



Operating Instructions

Remote HMI ET-5x6 / MT-5x6

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1 Preface

These Operating Instructions contains the relevant information about explosion protection of the Remote HMI operator interfaces. Please refer to the additional documentation such as the EC type examination certificate or the manual for further information concerning connections and installation.

As a first, these operating instructions cover both the ET-5x6 and MT-5x6 models of the Remote HMI series. Any differences between the two product ranges will be explicitly mentioned and dealt with. As a rule, though, the information contained in these operating instructions applies to all models of the Remote HMI series.

 For the correct operation of all associated components please note, in addition to these operating instructions, all other operating instructions enclosed in this delivery as well as the operating instructions of the additional equipment to be connected.

 Please also note that all certificates of the operator interfaces can be found in a separate document !

2 Explosion protection issues

2.1 Device function



The ET/MT-536 (38 cm (15") display) and ET/MT-556 (48 cm (19") display) operator interfaces are explosion-proof equipment for installation in hazardous areas. Whilst the ET-5x6 devices can be installed in zones 1, 2, 21 and 22 according to ATEX directive 94/9/EC, the MT-5x6 devices are suitable for installation in zones 2 and 22 and in industrial areas.

The ET/MT-5x6 operator interfaces are remote stations used for operation and visualization, where the PC that is operated is located in the safe area. This PC is connected to the KVM box (5x6-KVM-digital), which in turn is connected to the remote station via an Ethernet connection.

The Remote HMI system supports both modern technologies such as DVI and USB and older technologies such as VGA and PS/2.

Using the digital Ethernet technology for data transfer between the KVM box and the remote system means that the system can either be installed as stand-alone equipment or that it can be integrated into modern systems.

2.2 Technical Data

Illustration		
Version	ET-536/MT-536	ET-556/MT-556
Display	Version: TFT-Color, 262144 colors	
Size	38 cm (15")	48 cm (19")
Resolution	XGA 1024 x 768	SXGA 1280 x 1024 Pixel
Backlight	CFL Backlight	
Service life of backlight	50,000 h at 25°C	
Brightness normal/ High-Brightness	250 cd/m ² / 600 cd/m ²	350 cd/m ² / -
Operation	8-wire touch screen	
Touch Screen analogue resistive	8-wire touch screen	
Keyboard	8 Funktion keys, Polyester membrane on Aluminium plate, > 1 million actions	
External keyboard	Optional: 105 keys or 107 keys with integrated trackball/joystick	
Power supply	directly in integrated Ex-e terminal box	
Voltage	24 VDC (20.4 VDC up to 28.8 VDC)	
Operating voltage (max.) Um	For ET-5x6: Um = 30 VDC For MT-5x6: Um = 30 V with connected circuits in zone 1 (used as associated equipment)	
Power consumption	max. 1.9 A	max. 2.1 A
Connections	Via plug-in screw terminals, 2.5 mm ² green	
Interfaces	Alternatively Tx or Fx	
Ethernet	Alternatively Tx or Fx	
Copper (Tx)	10/100BaseTx, 10/100 Mbit, increased safty (Ex-e)	
Optical fiber (Fx)	100BaseFx, 100 Mbit, inherently safe (Ex op is)	
Cable type optical fiber	Multimode optical fiber cable with 62.5 µm core diameter and 125 µm outer diameter	
USB	ET-5x6: 2x Ex-e; 2x Ex-i MT-5x6: 2x Ex-nA; 2x Ex-i (or Ex-nL)	
Serial (COM1/COM2)	2x RS-232 or RS-422/485	
PS/2	For external keyboard, mouse, trackball, joystick (ET-5x6: Ex-i, MT-5x6: Ex-i or Ex-nL)	
RSi or WCRI	Alternatively to COM2: Optional module for reader unit as Barcodescanner, Wiegand- or Proximityreader	
Housing	Stainless steel	
Front plate	Polyester membrane at seawaterresistant Aluminium plate, with touch and safety glass Optional: Stainless steel (SS 316) at seawaterresistant Aluminium plate	
Protection type	IP66 (according to EN 60529)	
Environmental conditions		
Temperature range		
Cold start temperature	- 10°C ... + 50°C	
During operation	- 20°C ... + 50°C	
Operating with heater *	- 30°C ... + 50°C	
Operating with heater *, housing insulation and front cover	- 40°C ... + 50°C	
Storage temperature	- 20°C ... + 60°C	
* Comment	The used heater must be construed in the way, that inside of the enclosure of the operator interface the temperature will NOT fall below -20°C (-30°C only front plate) !	
Relative humidity	90% at 40 °C, without condensation	
Vibration		
Operation	3 to 22Hz: 1mm 22 to 500Hz: 9.8m/s ² = 1g	
Transport	3 to 9Hz: 3.5mm 9 to 500Hz: 9.8m/s ² = 1g	
Shock loading		
Operation	150m/s ² = ca. 15g / 11ms	
Transport	250m/s ² = ca. 25g / 6ms	
Dimensions [mm]		
Front (w x h)	440 x 340	535 x 425
Cut-out (w x h) (+/- 0.5)	427.5 x 327.5	522.5 x 412.5
Mounting depth	165	
Wall thickness	max. 8	
Weight [kg]		
Operator interface	14.7	22.50
Fixing frame	0.7	0.85

2.3 Conformity to standards

2.3.1 Remote HMI ET-5x6

The ET-5x6 operator interfaces comply with the following standards and directives:

Status of standard	Classification
Directive 94/9EC	
5. Supplement	
EN 60079-0 : 2006	General requirements
EN 60079-1 : 2007	Flameproof enclosure "d"
EN 60079-7 : 2007	Increased safety "e"
EN 60079-11 : 2007	Intrinsic safety "i"
EN 60079-18 : 2004	Encapsulation "m"
EN 60079-28 : 2007	Optical radiation
EN 61241-0 : 2006	General requirements (dust)
EN 61241-1 : 2004	Protected by enclosures "tD" (dust)
Electromagnetic compatibility	
Directive 2004/108EC	
EN 61000-6-2 (2005)	Interference resistance
EN 61000-6-4 (2007)	Interference emission

2.3.2 Remote HMI MT-5x6

The MT-5x6 operator interfaces comply with the following standards and directives:

Status of standard	Classification
Directive 94/9EC	
4. Supplement	
EN 60079-0 : 2006	General requirements
EN 60079-1 : 2007	Flameproof enclosure "d"
EN 60079-7 : 2007	Increased safety "e"
EN 60079-11 : 2007	Intrinsic safety "i"
EN 60079-15 : 2005	Type of protection "n"
EN 60079-18 : 2004	Encapsulation "m"
EN 60079-28 : 2007	Optical radiation
EN 61241-0 : 2006	General requirements (dust)
EN 61241-1 : 2004	Protected by enclosures "tD" (dust)
EN 61241-11 : 2006	Intrinsic safety "iD" (dust)
Electromagnetic compatibility	
Directive 98/336/EEC	
EN 61000-6-2 (2005)	Interference resistance
EN 61000-6-4 (2007)	Interference emission

2.4 Certificates

The ET-5x6 Remote HMI operator interfaces are certified for installation in the following areas:
according to ATEX Directive 94/9/EC
for installation in zones 1, 2, 21 and 22

The MT-5x6 Remote HMI operator interfaces are certified for installation in the following areas:
according to ATEX Directive 94/9/EC
for installation in zones 2 and 22

Both ET-5x6 and MT-5x6 product series are additionally certified for the following areas:

DNV (Det Norske Veritas)

GOST-R (Russische Zulassung)

CNEX (Nanyang Explosion Protected Electrical Apparatus Research Institute –
Chinesische Zulassung)

