



# Operating Instruction

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Device platform MANTA GMP

IT-xx9

SERIES 400 Panel PC

SERIES 500 Thin Clients

SERIES 700 Direct Monitors



THE STRONGEST LINK.

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HW-Rev.	IT-5x9:	01.00.12
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## Formatting conventions


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


In detail, these are:


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

 <b>WARNING</b>	This sign alerts users to hazards that <b>may</b> result in death or serious injury if ignored.
--	---


 <b>CAUTION</b>	This sign alerts users to hazards that may result in injury if ignored.
--	---


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

 <b>NOTICE</b>	Information highlighted by this symbol indicates important information of which particular note should be taken.
---	--

 <b>DOCUMENTATION</b>	Information highlighted by this symbol refers to a different chapter or section in this manual or other documentation or a web-page.
--	--

## Warnings

	Warning ! In ambient temperatures exceeding +45 °C the surface of the HMI devices may heat up. Caution when touching!
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	Caution ! Incorrect replacement of batteries may result in explosion ! Dispose of used batteries as described in instructions.
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# 1 Preface

These Operating Instructions contain all relevant information for the Manta GMP IT-xx9 devices (SERIES 400 Open HMI - Panel PCs, SERIES 500 Thin Clients and SERIES 700 Direct Monitors). They also contain information on the connection and installation (etc.) of these devices. Three device versions are available with the Manta GMP platform: the IT-479-2TX and IT-579-2TX with 2x 10/100/1000Base-TX Ethernet interface, and the IT-779-DVI0 with DVI interface. All of these have a 61 cm display (24") and AC supply.

## ! NOTICE

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 !

## 2 Device function

The MANTA GMP SERIES IT-479 and IT-579 Operator Stations (OS) have been developed for installation in cleanrooms cleanliness class C according to EU-GMP and according to EHEDG. At series IT-479 and IT-579 data is transmitted via dual Ethernet as 10/100/1000Base-TX via CAT7 across a distance of up to 100 m [330 ft].

The devices are connected to a communication system via the external serial interfaces (RS-232, Ethernet). The USB interfaces, also external, can be used for the connection of various peripheral devices. Furthermore, the interfaces for keyboard, mouse, video and audio signals are also located here.

Unlike the IT-479 and IT-579 devices, the IT-779 series only has a DVI input. This device series is designed to be operated purely as a screen.

The MANTA GMP operator stations are available with different mounting options (wall and stand mounting), two tilting angles or as a vertical or horizontal dual monitor solution. The systems can be equipped with RFID readers or barcode scanners for proximity data capture.

The dual monitor solutions always consist of one SERIES 400 / 500 device and one SERIES 700 device.

### 2.1 IT-4x9 (SERIES 400 Panel PC)

The IT-4x9 HMI devices are equipped with a Windows® operating system and can run any software. They are therefore easy to operate.

The devices are fitted with powerful processors and are thus able to process even large applications on-site. The devices have a back-up and recovery system which can be used to save complete images and load them onto new Panel PCs without requiring specific IT skills.

### 2.2 IT-5x9 (SERIES 500 Thin Clients)

The IT-5x9 SERIES 500 HMI devices can be integrated into modern networks as Thin Clients or with a KVM box via KVM-over-IP. Digital Ethernet technology is used for the transmission of data between the KVM-over-IP box and the Thin Client device.

Up to four Thin Clients can access one KVM-over-IP box with one software license, thus cost-effectively communicating with several PCs - for example, when monitoring the production process and simultaneously applying Condition Monitoring.

Multi-monitoring with several on-site terminals is as easy as the application as Thin Client in a server environment with virtual work stations.

### **2.3 IT-7x9 (SERIES 700 Direct Monitors)**

Our IT-7x9 HMI devices are directly connected to the PC sending the data, enabling users to monitor processes safely and fast - from a distance of up to 5 m [16.4 ft].

As an option, the devices that are intended to be operated purely as monitors can be fitted with a touch screen, so that they can be operated as well as monitored. The touch signals are transmitted to the PC via the USB connection at the IT-7x9. The PC in turn provides all software applications and functions without limitation and directly, thus ensuring full functionality in the production facility.

Connecting this device series requires no specific IT expertise.

### 3 Technical data

Function / Equipment	OS-IT-479-2TX	OS-IT-579-2TX	OS-IT-779-DVI0
<b>General information</b>			
HMI-type	Operator station		
Technology	Panel PC	Thin Client	Direct Monitor
<b>Explosion protection</b>			
Application range (Zones)	non-Ex (safe area)		
<b>Electrical data</b>			
Processor	AMD GX-222GC		-
Processor details	2.2 GHz; Dual Core, 10W TDP		-
Main memory	4 GB		-
Data memory	64 GB MLC 128 GB MLC	64 GB MLC	-
Graphics controller	integrated AMD Radeon R5E graphics		-
Memory technology	SSD solid state flash drive		-
Operating System	Windows Embedded Standard 7 (64 bit) Windows 7 Ultimate (64 bit) Windows 10 IoT Enterprise 2016 LTSP (32 bit and 64 bit)	Windows 10 IoT Enterprise	-
Operating system note	In the case of Windows 7 Ultimate and Windows 10 IoT at the OS-IT-479-2TX devices, the 64 bit version is pre-installed on the device. Additionally, the 32 bit version of the respective Windows version is installed on the recovery stick included in the delivery.		
Language support	via Windows operating system		-
HMI Image	-	Remote Firmware	-
Input voltage range	85 – 250 VAC		
Nominal voltage range	100 – 240 VAC		
Frequency range	50 - 60 Hz		
Rated operational power	typ. 50 W (170 BTU)		
Power consumption AC 1	1 A		
Fuses AC	4 AT		
Connections	via standard plug		
Plug version AC	IEC plug (female)		
Plug version USB	USB-A connector		USB-B connector
Note USB	The USB-B slot of the OS-IT-779-DVI0 devices is only equipped if the device has the touch option (T3) (see type code). In this case, the USB connection is used to transmit the touch signals to the connected PC.		
Further connections	12 VDC Output external on / off switch (pre-mounted at enclosure) Loudspeaker output (optional)		-
Further connections note	Only accessories approved by STAHL HMI may be connected to the 12 VDC output.		-
Plug version further connections	pluggable screw terminal, green, 6-pin 2.5 mm <sup>2</sup> (AWG14)		-
Fuses	2x 4A time-lag, 250 V		
Ethernet / Data	2x 10/100/1000Base-TX		-
Interface medium	CAT7 Data transmission		-
USB interface	4x USB		-
Interface serial	2x RS-232		-
Interface audio	1 x Audio Line in / out		-
Connection impedance	12 W at 4 Ohm		-
Data cable	CAT7 installation cable AWG23		DVI-I cable
Length of data cable	max. 100 m / [330 ft]		max. 5 m / [16.4 ft]
Minimum requirement connection cable supply	3 x 1.5 mm <sup>2</sup> (AWG16)		
Minimum requirement connection cable Ethernet	CAT6		-
Real-time clock	Yes		-
Real-time clock data buffer	Lithium battery and capacitor buffered, maintenance-free		-
Battery type	BR2032		-
Battery buffer	> 5 years		-
Capacitor buffer	at least 4 days		-



<b>Display</b>		
Display-Version	TFT Color display	
Display version 2	16.7 million colours	
Display size inch	24	
Display size cm	61	
Display resolution	Full HD	
Display total pixels	1920 x 1080	
Display dimensions	16:9	
Display brightness	250 cd/m <sup>2</sup>	
Display contrast	1000:1	
Backlight	LED Technology	
Life expectancy backlight	50 000 h at +20 °C / [-4 °F]	
Touch screen	yes, optional	
Touch screen technology	projected, capacitive (PCAP), multi-touch	
Display	Glass	
horizontal viewing angle	at CR ≥ 10 = 178°	
vertical viewing angle	at CR ≥ 10 = 178°	
Touchscreen activation	no activation pressure necessary	
Touchscreen input method	Finger, thin gloved finger or special gloves, conductive stylus	
Touchscreen durability	very good	
Touchscreen scratch hardness MoHS	6	
Touchscreen scratch hardness pencil hardness test ISO 15184	9H	
Touchscreen transmissivity / optics	very good	
Touchscreen surface contaminants	Unaffected (but can be affected by conductive fluids (e.g. saltwater))	
Touchscreen abrasive resistance	no visible abrasion by rubber or finger	
<b>Ambient conditions</b>		
Ambient temperature, operation	0 °C ... +45 °C / [+32 °F ... +113 °F]	
Storage temperature range	-20 °C ... +60 °C / [-4 °F ... +140 °F]	
Cold start temperature	0 °C / [+32 °F]	
Temperature note 3	Cold start temperature: If the HMI device is switched on at a temperature below 0 °C / [+32 °F] the display will need a certain amount of time to warm up until everything is clearly visible. Depending on how low the temperature is, this process may last up to 3 hours.	
Temperature note - general	The temperature details apply to a device combination with display, keyboard and enclosure. Any additional built-in or added components may have an impact on / change these.	
Heat dissipation	about 40% via the upper front enclosure, about 60% via the back of the enclosure	
Rel. air humidity	10 to 90% at +40°C [+104 °F], non-condensing	
<b>Mechanical data</b>		
Ingress Protection (IP)	IP66	
Material front	Stainless steel / glass	
Material back	Stainless steel	
Enclosure / Design (1)	GMP enclosure 15° tilted	
Enclosure / Design (2)	GMP enclosure vertical	
Dimensions (WxHxD) (1)	673 mm x 672 mm x 370 mm / [2.21 ft] x [2.2 ft] x [1.21 ft]	
Dimensions (WxHxD) (2)	673 mm x 680 mm x 373 mm / [2.21 ft] x [2.23 ft] x [1.22 ft]	
Weight	21.00 kg / [46.3 lbs]	16.00 kg / [35.27 lbs]
Mechanical data note 1	At Panel PC and Thin Client devices the mechanical data apply to a system with display and keyboard inside a GMP enclosure. Any additional built-in or added components may have an impact on / change these.	
Mechanical data note 2	At Direct Monito devices the mechanical data apply to a system with display inside a GMP enclosure. Any additional built-in or added components may have an impact on / change these.	
<b>Mounting/ Installation</b>		
Enclosure type	Stainless steel enclosure (GMP)	
Mounting option	Stand, mobile stand, wall bracket, dual monitor solution	
<b>Components</b>		
Keyboard	optional, 107 keys with trackball or touchpad	-

