

MANUAL

# VisuNet GMP RM/PC 200 series

## Hardware manual



With regard to the supply of products, the current issue of the following document is applicable: The General Terms of Delivery for Products and Services of the Electrical Industry, published by the Central Association of the Electrical Industry (Zentralverband Elektrotechnik und Elektroindustrie (ZVEI) e.V.) in its most recent version as well as the supplementary clause: "Expanded reservation of proprietorship"

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# 1 Safety

## 1.1 Validity

The chapter "Safety" is valid as instruction manual.

Specific processes and instructions in this instruction manual require special provisions to guarantee the safety of the operating personnel.

## 1.2 Symbols Used

This document contains symbols for the identification of warning messages and of informative messages.

### Warning Messages

You will find warning messages, whenever dangers may arise from your actions. It is mandatory that you observe these warning messages for your personal safety and in order to avoid property damage.

Depending on the risk level, the warning messages are displayed in descending order as follows:



#### **Danger!**

This symbol indicates an imminent danger.

Non-observance will result in personal injury or death.



#### **Warning!**

This symbol indicates a possible fault or danger.

Non-observance may cause personal injury or serious property damage.



#### **Caution!**

This symbol indicates a possible fault.

Non-observance could interrupt the device and any connected systems and plants, or result in their complete failure.

### Informative Symbols



#### **Note!**

This symbol brings important information to your attention.



#### **Action**

This symbol indicates a paragraph with instructions. You are prompted to perform an action or a sequence of actions.

## 1.3 System Operator and Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismantling lies with the plant operator.

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismantling of the device. The trained and qualified personnel must have read and understood the instruction manual.

## 1.4 Pertinent Laws, Standards, Directives, and further Documentation

Observe laws, standards, and directives applicable to the intended use and the operating location. Observe Directive 1999/92/EC in relation to hazardous areas.

The corresponding datasheets, manuals, declarations of conformity, EU-type examination certificates, certificates, and control drawings if applicable (see datasheet) are an integral part of this document. You can find this information under [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

Due to constant revisions, documentation is subject to permanent change. Please refer only to the most up-to-date version, which can be found under [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

## 1.5 Intended use

The device is only approved for appropriate and intended use. Ignoring these instructions will void any warranty and absolve the manufacturer from any liability.

The devices must not be repaired, changed or manipulated. If there is a defect, the product must always be replaced with an original device.

## 1.6 Installation and commissioning

The device must only be operated in the specified ambient temperature range and at the specified relative humidity without condensation.

### **Use shielded cable**

To connect interfaces only use shielded cable.

### **Screwing/locking connectors**

To advance the cable shield screw/lock the connectors.

The device must be disconnected from the power supply prior to installation and maintenance. The power supply may be activated only after all the circuits required for operation have been fully assembled and connected.

### **Leading of data cables and power circuit lines**

Lead data cable and power circuit line in separate cable channels.

### **Check cables and connectors**

Before commissioning the system check all cables and connectors.

## 2 Product Specifications

### 2.1 Overview

GMP (“Good Manufacturing Practice”) is a set of guidelines for assuring the quality of production processes in controlled industries and closely follow the guidelines issued by the European Commission or the FDA in the US. GMP applications are typically used in the pharmaceutical and food industries. However, products that conform with GMP guidelines are also required for the manufacture of cosmetics, flavour and nutrition.

The materials selected, design of the surfaces and architecture of the overall system should prevent the accumulation of fluids and dirt. Cleaning, maintenance, inspection and servicing must be as safe and easy as the processes employed for the disinfection of mechanical components.

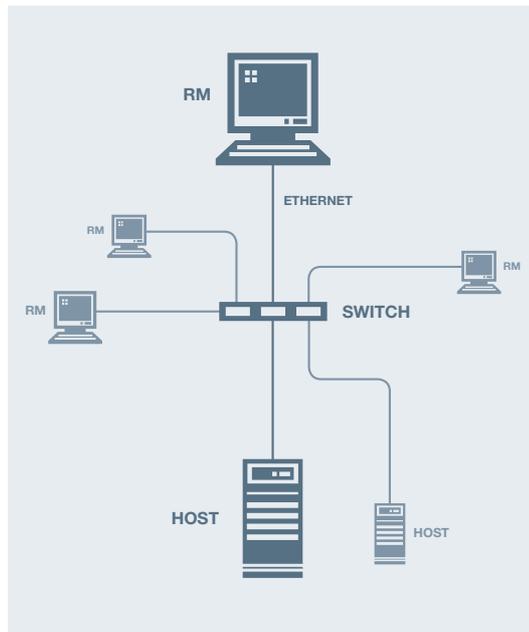
The VisuNet GMP product portfolio extends from simple direct monitors and remote monitor systems with Ethernet connection to a host, to complete PCs available with single or dual monitor systems and various mounting options. Both, models with 19", 21.5" (Full HD) and 22" displays (with optional touch screen) are available. The stainless steel housings have an IP65 degree of protection. Remote monitors and PCs are equipped with Ethernet, USB and RS232/RS485 interfaces.



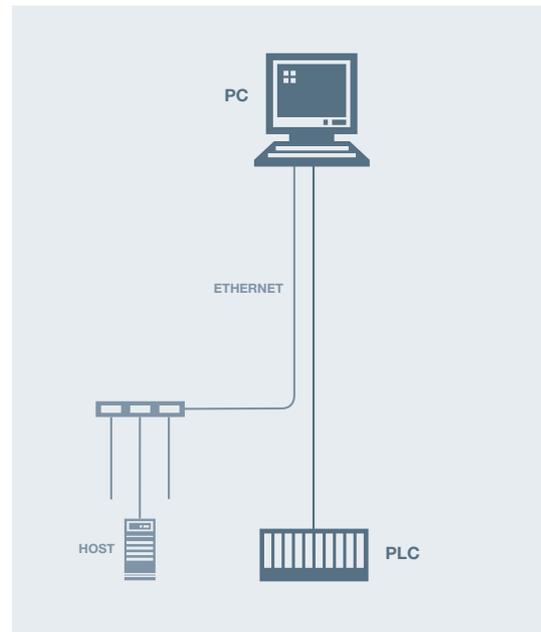
Figure 2.1 Several models

The VisuNet GMP product family guarantees a perfect fit for every system infrastructure. Four models are available depending on the functions required, the display and input unit and the distance over which the data is transferred. This manual describes the following two models:

The remote monitor automatically connects to the host using RDP, ICA or VNC, enabling via the network.  
The following drawing shows a typical system topology:



The complete panel PC system has many standard interfaces (network, USB, serial). The operating system used is Windows 7 Ultimate (32-bit or 64-bit) or Windows 10 IoT Enterprise LTSB (x 64). Customers can, therefore, install software packages for control, visualization and production. The system operates independently of any external computing power.  
The following drawing shows a typical system topology:



### VisuNet GMP PC - Special Features

- Available as 19", 21.5" or 22" monitor
- Network based data transfer via Ethernet
- Adapted for distances up to 100 m (or 2 km by using an optionbox)

### VisuNet GMP RM - Special Features

- Available as 19", 21.5" or 22" monitor
- Can also be operated as Extended Desktop, Clone Display and with several host PCs
- Network based data transfer via Ethernet (optional RDP, VNC or ICA)
- Adapted for distances up to 100 m (or 2 km by using an optionbox)

## 2.2

### Technical Data VisuNet GMP RM/PC219

	VisuNet GMP RM219	VisuNet GMP PC219
<b>General specifications</b>		
Type	Remote Monitor	Panel PC
<b>Hardware</b>		
Processor	Thin Client - 1.46 GHz Intel® Atom™ E3826	Intel® Atom™ E3826 1.46 GHz
RAM	4 GB RAM	Up to 8 GB RAM
Mass storage	compact flash: 32 GB CFAST	120 GByte Solid State Drive
<b>Supply</b>		

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	VisuNet GMP RM219	VisuNet GMP PC219
Rated voltage	24 V DC or 115 V AC / 230 V AC	
Input voltage range	20 ... 30 V DC or 90 ... 240 V AC	
Power consumption	max. 60 W	
<b>Indicators/operating means</b>		
<b>Display</b>		
Type	TFT, LCD	
Screen diagonal	48.3 cm (19 inch)	
Resolution	1280 x 1024 Pixel	
Color depth	16.7 Mio. (24 bit, true color)	
Contrast	2000:1	
Brightness	300 cd/m <sup>2</sup>	
Life span	50.000 h @ 25 °C	
Input devices	Analog resistive touchscreen (optional) , Keyboard with integrated mouse functionality: optical trackball/touchpad/joystick versions available	
<b>Electrical specifications</b>		
Inrush current	max. 100 A @ 240 VAC approx. 0.5 ms	
<b>Interface</b>		
Interface type	2x RS 232 2x USB (Usage depends on chosen remote protocol) 2x USB (for keyboard/mouse connection) 2x Network RJ45	2x RS 232 2x USB 2x USB (for keyboard/mouse connection) 2x Network RJ45
<b>Software</b>		
Operating system	Windows 7 Embedded Standard (RM Shell 4) or Windows 10 IoT (RM Shell 5)	Windows 7 Ultimate FES (32- bit or 64-bit) or Windows 10 IoT Enterprise LTSB (x 64)
<b>Compliance with standards and directives</b>		
Standard conformity		
Electrical safety	EN 60950-1 Class I equipment	
<b>Ambient conditions</b>		
Ambient temperature	0 ... 50 °C (32 ... 122 °F)	
Altitude	2000 m above MSL (version AC)	
<b>Mechanical specifications</b>		
Degree of protection	IP65	
<b>Material</b>		
Surface	stainless steel 1.4301 / AISI 304	
Surface quality	R <sub>a</sub> ≤ 0.8 µm	
Mounting type	slim line housing several mounting types (pedestal, wall bracket, wall arm - each turnable or fix) available	
Mass	approx. 12 kg	
Dimensions	568 mm x 450 mm x 73 mm	

## 2.3 Technical Data VisuNet GMP RM/PC221

	VisuNet GMP RM221	VisuNet GMP PC221
<b>General specifications</b>		
Type	Remote Monitor	Panel PC
<b>Hardware</b>		
Processor	Thin Client - 1.46 GHz Intel® Atom™ E3826	Intel® Atom™ E3826 1.46 GHz
RAM	4 GB RAM	Up to 8 GB RAM
Mass storage	compact flash: 32 GB CFAST	120 GByte Solid State Drive
<b>Supply</b>		
Rated voltage	24 V DC or 115 V AC / 230 V AC	
Input voltage range	20 ... 30 V DC or 90 ... 240 V AC	
Power consumption	max. 60 W	
<b>Indicators/operating means</b>		
<b>Display</b>		
Type	TFT, LCD	
Screen diagonal	54.6 cm (21.5 inch)	
Resolution	1920 x 1080 pixel	
Color depth	16.7 Mio. (24 bit, true color)	
Contrast	5000:1	
Brightness	300 cd/m <sup>2</sup>	
Life span	50.000 h @ 25 °C	
Input devices	Analog resistive touchscreen (optional) , Keyboard with integrated mouse functionality: optical trackball/touchpad/joystick versions available	
<b>Electrical specifications</b>		
Inrush current	max. 100 A @ 240 VAC approx. 0,5 ms	
<b>Interface</b>		
Interface type	2x RS 232 2x USB (Usage depends on chosen remote protocol) 2x USB (for keyboard/mouse connection) 2x Network RJ45	2x RS 232 2x USB 2x USB (for keyboard/mouse connection) 2x Network RJ45
<b>Software</b>		
Operating system	Windows 7 Embedded Standard (RM Shell 4) or Windows 10 IoT (RM Shell 5)	Windows 7 Ultimate FES (32- bit or 64-bit) or Windows 10 IoT Enterprise LTSP (x 64)
<b>Compliance with standards and directives</b>		
Standard conformity		
Electrical safety	EN 60950-1 Class I equipment	
<b>Ambient conditions</b>		
Ambient temperature	0 ... 50 °C (32 ... 122 °F)	
Altitude	2000 m above MSL (version AC)	
<b>Mechanical specifications</b>		
Degree of protection	IP65	

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	VisuNet GMP RM221	VisuNet GMP PC221
<b>Material</b>		
Surface	stainless steel 1.4301 / AISI 304	
Surface quality	$R_a \leq 0.8 \mu\text{m}$	
Mounting type	slim line housing several mounting types (pedestal, wall bracket, wall arm - each turnable or fix) available	
Mass	approx. 13 kg	
Dimensions	625 mm x 450 mm x 73 mm	

2.4

Technical Data VisuNet GMP RM/PC222

	VisuNet GMP RM222	VisuNet GMP PC222
<b>General specifications</b>		
Type	Remote Monitor	Panel PC
<b>Hardware</b>		
Processor	Thin Client - 1.46 GHz Intel® Atom™ E3826	Intel® Atom™ E3826 1.46 GHz
RAM	4 GB RAM	Up to 8 GB RAM
Mass storage	compact flash: 32 GB CFAST	120 GByte Solid State Drive
<b>Supply</b>		
Rated voltage	24 V DC or 115 V AC / 230 V AC	
Input voltage range	20 ... 30 V DC or 90 ... 240 V AC	
Power consumption	max. 60 W	
<b>Indicators/operating means</b>		
<b>Display</b>		
Type	TFT, LCD	
Screen diagonal	55.9 cm (22 inch)	
Resolution	1680 x 1050 pixel	
Color depth	16.7 Mio. (24 bit, true color)	
Contrast	1000:1	
Brightness	300 cd/m <sup>2</sup>	
Life span	50.000 h @ 25 °C	
Input devices	Analog resistive touchscreen (optional) , Keyboard with integrated mouse functionality: optical trackball/touchpad/joystick versions available	
<b>Electrical specifications</b>		
Inrush current	max. 100 A @ 240 VAC approx. 0,5 ms	
<b>Interface</b>		
Interface type	2x RS 232 2x USB (Usage depends on chosen remote protocol) 2x USB (for keyboard/mouse connection) 2x Network RJ45	2x RS 232 2x USB 2x USB (for keyboard/mouse connection) 2x Network RJ45

