



# Operating instructions

## KVM Units

**KVM-\*-CAT-\***

**KVM-\*-MM-\***

**KVM-\*-SM-\***

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**R. STAHL HMI Systems GmbH**

Adolf-Grimme-Allee 8

D 50829 Köln

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## Disclaimer

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We reserve the right to change our products and their specifications at any time, provided it is in the interest of technical progress. The information in the current manual (in the internet and on CD / DVD / USB stick) or in the operating instructions included with the device applies.

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## Specific markings


The markings in these operating instructions refer to specific features that must be noted.


In detail, these are:


	<p>This sign alerts users to hazards that <b>will</b> result in death or serious injury if ignored !</p>
---	--

	<p>This sign alerts users to hazards that <b>may</b> result in death or serious injury if ignored !</p>
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	<p>This sign alerts users to hazards that may damage machinery or equipment or result in injury if ignored !</p>
---	--

	<p>Information highlighted by this symbol indicates measures for the prevention of damage to machinery or equipment !</p>
---	---

	<p>Information highlighted by this symbol indicates important information of which particular note should be taken !</p>
---	--

	<p>Information highlighted by this symbol refers to a different chapter or section in this manual or other documentation or a web-page !</p>
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## Warnings

	<p style="text-align: center;">Caution !</p> <p>In ambient temperatures exceeding +45 °C the surface of the devices may heat up. Caution when touching !</p>
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# 1 Preface

These operating instructions contain all relevant information on the KVM transmission units for connection to HMIs of the SERIES 600 devices. They also contain information on the connection and installation (etc.) of these devices.

 <b>NOTICE</b>	<p>All data relevant to explosion protection from the EC-type examination certificate were copied into these operating instructions.</p> <p>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 !</p>
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 <b>DOCUMENTATION</b>	<p>Please note that the Ex certificates of the KVM transmission units are part of the certificates of the ET-xx7 HMI devices. You can find these certificates in a separate document (CE_ET-xx7) !</p> <p>You can find this document online at <a href="http://www.r-stahl.com">www.r-stahl.com</a> or request a copy from R. STAHL HMI Systems GmbH.</p>
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## 2 Function of transmission unit

All transmission units are used for classic point-to-point data connection from a PC outside of the production area to an on-site HMI. The data transmission to the PC is via VGA / DVI or USB / PS2 and a copper or optical fibre connection to the on-site HMI, realised as digital data transfer. Depending on cable connection and transmission technology the distance between the transmission unit and the Remote HMI ranges from 140 m (459.32 ft) (copper cable) to 10,000 m (32,808.40 ft) (optical fibre).


The transmission technologies available are the KVM Classic versions DVI1, DVI2 and DVI3, for which the appropriate transmission units exist (see type key).

### 2.1 General Notes


 <b>NOTICE</b>	<b>Note:</b> KVM transmission units must be selected to suit the SERIES 600 KVM-Systems !
---	--

#### 2.1.1 Device allocation

KVM transmission units	SERIES 600 KVM-Systems
	Can be used with
KVM-DVI1-CAT	ET-/MT-/IT-6x7-DVI1-CAT-*
KVM-DVI1-MM-FO	ET-/MT-/IT-6x7-DVI1-MM-FO-*
KVM-DVI1-SM-FO	ET-/MT-/IT-6x7-DVI1-SM-FO-*
KVM-DVI2-CAT	ET-/MT-/IT-6x7-DVI2-CAT-*
KVM-DVI3-CAT	ET-/MT-/IT-6x7-DVI3-CAT-*
KVM-DVI3-MM-FO	ET-/MT-/IT-6x7-DVI3-MM-FO-*
KVM-DVI3-SM-FO	ET-/MT-/IT-6x7-DVI3-SM-FO-*
KVM-DVI3-RU-CAT	Standard devices (screen, mouse, keyboard)
KVM-DVI3-RU-MM-FO	Standard devices (screen, mouse, keyboard)
KVM-DVI3-RU-SM-FO	Standard devices (screen, mouse, keyboard)

 <b>DOCUMENTATION</b>	* Any other device design, according to type key. See operating instructions for each HMI device series (ET-/MT-/IT-xx7).
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### 2.2 Notes on DVI2 and DVI3

 <b>NOTICE</b>	With regard to the USB connection between the KVM transmission unit and the host PC, users need to ensure that the host PC has a USB 2.0 chip set ! The more recent USB 3.0 chip sets may cause problems with the connection and its functions !
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## 2.3 Notes on DVI3

### 2.3.1 Resolutions

The DVI3 transmission units represent all resolutions at a ratio of 1:1. The image at the HMI device is therefore always displayed with its actual size and there is no scaling.

If the resolution of the image displayed is smaller than the natural resolution of the HMI device display, a black margin will appear around the image.

Image resolution  $\hat{=}$  display resolution

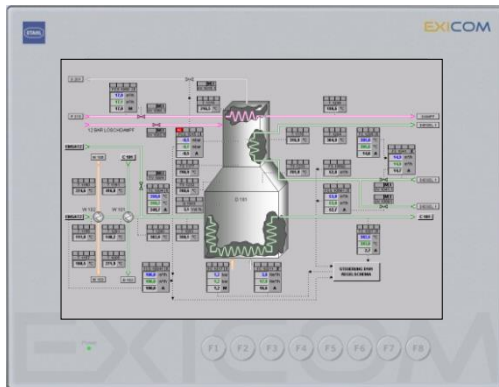
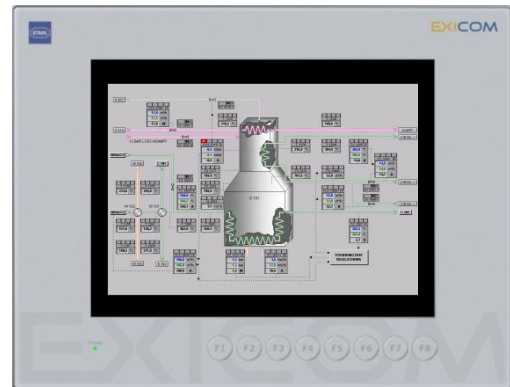


image resolution < display resolution



### 2.3.2 Caveat

Access to the host PC's BIOS via the KVM unit is not possible with all PC types. The BIOS has to support USB 2.0 (high speed) communication.

### 2.3.3 Brightness adjustment

The display brightness of the 6x7 HMI device is automatically reduced to 50% after 15 minutes without any operation. As soon as there is any activation via touch, button or keyboard the brightness level returns to 100%.

## 3 Type allocation

Since the beginning of 2013, the T-series devices have been allocated new type names according to the following pattern:

To avoid 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.