CKT (CAA JSC The National Center of Expertise and Certification Almaty Branch –
Kasachische Zulassung)

UL (Underwriters Laboratories)

2.4.1 ATEX

The ATEX certificates are listed under the following certification numbers:

Certificate number for ET-5x6:	TÜV 05 ATEX 7176 X
Certificate number for MT-5x6:	TÜV 07 ATEX 7471 X

2.4.2 DNV

The DNV certification is listed below the following numbers:

Certificate number:	A-11822
File number:	899.60
Job Id:	262.1-001689-3

2.4.3 GOST-R

The GOST-R certification is listed below the following number:

Certificate number:	POCC DE.ГБ04.В01280
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2.4.4 CNEX

The CNEX certification is listed below the following number:

Certificate number for ET-5x6:	CNEx10. 1832X
Certificate number for MT-5x6:	CNEx10. 1833X

2.4.5 CKT

The CKT certification is listed below the following numbers:

Certificate number:	KCC No 1018112
	KZ.0.02.0317
	KZ.7500317.01.01.14106


2.4.6 UL

The UL certification is listed below the following number:


UL File Number:	E202379
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2.5 Product identification

2.5.1 Remote HMI ET-5x6

Manufacturer	R. STAHL HMI Systems GmbH	
Type code	ET-5x6	
CE classification:	CE 0158	
Testing authority and certificate number:	TÜV 05 ATEX 7176 X	
Ex classification:		
ATEX guideline 94/9/EC		II 2 (2)G Ex d e mb ib [ib] [op is] IIC T4 II 2D Ex tD A21 IP65 T90°C
GOST-R		2Exdemib[ib]sIICT4X DIP A21 TA90°C, IP65
CNEX		Exdembib[ib]IICT4 DIP A21 TA, T90°C
UL		Class I, Div. 2, Groups A, B, C, D Class II, Div. 2, Groups F, G Class III, hazardous locations Class I, Zone 2, Group IIC Temperature classification T4, enclosure type 1

2.5.2 Remote HMI MT-5x6

Manufacturer	R. STAHL HMI Systems GmbH	
Type code	MT-5x6	
CE classification:	CE 0158	
Testing authority and certificate number:	TÜV 07 ATEX 7471 X	
Ex classification:		
ATEX guideline 94/9/EC		II 3 (3) G Ex d e mb nA nL [nL] [op is] IIC T4 II 3 (2) G Ex d e mb nA nL [ib] [op is] IIC T4 II 3 (2) D Ex tD A22 IP65 [ibD] T90°C
GOST-R		2ExdemnL[ib]sIICT4X 2ExdemnL[nL]sIICT4X DIP A22 TA90°C, IP65
CNEX		ExdembnAnL[ib]IICT4 DIP A22 TA, T90°C
UL		Class I, Div. 2, Groups A, B, C, D Class II, Div. 2, Groups F, G Class III, hazardous locations Class I, Zone 2, Group IIC Temperature classification T4, enclosure type 1

2.6 Power supply

2.6.1 Remote HMI ET-5x6

2.6.1.1 Operator interfaces

Power supply: 24 VDC (min. 20.4 VDC , max. 28.8 VDC)
 $U_m = 30 \text{ V}$

Power consumption:
 ET-536 max. 1.9 A
 ET-556 max. 2.1 A

2.6.1.2 Reader modules

- a) WCR1 external power supply module with intrinsically safe power supply circuit and the following maximum values:
 $U_O = 12.4 \text{ VDC}$ $I_O = 200 \text{ mA}$
- b) RSi1 internal intrinsically safe power supply circuit
 $U_O = 10.4 \text{ VDC}$ $I_O = 220 \text{ mA}$

2.6.2 Remote HMI MT-5x6

2.6.2.1 Operator interfaces

Power supply 24 VDC (min. 20.4 VDC , max. 28.8 VDC)
 $U_m = 30 \text{ VDC}$
 (for connected circuits in zone 1)
 (Application as associated equipment)

Power consumption:
 MT-536 max. 1.9 A
 MT-556 max. 2.1 A

2.6.2.1.1 All circuits in zone 2

If the operator interface and all connected circuits are solely used in zone 2, the operator interface can be supplied with the required rated voltage of
 $U_{\text{rated}} = 24 \text{ VDC (+20\% / -15\%)}$

Operation is in accordance with marking II 3 (3) G Ex d e mb nA nL [nL] [op is] IIC T4.

2.6.2.1.2 With circuits in zone 1

If the operator interface is run in zone 2 and connected to intrinsically safe circuits / devices in zone 1, the following applies:
 $U_m = 30 \text{ VDC}$
 (see EN 50020 : 2002 section 3.15).

Operation is in accordance with the marking II 3 (2) G Ex d e mb nA nL [ib] [op is] IIC T4).

2.6.2.2 Reader modules

- a) WCR1 external power supply module with limited (Ex-nL) or intrinsically safe (Ex-i) power supply circuit
- b) RSi1 internal limited (Ex-nL) or intrinsically safe (Ex-i) power supply circuit

☞ Please refer to [Section 2.7.4](#) for the relevant connection values for a) and b).

2.7 Permitted maximum values

2.7.1 External, non-intrinsically safe circuits (ET-5x6)

Input voltage (X1):

Rated voltage	24 VDC (+20% / -15%)
Power consumption at U_{rated}	1.9 A max
max. working voltage U_m	30 VDC

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

Rated voltage	RS-422: 5 VDC	RS-232: ± 12 VDC
Max. operating voltage U_m	253 VAC	

RS-422/-232 COM 2 (X3):

Rated voltage	RS-422: 5 VDC	RS-232: ± 12 VDC
Max. operating voltage U_m	253 VAC	

USB-1 (X5):

Rated voltage	5 VDC
Max. operating voltage U_m	253 VAC

USB-3 (X7):

Rated voltage	5 VDC
Max. operating voltage U_m	253 VAC

Copper Ethernet (X11):

Rated voltage	5 VDC
Rated power	100 mW
Max. operating voltage U_m	30 VDC

2.7.2 External, non-power limited safe circuits (MT-5x6)

Input voltage (X1):

Rated voltage	24 VDC (+20% / -15%) (for exclusive operation in zone 2)
Power consumption at U_{rated}	1.9 A max
max. working voltage U_m	30 VDC (applies for connected circuits in zone 1)

 The rest as for ET-5x6 ([Section 2.7.4](#))

2.7.3 External inherently safe optical interface

Ethernet optical fiber (X10):

Wavelength 1350 nm
 Radiant power ≤ 35 mW

2.7.4 External intrinsically safe circuits

USB0 (X4):

The maximum values for group IIC are:

U _i	=	-	V	U _o	=	5.9	V							
I _i	=	-	mA	I _o	=	1.02	A							
P _i	=	-	mW	P _o	=	6.02	W							
C _i	=	0	μF	C _o	=	8	13	30	43	μF				
L _i	=	0	mH	L _o	=	10	5	2	1	μH				

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

ET-5x6 only:

The maximum values for group IIB are:

U _i	=	-	V	U _o	=	5.9	V							
I _i	=	-	mA	I _o	=	1.02	A							
P _i	=	-	mW	P _o	=	6.02	W							
C _i	=	0	μF	C _o	=	14	26	50	89	μF				
L _i	=	0	mH	L _o	=	0.1	0.05	0.02	0.01	mH				

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

USB-2 (X6):

The maximum values for group IIC are:

U _i	=	-	V	U _o	=	5.9	V							
I _i	=	-	mA	I _o	=	1.02	A							
P _i	=	-	mW	P _o	=	6.02	W							
C _i	=	0	μF	C _o	=	8	13	30	43	μF				
L _i	=	0	mH	L _o	=	10	5	2	1	μH				