	VisuNet GMP RM222	VisuNet GMP PC222
<b>Software</b>		
Operating system	Windows 7 Embedded Standard (RM Shell 4) or Windows 10 IoT (RM Shell 5)	Windows 7 Ultimate FES (32-bit or 64-bit) or Windows 10 IoT Enterprise LTSB (x 64)
Compliance with standards and directives		
Standard conformity		
Electrical safety	EN 60950-1 Class I equipment	
<b>Ambient conditions</b>		
Ambient temperature	0 ... 45 °C (32 ... 113 °F)	
Altitude	2000 m above MSL (version AC)	
<b>Mechanical specifications</b>		
Degree of protection	IP65	
<b>Material</b>		
Surface	stainless steel 1.4301 / AISI 304	
Surface quality	$R_a \leq 0.8 \mu\text{m}$	
Mounting type	slim line housing several mounting types (pedestal, wall bracket, wall arm - each turnable or fix) available	
Mass	approx. 13 kg	
Dimensions	625 mm x 450 mm x 73 mm	

## 2.5 Dimensions VisuNet GMP PC/RM219

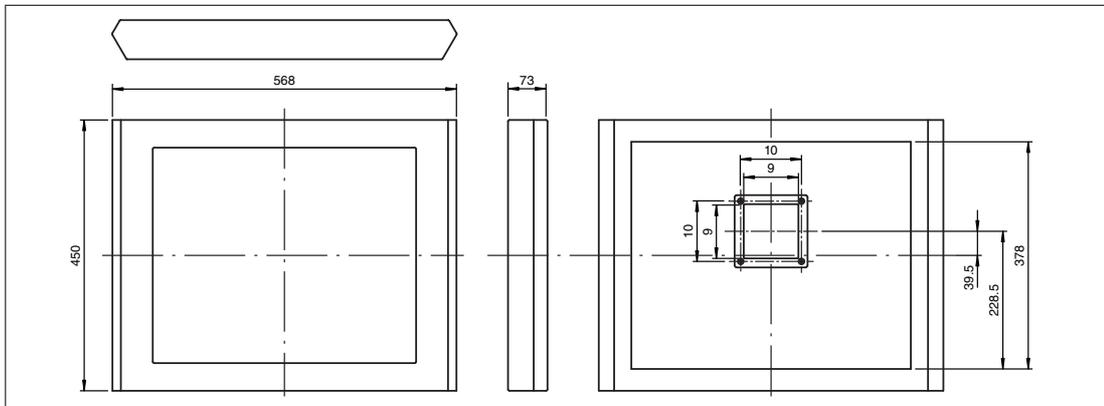


Figure 2.2 Dimensions VisuNet GMP PC/RM219

## 2.6 Dimensions VisuNet GMP PC/RM221 and PC/RM222

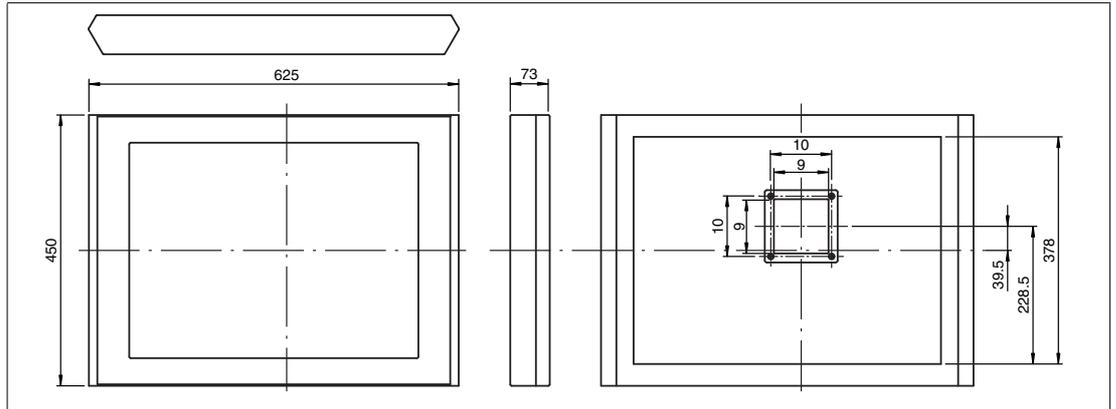


Figure 2.3 Dimensions VisuNet GMP PC/RM221 and PC/RM222

## 2.7 Image Sticking



### **Note!**

#### **Image Sticking**

Displaying a fixed pattern may cause burn-in-effects (image sticking due to the LCD characteristics).

To avoid image sticking change pattern frequently or activate screen saver.

Please note that damages at the display caused to burn-in-effects are not included in the warranty.

## 2.8 Interfaces and Connections

The interfaces and connections of the VisuNet GMP are located within the VESA adapter at the back of the housing.

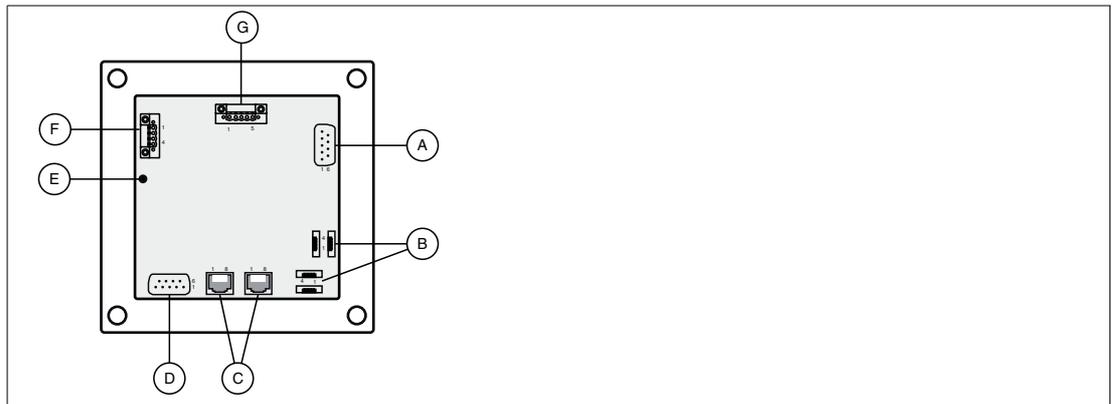
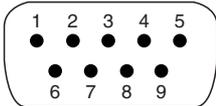


Figure 2.4 VESA adapter at the back of the VisuNet GMP housing

- A** Serial interface RS 232/RS485 (COM3)
- B** 4x USB (2x USB reserved fpr keyboard/mouse connection)
- C** 2x network RJ45
- D** Serial interface RS 232 RS 232 (COM1)
- E** Grounding bolt (M4)
- F** Power supply Phoenix DFK-MSTB 2,5/ 4-GF-5,08
- G** Connection Barcode handheld (COM6)

### 2.8.1 RS232/RS485

9-pin D-sub plug required for serial device connection. Connection layout according to EIA-232 (RS232).

Picture	RS232		RS485	
	Pin	Signal	Pin	Signal
	1	(Data) Carrier Detect	1	RS485 D-
	2	Receive Data	2	n.c.
	3	Transmit Data	3	RS485 D+
	4	Data Terminal Ready	4	n.c.
	5	GND	5	n.c.
	6	Datset Ready	6	n.c.
	7	Request to Send	7	n.c.
	8	Clear to Send	8	n.c.
	9	Ring Indicator	9	GND

### 2.8.2 USB 2.0

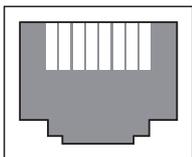
4-pin USB socket (type A).

Picture	Pin	Signal	Description
	1	VCC USB	power supply
	2	USB-	data
	3	USB+	data
	4	GND	grounding

### 2.8.3 Network RJ 45

8-pin socket required for ethernet connection (10/100/1000 Base-TX).

Use Cat.5e cable (AWG24) or better for wiring.

Picture	Pin	Signal
	1	D1+ / TX+
	2	D1- / TX-
	3	D2+ / RX+
	4	D3+
	5	D3-
	6	D2- / RX-
	7	D4+
	8	D4-

### 2.8.4 Ground Connection

For connecting to a low resistance grounding point at the housing: see chapter 3.2.1

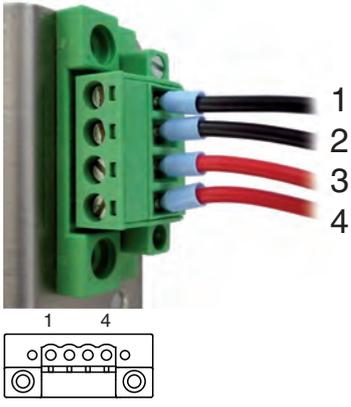
For connecting to a low resistance grounding point at pedestal/wall arm:

### 2.8.5 Supply Voltage 24 V

4-pin socket required for supply voltage connection (Phoenix Contact DFK-MSTB 2,5/ 4-GF-5,08).

The VisuNet GMP KM has inverse-polarity protection.

Matching plug: Phoenix Contact MSTBT 2,5/ 4-STF-5,08

Picture	Pin	Signal
	1	GND
	2	GND
	3	+ 24 V DC
	4	+ 24 V DC

### 2.8.6 Supply Voltage 120/230 V (AC)

4-pin socket required for supply voltage connection (Phoenix Contact DFK-MSTB 2,5/ 4-GF-5,08).

Matching plug: Phoenix Contact MSTBT 2,5/ 4-STF-5,08

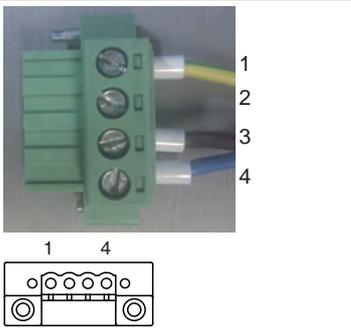


**Danger!**

Electric shock

Electric shock with heaviest personal injury to death. Heaviest property damage.

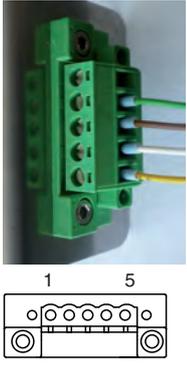
Connect the 4-pin socket as shown in the following table. Only connect the voltage supply when the device is completely installed.

Picture	Pin	Signal 120/230 V AC
	1	PE
	2	n. c.
	3	L
	4	N

### 2.8.7 Connection Barcode handheld

5-pin socket required for connecting Barcode handhelds (Phoenix Contact DFK-MSTB 2,5/ 5-GF-5,08).

Matching plug: Phoenix Contact MSTBT 2,5/ 5-STF-5,08

Picture	Pin	Signal
	1	12 V
	2	GND
	3	Rx
	4	Tx
	5	n.c.

## 2.9 Accessories

The following accessories are available.

### 2.9.1 Keyboards

There are several keyboard models available. All keyboards have an antibacterial coating. For this reason the keyboards are perfectly suitable for environments with high hygienic standards.

#### Keyboard TA3-K4

Keyboard with touchpad for controlling the mouse pointer.

2 separate buttons below the touchpad assume the function of left and right mouse button.



Figure 2.5 Keyboard with touchpad

TA3-K4	
<b>General specifications</b>	
Type	Keyboard with touchpad
<b>Supply</b>	
Rated voltage	via data line
<b>Indicators/operating means</b>	
Keyboard	105 short stroke keys Keyboard layout: US international, German, French, (further keyboard layouts on demand)

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	TA3-K4
<b>Touchpad</b>	
Active Principle	capacitive
Resolution	40 Pts./mm
Dimensions	66 x 50 mm
Driver	Microsoft Mouse <sup>®</sup> , USB
<b>Interface</b>	
Interface type	USB
<b>Conformity</b>	
Protection degree	IP65
<b>Ambient conditions</b>	
Ambient temperature	-20 ... 55 °C (-4 ... 131 °F)
Storage temperature	-20 ... 70 °C (-4 ... 158 °F)
Relative humidity	max. 85 % , non-condensing
<b>Mechanical specifications</b>	
Material	anodized aluminium , Polyester foil
Mass	1.2 kg
Dimensions	482.6 mm x 177.8 mm x 45 mm
Cable length	1.8 m , wire end ferrule

### Keyboard TA3-K6

Keyboard with joystick for controlling the mouse pointer.

2 separate buttons below the joystick assume the function of left and right mouse button.



Figure 2.6 Keyboard with joystick

	TA3-K6
<b>General specifications</b>	
Type	Keyboard with joystick
<b>Supply</b>	
Rated voltage	via data line

	TA3-K6
<b>Indicators/operating means</b>	
Keyboard	105 short stroke keys Keyboard layout: US international, German, French, (further keyboard layouts on demand)
<b>Joystick</b>	
Driver	Microsoft Mouse® , USB
<b>Interface</b>	
Interface type	USB
<b>Conformity</b>	
Protection degree	IP65
<b>Ambient conditions</b>	
Ambient temperature	-20 ... 55 °C (-4 ... 131 °F)
Storage temperature	-20 ... 70 °C (-4 ... 158 °F)
Relative humidity	max. 85 % , non-condensing
<b>Mechanical specifications</b>	
Material	anodized aluminium , Polyester foil
Mass	1.2 kg
Dimensions	482.6 mm x 177.8 mm x 45 mm
Cable length	1.8 m , wire end ferrule

### Keyboard TA3-K8

Keyboard with optical trackball for controlling the mouse pointer.

2 separate buttons below the trackball assume the function of left and right mouse button.