### 3.1 Type marking

Old (certificate)	New
T-Ex-KVM*-CAT7*	KVM-*-CAT*
T-Ex-KVM*-MM*	KVM-*-MM*
T-Ex-KVM*-SM*	KVM-*-SM*

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

# = numeric character without relevance to explosion protection.

 <b>DOCUMENTATION</b>	For the exact new device name and model please refer to the type code.
--	--



## 4 Technical Data

Function / Equipment	KVM-DVI1-*	KVM-DVI2-*	KVM-DVI3-*
Power supply	via IEC plug (female)		
Voltage supply	100 - 240 VAC, 50 - 60 Hz		
Power	typically 5 W / max. 10 W (typically 17 BTU / max. 34 BTU)		
Recommended fuses	1.0 AT		
MTBF	typically 50,000 h at 20 °C / 68 °F		
Power supply 2	redundant connection, via mini-DIN / Hosiden plug	-	-
Voltage supply	12 VDC	-	-
Interfaces			
Ethernet	either copper or optical fibre		
Copper (CAT)	direct connection, gigabit		
Optical fibre (MM-FO)	direct connection, gigabit, multi-mode intrinsically safe (Ex op is)	-	direct connection, gigabit, multi-mode intrinsically safe (Ex op is)
Optical fibre (SM-FO)	direct connection, gigabit, single mode intrinsically safe (Ex op is)	-	direct connection, gigabit, single mode intrinsically safe (Ex op is)
DVI	1 x DVI, 1 x DVI / VGA	1 x DVI-D in, 1 x DVI-D out	1 x DVI-I in, 1 x DVI-I out
USB	1 x plug type B	1 x plug type B	1 x plug type B
PS/2	2 x mouse, 2 x keyboard	-	-
Serial	RS-232	via USB / RS-232 converter	RS-232
Audio	line in / out	via USB / Audio converter	line in / out
Data cable			
Copper (CAT)	CAT7 installation cable AWG 22		
Optical fibre (MM-FO)	multi-mode optical fibre cable (50 or 62.5 / 125 µm core / external cross section)		
Optical fibre (SM-FO)	single-mode optical fibre cable (9 µm core cross section and 125 µm external cross section)		
Data cable lengths			
Copper (CAT)	140 m / 459.32 ft	500 m / 1,640.42 ft	150 m / 492.13 ft
Optical fibre (MM-FO)	-		
50 µm core	550 m / 1,804.46 ft	-	550 m / 1,804.46 ft
62.5 µm core	300 m / 984.25 ft	-	300 m / 984.25 ft
Optical fibre (SM-FO)	10,000 m / 32,808.40 ft	-	10,000 m / 32,808.40 ft
Enclosure	desktop enclosure, aluminium		
Enclosure protection type	IP20		
Operating temperature range			
Cold start temperature	+5 °C ... +40 °C / +41 °F ... +104 °F	-10 °C ... +50 °C / +14 °F ... +122 °F	
Operation	+5 °C ... +40 °C / +41 °F ... +104 °F	-20 °C ... +50 °C / -4 °F ... +122 °F	
Short-term temperature	+5 °C ... +40 °C / +41 °F ... +104 °F	-30 °C ... +60 °C / -22 °F ... +140 °F	
Storage temperature range	-20 °C ... +70 °C / -4 °F ... +158 °F	-20 °C ... +70 °C / -4 °F ... +158 °F	
Relative humidity	20 to 80% at +40 °C / +104 °F, non-condensing	10 to 90% at +40 °C / +104 °F, non-condensing	
Dimensions [mm] / [ft] (W x H x D)	210 x 44 x 210 / 0.689 x 0.144 x 0.689	210 x 44.45 x 165 / 0.689 x 0.146 x 0.541	210 x 44.45 x 165 / 0.689 x 0.146 x 0.541
Weight [kg] / [lbs]	1.0 / 2.2		

## 5 Certificates DVI1 and DVI3

Of all associated equipment only the KVM transmission units with an optical fibre interface have a corresponding certificate.

Europe:

according to ATEX Directive

International:

IECEX (International Electrotechnical Commission System for Certification to Standards for Electrical Equipment for Explosive Atmospheres)

USA:

according to NEC  
for installation in  
Class I, Zone 1

carried out by:  
CSA (Canadian Standard Association)

Canada:

according to CEC  
for installation in  
Class I, Division 2

carried out by:  
CSA (Canadian Standard Association)

Russia / Kazakhstan / Belarus:

EAC (TR) (Technical Regulation of the Eurasian Customs Union)

Korea

KGS (Korea Gas Safety Corporation)

Marine certification:

DNV / GL (Det Norske Veritas / Germanischer Lloyd)

### 5.1 ATEX


The ATEX certificate is listed under the following certification number:

Certificate number: BVS 11 ATEX E 102 X

### 5.2 IECEX

The IECEX certificate is listed under the following certification number:

Certificate number: IECEX TUR 11.0075X

 <b>DOCUMENTATION</b>	<p>You can access all IECEX certificates on the official website of the IEC under their certificate number.  <a href="http://iecex.iec.ch/iecex/iecexweb.nsf/welcome?openform">http://iecex.iec.ch/iecex/iecexweb.nsf/welcome?openform</a></p>
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### 5.3 NEC / CSA

The NEC / CSA certification is listed under the following certificate number:

Certificate number: 70011698

### 5.4 CEC / CSA

The CEC / CSA certification is listed under the following certificate number:

Certificate number: 70011698

## 5.5 EAC (TR)

The EAC (TR) certification has the following number:

Certificate number:

TC RU C-DE.ГБ04.В00478


## 5.6 KGS

 <b>NOTICE</b>	<b>Only valid for KVM-DVI3-* transmission units !</b>
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The KGS certificate is listed under the following certification number:

Certificate number:

12-GA4BO-0617X

 <b>NOTICE</b>	<p>NB: In order to be able to operate these KVM transmission units in Korea, each device type also requires a KCC certificate. The following KVM units currently have such a KCC certificate: T-Ex-KVM-DVI3 (KVM-DVI3-*)</p>
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## 5.7 DNV / GL



 <b>NOTICE</b>	<b>Only valid for KVM-DVI3-* transmission units !</b>
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The DNV / GL certification is listed under the following certificate number:

Certificate number:

TAA00000BK

## 6 Marking

Manufacturer	R. STAHL HMI Systems GmbH	
Type code	KVM-DVI1-MM-FO* / KVM-DVI1-SM-FO* KVM-DVI3-MM-FO* / KVM-DVI3-SM-FO*	
CE classification:	 0158	
Testing authority and certificate number:	BVS 11 ATEX E 102 X	
Ex classification:		
ATEX guideline		II (1) G [Ex op is Ga] IIC II (1) D [Ex op is Da] IIIB
IECEx		[Ex op is Ga] IIC [Ex op is Da] IIIB
EAC (TR)		[Ex op is Ga] IIC X [Ex op is Da] IIIB

## 7 Permitted maximum values

Input:  
Max. operating voltage  $U_m$   $\leq 250$  VAC

### 7.1 External inherently safe optical interface

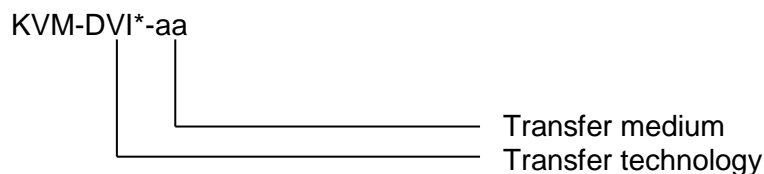
Ethernet optical fiber (MM-FO)  
Multi-mode

