VisuNet FLX System

RM-320S-*
PC-320S-*
DM-320S-*

Manual

Your automation, our passion.

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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 History of the Manual

The following editions of the manual have been released:

Version	Comments
04/2021	- First edition VisuNet FLX System (*-320S-LA-*, stainless steel housing)
09/2021	- Addition Installing the Bluetooth®-Kit - Improvement: New line drawings regarding mounting the keyboard - Improvement: Linking of additional manuals
10/2021	- Addition of PE Label - Addition ATEX Zone 2/22 (P+F self-declaration)
01/2022	- Addition of IDM Zone 2/22 barcode reader mechanical installation - Addition Chemical Resistance
06/2022	- Addition UL certification - Removal ATEX Zone 2/22 (P+F self-declaration) - Addition ThinManager Ready
07/2022	- Minor marking corrections
06/2023	- Addition of mounting information regarding 0° tilted mounting adapter for pedestal
11/2023	- First edition of VisuNet FLX *-320S-LB-* Systems Extended Temperature Range manual
06/2024	- Combination of VisuNet FLX System *-320S-***A**-*, and VisuNet FLX System *-320S-***B**-* Extended Temperature Range manuals
07/2024	- Addition optional IGEL OS operating system - Update PC OS Windows® 10 Enterprise LTSC 2021 - Addition CCC certification information
12/2024	- RFID Reader available as accessory - Ferrite core installation when RFID reader is configured - added link for Sunshield installation videos

2 Introduction

2.1 Content of this Document

This document contains information that you need in order to use your product throughout the applicable stages of the product life cycle. These can include the following:

- Product identification
- Delivery, transport, and storage
- Mounting and installation
- Commissioning and operation
- Maintenance and repair
- Troubleshooting
- Dismounting
- Disposal

Note

This document does not substitute the instruction manual.

Note

For full information on the product, refer to the instruction manual and further documentation on the Internet at www.pepperl-fuchs.com.

The documentation consists of the following parts:

- Present document
- Instruction manual
- Datasheet

Additionally, the following parts may belong to the documentation, if applicable:

- Type examination certificate
- EU declaration of conformity
- Attestation of conformity
- Certificates
- Control drawings
- Additional documents

2.2 Manufacturer

Pepperl+Fuchs Group Lilienthalstraße 200, 68307 Mannheim, Germany
Internet: www.pepperl-fuchs.com

2.3 Target Group, Personnel

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

Only appropriately trained and qualified personnel may carry out mounting, installation, commissioning, operation, maintenance, and dismounting of the product. The personnel must have read and understood the instruction manual and the further documentation.

Prior to using the product make yourself familiar with it. Read the document carefully.

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2.4 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

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

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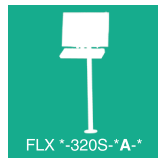
3 Product Description

VisuNet FLX *-320S-*A-*	VisuNet FLX *-320S-*B-*
FLX *-320S-*A-*	FLX *-320S-*B-*

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3.1 Overview
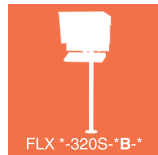
 VisuNet FLX *-320S-*A-*

The VisuNet FLX Systems are designed for Zone 2/22, DIV 2 or general purpose applications. The different mounting and configuring options lead to the highest application flexibility. Due to a fully modular design, the new platform, which is geared to the needs of the (petro-) chemical and pharmaceutical industries, the HMIs can be configured to fit exactly and enables simple and fast adjustments in the field. With the modern, compact design less installation space is required. The low weight allows a cost effective and easy installation.

Hygienic concept: The VisuNet FLX fulfills with its complete closed stainless steel housing pharma requirements. All cables are routed within the compact and robust system. The gap free surface which is available with a typical surface roughness of 0.8 µm and rounded edges of the system minimize the risk of an accumulation or growth of bacteria. Display, seals and keyboard are chemically resistant to typical cleaning agents.

 VisuNet FLX *-320S-*B-*

The VisuNet FLX Systems are designed for Zone 2/22 (Div. 2) and non-Ex (general) applications.

Thanks to the robust aluminum housing, the VisuNet FLX has an optimized thermal conductivity, resulting in improved heat exchange and temperature management. The high corrosion of the enclosure resistance makes the VisuNet FLX platform interesting for industries with high ambient temperatures, such as manufacturing, oil and gas, water and wastewater, and truck and ship loading and filling. Industries such as life science, (petro-) chemical and pharmaceutical industries also benefit from the advantages of the aluminum variant of the VisuNet FLX.

The different mounting and configuring options lead to the highest application flexibility. Due to a fully modular design, the new platform, which is geared to the needs of the (petro-) chemical and pharmaceutical industries, the HMIs can be configured to fit exactly and enables simple and fast adjustments in the field. With the modern, compact design less installation space is required. The low weight allows a cost effective and easy installation.

In addition, individual solutions can also be created and manufactured at Pepperl+Fuchs' Solution Engineering Centers (SEC), which are located around the world. For example, a large selection of already qualified control elements (e.g. push buttons, emergency stop) is available for this purpose. Solutions for dual-monitor or mobile applications are also already taken into account in the design and can be customized as needed.

VisuNet FLX System Components
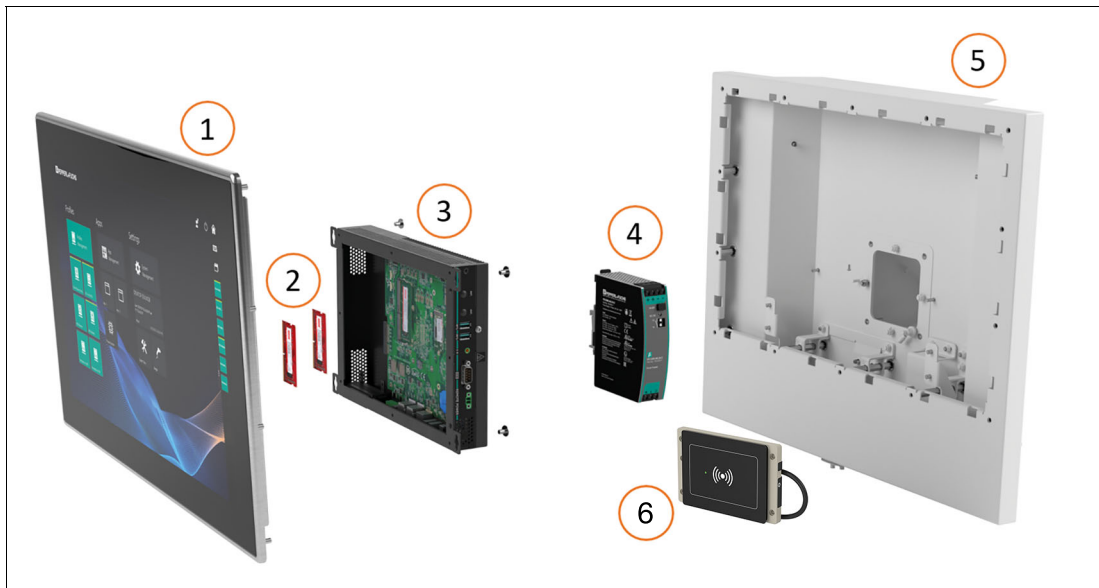
Figure 3.1

No.	Component	Description
(1)	**Display Unit**	21.5" display, touch screen, hardened front glass, available with optical bonding or non-optical bonding.
(2)	**RAM / Storage**	RAM available as 4 GB, 8 GB and 16 GB DDR4-2133 Storage available as 32 GB, 256 GB and 512 GB, expandable with qualified Pepperl+Fuchs components.
(3)	**Computing Unit**	(TCU, PCU or DMU): processor, SSD and memory, Ex circuits, interface modules
(4)	**Power Supply Unit**	AC option
(5)	**System Housing**	**2 options available:** • VisuNet FLX *-320S-*A-*: Stainless Steel: • VisuNet FLX *-320S-*B-*: Powder Coated, Marine-Grade Aluminum Alloy VisuNet FLX is preinstalled into the housing. Adapter, pedestal and keyboard must be ordered separately.
(6)	**RFID Reader RFID20-***	Optional integrated RFID Reader in VisuNet FLX Housing Two versions of the RFID reader are available for different functionalities (see type code): • TWN4 MultiTech 3 M LF HF (Option "R") • TWN4 MultiTech 3 LEGIC M LF HF (Option "F")

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VisuNet FLX *-320S-*A-* pedestal mounted with keyboard/mouse

FLX *-320S-*A-*

Figure 3.2   VisuNet FLX mounted into AG-3200-*-Housing on a pedestal PEDESTAL-3200-* with adapter and optional EXTA4-* keyboard/mouse (ordered separately)

Note

For a description of the product model nomenclature, see the VisuNet FLX RM, VisuNet FLX PC or VisuNet FLX DM product datasheets at www.pepperl-fuchs.com. For more mounting options and information, see the VisuNet Mounting Options datasheet.

Preferred Configurations:

Type	Type Code	Description
Remote Monitor con-figuration	RM-320S-N-A-22xx-D-1NAA2P1-NN0	Intel Celeron 3965U 4 GB DDR4, industrial temperature grade 32-GB M.2 SATA 3, industrial temperature grade VisuNet RM Shell 6 (based on Windows® 10 Enterprise LTSC 2021)
PC configuration	PC-320S-N-A-22xx-D-1NBD3P1-NN0	Intel Celeron 3965U 8 GB DDR4, industrial temperature grade 256-GB M.2 NVMe, industrial temperature grade Windows® 10 Enterprise LTSC 2021

VisuNet FLX *-320S-*B-* pedestal mounted with keyboard/mouse

FLX *-320S-***B**-*

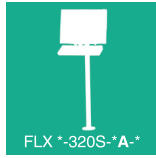Figure 3.3   VisuNet FLX mounted into AG-3200-*-Housing on a pedestal PEDESTAL-3200-* with adapter and optional EXTA4-* keyboard/mouse (ordered separately)

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> **i**
>
> **Note**
>
> For a description of the product model nomenclature, see the VisuNet FLX RM, VisuNet FLX PC or VisuNet FLX DM product datasheets at www.pepperl-fuchs.com. For more mounting options and information, see the VisuNet Mounting Options datasheet.

Preferred Configurations:

Type	Type Code	Description
Remote Monitor con-figuration	RM-320S-NB-22FC-D-1NKL4A1-NN0	Intel Celeron 3965U 4-GB DDR4, wide temperature grade 64-GB M.2 SATA 3, wide temperature grade VisuNet RM Shell 6 (based on Windows® 10 Enterprise LTSC 2021)
PC configuration	PC-320S-NB-22FC-D-1NLP3A1-NN0	Intel Celeron 3965U 8-GB DDR4, wide temperature grade 256-GB M.2 NVMe, wide temperature grade Windows® 10 Enterprise LTSC 2021

3.2 Cybersecurity Information

The **VisuNet FLX** is developed secure according to IEC 62443-4-1 for the area of application defined here. For cybersecure operation and protection of the device, the plant operator must implement the measures specified in this section.

1. Security Context and intended use

The VisuNet FLX is intended to be used in industrial applications. It should operate in an "Off-Plant", "Automation", "Intranet" or "Enterprise" network. This is a secure and monitored network with known and trusted participants that is separated (physically or logically) from the internet.

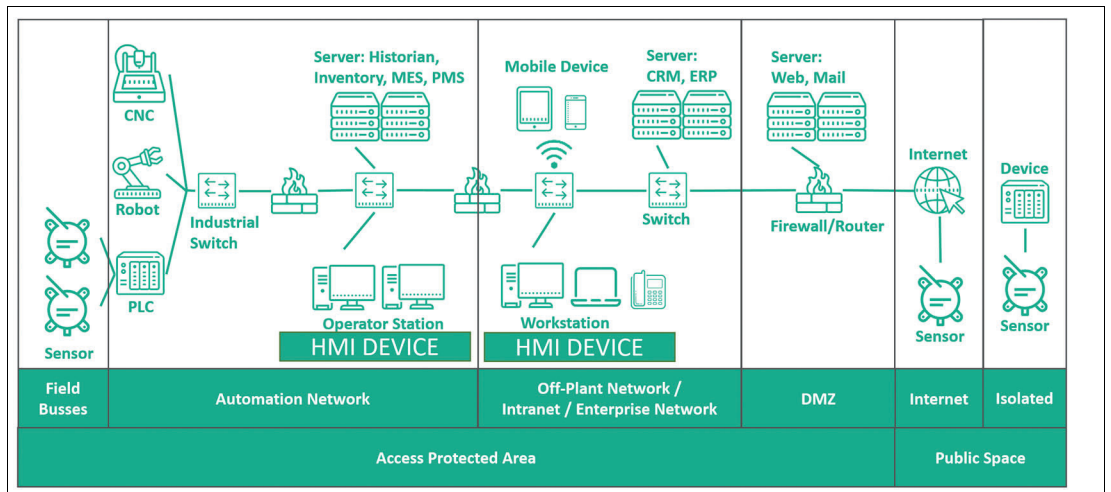The device should be locked against hardware manipulation.

Figure 3.4

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2. Commissioning of the device

The following measures must be implemented on the device for commissioning:

Hardening:	Change the default BIOS password.
Additional security layers:	Configuration of personal user accounts, user credentials, and rights with strong passwords. Harden the used operating system and disable all unused services and ports. Contact the vendor of the operating system for more information. Encrypt the used operating system using the credential store in the TPM.
Wi-Fi devices:	When using Wi-Fi devices, ensure that highest encryption protocols (like WPA3) are used.
Recommendation for security-related tools:	Password manager KeePass for generating and storing passwords.

3. Operation of the device

The following measures must be implemented on the device for operation:

Lock device:	The device should be locked against hardware manipulation.
Additional security layers:	BIOS Password change: every 2 years.
Recommendation for security-related tools:	Firewall for separating the internet from the protected network. IDS ("intrusion detection system") to detect access to disabled or unauthorized ports. Use virus scanner and malware detection.
Maintenance and management:	Subscribe and monitor the Cyber Security Information feed from the Pepperl+Fuchs homepage https://www.pepperl-fuchs.com/. Depending on the used operating system, check the vendors website regularly for Security Advisories postings and install updates regularly.

4. Decommissioning of the device

The following measures must be implemented for decommissioning the device:

OS data:	Contact vendor of the operating system how to perform a "Factory Reset" and wipe OS data.
Out of service:	Use a third-party data wiping tool to securely wipe the hard drive or destroy the built-in SSD (only when SSD is installed).

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3.3 Radio Frequency Exposure Condition

This device complies with the Radio Frequency exposure requirements for fixed devices for occupational/controlled exposure for not more than 6 minutes if the distance is smaller than 20 cm to the HF or LF antenna.

The minimum distance to the LF or HF antenna has to be:

- Valid for type RFID20-A-*NF-****-N** (with RFID Module TWN4 MultiTech 3 M LF HF): Minimum distance to use is 0.45 cm.

- Type RFID20-B-*NF-****-N** (with RFID Module TWN4 MultiTech 3 LEGIC M LF HF): Minimum distance to use is 0 mm.

3.4 Reference Documents

FLX *-320S-***A**-*   FLX *-320S-***B**-*
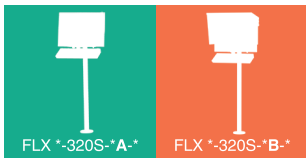
Important Instructions and Manuals for Operating the Device

	Documentation	Contents
	VisuNet FLX Panel manual	• Panel installation • Information regarding 21.5", 19" and 15.6" DPU • Connecting the BPC3200-* to the DPU3200-* • Panel dimensions • Cut out dimensions • Support Pixel Errors • Gloves Tested for Touch Sensitivity
	You are here: **VisuNet FLX System manual**	• System installation (mechanical, electrical) • Power connection (DC and AC) • Installing peripherals • Maintenance • Chemical Resistance
	BPC3200-* manual	• Technical data and expanded technical data • Electrical installation • I/O connection • DIP Switch positions when exchanging
	DMU3200-* manual	• Product Versions • Technical data • I/O Connection • Opening the device
	RM Shell 6 manual	• Overview • App Management • System Settings • Factory Reset • How-tos

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	Documentation	Contents
	EXTA4-* manual	• Product description • Installation and Commissioning • Chemical Resistance
	Wired handheld barcode reader for use in explosion-hazardous areas Zone 2/22	• System Structure • Commissioning
	Bluetooth® handheld barcode reader for use in explosion-hazardous areas Zone 2/22	• System Structure • Commissioning
	IGEL OS Security documentation	• Security Context • Maintenance and Management
	RFID Reader RFID20-* Manual	• Supported Transponder Media • Recommended Mode for Integration ino Systems • Technical data • Connecting the RFID Reader to a VisuNet device • Front foil attachement • Software • LED indication Maintenance & Cleaning

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3.5 Technical Data VisuNet FLX *-320S-*A-*

FLX *-320S-*A-*

RM-320S-*

General specifications	
Type	Remote Monitor

Hardware	
Processor	Intel® Celeron™ 3965U
RAM	1 x 4 GB DDR4-2133, industrial temperature grade [temperature class A]
Mass storage	Storage interface: 1x M.2 2242/2280 M Key, PCIe + SATA 3 Storage: 32-GB M.2 SATA 3, industrial temperature grade [temperature class A]

Software	
Operating system	VisuNet RM Shell 6 (based on Windows® 10 Enterprise LTSC 2021) **Optional:** T: ThinManager Ready [Celeron, 4 GB RAM, no storage] J: IGEL OS 12 (based on Linux, pre-installed without licence) I: IGEL OS 11 (based on Linux, pre-installed without licence)

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PC-320S-*

General specifications	
Type	Personal Computer

Hardware	
Processor	Intel Celeron 3965U
RAM	2x SO-DIMM slots, supports up to 32 GB DDR4-2133 (one SO-DIMM slot) **Configurable RAM options:** Industrial temperature grade (temperature option A): B: 1x 8 GB DDR4-2133 C: 1x 16 GB DDR4-2133
Mass storage	**Storage interface:** 1x M.2 2242/2280 M Key, PCIe + SATA 3 **Configurable storage options:** Industrial temperature grade (temperature option A): D: 256-GB M.2 NVMe 1.3 (PCIe 4x) E: 512-GB M.2 NVMe 1.3 (PCIe 4x)

Software	
Operating system	Windows® 10 Enterprise LTSC 2021

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RM-320S-* and PC-320S-*

Supply	
Power consumption	
AC	A: 115/230 V a.c. (100 ... 240 V a.c.), max. 0.7 A, max. 70 W For detailed information, refer to the PSU PS1000-A6-24.5 manual.
DC	20 ... 28 V d.c. / 2.8 A (SELV/PELV or NEC class 2)

Indicators/operating means	
Display	
Type	Liquid Crystal Display (LCD) with LED backlight
Screen diagonal	54.61 cm (21.5 inches)
Resolution	1920 x 1080 pixels (Full HD) Aspect ratio 16:9
Color depth	24 bit (16.7 M) color
Contrast	Typically 22GT: 1000:1 22FC: 5000:1
Brightness	Configurable display options: 22GT: 250 cd/m2 22FC: 300 cd/m2
Reading angle	22GT: 178° in all directions 22FC: horizontal: 170°, vertical: 160°
Life span	22GT: back lamp life: 30.000-hrs typical half life, at 25°C (77°F) 22FC: back lamp life: 50.000-hrs typical half life, at 25°C (77°F)

Input devices	
Touch screen	Configurable display options: 22GT: Capacitive touch, no optical bonding 22FC: Capacitive touch, optical bonding, 10-finger multi-touch, glove-friendly
Keyboard	Optional: Foil keyboard with different pointing device options available (see EXTA4 technical data)
RFID Reader	Optional: Integrated in the VisuNet FLX housing, 2 configuration options TWN4 MultiTech 3 M LF HF and TWN4 MultiTech 3 LEGIC M LF HF are available (see RFID20-* technical data)

Interface	
Interface type	1 x DisplayPort 1.2 (DP++) 1 x mini DisplayPort 1.2 (DP++ w/ mono locking screw) 1 x Audio Line-out 2 x USB Ex i ports prepared for Pepperl+Fuchs intrinsically safe keyboard 2 x USB 3.1 Gen1 (5 Gbps) ports 1 x USB 2.0 port 2 x LAN ports (RJ45, 10/100/1000 Mbps) 2 x RS232/422/485 (BIOS configurable) with 5V/12V to power peripherals (1 x DB9 male + 1 x RJ45)

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Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (ind. Locations) EN 61000-6-4:2007+A1:2011
Explosion protection	
Directive 2014/34/EU	EN IEC 60079-0:2018 EN IEC 60079-7:2015/A1:2018 EN 60079-11:2012 EN 60079-31:2014
RoHS	
Directive 2011/65/EU (RoHS)	EN IEC 63000:2018

Ambient conditions	
Operating temperature	0 ... 40 °C (32 ... 104 °F)
Storage temperature	-20 ... 65 °C (-4 ... 149 °F)
Relative humidity	max. relative humidity 93% at 40°C (non-condensing) according to EN60068-2-78
Climatic conditions	Passive cooling, no rotating parts
Altitude	Operating altitude max. 2000 m
Shock resistance	18 shocks 15 g, 11 ms all axis, IEC 60068-2-27
Vibration resistance	10 ... 150 Hz, +/- 0.075 mm, 1 g, 10 cycles per axis according to EN60068-2-6

Mechanical specifications	
Degree of protection	IP66 / Type 4X
Material	Housing: Stainless steel AISI304 (1.4301) Surface finish: Bead blasted, typical surface roughness 1.6 µm
Installation	System with enclosure
Mass	approx. 16 kg approx. 18 kg with AC Power Supply
Dimensions	577 mm x 466 mm x 91 mm

International approvals	
UL OrdLoc UL approval E223772	
Approved for	UL61010-1 Ed.3 UL 61010-2-201 Ed2 CAN/CSA C22.2 No 61010-1-12 CAN/CSA C22.2 No 61010-2-201
UL HazLoc UL approval E492874	