Figure 2.7 Keyboard with optical trackball

	TA3-K8
<b>General specifications</b>	
Type	Optical trackball
<b>Supply</b>	

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	TA3-K8
Rated voltage	via data line
<b>Indicators/operating means</b>	
Keyboard	105 short stroke keys Keyboard layout: US international, German, French, (further keyboard layouts on demand)
<b>Trackball</b>	
Diameter	50 mm
Material	[...] [...]
Driver	Microsoft Mouse®, USB
<b>Interface</b>	
Interface type	USB
<b>Conformity</b>	
Protection degree	IP65
<b>Ambient conditions</b>	
Ambient temperature	0 ... 55 °C (32 ... 131 °F)
Storage temperature	-10 ... 70 °C (14 ... 158 °F)
Relative humidity	max. 85 % , non-condensing
<b>Mechanical specifications</b>	
Material	anodized aluminium , Polyester foil
Mass	1.2 kg
Dimensions	482.6 mm x 177.8 mm x 45 mm
Cable length	1.8 m , wire end ferrule

### 2.9.2 Pedestals

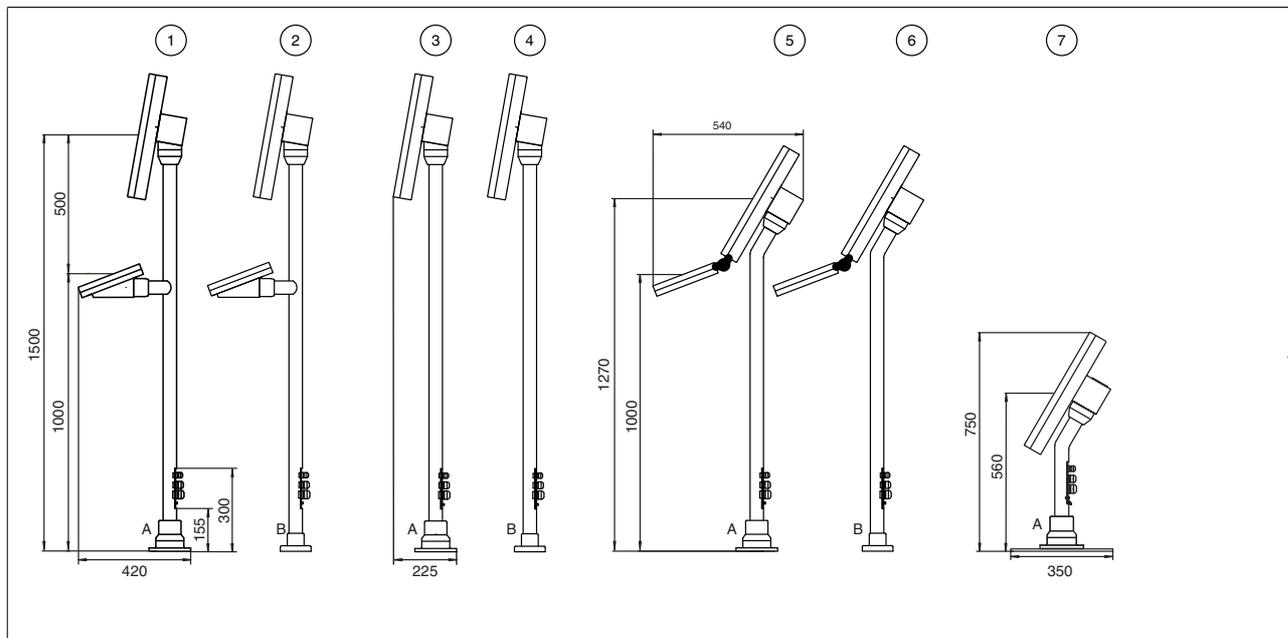


Figure 2.8 Pedestal models for VisuNet GMP

	Model number	Description
1	PEDESTAL1-150-1V-KP-G-T-304	Pedestal, turnable approx. 350°, inclination of monitor 10°, with pipe for keyboard
2	PEDESTAL1-150-1V-KP-G-F-304	Pedestal, fix mounted, inclination of monitor 10°, with pipe for keyboard
3	PEDESTAL1-150-1V-NP-G-T-304	Pedestal, turnable approx. 350°, inclination of monitor 10°
4	PEDESTAL1-150-1V-NP-G-F-304	Pedestal, fix mounted, inclination of monitor 10°
5	PEDESTAL1-130-3V-NP-G-T-304	Pedestal, turnable approx. 350°, inclination of monitor 30°
6	PEDESTAL1-130-3V-NP-G-F-304	Pedestal, fix mounted, inclination of monitor 30°
7	PEDESTAL1-56-3V-NP-G-T-304	Pedestal turnable approx. 350°, inclination of monitor 30°

### 2.9.3 Wall arm versions

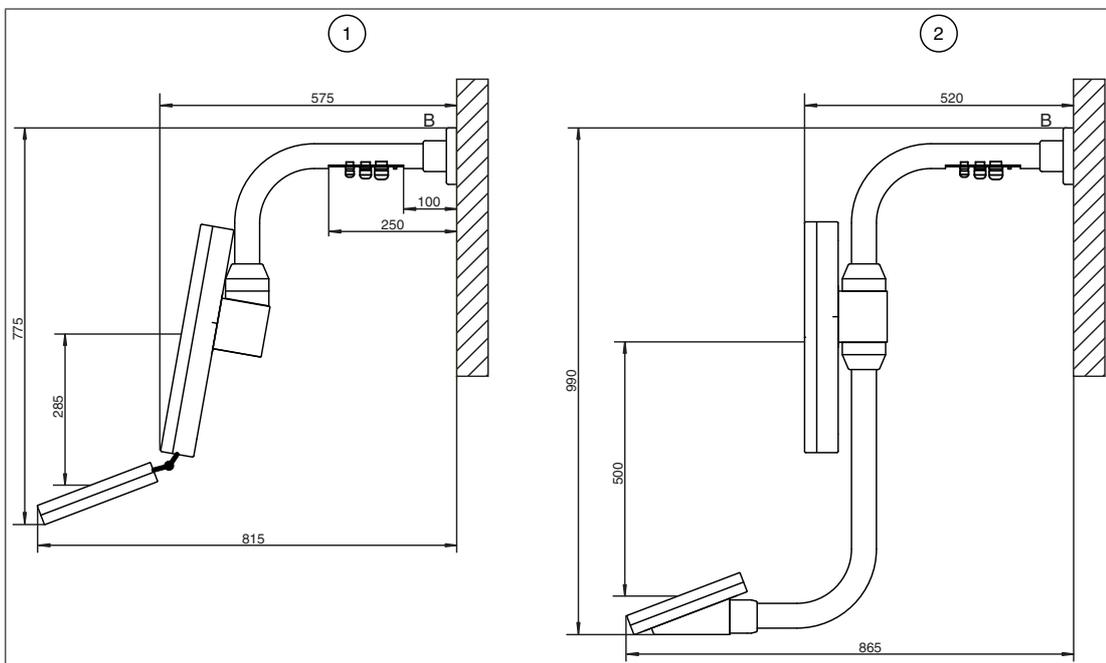


Figure 2.9 Wall arms for VisuNet GMP

	Model number	Description
1	WALL-ARM1-55-1V-NT-G-*-304	Wall arm, inclination of monitor 10°, without pipe for keyboard 2 models available: ■ WALL-ARM1-55-1V-NT-G-F-304: fix ■ WALL-ARM1-55-1V-NT-G-T-304: approx. 350° turnable
2	WALL-ARM1-55-0V-KT-G-*-304	Wall arm, without inclination of monitor, with pipe for keyboard 2 models available: ■ WALL-ARM1-55-0V-KT-G-F-304: fix ■ WALL-ARM1-55-0V-KT-G-T-304: approx. 350° turnable

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### 2.9.4 Wall bracket

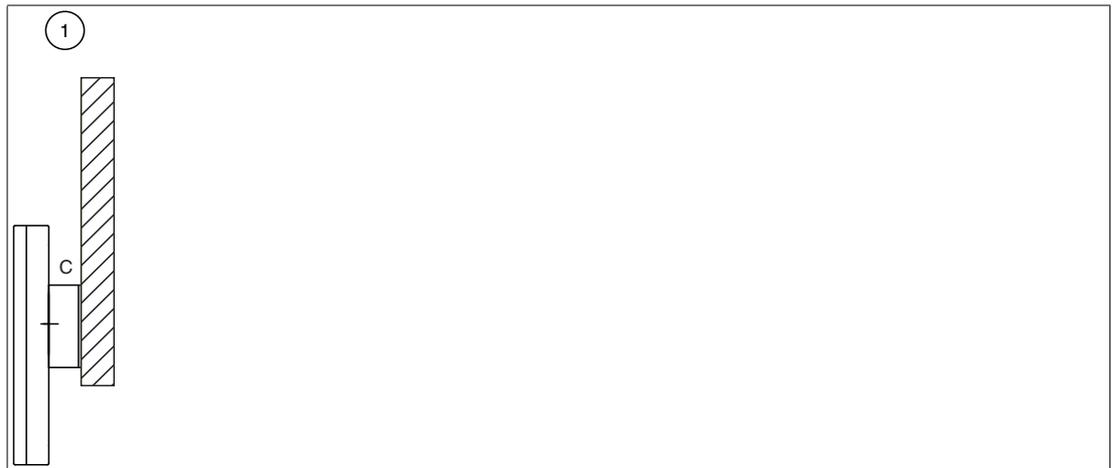
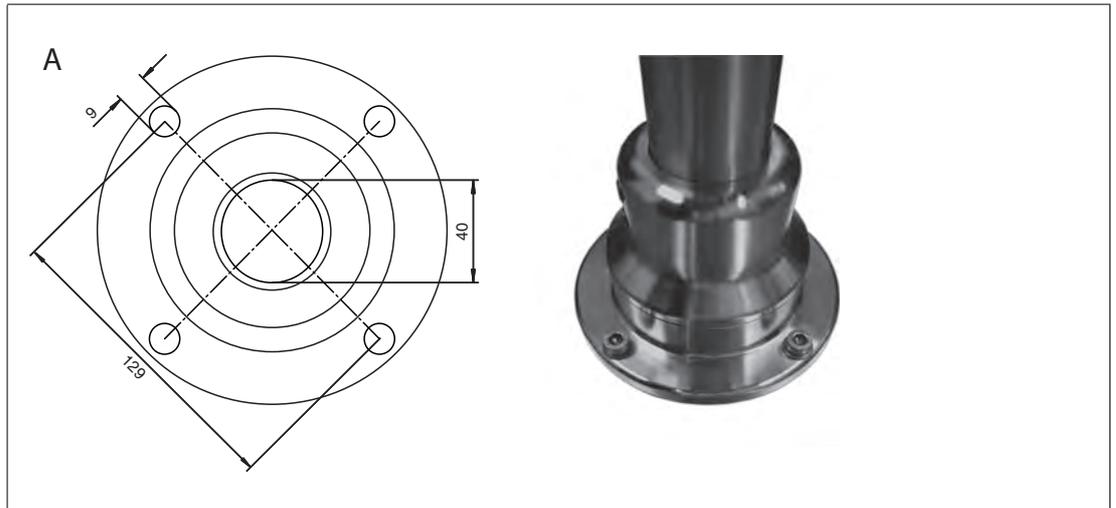


Figure 2.10 Wall bracket for VisuNet GMP

	Model number	Description
1	WALL-BRACKET1-0-0V-G-304	Wall bracket

### 2.9.5 Hole pattern for mounting versions turnable/fix

**Mounting version turnable, fastening at front:**



#### **Angle of turn for turnable mounting version**

The first stop plate is premounted for a max. angle of turn of 350°.

With the second enclosed stop plate you can define an individual angle.

The angle of turn can be divided with 6 screws in 60° steps.

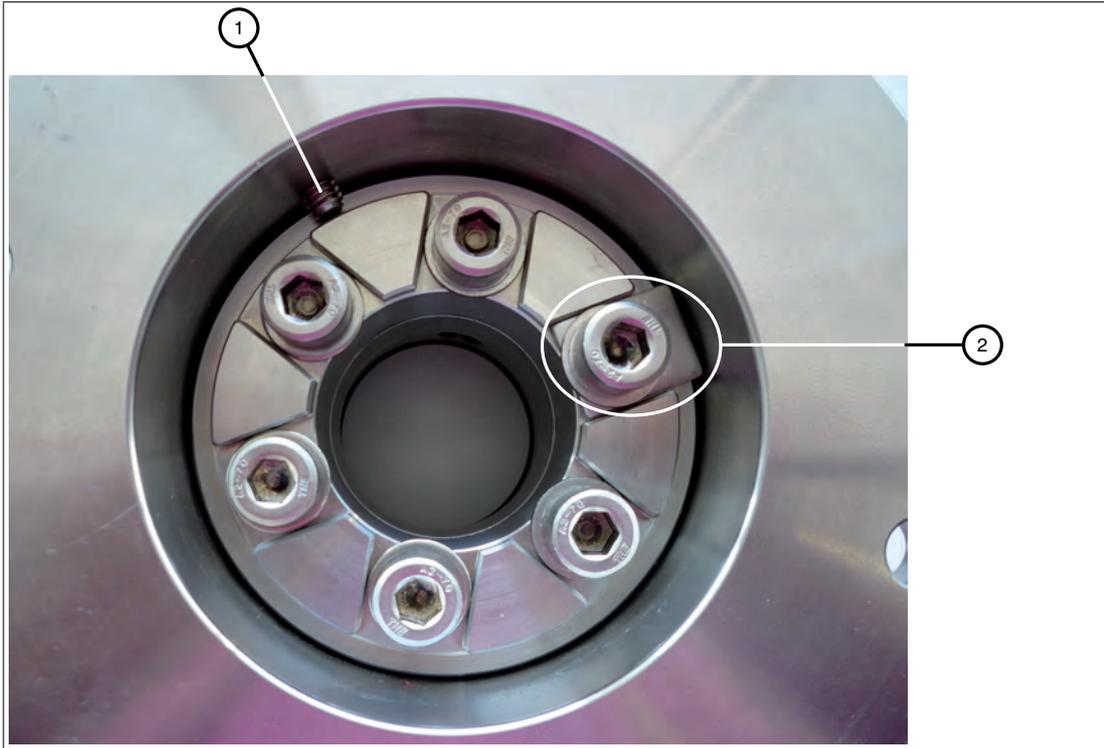
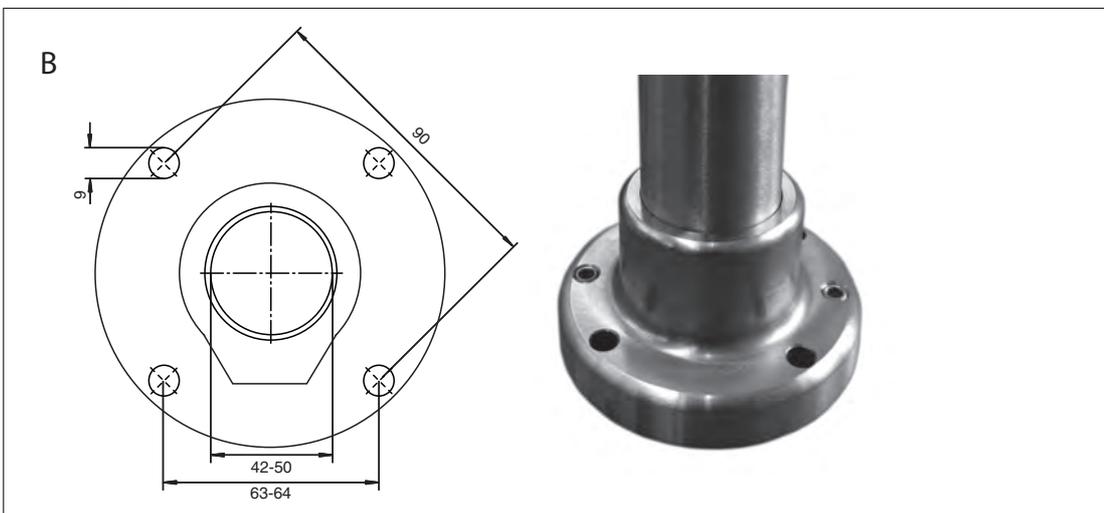