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

ET-5x6 only:

The maximum values for group IIB are:

U _i	=	-	V	U _o	=	5.9	V							
I _i	=	-	mA	I _o	=	1.02	A							
P _i	=	-	mW	P _o	=	6.02	W							
C _i	=	0	μF	C _o	=	14	26	50	89	μF				
L _i	=	0	mH	L _o	=	0.1	0.05	0.02	0.01	mH				

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

Reader (X8) +Uint 1 (power supply circuit, X8.0):

The maximum values for group IIC are:

U _i	=	-	V		U _o	=	10.4	V
I _i	=	-	mA		I _o	=	220	mA
P _i	=	-	mW		P _o	=	2.29	W
C _i	=	-	μF		C _o	=	2.41	μF
L _i	=	-	mH		L _o	=	0.02	mH

ET-5x6 only:

The maximum values for group IIB are:

U _i	=	-	V		U _o	=	10.4	V
I _i	=	-	mA		I _o	=	220	mA
P _i	=	-	mW		P _o	=	2.29	W
C _i	=	-	μF		C _o	=	12	μF
L _i	=	-	mH		L _o	=	50	μH

Reader WCR1 (connection voltage supply, X8.1–2):

The maximum values for group IIC are:

U _i	=	12.4	V		U _o	=	-	V
I _i	=	200	mA		I _o	=	-	mA
P _i	=	-	mW		P _o	=	-	mW
C _i	=	0	μF		C _o	=	-	μF
L _i	=	0	mH		L _o	=	-	mH

ET-5x6 only:

The maximum values for group IIB are:

U _i	=	12.4	V		U _o	=	-	V
I _i	=	200	mA		I _o	=	-	mA
P _i	=	-	mW		P _o	=	-	mW
C _i	=	0	μF		C _o	=	-	μF
L _i	=	0	mH		L _o	=	-	mH

Reader WCR1 (power supply Reader, X8.3-4):

The maximum values for group IIC are:

U_i	=	-	V		U_o	=	5.88	V
I_i	=	-	mA		I_o	=	200	mA
P_i	=	-	mW		P_o	=	1.18	W
C_i	=	4.6	μ F		C_o	=	28.4	μ F
L_i	=	100	nH		L_o	=	1.9	μ H

ET-5x6 only:

The maximum values for group IIB are:

U_i	=	-	V		U_o	=	5.88	V
I_i	=	-	mA		I_o	=	200	mA
P_i	=	-	mW		P_o	=	1.18	W
C_i	=	4.6	μ F		C_o	=	56.4	μ F
L_i	=	100	nH		L_o	=	19.9	μ H

Reader WCR1 (signal input / output, X8.5-8):

The maximum values for group IIC are:

U_i	=	15	V		U_o	=	5.88	V
I_i	=	500	mA		I_o	=	56	mA
P_i	=	2.5	W		P_o	=	83	mW
C_i	=	0	μ F		C_o	=	34	μ F
L_i	=	0	mH		L_o	=	2	μ H

ET-5x6 only:

The maximum values for group IIB are:

U_i	=	15	V		U_o	=	5.88	V
I_i	=	500	mA		I_o	=	56	mA
P_i	=	2.5	W		P_o	=	83	mW
C_i	=	0	μ F		C_o	=	63	μ F
L_i	=	0	mH		L_o	=	20	μ H

Reader RSi1 (connection voltage supply, X8.1–2):

The maximum values for group IIC are:

U_i	=	12.4	V		U_o	=	-	V
I_i	=	220	mA		I_o	=	-	mA
P_i	=	2.7	W		P_o	=	-	mW
C_i	=	0	μ F		C_o	=	-	μ F
L_i	=	0	mH		L_o	=	-	mH

ET-5x6 only:

The maximum values for group IIB are:

U_i	=	12.4	V		U_o	=	-	V
I_i	=	220	mA		I_o	=	-	mA
P_i	=	2.7	W		P_o	=	-	mW
C_i	=	0	μ F		C_o	=	-	μ F
L_i	=	0	mH		L_o	=	-	mH

Reader RSi1 (power supply Reader, X8.3–4):

The maximum values for group IIC are:

U_i	=	-	V		U_o	=	5.4	V
I_i	=	-	mA		I_o	=	220	mA
P_i	=	-	W		P_o	=	1.19	W
C_i	=	4.2	μ F		C_o	=	39.8	μ F
L_i	=	100	nH		L_o	=	1.9	μ H

ET-5x6 only:

The maximum values for group IIB are:

U_i	=	-	V		U_o	=	5.4	V
I_i	=	-	mA		I_o	=	220	mA
P_i	=	-	W		P_o	=	1.19	W
C_i	=	4.2	μ F		C_o	=	69.8	μ F
L_i	=	100	nH		L_o	=	19.9	μ H

Reader RSi1 (signal input / output, X8.5-8):

The maximum values for group IIC are:

U _i	=	15	V		U _o	=	5.4	V
I _i	=	500	mA		I _o	=	49	mA
P _i	=	2.5	W		P _o	=	62	mW
C _i	=	0	μF		C _o	=	45	μF
L _i	=	0	mH		L _o	=	2	μH

ET-5x6 only:

The maximum values for group IIB are:

U _i	=	15	V		U _o	=	5.4	V
I _i	=	500	mA		I _o	=	49	mA
P _i	=	2.5	W		P _o	=	62	mW
C _i	=	0	μF		C _o	=	78	μF
L _i	=	0	mH		L _o	=	20	mH

PS/2 interface (X9):

Connection for keyboard, mouse, trackball, joystick

The maximum values for group IIC are:

U _i	=	-	V		U _o	=	5.9	V	
I _i	=	-	mA		I _o	=	200	mA	
P _i	=	-	mW		P _o	=	1.18	W	
C _i	=	14	μF		C _o	=	19	29	μF
L _i	=	0	mH		L _o	=	2	1	μH

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

ET-5x6 only:

The maximum values for group IIB are:

U _i	=	-	V		U _o	=	5.9	V			
I _i	=	-	mA		I _o	=	200	mA			
P _i	=	-	mW		P _o	=	1.18	W			
C _i	=	14	μF		C _o	=	13	23	46	86	μF
L _i	=	0	mH		L _o	=	100	50	20	10	μH

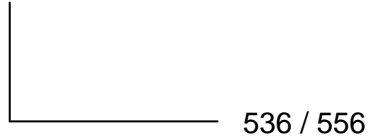
C_o and L_o pairs directly above/underneath each other may be used.

☞ Do **NOT** connect the optional external keyboard to live equipment !

2.8 Type code

Basic device:

ET/MT-xxx



Order number supplement:

Order number	Description
	Type with
5x6-Fx	Optical fiber 100 Base Fx (Ex op is) interface
5x6-Tx	Copper 10/100 Base Tx (Ex-e) Ethernet interface (Ex-e or Ex-nA)
536-HB	High Brightness Display 600 cd/m ² (15" display only)
5x6-RSi	Plug-in module for reader with integrated decoder and RS-232 interface
5x6-WCRi	Plug-in module for reader with Wiegand interface
5x6-VA	Front plate stainless steel
5x6-xx-UL	Operator interface with UL certification (May ONLY be used in ATEX areas with cable glands instead of Conduit Hubs !) *

*  See note in section "UL certification" !

2.9 Safety Advice

This chapter is a summary of the key safety measures. The summary is supplementary to existing rules which staff also have to study.

The safety of persons and equipment in hazardous areas depends on compliance with all relevant safety regulations. Thus, the installation and maintenance staff carry a particular responsibility, requiring precise knowledge of the applicable regulations and conditions.