Wavelength 850 nm  
Radiant power 0.22 mW  
max. radiant power: 35 mW

Ethernet optical fiber (SM-FO)  
Single mode

Wavelength 1310 nm  
Radiant power 0.22 mW  
max. radiant power: 35 mW

## 8 Type code



Product type:

Product key structure	Description
	Version
KVM-DVI1-CAT	KVM box with DVI1 transfer technology copper direct connection, gigabit
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-DVI2-CAT	KVM box with DVI2 transfer technology copper direct connection, gigabit
KVM-DVI3-CAT	KVM box with DVI3 transfer technology copper direct connection, gigabit
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-CAT	KVM box with DVI3 transfer technology, Non-Ex receiving unit copper direct connection, gigabit
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

## 9 Safety information

### 9.1 General Safety Information

- All relevant accident prevention regulations and the rules for electric installations have to be observed during installation, maintenance and operations. All persons involved in installation, commission, maintenance and repairs of this device and its accessories must be qualified accordingly and must have familiarised themselves with this manual and any associated documentation.
- In case of non-compliance or contravention of the above explosion-protection is no longer guaranteed and all warranty claims shall be null and void.
- National safety and accident prevention rules apply.
- Use the device for its intended purpose only.
- No changes to the device are permitted. The enclosure may only be opened by R. STAHL HMI Systems GmbH.
- The first four digits of the serial number on the type plate stand for the year of manufacture.

### 9.2 Cautionary note



#### ATTENTION

This is an EN 55022 Class A product.

In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

### 9.3 Installation safety information

- The national assembly and installation rules and the generally accepted technical rules must be observed. The device and its accessories must be connected and operated according to applicable standards, directives and installation guidelines. Only qualified personnel or personnel that has been instructed accordingly are allowed to install the device.
- Only appropriate tools must be used for the installation.
- The units must be earthed via the bolt at the back of the device.
- We recommend you use screened cables with the device. Routing of the data cable may reduce performance.
- At the place of installation voltage must not exceed 250 V and short-circuit current must not exceed 1500 A.
- Before starting up the device you must ensure that it has been installed according to regulations and that neither the device nor its cables are damaged.

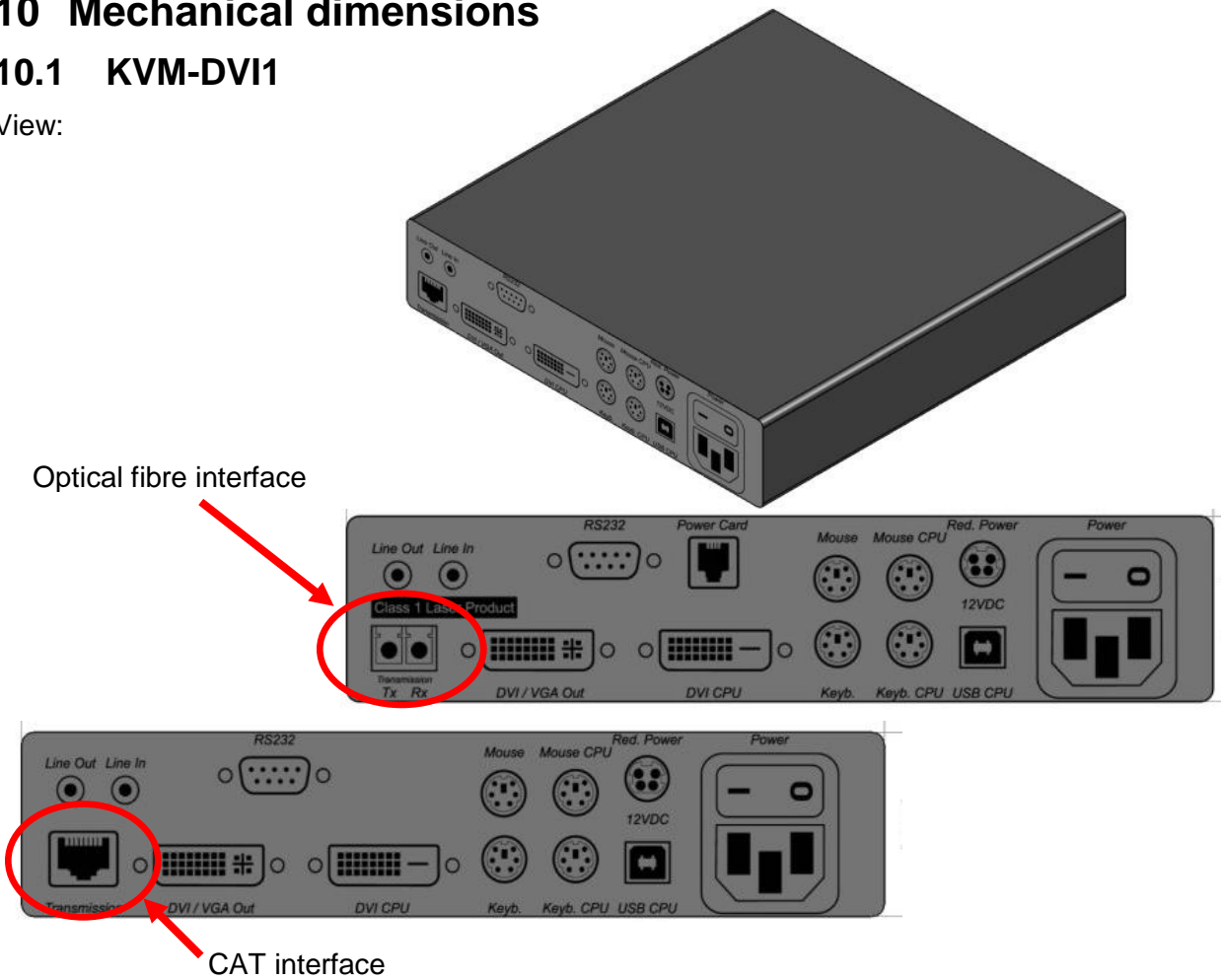
### 9.4 Safety information for operation

- 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.
- In case of non-compliance or contravention of the above explosion-protection is no longer guaranteed and all warranty claims shall be null and void !