Figure 2.11 Turnable mounting version

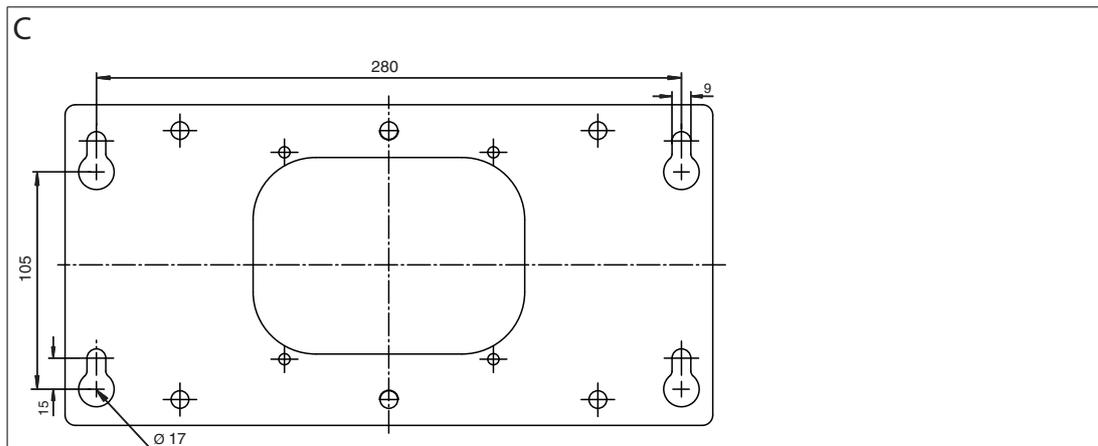
1. Locking screw
2. premounted stop plate

**Mounting version fix:**



### 2.9.6 Hole pattern for the wall bracket

**Wall Bracket:**



### 2.9.7 Power supply and network accessories

**Power Supply**

Model Number	Description
BN-24/5000-HS-10	Power supply for safe area, DIN rail mounting
DATL-A2-4.0N/2.5F-2	Power cable 2x 4.0mm <sup>2</sup> +2.5m 2.5mm <sup>2</sup> , wire end ferrule, length: 110 m
2DATL-A2-2.5-1	Power cable 2x 2.5mm <sup>2</sup> , wire end ferrule, max. length 80 m

**Network**

Model Number	Description
SK-FX-100-1-8	Switch for safe area DIN rail mounting, power supply 9-24 V DC, terminal connection, 1x fibre optics (SC-D), 8x Ethernet
DATL-C7TP-2-1RJ45	Cat.7 cable
RJZ2-SWITCH-5-10-AB	RJ Switch, Power Supply 10-30V DC, IP67, 5x Ethernet
DATL-C7TP-1-1RJZ2	Cat.7 cable consistent with RJ Switch (2 pieces needed)



## 2.9.8 Barcode Reader

The VisuNet GMP can operate an barcode handheld at its TTY interface. The following products can be used at present:

### Barcode handheld Powerscan PSCAN-D-1D-N0-R3-10-N

The PSCAN-D-1\* consists of an barcode handheld with connecting cable. The connecting cable is a 7 m long cable and a 8-pin M12 connector is mounted.



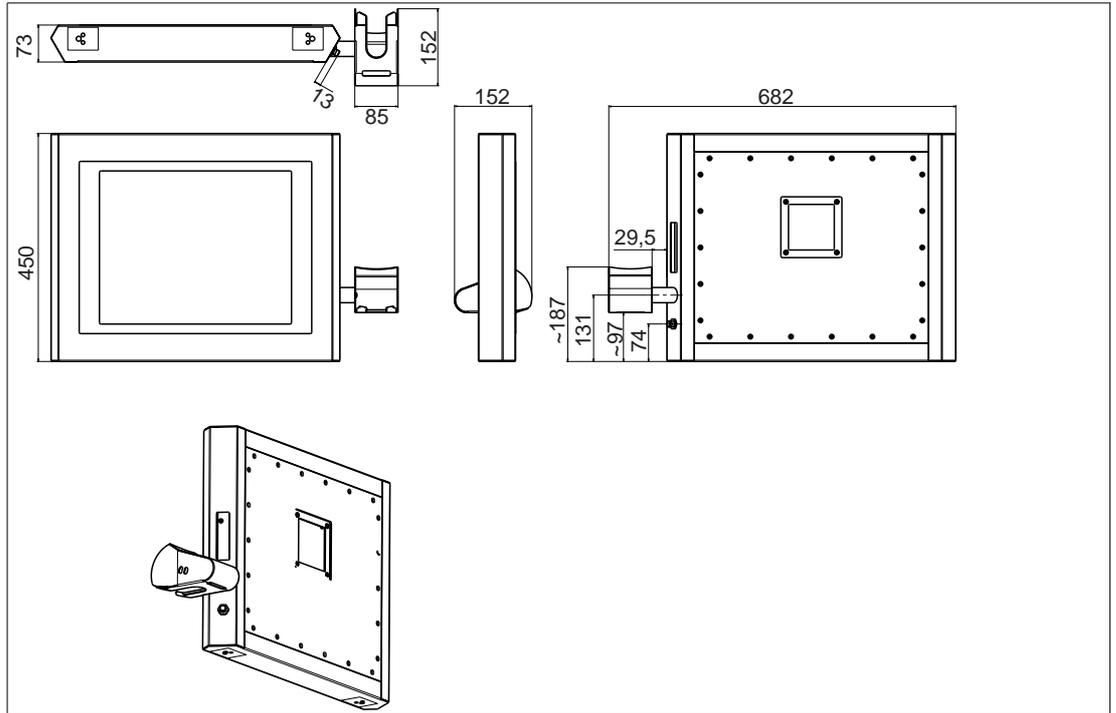
#### Order designation PSCAN-D-1\*

Device	Order designation	Description
PSCAN-D-1*	PSCAN-D-1D-N0-R3-10-N	Barcode handheld NON-Ex
Sparepart cable	SPAREPARTS-PSCAN-D-GP-CABLE-20	Sparepart cable for PSCAN-D-1D-N0-R3-10-N

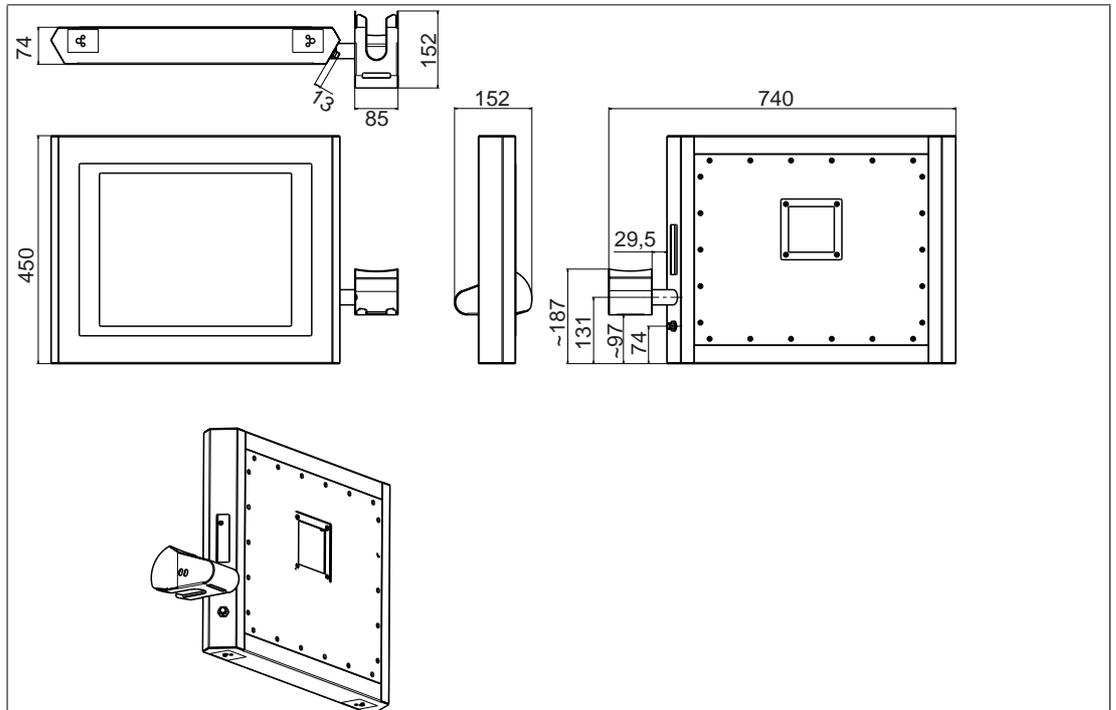
Please also refer to the barcode reader operating instructions. For more information about the terminal assignment see chapter 2.8.7.

### 2.9.9 Dimensions with Barcode handheld

#### Dimensions VisuNet GMP PC/RM 219 with Barcode handheld



#### Dimensions VisuNet GMP PC/RM221 and PC/RM222 with Barcode handheld





## 2.9.10 Holder for handheld barcode reader

### Dimensions

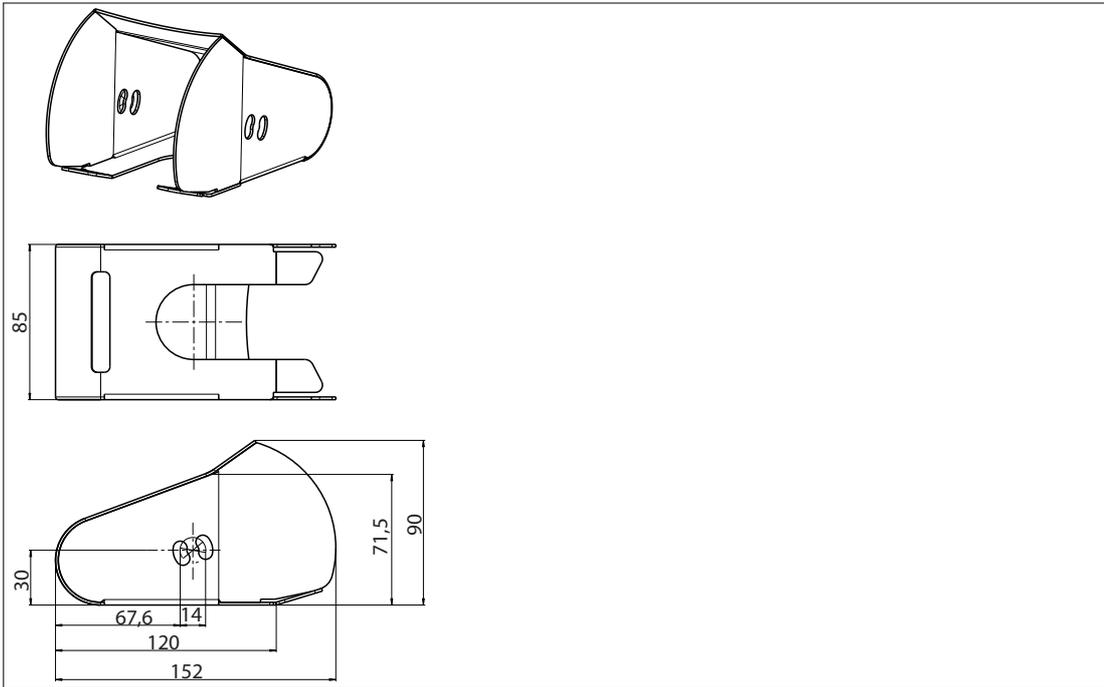


Figure 2.12 Abmessungen Halter für Barcode-Handheld

## 3 Installation and Commissioning

### 3.1 Preparation



#### Unpacking the unit

1. Check that all package contents are present and undamaged.  
↳ If anything is damaged, inform the shipper and contact the supplier.
2. Check that all items are present and correct based on your order and the shipping documents.  
↳ If you have any questions, please contact Pepperl+Fuchs.
3. Keep the original packing material in case you need to store or ship the unit at a later time.

### 3.2 Mounting in the field

The device is licensed for operation in confined spaces.

The cooling of the device does not require active components like CPU fan or water cooling systems. For that reason there are no ventilation slots in the housing.

To avoid overheating during operation, follow the advices below for field installation:

- Do not expose the device to direct solar radiation or other heat sources.
- Since the heat will dissipate via the housing, provide sufficient air circulation.
- Keep the ambient temperature below the specified maximal value.