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International approvals	
Approved for	NI circuits for CL I, DIV 2, GP A-D CL II, DIV 2, GP E, F, G CL III NI circuits for CL I, ZN 2, IIC CL II, ZN 22, IIIB CL III, ZN 22, IIIA Install per drawing 116-0478 Mounting in CL I, DIV 2, GP A-D, T4 CL II, DIV 2, GP E, F, G, T4 CL III Mounting in CL I, ZN 2, IIC, T4 CL II, ZN 22, IIIB, T85°C CL III, ZN 22, IIIA, T85°C
ATEX approval	
ATEX certificate	UL 22 ATEX 2481X
ATEX marking	II 3 G Ex ec [ic Gc] IIC T4 Gc II 3 D Ex tc [ic Dc] IIIC T85°C Dc
IECEx approval	
IECEx certificate	IECEx ULD 22.0019X
IECEx marking	Ex ec [ic Gc] IIC T4 Gc Ex tc [ic Dc] IIIC T85°C Dc
IECEx standards	IEC 60079-0:2017 Ed 7.0 IEC 60079-7:2017 Ed 5.1 IEC 60079-11:2011 Ed 6.0 IEC 60079-31:2013 Ed. 2
CCC approval	
CCC certificate	2024322309005748
CCC marking	Ex ec [ic Gc] IIC T4 Gc Ex tc [ic Dc] IIIC T85°C Dc
CCC standards	GB 3836.1-2021 GB/T 3836.3-2021 GB/T 3836.4-2021 GB/T 3836.31-2021

Note

RFID reader as accessory for VisuNet FLX PC and RM systems can only be configured with the following Options:

- "N": Industrial, general purpose

- "R" ATEX Zone 2/22 (Self declaration)

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Note

For RFID configuration only:

International approval ATEX approval (Self declaration)

ATEX certificate: PF21CERT6290X

ATEX marking:

II 3G Ex ec IIC T4 Gc

II 3D Ex tc IIIC 135 °C Dc

DM-320S-*

General specifications	
Type	Direct Monitor

Supply	
Power consumption	
AC	A: 115/230 V a.c. (100 ... 240 V a.c.), max. 0.4 A, max. 40 W For detailed information, refer to the PSU PS1000-A6-24.5 manual.
DC	D: 20 ... 28 V d.c. / 1.5 A (SELV/PELV or NEC class 2)

Indicators/operating means	
Display	
Type	Liquid Crystal Display (LCD) with LED backlight
Screen diagonal	54.61 cm (21.5 ")
Resolution	1920 x 1080 pixels (Full HD) Aspect ratio 16:9
Color depth	24 bit (16.7 M) color
Contrast	Typically 22GT: 1000:1 22FC: 5000:1
Brightness	Configurable display options: 22GT: 250 cd/m2 22FC: 300 cd/m2
Reading angle	22GT: 178° in all directions 22FC: horizontal: 170°, vertical: 160°
Life span	22GT: back lamp life: 30.000-hrs typical half life, at 25°C (77°F) 22FC: back lamp life: 50.000-hrs typical half life, at 25°C (77°F)

Input devices	
Touch screen	Configurable display options: 22GT: Capacitive touch, no optical bonding 22FC: Capacitive touch, optical bonding, 10-finger multi-touch, glove-friendly
Keyboard	Optional: Foil keyboard with different pointing device options available (see EXTA4 technical data)

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Interface	
Interface type	1x Power input w/ 3-pin terminal block 1x HDMI 1x DVI-I 1x VGA 1x USB 1x OSD Menu w/ power button

Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (ind. Locations) EN 61000-6-4:2007+A1:2011
Explosion protection	
Directive 2014/34/EU	EN IEC 60079-0:2018 EN IEC 60079-7:2015/A1:2018 EN 60079-31:2014
RoHS	
Directive 2011/65/EU (RoHS)	EN IEC 63000:2018

Ambient conditions	
Operating temperature	0 ... 40 °C (32 ... 104 °F)
Storage temperature	-20 ... 65 °C (-4 ... 149 °F)
Relative humidity	max. relative humidity 93% at 40°C (non-condensing) according to EN60068-2-78
Climatic conditions	Passive cooling, no rotating parts
Altitude	Operating altitude max. 2000 m
Shock resistance	18 shocks 15 g, 11 ms all axis, IEC 60068-2-27
Vibration resistance	10 ... 150 Hz, +/- 0.075 mm, 1 g, 10 cycles per axis according to EN60068-2-6

Mechanical specifications	
Degree of protection	IP66 / Type 4X
Material	Housing: Stainless steel AISI304 (1.4301) Surface finish: Bead blasted, typical surface roughness 1.6 µm
Installation	System with enclosure
Mass	approx. 16 kg approx. 18 kg with AC Power Supply
Dimensions	577 mm x 466 mm x 91 mm

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International approvals	
UL OrdLoc UL approval E223772	
Approved for	UL61010-1 Ed.3 UL 61010-2-201 Ed2 CAN/CSA C22.2 No 61010-1-12 CAN/CSA C22.2 No 61010-2-201
UL HazLoc UL approval E492874	
Approved for	Mounting in CL I, DIV 2, GP A-D, T4 CL II, DIV 2, GP E, F, G, T4 CL III Mounting in CL I, ZN 2, IIC, T4 CL II, ZN 22, IIIB, T85°C CL III, ZN 22, IIIA, T85°C
ATEX approval	
ATEX certificate	UL 22 ATEX 2481X
ATEX marking	II 3 G Ex ec IIC T4 Gc II 3 D Ex tc IIIC T85°C Dc
IECEx approval	
IECEx certificate	IECEx ULD 22.0019X
IECEx marking	Ex ec IIC T4 Gc Ex tc IIIC T85°C Dc
IECEx standards	IEC 60079-0:2017 Ed 7.0 IEC 60079-7:2017 Ed 5.1 IEC 60079-31:2013 Ed. 2
CCC approval	
CCC certificate	2023322309005595
CCC marking	Ex ec IIC T4 Gc Ex tc IIIC T85°C Dc
CCC standards	GB 3836.1-2021 GB/T 3836.3-2021 GB/T 3836.31-2021

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Note

For expanded technical data regarding, e.g., interfaces, electrical parameter, storage capacity and reliability rating refer to the BPC3200-* manual.
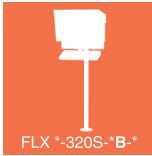
Thermal Throttling

For the Celeron processor, CPU throttling via a thermal control circuit is used. Depending on the system load and environmental operating temperature, the performance of the CPU may be throttled.

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Note

Assess the system performance in context with the applications intended environmental conditions, including operating temperature range.

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3.6 Technical Data VisuNet FLX *-320S-*B-*

FLX *-320S-*B-*

RM-320S-*

General specifications	
Type	Remote Monitor

Hardware	
Processor	Intel® Celeron™ 3965U
RAM	1x 4 GB DDR4-2133, wide temperature grade [temperature class B] 1x 8 GB DDR4-2133, wide temperature grade [temperature class B]
Mass storage	Storage interface: 1x M.2 2242/2280 M Key, PCIe + SATA 3 Storage: 64 GB M.2 SATA 3, wide temperature grade

Software	
Operating system	VisuNet RM Shell 6 (based on Windows® 10 Enterprise LTSC 2021) **Optional:** T: ThinManager Ready [Celeron, 4 GB RAM, no storage] J: IGEL OS 12 (based on Linux, pre-installed without licence) I: IGEL OS 11 (based on Linux, pre-installed without licence)

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PC-320S-*

General specifications	
Type	Personal Computer

Hardware	
Processor	Intel® Core™ i5-7300U
RAM	2x SO-DIMM slots, supports up to 32 GB DDR4-2133 (one SO-DIMM slot) **Configurable RAM options:** Wide temperature grade (temperature option B): L: 1x 8GB DDR4-2133 M: 1x 16GB DDR4-2133
Mass storage	**Storage interface:** 1x M.2 2242/2280 M Key, PCIe + SATA 3 **Configurable storage options:** Wide temperature grade (temperature option B): P: 256 GB M.2 NVMe 1.3 (PCIe 4x) Q: 512 GB M.2 NVMe 1.3 (PCIe 4x)

Software	
Operating system	Windows® 10 Enterprise LTSC 2021

The measurements occurred under the following conditions:

Maximum load:

- Computing Unit: full load
- 11.5 W total electrial loads
- Display Unit (21.5")
- External Monitor

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RM-320S-* and PC-320S-*

Supply	
Power consumption	
Intel® Celeron^TM 3965U	
AC (110 V / 230 V)	Maximum load: 60 W
DC (24 V)	
Intel® Core^TM i5-7300U	
AC (110 V / 230 V)	Maximum load: 64 W
DC (24 V)	

Indicators/operating means	
Display	
Type	Liquid Crystal Display (LCD) with LED backlight
Screen diagonal	54.61 cm (21.5 inches)
Resolution	1920 x 1080 pixels (Full HD) Aspect ratio 16:9
Color depth	24 bit (16.7 M) color
Contrast	22FC: 5000:1
Brightness	22FC: 300 cd/m2
Reading angle	22FC: horizontal: 170°, vertical: 160°
Life span	22FC: back lamp life: 50.000-hrs typical half life, at 25°C (77°F)

Input devices	
Touch screen	22FC: Capacitive touch, optical bonding, 10-finger multi-touch, glove-friendly
Keyboard	Optional: Foil keyboard with different pointing device options available (see EXTA4 technical data)
RFID Reader	Optional: Integrated in the VisuNet FLX housing, 2 configuration options TWN4 MultiTech 3 M LF HF and TWN4 MultiTech 3 LEGIC M LF HF are available (see RFID20-* technical data)

Interface	
Interface type	1 x DisplayPort 1.2 (DP++) 1 x mini DisplayPort 1.2 (DP++ w/ mono locking screw) 1 x Audio Line-out 2 x USB Ex i ports prepared for Pepperl+Fuchs intrinsically safe keyboard 2 x USB 3.1 Gen1 (5 Gbps) ports 1 x USB 2.0 port 2 x LAN ports (RJ45, 10/100/1000 Mbps) 2 x RS232/422/485 (BIOS configurable) with 5V/12V to power peripherals (1 x DB9 male + 1 x RJ45)

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Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (ind. Locations) EN 61000-6-4:2007+A1:2011
Explosion protection	
Directive 2014/34/EU	EN IEC 60079-0:2018 EN IEC 60079-7:2015/A1:2018 EN 60079-11:2012 EN 60079-31:2014
RoHS	
Directive 2011/65/EU (RoHS)	EN IEC 63000:2018

Ambient conditions	
Operating temperature	-20 °C ... 50 °C (-4 ... 122 °F)
Storage temperature	-20 °C ... 65 °C (-4 ... 149 °F)
Relative humidity	max. relative humidity 95% at 50°C (non-condensing) according to EN60068-2-78
Climatic conditions	Passive cooling, no rotating parts
Altitude	Operating altitude max. 2000 m
Shock resistance	18 shocks 15 g, 11 ms all axis, IEC 60068-2-27
Vibration resistance	10 ... 150 Hz, +/- 0.075 mm, 1 g, 10 cycles per axis according to EN60068-2-6

Mechanical specifications	
Degree of protection	IP66 / Type 4X
Material	Housing: Powder coated, marine-grade aluminium alloy (EN AW-5754)
Installation	System with enclosure
Mass	approx. 11.4 kg aprprox. 13.4 kg with AC Power Supply with top sunshield: + approx. 1.6 kg with top and side sunshield: + approx. 3 kg
Dimensions	577 mm x 466 mm x 233 mm

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International approvals	
UL approval	
Approved for	UL OrdLoc UL approval E223772 UL61010-1 Ed.3 UL 61010-2-201 Ed2 CAN/CSA C22.2 No 61010-1-12 CAN/CSA C22.2 No 61010-2-201 UL HazLoc UL approval E492874 Non-Incendive circuits for CL I, DIV 2, GP A-D CL II, DIV 2, GP F, G CL III Non-Incendive circuits for CL I, ZN 2, IIC CL II, ZN 22, IIIB CL III, ZN 22, IIIA Install per drawing 116-0478 Mounting in CL I, DIV 2, GP A-D, T4 CL II, DIV 2, GP F, G, T4 CL III Mounting in CL I, ZN 2, IIC, T4 CL II, ZN 22, IIIB, T85°C CL III, ZN 22, IIIA, T85°C
ATEX approval	
ATEX certificate	UL 22 ATEX 2481X
ATEX marking	II 3 G Ex ec [ic Gc] IIC T4 Gc II 3 D Ex tc [ic Dc] IIIC T85°C Dc
IECEx approval	
IECEx certificate	IECEx ULD 22.0019X
IECEx marking	Ex ec [ic Gc] IIC T4 Gc Ex tc [ic Dc] IIIC T85°C Dc
IECEx standard	IEC 60079-0:2017 Ed 7.0 IEC 60079-7:2017 Ed 5.1 IEC 60079-11:2011 Ed 6.0 IEC 60079-31:2013 Ed. 2
CCC approval	
CCC certificate	2024322309005748
CCC marking	Ex ec [ic Gc] IIC T4 Gc Ex tc [ic Dc] IIIC T85°C Dc
CCC standards	GB 3836.1-2021 GB/T 3836.3-2021 GB/T 3836.4-2021 GB/T 3836.31-2021

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Note

RFID reader as accessory for VisuNet FLX PC and RM systems can only be configured with the following Options:

- "N": Industrial, general purpose

- "R" ATEX Zone 2/22 (Self declaration)

Note

For RFID configuration only:

International approval ATEX approval (Self declaration)

ATEX certificate: PF21CERT6290X

ATEX marking:

II 3G Ex ec IIC T4 Gc

II 3D Ex tc IIIC 135 °C Dc

DM-320S-*

General specifications	
Type	Direct Monitor

Supply	
Power consumption	
AC	A: 115/230 V a.c. (100 ... 240 V a.c.), max. 0.4 A, max. 40 W For detailed information refer to the PSU PS1000-A6-24.5 manual.
DC	D: 20 ... 28 V d.c. / 1.5 A (SELV/PELV or NEC class 2)

Indicators/operating means	
Display	
Type	Liquid Crystal Display (LCD) with LED backlight
Screen diagonal	54.61 cm (21.5 '')
Resolution	1920 x 1080 pixels (Full HD) Aspect ratio 16:9
Color depth	24 bit (16.7 M) color
Contrast	22FC: 5000:1
Brightness	22FC: 300 cd/m2
Reading angle	22FC: horizontal: 170°, vertical: 160°
Life span	22FC: back lamp life: 50.000-hrs typical half life, at 25°C (77°F)

Input devices	
Touch screen	22FC: Capacitive touch, optical bonding, 10-finger multi-touch, glove-friendly
Keyboard	Optional: Foil keyboard with different pointing device options available (see EXTA4 technical data)

Interface	
Interface type	1x Power input w/ 3-pin terminal block 1x HDMI 1x DVI-I 1x VGA 1x USB 1x OSD Menu w/ power button

Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (ind. Locations) EN 61000-6-4:2007+A1:2011
Explosion protection	

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Directive conformity	
Directive 2014/34/EU	EN IEC 60079-0:2018 EN IEC 60079-7:2015/A1:2018 EN 60079-31:2014
RoHS	
Directive 2011/65/EU (RoHS)	EN IEC 63000:2018

Ambient conditions	
Operating temperature	-20 °C ... 50 °C (-4 ... 122 °F)
Storage temperature	-20 °C ... 65 °C (-4 ... 149 °F)
Relative humidity	max. relative humidity 95% at 50°C (non-condensing) according to EN60068-2-78
Climatic conditions	Passive cooling, no rotating parts
Altitude	Operating altitude max. 2000 m
Shock resistance	18 shocks 15 g, 11 ms all axis, IEC 60068-2-27
Vibration resistance	10 ... 150 Hz, +/- 0.075 mm, 1 g, 10 cycles per axis according to EN60068-2-6

Mechanical specifications	
Degree of protection	IP66 / Type 4X
Material	Housing: Aluminium EN AW-5754
Installation	System with enclosure
Mass	approx. 11.4 kg aprprox. 13.4 kg with AC Power Supply with top sunshield: + approx. 1.6 kg with top and side sunshield: + approx. 3 kg
Dimensions	577 mm x 466 mm x 233 mm

International approvals	
UL approval	
Approved for UL OrdLoc	UL approval E223772 UL61010-1 Ed.3 UL 61010-2-201 Ed2 CAN/CSA C22.2 No 61010-1-12 CAN/CSA C22.2 No 61010-2-201
Approved for UL HazLoc	Mounting in CL I, DIV 2, GP A-D, T4 CL II, DIV 2, GP F, G, T4 CL III Mounting in CL I, ZN 2, IIC, T4 CL II, ZN 22, IIIB, T85°C CL III, ZN 22, IIIA, T85°C
ATEX approval	
ATEX certificate	UL 22 ATEX 2481X

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International approvals	
ATEX marking	II 3 G Ex ec IIC T4 Gc II 3 D Ex tc IIIC T85°C Dc
IECEx approval	
IECEx certificate	IECEx ULD 22.0019X
IECEx marking	Ex ec IIC T4 Gc Ex tc IIIC T85°C Dc
IECEx standard	IEC 60079-0:2017 Ed 7.0 IEC 60079-7:2017 Ed 5.1 IEC 60079-31:2013 Ed. 2

i

Note

For expanded technical data regarding e.g. interfaces, electrical parameter, storage capacity and reliability rating refer to the DMU3200-* manual.

i

Note

Assess the system performance in context with the applications intended environmental conditions, including operating temperature range.

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3.7 Dimensions

VisuNet FLX *-320S-*A-*
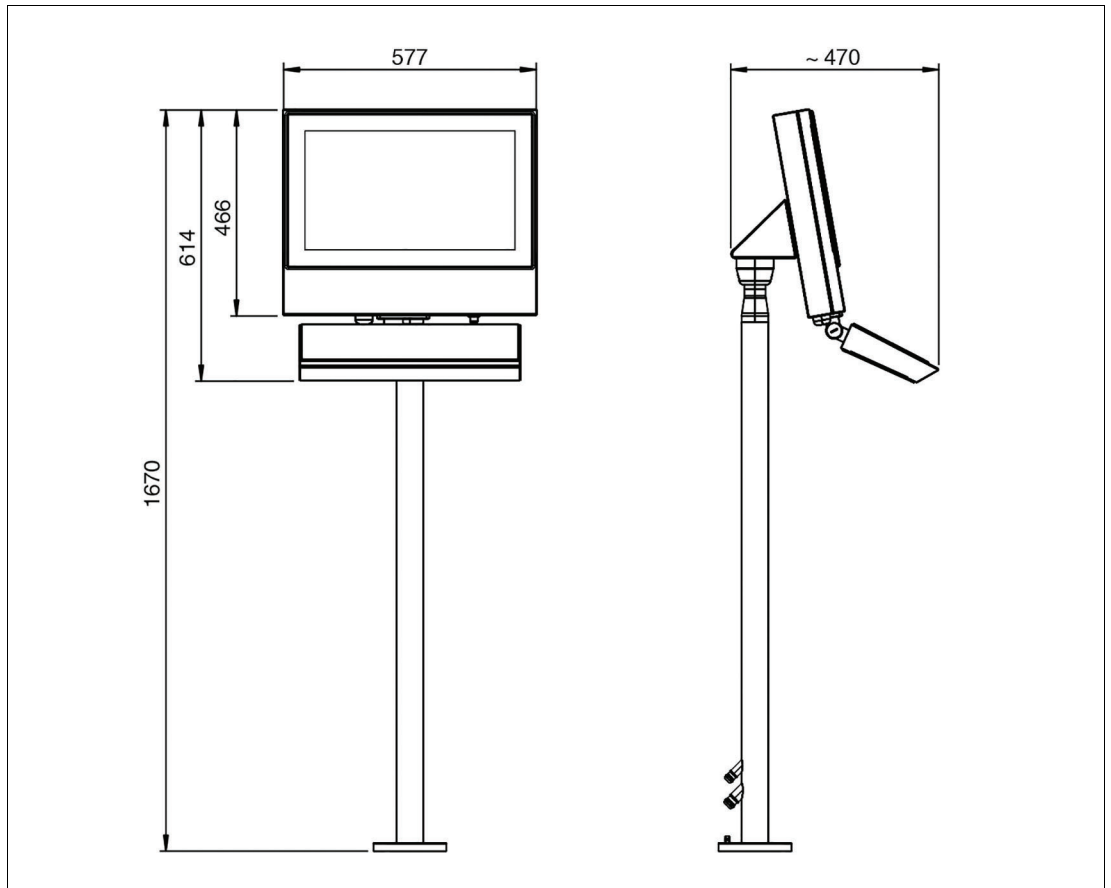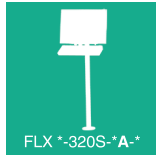
FLX *-320S-***A**-*

Figure 3.5   10° tilted system with pedestal

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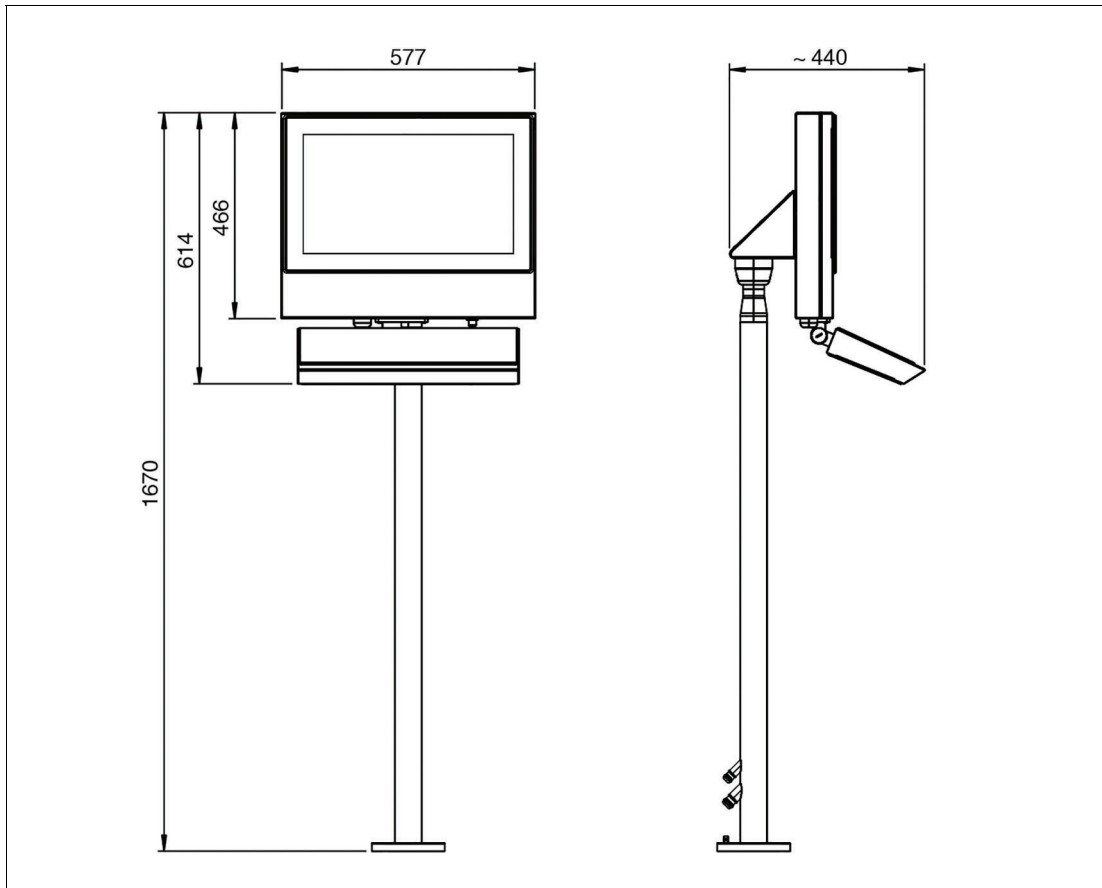
Figure 3.6   0° tilted with pedestal or wall mounting