## 4 Conformity to standards

The IT-xx9 devices comply with the following standards and directive:

Standard	Classification
<b>Electromagnetic compatibility</b>	
<b>Directive 2014/30/EU</b>	
EN 61000-3-2 : 2014	EMC limitation of harmonic currents
EN 61000-3-3 : 2013	EMC limits
EN 61000-6-2 : 2005 + AC 2005	Immunity
EN 61000-6-4 : 2007 + A1 : 2011	Interference emission
EN 55032 2012 :	EMC interference emission
EN 55024 2010 :	Interference resistance properties
<b>Low voltage directive</b>	
<b>Directive 2014/35/EU</b>	
IEC 60950-1 : 2005 + A1 : 2009 + A2 : 2013	General requirements
EN 60950-1 : 2006 + A11 + A12 + A2	
<b>RoHS Directive</b>	
<b>2011/65/EU</b>	<b>Classification</b>
EN 50581 : 2012	Technical documentation evaluating electric and electronic equipment with regards to hazardous substances

## 5 Identification

Manufacturer	R. STAHL HMI Systems GmbH
Type designation	IT-479-2TX / IT-579-2TX / IT-779-DVIO
CE classification:	<b>CE</b>

## 6 Certificates

The IT-479 and IT-579 devices are certified for installation in the following areas:

Synonym	Scope
KCC	Korea

The KCC certification is listed under the following registration numbers:

Registration number:

R-REM-RS3-IT-479-xx  
R-REM-RS3-IT-579-xx

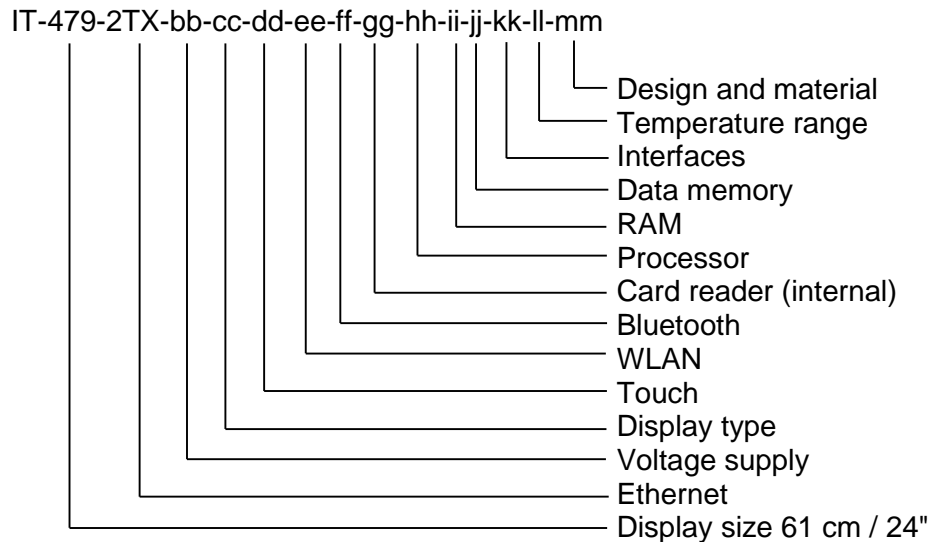
## 7 Power supply

### 7.1 HMI devices

Supply voltage: 100 - 240 VAC, 50 - 60 Hz  
max. power consumption: 1 A

## 8 Type code

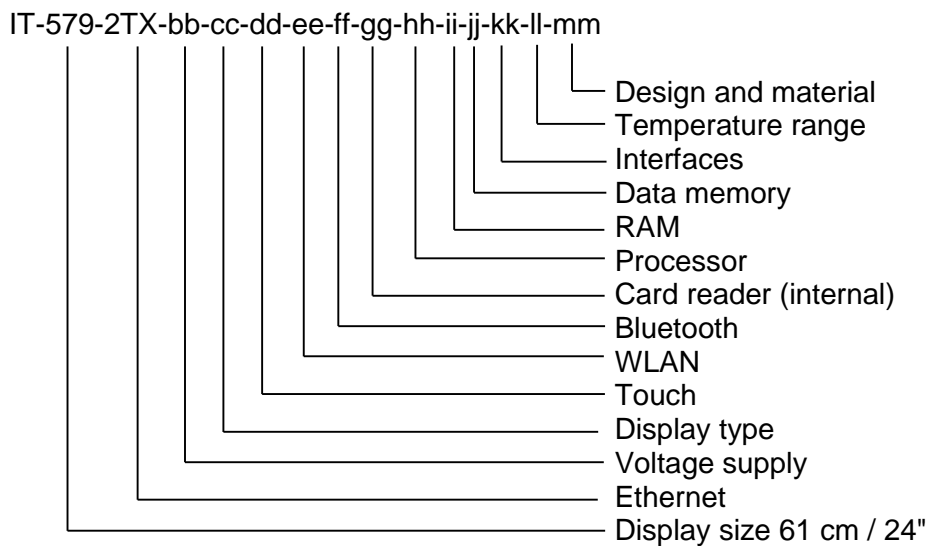
### 8.1 IT-479-2TX (Panel PC)



Device variant:

Classification product key	Description
	Type with
IT-479- <b>2TX</b> -bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll-mm	2x Copper Ethernet interface 10/100Base-TX
IT-479-aa- <b>AC</b> -cc-dd-ee-ff-gg-hh-ii-jj-kk-ll-mm	Power supply 100 - 240 VAC, 50 - 60 Hz
IT-479-aa-bb- <b>D0</b> -dd-ee-ff-gg-hh-ii-jj-kk-ll-mm	TFT display (standard)
IT-479-aa-bb-cc- <b>T0</b> -ee-ff-gg-hh-ii-jj-kk-ll-mm	No Touch screen
IT-479-aa-bb-cc- <b>T3</b> -ee-ff-gg-hh-ii-jj-kk-ll-mm	Touch screen, capacitive
IT-479-aa-bb-cc-dd- <b>W00</b> -ff-gg-hh-ii-jj-kk-ll-mm	No WLAN
IT-479-aa-bb-cc-dd- <b>W02</b> -ff-gg-hh-ii-jj-kk-ll-mm	WLAN interface RF 2.4 GHz
IT-479-aa-bb-cc-dd-ee- <b>B0</b> -gg-hh-ii-jj-kk-ll-mm	No Bluetooth
IT-479-aa-bb-cc-dd-ee-ff- <b>C0</b> -hh-ii-jj-kk-ll-mm	No internal card reader
IT-479-aa-bb-cc-dd-ee-ff-gg- <b>P2</b> -ii-jj-kk-ll-mm	AMD GX-217GA processor
IT-479-aa-bb-cc-dd-ee-ff-gg-hh- <b>R3</b> -jj-kk-ll-mm	4 GB RAM
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii- <b>MA</b> -kk-ll-mm	64 GB Solid State Drive MLC
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii- <b>M9</b> -kk-ll-mm	128 GB Solid State Drive MLC
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>I0</b> -ll-mm	No additional interfaces
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>I1</b> -ll-mm	USB plug
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>I2</b> -ll-mm	USB plug GMP
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>I7</b> -ll-mm	Audio amplifier
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>IA</b> -ll-mm	USB plug and audio amplifier
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>IB</b> -ll-mm	USB plug GMP and audio amplifier
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>IX</b> -ll-mm	USB plug GMP, audio amplifier and LS2 loudspeaker (mounted inside enclosure)
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk- <b>O7</b> -mm	Temperature range 0 – 45 °C
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll- <b>G100</b>	GMP enclosure, vertical, V2A stainless steel (SS304), mounted on stand
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll- <b>G200</b>	GMP enclosure, inclined, V2A stainless steel (SS304), mounted on stand
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll- <b>G101</b>	GMP enclosure Class C, vertical, V2A stainless steel (SS304), mounted on stand
IT-479-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll- <b>G201</b>	GMP enclosure Class C, inclined, V2A stainless steel (SS304), mounted on stand