#### **Note!**

The device is not delivered in sterile condition.

#### 3.2.1 Grounding at housing



#### **Note!**

Pepperl+Fuchs recommend to use a cable with a core-cross section of 4 mm<sup>2</sup> for grounding.

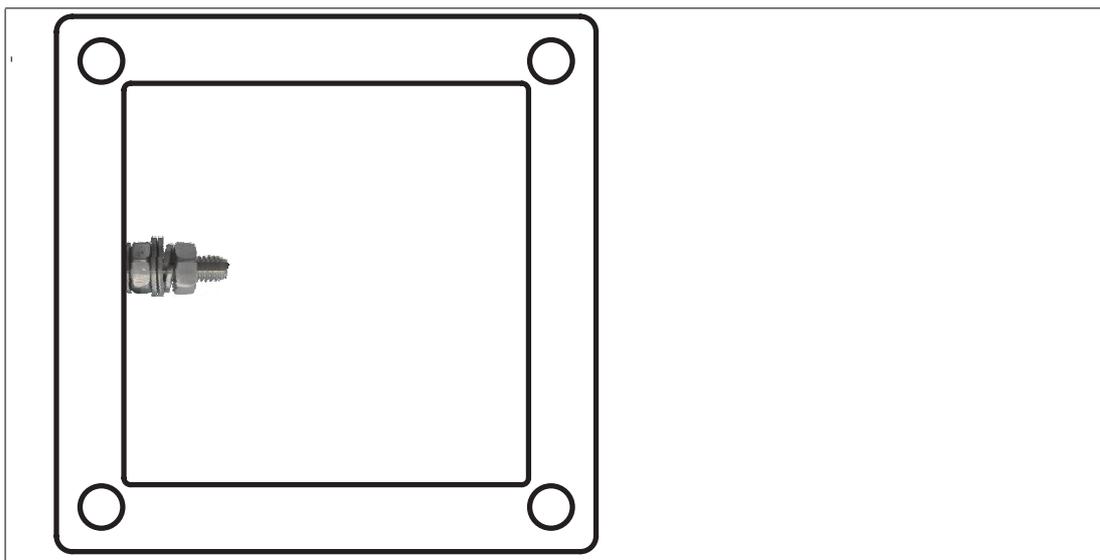


Figure 3.1 Ground connection at housing



## Grounding VisuNet GMP at housing



### **Note!**

Depending on the grounding cable you need the adequate cable lug (not included in delivery).

1. Insert the grounding cable into a cable lug (4).
2. Unscrew the M4 screw nut on ground connection.
3. Insert the cable of the cable lug between the 2 washers (1).
4. Tighten the screw nut.

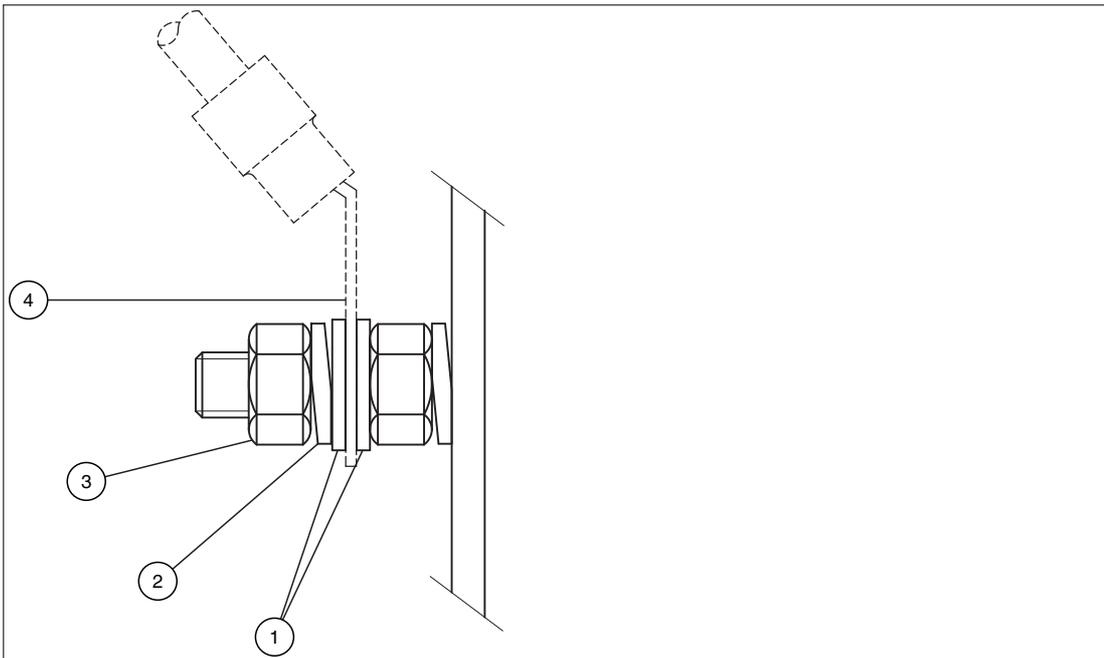


Figure 3.2 Equipotential bonding at the housing

- 1 washer
- 2 lock washer
- 3 screw nut
- 4 cable lug

### 3.2.2 Grounding at Pedestal



### **Note!**

Pepperl+Fuchs recommend to use a cable with a core-cross section of 4 mm<sup>2</sup> for grounding.



Figure 3.3 Ground connection at pedestal



## Grounding VisuNet GMP at pedestal and wall arm



### **Note!**

Depending on the grounding cable you need the adequate cable lug (not included in delivery).

1. Insert the grounding cable into a cable lug (4).
2. Unscrew the M4 screw on ground connection.
3. Insert the cable of the cable lug between the 2 washers (1).
4. Tighten the screw.

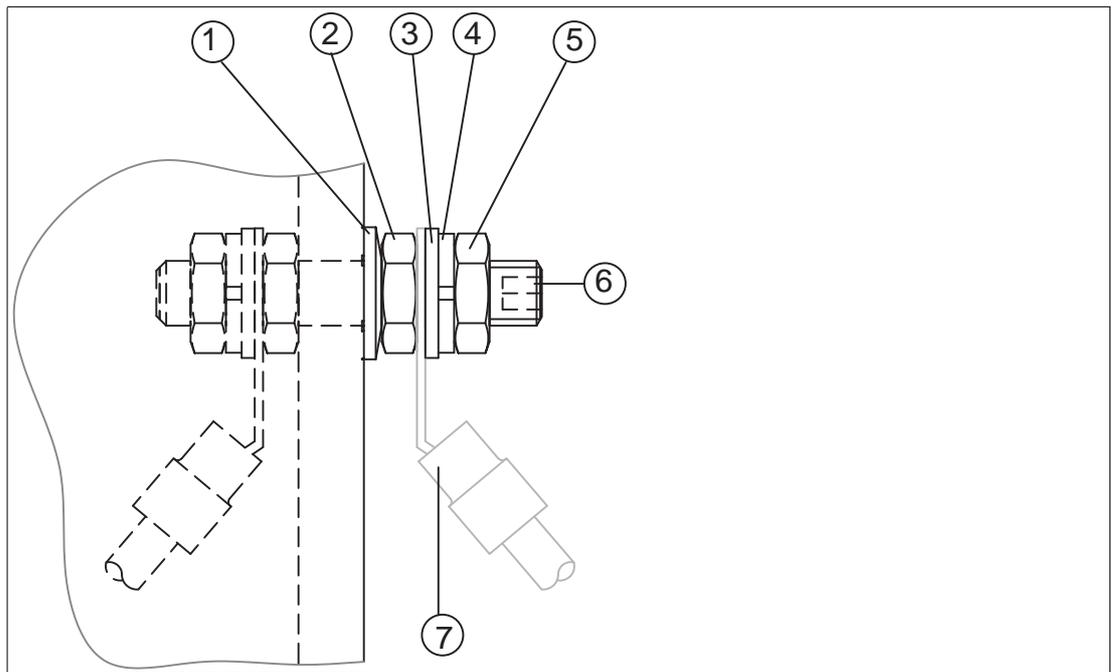


Figure 3.4 Grounding at pedestal

- |   |                          |
|---|--------------------------|
| 1 | contact disk             |
| 2 | screw nut                |
| 3 | washer                   |
| 4 | lock washer              |
| 5 | screw nut                |
| 6 | hexagon socket set screw |
| 7 | cable lug                |

### 3.3 General Mounting Information



**Note!**

**Mounting with 2 persons**

The following mounting requires 2 persons.



**Note!**

For fastening the pedestal, use 4 screws (M8) which suit the soil conditions.

#### Tools required for assembly

Use the following tools for assembly (not included in the scope of supply):

- Allen key, 3,5 mm, 3 mm, 4 mm
- 4 stainless steel screws (M8) for wall/floor mount
- Fork wrench for cable glands

Choose the appropriated wrench size to tighten the cable glands:

#### Clamping Range in the Pedestal - Wrench Size

	Wrench Size	Cable Diameter	Torque
M16	20	4,5-10 mm	10 Nm
M20	24	7-13 mm	12 Nm
M25	29	9-17 mm	12 Nm

### 3.4 Mounting the pedestal



#### Mounting pedestal on the ground



**Note!**

For fastening the pedestal, use 4 screws (M8) which suit the soil conditions.

1. To seal the pedestal against the floor, use the enclosed gasket.
2. Mount the pedestal by using the 4 screws (M8).

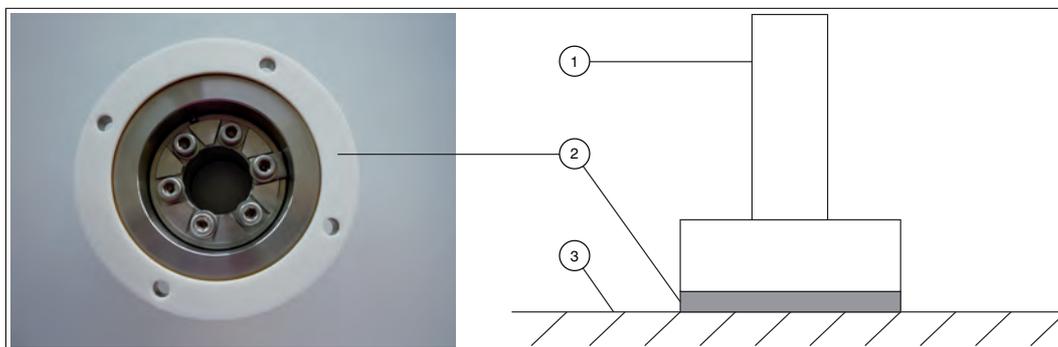


Figure 3.5 Pedestal from bottom (photo) and from side (drawing)

1. Pedestal
2. Gasket
3. Ground

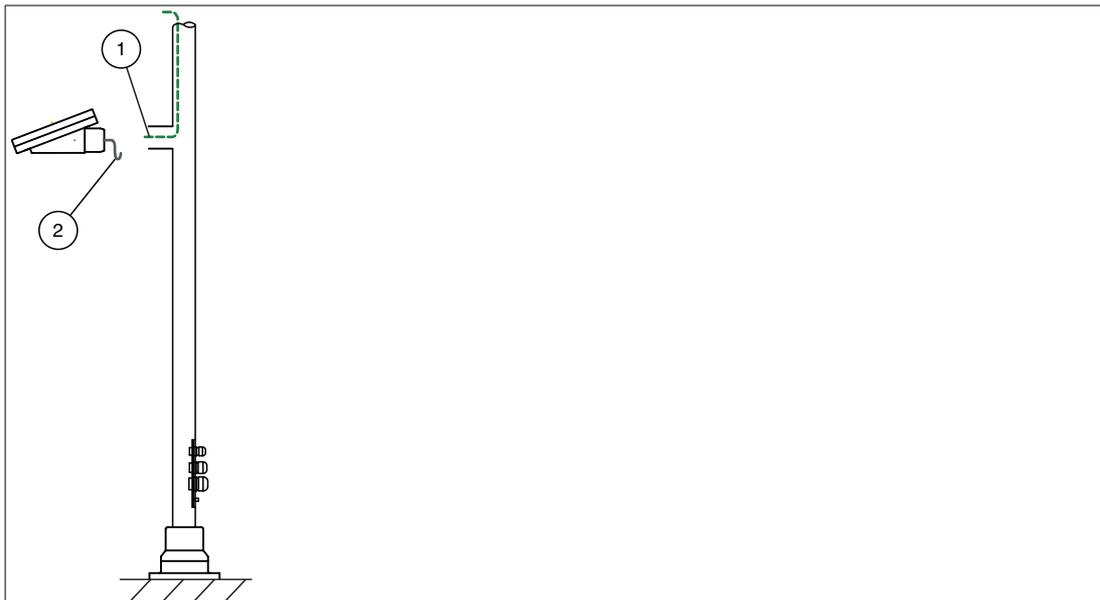
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### Running the keyboard cable through the pedestal

If you use a pedestal with keyboard pipe (**Pedestal1-150-1V-KP-G-T-304**, **Pedestal1-150-1V-KP-G-F-304**, **Pedestal1-150-1K-KP-G-T-304**, **Pedestal1-150-1K-KP-G-F-304**), a wire pull is already installed for running the keyboard cable through the pedestal. Run the keyboard cable first. Run all other connection cables after that.

1. Tighten the keyboard cable (2) to the wire pull (1).
2. Carefully pull the keyboard cable up through the pedestal.
3. Remove the wire pull from the keyboard cable.
4. Attach the keyboard with 2 grub screws on the pedestal.



