°C, such as "3M Scotchcal color foil 3690".

- Manufacturer's name: "R Stahl ", 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.
- Electrical ratings: As specified in the PRODUCTS section, above.
- 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 ratings: As specified in the PRODUCTS section, above.
- The CSA Mark, as shown on the Certificate of Conformity followed by the certificate reference in the following form; the last two figures of the year of the certificate followed by the certificate number of this report followed by an "X" (example: CSA 14.70011698X)
- Hazardous Location designation: As specified in the PRODUCTS section, above
- Temperature code: As specified in the PRODUCTS section, above.
- Warning near the Ex e connection box: "Isolate supply and all Ex e and Ex ia circuits, wait 7 minutes before opening the Ex e connection box!" and "Isoler l'alimentation et tous Ex e et Ex ia circuits , attendre 7 minutes avant d'ouvrir le boîtier de raccordement Ex e" or equivalent.
- Protective earthing TERMINAL is identified by the letter "PE/EARTH", adjacent to the TERMINAL;
- The following words:
  - "[Ex ia]".
  - The words: "ASSOCIATED EQUIPMENT"
  - "WARNING: Substitution of components may impair intrinsic safety."
  - "AVERTISSEMENT : La substitution de composants peut compromettre la securite intrinseque"
  - "Install per drawing 6000076

DQD 507 Rev. 2012-05-22 Page 6

Certificate: 70011698 **Master Contract:** 213004
Project: 70011727 **Date Issued:** 2015-06-24

DOCUMENTATION

Equipment is accompanied by the following documentation. See Att1.

- Manufacturer's name and address
- Electrical ratings:
- Specification for ambient temperature rating
  - $-40°C \leq T_a \leq 80°C$
- Specification for process pressure ratings.
- Specification for appropriate wiring to the connector, including definition of pin functions, and specification for wire gauge.
- The intended use of the equipment.
- Specification for the pollution degree rating
  - Pollution Degree IV
- Specification for the relative humidity
- Specification for the altitude rating
- Specification for overvoltage category
  - Overvoltage Category II
- Mounting and installation instructions, including dimensions.
- Enclosure Rating, "IP66"

DQD 507 Rev. 2012-05-22 Page 7

CSA Group

Supplement to Certificate of Compliance

Certificate: 70011698 **Master Contract:** 213004

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
70011727	2015-06-24	Project 3 of 3 - Update to report 70011698 from CSA 142 and UL 508 to CSA/UL/IEC 61010.
70011724	2014-12-12	Update to report 70011698 to evaluate to US requirements.
70011698	2014-11-20	Original certification of the T-Ex.

DQD 507 Rev. 2012-05-22 Page 1

9 Indian certificates

9.1 PESO

Government of India
Ministry of Commerce & Industry
Petroleum & Explosives Safety Organisation (PESO)
5th Floor, A-Block, CGO Complex, Seminary Hills,
Nagpur - 440006

E-mail : **explosives@explosives.gov.in**
Phone/Fax No : **0712 -2510248, Fax-2510577**

Approval No : A/P/HQ/TN/104/5768 (P438244) Dated : **08/03/2019**

14 MAR 2019

To,

M/s. R.STAHL HMI Systems GmbH,
Adolf-Grimme Allee 8,Köln
50829
GERMANY

Sub : Approval of Sand Filled, Increased Safety, Intrins under Petroleum Rules 2002- Regarding.

Sir(s),

Please refer to your letter No. **OIN273076** dated **18/02/2019** on the subject.

The following Ex electrical equipment(s) manufactured by you according to **IEC 60079-0 : 2017, IEC 60079-11 : 2011, IEC 60079-28 : 2015, IEC 60079-31 : 2013, IEC 60079-5 : 2015, IEC 60079-7 : 2017,** standards and covered under **DEKRA Testing and Certification GmbH** Test reports mentioned below is/are approved for use in **Zone 1** of Gas **IIC** hazardous areas coming under the the Petroleum Rules, 2002 administered by this Organization.

Sr. No	Description	Safety Protection	Equipment reference Number	Test Agency			Drawing no
				Name	Certificate No.	Certificate Date	
1	Terminal type T-Ex or alternatively ET-xx7	Ex eb q [ia op is Ga] IIC T4 Gb	**P438244/1**	DEKRA Testing and Certification GmbH	IECEx BVS 11.0075X Issue No 1	21/01/2019	11000006

This Approval is granted subject to observance of the following conditions:-

1)The design and construction of the equipment shall be strictly in accordance with description, condition and drawings as mentioned in the DEKRA Testing and Certification GmbH Test Reports referred to above.

2)The equipment shall be used only with approved type of accessories and associated apparatus.

3)Each equipment shall be marked either by raised lettering cast integrally or by plate attached permanently to the main structure to indicate conspicuously:-
(a) Name of the manufacturer
(b) Name and number by which the equipment is identified.
(c) Number & date of the test report of the DEKRA Testing and Certification GmbH applicable to the equipment.
(d) Equipment reference number of this letter by which use of apparatus is approved.
(e) Protection level.

4) A certificate to the effect that the equipment has been manufactured strictly in accordance with the drawing referred to in the DEKRA Testing and Certification GmbH Test report and is identical with the one tested and certified at DEKRA Testing and Certification GmbH shall be furnished with each equipment.
5) The customer shall be supplied with a copy of this letter, an extract of the conditions and maintenence schedule, if any, recommended by DEKRA Testing and Certification GmbH in their test reports and copy of instructions booklet detailing operation & maintenance of the equipment so as to maintain its Flame Proof characterestics.
6) The After sales service and maintanance of subject equipment shall be looked after by your representative R. STAHL PRIVATE LIMITED, Malrosapuram Main Road

This approval also covers the permissible variations as approved under the DEKRA Testing and Certification GmbH test reports referred above. This approval is liable to be cancelled if any of the conditions of the approval is violated or not complied with . The approval may also be amended or withdrawn at any time, if considered necessary in the interest of safety.

The field performance report from actual users/your customers of the subject equipment may please be collected and furnished to this office for verification and record on annual basis.

The Approval is Valid upto **31/12/2023**

Yours faithfully,

(K Srinivasa Rao)
Controller of Explosives
For Chief Controller of Explosives
Nagpur

Copy to :
1. Jt. Chief Controller of Explosives, East Circle office, KOLKATA
2.R. STAHL PRIVATE LIMITED,Malrosapuram Main Road

for Chief Controller of Explosives
Nagpur

(For more information regarding status,fees and other details please visit our website http://peso.gov.in)

Note:- Please submit the revalidation application one month before the date of Expiry of approval otherwise approval will be treated as cancelled and a fresh application for approval will be considered for the approval.

9.2 BIS

भारतीय मानक ब्यूरो
(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)
BUREAU OF INDIAN STANDARDS
(Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India)

मानक भवन, 9 बहादुर शाह जफ़र मार्ग, नई दिल्ली – 110002
Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi – 110002
दूरभाष / Phone: +91-11-23230856/2323010131/23233375/23239402
ई–मेल / E-mail: registration@bis.gov.in
वेबसाईट / Website: https://bis.gov.in/, https://www.crsbis.in/BIS/

Our Ref: Registration/CRS 2022-2596/R-41228087 Date:27-06-2022

Subject : Licence Document

MANUFACTURING UNIT :	R.Stahl Hmi Systems Gmbh ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE COLOGNE,Germany-50829 office@stahl-hmi.de 49221768061000	

Dear Sir,

1.With reference to your Application, we are pleased to inform you that it has been decided to grant you licence as per details given below :

Product Category :	Automatic Data Processing Machine
Product Name :	ALL IN ONE PC (ADPM)
IS NO :	IS 13252(PART 1):2010/ IEC 60950-1 : 2005
Brand (As Declared by Manufacturer) :	STAHL
Model :	[Brand -> STAHL, Models -> ET-577-LX-AC, ET-577-LX-DC, ET-577-SX-AC, ET-577-SX-DC, ET-577-TX-AC, ET-577-TX-DC]
Factory Address :	ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE COLOGNE,Germany-50829

2. The Licence is being granted for your unit located at the address and for the brand and models mentioned at serial no 1 above.

3. The number assigned to this Licence is **R-41228087** which has been made operative from **27-06-2022** and is valid upto **26-06-2024** . The Licence Number should invariably be referred to in your future correspondence.

4. The rights and privileges under the licence shall not be exercised by any other factory / organization at any other location. This licence is not transferable. In the event of shifting of the manufacturing machinery from the registered premises to some other place use of the Licence Number shall be stopped and BIS shall be informed.

5. The licensee shall comply with the provisions of the Act, rules and regulations framed thereunder and as amended from time to time.

6. The licensee shall follow the guidelines for the use of Standard Mark and labeling requirements as per Annex-I.

7. The licensee shall not use the licence in any manner which contravenes the provisions of Act, rules and regulations framed thereunder and as amended from time to time.

8. Upon expiry of validity, stoppage or suspension or cancellation of licence, you shall discontinue forthwith the self declaration of conformity to the relevant Indian Standard(s) and withdraw all promotional and advertising matter which contains any reference thereto.

9. As per your declaration, **SATHISHKUMAR D, Certification Manager, R STAHL PRIVATE LIMITED(Address- Plot No 5 Malrosapuram Main Road, Sengundram Industrial Area, Singaperumal koil 603204 Tamil Nadu,NA)** is your authorized Indian representative. Any intended change in the name of the Indian representative ought to be brought to our notice immediately along with requisite fees and document.