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VisuNet FLX *-320S-*B-*

FLX *-320S-*B-*
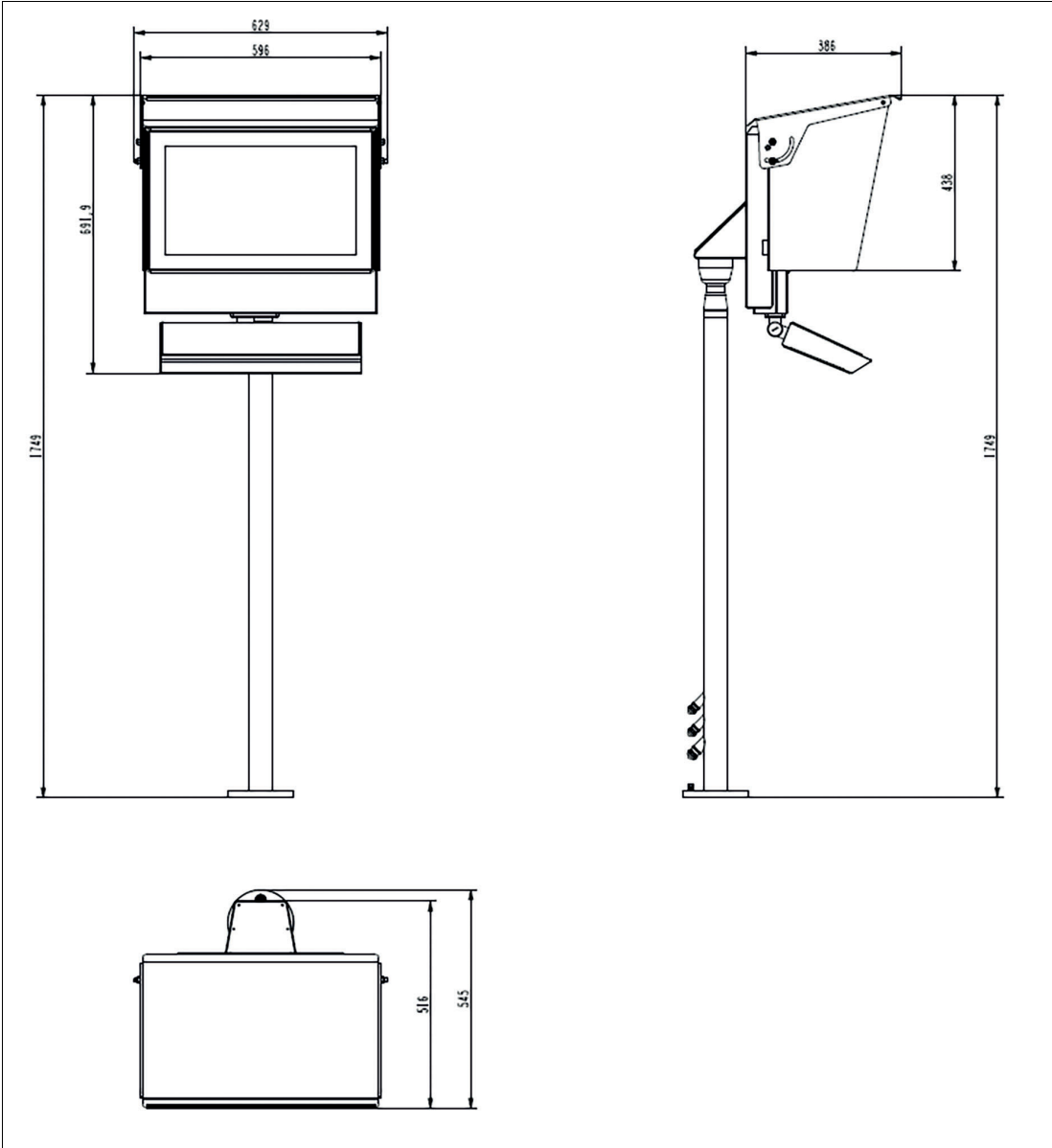
Figure 3.7   0° tilted with pedestal, Dimensions with Top, Sides, Back shields

PEPPERL+FUCHS
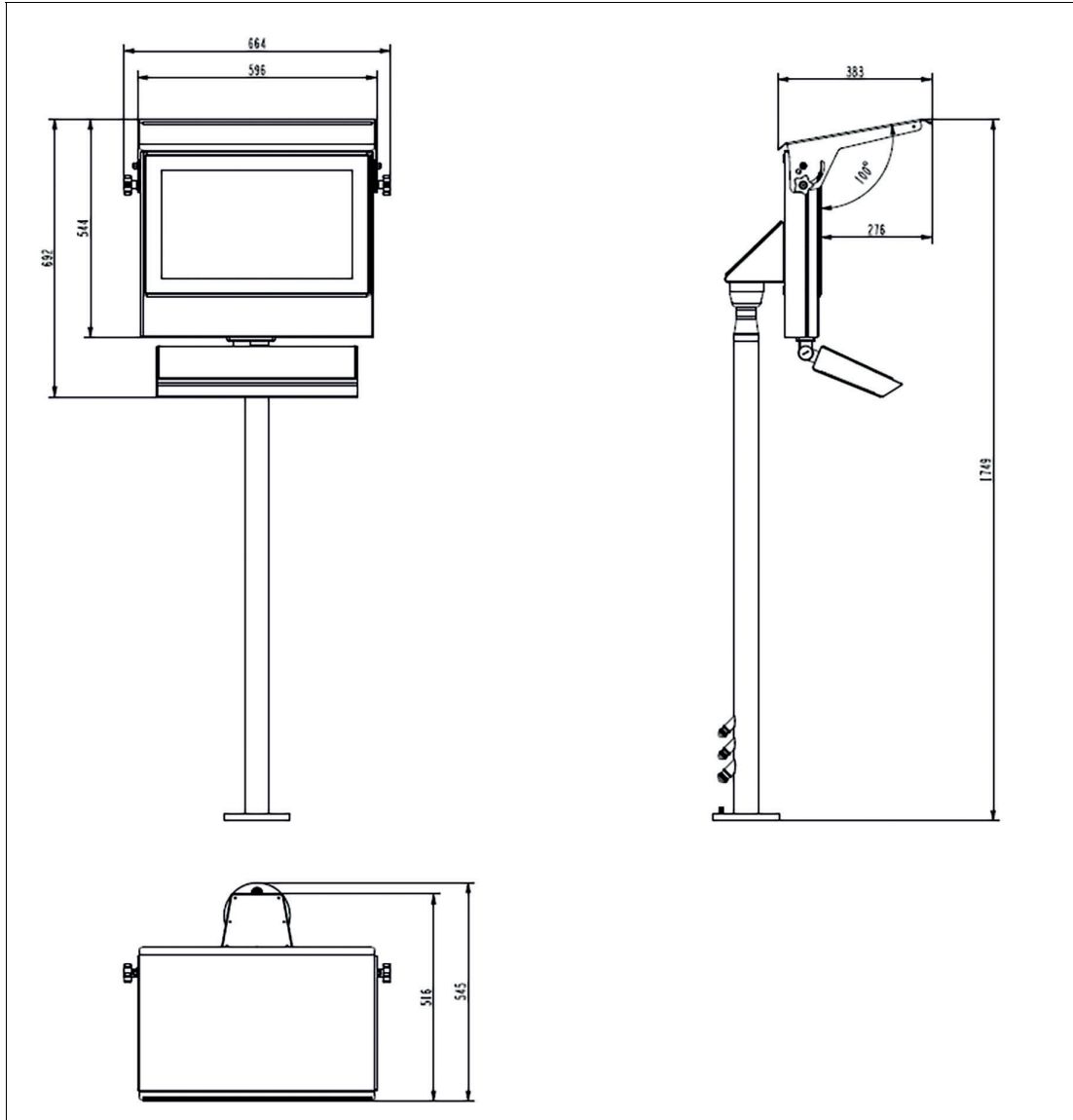
Figure 3.8   0° tilted with pedestal, Dimensions with Top and Back shields

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Wall Bracket
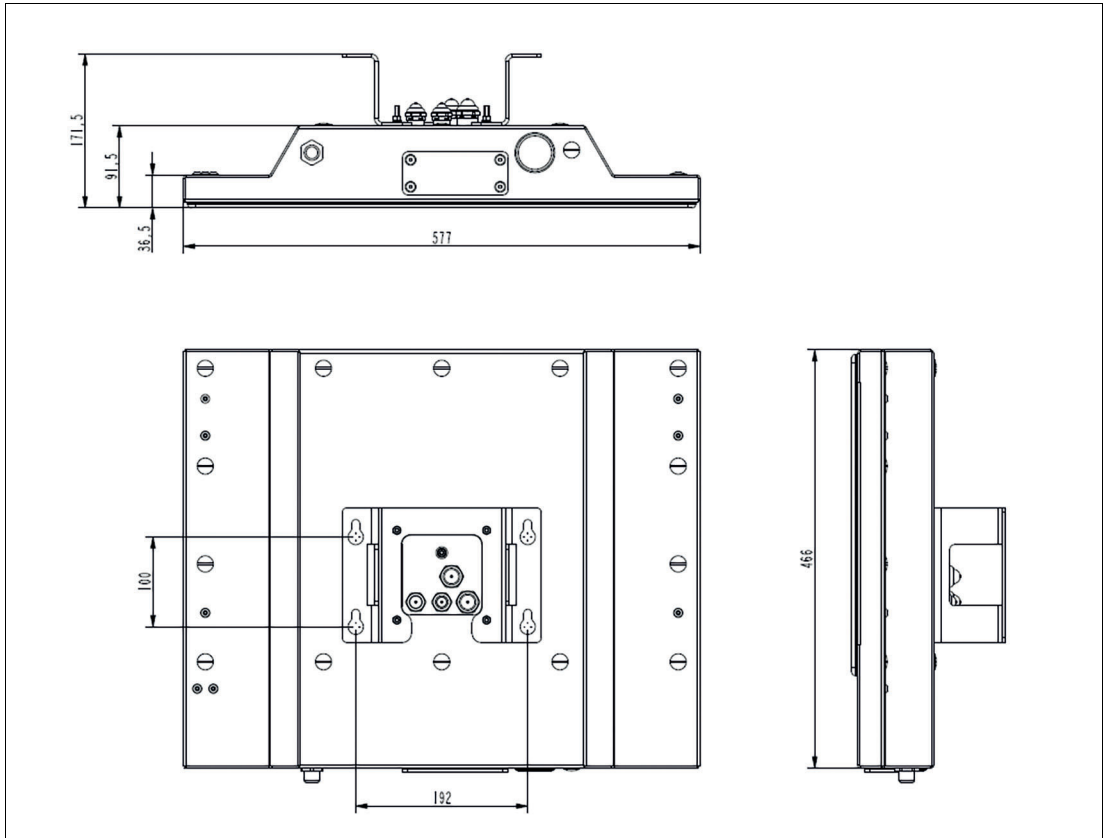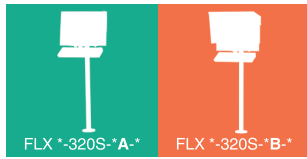
FLX *-320S-*A-*   FLX *-320S-*B-*

Figure 3.9   Dimensions Wall Mounting

Note

For detailed specification on the VisuNet FLX Panel Mount refer to the VisuNet FLX Panel Mount manual (RM-320P-*, PC-320P-* and DM-320P-*).

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3.8 Nameplates and Labels

VisuNet FLX *-320S-*A-*

FLX *-320S-*A-*

The following nameplates and labels are attached to the VisuNet FLX System:
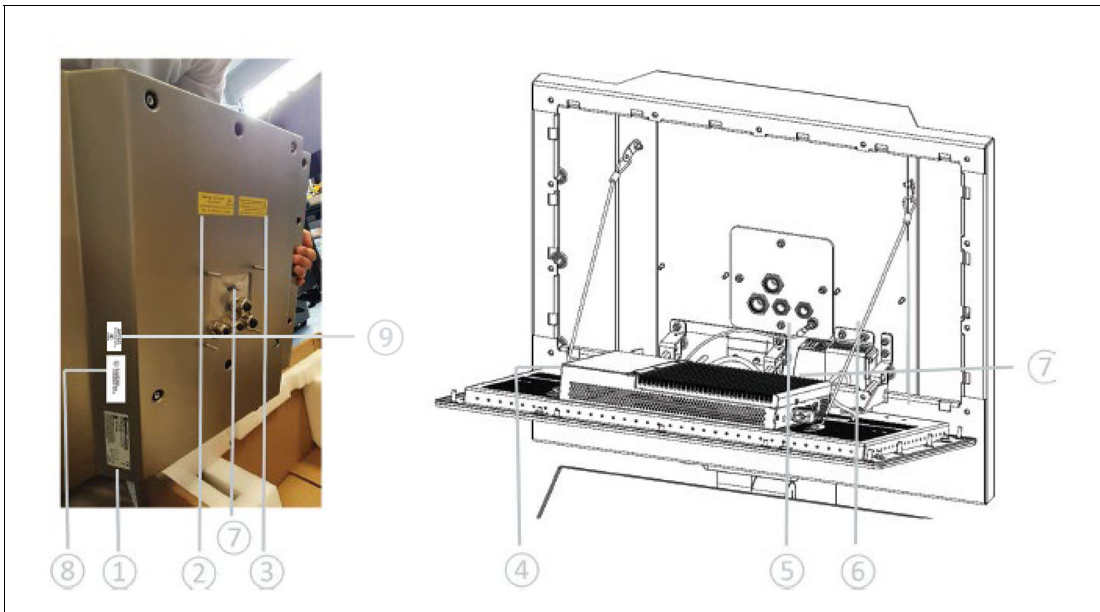
Figure 3.10

(1) Main Label

Figure 3.11

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(2) Hot surface!

Warning - Hot Surface!
Do not touch!

AVERTISSEMENT: Surface chaude! Ne pas toucher!

警告- 外壳表面高温！请勿触摸！
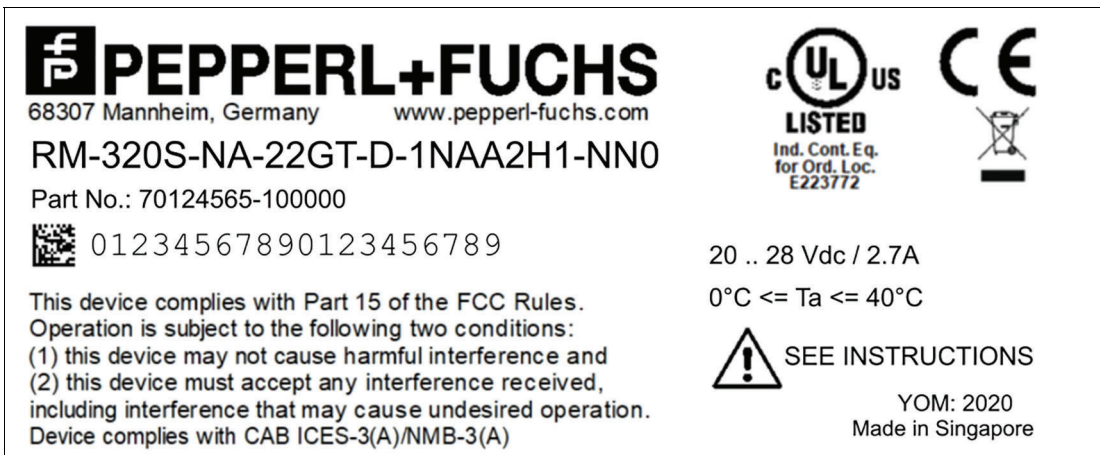
Figure 3.12

(3) Do not open when energized!

Warning - Do not open when energized!
Warning - Refer to instruction manual!

AVERTISSEMENT – Ne pas ouvrir sous tension!
Consulter les instructions du fabricant!

警告-带电时请勿打开！请参考使用说明书！

Figure 3.13

(4) Sublabel BPC3200-*

PEPPERL+FUCHS
68307 Mannheim, Germany   www.pepperl-fuchs.com

CE

BPC3200-NA-NNNN-D-1NAA2NN-NN0

YOM: 2020
Made in Singapore
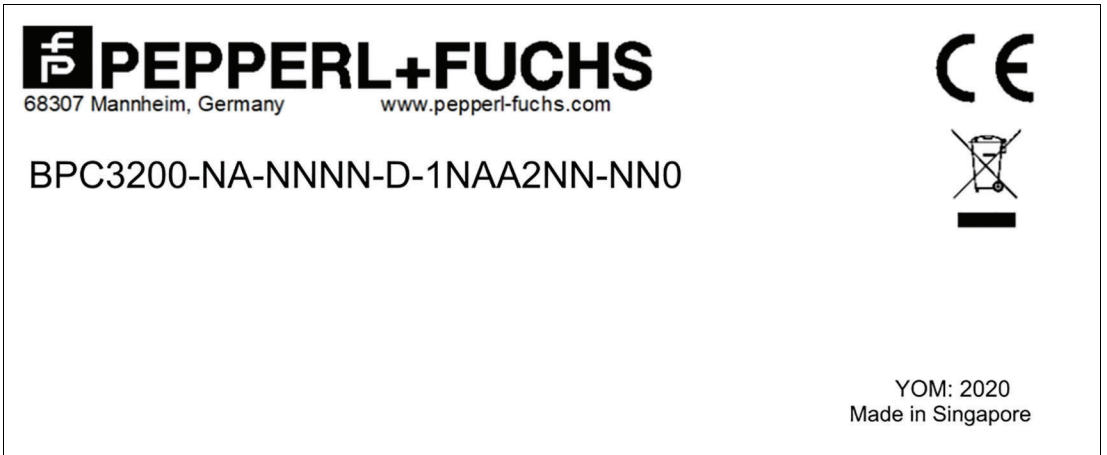
Figure 3.14

(5) Equipotential Bonding

Figure 3.15

(6) AC warning

Caution – Possibility
of electric shock!

Attention – Possibilité de choc électrique!

小心，电击危险!

Figure 3.16

PEPPERL+FUCHS
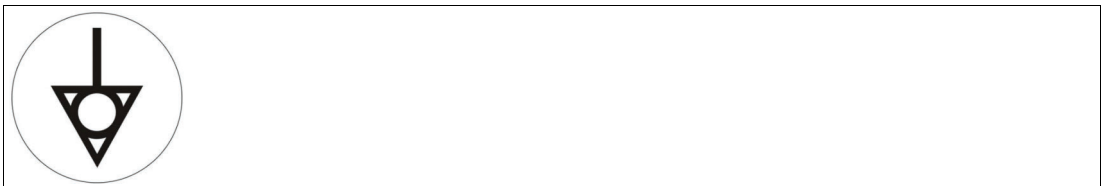
(7) PE Symbol (Optional with AC configuration)
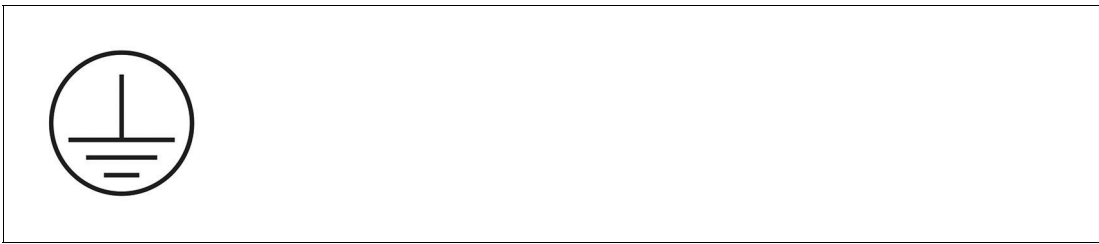
Figure 3.17

(8) Certification label RM-320S-* and PC-320S-*
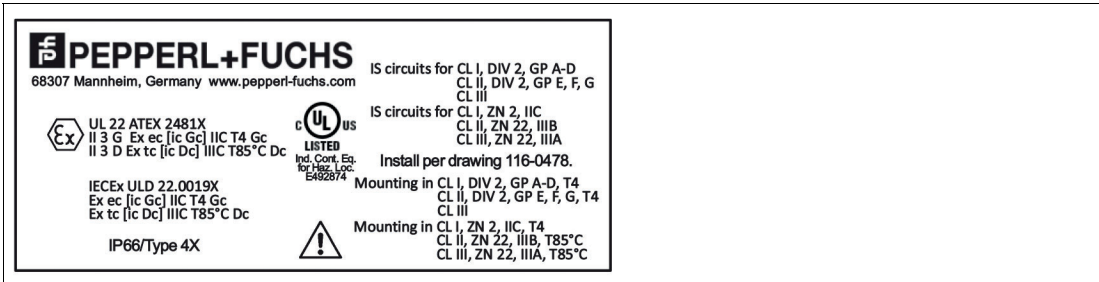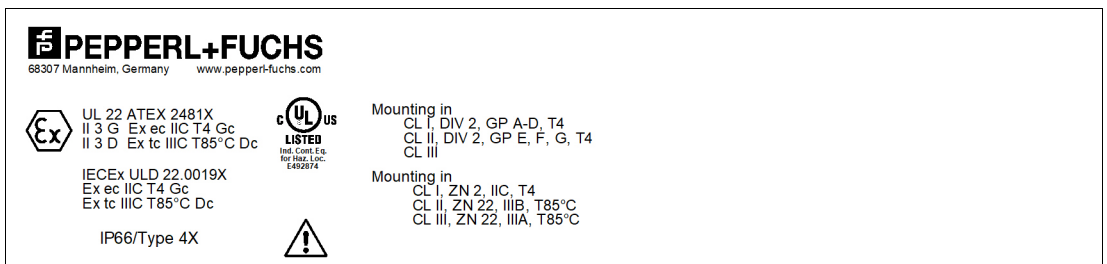

Figure 3.18

(8) Certification label DM-320S-*
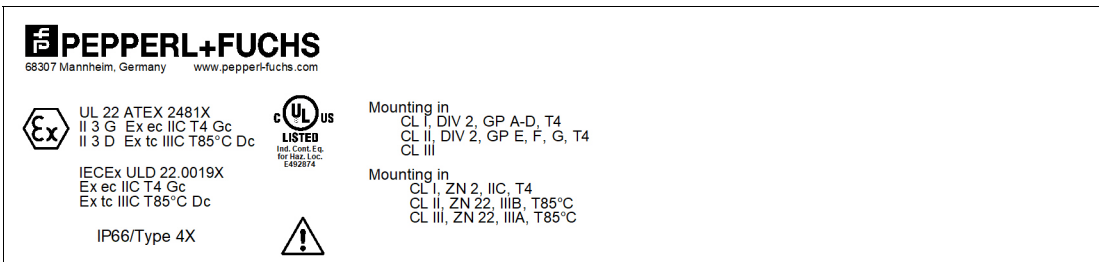
Figure 3.19

(9) Certification Label CCC sample RM-320S-* and PC-320S-*

(9) Certification Label CCC sample DM-320S-*

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VisuNet FLX *-320S-*B-*

FLX *-320S-*B-*

The following nameplates and labels are attached to the VisuNet FLX System:

Figure 3.20

(1) Main Label

PEPPERL+FUCHS

68307 Mannheim, Germany   www.pepperl-fuchs.com

#NAME#

Part No.: #ITEMNO#

PF-Serial

This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) this device may not cause harmful interference and
(2) this device must accept any interference received,
including interference that may cause undesired operation.
Device complies with CAB ICES-3(A)/NMB-3(A)

CE

#INPUTVOLTAGE#

#TEMPRANGE#

⚠ SEE INSTRUCTIONS

YOM: YYYY
#MANUFACTURER#

Figure 3.21

(2) Hot surface!