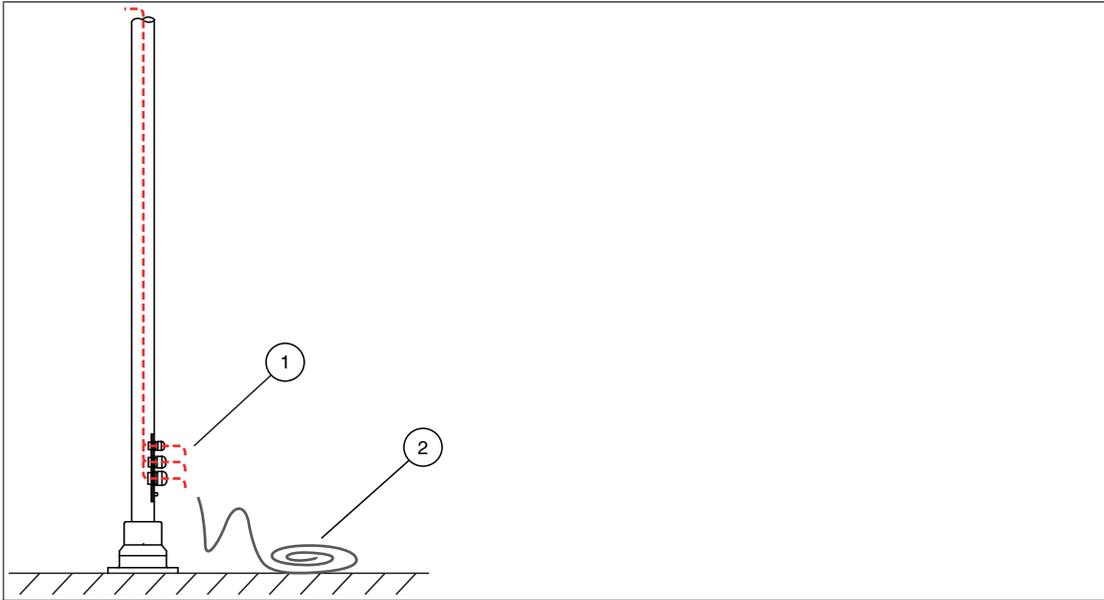
- 1 Wire pull for keyboard cable
- 2 Keyboard cable



### Running cables through pedestal

For easier installation of the connection cables through the pedestal, wires are already installed through the pedestal and the cable glands (1).

1. Depending on cable diameter, choose the adequate cable gland (e.g. 1 cable gland for supply cable, 1 cable gland for network cable).
2. Attach the connection cable to the current string and pull the cable carefully up.
3. Remove the strings from the connection cables.



- 1 Wire pull for connection cables
- 2 Connection cable



### Connecting Cables to VisuNet GMP (Pedestal)

Connect all cables correctly.



Figure 3.6 Example of connection

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### Mounting VisuNet GMP to Pedestal

1. Attach the VisuNet GMP with 4 countersunk screws with hexagon socket (M5x16). Use a allen key (3 mm).
2. Tighten the screws (torque: 5-6 Nm)



Figure 3.7 Mounting VisuNet GMP to Pedestal



### Tightening/Plugging up the pedestal/wall arm cable glands



**Note!**

The IP protection is only ensured if either a cable is run or a plug is plugged in.

1. Screw the cable glands with a fork wrench.
2. To plug up cable glands that are not in use, lightly tighten the cable gland
3. Plug the plugs in.
4. Firmly tighten the cable gland.



**Note!**

Pepperl+Fuchs recommend to use a cable with a core-cross section of 4 mm<sup>2</sup> for grounding.

### 3.5 Mounting to wall arm

#### Fastening the wall arm



**Caution!**

Danger of instability

There are problems by keyboard entry. The device is not properly mounted to the wall.

Ensure that the soil is stable. The soil must be able to absorb high mechanical energy. For fastening the wall arm, use 4 screws (M8) which suit the soil conditions.

1. To secure the wall arm from wall unevenness, use the enclosed gasket.
2. Mount the wall arm by using the 4 screws (M8).

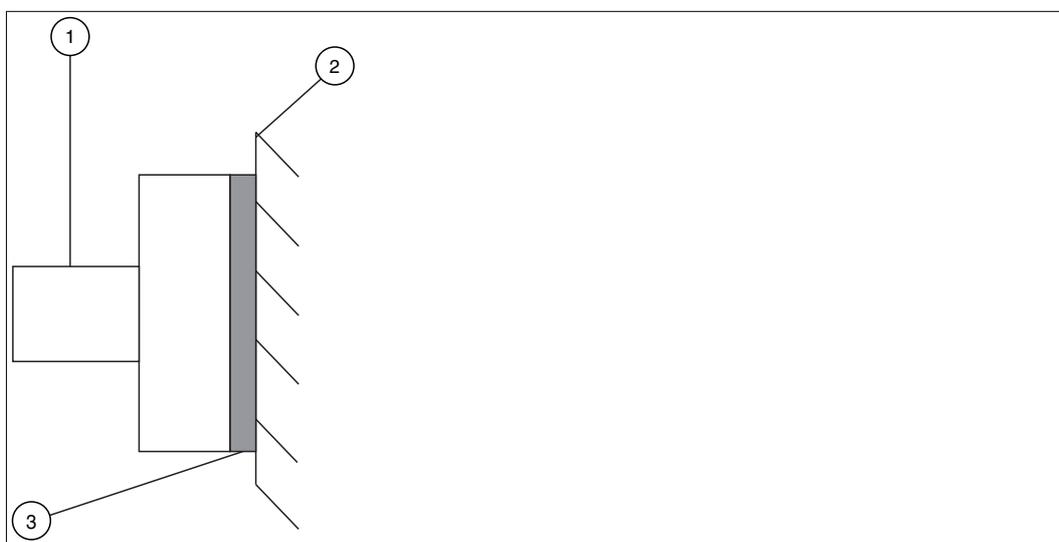


Figure 3.8 Wall arm from side

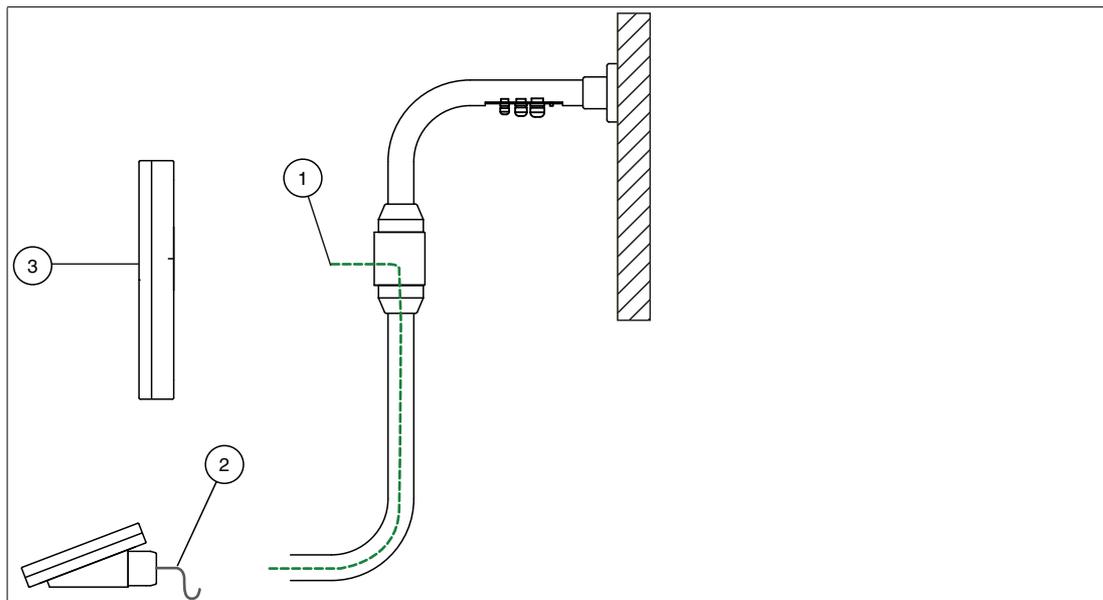
1. Wall arm
2. Wall
3. Gasket



#### Running the keyboard cable through the wall arm

If you use a wall arm with keyboard pipe (**Wall-Arm-1-55-1V-KT-G-F-304**, **Wall-Arm-1-55-1V-KT-G-T-304**), a wire pull is already installed for running the keyboard cable through the wall arm. Run the keyboard cable first. Run all other connection cables after that.

1. Tighten the keyboard cable (2) to the wire pull (1).
2. Carefully pull the keyboard cable up through the wall arm.
3. Remove the wire pull from the keyboard cable.
4. Attach the keyboard with 2 grub screws on the wall arm.



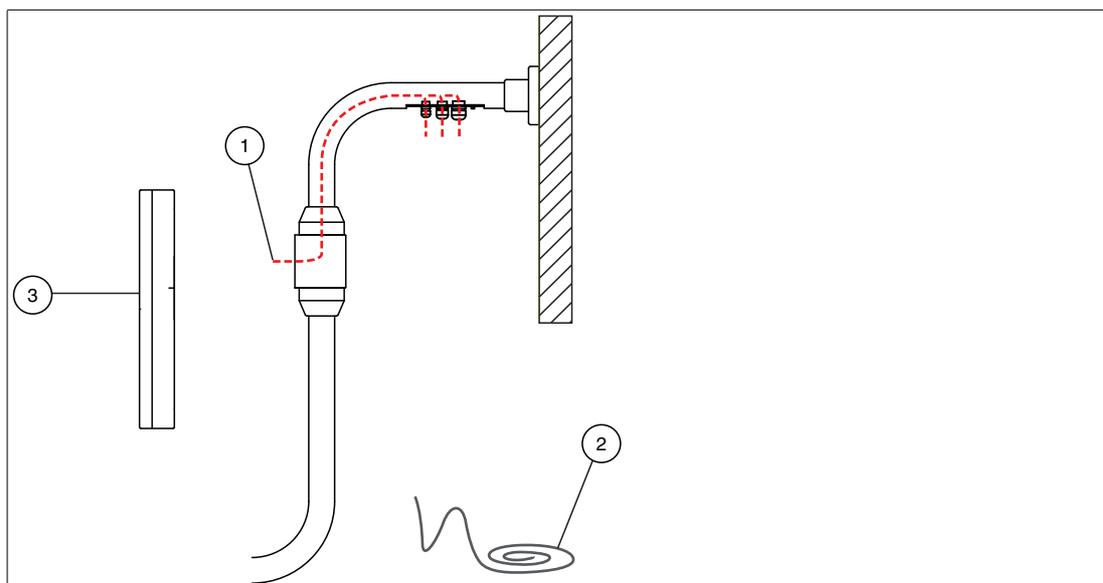
- 1 Wire pull for keyboard cable
- 2 Keyboard cable
- 3 VisuNet GMP



### Running cables through wall arm

For easier installation of the connection cables through the wall arm, wires are already installed through the wall arm and the cable glands (1).

1. Depending on cable diameter, choose the adequate cable gland (e.g. 1 cable gland for supply cable, 1 cable gland for network cable).
2. Attach the connection cable to the current string and pull the cable carefully up.
3. Remove the stings from the connection cables.



- 1 Wire pull for connection cable
- 2 Connection cable
- 3 VisuNet GMP



### Mounting flexible Patch Cable (in Case of using turnable Wall Arm)



**Note!**

***In case of using a turnable wall arm apply flexible patch cable***

Due to frequent monitor turning in live operation inflexible patch cable (1) is strained heavily within the wall bracket (4). That may cause cable damage. Therefore, use flexible patch cable (2).

1. Connect the network plug of the inflexible patch cable via adapter (3) to the flexible patch cable.
2. Connect the network plug of the flexible patch cable to the RJ45 interface of the monitor.

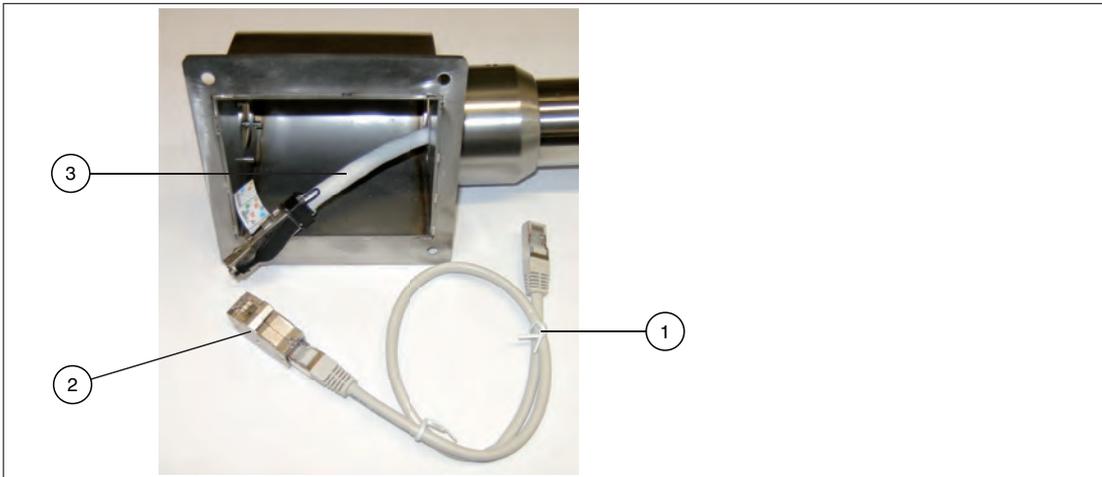


Figure 3.9 Mounting of flexible patch cable

- 1 Flexible patch cable
- 2 Adapter
- 3 inflexible network cable



### Connecting Cables to VisuNet GMP (Wall Arm)

Connect all cables correctly.



Figure 3.10 Example of connection



### Mounting VisuNet GMP to Wall Arm

1. Attach the VisuNet GMP with 4 countersunk screws with hexagon socket (M5x16). Use a allen key (3 mm).
2. Tighten the screws (torque: 5-6 Nm)



Figure 3.11 Mounting VisuNet GMP to Wall Arm



### Tightening/Plugging up the pedestal/wall arm cable glands



**Note!**

The IP protection is only ensured if either a cable is run or a plug is plugged in.

1. Screw the cable glands with a fork wrench.
2. To plug up cable glands that are not in use, lightly tighten the cable gland
3. Plug the plugs in.
4. Firmly thighten the cable gland.



**Note!**

Pepperl+Fuchs recommend to use a cable with a core-cross section of 4 mm<sup>2</sup> for grounding.