10. For renewal of licence, the licensee shall have to apply to BIS three months in advance before expiration of the licence and application form for renewal is available on BIS website

11. The licence is not transferable. Kindly acknowledge receipt of this letter.

Thanking you,

Yours faithfully,
(Aurosmita Kabiraj)
Scientist-C
Telfax : +91-11-23230856
E-mail: registration@bis.gov.in

Note: This is a system generated letter. Hence signature is not required.
To verify authentication of letter, kindly scan the QR code on this letter.

भारतीय मानक ब्यूरो
(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)
BUREAU OF INDIAN STANDARDS
(Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India)

मानक भवन, 9 बहादुर शाह जफ़र मार्ग, नई दिल्ली - 110002
Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi – 110002
दूरभाष / Phone: +91-11-23230856/2323010131/23233375/23239402
ई-मेल / E-mail: registration@bis.gov.in
वेबसाईट / Website: https://bis.gov.in/, https://www.crsbis.in/BIS/

Our Ref: REGISTRATION/CRS 2022-2596/R-41228087 Date:19-01-2023

Inclusion Id: 64958

Subject :Inclusion of Additional Model(s)

MANUFACTURING UNIT :	R.Stahl Hmi Systems Gmbh ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE COLOGNE,Germany-50829 office@stahl-hmi.de 49221768061000	

Dear Sir,

1. This has reference to your request for inclusion of models of **"Automatic Data Processing Machine" as per IS 13252(Part 1):2010/ IEC 60950-1 : 2005 in Licence No. R-41228087** already granted to you which is valid upto 26-06-2024.

2. It is intimated that the additional Models as per details given below have been agreed to be included in your scope of Licence. **R-41228087 w.e.f. 19-01-2023:**

Product Category	Automatic Data Processing Machine
Product Name	ALL IN ONE PC (ADPM)
IS No.	IS 13252(Part 1):2010/ IEC 60950-1 : 2005
Brand (As Declared by Manufacturer):	STAHL
Inclusion of Additional Models **(w.e.f. 19-01-2023)**	ET-477-LX-AC, ET-477-LX-DC, ET-477-SX-AC,ET-477-SX-DC,ET-477-TX-AC, ET-477-TX-DC, ET-577-2TX-AC, ET-577-2TX-DC
Factory Address	ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE COLOGNE,Germany-50829

3. Other terms and conditions of the licence shall remain same.

4. This letter is being issued with the approval of competent authority.

Kindly acknowledge receipt of this letter.

Thanking you,

Yours faithfully,
(Avik Datta)
Scientist-C
Telfax : +91-11-23230856
E-mail: registration@bis.gov.in

Note: This is a system generated letter. Hence signature is not required.
To verify authentication of letter, kindly scan the QR code on this letter.

For details information on BIS, consult the e-BIS Portal (www.manakonline. in).
Please use BIS CARE APP for verification of ISI-marked goods and hallmarked gold jewellery.

10 Chinese certificates

10.1 CNEX certificate ET-xx7

10.1.1 English version

CNEX
国家防爆

Certificate number: CNEx21.1938X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Manufacturer	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 8, 50829 Koln, Germany
Product	Display Unit
Type	ET - ##7*
Marking	Ex e q [ia op is Ga] IIC T4 Gb/Ex tD [iaD op is] A21 IP65 T110℃
Standard(s)	——
Drawing No.	10410084 Rev a Display general view

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 3836.3-2010	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/T 3836.7-2017	Explosive atmospheres - Part 7:Equipment protection by powder filling "q"
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 enclosure "tD"

Note:

See Annex (10 page in total).

Director

Date: 2021-6-17

Valid until: 2026-6-16

Ex CQST

CHINA NATIONAL QUALITY SUPERVISION AND TEST CENTER FOR EXPLOSION PROTECTED ELECTRICAL PRODUCTS

Address: No.20 North Zhongjing Rd, Nanyang, Henan(473008), P.R.China

Tel: 0377-63258564 Fax: 0377-63208175 Web: www.china-ex.com

Note: This certificate is only valid for 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). 登录网站 输入数码 查询防伪 4928 4319 8276 7920

CNEX
国家防爆

Certificate number: CNEx21.1938X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

This product has been certified, under certificate number IECEx BVS 11.0075X, issue 1, dated 2019-01-21 and Test report DE/BVS/ExTR11.0105/01 dated 2019.01.08.

Product Description:

The terminal T-Ex or alternatively ET-##7 is designed to operate, visualize and control processes in hazardous areas. The system contains a display unit, a keyboard/trackball unit and an optional transmission unit which is installed outside the potentially hazardous area. The display unit is carried out in type of protection Powder Filling "q" to cover the power supply and in type of protection Intrinsic Safety "ia" for various circuits. The terminal box is in type of protection Increased Safety "e".

Type designation:

- ET - ##7*

#: one alphanumeric character, without relevance for explosion protection.

*: any alphanumeric or symbolic character, without relevance for explosion protection.

Subject and Type:

ET-4x7-aa-bb-cc-dd-ee-ff-gg-hh, ET-4x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-ii

ET-5x7-aa-bb-cc-dd-ee-ff, ET-5x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-ii

ET-577-aa-P2-bb-cc-dd-ee-ff-gg-hh-ii, ET-6x7-aa-bb-cc-dd-ee-ff-gg

Type ET-4x7-aa-bb-cc-dd-ee-ff-gg-hh:

4x7: 467 / 477 / 487

middle digit : display size

6 : 56 cm / 22" display

7 : 61 cm / 24" display

8 : 61 cm / 24"WU display

aa: Ethernet interface

bb: Display type

cc: Touch screen

dd: RAM

ee: Data memory

Director

Date: 2021-6-17

Valid until: 2026-6-16

Ex CQST

CHINA NATIONAL QUALITY SUPERVISION AND TEST CENTER FOR EXPLOSION PROTECTED ELECTRICAL PRODUCTS

Address: No.20 North Zhongjing Rd, Nanyang, Henan(473008), P.R.China

Tel: 0377-63258564 Fax: 0377-63208175 Web: www.china-ex.com

Note: This certificate is only valid for 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).

CNEX
国家防爆

Certificate number: CNEx21.1938X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

ff: Voltage supply
gg: Outdoor option
hh: Front design
Device variant:

Classification product key	Description
ET-4x7-**SX**-bb-cc-dd-ee-ff-gg-hh	Optical fiber Ethernet interface 1000Base-SX (Ex op is), multi-mode
ET-4x7-**TX**-bb-cc-dd-ee-ff-gg-hh	Copper Ethernet interface 10/100Base-TX (Ex e)
ET-4x7-aa-**TFT**-cc-dd-ee-ff-gg-hh	TFT display (standard)
ET-4x7-aa-bb-**T**-dd-ee-ff-gg-hh	Touch screen (membrane)
ET-4x7-aa-bb-**TG**-dd-ee-ff-gg-hh	Touch screen glass
ET-4x7-aa-bb-dd-ee-ff-gg-hh	No touch screen
ET-4x7-aa-bb-cc-**R1**-ee-ff-gg-hh	1 GB RAM
ET-4x7-aa-bb-cc-**R2**-ee-ff-gg-hh	2 GB RAM
ET-4x7-aa-bb-cc-dd-**4GB**-ff-gg-hh	4 GB Solid State Drive
ET-4x7-aa-bb-cc-dd-**16GB**-ff-gg-hh	16 GB Solid State Drive
ET-4x7-aa-bb-cc-dd-**128GBM**-ff-gg-hh	128 GB Solid State Drive MLC
ET-4x7-aa-bb-cc-dd-**128GBS**-ff-gg-hh	128 GB Solid State Drive SLC
ET-4x7-aa-bb-cc-dd-**100GB**-ff-gg-hh	100 GB hard disk (internal)
ET-4x7-aa-bb-cc-dd-ee-**AC**-gg-hh	Power supply 100 - 240 VAC, 50 - 60 Hz
ET-4x7-aa-bb-cc-dd-ee-**DC**-gg-hh	Voltage supply 24 VDC
ET-4x7-aa-bb-cc-dd-ee-ff-**O30**-hh	Outdoor installation -30 °C [-22 °F] *
ET-4x7-aa-bb-cc-dd-ee-ff-hh	No outdoor installation
ET-4x7-aa-bb-cc-dd-ee-ff-gg-**AL**	Aluminium front plate
ET-4x7-aa-bb-cc-dd-ee-ff-gg-**RM**	Rear mount module

* The O30 option is only available for AC devices !

Director

Date: 2021-6-17

Valid until: 2026-6-16

Ex CQST

CHINA NATIONAL QUALITY SUPERVISION AND TEST CENTER
FOR EXPLOSION PROTECTED ELECTRICAL PRODUCTS
Address: No.20 North Zhongjing Rd, Nanyang, Henan(473008), P.R.China
Tel: 0377-63258564 Fax: 0377-63208175 Web: www.china-ex.com

Note: This certificate is only valid for 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).