Warning - Hot Surface!
Do not touch! ⚠

AVERTISSEMENT: Surface chaude! Ne pas toucher!
警告- 外壳表面高温！请勿触摸！

Figure 3.22

(3) Do not open when energized!

Warning - **Do not open when energized!**
Warning - Refer to instruction manual!

AVERTISSEMENT – Ne pas ouvrir sous tension!
Consulter les instructions du fabricant!

警告-带电时请勿打开! 请参考使用说明书!

Figure 3.23

(4) Sublabel BPC3200-*

PEPPERL+FUCHS
68307 Mannheim, Germany   www.pepperl-fuchs.com

CE

BPC3200-NA-NNNN-D-1NAA2NN-NN0

YOM: 2020
Made in Singapore
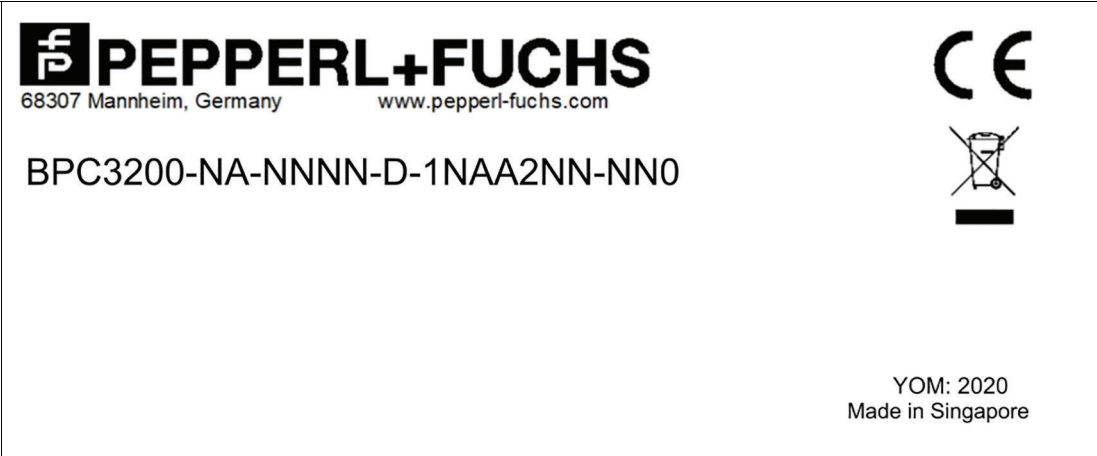
Figure 3.24

(5) Equipotential Bonding

Figure 3.25

(6) AC warning

Caution – Possibility
of electric shock!

Attention – Possibilité de choc électrique!

小心，电击危险!
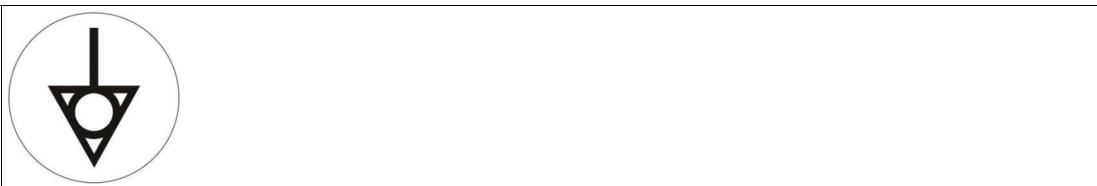
Figure 3.26

(7) PE Symbol (Optional with AC configuration)

Figure 3.27

PEPPERL+FUCHS
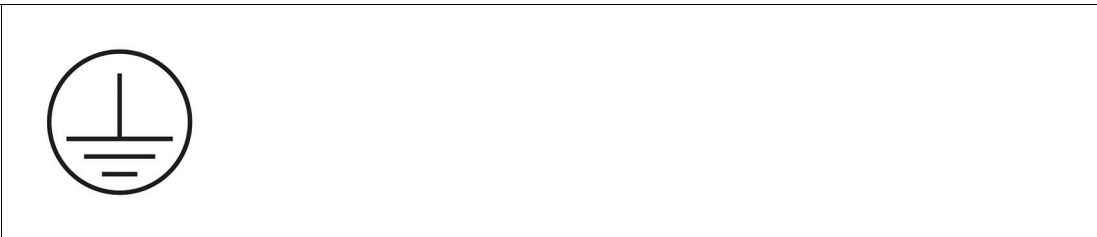
(8) Certification label RM-320S-* and PC-320S-*
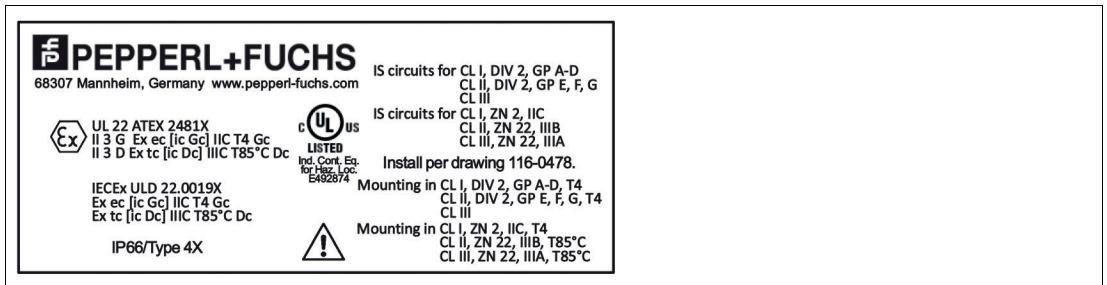
Figure 3.28

(8) Certification label DM-320S-*

Figure 3.29

(9) Warning! Danger of hand injury!

Figure 3.30

(10) Certification Label CCC sample RM-320S-* and PC-320S-*
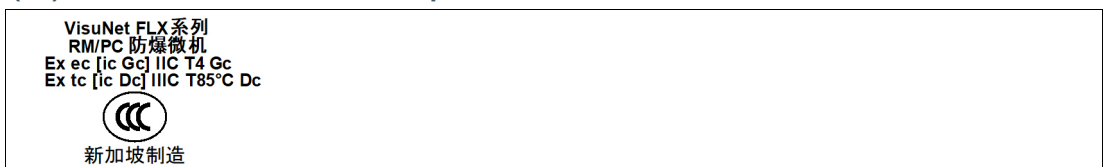
4 Mechanical Installation
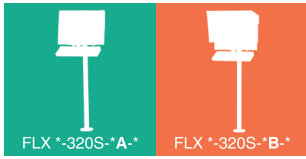
Note

Recommendation for use: Carry out the installation of the device at the installation location with at least 2 persons.

4.1 Installation Requirements (Outdoor)
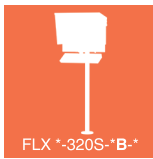
Note

It is recommended to orient the device so that the display faces north. If the device is facing east or south, make sure that the sunshields adequately protect the display from direct sunlight.

Use optional sun shields to protect device from direct sunlight.

Caution!

It is not recommended to install the device in a way that the display is facing west.

If the device is facing west, direct sunlight when the sun is setting can penetrate the display with a high ambient temperature.

Note

Use sunshields to further improve thermal heat reflection.

Caution!

Device damage!

Mount the device in such a way that it is protected from ultraviolet radiation and sunlight. Do not expose the device to direct sunlight! The device might get damaged.

Caution!

Device damage!

Protect the device from external heat sources (e.g sunlight).

Note

Always try to use the installation in a shaded location if possible.

2024-12

PEPPERL+FUCHS

Caution!

Use of the device!

The use of the device is only permitted under the ambient conditions (temperature, humidity, vibration and shock) which are specified in the technical data. Failure to comply with any of these conditions void the warranty for the device. Pepperl+Fuchs cannot be held liable for any damage arising from improper use and handling.

Caution!

Damage caused by condensation!

If the temperature of the device is different to that of the room in which it is located, condensation can form.

Switch on the device only if it has acclimated to the ambient temperature!

Warning!

Ensure that all seals are clean, undamaged, and correctly fitted!

Explosion protection is no longer ensured if a system with damaged seals is used. Never use a system with damaged seals in a hazardous area. If the seal is damaged in any way, return the system to Pepperl+Fuchs at once and replace it with a new one.

Note

Impact of rain!

Use sunshields to protect the device from environmental influences.

4.1.1 General Installation Information

FLX *-320S-***A**-*   FLX *-320S-***B**-*
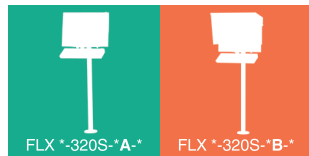
Observe the following requirements when installing the system components.

- The equipment must be installed by competent personnel in accordance with the instructions. National laws and regulations must be observed.
- The building installation must provide a 20 A overcurrent protection.
- The installer must make a readily accessible disconnect device available.
- The safety of any system incorporating the PSU is the responsibility of the assembler of the system
- Keep the device away from arc-generating devices such as magnetic switches and non-fused breakers. Avoid using the device in environments where corrosive gases are present.
- Install the VisuNet FLX in a location providing a minimum clearance of 10 mm (0.39 in.) or more on the left and right sides, 50 mm (1.96 in.) or more on the rear side, and 100 mm (3.93 in.) or more above and below the product from all adjacent structures and equipment.
- Install the device with sufficient clearance to provide for cable routing and cable connectors.

PEPPERL+FUCHS
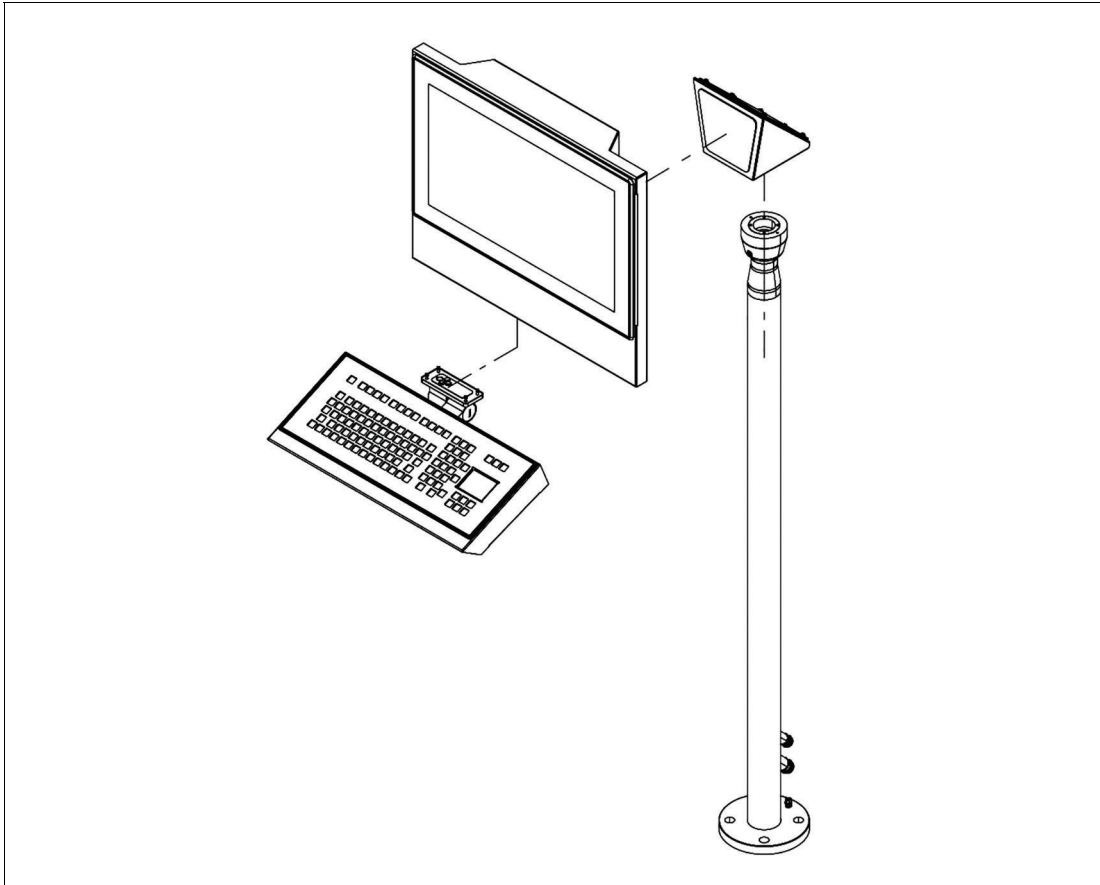
Figure 4.1   Adapter, pedestal and peripherals as keyboard must be ordered separately

Included with Delivery

- Preassembled VisuNet RM-, PC- or DM- FLX System, pre-mounted into AG-3200-* housing
- 1x Field Connector RJ45 (must be assembled by customer)

Figure 4.2   Field Connector RJ45

Note

Refer to the documentation of the supplier on how to mount the RJ45 Field Plug Pro: Link

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Figure 4.3   Sleeves

- 6x long threaded sleeves (4 are already in use to fix the housing)
- 8x short threaded sleeves
- 14x M16 blind plugs with sealing
- DC terminal block in case of DC configuration

Items Ordered Separately

- Pedestal that is compatible with AG-3200-* housing (PEDESTAL-3200-*)
- Pedestal adapter
- Optional: EXTA4-* keyboard
- Optional: IDM Barcode Reader
- Optional: Spare part housing blind plugs - GMP

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4.2 Unpacking

FLX *-320S-***A**-*   FLX *-320S-***B**-*

i
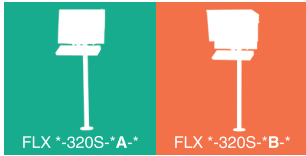
Note

Risk of injury!

Handling the VisuNet FLX components without gloves may cut fingers, hands, or wrists.

Wear always gloves during installation.

The VisuNet FLX comes with its core components preassembled. These components consist of a display unit (DPU), optional power supply unit (PSU), and Thin Client Unit (TCU), PC unit (PCU) or Direct Monitor Unit (DMU). If the housing option is chosen, the components come pre-mounted into the housing.

Figure 4.4

⚠

Caution!

Scratches and damage!

VisuNet FLX components may become scratched or damaged if they are placed onto or slid across hard surfaces.

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> ⚠ **Caution!**
>
> Placing the device on the front can damage operating elements!
>
> If you place the unit on its front before or during installation, the front panel controls may be damaged.
>
> Place the unit on a soft, raised surface so that the front controls do not touch the work surface and are not damaged.

4.3 Space Requirements

FLX *-320S-***A**-*   FLX *-320S-***B**-*

> **i** **Note**
>
> Operating temperature must be considered. Customer must ensure suitable air circulation!

4.4 Preparing for Pedestal Installation

FLX *-320S-***A**-*   FLX *-320S-***B**-*
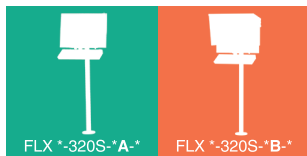
For floor mounting, the preferred installation option uses PEDESTAL-3200-* with either two or three cable glands. The pedestal is shipped with a pre-installed rotating coupling with four bolts and a PB wire, which is attached to the pedestal tube.

> ⚠ **Warning!**
>
> Proper floor mounting!
>
> It is the installer's responsibility to select a suitable location with sufficient strength to hold the equipment. It is the installer's responsibility to select the proper screws based on the installation conditions.

> **i** **Note**
>
> An additional mounting adapter is necessary and must be ordered separately!

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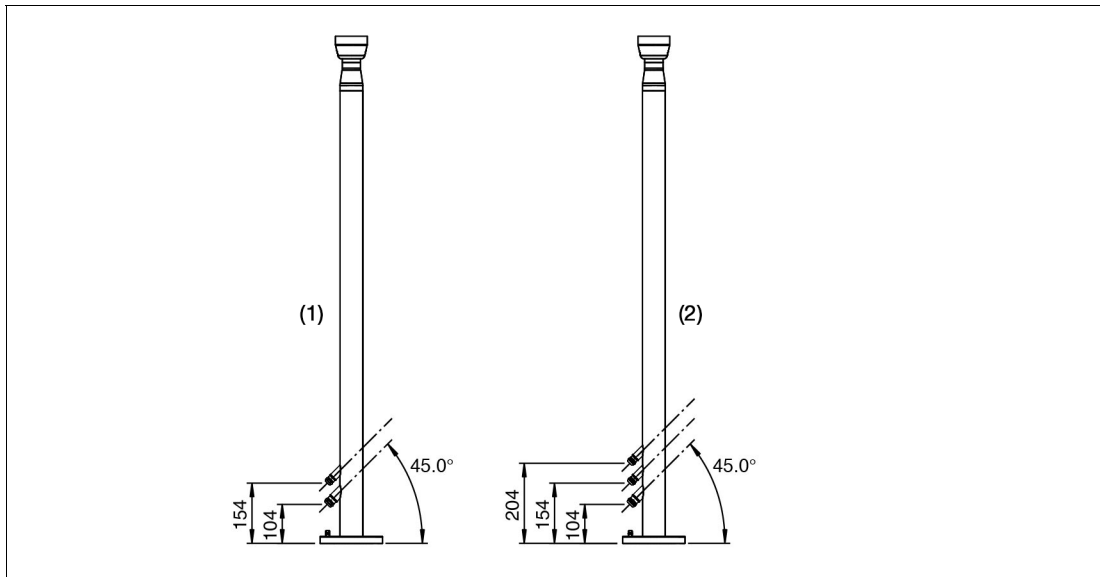
Figure 4.5

No.	Description
1	PEDESTAL-3200-131-2-304B-T-N0 with 2 cable glands
2	PEDESTAL-3200-131-3-304B-T-N0 with 3 cable glands

Preparing the Pedestal for Connection to the Housing

1. The pedestal must be firmly screwed to the floor.

2. Bend the PE wire with a max. radius of 20 mm and place it within the pedestal tube.

Warning!

Damage to the PB protective (equipotential) bonding wire!

The PB wire may become damaged if it gets stuck between the pedestal and the adapter. Bend the PB wire in such a way that it does not get stuck between the pedestal and the adapter.

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> **Installing the Adapter to the Pedestal**

1. Remove the cover of the adapter plate.

2. Align the pedestal centrally – determine the center by turning it to the right and left stop. Then align it at right angle to cable glands at the bottom of the pedestal.
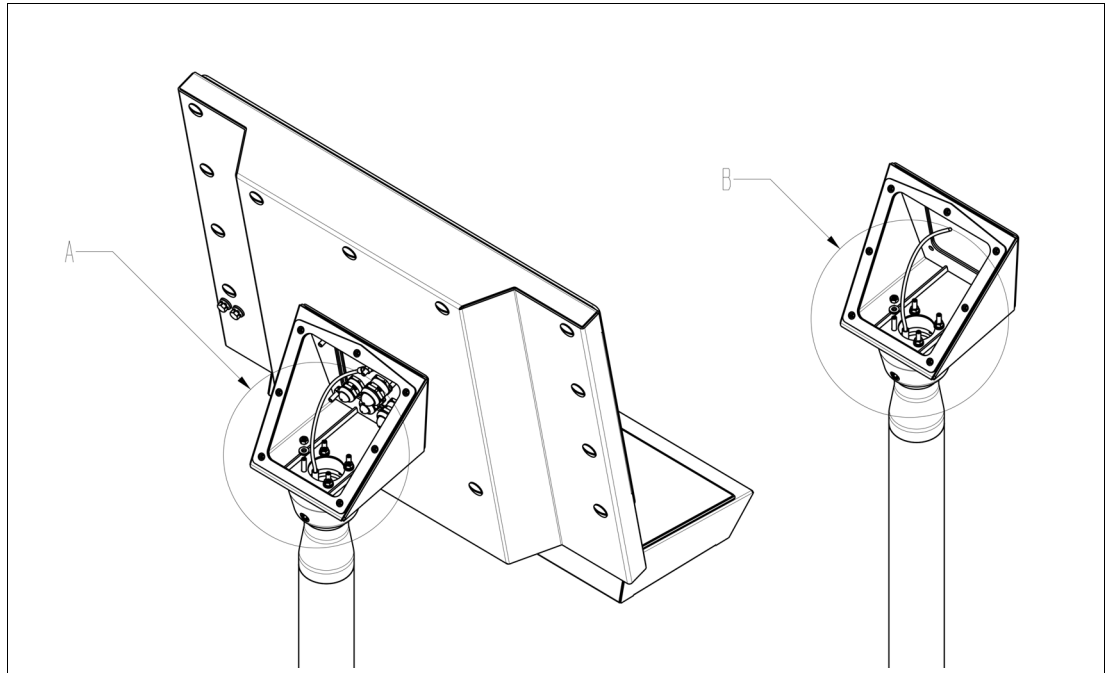
Figure 4.6   The pedestal comes with a preinstalled equipotential bonding cable.