### 3.6

## Mounting to wall bracket



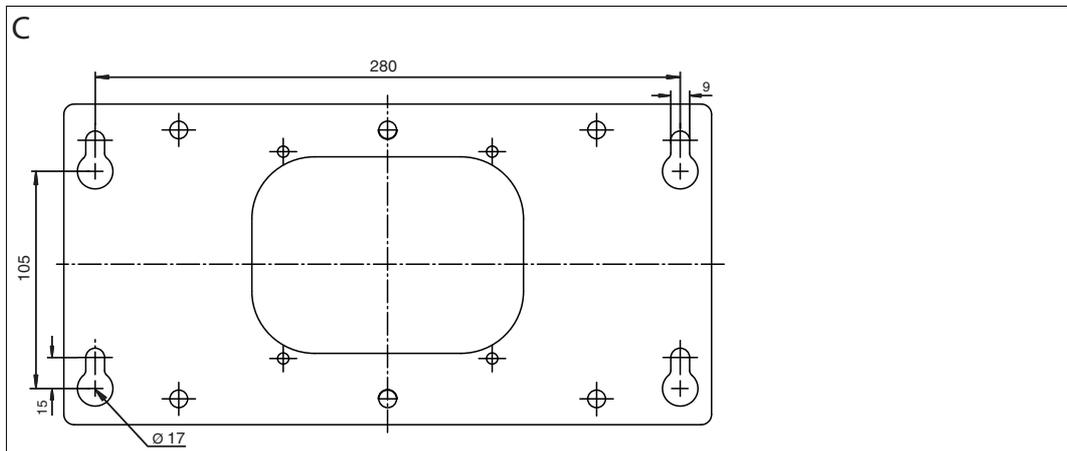
### Fixing the screws for wall bracket on the wall



**Note!**

For fastening the wall bracket, use 4 screws (M8) which suit the soil conditions.

1. Place the drill holes on the wall. Therefor use the drilling template C.

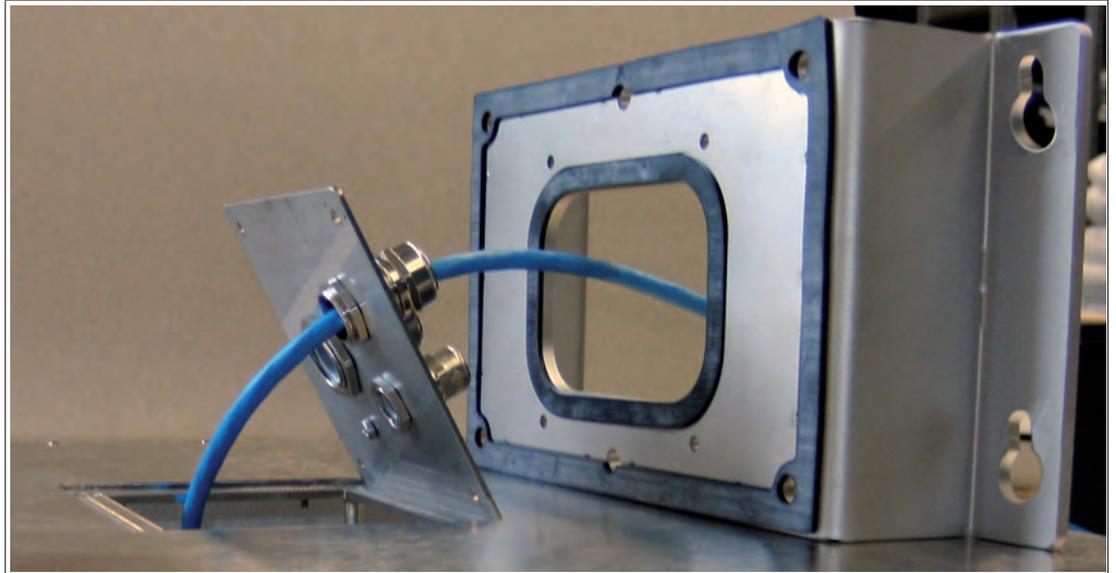


2. Attach the 4 screws (M8).



### Running cable through wall bracket/VESA plate

1. Depending on cable diameter, choose the adequate cable gland (e.g. 1 cable gland for supply cable, 1 cable gland for network cable).
2. Feed the cable through the wall bracket as shown.



### Connecting Cables to VisuNet GMP (Wall Bracket)

Connect all cables correctly.

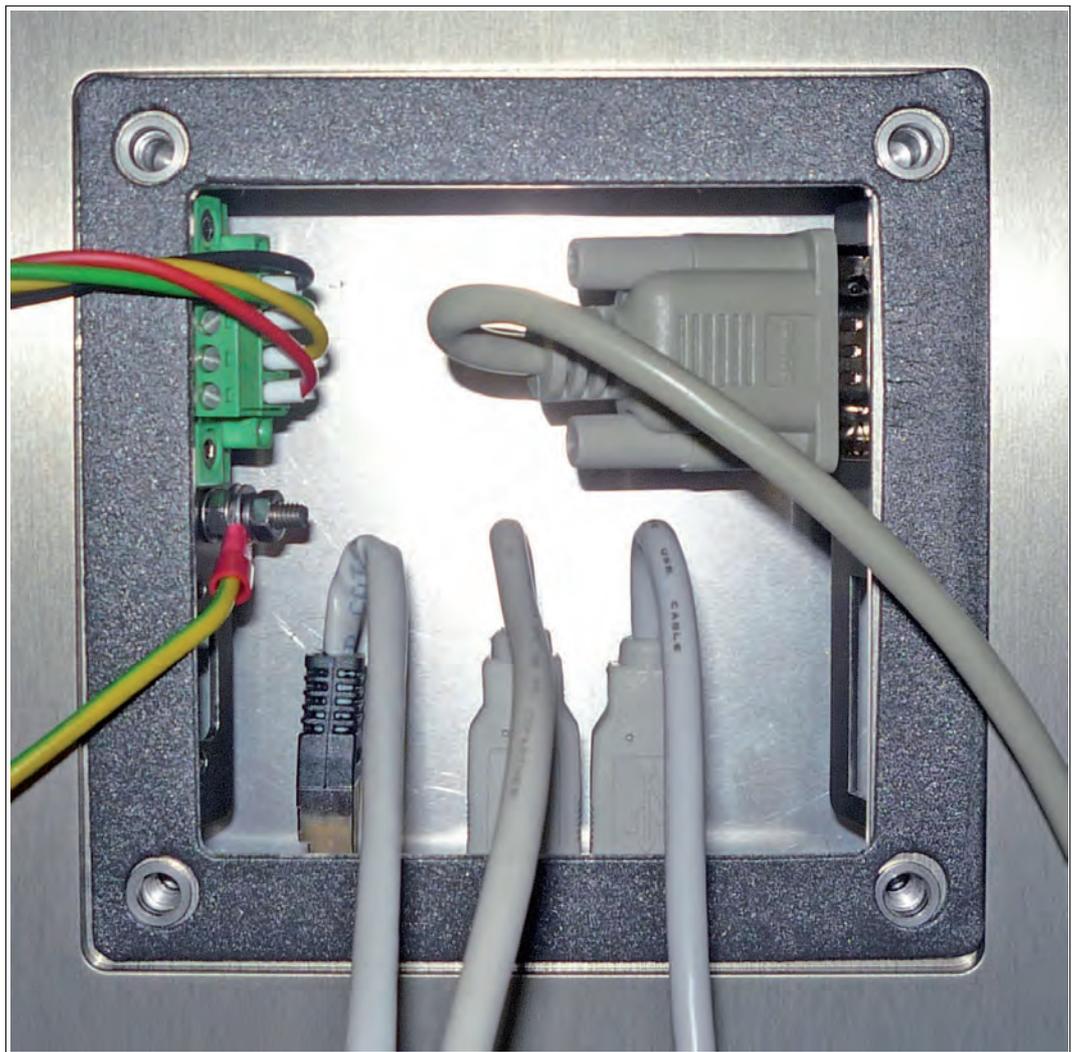


Figure 3.12 Example of connection

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## Tightening/Plugging up the pedestal/wall arm cable glands



### **Note!**

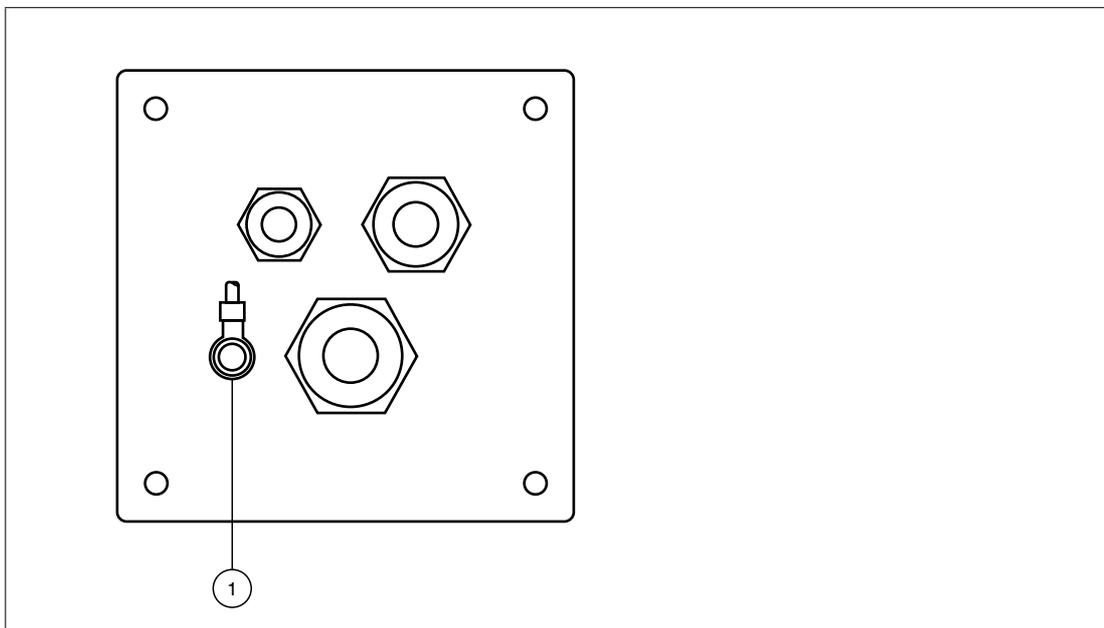
The IP protection is only ensured if either a cable is run or a plug is plugged in.

1. Screw the cable glands with a fork wrench.
2. To plug up cable glands that are not in use, lightly tighten the cable gland
3. Plug the plugs in.
4. Firmly tighten the cable gland.



### **Note!**

Pepperl+Fuchs recommend to use a cable with a core-cross section of 4 mm<sup>2</sup> for grounding.

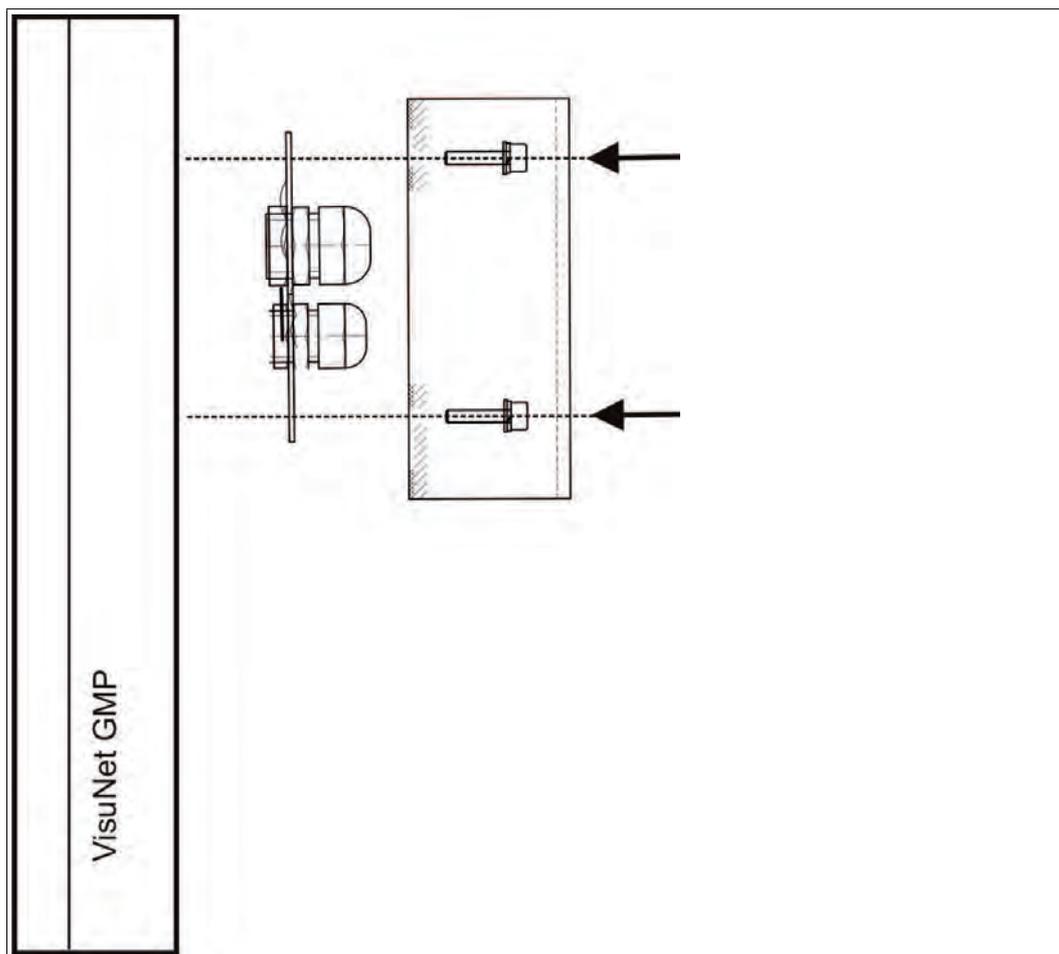


1. Grounding



## Tightening the wall bracket and hooking the device

1. Tighten the 4 screws with washer and lock washer. Use the Allen Key SW4 (Torque: 5-6 Nm).



2. Hook the device at the screws on the wall.

### 3.7

## Commissioning VisuNet GMP RM/PC

Use a low resistance connection between device and control cabinet.