CNEX
国家防爆

Certificate number: CNEx21.1938X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Type: ET-4x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-ii
4x7: 467 / 477 / 487
middle digit : display size
6 : 56 cm / 22" display
7 : 61 cm / 24" display
8 : 61 cm / 24"WU display
aa: Ethernet interface
BT: Processor type (fixed to BT = Bay Trail)
bb: Display type
cc: Touch screen
dd: RAM
ee: Data memory
ff: Audio
gg: Voltage supply
hh: Outdoor option
ii: Front design
Device variant:

Classification product key	Description
ET-4x7-**SX**-BT-bb-cc-dd-ee-ff-gg-hh-ii	Optical fiber Ethernet interface 1000Base-SX(Ex op is), multi-mode Additional with 1x copper Ethernet interface TX up from HW-Rev. 01.03.02
ET-4x7-**LX**-BT-bb-cc-dd-ee-ff-gg-hh-ii	Optical fiber Ethernet interface 1000Base-LX (Ex op is), single mode
ET-4x7-**TX**-BT-bb-cc-dd-ee-ff-gg-hh-ii	Copper Ethernet interface 10/100Base-TX (Ex e)
ET-4x7-**2TX**-BT-bb-cc-dd-ee-ff-gg-hh-ii	2x Copper Ethernet interface 10/100Base-TX (Ex e)
ET-4x7-aa-BT-**TFT**-cc-dd-ee-ff-gg-hh-ii	TFT display (standard)
ET-4x7-aa-BT-bb-**T**-dd-ee-ff-gg-hh-ii	Touch screen (membrane)
ET-4x7-aa-BT-bb-**TG**-dd-ee-ff-gg-hh-ii	Touch screen glass
ET-4x7-aa-BT-bb-dd-ee-ff-gg-hh-ii	No touch screen
ET-4x7-aa-BT-bb-cc-**R3**-ee-ff-gg-hh-ii	4 GB RAM
ET-4x7-aa-BT-bb-cc-dd-**64GB**-ff-gg-hh-ii	64 GB Solid State Drive
ET-4x7-aa-BT-bb-cc-dd-**128GBM**-ff-gg-hh-ii	128 GB Solid State Drive MLC
ET-4x7-aa-BT-bb-cc-dd-ee-**SND**-gg-hh-ii	Audio amplifier (mono amplifier) 3.5 W
ET-4x7-aa-BT-bb-cc-dd-ee-gg-hh-ii	No audio amplifier

Director **Date:** 2021-6-17

Valid until: 2026-6-16

Ex CQST

CHINA NATIONAL QUALITY SUPERVISION AND TEST CENTER
FOR EXPLOSION PROTECTED ELECTRICAL PRODUCTS
Address: No.20 North Zhongjing Rd, Nanyang, Henan(473008), P.R.China
Tel: 0377-63258564 Fax: 0377-63208175 Web: www.china-ex.com

Note: This certificate is only valid for 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).

CNEX
国家防爆

Certificate number: CNEx21.1938X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

ET-4x7-aa-BT-bb-cc-dd-ee-ff-AC-hh-ii	Power supply 100 - 240 VAC, 50 - 60 Hz
ET-4x7-aa-BT-bb-cc-dd-ee-ff-DC-hh-ii	Voltage supply 24 VDC
ET-4x7-aa-BT-bb-cc-dd-ee-ff-gg-O30-ii	Outdoor installation -30℃ [-22°F] *
ET-4x7-aa-BT-bb-cc-dd-ee-ff-gg-ii	No outdoor installation
ET-4x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-AL	Aluminium front plate
ET-4x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-RM	Rear mount module

* The O30 option is only available for AC devices !

Type ET-5x7-aa-bb-cc-dd-ee-ff:
5x7: 567 / 577 / 587
middle digit : display size
6 : 56 cm / 22" display
7 : 61 cm / 24" display
8 : 61 cm / 24"WU display
aa: Ethernet interface
bb: Display type
cc: Touch screen
dd: Voltage supply
ee: Outdoor option
ff: Front design
Device variant:

Classification product key	Description
ET-5x7-**SX**-bb-cc-dd-ee-ff	Optical fiber Ethernet interface 1000Base-SX (Ex op is), multi-mode
ET-5x7-**TX**-bb-cc-dd-ee-ff	Copper Ethernet interface 10/100Base-TX (Ex e)
ET-5x7-aa-**TFT**-cc-dd-ee-ff	TFT display (standard)
ET-5x7-aa-bb-**T**-dd-ee-ff	Touch screen (membrane)
ET-5x7-aa-bb-**TG**-dd-ee-ff	Touch screen glass
ET-5x7-aa-bb-dd-ee-ff	No touch screen
ET-5x7-aa-bb-cc-**AC**-ee-ff	Power supply 100 - 240 VAC, 50 - 60 Hz
ET-5x7-aa-bb-cc-**DC**-ee-ff	Voltage supply 24 VDC
ET-5x7-aa-bb-cc-dd-**O30**-ff	Outdoor installation -30 °C [-22 °F] *

Director

Date: 2021-6-17

Valid until: 2026-6-16

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CNEX 国家防爆

Certificate number: CNEx21.1938X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

ET-5x7-aa-bb-cc-dd-ff	No outdoor installation
ET-5x7-aa-bb-cc-dd-ee-AL	Aluminium front plate
ET-5x7-aa-bb-cc-dd-ee-RM	Rear mount module

* The O30 option is only available for AC devices !

Type ET-5x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-ii

5x7: 567 / 577 / 587
middle digit : display size
6 : 56 cm / 22" display
7 : 61 cm / 24" display
8 : 61 cm / 24"WU display
aa: Ethernet interface
BT: Processor type (fixed to BT = Bay Trail)
bb: Display type
cc: Touch screen
dd: RAM
ee: Data memory
ff: Audio
gg: Voltage supply
hh: Outdoor option
ii: Front design
Device variant:

Classification product key	Description
ET-5x7-**SX**-BT-bb-cc-dd-ee-ff-gg-hh-ii	Optical fiber Ethernet interface 1000Base-SX (Ex op is), multi-mode Additional with 1x copper Ethernet interface TX up from HW-Rev. 01.03.02
ET-5x7-**LX**-BT-bb-cc-dd-ee-ff-gg-hh-ii	Optical fiber Ethernet interface 1000Base-LX (Ex op is), single mode
ET-5x7-**TX**-BT-bb-cc-dd-ee-ff-gg-hh-ii	Copper Ethernet interface 10/100Base-TX (Ex e)
ET-5x7-**2TX**-BT-bb-cc-dd-ee-ff-gg-hh-ii	2x Copper Ethernet interface 10/100Base-TX (Ex e)
ET-5x7-aa-BT-**TFT**-cc-dd-ee-ff-gg-hh-ii	TFT display (standard)
ET-5x7-aa-BT-bb-**T**-dd-ee-ff-gg-hh-ii	Touch screen (membrane)
ET-5x7-aa-BT-bb-**TG**-dd-ee-ff-gg-hh-ii	Touch screen glass
ET-5x7-aa-BT-bb-dd-ee-ff-gg-hh-ii	No touch screen
ET-5x7-aa-BT-bb-cc-**R3**-ee-ff-gg-hh-ii	4 GB RAM
ET-5x7-aa-BT-bb-cc-dd-**64GB**-ff-gg-hh-ii	64 GB Solid State Drive

Director **Date:** 2021-6-17

Valid until: 2026-6-16

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CERTIFICATE OF CONFORMITY

ET-5x7-aa-BT-bb-cc-dd-**128GB**-ff-gg-hh-ii	128 GB Solid State Drive
ET-5x7-aa-BT-bb-cc-dd-ee-**SND**-gg-hh-ii	Audio amplifier (mono amplifier) 3.5 W
ET-5x7-aa-BT-bb-cc-dd-ee-gg-hh-ii	No audio amplifier
ET-5x7-aa-BT-bb-cc-dd-ee-ff-**AC**-hh-ii	Power supply 100 - 240 VAC, 50 - 60 Hz
ET-5x7-aa-BT-bb-cc-dd-ee-ff-**DC**-hh-ii	Voltage supply 24 VDC
ET-5x7-aa-BT-bb-cc-dd-ee-ff-gg-**O30**-ii	Outdoor installation -30℃ [-22°F] *
ET-5x7-aa-BT-bb-cc-dd-ee-ff-gg-ii	No outdoor installation
ET-5x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-**AL**	Aluminium front plate
ET-5x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-**RM**	Rear mount module

* The O30 option is only available for AC devices !

Type ET-577-aa-P2-bb-cc-dd-ee-ff-gg-hh-ii
577: middle digit : display size
7 : 61 cm / 24" display
aa: Ethernet interface
P2: Processor type (P2 = AMD GX)
bb: Display type
cc: Touch screen
dd: RAM
ee: Data memory
ff: Audio (unavailable)
gg: Voltage supply
hh: Outdoor option (unavailable)
ii: Front design
Device variant:

Classification product key	Description
ET-577-**2TX**-P2-bb-cc-dd-ee-ff-gg-hh-ii	2x Copper Ethernet interface 10/100Base-TX (Ex e)
ET-577-**SX**-P2-bb-cc-dd-ee-ff-gg-hh-ii	Optical fiber Ethernet interface 1000Base-SX (Ex op is), multi-mode, additional 1x copper Ethernet interface 10/100/1000Base-TX
ET-577-aa-P2-**TFT**-cc-dd-ee-ff-gg-hh-ii	TFT display (standard)
ET-577-aa-P2-bb-**T**-dd-ee-ff-gg-hh-ii	Touch screen (membrane)
ET-577-aa-P2-bb-**TG**-dd-ee-ff-gg-hh-ii	Touch screen glass
ET-577-aa-P2-bb-dd-ee-ff-gg-hh-ii	No touch screen

Director **Date:** 2021-6-17

Valid until: 2026-6-16

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Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

ET-577-aa-P2-bb-cc-R3-ee-ff-gg-hh-ii	4 GB RAM
ET-577-aa-P2-bb-cc-dd-64GB-ff-gg-hh-ii	64 GB Solid State Drive
ET-577-aa-P2-bb-cc-dd-128GB-ff-gg-hh-ii	128 GB Solid State Drive
ET-577-aa-P2-bb-cc-dd-ee-ff-AC-hh-ii	Power supply 100 - 240 VAC, 50 - 60 Hz
ET-577-aa-P2-bb-cc-dd-ee-ff-DC-hh-ii	Voltage supply 24 VDC
ET-577-aa-P2-bb-cc-dd-ee-ff-gg-hh-AL	Aluminium front plate