2.9.1 Installation and operation

Please note the following when installing and operating the device:

- Only operator interfaces with UL certification may be installed and operated in areas covered by the NEC (see chapter "UL certification") !
In areas covered by ATEX, this device may **ONLY** be installed and operated if the two Conduit Hub connections have been replaced by conventional cable glands !
- The national regulations for installation and assembly apply (e.g. EN 60079-14).
- The operator interface must only be switched on when it is closed.
- After switching the operator interface off, wait for at least 1 minute before opening it.
- The safe maximum values of the connected field device(s) must correspond to the values listed on the data sheet or the EC type examination certificate.
- During assembly and operation of the operator interface electrostatic surface charging must not exceed that caused by manual rubbing.
- National safety and accident prevention rules.
- Generally accepted technical rules.
- Safety instructions contained in these operating instructions.
- Any damage may compromise the explosion protection !

Use the device for its intended purpose only (see "[Device Function](#)").

Incorrect or unauthorized use and non-compliance with the instructions in this manual will void any warranty on our part.

No changes to the device that compromise its explosion protection are permitted !

The device may only be installed and operated in an undamaged condition !

2.9.1.1 ET-5x6 only

- The operator interfaces may be installed in zones 1, 2, 21 or 22.
- The intrinsically safe circuits must be installed according to applicable regulations.
- When installed in zones 1, 2, 21 and 22, intrinsically safe devices suitable for zones 1, 2, 21 and 22 may be connected to the intrinsically safe power supply circuits.
- Interconnecting several active devices in an intrinsically safe circuit may result in different safe maximum values. This could compromise intrinsic safety !
- Before opening the housing lid users must ensure that all non-intrinsically safe circuits have been switched off. Circuits supplied from different sources may be connected ! Please note that all associated equipment (such as the SK-KJ1710, for example) must also be switched off !

2.9.1.2 MT-5x6 only

- The operator interfaces may be installed in zones 2 or 22.
- The installation must be compliant with any applicable regulations.
- When used in zone 2 and zone 22, intrinsically safe category 2 devices or energy-limited category 3 associated equipment may be connected to the intrinsically safe circuits.
- If category 2 equipment is connected to the intrinsically safe circuits in zone 1, Um must adhere to EN 60079-11 : 2007, section 3.16 when connecting the power supply and the non-energy-limited circuits of the MT-5x6.
- For the maximum connectable L and C values of the intrinsically safe circuits, the associated (above/underneath each other) pairs of values must be applied.

2.9.1.3 Circuits in zone 21

It is permitted to connect intrinsically safe circuits of "ibD" protection type in zone 21.

2.9.2 Special conditions

- The housing of the operator interface must be protected against prolonged UV radiation.
- The operator interface and any connected equipment must be incorporated into the same potential equalization system (see installation example in the Hardware Manual). An alternative would be to connect only devices that are safely isolated from earth potential.

2.9.3 System restore with USB memory sticks

You may only use USB memory sticks permitted for use by R. STAHL HMI Systems GmbH. These USB memory sticks are below and in general referred to by R. STAHL HMI Systems GmbH as "USB(i) Drives". Data may only be copied onto the operator interfaces and software may only be installed with these USB Drives.

- In hazardous areas you may only use I.S. certified USB Drives supplied by R. STAHL HMI Systems GmbH.
- In an industrial area, a permitted, non-explosion proof memory stick may be connected to the I.S. USB interface of the operator interface after having been connected to any PC.
- R. STAHL HMI Systems GmbH's USB(i) drives may also be connected to non-intrinsically safe interfaces, from where they may be used with operator interfaces of the ET-5x6 series.


If devices are connected to the I.S. USB interface that have not been approved by R. STAHL HMI Systems GmbH, protective elements may become damaged, thus compromising the intrinsic safety of the interfaces.

In this case R. STAHL HMI Systems can no longer guarantee the intrinsic safety of the device !

2.9.4 USB interfaces

The ET-5x6 operator interfaces have 2 USB interface channels.

- Channel 1 is wired in parallel to USB0 (X4) and USB2 (X6) and can be used for the internal (X4) or external (X6) connection of an USBi Drive.
- Channel 2 is wired in parallel to USB1 (X5) and USB3 (X7) and can be used to connect an external USB device.

 The connection diagram for the ET-5x6 interfaces can be found in [Chapter 5.2 Connections ET/MT-5x6](#).

2.9.4.1 I.S. USB interfaces USB0, USB2

The USB0 and USB2 Ex-i interfaces (X4 and X6) are intended for the internal or external connection of USBi Drives.

The maximum value for the joint power supply of USB0 and USB2 is 500 mA.

2.9.4.2 Ex-e USB interfaces USB1, USB3

The USB1 and USB3 Ex-e USB interfaces (X5 and X7) are intended for the connection of external USB devices.

The maximum value for the joint power supply of USB1 and USB3 is 500 mA.

3 Installation

3.1 General information

Electrical equipment is subject to certain regulations concerning installation and operation, such as RL 1999/92/EC, RL 94/9/EC und IEC/EN 60079-14.

The operators of electrical installations in hazardous environments must ensure that the equipment is kept in proper condition, is operated according to instructions and that maintenance and repairs are carried out.

3.2 Remote HMI ET/MT-5x6

- Operators must ensure compliance with the EC type examination certificates before installation. Users must adhere to any “special conditions” therein. Also of importance are the maximum electrical operating values specified therein.
- The earth/ground (PA) connector at the back of the operator interface housing must be connected to the equipotential bonding conductor of the hazardous area. To prevent equalizing currents flowing to the earth/ground (PA) system of the operator interface it is necessary to safely isolate any connected devices from earth or to integrate them into the earth/ground (PA) system of the operator interface.
- The PA connection part of the operator interface located at the back of the housing is internally connected with the GND supply cable (X1 pins 3 and 4).
- Ex-e terminal blocks may be mounted inside the connection box of the housing (**NOT** NEC). They can, for example, serve as a sub-distribution unit for supply and signal lines of accessories mounted in separate housings and connected to the operator interface. These terminal blocks are installed during production of the operator interface. Customers must not attempt to mount the blocks into the devices themselves.
- The operator interfaces may be mounted in any position.
- The operator interface's front should be protected by a canopy against permanent exposure to UV light. This increases the front membrane's lifespan. The canopy **MUST NOT** be too close to the front plate and sufficient air circulation must be ensured.

3.3 ET-5x6 only

- The operator interfaces may be installed in zones 1, 2, 21 or 22. The intrinsically safe circuits must be installed according to applicable regulations.
- Intrinsically safe and non intrinsically safe conducting connection parts must be installed with a minimum distance of 50 mm.
- When connecting the operator interfaces to the intrinsically safe circuits of the associated equipment the respective maximum values of the field unit and the associated equipment must be observed to ensure explosion protection (proof of intrinsic safety).

3.4 MT-5x6 only

- The operator interfaces may be installed in zones 2 or 22. The circuits must be installed according to applicable regulations.

4 Assembly and disassembly

4.1 General information

Assembly and disassembly are subject to general technical rules. Additional, specific safety regulations apply to electronic and pneumatic installations.

4.2 Cut-out ET/MT-5x6

Make a cut-out with the following dimensions:

Operator interface	Width	Height	Depth of cut-out	Material thickness
ET/MT-536	427.5 ± 0.5 mm	327.5 ± 0.5 mm	165 mm	up to 8 mm
ET/MT-556	522.5 ± 0.5 mm	412.5 ± 0.5 mm	165 mm	up to 8 mm

5 Operation

5.1 General information

When operating the devices, particular care shall be taken that:

- the operator interface has been properly installed according to instructions,
- the device is undamaged,
- the terminal compartment is clean,
- all screws are tightened fast,
- before switching the operator interface on, its external bonding terminal is properly connected to the equipotential bonding system at its place of use,
- the cover of the terminal compartment is completely closed.