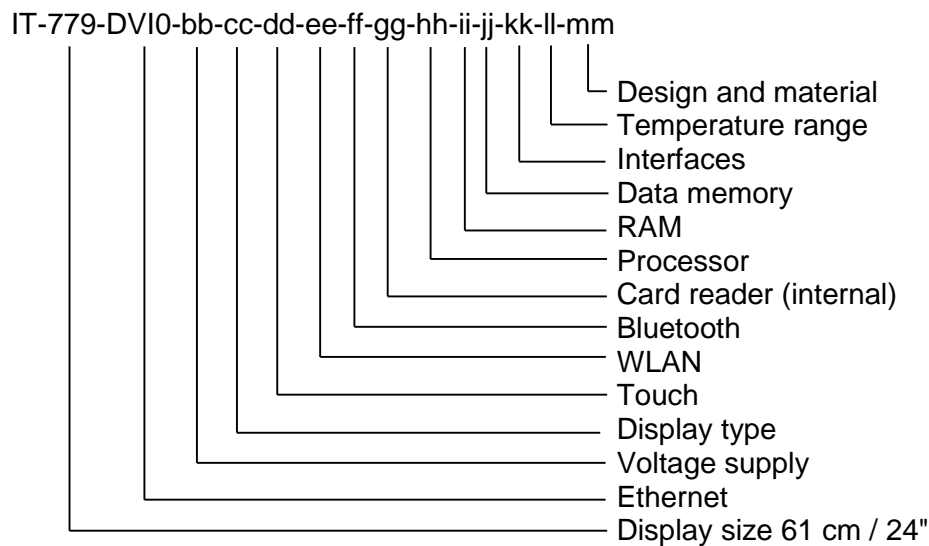
## 8.2 IT-579-2TX (Thin Client)



Device variant:

Classification product key	Description
	Type with
IT-579- <b>2TX</b> -bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll-mm	2x Copper Ethernet interface 10/100Base-TX
IT-579-aa- <b>AC</b> -cc-dd-ee-ff-gg-hh-ii-jj-kk-ll-mm	Power supply 100 - 240 VAC, 50 - 60 Hz
IT-579-aa-bb- <b>D0</b> -dd-ee-ff-gg-hh-ii-jj-kk-ll-mm	TFT display (standard)
IT-579-aa-bb-cc- <b>T0</b> -ee-ff-gg-hh-ii-jj-kk-ll-mm	No Touch screen
IT-579-aa-bb-cc- <b>T3</b> -ee-ff-gg-hh-ii-jj-kk-ll-mm	Touch screen, capacitive
IT-579-aa-bb-cc-dd- <b>W00</b> -ff-gg-hh-ii-jj-kk-ll-mm	No WLAN
IT-579-aa-bb-cc-dd- <b>W02</b> -ff-gg-hh-ii-jj-kk-ll-mm	WLAN interface RF 2.4 GHz
IT-579-aa-bb-cc-dd-ee- <b>B0</b> -gg-hh-ii-jj-kk-ll-mm	No Bluetooth
IT-579-aa-bb-cc-dd-ee-ff- <b>C0</b> -hh-ii-jj-kk-ll-mm	No internal card reader
IT-579-aa-bb-cc-dd-ee-ff-gg- <b>P2</b> -ii-jj-kk-ll-mm	AMD GX-217GA processor
IT-579-aa-bb-cc-dd-ee-ff-gg-hh- <b>R3</b> -jj-kk-ll-mm	4 GB RAM
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii- <b>MA</b> -kk-ll-mm	64 GB Solid State Drive MLC
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii- <b>M9</b> -kk-ll-mm	128 GB Solid State Drive MLC
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>I0</b> -ll-mm	No additional interfaces
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>I1</b> -ll-mm	USB plug
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>I2</b> -ll-mm	USB plug GMP
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>I7</b> -ll-mm	Audio amplifier
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>IA</b> -ll-mm	USB plug and audio amplifier
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>IB</b> -ll-mm	USB plug GMP and audio amplifier
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>IX</b> -ll-mm	USB plug GMP, audio amplifier and LS2 loudspeaker (mounted inside enclosure)
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk- <b>O7</b> -mm	Temperature range 0 – 45 °C
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll- <b>G100</b>	GMP enclosure, vertical, V2A stainless steel (SS304), mounted on stand
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll- <b>G200</b>	GMP enclosure, inclined, V2A stainless steel (SS304), mounted on stand
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll- <b>G101</b>	GMP enclosure Class C, vertical, V2A stainless steel (SS304), mounted on stand
IT-579-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll- <b>G201</b>	GMP enclosure Class C, inclined, V2A stainless steel (SS304), mounted on stand

### 8.3 IT-779-DVI0 (Direct Monitors)



Device variant:

Classification product key	Description
	Type with
IT-779- <b>DVI0</b> -bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll-mm	Monitor input via DVI interface
IT-779-aa- <b>AC</b> -cc-dd-ee-ff-gg-hh-ii-jj-kk-ll-mm	Power supply 100 - 240 VAC, 50 - 60 Hz
IT-779-aa-bb- <b>D0</b> -dd-ee-ff-gg-hh-ii-jj-kk-ll-mm	TFT display (standard)
IT-779-aa-bb-cc- <b>T0</b> -ee-ff-gg-hh-ii-jj-kk-ll-mm	No Touch screen
IT-779-aa-bb-cc- <b>T3</b> -ee-ff-gg-hh-ii-jj-kk-ll-mm	Touch screen, capacitive
IT-779-aa-bb-cc-dd- <b>W00</b> -ff-gg-hh-ii-jj-kk-ll-mm	No WLAN
IT-779-aa-bb-cc-dd-ee- <b>B0</b> -gg-hh-ii-jj-kk-ll-mm	No Bluetooth
IT-779-aa-bb-cc-dd-ee-ff- <b>C0</b> -hh-ii-jj-kk-ll-mm	No internal card reader
IT-779-aa-bb-cc-dd-ee-ff-gg- <b>P0</b> -ii-jj-kk-ll-mm	No processor
IT-779-aa-bb-cc-dd-ee-ff-gg-hh- <b>R0</b> -jj-kk-ll-mm	No RAM
IT-779-aa-bb-cc-dd-ee-ff-gg-hh-ii- <b>M0</b> -kk-ll-mm	No data memory
IT-779-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj- <b>I0</b> -ll-mm	No additional interfaces
IT-779-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk- <b>O7</b> -mm	Temperature range 0 – 45 °C
IT-779-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll- <b>G100</b>	GMP enclosure, vertical, V2A stainless steel (SS304), mounted on stand
IT-779-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll- <b>G200</b>	GMP enclosure, inclined, V2A stainless steel (SS304), mounted on stand
IT-779-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll- <b>G101</b>	GMP enclosure Class C, vertical, V2A stainless steel (SS304), mounted on stand
IT-779-aa-bb-cc-dd-ee-ff-gg-hh-ii-jj-kk-ll- <b>G201</b>	GMP enclosure Class C, inclined, V2A stainless steel (SS304), mounted on stand

## 9 Safety information



Read the safety information listed in section 8 carefully to avoid injury and damage to equipment !

### 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 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.

### 9.2 Industrial Security

Our products with Industrial Security functions support the secure operation of plants, systems and equipment. Protection against cyber threats requires an all-encompassing Industrial Security concept. The key to a successful concept is integrated implementation, continuous maintenance and state-of-the-art technology. This is the responsibility of the plant operator.

The following are key issues for an effective Industrial Security concept:

- Prevention of unauthorised access to plants, systems, equipment and networks
- Systems, equipment and components should only be connected to the company intranet or the internet if and when required
- Employ protective measures such as firewalls and network segmentation
- Only use the latest software product versions
- Carry out software updates as soon as new versions are available
- Use standard user accounts for regular operation
- Use secure passwords
- Appropriate safeguarding of administrator accounts
- Application of security guidelines
- Other measures to be taken as required

R. STAHL is constantly working on enhancing its products, thereby contributing to plant security and to minimizing the risk of cyber threats.

### 9.3 Cautionary note



This is a 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.

### 9.4 Installation safety information

- The applicable 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.
- The device has been certified as a fixed, stationary device. The device must be mounted on a bracket or be fixed to a specified place in another way.
- The device may only be moved when it is disconnected from the mains. Keep in mind the EPL.
- Only appropriate tools must be used for the installation.
- The wire used for earthing must have a minimum cross section of 4 mm<sup>2</sup> ! Make sure that there is equipotential bonding between the devices.
- We recommend you use screened cables with the device. Routing of the data cable may reduce performance.
- The maximum voltage of 250 V and a short current of 1500 A must not exceed at the place of installation.
- IEC 60950 stipulates that an easily accessible disconnection device must be located outside of an IT-x79 device which can be used to interrupt the power line.
- 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.
- The stipulated tightening torques of the connection terminals must be observed and applied. Again, they must be checked and possibly adjusted before commissioning !