Type ET-6x7-aa-bb-cc-dd-ee-ff-gg
6x7: 667 / 677 / 687
middle digit : display size
6 : 56 cm / 22" display
7 : 61 cm / 24" display
8 : 61 cm / 24"WU display
aa: Transfer technology
bb: Display type
cc: Touch screen
dd: Audio
ee: Voltage supply
ff: Outdoor option
gg: Front design
Device variant:

Classification product key	Description
ET-6x7-**DVI1-CAT**-bb-cc-dd-ee-ff-gg	DVI1 KVM, with direct copper connection, Gigabit (Ex e)
ET-6x7-**DVI1-MM**-bb-cc-dd-ee-ff-gg	DVI1 KVM, with direct optical fibre connection (Ex op is), multi-mode
ET-6x7-**DVI1-SM**-bb-cc-dd-ee-ff-gg	DVI1 KVM, with direct optical fibre connection (Ex op is), single mode
ET-667-**DVI2-CAT**-bb-cc-dd-ee-ff-gg	DVI2 ** KVM, with direct copper connection, Gigabit (Ex e)
ET-6x7-**DVI3-CAT**-bb-cc-dd-ee-ff-gg	DVI3 KVM, with direct copper connection, Gigabit (Ex e)
ET-6x7-**DVI3-MM-FO**-bb-cc-dd-ee-ff-gg	DVI3 KVM, with direct optical fibre connection (Ex op is), multi-mode
ET-6x7-**DVI3-SM-FO**-bb-cc-dd-ee-ff-gg	DVI3 KVM, with direct optical fibre connection (Ex op is), single mode
ET-6x7-aa-**TFT**-cc-dd-ee-ff-gg	TFT display (standard)
ET-6x7-aa-bb-**T**-dd-ee-ff-gg	Touch screen (membrane)

Director

Date: 2021-6-17

Valid until: 2026-6-16

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Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

ET-6x7-aa-bb-**TG**-dd-ee-ff-gg	Touch screen glass
ET-6x7-aa-bb-dd-ee-ff-gg	No touch screen
ET-6x7-aa-bb-cc-**SND**-ee-ff-gg	Audio amplifier (mono amplifier) 3.5 W
ET-6x7-aa-bb-cc-ee-ff-gg	No audio amplifier
ET-6x7-aa-bb-cc-dd-**AC**-ff-gg	Power supply 100 - 240 VAC, 50 - 60 Hz
ET-6x7-aa-bb-cc-dd-**DC**-ff-gg	Voltage supply 24 VDC
ET-6x7-aa-bb-cc-dd-ee-**O30**-gg	Outdoor installation -30 °C [-22 °F] *
ET-6x7-aa-bb-cc-dd-ee-gg	No outdoor installation
ET-6x7-aa-bb-cc-dd-ee-ff-**AL**	Aluminium front plate
ET-6x7-aa-bb-cc-dd-ee-ff-**RM**	Rear end module

* The O30 option is only available for AC devices !
** The DVI2 KVM solution is only available together with the ET-667 HMI device !

Parameters:
Electrical data:

"PWR" interface parameter for X10 (Exe):	
U	20~240V AC/DC
I	≤5A
P	≤150W
: Maximum r.m.s. a.c. voltage U_m	≤250V
"USB" interface parameter for X13 (Ex e):	
U	5V+10% AC/DC
Maximum r.m.s. a.c. or d.c. voltage U_m	≤250V
"12V" interface parameter for X14 (Ex e):	
U	12V+10% AC/DC
Maximum r.m.s. a.c. or d.c. voltage U_m	≤250V
"CAT7 1" interface parameter for X16 (Ex e):	
U	5V+10% AC/DC
Maximum r.m.s. a.c. or d.c. voltage U_m	≤250V
"SER" interface parameter for X97 (Ex e):	
U	15V+10% AC/DC
Maximum r.m.s. a.c. or d.c. voltage U_m	≤250V

Director **Date:** 2021-6-17

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CERTIFICATE OF CONFORMITY

"CAM" interface parameter for X101 (Ex e):	
U	5V+10% AC/DC
Maximum r.m.s. a.c. or d.c. voltage Um	≤250V
"AUD" interface parameter for X105 (Ex e):	
U	100V+10% AC/DC
Maximum r.m.s. a.c. or d.c. voltage Um	≤250V

Connector X11 (Ex ia) Keyboard:			
Uo	5.5VDC	Ui	5.5VDC
Io	309mA	Ii	3A
Po	629mW	Pi	2W
Co	50uF	Ci	negligible
Lo	40uH	Li	negligible

Connector X12 (Ex ia) Trackball:			
Uo	5.5VDC	Ui	5.5VDC
Io	309mA	Ii	3A
Po	629mW	Pi	2W
Co	50uF	Ci	negligible
Lo	40uH	Li	negligible

Connector X24 (Ex ia) USB1i:			
Uo	5.5VDC	Ui	5.5VDC
Io	309mA	Ii	3A
Po	629mW	Pi	2W
Co	50uF	Ci	negligible
Lo	40uH	Li	negligible

Director

Date: 2021-6-17

Valid until: 2026-6-16

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Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Connector X25 (Ex ia) USB2i:			
Uo	5.5VDC	Ui	5.5VDC
Io	309mA	Ii	3A
Po	629mW	Pi	2W
Co	50uF	Ci	negligible
Lo	40uH	Li	negligible

Only for ET-6x7*-MM* and type ET-6x7*-SM*:
External inherently safe optical interface:
"FO 1" interface parameter for X18 (Ex op is):

ET-6x7*-MM*	
Wavelength	850 nm
Radiant power	0.22 mW
max. radiant power	35 mW

ET-6x7*-SM*	
Wavelength	1310 nm
Radiant power	0.22 mW
max. radiant power	35 mW

Thermal Data: Ta = -30℃ ~ +60℃

Temperature class	T4
Max. surface temperature T with thermo fuse limited to 110 °C	

Degrees of protection: IP65

Ex marking: Ex e q [ia op is Ga] IIC T4 Gb/Ex tD [iaD op is] A21 IP65 T110℃

Specific Conditions Of Use:
- Along the intrinsically safe circuits between Display Unit and Pointing Device potential equalisation must exist.
- The evaluation and test of the optical radiation "op is" standard are not included in the scope of this product certification.
- The intrinsically safe circuit is grounded, and the installation should meet the relevant requirements of GB/T3836.15.

Director

Date: 2021-6-17

Valid until: 2026-6-16

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10.1.2 Chinese version

编号：CNEx21.1938X

CNEX 国家防爆

防爆合格证

制造单位	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 8, 50829 Koln, Germany
产品名称	防爆人机界面
型号规格	ET - ##7*
防爆标志	Ex e q [ia op is Ga] IIC T4 Gb/Ex tD [iaD op is] A21 IP65 T110℃
产品标准	——
总装图号	10410084 Rev a Display general view

经对上述产品图样及技术文件的审查和样品检验,确认符合下列标准：
GB3836.1-2010《爆炸性环境　第 1 部分：设备　通用要求》
GB3836.3-2010《爆炸性环境　第 3 部分：由增安型“e”保护的设备》
GB3836.4-2010《爆炸性环境　第 4 部分：由本质安全型“i”保护的设备》
GB/T3836.7-2017《爆炸性环境　第 7 部分：由充砂型“q”保护的设备》
GB12476.1-2013《可燃性粉尘环境用电气设备　第 1 部分：通用要求》
GB12476.4-2010《可燃性粉尘环境用电气设备　第 4 部分：本质安全型“iD”》
GB12476.5-2013《可燃性粉尘环境用电气设备　第 5 部分：外壳保护型“tD”》

记事:见附页（共 10 页）。

中心主任　　颁发日期　2021年6月17日

本证有效期　2021年6月17日至2026年6月16日

Ex CQST 国家防爆电气产品质量监督检验中心
南阳防爆电气研究所

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ATEX 认证

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IECEx TL国际实验室

美国能源部电动机效率实验室 (NVLAP)

国家安全生产检测检验机构

中国人民解放军军工产品检验机构

船用防爆电气产品检验实验室

国家中小型电机节能认证检验实验室

机械工业防爆电气产品质量监督检验中心

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IEC TC31技术委员会 中国办公室

中国电器工业协会防爆电机分会

中国电工技术学会防爆电气技术专业委员会

爆炸危险场所工程设备监理中心

CNEX 国家防爆

编号：CNEx21.1938X

防爆合格证 （附页）

共 10 页 第 1 页

本产品已取得 IECEx 认证，证书号：IECEx BVS 11.0075X，1 版，2019.01.21 颁发,报告号为：DE/BVS/ExTR11.0105/01，2019.01.08 颁发。

产品描述：

ET-##7 用于在危险区域操作、可视化和控制过程。该系统包含一个人机界面、一个键盘/轨迹球单元和一个安装在潜在危险区域外的可选传输单元。人机界面采用充砂型电源，电路由本质安全型"ia"保护，接线盒由增安型"e"保护。

型号名称：

- ET - ##7*

#： 一个字母数字字符，与防爆无关。

*： 任何字母数字或符号字符，与防爆无关。

型号命名：

ET-4x7-aa-bb-cc-dd-ee-ff-gg-hh，ET-4x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-ii，
ET-5x7-aa-bb-cc-dd-ee-ff，ET-5x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-ii，
ET-577-aa-P2-bb-cc-dd-ee-ff-gg-hh-ii，ET-6x7-aa-bb-cc-dd-ee-ff-gg