## 10 Mechanical dimensions

### 10.1 KVM-DVI1

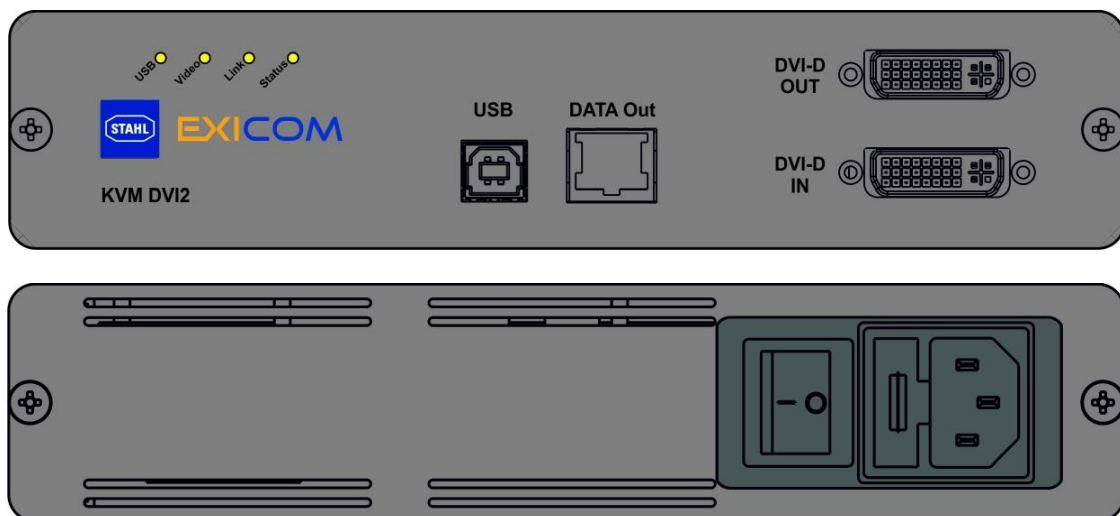
View:



Dimensions in mm / ft:  
 210 x 44 x 210 / 0.689 x 0.144 x 0.689 (W x H x D)

### 10.2 KVM-DVI2

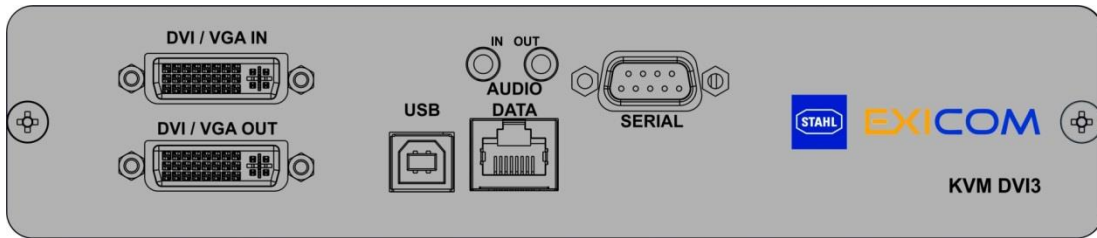
View:



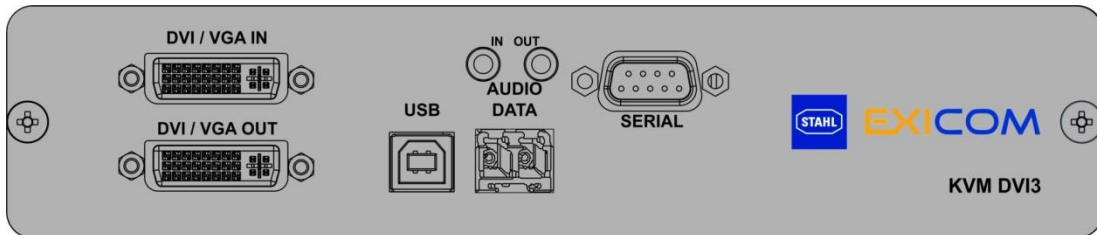
Dimensions in mm / ft:  
 210 x 44.45 x 165 / 0.689 x 0.146 x 0.541 (W x H x D)

### 10.3 KVM-DVI3

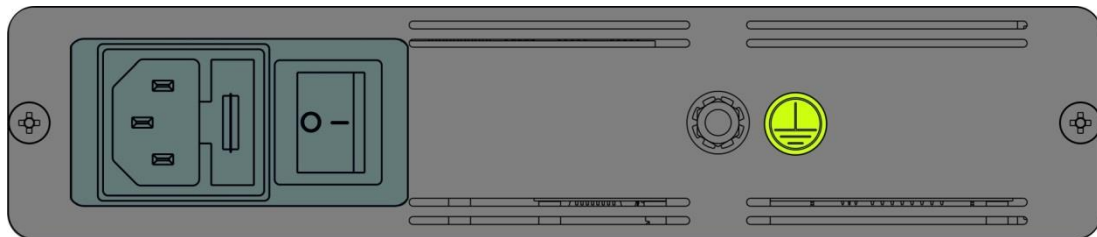
View (CAT version):



View (optical fibre version):








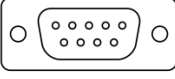


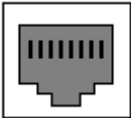
Back view:



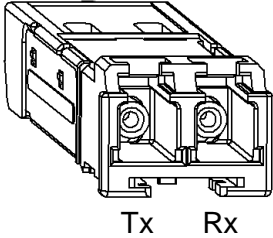
Dimensions in mm / ft:  
 210 x 44.45 x 165 / 0.689 x 0.146 x 0.541 (W x H x D)


# 11 Connections

## 11.1 KVM-DVI1



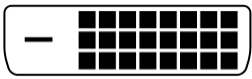

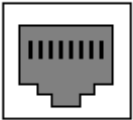
Definition	Plug type	Connection	Definition	
Power		IEC connector	power supply 100 - 240 VAC of the KVM transmission unit	
Red. power		Mini-DIN / Hosiden connector	redundant 12 VDC supply of the KVM transmission unit	
DVI CPU	 DVI-D (Dual Link)	DVI-D connector	DVI screen in, connection to the PC	
DVI / VGA out	 DVI-I (Dual Link)	DVI-I connector	DVI / VGA screen out, connection to local screen	
USB CPU		USB plug type B	USB in connection to the PC	
Mouse CPU	-	PS/2	not used / not supported	
Keyb. CPU	-	PS/2	not used / not supported	
Mouse	-	PS/2	not used / not supported	
Keyb.	-	PS/2	not used / not supported	
RS232		Sub-D 9 pin socket	RS-232 data Interface	
Line out		3.5mm TRS socket	Audio out	
Line in		3.5mm TRS socket	Audio in	
Transmission	 1.....8	RJ45 connector	Ethernet copper connection *	
		Pin	Signal	typical colour coding
		1	TRD0+	White / Orange
		2	TRD0-	Orange
		3	TRD1+	White / Green
		4	TRD1-	Blue
		5	TRD2+	Blue / White
		6	TRD2-	Green
		7	TRD3+	White / Brown
		8	TRD3-	Brown
9	SHLD	Screen		




Transmission		optical fibre connection type LC Duplex connector	Ethernet optical fibre interface * Ex op is
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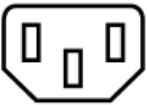