#### 9.4.1 Cable glands


- The tightening torques for the cable glands may vary depending on the cables and wires used. The users have to determine and apply the required torques themselves.
- In the case of ex-factory systems, all components are installed correctly and in accordance with applicable standards. Since storage or temperature etc. can have an impact on the cables and cable glands, the pre-installed screw connections must be checked and possibly tightened before commissioning.
- If they are too loose or too tight, the type of protection, sealing or strain relief might be negatively impacted.
- Cable glands with cap nut and without strain relief clamp should only be used for permanently installed cables and electrical lines. Installation of the required strain relief is the responsibility of the system set-up engineer.

## 9.5 Safety information for operation

- The device may only be operated in an undamaged and clean condition. 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 general, and particularly when opening and closing enclosures, users must take care not to get injured by getting caught / trapped.

## 10 Mounting and dismounting

### 10.1 General information

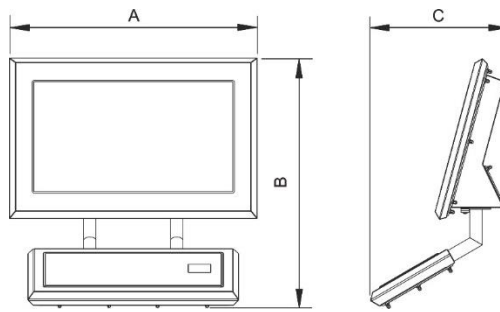
 <b>NOTICE</b>	Assembly and disassembly are subject to general technical rules. Additional, specific safety regulations apply to electronic and pneumatic installations. In Germany, for example, these include the BG regulations (Government Safety Association) and the BetrSichVer (Betriebsicherheitsverordnung - Occupational Health and Safety).
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- Mounting, connection, commissioning, repair and maintenance may only be carried out by qualified staff specially trained for this purpose.



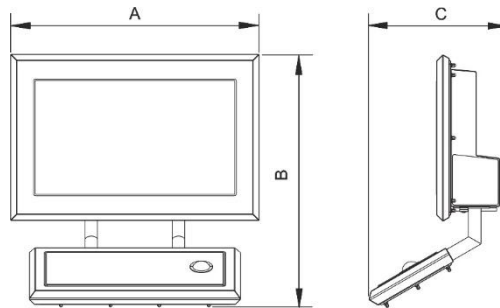
## 10.2 Mounting options / dimensions

### 10.2.1 Tilted GMP device



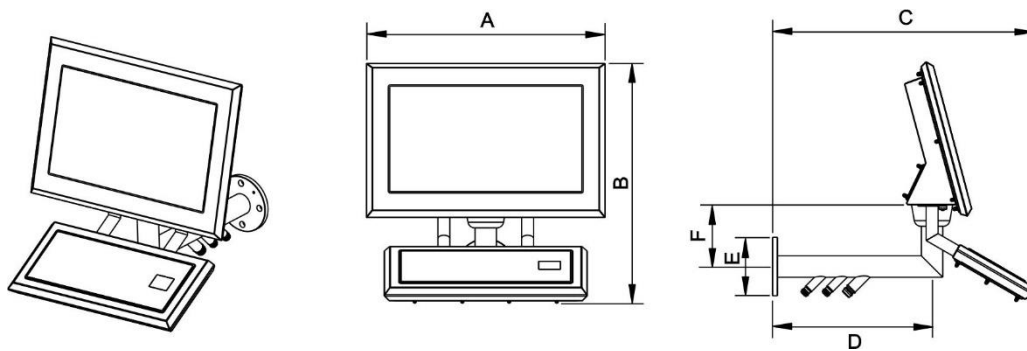
Enclosure / design	A	B	C
tilted 15°	673 mm	676 mm	370 mm

### 10.2.2 Vertical GMP device



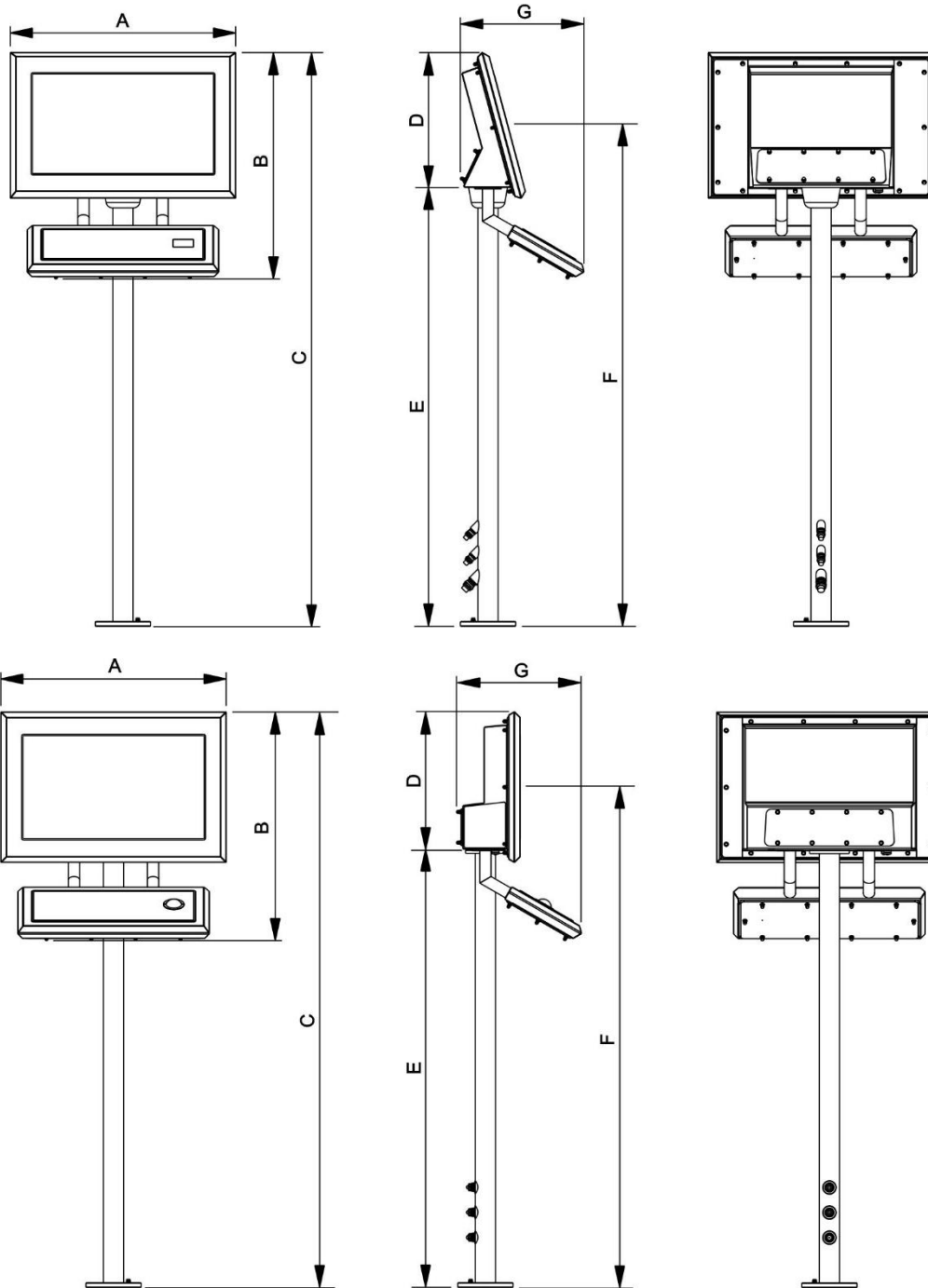
Enclosure / design	A	B	C
vertical	673 mm	684 mm	373 mm

### 10.2.3 GMP device mounted on wall bracket



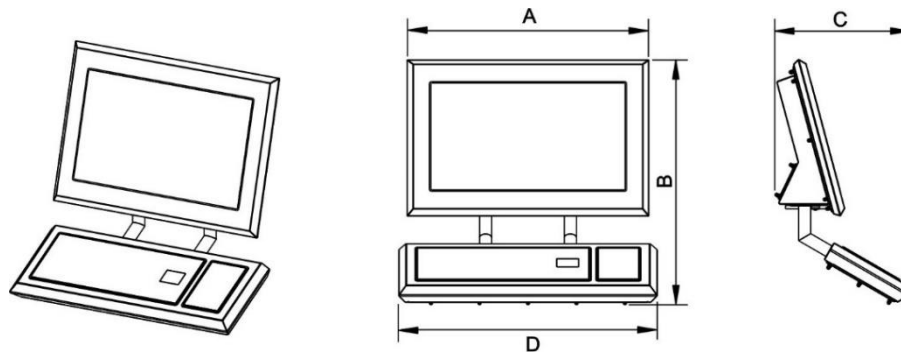
Enclosure / design	A	B	C	D	E	F
tilted 15°	673 mm	672 mm	736 mm	450 mm	Ø 165 mm	174 mm
vertical	673 mm	680 mm	736 mm	450 mm	Ø 165 mm	174 mm

10.2.4 GMP device mounted on stand



Enclosure / design	A	B	C	D	E	F	G
tilted 15°	673 mm	676 mm	1713 mm	403 mm	1310 mm	1500 mm	370 mm
vertical	673 mm	684 mm	1721 mm	411 mm	1310 mm	1496 mm	373 mm