型号 ET-4x7-aa-bb-cc-dd-ee-ff-gg-hh：

4x7：467 / 477 / 487
- 中间数字：显示屏尺寸
  - 6：56 cm / 22" 显示屏
  - 7：61 cm / 24" 显示屏
  - 8：61 cm / 24"WU 显示屏

aa：以太网接口
bb：显示屏类型
cc：触摸屏
dd：RAM
ee：数据存储器
ff：电源
gg：户外选装件
hh：正面结构

型号：

产品型号	说明
ET-4x7-SX-bb-cc-dd-ee-ff-gg-hh	光纤以太网接口 1000Base-SX（Ex-op-is），多模
ET-4x7-TX-bb-cc-dd-ee-ff-gg-hh	铜以太网接口 10/100Base-TX (Ex e)

中心主任

颁发日期 2021年6月17日

本证有效期 2021年6月17日至2026年6月16日

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ATEX 认证

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IECEx TL国际实验室

美国能源部电动机效率实验室 (NVLAP)

国家安全生产检测检验机构

中国人民解放军军工产品检验机构

船用防爆电气产品检验实验室

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IEC TC31技术委员会 中国办公室

中国电器工业协会防爆电机分会

中国电工技术学会防爆电气技术专业委员会

爆炸危险场所工程设备监理中心

CNEX 国家防爆

编号：CNEx21.1938X

防爆合格证 （附页）

ET-4x7-aa-TFT-cc-dd-ee-ff-gg-hh	TFT 显示屏（标准）
ET-4x7-aa-bb-T-dd-ee-ff-gg-hh	触摸屏（薄膜）
ET-4x7-aa-bb-TG-dd-ee-ff-gg-hh	玻璃触摸屏
ET-4x7-aa-bb-dd-ee-ff-gg-hh	无触摸屏
ET-4x7-aa-bb-cc-R1-ee-ff-gg-hh	1 GB RAM
ET-4x7-aa-bb-cc-R2-ee-ff-gg-hh	2 GB RAM
ET-4x7-aa-bb-cc-dd-4GB-ff-gg-hh	4 GB 固态硬盘
ET-4x7-aa-bb-cc-dd-16GB-ff-gg-hh	16 GB 固态硬盘
ET-4x7-aa-bb-cc-dd-128GBM-ff-gg-hh	128 GB 固态硬盘 MLC
ET-4x7-aa-bb-cc-dd-128GBS-ff-gg-hh	128 GB 固态硬盘 SLC
ET-4x7-aa-bb-cc-dd-100GB-ff-gg-hh	100 GB 硬盘（内部）
ET-4x7-aa-bb-cc-dd-ee-AC-gg-hh	电源 100 ~ 240 VAC, 50 ~ 60 Hz
ET-4x7-aa-bb-cc-dd-ee-DC-gg-hh	电源 24 VDC
ET-4x7-aa-bb-cc-dd-ee-ff-O30-hh	户外安装 -30 °C [-22 °F] *
ET-4x7-aa-bb-cc-dd-ee-ff-hh	无户外安装
ET-4x7-aa-bb-cc-dd-ee-ff-gg-AL	铝制前面板
ET-4x7-aa-bb-cc-dd-ee-ff-gg-RM	后置模块

* O30 选装件仅适用于交流设备!

型号 ET-4x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-ii

4x7：467 / 477 / 487

中间数字：显示屏尺寸

6：56 cm / 22"显示屏

7：61 cm / 24"显示屏

8：61 cm / 24"WU 显示屏

aa：以太网接口

BT：处理器类型 (固定设置为 BT=间隔轨迹)

bb：显示器类型

cc：触摸屏

dd：RAM

ee：数据存储器

ff： 音频

gg：电源

hh：户外选装件

ii：正面结构

中心主任

颁发日期 2021年6月17日

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爆炸危险场所工程设备监理中心

CNEX 国家防爆

编号：CNEx21.1938X

防爆合格证 （附页）

共 10 页 第 3 页

型号：

产品型号	说明
ET-4x7-SX-BT-bb-cc-dd-ee-ff-gg-hh-ii	光纤以太网接口 1000Base-SX（Ex op is），多模 01.03.02 以上硬件版本还带有 1 个铜以太网接口 TX
ET-4x7-LX-BT-bb-cc-dd-ee-ff-gg-hh-ii	LWL 以太网接口 1000Base-LX (Ex op is)，单模
ET-4x7-TX-BT-bb-cc-dd-ee-ff-gg-hh-ii	铜以太网接口 10/100Base-TX (Ex e)
ET-4x7-2TX-BT-bb-cc-dd-ee-ff-gg-hh-ii	2 个铜以太网接口 10/100Base-TX (Ex e)
ET-4x7-aa-BT-TFT-cc-dd-ee-ff-gg-hh-ii	TFT 显示屏（标准）
ET-4x7-aa-BT-bb-T-dd-ee-ff-gg-hh-ii	触摸屏（薄膜）
ET-4x7-aa-BT-bb-TG-dd-ee-ff-gg-hh-ii	玻璃触摸屏
ET-4x7-aa-BT-bb-dd-ee-ff-gg-hh-ii	无触摸屏
ET-4x7-aa-BT-bb-cc-R3-ee-ff-gg-hh-ii	4 GB RAM
ET-4x7-aa-BT-bb-cc-dd-64GB-ff-gg-hh-ii	64 GB 固态硬盘
ET-4x7-aa-BT-bb-cc-dd-128GBM-ff-gg-hh-ii	128 GB 固态硬盘 MLC
ET-4x7-aa-BT-bb-cc-dd-ee-SND-gg-hh-ii	音频放大器（单声道放大器） 3.5 W
ET-4x7-aa-BT-bb-cc-dd-ee-gg-hh-ii	无音频放大器
ET-4x7-aa-BT-bb-cc-dd-ee-ff-AC-hh-ii	电源 100 ~ 240 VAC, 50 ~ 60 Hz
ET-4x7-aa-BT-bb-cc-dd-ee-ff-DC-hh-ii	电源 24 VDC
ET-4x7-aa-BT-bb-cc-dd-ee-ff-gg-O30-ii	户外安装 -30 °C [-22 °F] *
ET-4x7-aa-BT-bb-cc-dd-ee-ff-gg-ii	无户外安装
ET-4x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-AL	铝制前面板
ET-4x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-RM	后置模块

* O30 选装件仅适用于交流设备!

型号 **ET-5x7-aa-bb-cc-dd-ee-ff**：

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爆炸危险场所工程设备监理中心

编号：CNEx21.1938X

CNEX
国家防爆

防爆合格证 （附页）

5x7：567 / 577 / 587
中间数字：显示屏尺寸
6：56 cm / 22" 显示屏
7：61 cm / 24" 显示屏
8：61 cm / 24"WU 显示屏
aa：以太网接口
bb：显示屏类型
cc：触摸屏
dd：电源
ee：户外选装件
ff：正面结构

型号：

产品型号	说明
ET-5x7-SX-bb-cc-dd-ee-ff	光纤以太网接口 1000Base-SX (Ex op is)，多模
ET-5x7-TX-bb-cc-dd-ee-ff	铜以太网接口 10/100Base-TX (Ex e)
ET-5x7-aa-TFT-cc-dd-ee-ff	TFT 显示屏（标准）
ET-5x7-aa-bb-T-dd-ee-ff	触摸屏（薄膜）
ET-5x7-aa-bb-TG-dd-ee-ff	玻璃触摸屏
ET-5x7-aa-bb-dd-ee-ff	无触摸屏
ET-5x7-aa-bb-cc-AC-ee-ff	电源 100 - 240 VAC, 50 - 60 Hz
ET-5x7-aa-bb-cc-DC-ee-ff	电源 24 VDC
ET-5x7-aa-bb-cc-dd-O30-ff	户外安装 -30 °C [-22 °F] *
ET-5x7-aa-bb-cc-dd-ff	无户外安装
ET-5x7-aa-bb-cc-dd-ee-AL	铝制前面板
ET-5x7-aa-bb-cc-dd-ee-RM	后置模块

* O30 选装件仅适用于交流设备!

型号 **ET-5x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-ii**

5x7：567 / 577 / 587
中间数字：显示屏尺寸
6：56 cm / 22" 显示屏
7：61 cm / 24" 显示屏
8：61 cm / 24"WU 显示屏

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爆炸危险场所工程设备监理中心

编号：CNEx21.1938X

CNEX 国家防爆

防爆合格证 （附页）

aa：以太网接口
BT：处理器类型 (固定设置为 BT= Bay Trail)
bb：显示屏类型
cc：触摸屏
dd：RAM
ee：数据存储器
ff： 音频
gg：电源
hh：户外选装件
ii： 正面结构

型号：

产品型号	说明
ET-5x7-SX-BT-bb-cc-dd-ee-ff-gg-hh-ii	光纤以太网接口 1000Base-SX (Ex op is)，多模 01.03.02 以上硬件版本还带有 1 个铜以太网接口 TX
ET-5x7-LX-BT-bb-cc-dd-ee-ff-gg-hh-ii	光纤以太网接口 1000Base-LX (Ex op is)，单模
ET-5x7-TX-BT-bb-cc-dd-ee-ff-gg-hh-ii	铜以太网接口 10/100Base-TX (Ex e)
ET-5x7-2TX-BT-bb-cc-dd-ee-ff-gg-hh-ii	2 个铜以太网接口 10/100Base-TX (Ex e)
ET-5x7-aa-BT-TFT-cc-dd-ee-ff-gg-hh-ii	TFT 显示屏（标准）
ET-5x7-aa-BT-bb-T-dd-ee-ff-gg-hh-ii	触摸屏（薄膜）
ET-5x7-aa-BT-bb-TG-dd-ee-ff-gg-hh-ii	玻璃触摸屏
ET-5x7-aa-BT-bb-dd-ee-ff-gg-hh-ii	无触摸屏
ET-5x7-aa-BT-bb-cc-R3-ee-ff-gg-hh-ii	4 GB RAM
ET-5x7-aa-BT-bb-cc-dd-64GB-ff-gg-hh-ii	64 GB 固态硬盘
ET-5x7-aa-BT-bb-cc-dd-128GB-ff-gg-hh-ii	128 GB 固态硬盘
ET-5x7-aa-BT-bb-cc-dd-ee-SND-gg-hh-ii	音频放大器（单声道放大器）3.5 W
ET-5x7-aa-BT-bb-cc-dd-ee-gg-hh-ii	无音频放大器
ET-5x7-aa-BT-bb-cc-dd-ee-ff-AC-hh-ii	电源 100 - 240 VAC, 50 - 60 Hz
ET-5x7-aa-BT-bb-cc-dd-ee-ff-DC-hh-ii	电源 24 VDC

中心主任

颁发日期 2021年6月17日

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爆炸危险场所工程设备监理中心

编号：CNEx21.1938X

CNEX 国家防爆

防爆合格证 （附页）

ET-5x7-aa-BT-bb-cc-dd-ee-ff-gg-O30-ii	户外安装 -30 °C [-22 °F] *
ET-5x7-aa-BT-bb-cc-dd-ee-ff-gg-ii	无户外安装
ET-5x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-AL	铝制前面板
ET-5x7-aa-BT-bb-cc-dd-ee-ff-gg-hh-RM	后置模块

* O30 选装件仅适用于交流设备!