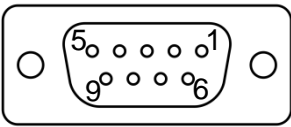


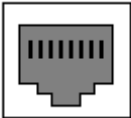
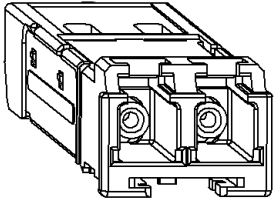
 <b>NOTICE</b>	<p>* Please note that the Ethernet connection is designed <b>either</b> for an optical fibre connection (FO) <b>or</b> for a copper connection (CAT7), depending on the version ordered ! In the case of an optical fibre connection the following cable is recommended:</p> <p>Multi-mode: 50 µm core cross section and 125 µm external cross section</p> <p>Single mode: 9 µm core cross section and 125 µm external cross section</p> <p>Recommended cable length for USB, RS-232 and Audio: max. 3 m (10 ft)</p>
---	--

### 11.2 KVM-DVI2

Definition	Plug type	Connection	Definition	
Power		IEC connector	power supply 100 - 240 VAC of the KVM transmission unit	
DVI-D in		DVI-D connector	DVI screen in, connection to the PC	
DVI-D out		DVI-D connector	DVI screen out, connection to local screen	
USB		USB plug type B	USB in Cconnection to the PC	
Data out	 1.....8	RJ45 connector	Ethernet copper connection	
		Pin	Signal	typical colour coding
		1	TRD0+	White / Orange
		2	TRD0-	Orange
		3	TRD1+	White / Green
		4	TRD1-	Blue
		5	TRD2+	Blue / White
		6	TRD2-	Green
		7	TRD3+	White / Brown
8	TRD3-	Brown		
9	SHLD	Screen		

 <b>NOTICE</b>	Audio and RS-232 only via a corresponding USB converter.
---	--

### 11.3 KVM-DVI3

Definition	Plug type	Connection	Definition		
Power		IEC connector	power supply 100 - 240 VAC of the KVM transmission unit		
DVI / VGA in	 DVI-I (Dual Link)	DVI-I connector *	DVI / VGA screen in, connection to the PC		
DVI / VGA out	 DVI-I (Dual Link)	DVI-I connector *	DVI / VGA screen out, connection to local screen		
USB		USB plug type B	USB in connection to the PC		
Serial		Sub-D 9 pin socket**	RS-232 data Interface		
		Pin		Signal	Designation
		2		RxD	Receive data
		3		TxD	Transmit data
		4		DTR	Data Terminal Ready
		5		GND	Ground
8	CTS	Clear to send			
Audio out		3.5mm TRS socket	Audio out		
Audio in		3.5mm TRS socket	Audio in		
Data	 1.....8	RJ45 connector	Ethernet (OSI Layer 1) copper interface ***		
		Pin		Signal	typical colour coding *4
		1		TRD0+	White / Orange
		2		TRD0-	Orange
		3		TRD1+	White / Green
		4		TRD1-	Blue
		5		TRD2+	Blue / White
		6		TRD2-	Green
		7		TRD3+	White / Brown
		8		TRD3-	Brown
9	SHLD	Screen			
Data	 Tx Rx	optical fibre connection type LC Duplex connector	Ethernet (OSI Layer 1) optical fibre interface *** Ex op is		

 NOTICE

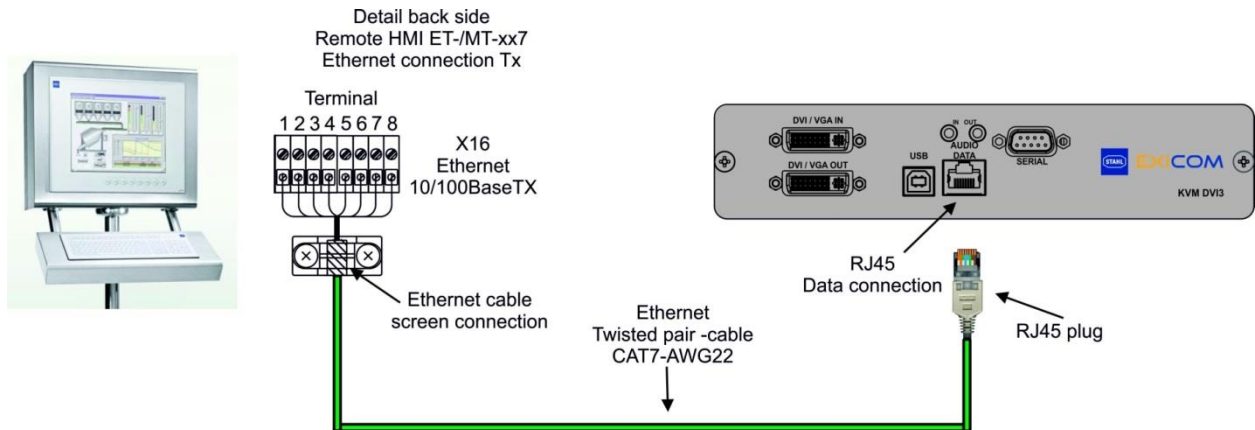
- \* It is also possible to use a single link connection for the DVI connection.
  - \*\* The named signals at the Sub-D socket are supported by the systems.
  - \*\*\* Please note that the Ethernet connection is designed either for an optical fibre connection (FO) or for a copper connection (CAT7), depending on the version ordered !  
In the case of an optical fibre connection the following cable is recommended:
    - Multi-mode (MM): 50 µm core cross section and 125 µm external cross section
    - Single mode (SM): 9 µm core cross section and 125 µm external cross section
- Data cable lengths:
- Optical fibre MM
    - up to 500 m (1,640.42 ft) via a 50 / 125 µm optical fibre cable,
    - up to 300 m (984.25 ft) via 62.5 / 125 µm optical fibre cable
  - Optical fibre SM
    - up to 10,000 m (32,808.40 ft) via a 9 / 125 µm optical fibre cable
  - Copper (TX)
    - up to 150 m (492.13 ft) via CAT7 installation cable AWG22
- \*4 Colour coding acc. to EIA/TIA T568B  
Recommended cable length for USB, RS-232 and Audio  
max. 3 m (9.84 ft)

## 11.4 Connection diagram KVM-DVI3

### 11.4.1 KVM-DVI3 data connection to 6x7 unit

The SERIES 600 HMI device is connected to the KVM transmission unit via an Ethernet connection which can consist of copper (Tx) or optical fibre (MM / SM) - depending on the version ordered.