10.2.5 GMP device with RFID reader

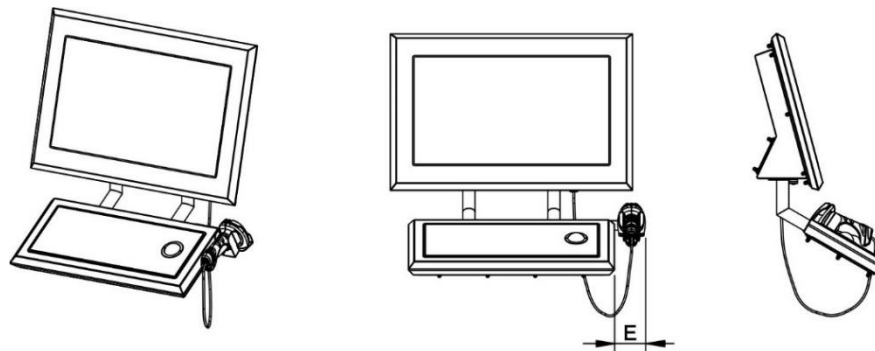


Enclosure / design	A	B	C	D
tilted 15°	673 mm	676 mm	370 mm	720 mm

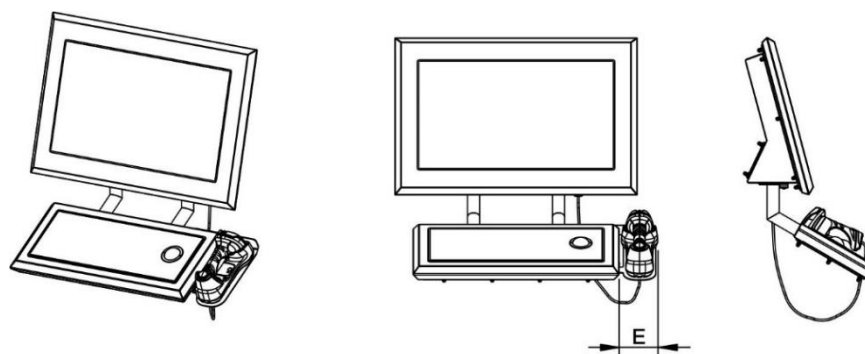
<b>! NOTICE</b>	The RFID reader can only be installed inside the keyboard enclosure. For all other mounting options, the reader is installed in the same location. They also all have the same dimensions for the keyboard enclosure.
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10.2.6 GMP device with barcode scanner

- fixed cable



- Bluetooth



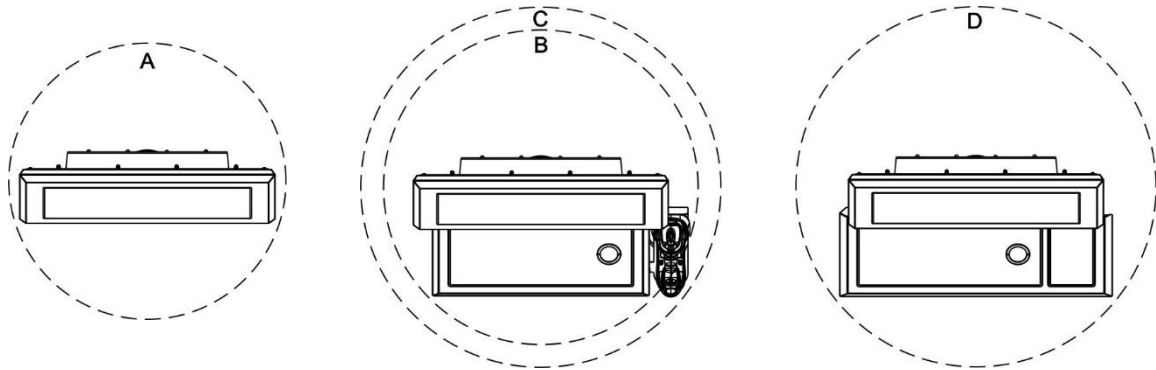
<b>! NOTICE</b>	The barcode scanners can only be mounted at the keyboard enclosure. Below are listed the dimensions for the scanner assembly only. All other dimensions are included on the other drawings. The same applies to all other mounting options - the same scanner location and the same additional dimensions (E) for the scanner assembly.
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Dimensions E	fixed cable	Bluetooth
	85 mm	107 mm

10.2.7 Rotation radius of GMP devices

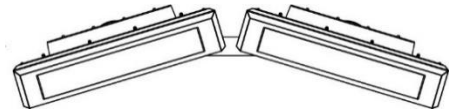
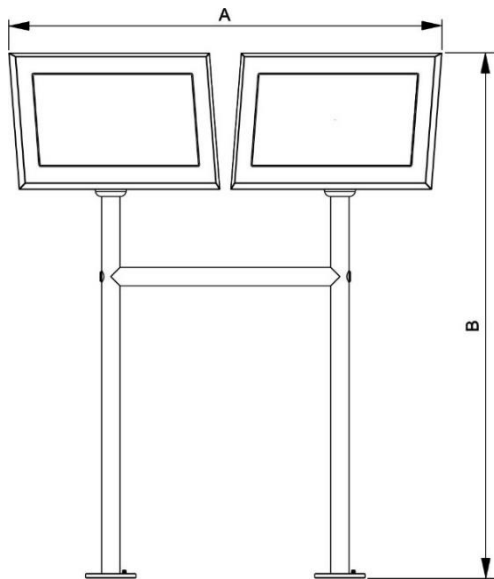
**! NOTICE**

The GMP devices can be rotated 300°. The space required for this should be kept free.  
The dimensions for the various versions are listed in the table below:

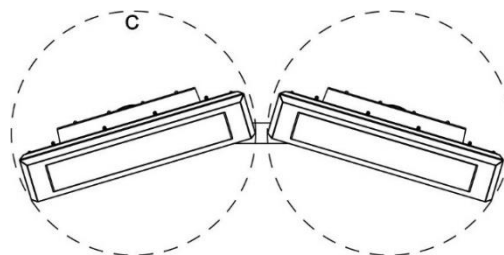
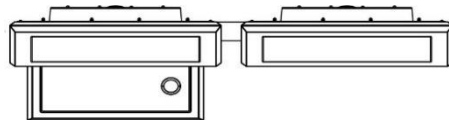
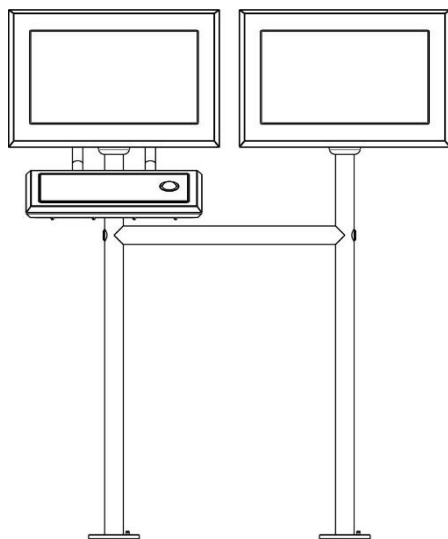


Rotation radius	A	B	C	D
Note	GMP device without keyboard	GMP devcie with keyboard	GMP device with keyboard and barcode scanner	GMP device with keyboard and RFID reader
	730 mm	830 mm	950 mm	950 mm