型号 ET-577-aa-P2-bb-cc-dd-ee-ff-gg-hh-ii

577：中间数字：显示屏尺寸
7：61 cm / 24" 显示屏
aa：以太网接口
P2：处理器类型(P2 = AMD GX)
bb：显示屏类型
cc：触摸屏
dd：RAM
ee：数据处理器
ff： 音频 (不适用)
gg：电源
hh：户外选装件 (不适用)
ii： 正面结构

型号：

产品型号	说明
ET-577-2TX-P2-bb-cc-dd-ee-ff-gg-hh-ii	2 个铜以太网接口 10/100Base-TX (Ex e)
ET-577-SX-P2-bb-cc-dd-ee-ff-gg-hh-ii	光纤以太网接口 1000Base-SX (Ex op is)，多模，另外有 1 个铜以太网接口 10/100/1000Base-TX
ET-577-aa-P2-TFT-cc-dd-ee-ff-gg-hh-ii	TFT 显示屏（标准）
ET-577-aa-P2-bb-T-dd-ee-ff-gg-hh-ii	触摸屏（薄膜）
ET-577-aa-P2-bb-TG-dd-ee-ff-gg-hh-ii	玻璃触摸屏
ET-577-aa-P2-bb-dd-ee-ff-gg-hh-ii	无触摸屏
ET-577-aa-P2-bb-cc-R3-ee-ff-gg-hh-ii	4 GB RAM
ET-577-aa-P2-bb-cc-dd-64GB-ff-gg-hh-ii	64 GB 固态硬盘
ET-577-aa-P2-bb-cc-dd-128GB-ff-gg-hh-ii	128 GB 固态硬盘
ET-577-aa-P2-bb-cc-dd-ee-ff-AC-hh-ii	电源 100 - 240 VAC, 50 - 60 Hz
ET-577-aa-P2-bb-cc-dd-ee-ff-DC-hh-ii	电源 24 VDC
ET-577-aa-P2-bb-cc-dd-ee-ff-gg-hh-AL	铝制前面板

中心主任

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爆炸危险场所工程设备监理中心

CNEX
国家防爆

编号：CNEx21.1938X

防爆合格证 （附页）

共 10 页 第 7 页

型号 **ET-6x7-aa-bb-cc-dd-ee-ff-gg**

6x7：667 / 677 / 687
中间数字：显示屏尺寸
6：56 cm / 22" 显示屏
7：61 cm / 24" 显示屏
8：61 cm / 24"WU 显示屏
aa：传输技术
bb：显示屏类型
cc：触摸屏
dd：音频
ee：电源
ff：户外选装件
gg：正面结构

型号：

产品型号	说明
ET-6x7-DVI1-CAT-bb-cc-dd-ee-ff-gg	DVI1 KVM，铜连接，千兆位 (Ex e)
ET-6x7-DVI1-MM-bb-cc-dd-ee-ff-gg	DVI1 KVM，光纤连接(Ex op is)，多模
ET-6x7-DVI1-SM-bb-cc-dd-ee-ff-gg	DVI1 KVM，光纤连接 (Ex op is)，单模
ET-667-DVI2-CAT-bb-cc-dd-ee-ff-gg	DVI2 ** KVM，铜连接，千兆位 (Ex e)
ET-6x7-DVI3-CAT-bb-cc-dd-ee-ff-gg	DVI3 KVM，铜连接，千兆位 (Ex e)
ET-6x7-DVI3-MM-FO-bb-cc-dd-ee-ff-gg	DVI3 KVM，光纤连接 (Ex op is)，多模
ET-6x7-DVI3-SM-FO-bb-cc-dd-ee-ff-gg	DVI3 KVM，光纤连接 (Ex op is)， 单模
ET-6x7-aa-TFT-cc-dd-ee-ff-gg	TFT 显示屏（标准）
ET-6x7-aa-bb-T-dd-ee-ff-gg	触摸屏（薄膜）
ET-6x7-aa-bb-TG-dd-ee-ff-gg	玻璃触摸屏
ET-6x7-aa-bb-dd-ee-ff-gg	无触摸屏
ET-6x7-aa-bb-cc-SND-ee-ff-gg	音频放大器（单声道放大器）3.5 W
ET-6x7-aa-bb-cc-ee-ff-gg	无音频放大器
ET-6x7-aa-bb-cc-dd-AC-ff-gg	电源 100 - 240 VAC, 50 - 60 Hz
ET-6x7-aa-bb-cc-dd-DC-ff-gg	电源 24 VDC

中心主任

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防爆合格证 （附页）

ET-6x7-aa-bb-cc-dd-ee-O30-gg	户外安装 -30 °C [-22 °F] *
ET-6x7-aa-bb-cc-dd-ee-gg	无户外安装
ET-6x7-aa-bb-cc-dd-ee-ff-AL	铝制前面板
ET-6x7-aa-bb-cc-dd-ee-ff-RM	后置模块

* O30 选装件仅适用于交流设备!

** DVI2 KVM 解决方案仅可与 ET-667 HMI 设备一起使用!

参数：

电气参数：

X10（Exe）的“PWR”接口参数：	
U	20~240V AC/DC
I	≤5A
P	≤150W
最大 r.m.s a.c 电压 Um	≤250V
X13（Exe）的“ USB”接口参数：	
U	5V+10% AC/DC
最大 r.m.s. a.c.或 d.c.电压 Um	≤250V
X14（Exe）的“ 12V”接口参数：	
U	12V+10% AC/DC
最大 r.m.s. a.c.或 d.c.电压 Um	≤250V
X16（Exe）的“ CAT7 1”接口参数：	
U	5V+10% AC/DC
最大 r.m.s. a.c.或 d.c.电压 Um	≤250V
X97（Exe）的“ SER”接口参数：	
U	15V+10% AC/DC
最大 r.m.s. a.c.或 d.c.电压 Um	≤250V
X101（Exe）的“ CAM”接口参数：	
U	5V+10% AC/DC
最大 r.m.s. a.c.或 d.c.电压 Um	≤250V
X105（Exe）的“ AUD”接口参数：	
U	100V+10% AC/DC
最大 r.m.s. a.c.或 d.c.电压 Um	≤250V

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防爆合格证 （附页）

连接器 X11（Ex ia）键盘：			
U_o	5.5VDC	U_i	5.5VDC
I_o	309mA	I_i	3A
P_o	629mW	P_i	2W
C_o	50uF	C_i	可忽略
L_o	40uH	L_i	可忽略

连接器 X12（Ex ia）轨迹球：			
U_o	5.5VDC	U_i	5.5VDC
I_o	309mA	I_i	3A
P_o	629mW	P_i	2W
C_o	50uF	C_i	可忽略
L_o	40uH	L_i	可忽略

连接器 X24 (Ex ia) USB1i：			
U_o	5.5VDC	U_i	5.5VDC
I_o	309mA	I_i	3A
P_o	629mW	P_i	2W
C_o	50uF	C_i	可忽略
L_o	40uH	L_i	可忽略

连接器 X25（Ex ia）USB2i：			
U_o	5.5VDC	U_i	5.5VDC
I_o	309mA	I_i	3A
P_o	629mW	P_i	2W
C_o	50uF	C_i	可忽略
L_o	40uH	L_i	可忽略

仅用于 ET-6x7*-MM*和 ET-6x7*-SM*型号：

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编号：CNEx21.1938X

防爆合格证 （附页）

外部本安光纤接口：

X18 的“FO 1”接口参数（Ex op is）：

ET-6x7*-MM*	
波长	850 nm
辐射功率	0.22 mW
最大辐射功率	35 mW

ET-6x7*-SM*	
波长	1310 nm
辐射功率	0.22 mW
最大辐射功率	35 mW

热参数：Ta = -30℃ ~ +60℃

温度组别	T4
带有热熔断器的最高表面温度 T 限制在 110℃	

外壳防护等级：IP65

防爆标志：Ex e q [ia op is Ga] IIC T4 Gb/Ex tD [iaD op is] A21 IP65 T110℃

安全使用条件：

- 人机界面和指点设备之间的本安电路必须等电位连接。
- 本产品认证不包括对光辐射“op is”标准的评价和试验。
- 本安电路接地，安装时应符合 GB/T3836.15 相关要求。

中心主任

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10.2 CNEX certificate KBDi-USB

10.2.1 English version

Certificate number: CNEx21.1939X

CNEX 国家防爆

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Manufacturer	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 8, 50829 Koln, Germany
Product	Keyboard and pointing device
Type	KBDi-USB-TB50*, KBDi-USB-M*, KBDi-USB-P*, KBDi-USB-J*
Marking	Ex ia IIC T4 Gb/Ex iaD 21 T135°C
Standard(s)	——
Drawing No.	10420013 Rev_ General overview of KTU Keyboard Trackball-50 Unit, 10420014 Rev_ General overview of KMU Keyboard Mouse Unit, 10420015 Rev_ General overview of KPU Keyboard Pad Unit, 10420016 Rev_ General overview of KJU Keyboard Joystick Unit

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 3836.4-2010	Explosive atmospheres - Part 4:Equipment protection by intrinsic safety "i"
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"

Note:

See Annex (4 page in total).