5.2 Connections ET/MT-5x6

Terminal	Pin	Definition	Connection
X1	1	Power supply operator interface +24 VDC	Power supply of the operator interface
	2	Power supply operator interface +24 VDC	
	3	Power supply operator interface GND	
	4	Power supply operator interface GND	
X2	1	TxD-b	Serial COM1 interface RS-422/485
	2	TxD-a	
	3	RxD-b	
	4	RxD-a	
	5	TxD-b'	
	6	TxD-a'	
	7	RxD-b'	
	8	RxD-a'	
	9	TxD	Serial COM1 interface RS-232
	10	RxD	
	11	RTS/	
	12	CTS/	
	13	GND	
X3	1	TxD-b	Serial COM2 interface RS-422/485
	2	TxD-a	
	3	RxD-b	
	4	RxD-a	
	5	TxD-b'	
	6	TxD-a'	
	7	RxD-b'	
	8	RxD-a'	
	9	TxD	Serial COM2 interface RS-232
	10	RxD	
	11	RTS/	
	12	CTS/	
	13	GND	
X4		USB interface, connection type A	USB0 I.S. *
X5	1	VCC	USB1 Ex-e *
	2	USB -	
	3	USB +	
	4	GND	
X6	1	VCC	USB2 I.S. *
	2	USB -	
	3	USB +	
	4	GND	
	5	GND	
X7	1	VCC	USB3 Ex-e *
	2	USB -	
	3	USB +	
	4	GND	

X8	0	+U_INT1	Reader interface I.S.
	1	0V	
	2	+U_EX1	
	3	GND	
	4	+U_RD	
	5	Signal 1	
	6	Signal 2	
	7	Signal 3	
	8	Signal 4	
	9	+U_EX1 (out)	
X9	1	VCC	PS2 interface ** I.S. for external keyboard / mouse
	2	KBDAT	
	3	KBCLK	
	4	MSDAT	
	5	MSCLK	
	6	GND	
X10	1	Optical fiber connection type SC	Ethernet optical fiber interface ***
X11	1	TxD (+)	Ethernet copper connection ***
	2	TxD (-)	
	3	RxD (+)	
	4	RxD (-)	

- ☞ * USB connections USB0 and USB2 as well as USB1 and USB3 are wired in parallel. The USB connections USB0 and USB2 as well as USB1 and USB3 must therefore **NOT BE USED AT THE SAME TIME !**
- ☞ Please also note that the COM interfaces may only be physically connected once. Power is supplied either with a physical RS-232 or an RS-422/485 connection.
- ☞ ** Do **NOT** connect the optional external keyboard to live equipment !
- ☞ *** Please note that the Ethernet connection is **either** for an optical fiber connection (X10) **or** for a copper connection (X11), depending on the version ordered !
The optical fiber connection requires a multimode optical fiber cable with 62.5 µm core diameter and 125 µm external diameter.
Cables connected to the Ethernet terminals (X11) must have a minimum cross section of 0.2 mm² (metric) (AWG 24).
Which cable cross sections are chosen should be decided on the basis of relevant regulations, such as DIN VDE 0298. Factors that might require a larger cross section, such as current, increased temperatures, cable bundling, etc. must also be taken into account.

5.2.1 Dip switch settings S3 and S4

Switch	Position	Interface	Function
S3-1	OFF	COM1 RS-422/485	No bus terminator resistor set
	ON		Bus terminator resistor TxD line
S3-2	OFF		No bus terminator resistor set
	ON		Bus terminator resistor RxD line
S4-1	OFF	COM2 RS-422/485	No bus terminator resistor set
	ON		Bus terminator resistor TxD line
S4-2	OFF		No bus terminator resistor set
	ON		Bus terminator resistor RxD line

5.3 Connections Ex-e terminals (X12)

Up to 8 Ex-e terminal blocks may be mounted inside the connection box of the housing (**NOT** NEC). Because these terminal blocks are exclusively mounted during production, this option must be specified when ordering the product.

For devices with these optional terminal blocks, please note the following:

- Either Ex-e, Ex-nL (ProVicom only) or I.S. circuits may be connected to these terminal blocks !



Ex-e, Ex-nL (ProVicom only) or I.S. circuits **MUST NOT** be connected at the same time on terminal block X12.



When connecting cables please ensure that the cable isolation goes right up to the terminal part.

5.3.1 Labelling I.S. circuits

If intrinsically safe circuits are connected to terminal X12, the terminal and these circuits must be marked clearly and uniquely in line with EN 60079-11. If they are color-coded, you must use light blue.

5.3.2 Connection details of the I.S. or Ex-nL terminals

Intrinsically safe (I.S.) or energy-limited (Ex-nL - ProVicom only) circuits with the following safe maximum values may be connected to terminal block X12:

$$U = 30 \text{ V}$$

$$I = 5 \text{ A}$$

5.3.3 Connection details of the Ex-e terminals

For the alternatively permitted connection of Ex-e circuits the following maximum values apply:

- Maximum nominal voltage:
 - if the fixed bridge bar is not used 275 V
 - if the fixed bridge bar is used 175 V
- Rated current: 4 A
- Max. rated current: 5 A

5.3.4 Cable types and cross sections

Copper cables with the following cross sections may be used:

- Maximum cable cross section in mm² (AWG) 4 (12)
- Minimum cable cross section in mm² (AWG) 0.2 (24)

Multiple cable connection to the screw terminal (2 cables of the same cross section and cable type):

- flexible mm² (AWG) 0.2 - 1.5 (24 - 16)
- rigid mm² (AWG) 0.2 – 1.5 (24 – 16)

Which cable cross sections are chosen should be decided on the basis of relevant regulations, such as DIN VDE 0298. Factors that might require a larger cross section, such as current, increased temperatures, cable bundling, etc. must also be taken into account.

6 Maintenance, service

Adhere to the applicable directives for the maintenance, service and testing of associated equipment. For explosion-protected devices the directives 1999/92/EC, IEC 60079-19, EN 60079-17 and BetrSichVer also apply.

Because the transmission of the devices remains reliable and stable over long periods of time, regular adjustments are not required.

The following principles apply to repairs *, spare parts purchase * or exchange of parts * (where this can be done by the user !):

- Only original parts provided by the manufacturer must be used.
- Fuses may only be replaced by equivalent fuse types.



* Please also note [Section 7 Trouble Shooting](#) !

If Remote HMI devices are in storage for longer than six months they should be operated for at least an hour at room temperature (20°C ± 5°C) every six months.

System maintenance should focus on the following:

- a. Seal wear
- b. Display damage
- c. All screws are tightened fast
- d. All cables and lines are properly connected and undamaged

6.1 Servicing

In accordance with IEC 60079-19 and EN 60079-17, operators of electric plants in hazardous areas are obliged to have them serviced by qualified electricians.

7 Troubleshooting

Devices operated in hazardous areas must not be modified. Repairs may only be carried out by qualified, authorized staff specially trained for this purpose.



Repairs may only be carried out by specially trained staff who are familiar with all basic conditions of the applicable user regulations and – where required – have been authorized by the manufacturer.

8 Disposal

Disposal of packaging and used parts is subject to regulations valid in whichever country the device has been installed.

The disposal of devices sold after August 13th, 2005, and installed in countries under the jurisdiction of the EU is governed by directive 2002/96/EC on waste electrical and electronic equipment (WEEE). Under this directive, operator interfaces are listed in category 9 (monitoring and control instruments).

We shall take back our devices according to our General Terms and Conditions.

8.1.1 ROHS directive 2002/95/EC

The prohibition of hazardous substances as detailed in directive 2002/95/EC (ROHS) does not apply to electronic equipment of categories 8 and 9, and is therefore not applicable to the equipment described in these operating instructions.