3. Screw the adapter tight with 4 Nm.

4.5   Mounting the Housing onto the Pedestal

FLX *-320S-*A-*   FLX *-320S-*B-*
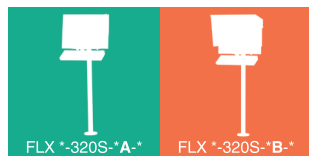
Warning!

Risk of injury!

Lifting the device on your own may lead to injury. Do not attempt to lift the device on your own. Use a crane or get another person for help.

Required Components

- Prepared pedestal that is properly secured to the floor
- Installed Mounting Adapter to pedestal
- VisuNet FLX pre-assembled in an AG-3200-* housing

Required Installation Tools

- 8-mm socket wrench for attaching PE hardware and housing screws
- 10-mm flat wrench for nuts on pedestal set screws
- Open-ended wrench for cable glands (cable gland installation tool)
- Safety gloves

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> **Attaching Housing to Pedestal**

1. Carefully turn the housing so that the display is facing up.

2. Using a crane or with the help of another person, place the housing onto the adapter so that the System Housing bolts align with the adapter slots and the housing rests on the adapter. Tighten the M5 washers onto the system housing bolts in a criss-cross pattern using a torque of 2.3 Nm.
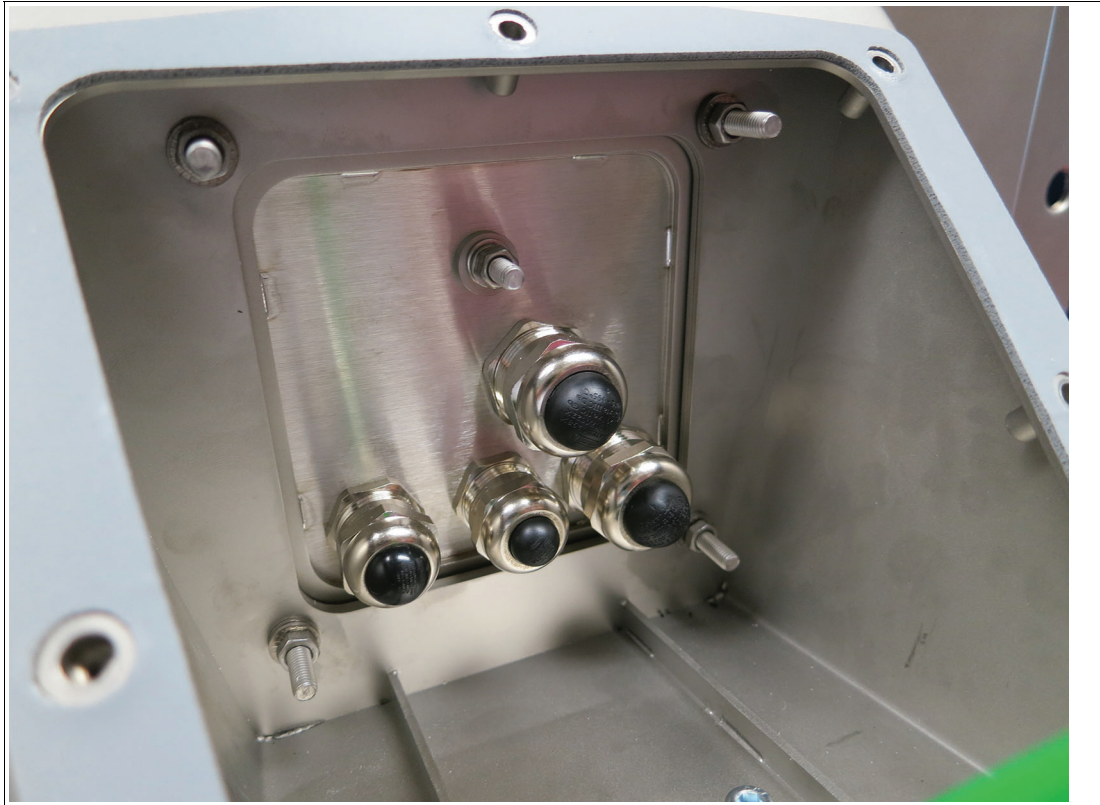
Figure 4.7   Tighten the four nuts with 2.3 Nm

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4.6 Mounting the Housing with 0° Tilted Mounting Adapter

FLX *-320S-*A-* FLX *-320S-*B-*
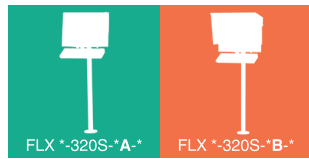
When using the 0° mounting adapter, a 70 mm bolt is required on the lower position to enable mounting. Please replace one of the 6 bolts with the shorter bolt as illustrated.
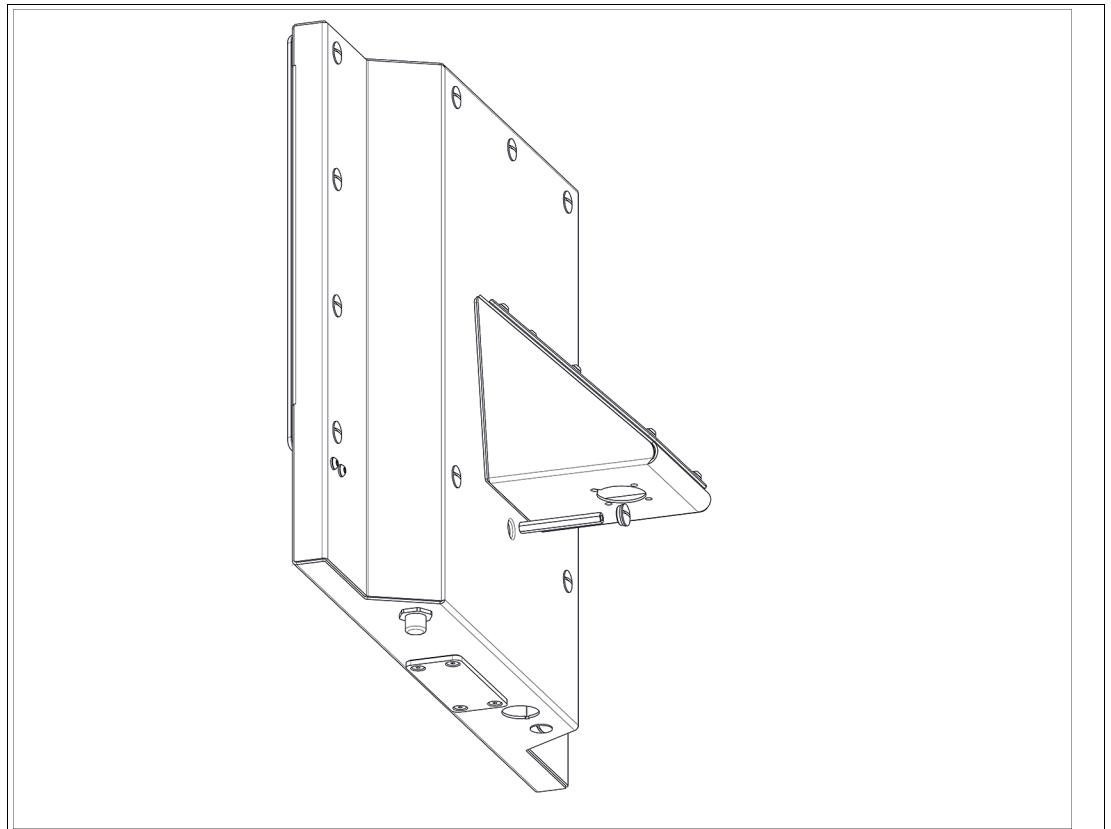
Figure 4.8   Position of the shorter bolt

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4.7 Open the Housing

FLX *-320S-*A-*   FLX *-320S-*B-*

Opening the VisuNet FLX System AG-3200-* Housing

1. Remove the 4 threaded sleeves from the back of the housing.

2. Remove the DPU from the housing and carefully lock the retaining feet on the lower part of the housing into the brackets provided.

3. Slowly lower the DPU.

4. Hook the housing cover into the upper side of the housing. Make sure that both sides are hooked in. Make sure that the hooks are engaged in the same was as in figure 4.9.

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Figure 4.9

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5. Tip the display panel toward you until the display comes to rest at its fully opened position and the safety lines are stretched out.

Figure 4.10   The safety lines hold the display when fully extended

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4.8 Installing Cables in the Pedestal

FLX *-320S-***A**-*   FLX *-320S-***B**-*
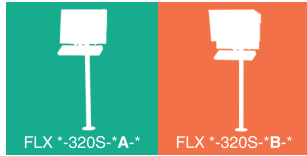
Warning!

Pinched cables!

Ensure that cables do not get pinched or damaged during installation.

Note

Refer to the manuals of the individual components for information on electrical installation and wiring.

Required Installation Tools

- Cable gland installation tool
- Small cable ties
- Side cutters

All tools should be torque controlled if a torque is specified.
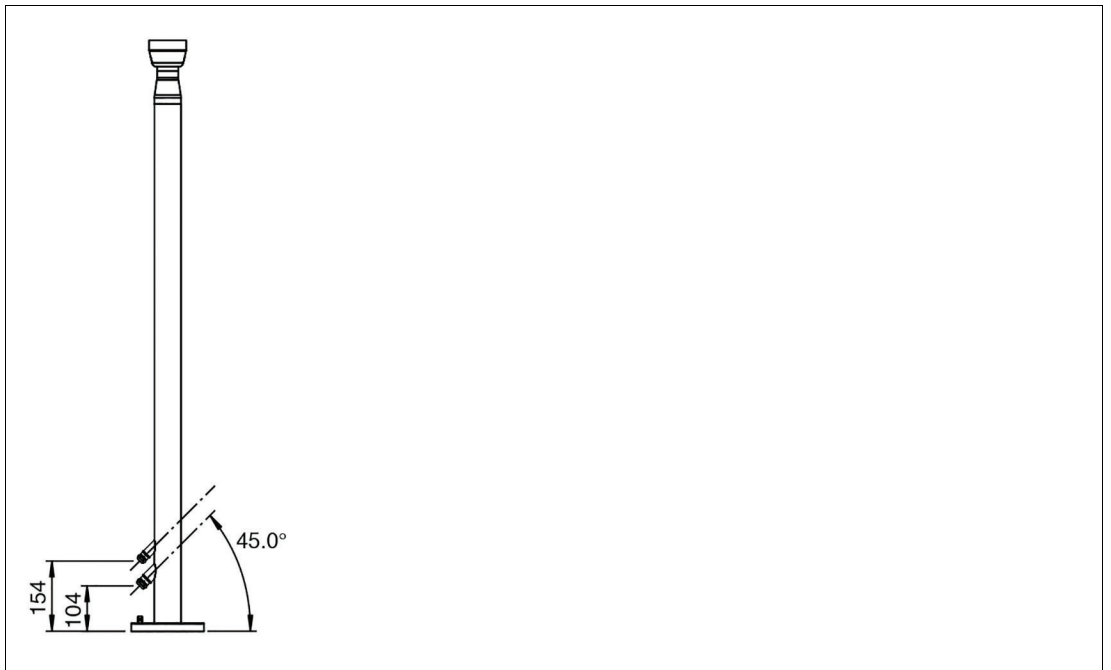
Figure 4.11

Pedestal with two Cable Glands

No.	Opening size
1	M20
2	M16

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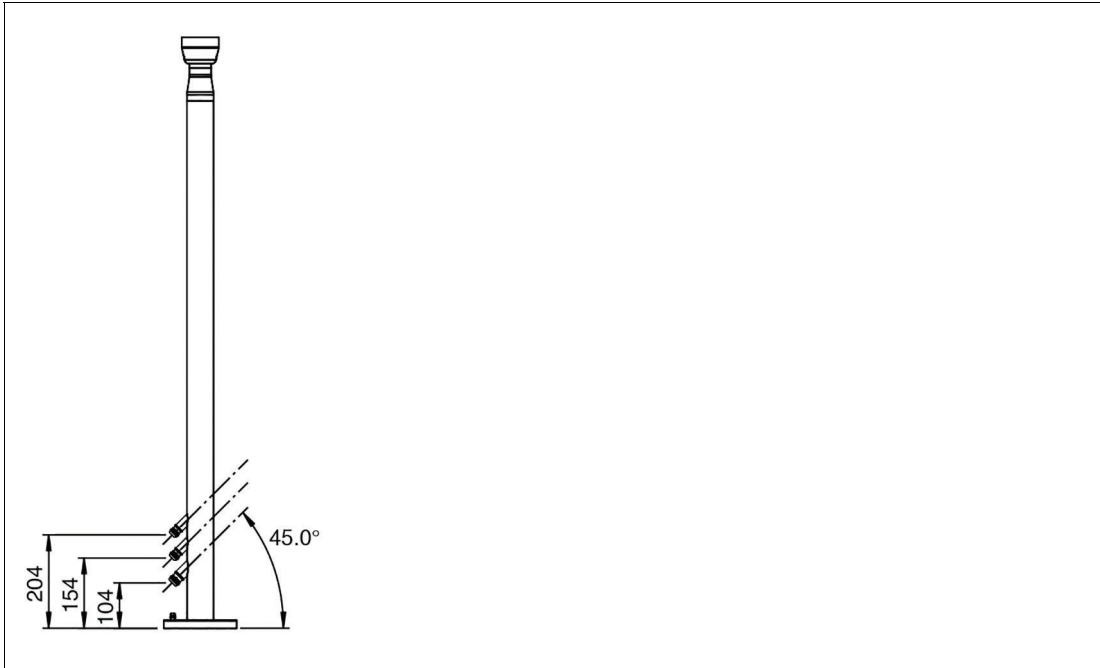
Figure 4.12

Pedestal with three Cable Glands

No.	Opening size
1	M20
2	M16
3	M16

Opening/Wrench Size, Cable Diameter, and Torque

	Wrench size	Cable diameter	Torque
M20	24 mm	7 .. 12 mm	10 Nm
M16	20 mm	3 ... 7 mm	5 Nm
M16	20 mm	6 ... 10 mm	5 Nm

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Installing Cables

1. Based on how many cables and openings are required (i.e., power and Ethernet), remove the appropriate number of cable glands at the bottom of the pedestal.

Figure 4.13

2. Put the gland nut and ferrule of the cable gland on the cable and slide them a few meters down the length of the cable away from the pedestal. Keep the nut and ferrule on the cable. They are tightened in a later installation step

Figure 4.14

3. Feed the pull wire (thin, 2.5-m-long wire for pulling cables through pedestal) through the top of the pedestal and out the appropriate cable entry.

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4. Attach the cable to the pull wire.

Figure 4.15

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5. Pull the cable through the pedestal so that 50 cm of the cable is hanging out of the top of the pedestal.
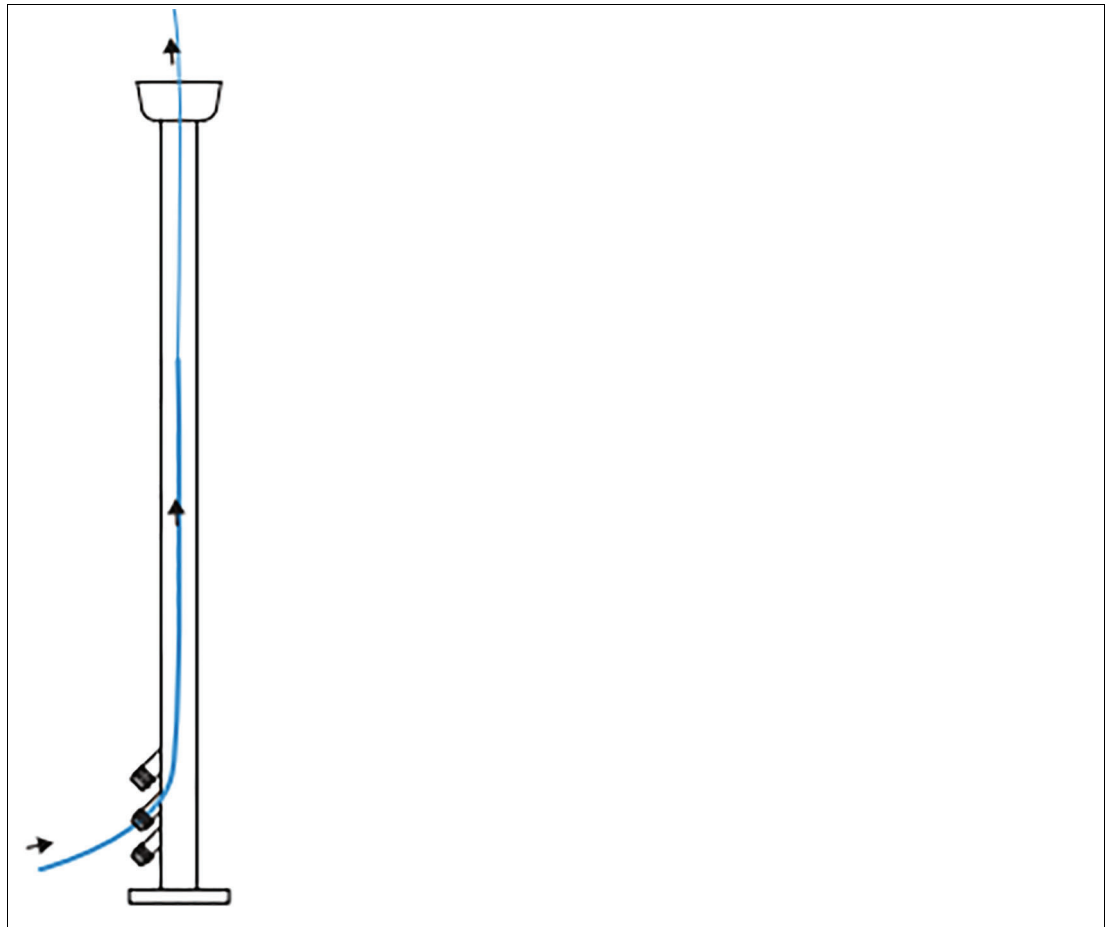
Figure 4.16

6. Repeat the preceding steps for each cable that must be routed through the pedestal.

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7.   Route the cable through the cable glands of the system housing.
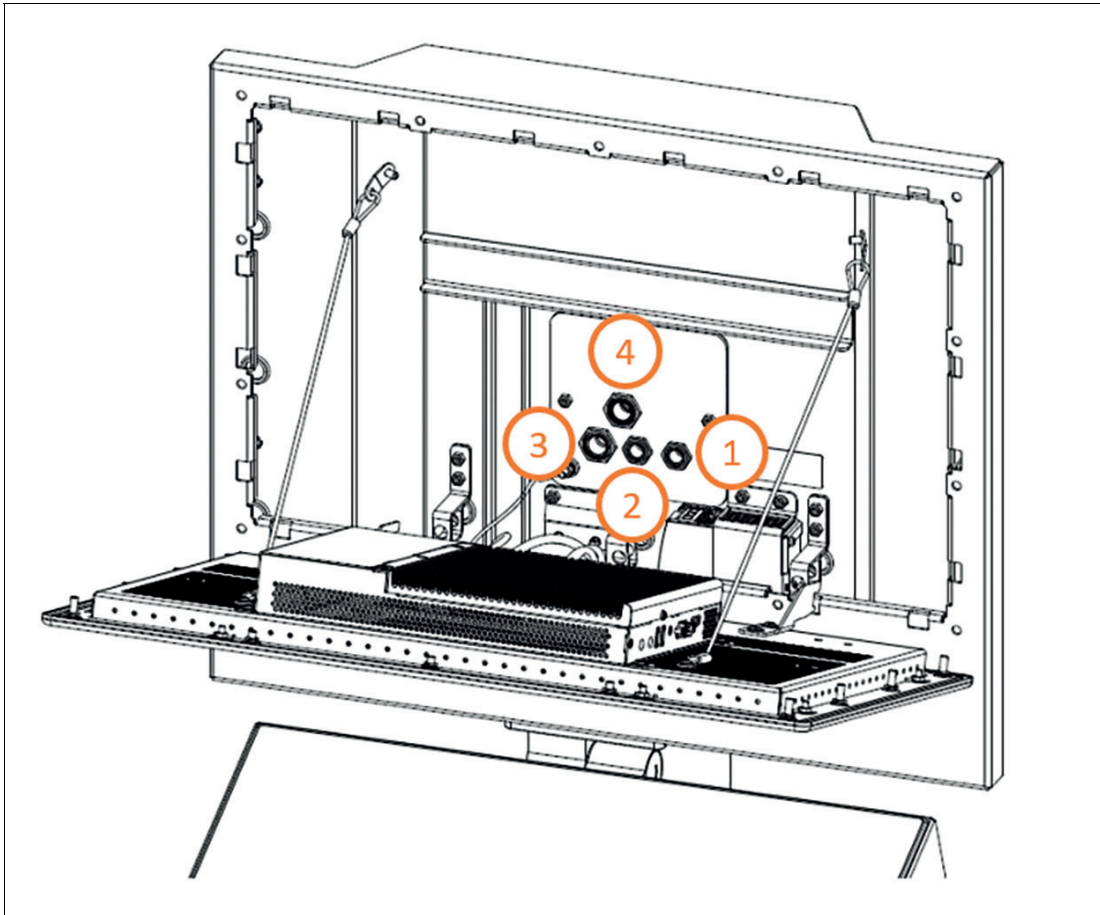
Figure 4.17

No.	Description	Size
1	Dual Ethernet	M16 (Ø 6-10 mm)
2	Dual Ethernet	M16 (Ø 3-7 mm)
3	Power	M20 (Ø7-12mm)
4	Spare for additional connection	M20 (Ø7-12mm)

Note

To get the cables through the cable glands, the insulation must be in place. Remove the insulation only inside the housing.