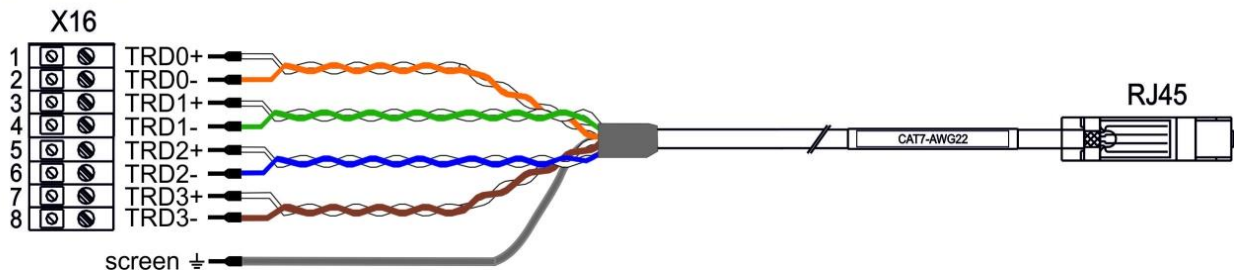
#### 11.4.1.1 Ethernet copper (Tx) connection



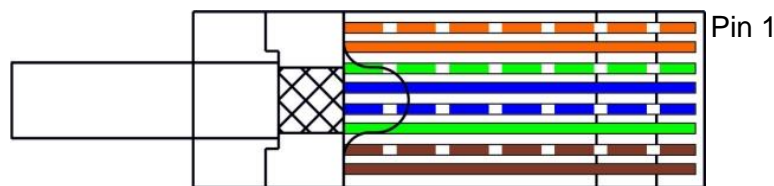
##### 11.4.1.1.1 Terminal assignment copper (Tx) connection

Diagram of cable connection between the 6x7 HMI device and the KVM transmission unit DVI3; colour coding according to EIA/TIA T568B.

6x7 HMI device



View / assignment of the RJ45 plug:



**NOTICE**

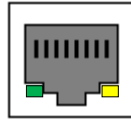
**Please note:**  
The wire pairs must be twisted right up to the terminals of the 6x7 HMI device !

Keep the cable wires as short as possible.

Ensure that the shielding of the cable covers a wide area.

**11.4.1.1.2 LED function copper (Tx) connection**

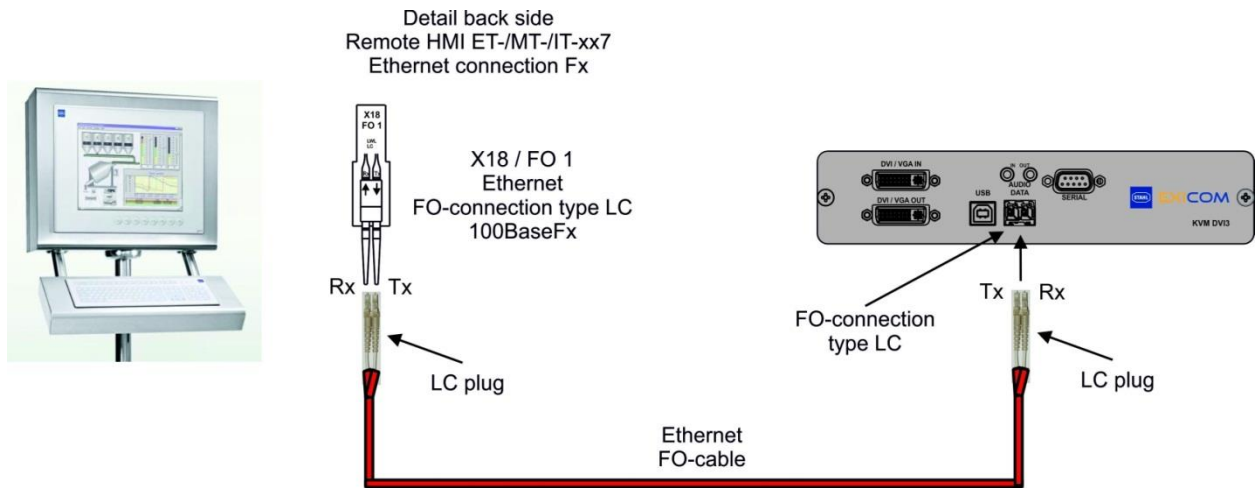
The LEDs for the state of the data connection of the Ethernet copper connection are located at the RJ45 socket.



LED (colour)	LED status		
	Off	Flashing	On
Yellow	No voltage at KVM-DVI3	Data connection interrupted	Data connection on
Green	No DVI / VGA signal	Activity at USB connection	DVI / VGA signal exists

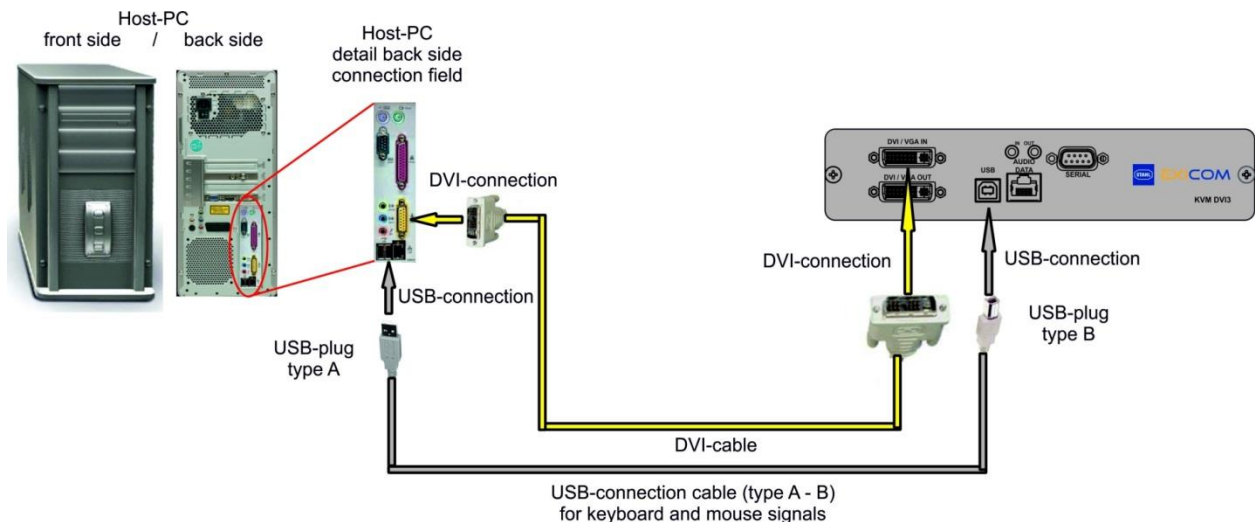
**11.4.1.2 Ethernet optical fibre (MM / SM) connection**

Flip both optical fibre cables at one end so that the Tx signal is connected to the Rx signal, and the Rx signal to the Tx signal.