8.1.2 China ROHS labelling

According to new Chinese legislation in force since 01.03.2007, all devices containing hazardous substances must be labeled accordingly.

For our operator interfaces, the following conditions apply:

Names and contents of toxic or hazardous substances or elements:

Part Name	Toxic or hazardous substances and elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexa- valent Chromium (Cr (VI))	Poly- brominated Biphenyls (PBB)	Poly- brominated diphenyl ethers (PBDE)
Housing	O	O	O	O	O	O
Display	O	O	O	O	O	O
all PCBs	X	O	O	O	O	O
Miscellaneous	O	O	O	O	O	O

- O Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirements in SJ/T11363-2006.
- X Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials for this part is below the limit requirements in SJ/T11363-2006.

9 UL Certification

9.1 General information

Only Remote HMI devices with the UL certification may be installed and operated in countries covered by the NEC.

☞ Remote HMI devices for installation in countries covered by the NEC have separate ordering numbers (see type code). Please state these when ordering.

⚠ In areas covered by ATEX, an operator interface with UL certification may **ONLY** be installed and operated if the two Conduit Hub connections have been replaced by conventional cable glands !
To this end, the delivery of operator interfaces with UL certification includes two cable glands.

The Remote HMI devices with the UL certification may be installed in the following hazardous areas:

- Class I, Division 2, Groups A, B, C, D
- Class II, Division 2, Groups F and G
- Class III, hazardous locations
- Class I, Zone 2, Group IIC
- Temperature classification T4, enclosure type 1

as defined by the NEC, or in non-hazardous areas.

☞ Before installation and operation of the Remote HMIs users **MUST** refer to Control Drawing No. 2010 11 7000 0 !

9.2 Safety Advice

Before switching on the Remote HMI devices and associated equipment, its external equipotential bonding terminal must be properly connected to the equipotential bonding system at its place of installation.

As an alternative, you may connect devices to the Remote HMIs that have been safely disconnected from the earth potential.

9.2.1 Caution

⚠ Non-observance of this safety advice may lead to an explosion !

- The substitution of any component of the Remote HMI devices may affect safety in hazardous areas and is therefore **NOT** permitted.
- Connected equipment must **NOT** be disconnected from the operator interface when still live, except if the environment is known to be free of ignitable concentrations.

9.3 Permitted maximum values

9.3.1 Electrical

Power supply (X1):

Vnominal	=	24.0 VDC (min. 20.4 VDC; max. 28.8 VDC)
Vmax	=	30 VDC
Imax	=	1.9 A for ET-/MT-536
Imax	=	2.1 A for ET-/MT-556

Interfaces RS-232, RS-422 and RS-485 (X2, X3):

RS-422, RS-485:	Vnom = 5 VDC, Vmax = 253 VAC
RS-232:	Vnom = ±12 VDC, Vmax = 253 VAC

Memory Stick USBi Drive (X4), USB interface (X6)

Entity parameters for nonincendive field wiring:

Voc	=	5.9 V
Isc	=	1.02 A
Po	=	6.02 W
Ca	=	8 µF 13 µF 30 µF 43 µF
La	=	10 µH 5 µH 2 µH 1 µH

The capacitances (Ca) and inductances (La) that are right underneath each other are associated pairs.

USB interfaces (X5, X7):

Vnom	=	5 VDC
Vmax	=	253 VAC

PS2 interface (X9):

Entity parameters for nonincendive field wiring:

Voc	=	5.9 V
Isc	=	200 mA
Po	=	1.18 W
Ca	=	19 µF 29 µF
La	=	2 µH 1 µH

The capacitances (Ca) and inductances (La) that are right underneath each other are associated pairs.

LAN optical fibre (X10):

Wavelength	=	1350 nm
Radiant power	≤	35 mW

LAN copper cable (X11):

Vnom	=	5 VDC
Pnom	=	100 mW

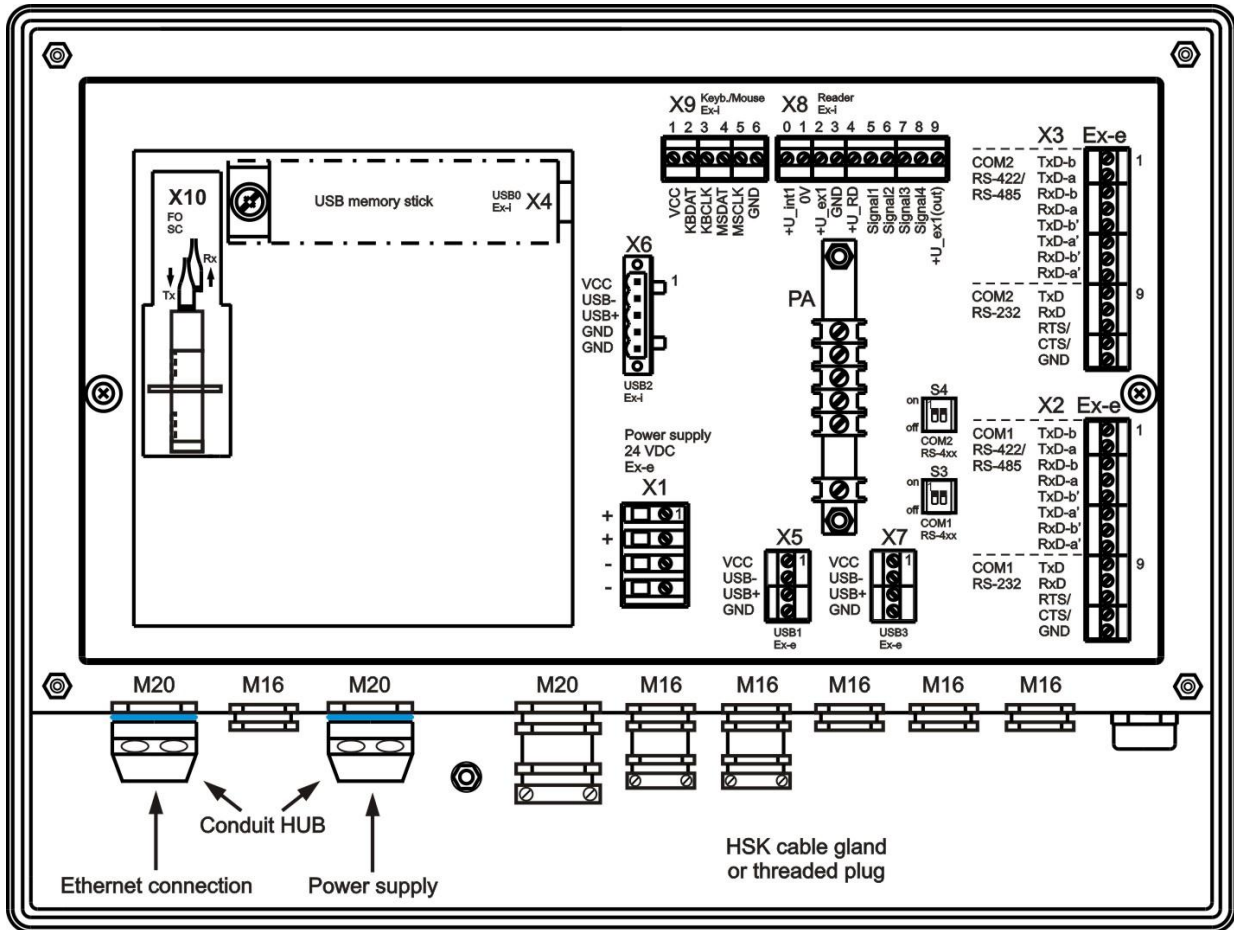
9.3.2 Temperature range

-20°C up to + 50°C

9.4 Device with UL certification

Back view:

Example for placement of cable glands in accordance to UL:



Any cable glands at the operator interface that are not required **MUST BE** replaced by threaded plugs so that the opening in the housing is covered.