Use cables with a minimum cross core-section of 2,5 mm<sup>2</sup> for power supply.



### Turning on the VisuNet GMP

1. Connect the 4-pin plug with the 4-pin power supply socket at the back of the housing.
2. Fix and tighten the screws of the plug.
3. Switch on the power supply at source.

↳ After establishing the power supply the VisuNet GMP starts automatically. The green LED on the right hand side of the housing indicates a correct power supply.



#### **Note!**

Use the VisuNet GMP only with safety-low voltage (protective extra-low-voltage). The power supply needs to be in line with applicable standards.



### Turning off the VisuNet GMP

1. Disconnect the device from the power supply.
2. After that unscrew the power plug at the VisuNet GMP.

## 4 Appendix

### 4.1 Chemical resistance of keyboard foil

The keyboard foil is manufactured from a biaxially aligned polyester-based material and therefore has a greater resistance to solvents. The foil is stronger and more durable than other standard foils used on keyboards and front panels, such as polycarbonate and PVC.

The keyboard foil is resistant against the following substances: (Test method: DIN42115):

- Alcohols
- Dilute acids
- Dilute alkalis
- Esters
- Hydrocarbons
- Household cleaning

### 4.2 Anti microbial resistance of keyboard foil

The foil passed the anti microbial effectiveness tested with (Test method: AATCC Test Method 100):

- Staphylococcus aureus (MRSA)
- Escherichia coli 0157
- Listeria monocytogenes
- Pseudomonas aeruginosa
- Salmonella enteritidis
- Bacillus cereus
- Streptococcus faecalis
- Klebsiella pneumoniae
- Aspergillus niger
- Penicillium purpurogenum
- Phoma violacea
- Saccharmyces cerevisiae

### 4.3 Chemical resistances of the touch screen

The foil is manufactured from a biaxially aligned polyester-based material and therefore has a greater resistance to solvents. It is physically resistant to pencil lead with a maximum hardness of 3HB.

The foil is resistant against the following substances (concentration 100 % - unless otherwise specified):

Aldehyde:	
Acetaldehyde	Formaldehyde 37 - 42 %
Alcohols:	
Ethanol	Hexahydrophenol
Triacetin	Dowandol DRM/PM
Glycol	Glycerin
Isopropanol	Methanol
	Diacetone alcohol

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<b>Aldehyde:</b>	
<b>Hydrocarbons:</b>	
Aliphatic hydrocarbons	generally gasoline
Kerosene	Toluol
Xylene	Benzene
<b>Chlorinated hydrocarbons:</b>	
Chlorofluorocarbons	Perchloroethylene
III-Trichloroethylene	Diethyl ether
Methyl ethyl ketone	Trichloroethylene
<b>Acids:</b>	
Formic acid <10 %	acetic acid <10 %
Phosphoric acid <10 %	Hydrochloric acid <10 %
Nitric acid <10 %	Trichloroacetic acid <10 %
	sulfuric acid <10 %
<b>Other organic solvents:</b>	
Ether	Acetone
Dimethylformamide	Dioxane
Ethyldioctyl	Dibutyl phthalate
Phthalate	Butyl cellosolve
Iron chlorid (FeCl <sub>2</sub> )	Iron chlorid (FeCl <sub>3</sub> )
<b>Lyes:</b>	
Ammonia <10 %	Sodium hydroxide <10 %
	Alkali carbonate
<b>Ester:</b>	
Ethylacetate	N-butyl acetate
	Amyl acetate
<b>Technical oils and greases:</b>	
Drilling emulsion	Diesel oil
Varnish	Heating oil
Liquid paraffin	Castor oil
Silicone oil	Turpentine oil substitute
Brake fluid	Decon
<b>Saline solutions:</b>	
Alkali carbonate	Bichromate
Potassium hydroxide <30 %	Acetonitrile
sodium bisulfate	potassium ferrocyanide
	Sodium hypochlorite <20 %
<b>Various other substances:</b>	
Molecular chlorine	Cresol phenol soaps in hydrogen soution
Oxygen	Tricresyl phosphate
Water <100 °C	Hydrogen peroxid <25%
Saline water	Solvent (white spirit)

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<b>Aldehyde:</b>	
Grape juice	Milk
	Coffee
<b>Detergent, rising agent, cleaning agent:</b>	
Potash soap	Detergent solutions (surfactants)
Fabric softener	Sodium carbonate
<b>Household chemicals (24 hours of exposure at 50 °C)</b>	
Top Job	Jet Dry
Gumption	Fantastic
Formula 409	Ariel
Persil	Wisk
Lenor	Downey
Ajax	Vim
Domestos	Vortex
	Windex0

Resistance to surface desinfectant can be determined on request.

### Slight discoloration

Intense examinations established that the following products caused slight discoloration:

- Mustard
- Tomato juice
- Tomato ketchup
- Lemon juice

### No resistance

**Not** resistant to:

- concentrated mineral acids
- concentrated alkaline solutions
- High-pressure steam over 100 °C



**Note!**

Various other substances may cause the surface structure to alter. Testing and subsequent assessment still require clarification.

## 4.4 Chemical Resistance of the Display Foil Frame used in versions with touch screen

The foil is manufactured from a biaxially aligned polyester-based material and therefore has a greater resistance to solvents.

The foil is resistant against the following substances (concentration 100 % - unless otherwise specified):

Ethanol	Acetaldehyde	1.1.1. Trichloroethane (Genklene)
Cyclohexanol	Aliphatic hydrocarbons	Amylacetate
Dowanol DRM/PM Diacetone	Formaldehyde (37-42%)	Butylcellosolve

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Glycerine	Toluene	Diethyl ether
Isopropanol	Xylene	Ether
Methanol	White spirit	Ethylacetate
Triacetin		N-Butyl acetate
Acetone	Acetic acid (<50%)	Dibutyl Phthalate
Isophorone	Formic acid (<50%)	Diethyl Phthalate
Cyclohexanone	Hydrochloric acid (<36%)	Fabric conditioner
Methylethylketone	Nitric acid (<10%)	Ferric Chloride (saturated)
Methylisobutyleketone	Sulphuric acid (<30%)	Ferrous Chloride (saturated)
Lixtop	Phosphoric acid (<30%)	Hydrogen peroxide (<25%)
	Trichloroacetic acid (<50%)	Potassium carbonate
	Glutaraldehyde in water 50%	Sodium carbonate (saturated)
	Oleic Acid	Sodium hypochlorite (<20%)
		Tego51
		Washing powders
Acetonitrile	Blown castor oil	Saturated Salt Solution
Ammonia (<32%)	Cutting oil (hysol X)	Water
Ammonium chloride (<10%)	Decon	
Sodium hydroxide (50%)	Diesel oil	
Dichromate	Hydraulic oil (Castrol Anvol)	
Potassium hydroxide (<40%)	Linseed oil	
Sodium bisulphate (<50%)	Paraffin oil	
Potassium ferrocyanide/ferricyanide	Universal brake fluid (Castor Girling)	
Silver Nitrate	Silicone oil	
	Teepol	
	Turpentine substitute	
	Petrol	
	Diabasic Ester 5	
	Skydrol 500B4	

Resistance to surface desinfectant can be determined on request.

### No resistance

Not resistant to:

- Benzyl alcohol
- Concentrated caustic solution
- Concentrated mineral acids
- Dichloromethane
- Dimethylformamide
- High pressure steam at over 100°C
- Methylene chloride

- Tetrahydrofuran

### Slight discoloration

Intense examinations established that the following products caused slight discoloration:

- Mustard
- Tomato juice
- Tomato ketchup
- Lemon juice
- Tea
- Coffee



**Note!**

Various other substances may cause the surface structure to alter. Testing and subsequent assessment still require clarification.

## 4.5 Change the keyboard TA3-K\*

Assembly, commissioning, operation, maintenance and dismantling of any device may only be carried out by trained, qualified personnel.



**Caution!**

Fault / Fail completely

Devices or any connected facilities or systems may develop a fault or fail completely.

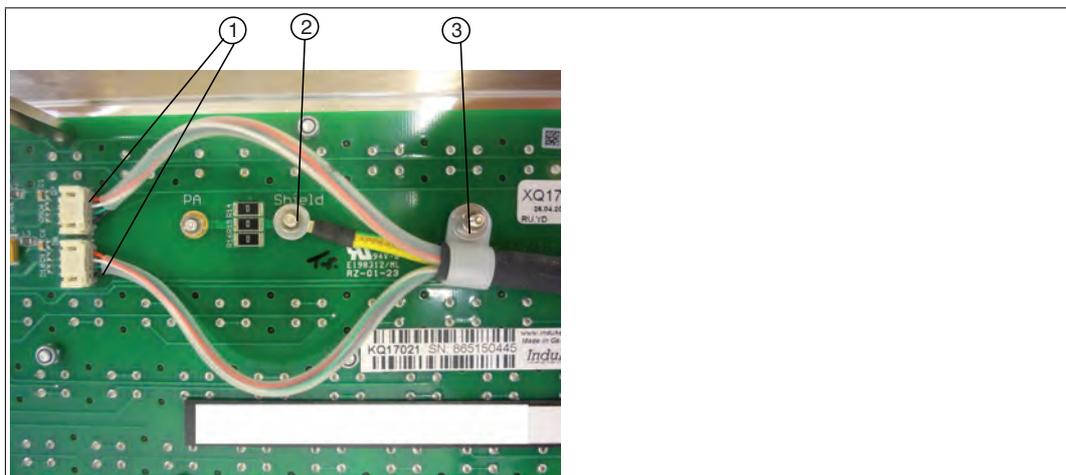
Consider the ESD safety measures.

### 4.5.1 Dismount a keyboard TA3-K\*



#### Dismount a keyboard

1. Separate the silicon joint between housing and keyboard. Use a sharp edged tool for example a knife or a scalpel.
2. Open the bottom plate.
3. Remove the cable from the board: Pull the cables (1). Declamp the PE connector (2). Declamp the cable clamp (3).



4. Remove the mounting rail of the keyboard. Remove the lock nuts. Remove the rails.



5. Remove the keyboard and put it out of the front housing.



#### 4.5.2

#### Attach the keyboard TA3-K\*

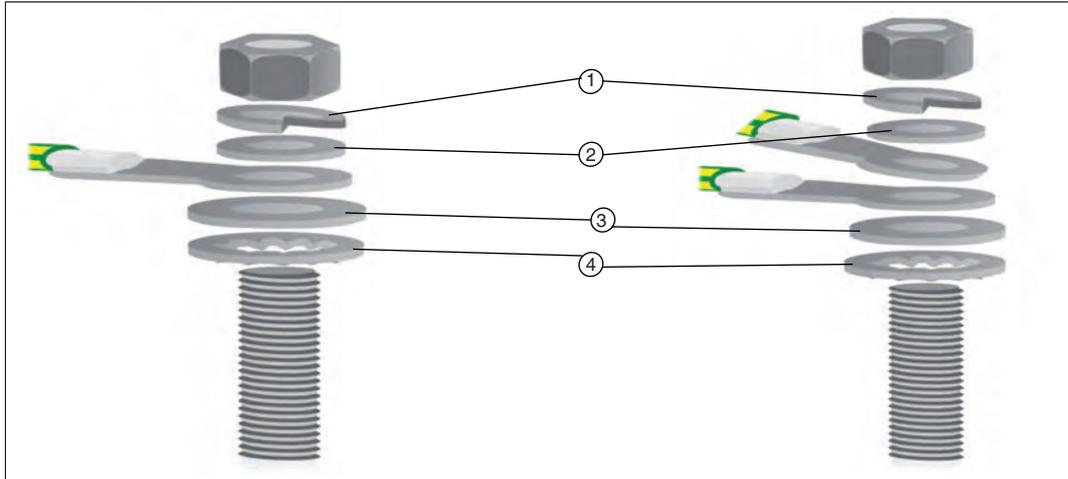


##### Attach the keyboard

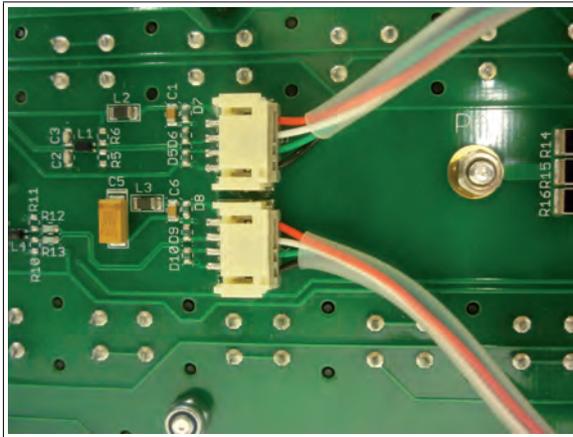
1. Remove the cover plate of the keyboard.
2. Replace the 8x distance bolts to 8x lock nuts. Tighten the lock nuts, torque 0,3 Nm.
3. Remove the connecting cable of the keyboard. See chapter see chapter 4.5.1.
4. Place the keyboard from the front into the housing. See chapter see chapter 4.5.1 in reversed order.
5. Put the connection rails from the back to the keyboard and mount it with the new enclosed lock nuts. Tighten the lock nut of each rail as compact the keyboard can be moved. Adjust the keyboard central. Tighten all lock nuts with suited tools, torque 0,4 Nm..
6. Attach the cable clamp. Depending on the version of the keyboard there are one or two cables.



7. Attach the PE cable. Depending on the version of the keyboard there are one or two cables.



- 1 Lock washer M3
  - 2 Washer M3
  - 3 Washer M4
  - 4 Toothed lock washer M4
8. Put the cable into the board.



9. Close the bottom plate.
10. To assure the GMP capability join the joint at the keyboard with silicon professionally.



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# PROCESS AUTOMATION – PROTECTING YOUR PROCESS



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