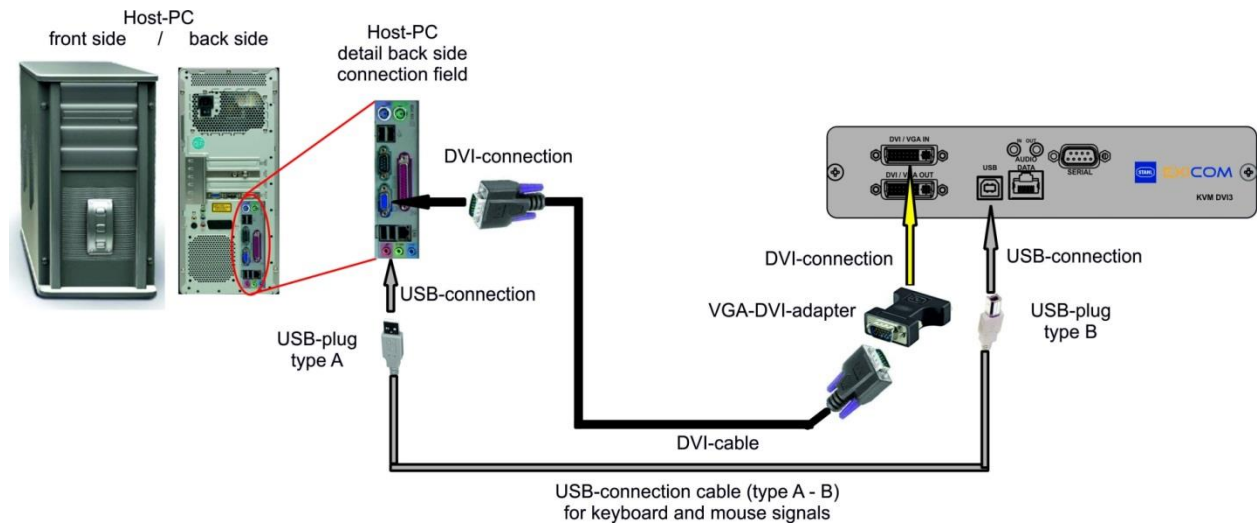


**11.4.2 KVM-DVI3 connection to the host PC**

Displaying the screen content and to operating the host PC require signal cables for the video, mouse and keyboard signals in addition to the power connection of the KVM transmission unit. Use the DVI / VGA IN socket for the video signal of the host PC.

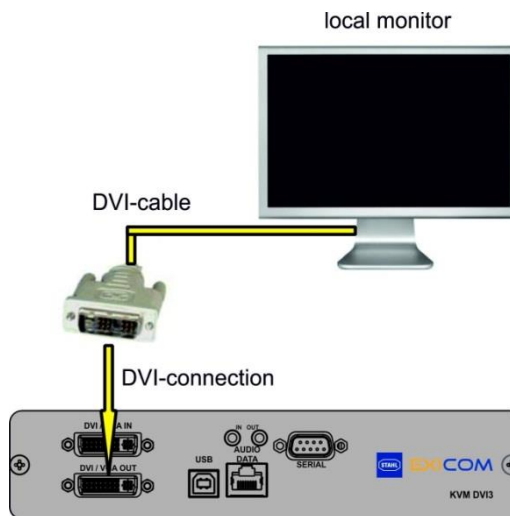


If the host computer has no DVI video signal, the KVM transmission unit can also be connected via a VGA video signal and cable. In this case, however, each host PC resolution used requires a video calibration of the KVM transmission unit. A VGA-DVI adapter is required because the KVM transmission unit only has a DVI connector.



### 11.4.3 Local display of the host PC at the KVM-DVI3

If a local display of the host PC at the KVM transmission unit is required, a screen needs to be connected to the DVI / VGA OUT socket of the transmission unit.



## 12 Maintenance, overhaul

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

System maintenance should focus on the following:

- a. Housing damage
- b. All cables and lines are properly connected and undamaged



If the device in its factory state is damaged or altered in any way, decommission it immediately and contact the R. STAHL HMI Systems GmbH !

## 13 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 – if requested – have been authorized by the manufacturer.

### 13.1 Repairs / hazardous substances

An error description must be enclosed with any units returned to R. STAHL HMI Systems GmbH for repairs.

Remove all material residues. Please pay particular attention to the seal grooves and slits where material residues may be lodged. We have to ask you not to return a unit if you are unable to completely remove any hazardous substances. We shall bill you for any costs arising from insufficiently cleaned units, such as disposal or damage to persons (chemical burns, etc.).

## 14 Disposal

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

For countries under the jurisdiction of the EU the corresponding WEEE directive applies.

The KVM units are classified according to the table below:

	old	new
Directive	WEEE I Directive 2002/96/EC	WEEE II Directive 2012/19/EU
Valid	until 14.08.2018	from 15.08.2018
Category	9 Monitoring and control devices	SG5 Small equipment <50 cm

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

### 14.1 RoHS directive 2011/65/EC

The revised version of the RoHS (restriction of hazardous substances) 2002/95/EC directive, directive 2011/65/EC, extends its area of application to all electric and electronic products.

The KVM units are conform with the requirements from RoHS directive 2011/65/EU, dated 03.01.2013.

# 15 Declaration of EC conformity

## EG/EU-Konformitätserklärung EC/EU Declaration of Conformity Déclaration de Conformité CE/UE



**R. STAHL HMI Systems GmbH • Adolf-Grimme-Allee 8 • 50829 Köln, Germany**

erklärt in alleiniger Verantwortung, declares in its sole responsibility, déclare sous sa seule responsabilité,

dass das Produkt: Bedien- und Beobachtungsgeräte  
that the product: Operating and Monitoring Devices  
que le produit: Consoles de commande et de visualisation

Typ(en), type(s), type(s):

Display Unit T-EX-##\*-CAT7\*  
Display Unit T-EX-##\*-MM\*  
Display Unit T-EX-##\*-SM\*  
Keyboard Trackball Unit T-EX\*-KB-TB\*  
Keyboard Mouse Unit T-EX\*-KB-M\*  
Keyboard Pad Unit T-EX\*-KB-P\*  
Keyboard Joystick Unit T-EX\*-KB-J\*  
Transmission Unit T-EX-KVM\*-CAT7\*  
Transmission Unit T-EX-KVM\*-MM\*  
Transmission Unit T-EX-KVM\*-SM\*

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

#=one numeric character, without relevance for explosion protection

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.

is in conformity with the requirements of the following directives and standards.

est conforme aux exigences des directives et des normes suivantes.