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Note

Cables must be long enough to pull in a loop, before fixation.

Figure 4.18

Note

For detailed information on the equipotential bonding of the device refer to chapter **Equipotential Bonding**.

For detailed information on connecting the installed cables to system refer to chapter **Interfaces of the system**.

For detailed information on the different interfaces refer to the BPC3200-* manual.

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4.9 Closing the AG-3200-* Housing

FLX *-320S-*A-*   FLX *-320S-*B-*

Required Tools

- Socket wrench with slotted screwdriver bit

Procedure

1. Slowly lift the DPU into an upright position until the bolts touch the inner frame of the housing.

2. Lift the display, so that the hooks are positioned behind the housing frame.

3. Press the DPU and housing together at the top end of the system. From the back of the housing, place one threaded sleeve in the hole at the upper-left corner and one threaded sleeve in the hole at the upper-right corner of the housing.

4. Tighten the two threaded sleeves with a torque of 4 Nm.

5. Repeat the previous step with all other threaded sleeves, following a diagonal pattern.

6. Screw the screws with the seal into the housing.

7. Tighten them all up with a torque of 2 Nm.

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FLX *-320S-*A-*
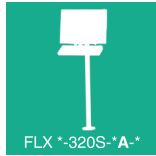
Optional: Use the Spare Part Housing Blind Plugs for Strict GMP Requirement

SPAREPART-AG-320S-BP-P1 (#70136529)
Follow above mentioned steps 1 to 5.

1. Screw the pharma blind plugs with the seal into the housing.
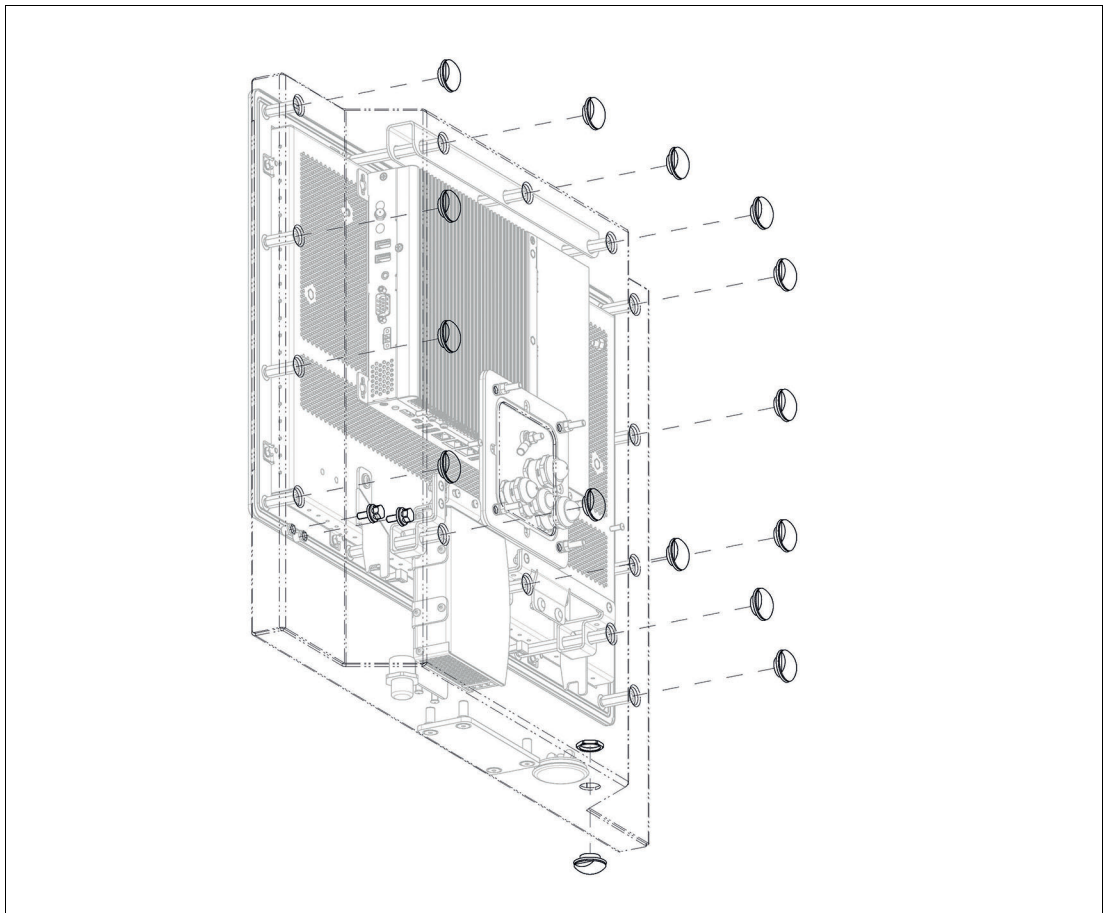
Figure 4.19

2. Tighten them all up with a torque of 2 Nm.

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3. Exchange the blind plugs on the right site of the back of the housing with the enclosed pharma M5 screws. Tighten them up with a torque of 4 Nm.
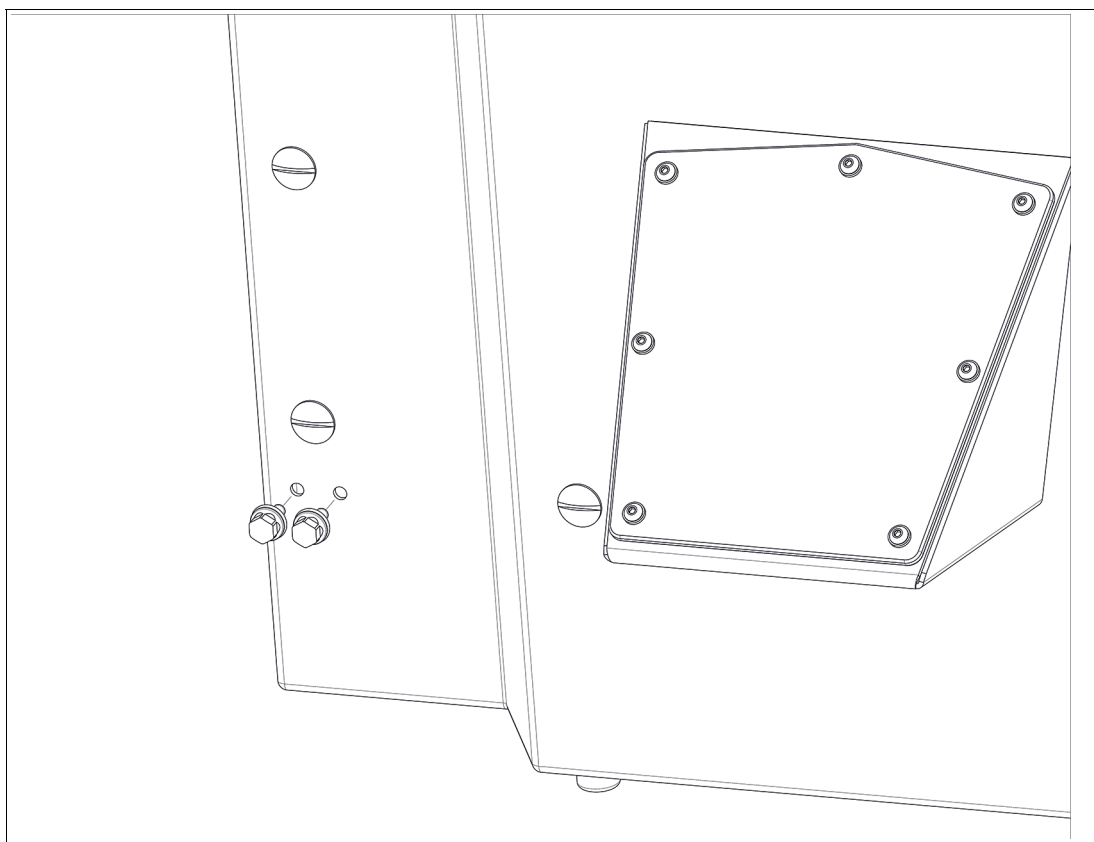
Figure 4.20

Caution!

Foreign bodies!

Keep the housing doors and openings permanently closed, so that no foreign bodies accumulate in the workstation.

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4.10   Wall Mount Installation
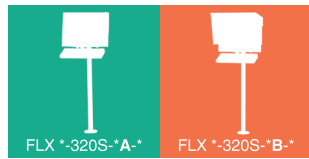
Warning!

Proper installation on the wall!

It is the installer's responsibility to select a suitable location with sufficient strength to hold the device. It is the installer's responsibility to select the proper screws based on the installation conditions.

Required Components

- Pre-assembled VisuNet FLX PC-, RM-, DM- mounted into AG-3200-* housing (P1-, A1- or H1-Housing Option)
- Wall bracket adapter (WALL-BRACKET-3200-304A-N0) for wall mounting installation compatible with AG-3200-* housing (P1-, A1- or H1-Housing Option)
- Optional EXTA4-* keyboard/mouse

Required Installation Tools

- 8-mm socket wrench for attaching PE hardware and housing screws
- Safety gloves

Wall Mounting

1. Use the hole pattern to install the bracket to the wall.

2. Connect the PB wire from the field to the PB stud on the wall bracket.

3. Mount the VisuNet FLX to the bolts on the wall bracket. With the DPU hinged down, route cables through the cable glands in the wall bracket.

4. A cable tie socket could be used to attach the cables.

5. Cables can be routed from the top through the cutout in the wall bracket or from the bottom.

Note

Connect the equipotential bonding of the AG-3200-* housing to the Wall Bracket. The AG-3200-* housing equipotential bonding is indirectly via the wall bracket connected. It does not require an extra PB wire between housing and wall bracket.

4.11 Wall Mounting for Scanner Barrier

FLX *-320S-***A**-*   FLX *-320S-***B**-*
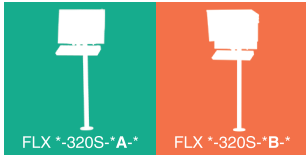
The adapter WALL-MOUNT-3200-10-304A-M12 is designed for direct wall mounting for zone 2 scanner barrier. It is prepared for IDM Barcode Readers and is compatible to the housing AG-3200-*. To install the barrier, follow these steps:

Installing VisuNet FLX Wall Mounting Adapter for Scanner Barrier

Figure 4.21

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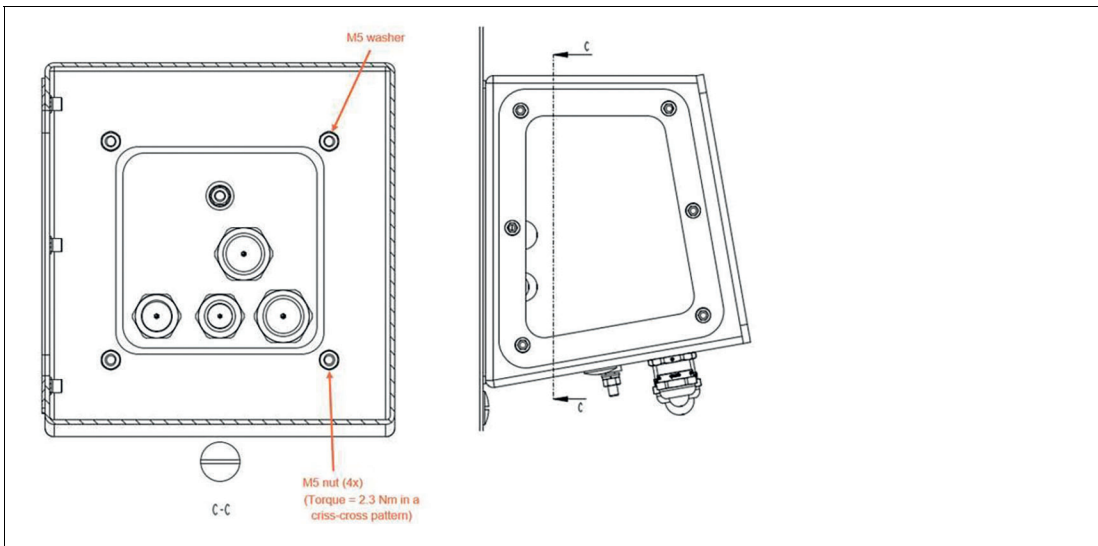
1. Remove cover.
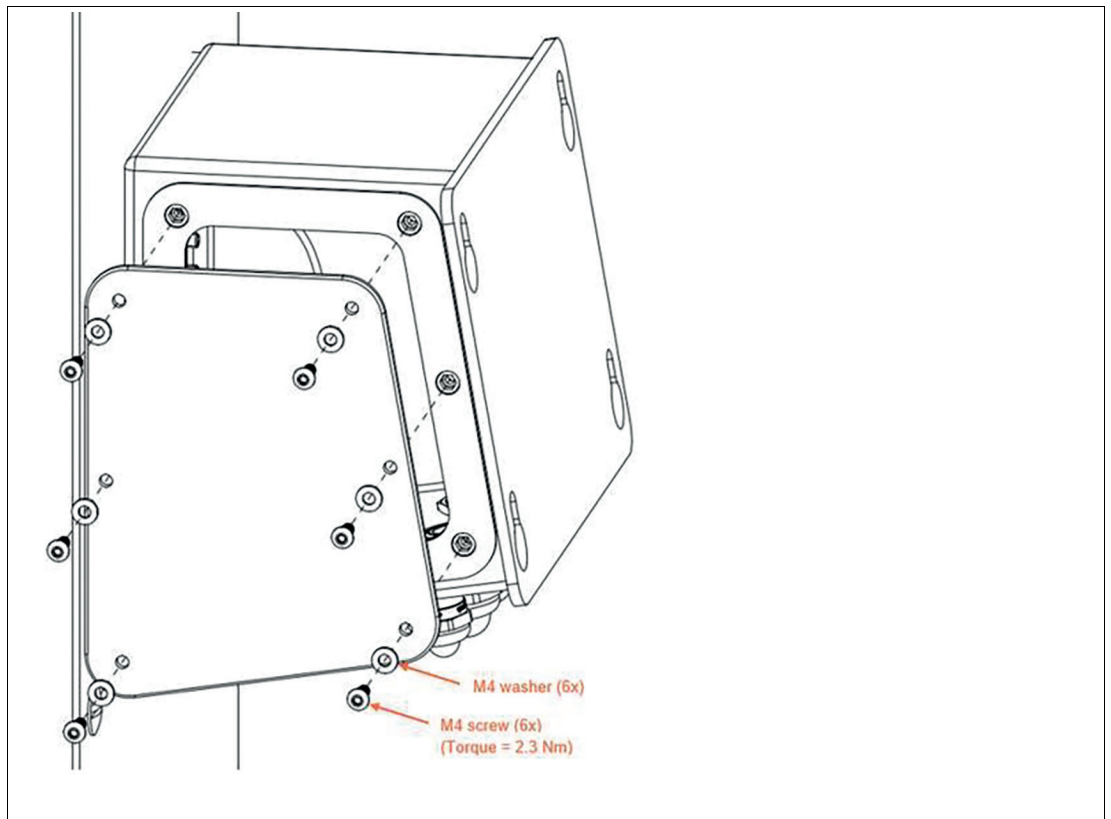
Figure 4.22

2. Remove M16 blind plug. In same hole, install the M12 socket. Tighten the M12 socket with 0.6 Nm. The lock nut of the coupling in the adapter with 2 Nm.

3. Install ground cable in position shown.

> **i** **Note**
>
> This step can also be performed last.

Figure 4.23

PEPPERL+FUCHS
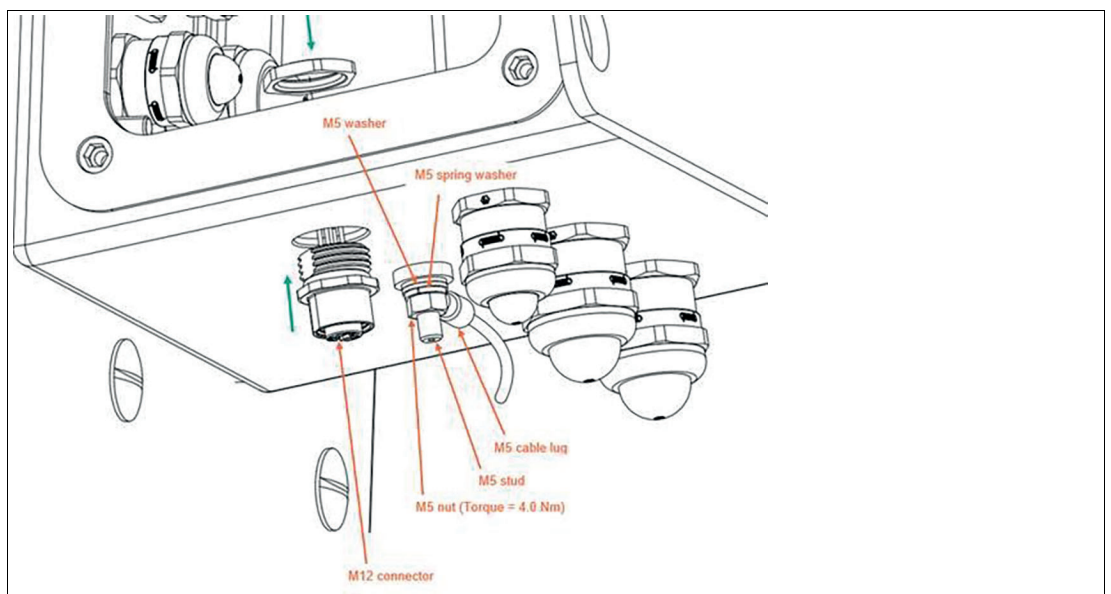
4. Remove cable gland No 4 (M20 Ø7-12 mm). By this point, the DPU should be in the open position.
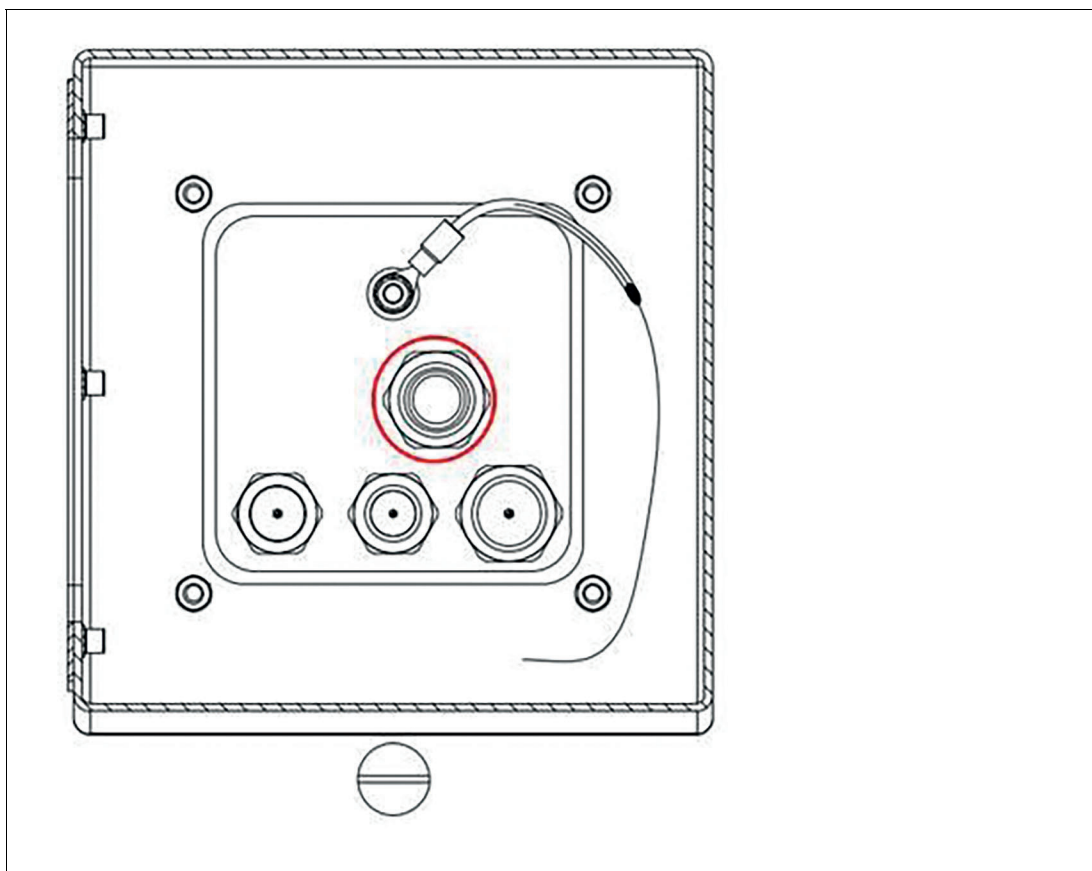
5. Fix the integrated cable gland of the supply cable in the section that has become free. Fix it with a torque of 12 Nm.