Director

Date: 2021-6-17

Valid until: 2026-6-16

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CNEX
国家防爆

Certificate number: CNEx21.1939X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

This product has been certified, under certificate number IECEx BVS 11.0075X, issue 1, dated 2019-01-21 and Test report DE/BVS/ExTR11.0105/01 dated 2019.01.08.

Product Description:

The keyboard/ pointing device unit is designed to be connected to intrinsically safe interfaces. The keyboard- and the pointing device electronics are separated inside the keyboard/ pointing device unit and are separately connected via pre mounted connection cables.

Type designation:

- KBDi-USB-TB50*, KBDi-USB-M*, KBDi-USB-P*, KBDi-USB-J*

* = alphanumeric or symbolic characters without relevance to explosion protection.

Type code:

Type	KBDi	USB	aa	bb
		Interface	Pointer device	Language layout

Product type:

Product key structure	Description
KBDi-USB-**TB50**-bb	Keyboard with integrated trackball
KBDi-USB-**TB50-VA**-bb	Keyboard with integrated stainless steel trackball
KBDi-USB-**M**-bb	Keyboard with integrated mouse
KBDi-USB-**P**-bb	Keyboard with integrated touch pad
KBDi-USB-**J**-bb	Keyboard with integrated joystick
KBDi-USB-aa-**DE**	Language: German (QWERTZ)
KBDi-USB-aa-**US**	Language: American (QWERTY)
KBDi-USB-aa-**FR**	Language: French (AZERTY)
KBDi-USB-aa-**FR-BE**	Language: French, Belgian version (AZERTY)
KBDi-USB-aa-**CH**	Language: German, Swiss layout
KBDi-USB-aa-**ES**	Language: Spanish
KBDi-USB-aa-**CN**	Language: Chinese

Director

Date: 2021-6-17

Valid until: 2026-6-16

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Certificate number: CNEx21.1939X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Parameters
Electrical data:

Keyboard Trackball Unit type KBDi-USB-TB50*:

Keyboard X72 (Ex ia):	
Voltage U_i	5.5VDC
Current I_i	1A
Power P_i	650mW
Effective internal capacitance C_i	20µF
Effective internal inductance L_i	negligible

Trackball X73 (Ex ia):	
Voltage U_i	5.5VDC
Current I_i	1A
Power P_i	650mW
Effective internal capacitance C_i	20µF
Effective internal inductance L_i	negligible

Keyboard Mouse Unit type KBDi-USB-M*:

Keyboard X72 (Ex ia):	
Voltage U_i	5.5VDC
Current I_i	1A
Power P_i	650mW
Effective internal capacitance C_i	20µF
Effective internal inductance L_i	negligible

Mouse Interface (X94) Ex ia:	
Voltage U_i	5.5VDC
Current I_i	1A
Power P_i	650mW
Effective internal capacitance C_i	20µF
Effective internal inductance L_i	negligible

Director **Date:** 2021-6-17

Valid until: 2026-6-16

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CNEX 国家防爆

Certificate number: CNEx21.1939X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Keyboard Pad Unit type KBDi-USB-P*:

Keyboard Interface(X72) Ex ia:	
Voltage U_i	5.5VDC
Current I_i	1A
Power P_i	650mW
Effective internal capacitance C_i	20μF
Effective internal inductance L_i	negligible

Pad Interface (X95) Ex ia:	
Voltage U_i	5.5VDC
Current I_i	1A
Power P_i	650mW
Effective internal capacitance C_i	20μF
Effective internal inductance L_i	negligible

Keyboard Joystick Unit type KBDi-USB-J*:

Keybord Interface(X72) Ex ia:	
Voltage U_i	5.5VDC
Current I_i	1A
Power P_i	650mW
Effective internal capacitance C_i	20μF
Effective internal inductance L_i	negligible

Joystick Interface (X96) Ex ia:	
Voltage U_i	5.5VDC
Current I_i	1A
Power P_i	650mW
Effective internal capacitance C_i	40μF
Effective internal inductance L_i	negligible

Director

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CNEX
国家防爆

Certificate number: CNEx21.1939X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Thermal Data:

Permitted ambient temperature rate: Ta = -30℃ ~ +60℃

Temperature class	T4
Max. surface temperature limited to 135 °C	

Degrees of protection : IP20

Ex marking: Ex ia IIC T4 Gb/Ex iaD 21 T135℃

Specific Conditions Of Use:

- Along the intrinsically safe circuits between Display Unit and Pointing Device potential equalisation must exist.

- The Pointing Device shall not be used in areas where charging mechanism creating propagating brush discharges have to be regarded.

- The intrinsically safe circuit is grounded, and the installation should meet the relevant requirements of GB/T3836.15.

- When used in dust-explosive areas, the device has to be installed in a suitable enclosure to obtain at least IP64 in accordance with GB12476.1.

Director

Date: 2021-6-17

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10.2.2 Chinese version

编号：CNEx21.1939X

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国家防爆

防爆合格证

制造单位	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 8, 50829 Koln, Germany
产品名称	防爆键盘和指点设备
型号规格	KBDi-USB-TB50*, KBDi-USB-M*, KBDi-USB-P*, KBDi-USB-J*
防爆标志	Ex ia IIC T4 Gb/Ex iaD 21 T135℃
产品标准	——
总装图号	10420013 Rev_ General overview of KTU Keyboard Trackball-50 Unit, 10420014 Rev_ General overview of KMU Keyboard Mouse Unit, 10420015 Rev_ General overview of KPU Keyboard Pad Unit, 10420016 Rev_ General overview of KJU Keyboard Joystick Unit

经对上述产品图样及技术文件的审查和样品检验,确认符合下列标准：
GB3836.1-2010《爆炸性环境　第 1 部分：设备　通用要求》
GB3836.4-2010《爆炸性环境　第 4 部分：由本质安全型“i”保护的设备》
GB12476.1-2013《可燃性粉尘环境用电气设备　第 1 部分：通用要求》
GB12476.4-2010《可燃性粉尘环境用电气设备　第 4 部分：本质安全型“iD”》

记事:见附页（共 4 页）。

中心主任

颁发日期　2021 年 6 月 17 日

本证有效期　2021 年 6 月 17 日至 2026 年 6 月 16 日

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爆炸危险场所工程设备监理中心

CNEX 国家防爆

编号：CNEx21.1939X

防爆合格证 （附页）

共 4 页 第 1 页

本产品已取得 IECEx 认证，证书号：IECEx BVS 11.0075X，1 版，2019.01.21 颁发,报告号为：DE/BVS/ExTR11.0105/01，2019.01.08 颁发。

产品描述：
键盘/指点设备单元设计为连接到本安接口。键盘和指点设备的电子设备在键盘/指点设备单元内分开，并通过预先安装的连接电缆分别连接。

型号名称：
- KBDi-USB-TB50*, KBDi-USB-M*, KBDi-USB-P*, KBDi-USB-J*
* =任何数字或字母，与防爆无关。

型号命名：

型号	KBDi	USB	aa	bb
		接口	指点设备	语言布局

产品型号：

产品主要结构	描述
KBDi-USB-TB50-bb	带集成轨迹球的键盘
KBDi-USB-TB50-VA-bb	带有集成不锈钢轨迹球的键盘
KBDi-USB-M-bb	带有集成鼠标的键盘
KBDi-USB-P-bb	带有集成触摸板的键盘
KBDi-USB-J-bb	带有集成操纵杆的键盘
KBDi-USB-aa-DE	语言：德语（QWERTZ）
KBDi-USB-aa-US	语言：美语（QWERTY）
KBDi-USB-aa-FR	语言：法语（AZERTY）
KBDi-USB-aa-FR-BE	语言：法语、比利时语（AZERTY）
KBDi-USB-aa-CH	语言：德语、瑞士语
KBDi-USB-aa-ES	语言：西班牙语
KBDi-USB-aa-CN	语言：中文

中心主任

颁发日期 2021年6月17日

本证有效期 2021年6月17日至2026年6月16日

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爆炸危险场所工程设备监理中心

编号：CNEx21.1939X

CNEX 国家防爆

防爆合格证 （附页）

共 4 页 第 2 页

参数：

电气参数：

键盘轨迹球单元型号 KBDi-USB-TB50 *：

键盘 X72 (Ex ia)：	
电压 U_i	5.5VDC
电流 I_i	1A
功率 P_i	650mW
有效内部电容 C_i	20μF
有效内部电感 L_i	可忽略

轨迹球 X73 (Ex ia)：	
电压 U_i	5.5VDC
电流 I_i	1A
功率 P_i	650mW
有效内部电容 C_i	20μF
有效内部电感 L_i	可忽略

键盘鼠标单元型号 KBDi-USB-M *：

键盘 X72 (Ex ia)：	
电压 U_i	5.5VDC
电流 I_i	1A
功率 P_i	650mW
有效内部电容 C_i	20μF
有效内部电感 L_i	可忽略