☞ Please only use the cable glands for the cables indicated in the CONTROL DRAWINGS !

1 2 3 4 5 6 7 8 9 10

Security Advices

1. No revision to drawing prior to certification body.
2. The Associated Apparatus must be UL Approved.
3. Manufacturer's installation drawing must be followed when installing associated apparatus.
4. Interconnection of nonincendive equipment apparatus with associated apparatus is allowed when the following is true:

nonincendive Equipment	Associated Apparatus
Vmax	≥ Voc or Uo
Imax	≥ Isc or Io
PI	≥ Po
Ci + Ccable	≤ Ca (or Co)
Li + Lcable	≤ La (or Lo)

WARNING:

- Substitution of components may impair Safety.
- To prevent ignition of flammable or combustible atmospheres disconnect power and wait a minimum of 60s before servicing.

The ET-/MT-xx6 operator interfaces and connected devices must be integrated in the same system of potential equalization. As an alternative to this, only devices hat are isolated from earth potential may be connected.

All circuits must be wired using

- Class I, Div. 2 methods as specified in Article 503.10(B);
- Class II, Div. 2 methods as specified in Article 502.10(B);
- Class III, Div. 1 methods as specified in Article 503.10(A);
- Class III, Div. 2 methods as specified in Article 503.10(B) with ref. to Article 503.10(A);

of the National Electric Code NFPA 70 for installation within the United States

Calculation of cable length

- 1.) Determination of Ccablemax and Lcablemax:
Ccablemax = Co - Ci (ass. Ap.)
Lcablemax = Lo - Li (ass. Ap.)
Determination of Lcablemax
- 2.) Determination of cable length C and length L:
Length C = Ccablemax
Ccable (*1)
Length L = Lcablemax
Lcable (*1)
- 3.) Determination of absolute cablelength:
length C or length L, whatever is less.
(*1) when cable parameters are unknown, the following values may be used:
Cable = 60 pF/ft. (200 pF/m)
Lcable = 0.2 pH/ft. (0.66 pH/m)

Alle Rechte vorbehalten! Diese Zeichnung darf ohne unsere ausdrückliche Zustimmung weder vervielfältigt, noch Dritten zugänglich gemacht werden. Außerdem darf sie durch den Empfänger oder durch Dritte nicht in anderer Art und Weise missbräuchlich verwendet werden.

**Operator Panel Type ET-/MT-xx6
Control Drawing**

Revised	Date	Checked
1		
2		
3		
4		

Modification/Name	Date	Checked
1		
2		
3		
4		

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Keine Änderung ohne Prüfung durch Prüfstelle No changes prior to Certification Body approval								
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Drawn	Name							
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November 19, 2010								
Drawing Number: 2010 11 7000 0								
Sheet 3 of 3								

10 Accessories

10.1 Phoenix Contact terminal block

10.1.1 Data sheet Mini-Ex-terminal

Please note that when connected to the operator interfaces the connection values for the explosion proof terminals are limited (see also [Chapter "Ex-e terminals"](#)) !



Mini-Terminal Block MBK

Article description	MBK 3/E-Z *
Article no.	1413036 *
EC-TYPE EXAMINATION CERTIFICATE IECEX-CERTIFICATE	KEMA 01ATEX2134 U * IECEX KEM 07.0008 U
Marking	Ex e II KEMA 01ATEX2134 U IECEX KEM 07.0008 U
Assembly on mounting rails	NS 15 acc. to EN 60715-TH 15
Stripping length	8 mm
Torque	0,6 - 0,8 Nm
Assembly instructions	See page 2
Operating temperature range	-50 °C ... +110 °C



Technical data according to EN 60079-7 (increased safety „e“)

Rated insulation voltage	250 V
Rated voltage	275 V
Nominal current	22,5 A
Max. rated current	28 A

Connection capacity

Rated cross-section	2,5 mm ²	AWG 14
Max. conductor cross-section	4 mm ²	AWG 12
Connectable conductor cross-section	0,2 - 4 mm ² rigid	AWG 24 - 12
	0,2 - 2,5 mm ² flexible	AWG 24 - 14

Multi-conductor connection (2 conductors of the same cross-section)

rigid / flexible	0,2 - 4 mm ² rigid	AWG 24 - 12
	0,2 - 2,5 mm ² flexible	AWG 24 - 14

Data of insulation material

Description	PA 6.6
Creep resistance acc. to IEC 60112 / material group	CTI 600 / I

Accessories

	Description	Article no.	
Cover	D-MBK/E	1415021	
Fixed bridge bar	FBRI 10-5 N	2770642	22,0 A / 2,5 mm ²
			22,5 A / 4 mm ²

* valid for colour variants

Important assembly instructions – increased safety „e“

The Terminal Blocks are suitable for use in enclosures in atmospheres with flammable gases or combustible dust. For flammable gases these enclosures must satisfy the requirements according to EN 60079-0 and EN 60079-7. For combustible dust these enclosures must satisfy the requirements according to EN 50281-1-1.

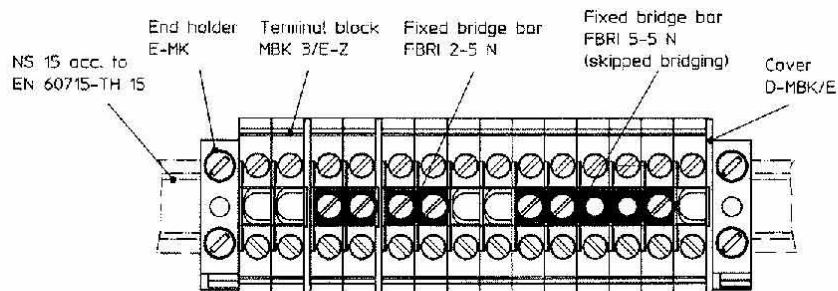
When assembling with other certified series and sizes of terminal blocks and using belonging accessories, the required creepage distances and clearances have to be observed.

When using the fixed bridge bars to achieve a skipped bridging the rated voltage is reduced to 176 V.

If conductors with smaller cross section as the rated cross section are used, the belonging lower current has to be laid down in the EC-Type Examination Certificate of the complete apparatus.

The Terminal Blocks may be used, based on the self-heating when used at the nominal current and at ambient temperatures of -50 °C to +40 °C at the mounting position in electrical apparatus, e.g. junction and connection boxes, for temperature class T6. When the Terminal Blocks are used in electrical apparatus of temperature classes T1 up to T5, the highest temperature of the insulating material shall not exceed the maximum value of the operating temperature range.

The Terminal Blocks and their appropriate accessories have to be assembled as specified below.



Operational instructions – Intrinsic safety “i”

EN 60079-14 Clause 12 describes modular terminal blocks as simple apparatus when used in intrinsically-safe circuits. Testing by a notified body and marking is not required. If terminal blocks be identifiable as part of an intrinsically circuit are marked by a colour, the colour used shall be light blue.

Testing for compliance to intrinsically safe requirements including clearance, creepage, and solid insulation distances specified in EN 60079-0 (EN 50014) and EN 60079-11 (EN 50020) have been performed for circuits up to 60 V.

Compliance with distance requirements of EN 60079-14 Clause 12.2.3 for the connection of separated intrinsically-safe circuit accessories is met. A minimum distance of 50 mm to separate clamping units of intrinsically-safe and non intrinsically-safe circuits is required through the use of a separating plate or similar device.