10.2.8 Horizontal dual monitor



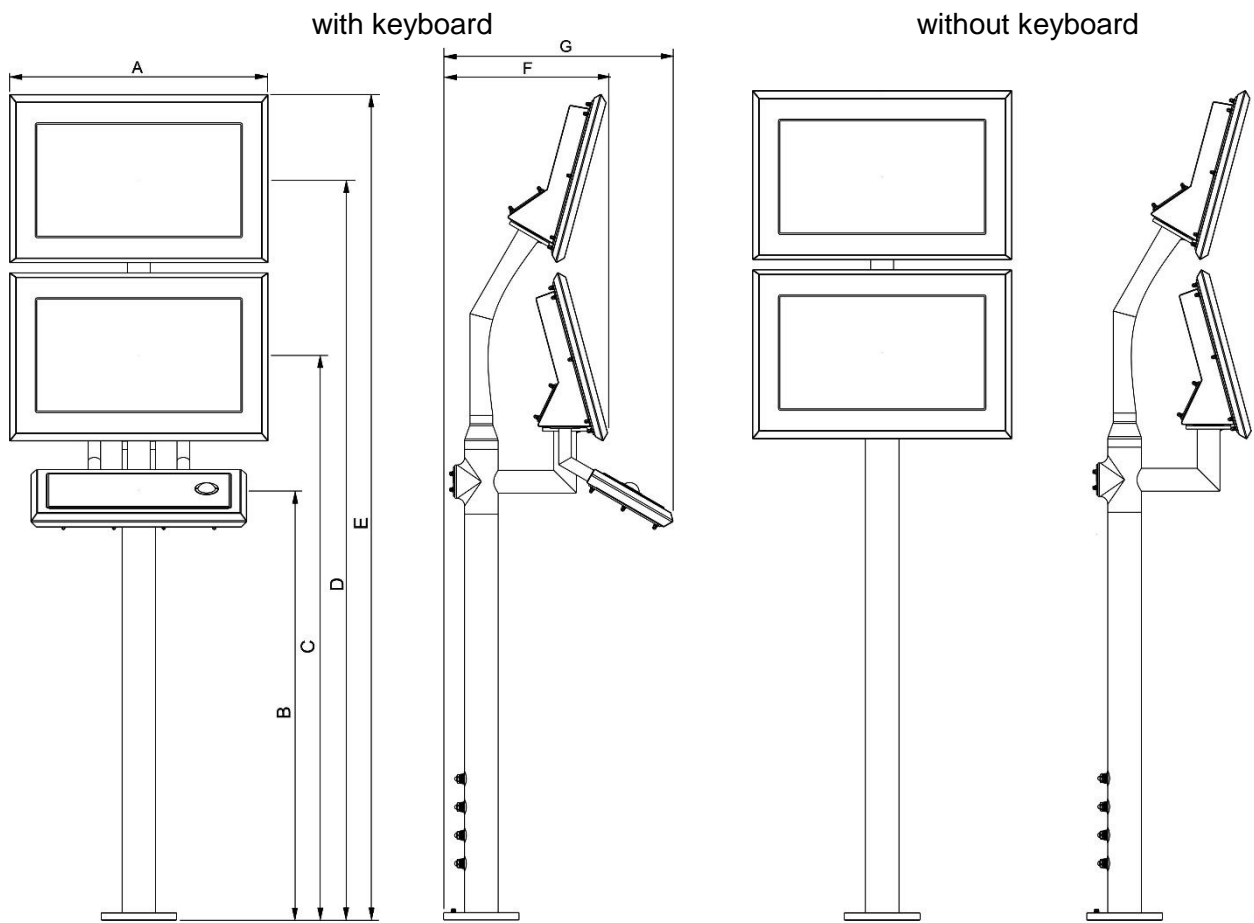
- with keyboard



Dimensions	A	B	C
	max. 1466 mm	1717 mm	Rotation radius (without keyboard) 716 mm

 <b>NOTICE</b>	<p>The keyboard is always mounted beneath the main monitor of the SERIES 400 / 500 device. This combination can be either on the left (as shown at the picture) or on the right hand side.</p>
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10.2.9 Vertical dual monitor

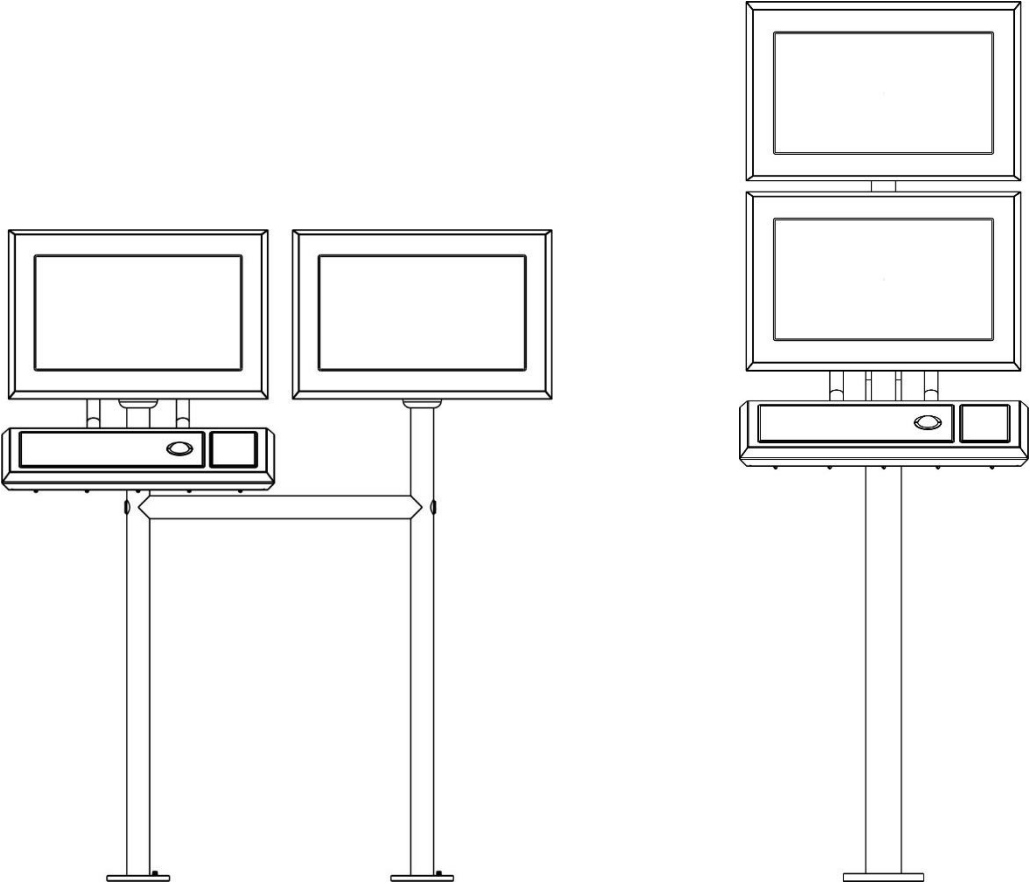


Dimensions	A	B	C	D	E	F	G
	673 mm	1142 mm	1500 mm	1965 mm	2193 mm	435 mm	610 mm

**! NOTICE**

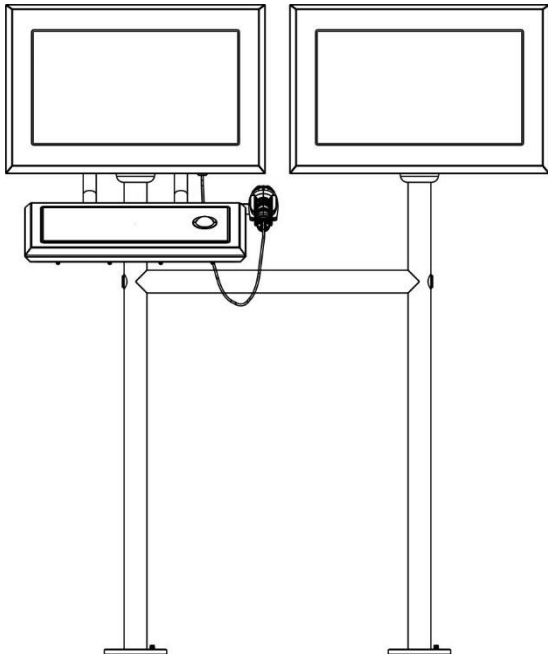
Both operating devices are vertically tilted 15° and fixed. They can therefore not be rotated.  
 The operating device at the bottom is always the SERIES 400 / 500 main monitor, the top operating device is the SERIES 700 monitor.