中心主任

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编号：CNEx21.1939X

防爆合格证 （附页）

鼠标接口（X94）Ex ia：	
电压 U_i	5.5VDC
电流 I_i	1A
功率 P_i	650mW
有效内部电容 C_i	20μF
有效内部电感 L_i	可忽略

键盘触摸板单元型号 KBDi-USB-P *：

键盘接口（X72）Ex ia：	
电压 U_i	5.5VDC
电流 I_i	1A
功率 P_i	650mW
有效内部电容 C_i	20μF
有效内部电感 L_i	可忽略

触摸板接口（X95）Ex ia：	
电压 U_i	5.5VDC
电流 I_i	1A
功率 P_i	650mW
有效内部电容 C_i	20μF
有效内部电感 L_i	可忽略

键盘操纵杆单元型号 KBDi-USB-J*：

键盘接口（X72）Ex ia：	
电压 U_i	5.5VDC
电流 I_i	1A
功率 P_i	650mW
有效内部电容 C_i	20μF
有效内部电感 L_i	可忽略

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CNEX 国家防爆

编号：CNEx21.1939X

防爆合格证 （附页）

操纵杆接口（X96）Ex ia：	
电压 U_i	5.5VDC
电流 I_i	1A
功率 P_i	650mW
有效内部电容 C_i	40μF
有效内部电感 L_i	可忽略

热参数：

允许的环境温度：Ta = -30℃ ~ +60℃

温度组别	T4
最高表面温度限制为 135℃	

防护等级：IP20

防爆标志：Ex ia IIC T4 Gb/Ex iaD 21 T135℃

安全使用条件：

- 人机界面和指点设备之间的本安电路必须等电位连接。
- 在可能产生传播型刷型放电的区域，不得使用指点设备。
- 安装时本安电路接地应符合 GB/T3836.15 相关要求。
- 用于爆炸性粉尘环境，必须将设备安装在最低防护等级为 IP64（GB12476.1）的外壳中。

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10.3 CNEX certificate KVM units

10.3.1 English version

Certificate number: CNEx21.1940X

CNEX
国家防爆

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Manufacturer	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 8, 50829 Koln, Germany
Product	Transmission Unit
Type	KVM-*-MM* or KVM-*-SM*
Marking	[Ex op is Ga] IIC/[Ex op is Da] IIIB
Standard(s)	——
Drawing No.	10440012 Rev_ FO Mounting transmission unit

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

IEC 60079-0:2017	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-28:2015	Explosive atmospheres - Part 28:Protection of equipment and transmission systems using optical radiation

Note:

See Annex (2 page in total).

Director **Date:** 2021-6-17

Valid until: 2026-6-16

Ex CQST

CHINA NATIONAL QUALITY SUPERVISION AND TEST CENTER FOR EXPLOSION PROTECTED ELECTRICAL PRODUCTS

Address: No.20 North Zhongjing Rd, Nanyang, Henan(473008), P.R.China

Tel: 0377-63258564 Fax: 0377-63208175 Web: www.china-ex.com

Note: This certificate is only valid for 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). 登录网站 输入数码 查询防伪 2987 7359 4272 3983

CNEX
国家防爆

Certificate number: CNEx21.1940X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

This product has been certified, under certificate number IECEx BVS 11.0075X, issue 1, dated 2019-01-21 and Test report DE/BVS/ExTR11.0105/01 dated 2019.01.08.

Product Description:

The transmission unit covers a fibre optic transceiver and is mounted outside the hazardous area.

Type designation:

- KVM-*-MM* or KVM-*-SM*

*: any alphanumeric or symbolic character, without relevance for explosion protection.

Type	Description
KVM-DVI1-MM	KVM box with DVI1 transfer technology direct optical fibre connection, multi-mode
KVM-DVI1-SM	KVM box with DVI1 transfer technology direct optical fibre connection, single-mode
KVM-DVI3-MM-FO	KVM box with DVI3 transfer technology direct optical fibre connection, multi-mode
KVM-DVI3-SM-FO	KVM box with DVI3 transfer technology direct optical fibre connection, single-mode
KVM-DVI3-RU-MM-FO	KVM box with DVI3 transfer technology Non-Ex receiving unit direct optical fibre connection, multi-mode
KVM-DVI3-RU-SM-FO	KVM box with DVI3 transfer technology Non-Ex receiving unit direct optical fibre connection, single-mode

Interface parameter of Transmission unit type KVM-*-MM* or KVM-*-SM* :

Input	
Maximum r.m.s. a.c. voltage U_m	≦250 VAC

Output for the Transmission unit type KVM-*-MM* or KVM-*-SM*

F01 parameter for X70 (Ex op is):

Transmission unit type KVM-*-MM*	
Wavelength	850 nm
Nominal optical radiated power	0.22 mW
Max. optical radiated power under fault conditions	35 mW

Director

Date: 2021-6-17

Valid until: 2026-6-16

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CNEX
国家防爆

Certificate number: CNEx21.1940X

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Transmission unit type KVM-*-SM*	
Wavelength	1310 nm
Nominal optical radiated power	0.22 mW
Max. optical radiated power under fault conditions	35 mW

Thermal Data: Ta = -30°C ~ +60°C

Temperature class	T4

Specific Conditions Of Use:

- Operate the device only if it is clean and undamaged. If the device is in any way damaged, do not touch it to avoid injury. In the case of any damage that may compromise ingress protection (e.g. cracks, holes or broken components) the device must be taken out of commission immediately. Before the device is recommissioned the damaged components must be replaced.

Director

Date: 2021-6-17

Valid until: 2026-6-16

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10.3.2 Chinese version

编号：CNEx21.1940X

CNEX
国家防爆

防爆合格证

制造单位	R. STAHL HMI SYSTEMS GmbH Adolf-Grimme-Allee 8, 50829 Koln, Germany
产品名称	传输单元
型号规格	KVM-*-MM*或 KVM-*-SM*
防爆标志	[Ex op is Ga] IIC/[Ex op is Da] IIIB
产品标准	——
总装图号	10440012 Rev_ FO Mounting transmission unit

经对上述产品图样及技术文件的审查和样品检验,确认符合下列标准：
IEC 60079-0:2017《爆炸性环境　第 0 部分：设备　通用要求》
IEC 60079-28:2015《爆炸性环境　第 28 部分：光辐射设备和传输系统的保护措施》

记事:见附页（共 2 页）。

中心主任

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本证有效期　2021年6月17日至2026年6月16日

Ex CQST 国家防爆电气产品质量监督检验中心
南阳防爆电气研究所

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南阳防爆电气研究所有限公司

强制性认证

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南阳防爆电气研究所国际认证中心（CNEX-GLOBAL B.V.）

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国家安全生产检测检验机构

中国人民解放军军工产品检验机构

船用防爆电气产品检验实验室

国家中小型电机节能认证检验实验室

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中国电器工业协会防爆电机分会

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爆炸危险场所工程设备监理中心

CNEX 国家防爆

编号：CNEx21.1940X

防爆合格证 （附页）

共 2 页 第 1 页

本产品已取得 IECEx 认证，证书号：IECEx BVS 11.0075X，1 版，2019.01.21 颁发,报告号为：DE/BVS/ExTR11.0105/01，2019.01.08 颁发。

产品描述：
传输单元包括一个光纤收发器，安装在危险区域外。

型号名称：
- KVM-*-MM* 或 KVM-*-SM*
*：任何字母数字或符号字符，与防爆无关。

型号	描述
KVM-DVI1-MM	KVM 盒采用 DVI1 传输技术直接光纤连接，多模
KVM-DVI1-SM	KVM 盒采用 DVI1 传输技术直接光纤连接，单模
KVM-DVI3-MM-FO	KVM 盒采用 DVI3 传输技术直接光纤连接，多模
KVM-DVI3-SM-FO	KVM 盒采用 DVI3 传输技术直接光纤连接，单模
KVM-DVI3-RU-MM-FO	KVM 盒采用 DVI3 传输技术非 Ex 接收单元直接光纤连接，多模
KVM-DVI3-RU-SM-FO	KVM 盒采用 DVI3 传输技术非 Ex 接收单元直接光纤连接，单模

传输单元型号 KVM-*-MM* 或 KVM-*-SM* 的接口参数：

输入	
最大 r.m.s. a.c. 电压 U_m	≦250 VAC

传输单元型号 KVM-*-MM* 或 KVM-*-SM* 的输出：
X70 的 F01 参数 (Ex op is):

传输单元型号 KVM-*-MM*	
波长	850 nm
辐射功率	0.22 mW
最大辐射功率	35 mW

中心主任

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CNEX 国家防爆

编号：CNEx21.1940X

防爆合格证 （附页）

传输单元型号 KVM-*-SM*	
波长	1310 nm
辐射功率	0.22 mW
最大辐射功率	35 mW

热参数: Ta = -30°C ~ +60°C

温度等级	T4

安全使用条件：无

- 仅在设备清洁且未损坏的情况下操作设备。如果设备有任何损坏，请勿触摸，以免受伤。如果发生任何可能危及防护等级的损坏（如裂缝、孔洞或损坏的部件），必须立即停止使用设备。在重新调试设备之前，必须更换损坏的部件。

中心主任

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11 Release Notes

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

Version 01.03.11

- Renew picture cover
- Correction of phone and fax no.
- Correction of certification designation KGS for Korea -> into KCS
- Addition of BIS certification for ET-577-* devices
- Formal changes

Version 01.03.12

- Removing previous release notes
- Addition of BIS certification for ET-477-* devices
- Changing DNV / GL -> into DNV
- Changing HW-Ref at cover for all devices
- Correction of r-stahl link
- Changing "R. STAHL HMI Systems GmbH's website" into "R. STAHL's website" in "Preface"
- Formal changes

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