PEPPERL+FUCHS
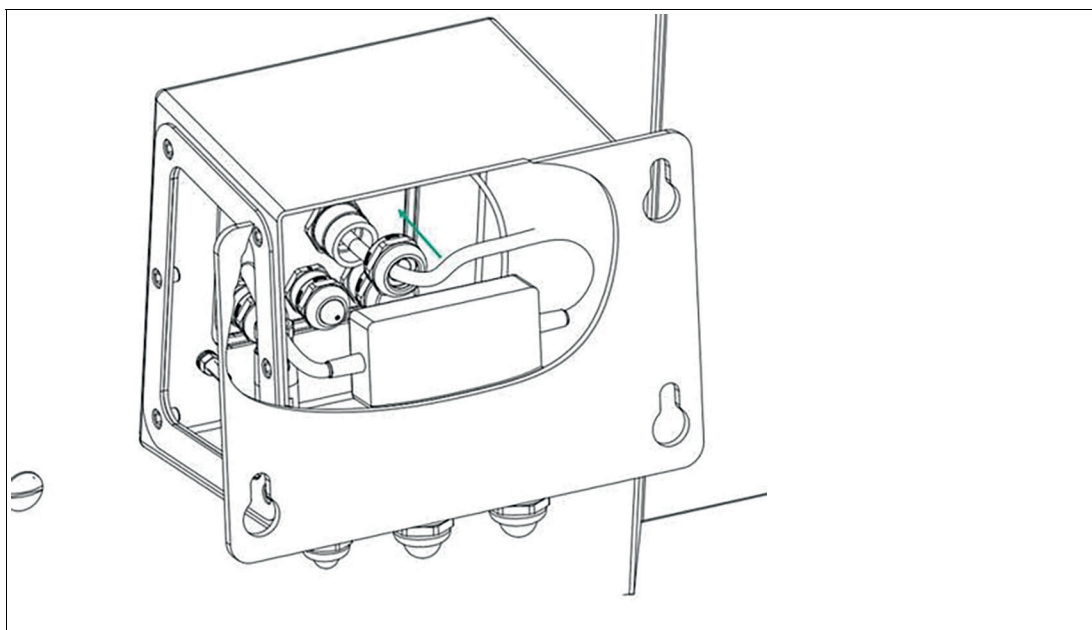
6. Connect the M12 plug of the supply cable to the connector in the adapter and tighten it firmly.
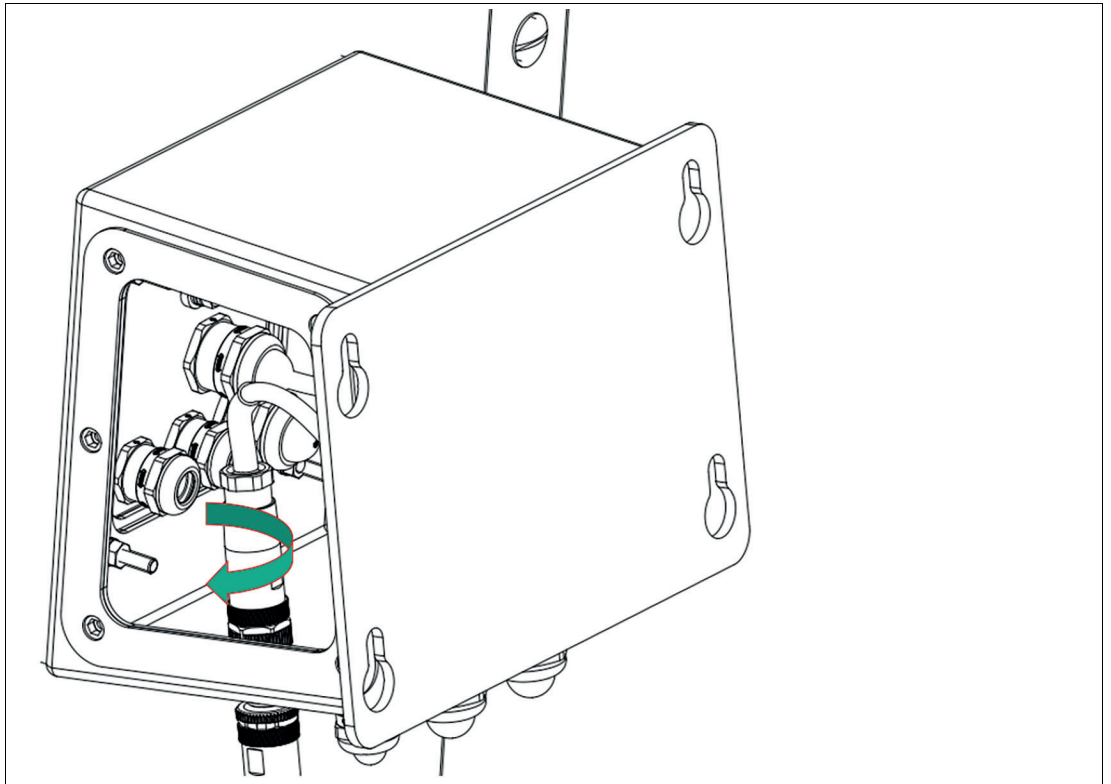
Figure 4.24

7. Bend the cable as shown in the following picture.

Figure 4.25

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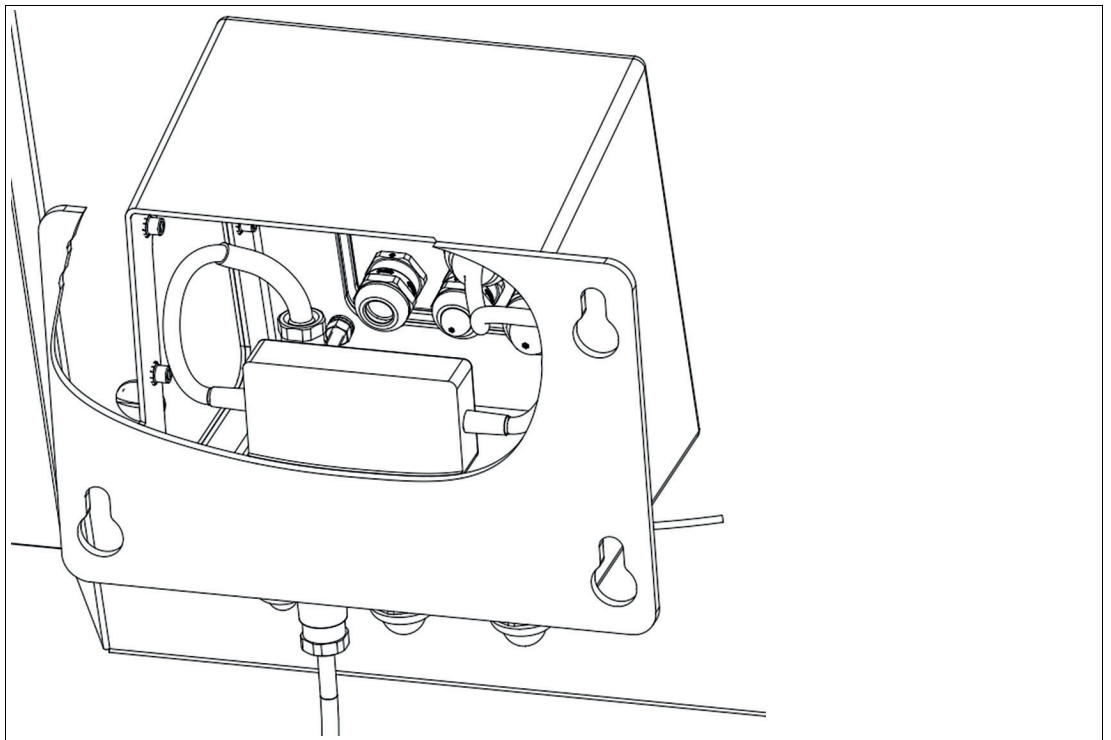
⚠ **Warning!**

Bending radius must be maintained. The minimum allowed bending radius is Ø80mm.
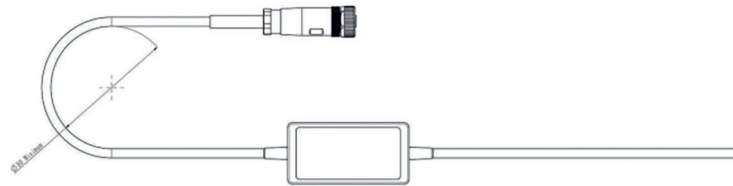
8. Place the USB supply cable with the Velcro tape on the left side of the inner side of the adapter.

9. Connect the USB connector of the supply cable to the BPC3200-*.

Figure 4.26

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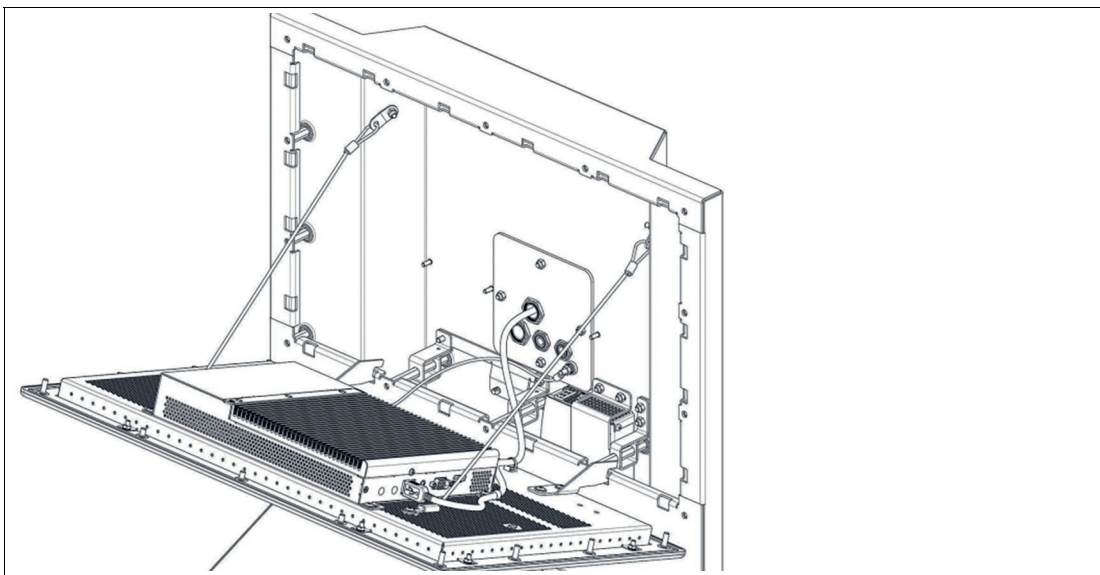
10. Position of barrier inside back surface of adapter:
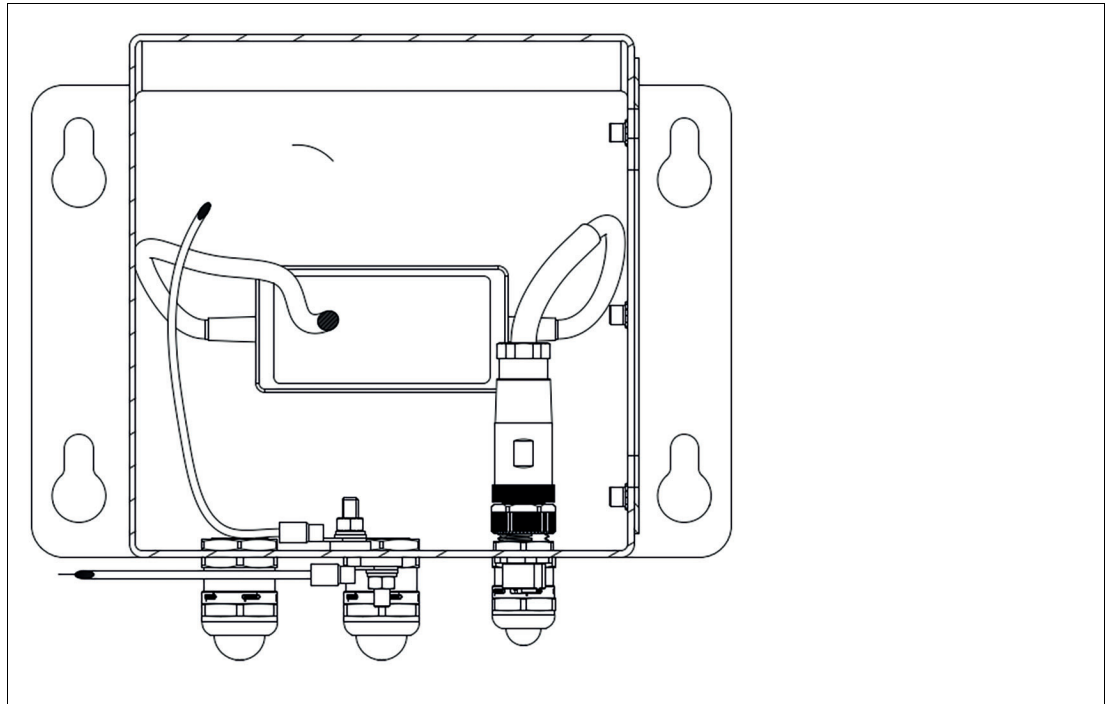
Figure 4.27

11. Connect the plug of the barcode reader connection cable or base station connection cable to the M12 connector of the adapter and tighten it firmly.
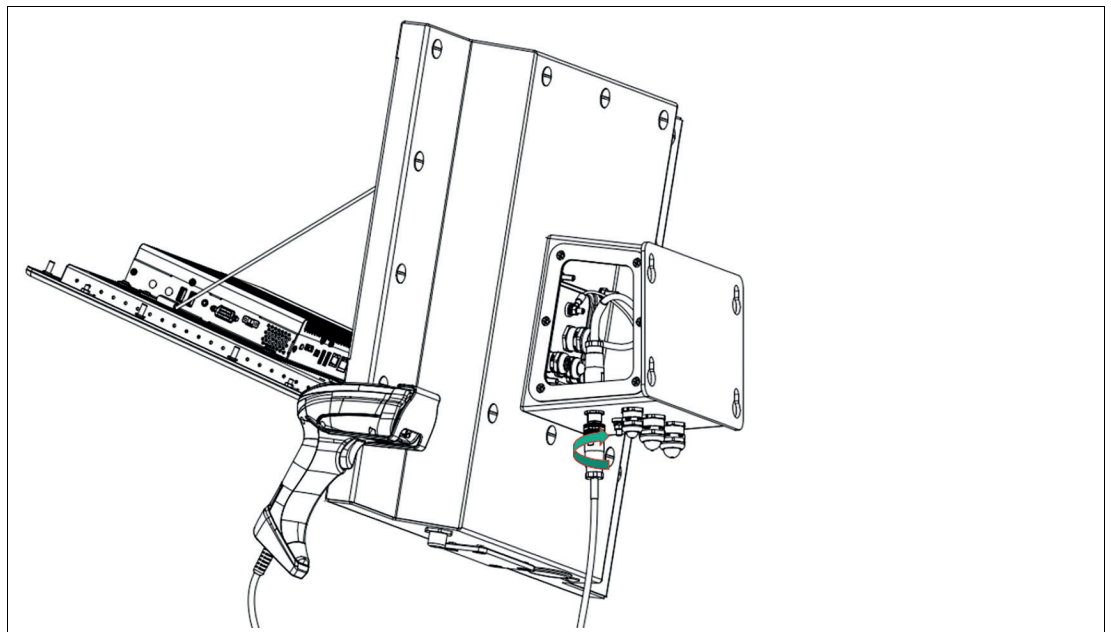
Figure 4.28

> **i** **Note**
>
> The plug and socket are keyed. Match the key on the plug to the slot on the socket before tightening:

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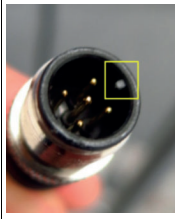
Figure 4.29

↳ After mounting the adapter for the VisuNet FLX it should look like this:

Figure 4.30

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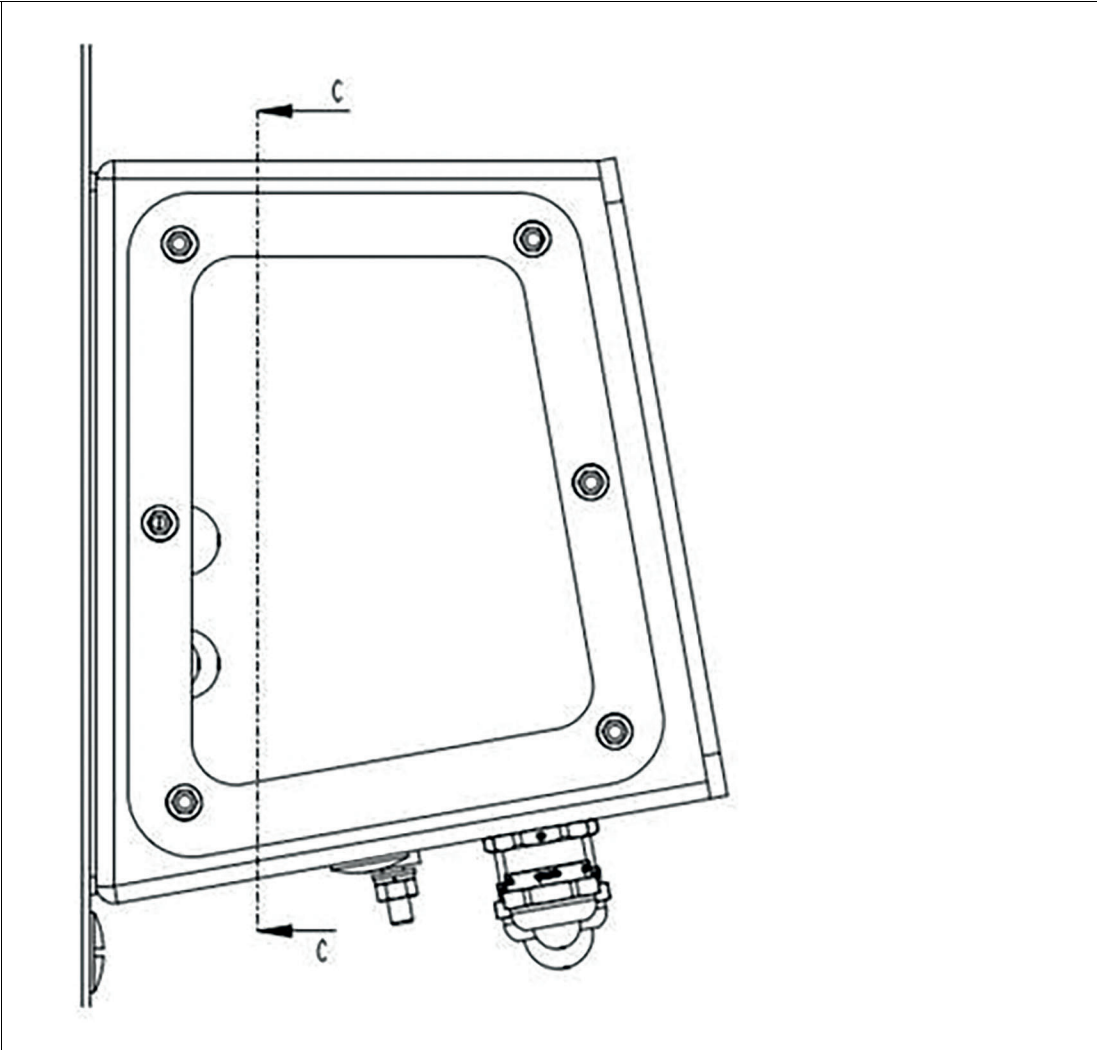
4.12 Sunshield installation for VisuNet FLX *-320S-*B-*
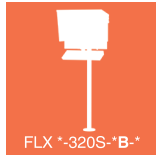
Tip

Watch the tutorial for this installation steps on YouTube by scanning the QR code or by clicking on the following link:
https://www.youtube.com/watch?v=Bc9YhGiSXWM&list=PL3MZFYaaexY-mmsXLgwL4RC0uuqCdVtLd&index=25

Figure 4.31

The following installation steps are only relevant for VisuNet FLX *-320S-*B-* Systems (Extended Temperature Range) installed in an aluminum alloy housing.

The following accessories can be ordered additonally to further protect the VisuNet FLX from sunlight and weather conditions:

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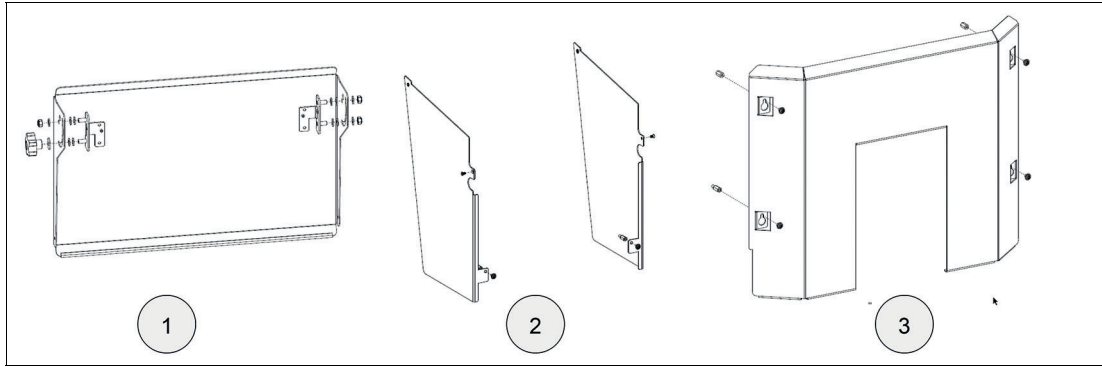
Figure 4.32   Optional accessories for VisuNet FLX extended temperature range configurations

No.	Product name	Description	Art. No.
(1)	KIT-SUNSHIELD-3200-TOP-A1-N0	Canopy with Display protection function and adjustable	70171176
(2)	KIT-SUNSHIELD-3200-SIDES-A1-N0	Side Reflector Shields NOTE: Requires pre-installed Sun Protection Canopy	70171177
(3)	KIT-SUNSHIELD-3200-BACK-A1-N0	BacksideHeat Reflector NOTE: Requires pre-installed Sun Protection Canopy	70171178

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4.12.1   Top sunshield installation instructions

FLX *-320S-*B-*
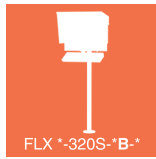
Follow the installation instructions see chapter 4.1 to avoid damage to the device.