10.2.10 Dual monitor with RFID reader

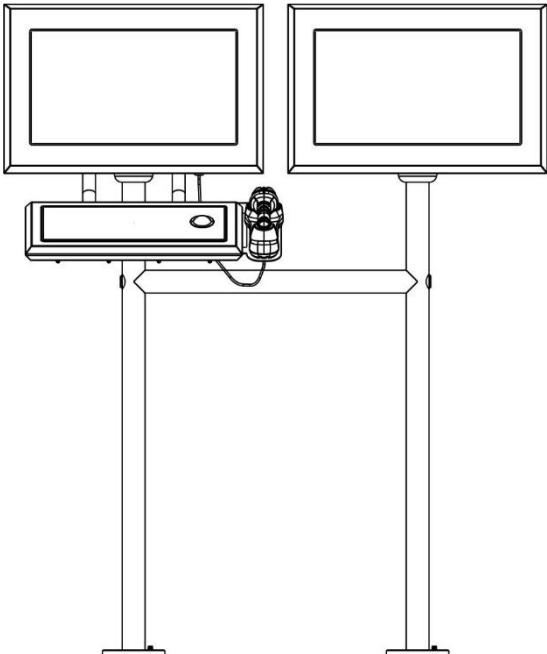


10.2.11 Dual monitor with barcode scanner

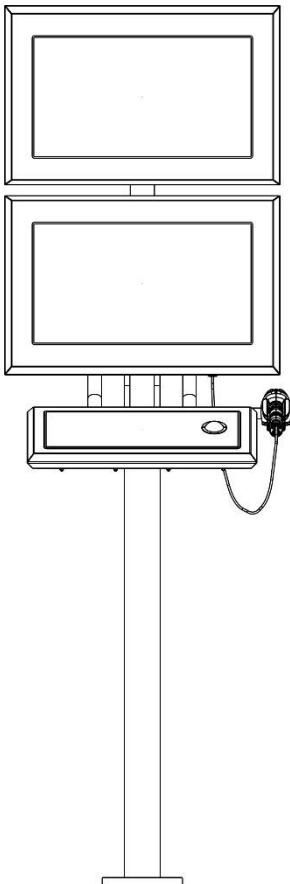
fixed cable



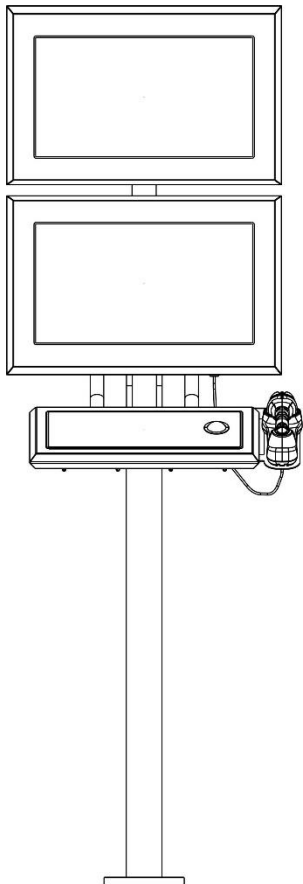
Bluetooth



fixed cable




Bluetooth





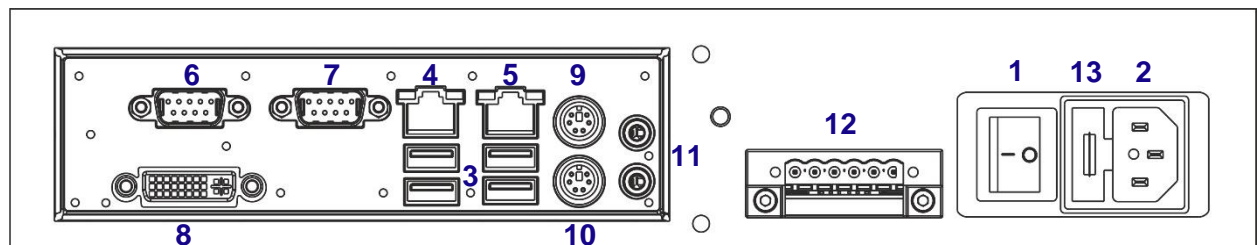
# 11 Commissioning

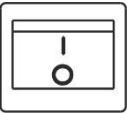

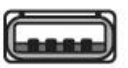
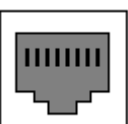
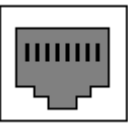
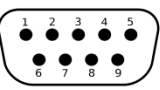
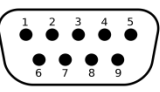
## 11.1 General information





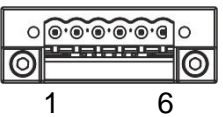
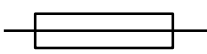
 <b>NOTICE</b>	<p>When operating the devices, particular care shall be taken that:</p> <ul style="list-style-type: none"> <li>the HMI device has been properly installed according to instructions,</li> <li>the HMI device is undamaged,</li> <li>all screws are tightened fast,</li> <li>before switching on the HMI device, its external equipotential bonding terminal is properly connected to the equipotential bonding system at its place of use.</li> </ul>
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## 11.2 Connections

### 11.2.1 SERIES 400 / 500

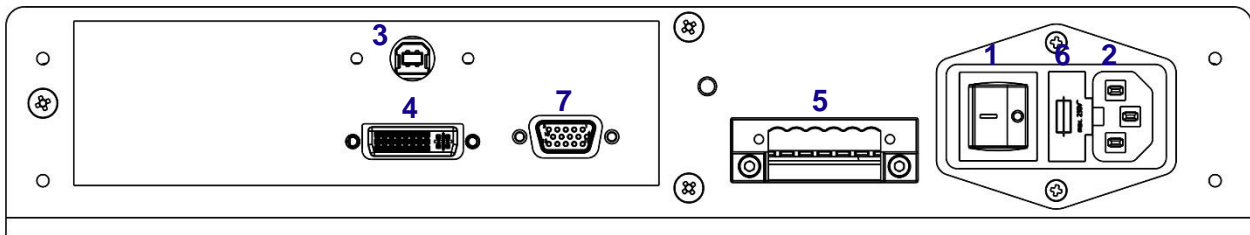


Designation	Number	View	Connection	Meaning
	1		-	On / off switch
PWR (Power)	2		IEC connector	Power supply of the HMI device AC
USB 4 x	3		USB-A connector	USB interface, connection type A, USB2.0
LAN1 (Data)	4	 1.....8	RJ-45 connector	Ethernet interface copper connection 1
LAN2 (Data)	5	 1.....8	RJ-45 connector	Ethernet interface copper connection 2
COM1 (serial)	6		9-pin sub-D plug (male)	Serial interface RS-232
COM2 (serial)	7		9-pin sub-D plug (male)	Serial interface RS-232

	8		DVI-I connector	DVI connection
	9		PS/2 socket	Mouse connection
	10		PS/2 socket	Keyboard connection
AUD (Audio)	11		TRS socket (stereo) 2 x 3.5 mm	Audio line in / out interface
	12		6-pin connector with terminals	Connection for - external push button * - loudspeaker ** - 12 VDC output
	Pin	1	GND	external push-button (integrated in GMP enclosure)
		2	P	
		3	LSP -	Loudspeaker output (optional)
		4	LSP +	
		5	GND	12 VDC output, 1 A
		6	+12 V DC	
F	13		for wire L for wire N	Fuses 2x

 <b>NOTICE</b>	<p>Max. recommended cable length for USB, keyboard, mouse, RS-232 and audio: 3 m</p> <p>* The external push button is mounted inside the GMP enclosure ex-factory, and has the same function as the power switch of a PC (or its function can be defined as such via the system control).</p> <p>** The use of a loudspeaker also requires the optional audio amplifier (see type key).</p>
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11.2.2 SERIES 700



Designation	Number	View	Connection	Meaning
	1		-	On / off switch
PWR (Power)	2		IEC connector	Power supply of the HMI device AC
USB	3		USB-B connector *	USB connection for touch data transmission, connection type B, USB2.0
	4		DVI-I connector	DVI Monitor input
	5		6-pin connector	Not used / blind plug
F	6		for wire L for wire N	Fuses 2x
	7		-	Not used / no function

<b>NOTICE</b>	<p>* The USB-B slot of the OS-IT-779-DVI0 devices is only equipped if the device has the touch option (T3) (see type code). In this case, the USB connection is used to transmit the touch signals to the connected PC. Max. recommended cable length for USB: 3 m</p>
---------------	--

## 12 General Information

### 12.1 Touch driver

#### NOTICE

The UPDD touch driver is copyrighted licensed software supplied strictly for use with original R. STAHL HMI Systems GmbH touch systems and under no circumstances should this driver be downloaded or used on any other equipment !

### 12.2 IT-479 (Panel PC) and IT-579 (Thin Client)

#### 12.2.1 Up to Windows 7 operating systems

##### 12.2.1.1 Licensing issues

The SERIES 400 and 500 HMI devices usually have a Windows operating system pre-installed. The corresponding license sticker is affixed on the back of the operator interface, next to the type plate.

Please note that according to the license issued for Windows the application of these systems as Office PC is not permitted.

#### DOCUMENTATION

Please also note the information on the licensing stipulations for Windows operating systems contained in the "TechNote Windows Operating Systems" file located on the CD / DVD / USB stick which is part of the delivery.

#### 12.2.2 Note on Windows Embedded operating systems

When using the Windows Embedded 7 operating system on the Panel PC SERIES 400 HMI devices, the C:\ system drive can be protected from unauthorised writing (EWF).

#### NOTICE

This is not the case for other Windows operating systems!

#### ATTENTION

R. STAHL HMI Systems GmbH recommends you leave the write protection filter on at all times.

#### DOCUMENTATION

For further information on this write protection (EWF), please refer to the OpenHMI\_help\_en.chm help file in the "STAHL" folder on the HMI device or on the CD / DVD / USB stick that is included in the delivery.

#### 12.2.3 Windows® 10 IoT Enterprise 2016 LTSC operating system

The operating system is based on Windows 10 for PC platforms with 64 bit x86 processors. For the LTSC (Long-Time-Service-Branch) versions, Microsoft guarantees 10 years of security updates and new builds with feature updates only every 2-3 years, with these being optional. The LTSC versions are ideal for industrial applications and feature additional security components such as write filters (UWF) and HORM (start of a system snapshot from the RAM plus write protection).

From 2016 LTSC onwards, Microsoft has tied its licensing model to the processor performance:

ENTRY for AMD® GX and ATOM™


VALUE for Intel® Core i5™

HIGH for Intel® Core i7™


The Panel PC SERIES 400 HMI devices with Windows 10 IoT Enterprise 2016 LTSP operating systems have the license provided as part of the image, with the corresponding label affixed to the back of the device. When delivered, the devices have already been registered and activated.

The EOL (End of Life) date for Windows 10 IoT Enterprise 2016 LTSP for support and updates has been set by Microsoft to 31.07.2026.

### 12.2.3.1 Recovery

 <b>NOTICE</b>	<p>If a Panel PC is reset to the factory state (recovered) it will remain registered but will have to be reactivated ! This requires an active internet connection to a Microsoft server !</p>
---	--

### 12.2.3.2 Company-specific Windows installations


 <b>NOTICE</b>	<p>The Windows 10 IoT license key is tied to STAHL images ! The installation of own Windows 10 IoT operating systems requires a separate license key !</p>
	<p>All necessary drivers are provided by R.STAHL HMI Systems GmbH. Please contact our Support department.</p>

### 12.2.4 Initial start-up IT-479 (Panel PC)


When started for the first time, the Windows installation Wizard starts, prompting users to select certain settings.