Richtlinie(n) / Directive(s) / Directive(s)	Norm(en) / Standard(s) / Norme(s)
2014/34/EU ATEX-Richtlinie	EN 60079-0: 2009 Das Produkt entspricht Anforderungen aus:
2014/34/EU ATEX Directive	EN 60079-5: 2007 Product corresponds to requirements from:
2014/34/UE Directive ATEX	EN 60079-7: 2007 Produit correspond aux exigences:
	EN 60079-11: 2007 EN 60079-0: 2012/A11:2013
	EN 60079-26: 2007 EN 60079-5: 2015
	EN 60079-28: 2004 EN 60079-7: 2015 (Ab/From/De 01.08.2018)
	EN 60079-31: 2009 EN 60079-11: 2012
	EN 61241-11: 2006 EN 60079-26: 2015
	EN 60079-28: 2016
	EN 60079-31: 2014

Kennzeichnung, marking, marquage:



Display Unit type T-Ex-##\*-R2:  
II 2(1) G Ex eb q [ia op is Ga] IIC T4 Gb  
II 2(1) D Ex tb IIIC [ia op is Da] IP65 T110°C Db  
Keyboard Trackball Unit, for Keyboard Mouse Unit, for  
Keyboard Pad Unit, for Keyboard Joystick Unit:  
II 1 G Ex ia IIC T4 Ga  
II 1 D Ex ia IIIB T110°C Da  
Transmission Unit:  
II (1) G [Ex op is Ga] IIC  
II (1) D [Ex op is Da] IIIB

CE 0158

EG/EU-Baumusterprüfbescheinigung:  
EC/EU Type Examination Certificate:  
Attestation d'examen CE/UE de type:

BVS 11 ATEX E 102 X

DEKRA EXAM GmbH (NB 0158)  
Dinnendahlstraße 9, 44809 Bochum, Germany



**EG/EU-Konformitätserklärung**  
*EC/EU Declaration of Conformity*  
*Déclaration de Conformité CE/UE*



2014/30/EU	EMV-Richtlinie	EN 61000-6-2: 2006
2014/30/EU	EMC Directive	EN 61000-6-4: 2007
2014/30/UE	Directive CEM	
Produktnormen nach Niederspannungsrichtlinie: Product standards according to Low Voltage Directive: Normes des produit pour la Directive Basse Tension:		EN 50178: 1997 EN 61010-1: 2001+ Corrigendum / Errata
Produktnormen nach RoHS-Richtlinie (2011/65/EU): Product standards according to RoHS Directive: Normes des produit pour la Directive RoHS:		EN 50581:2012

Köln, 2018-06-06

Ort und Datum  
Place and date  
Lieu et date

i.V.

J. Düren  
Technical Director

i.V.

A. Jung  
Ex Representative

# 15.1 RCM

## Supplier's declaration of conformity



As required by the following Notices:

- > *Radiocommunications (Compliance Labelling - Devices) Notice 2014* made under section 182 of the *Radiocommunications Act 1992*;
- > *Radiocommunications Labelling (Electromagnetic Compatibility) Notice 2017* made under section 182 of the *Radiocommunications Act 1992*
- > *Radiocommunications (Compliance Labelling – Electromagnetic Radiation) Notice 2014* made under section 182 of the *Radiocommunications Act 1992* and
- > *Telecommunications (Labelling Notice for Customer Equipment and Customer Cabling) Instrument 2015* made under section 407 of the *Telecommunications Act 1997*.

### Instructions for completion

- > *Do not return this form to the ACMA.* This completed form must be retained by the supplier as part of the documentation required for the compliance records and must be made available for inspection by the ACMA when requested.

### Supplier's details (manufacturer, importer or authorised agent)

Company Name (OR INDIVIDUAL)

R. STAHL Australia Pty Ltd
TRADING AS R. STAHL HMI Systems GmbH

ACN/ARBN

ABN 81150955838
-----------------

OR

New Zealand IRDN

--

Street Address (AUSTRALIAN or NEW ZEALAND)

848 Old Princes Highway
Sutherland, NSW
POSTCODE 2232
Phone: +61 2 4254 4777

### Product details and date of manufacture

Product description – brand name, type, current model, lot, batch or serial number (if available), software/firmware version (if applicable)

<p>Operating and Monitoring Devices</p> <p>Display Unit T-EX-##*-CAT7*; Display Unit T-EX-##*-MM*; Display Unit T-EX-##*-SM*; * =any alphanumeric or symbolic character; # =one numeric character</p>
<p>Operating and Monitoring Devices</p> <p>Display Unit MT-##7*-CAT7*; Display Unit MT-##7*-MM*; Display Unit MT-##7*-SM*; * =any alphanumeric or symbolic character; # =one numeric character</p>
<p>Keyboard</p> <p>Keyboard Trackball Unit T-EX*-KB-TB*; Keyboard Mouse Unit T-EX*-KB-M*; Keyboard Pad Unit T-EX*-KB-P*; Keyboard Joystick Unit T-EX*-KB-J*; * =any alphanumeric or symbolic character</p>
<p>Transmission Unit</p> <p>Transmission Unit T-EX-KVM*-CAT7*; Transmission Unit T-EX-KVM*-MM*; Transmission Unit T-EX-KVM*-SM*; * =any alphanumeric or</p>

symbolic character

**Compliance – applicable standards and other supporting documents**

Evidence of compliance with applicable standards may be demonstrated by test reports, endorsed/accredited test reports, certification/competent body statements.

Having had regard to these documents, I am satisfied the above mentioned product complies with the requirements of the relevant ACMA Standards made under the *Radiocommunications Act 1992* and the *Telecommunications Act 1997*.

List the details of the documents the above statement was made, including the standard title, number and, if applicable, number of the test report/endorsed test report or certification/competent body statement

EN 61000-6-4:2007; EN 61000-6-4:2007 + A1:2011

**Declaration**

I hereby declare that:

1. I am authorised to make this declaration on behalf of the Company mentioned above,
2. the contents of this form are true and correct, and
3. the product mentioned above complies with the applicable above mentioned standards and all products supplied under this declaration will be identical to the product identified above.

**Note:** Under section 137.1 of the *Criminal Code Act 1995*, it is an offence to knowingly provide false or misleading information to a Commonwealth entity.  
Penalty: 12 months imprisonment

	Managing Director
SIGNATURE OF SUPPLIER OR AGENT	POSITION IN ORGANISATION
John Zagame	2018-10-15
PRINT NAME	DATE

The *Privacy Act 1988* (Cth) (the Privacy Act) imposes obligations on the ACMA in relation to the collection, security, quality, access, use and disclosure of personal information. These obligations are detailed in the Australian Privacy Principles.

The ACMA may only collect personal information if it is reasonably necessary for, or directly related to, one or more of the ACMA's functions or activities.

The purpose of collecting the personal information in this form is to ensure the supplier is identified in the 'Declaration of conformity'. If this Declaration of Conformity is not completed and the requested information is not provided, a compliance label cannot be applied.

Further information on the Privacy Act and the ACMA's Privacy Policy is available at [www.acma.gov.au/privacypolicy](http://www.acma.gov.au/privacypolicy). The Privacy Policy contains details about how you may access personal information about you that is held by the ACMA, and seek the correction of such information. It also explains how you may complain about a breach of the Privacy Act and how we will deal with such a complaint.

Should you have any questions in this regard, please contact the ACMA's privacy contact officer on telephone on 1800 226 667 or by email at [privacy@acma.gov.au](mailto:privacy@acma.gov.au).

## 16 Release notes

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

Version 01.00.05

- Removal of previous release notes
- Changing disclaimer
- Changing title "Maintenance" into "Maintenance, overhaul"
- Addition of "textbox caution" in section "Maintenance, overhaul" with information according to "decommission the device"
- Correction category WEEE II directive
- Addition of RCM declaration of conformity
- Formal changes







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[www.stahl-hmi.de](http://www.stahl-hmi.de)