Attestation of Conformity

The above mentioned product is in line with the provisions of the below marked directive and their modification directive(s):

94/9/EC ATEX Directive

Compliance with Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2004 EN 60079-7:2003 EN 50281-1-1:1998 + A1

The conformity with the provisions of the ATEX directive were certified by

Notified Body: KEMA Quality B.V.
 Address: Utrechtseweg 310, NL-6812 AR Arnhem, The Netherlands [Ident.-No.: 0344]
 Certificate: KEMA 01ATEX2134 U, 2006-05-15
 (No., Date)




Blomberg, 2007-12-05


 I. A. Gerhard Leßmann
 Business Unit Device Connection
 Technology
 Ex-Representative


 Dirk Görlitzer
 Business Unit Industrial Connection
 Technology
 Head of Business Unit

This attestation certifies the conformity with the indicated directive, it does not, however, covenant any characteristics. The instructions for safety and installation have to be observed.

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 Germany

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11 Declaration of EC conformity

11.1 Remote HMI ET-5x6

EG - Konformitätserklärung
EC-Declaration of Conformity
 CE-Déclaration de Conformité



Wir / We / Nous

R. STAHL HMI Systems GmbH
 Im Gewerbegebiet Pesch 14
 D-50767 Köln

erklären in alleiniger Verantwortung dass unser(e) Produkt(e):

declare under our sole responsibility that the product(s):

attestons sous notre responsabilité que le(s) produit(s):

gekennzeichnet:

marked:

marqué:

Exicom

ET-306, ET-316, ET-336 (-VA)

ET-406, ET-416, ET-436 (-VA), ET-456 (-VA)

ET-506, ET-516, ET-536 (-VA), ET-556 (-VA)



II 2 (2) G Ex d e mb ib [ib] [op is] IIC T4

II 2 D Ex tD A21 IP65 T90°C

übereinstimmend ist (sind) mit der (den) folgenden Norm(en) oder normativen Dokumenten:

is (are) in conformity with the following standard(s) or normative documents:

est (sont) conforme aux norme(s) ou aux documents normatifs suivants:

Bestimmung der Richtlinie <i>Terms of the directive</i> Prescription de la directive	Titel und/oder Nr. sowie Ausgabedatum der Norm <i>Title and/or No. and date of issue of the standard</i> Titre et/ou No. ainsi que date d'émission des normes	
2004/108/EG: Elektromagnetische Verträglichkeit <i>2004/108/EC: Electromagnetic compatibility</i> 2004/108/CE: Compatibilité électromagnétique	EN 61000-6-2:2005 EN 61000-6-4:2007	
94/9/EG: Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen <i>94/9/EC: Equipment and protective systems intended for use in potentially explosive atmospheres</i> 94/9/CE: Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles	EN 60079-0:2006 EN 60079-1:2007 EN 60079-7:2007 EN 60079-11:2007 EN 60079-18:2004 EN 60079-28:2007	EN 61241-0:2006 EN 61241-1:2004
EG-Baumusterprüfbescheinigung Nr., ausgestellt durch benannte Stelle: <i>EC-Type Examination Certificate No., issued by notified body:</i> Attestation d'examen CE de type No. exposé par organisme notifié:	TÜV 05 ATEX 7176 X TÜV Rheinland Industrie Service GmbH TÜV Rheinland Group Am Grauen Stein 51105 Köln/Cologne Deutschland/Germany/Allemagne	

Köln, den 01.04.2010

Ort und Datum
Place and date
lieu et date

Joachim Düren
Technical Director

Werner Bertges
Quality Manager

11.2 Remote HMI MT-5x6

EG - Konformitätserklärung
EC-Declaration of Conformity
 CE-Déclaration de Conformité



Wir / We / Nous

R. STAHL HMI Systems GmbH
 Im Gewerbegebiet Pesch 14
 D-50767 Köln

erklären in alleiniger Verantwortung dass unser(e) Produkt(e):

declare under our sole responsibility that the product(s):

attestons sous notre responsabilité que le(s) produit(s):

ProVicom

**MT-306-S; MT-316-S; MT-336-S; MT-336-VA;
 MT-406; MT-416; MT-436 (-VA); MT-456 (-VA);
 MT-506; MT-516; MT-536 (-VA); MT-556 (-VA)**

gekennzeichnet:

marked:

marqué:



II 3 (3) G Ex d e mb nA nL [nL] [op is] IIC T4
 II 3 (2) G Ex d e mb nA nL [ib] [op is] IIC T4
 II 3 (2) D Ex tD A22 IP65 [ibD] T90°C

übereinstimmend ist (sind) mit der (den) folgenden Norm(en) oder normativen Dokumenten:

is (are) in conformity with the following standard(s) or normative documents:

est (sont) conforme aux norme(s) ou aux documents normatifs suivants:

Bestimmung der Richtlinie <i>Terms of the directive</i> <i>Prescription de la directive</i>	Titel und/oder Nr. sowie Ausgabedatum der Norm <i>Title and/or No. and date of issue of the standard</i> <i>Titre et/ou No. ainsi que date d'émission des normes</i>	
2004/108/EG: Elektromagnetische Verträglichkeit <i>2004/108/EC: Electromagnetic compatibility</i> <i>2004/108/CE: Compatibilité électromagnétique</i>	EN 61000-6-2:2005 EN 61000-6-4:2007	
94/9/EG: Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen <i>94/9/EC: Equipment and protective systems intended for use in potentially explosive atmospheres</i> <i>94/9/CE: Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles</i>	EN 60079-0:2006 EN 60079-1:2007 EN 60079-7:2007 EN 60079-11:2007 EN 60079-15:2005 EN 60079-18:2004 EN 60079-26:2007	EN 61241-0:2006 EN 61241-1:2004 EN 61241-11:2006
EG-Baumusterprüfbescheinigung Nr., ausgestellt durch benannte Stelle: <i>EC-Type Examination Certificate No., issued by notified body:</i> <i>Attestation d'examen CE de type No. exposé par organisme notifié:</i>	TÜV 07 ATEX 7471 X TÜV Rheinland Industrie Service GmbH TÜV Rheinland Group Am Grauen Stein 51105 Köln/Cologne Deutschland/Germany/Allemagne	

Köln, den 01.04.2010

Ort und Datum
Place and date
lieu et date

Joachim Düren
 Technical Director

Werner Bertges
 Quality Manager

12 Release notes

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

Version 02.05[04].08

- Correction of "equipotential" in section "General information"
- Addition section "Product identification"
- Deletion of previous information on the document versions
- Removal of all certificates to make up a separate document
- Inclusion of -40°C in the chapter entitled Technical Data
- Inclusion of Chinese CNEX certificate in chapter "Certificates"
- Inclusion of Kazakh CKT certificate in chapter "Certificates"
- Inclusion of UL certificate in chapter "Certificates"
- Deletion of certificate information from chapter entitled Technical Data
- Addition of installation notes regarding NEC in chapter "Installation" – "Remote HMI ET/MT-5x6"
- Inclusion of section "UL certificate"
- Deletion of Exicom and ProVicom name
- Inclusion of note concerning separate documentation with certificates in section "Preface"
- Inclusion of section "Operation in countries covered by NEC" in the chapter "Safety Advice", section "Installation and Operation"
- Insert "Protect operator interfaces against permanent UV-exposure" into chapter "Installation - "Remote HMI ET/MT-5x6"
- Removal of ElexV and VDE0100 in chapter "Installation"
- Inclusion of comment "not for NEC" for terminal block

Version 02.05[04].09

- Addition type code for UL device
- Addition product identification for UL device
- Changing of section "UL certification"
- Changing of "operation UL device in NEC" in section "Installation and operation"
- Removal of "operation UL device in NEC" in section "Installation"

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