Please follow the instructions of the installation Wizard.

### 12.2.5 Recovery Stick

 <b>NOTICE</b>	<p>A recovery stick is included in the delivery to enable you to restore your HMI device to its original state. This recovery stick (USB-drive) contains the factory image, with which the system can be restored to delivery status within a very short time. Please note that you can restore the HMI devices to their original state only with the aid of the recovery stick.</p>
	<p>As an option, the recovery stick can also contain a backup software, with which you can back up your own device configuration.</p>

### 12.2.6 Back-up

 <b>NOTICE</b>	<p>Please note that it is the sole responsibility of the operator to generate a back-up of the HMI devices and their overall function.</p>
	<p>We strongly recommend such a back-up to be stored on an external storage medium and / or on the company network.</p>

### 12.2.7 Switching off / closing down

**!** NOTICE

The Microsoft Windows operating system stores key data in the main memory, regardless of the application, and has to store this data on the hard disk before the HMI device is switched off.

**!** ATTENTION

It is therefore important for the safe and correct operation that the HMI device is "shut down" properly (see illustration below) and not simply switched off. Otherwise the existing image of the HMI device may be damaged, rendering the device non-functioning.

### 12.2.8 Loss of data

**!** NOTICE

In the case of applications that require constant writing into memory, R. STAHL HMI Systems GmbH recommends you use external storage media (USB sticks, network servers) for these write processes.

**!** ATTENTION

Try and avoid cyclical writes (log files, databases, etc.) to the SSD. The endurance of an SSD depends on the number of write cycles (TBW / terabytes written). Writing to the SSD with a simultaneous drop in voltage is most likely going to result in data loss.

## 13 Maintenance

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

Keep the units clean so that the enclosure locks and screws remain accessible. Maintenance may be required for the enclosure seal.

The following must be checked during maintenance work:

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

## 14 Troubleshooting

### 14.1 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.).

## 15 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 HMI devices 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	SG2 Screens, monitors, and equipment containing screens >100 cm <sup>2</sup>

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

## 16 Material declaration

Declaration on substances according to IEC 62474 : 2012 (DIN EN 62474 : 2013-5) as evidence of compliance with legal obligations, especially regulation (EC) No. 1907/2006 (REACH) and directive 2011/65/EU (RoHS).

The present declaration is based on the declaration procedure specified in the international standard IEC 62474. The declaration refers to the list of substances „Declarable Substance Groups and Declarable Substances“ in the corresponding online database (<http://std.iec.ch/iec62474>).

Besides the substances that need to be declared pursuant to the above mentioned directives (EC) No. 1907/2006 (REACH) and 2011/65/EU (RoHS), the database also contains the notifiable substances given in another 40 international regulations (appendix 1). Although not explicitly mentioned, the database de facto also covers the substances included in the appendices 1 and 8 of Annex 3 to the “2011 Guidelines for the Development of the Inventory of Hazardous Materials – IHM”, Report MEPC 62/64 of the “International Maritime Organization – IMO”.

R. STAHL HMI Systems GmbH meets the requirements of directive 2012/19/EC (WEEE) and is registered under the number DE 15180083.

All products of R. STAHL HMI Systems GmbH are produced in accordance with the applicable regulations and comply with the substance restrictions given in these regulations. Due care is taken to ensure that the prohibitions and restrictions concerning the use of substances are observed throughout the entire value added chain. Exemptions are permitted only if, from a scientific and technical point of view, substitution of the notifiable substance is not feasible. These are solely exemptions that are limited to certain applications and materials, which are explicitly approved in the directives. In that event, detailed information about the substances that are concerned and the exemptions will be given in appendix 2.

Component	Designation	Mass (g)	Declarable Substance Groups and Substances (IEC 62474 database)	CAS Nr.	Mass %	Exemption (acc. to directive)
Label xx	All labels on the product based on	1	8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 10-ethyl-4,4-dioctyl-7-oxo-, 2-ethylhexyl ester	15571-58-1	> 0,1	-
	3M Scotchcal 3698E 76500, 76510, 76530		8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-, 2-ethylhexyl ester	27107-89-7		-

### 16.1 RoHS directive 2011/65/EC

The revision of RoHS directive 2002/95/EC and the resulting revised version 2011/65/EC extends its scope to all electric and electronic products.

The HMI devices meet the requirements of RoHS Directive 2011/65/EU dated 03.01.2013.



# 17 Declaration of EC conformity

**EU-Konformitätserklärung**  
*EU Declaration of Conformity*  
*Déclaration de Conformité 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)*: IT-479-xx  
 IT-579-xx


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)
EMV-Richtlinie <i>EMC Directive</i> <i>Directive CEM</i>	2014/30/EU 2014/30/EU 2014/30/UE	EN 61000-3-2:2014 EN 61000-3-3:2013 EN 61000-6-2:2005 + AC:2005 EN 61000-6-4:2007 + A1:2011 EN 55032:2012 EN 55024:2010
Niederspannungsrichtlinie <i>Low Voltage Directive</i> <i>Directive Basse Tension</i>	2014/35/EU 2014/35/EU 2014/35/UE	IEC 60950-1:2005 + A1:2009 + A2:2013 EN 60950-1:2006 + A11 + A1 + A12 + A2
Produktnormen nach RoHS-Richtlinie (2011/65/EU): <i>Product standards according to RoHS Directive:</i> <i>Normes des produit pour la Directive RoHS:</i>		EN 50581:2012

Köln, 2017-12-19

Ort und Datum  
*Place and date*  
*Lieu et date*


i.V.   
**J. Düren**  
 Technical Director

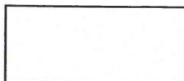
i.V.   
**A. Jung**  
 Ex Representative

# 18 Certificates

## 18.1 IT-479


4A55-0B39-3C2E-9688

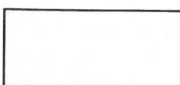
방송통신기자재등의 적합등록 필증 Registration of Broadcasting and Communication Equipments	
상호 또는 성명 <i>Trade Name or Registrant</i>	R. STAHL HMI Systems GmbH
기자재명칭(제품명칭) <i>Equipment Name</i>	IT-479
기본모델명 <i>Basic Model Number</i>	IT-479-xx
파생모델명 <i>Series Model Number</i>	
등록번호 <i>Registration No.</i>	R-REM-RS3-IT-479-xx
제조사/제조(조립)국가 <i>Manufacturer/Country of Origin</i>	R. STAHL HMI Systems GmbH / 독일
등록연월일 <i>Date of Registration</i>	2018-02-02
기타 <i>Others</i>	
위 기자재는 「전파법」 제58조의2 제3항에 따라 등록되었음을 증명합니다. It is verified that foregoing equipment has been registered under the Clause 3, Article 58-2 of Radio Waves Act.	
2018년(Year) 02월(Month) 02일(Day)	
국립전파연구원장 Director General of National Radio Research Agency	
	
※ 적합등록 방송통신기자재는 반드시 "적합성평가표시" 를 부착하여 유통하여야 합니다. 위반시 과태료 처분 및 등록이 취소될 수 있습니다.	



18.2 IT-579

9928-2CCA-E3AE-61C4

방송통신기자재등의 적합등록 필증 Registration of Broadcasting and Communication Equipments	
상호 또는 성명 <i>Trade Name or Registrant</i>	R. STAHL HMI Systems GmbH
기자재명칭(제품명칭) <i>Equipment Name</i>	IT-579
기본모델명 <i>Basic Model Number</i>	IT-579-xx
파생모델명 <i>Series Model Number</i>	
등록번호 <i>Registration No.</i>	R-REM-RS3-IT-579-xx
제조사/제조(조립)국가 <i>Manufacturer/Country of Origin</i>	R. STAHL HMI Systems GmbH / 독일
등록연월일 <i>Date of Registration</i>	2018-02-02
기타 <i>Others</i>	
위 기자재는 「전파법」 제58조의2 제3항에 따라 등록되었음을 증명합니다. It is verified that foregoing equipment has been registered under the Clause 3, Article 58-2 of Radio Waves Act.	
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## 19 Release notes

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

### Version 01.00.06

- Deletion of all previous release notes
- Addition of text concerning "Mounting options" in section "Device function"
- Addition of mounting options in chapter "Technical data"
- Change of title of section "Dimensions" to "Mounting options / dimensions"
- Addition of drawings in section "Mounting options / dimensions"
- Change to dimension "height"
- Formal changes

### Version 01.00.07

- Addition of section "Touch driver"

### Version 01.00.08

- Changing layout cover
- Changing disclaimer, new mail addresses
- Adaption address field verso
- Removal of "digits of the serial number stand for the year of manufacture" in "General Safety Information"
- Addition of chapter "Certificates"
- Addition of chapter "Material declaration"
- Moving section "RoHS" into chapter "Material declaration"
- Addition of chapter "Industrial Security"
- Chapter "Cable glands" now in list form
- Formal changes







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[exicom.de](http://exicom.de)



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