Note

If only using the top sunshield it is recommended to rotate the top sunshield down when not in use to ensure further protection of the device.
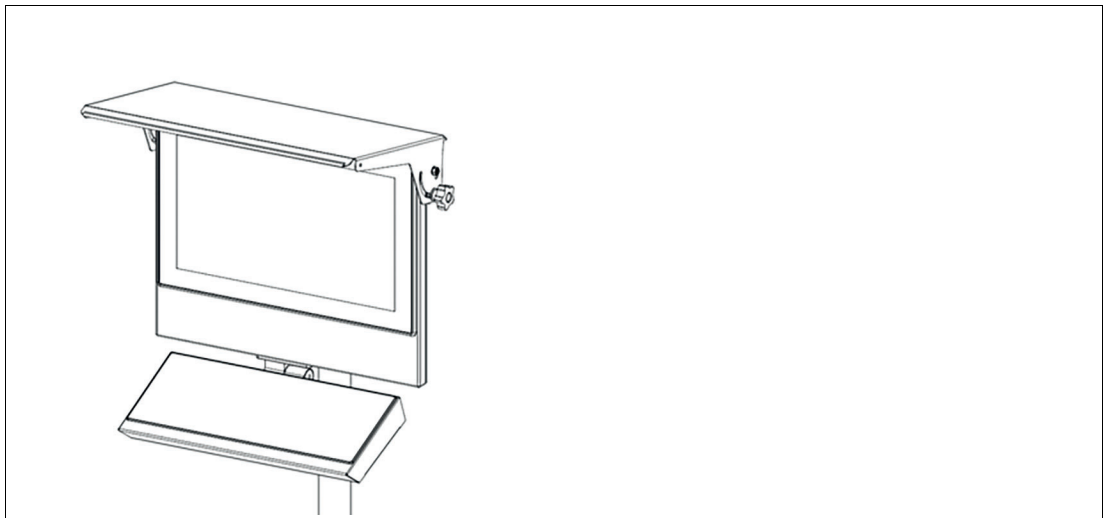

Figure 4.33

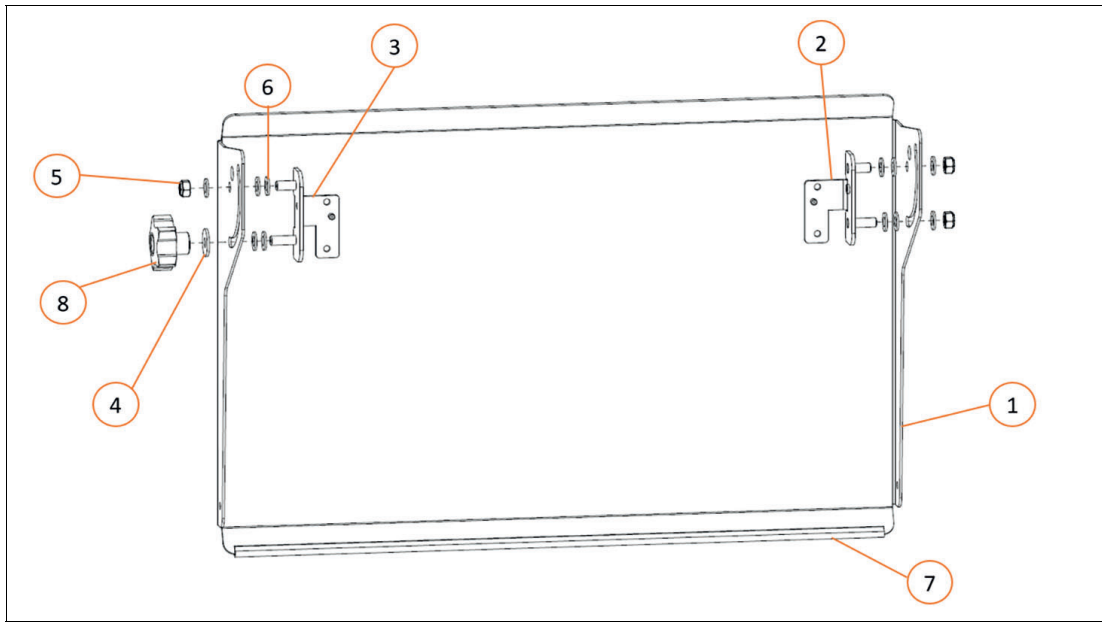The sunshield will be pre-assembled before delivery as shown in the figure.

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Figure 4.34   Items for the pre-installation of the top sunshield

Item	QTY	Description	Part-No.
1	1	Sunshield top	-
2	1	Sunshield Mounting Bracket, left	-
3	1	Sunshield Mounting Bracket, right	-
4	1	Washer, M8 oversized	126822
5	3	M8 lock nut	311489
6	11	Washer, M8 flat	522104
7	1	Edge protector	523747
8	1	Knob, M8 lobe	922550

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1. Tighten the M8 lock nuts (item nr. 5) to keep the top shield in place but still allow rotation with some force applied. Align brackets to allow installation of sunshield in closed position. Tighten them so that the brackets provide resistance but still allow some force to be rotated.
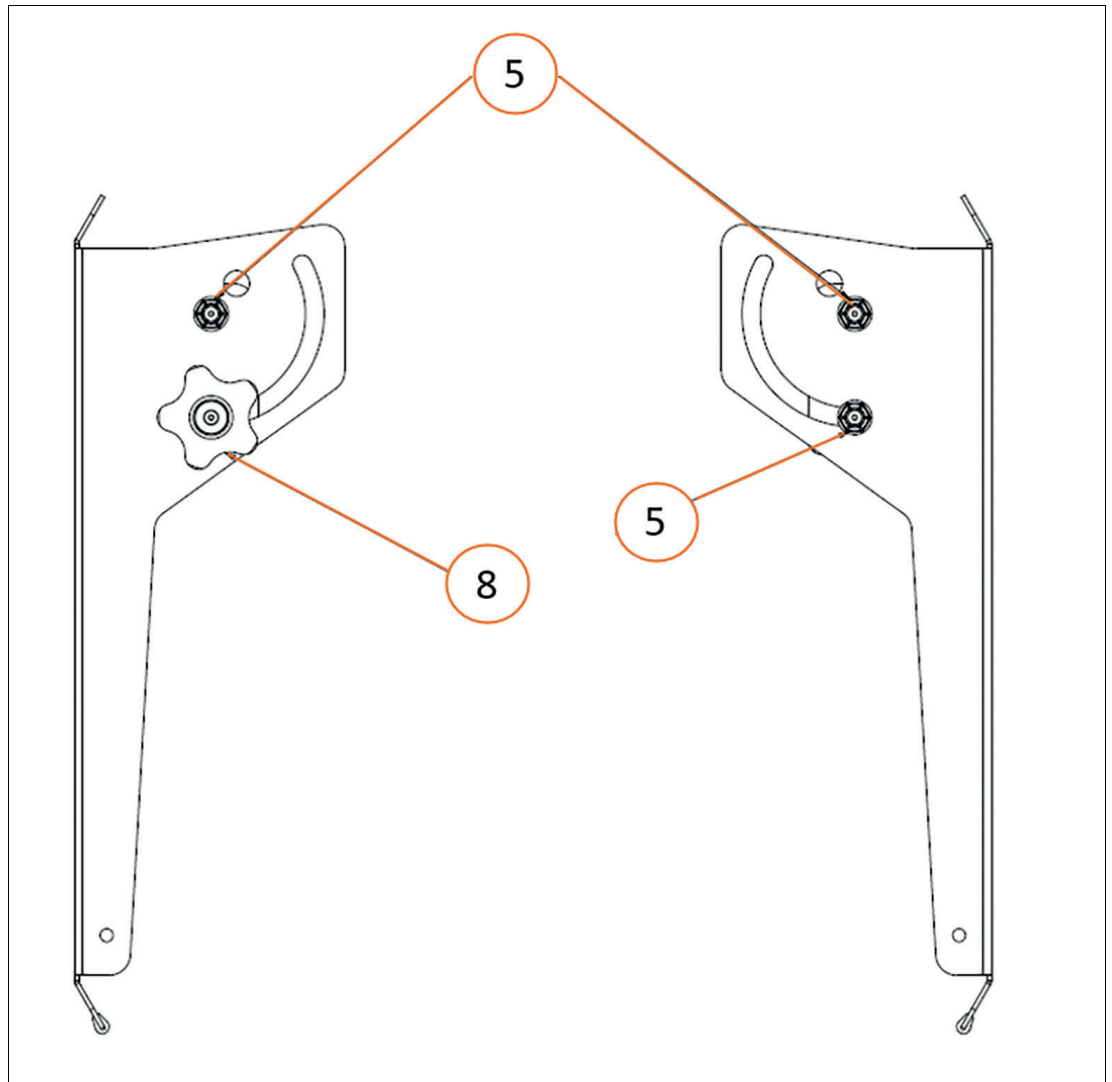

Figure 4.35

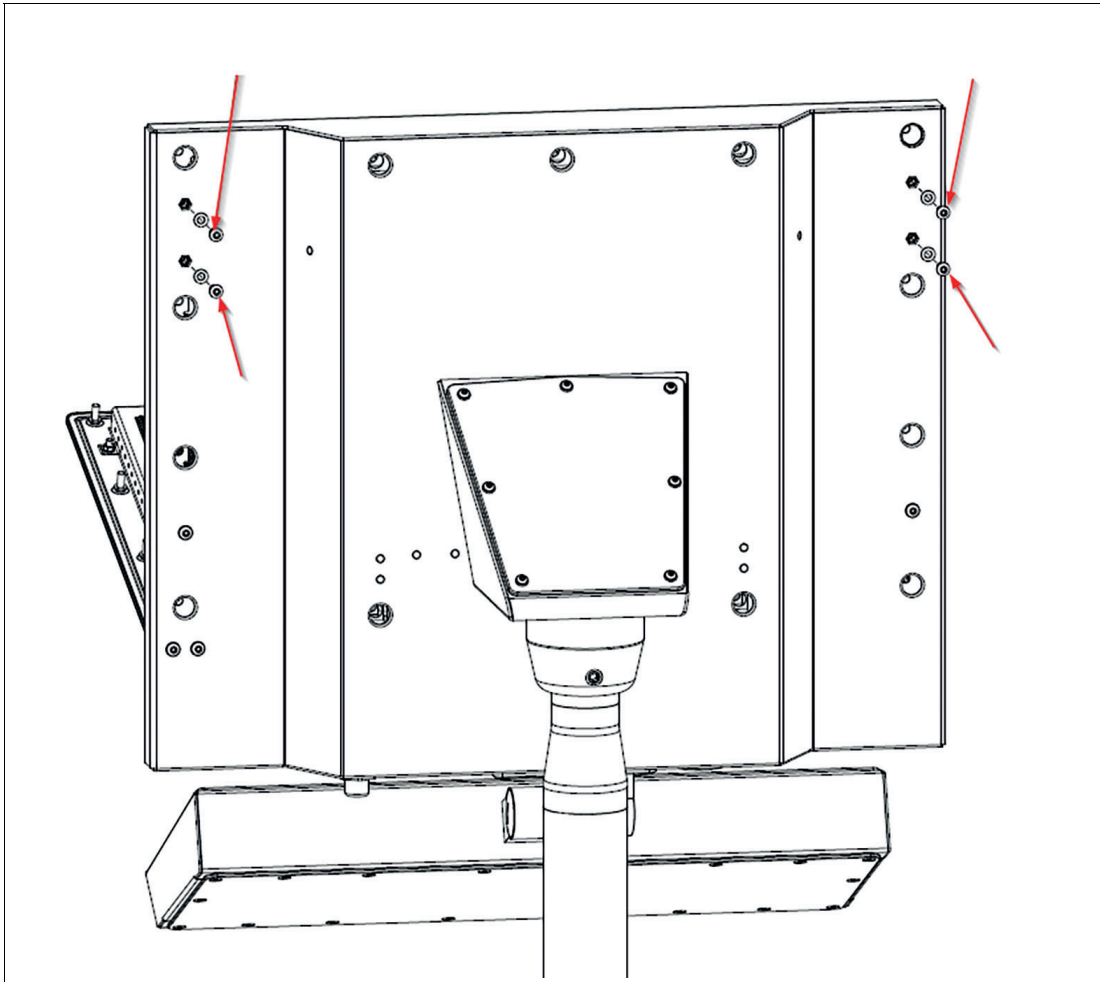**2.** Remove the 4 screws and washers from the backside of the housing as shown.

Figure 4.36

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3. Carefully fit pre-assembled top sunshield over top of outer housing and install and tighten the 4 screws (the ones you just removed in step 2) to a torque of 4 Nm.
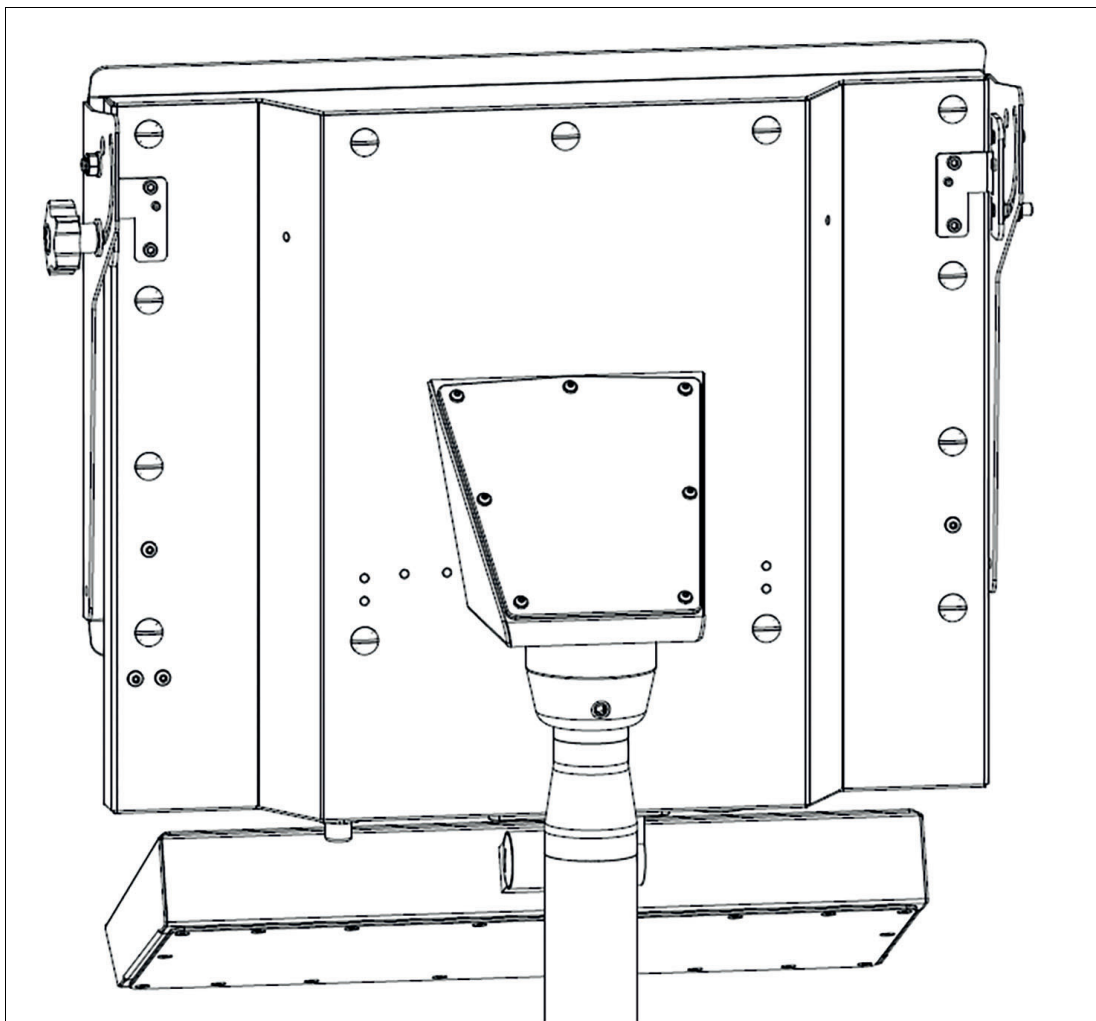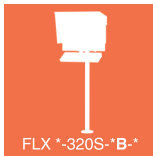

Figure 4.37

4. Rotate sunshield top into desired operating position and firmly hand tighten knob.

5. The sunshield top assembly is now complete.

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4.12.2 Back sunshield installation instructions

FLX *-320S-*B-*

Note

Back sunshield can only be installed in combination with the top sunshield.
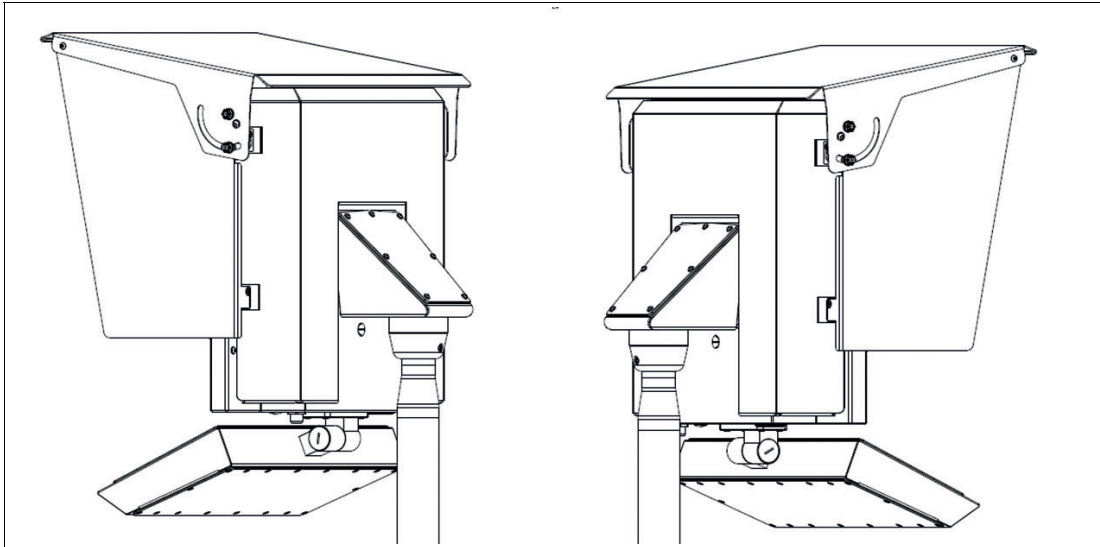

Figure 4.38

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1. Follow the above described steps 1 to 3.

2. Remove the 2 missing screws and washers from backside of housing as shown.
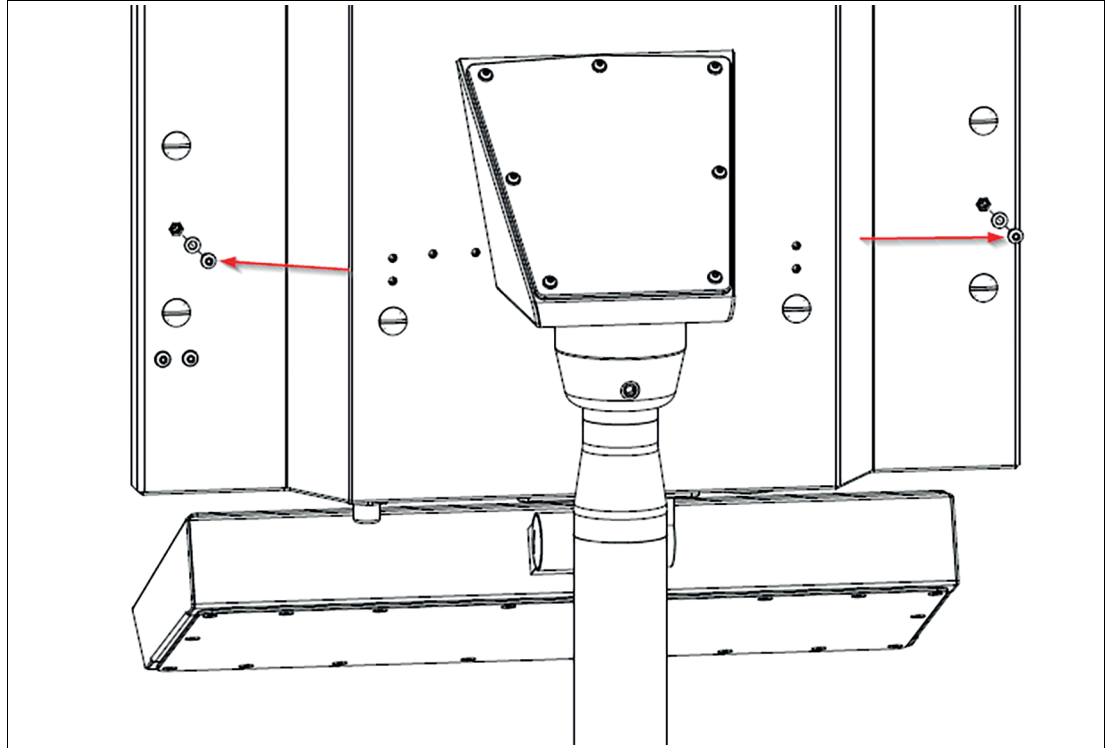

Figure 4.39

3. Install the 2 female-female spacers to mounting brackets (1) and tighten to a torque of 3 Nm.
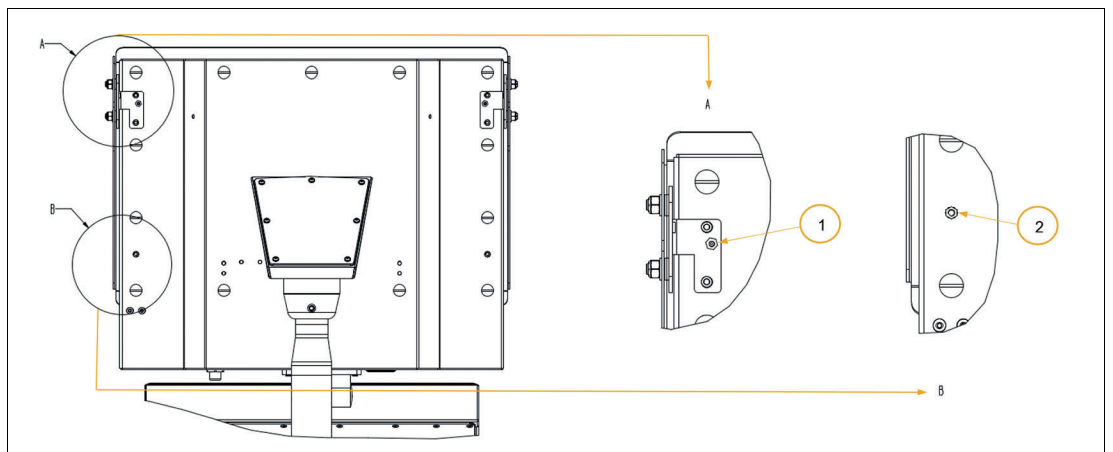

Figure 4.40

Item No.	Part No.	QTY	Description	Torque (Nm)
1	112373	4	M5x12 Socket Head Cap Screw	4
2	70171760	2	M5x15mm, F-F Space	3
3	70171761	2	M5x15mm, M-F Spacer	3

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4. Install the 2 female-male spacers to outer housing (2) and tighten to a torque of 3 Nm.

> **i** **Note**
>
> These spacers are only used for the back shield option.

> **i** **Note**
>
> If side shields will be installed leave out the bottom 2 screws.

5. Install the 4 screws onto spacers leaving a gap more than the thickness of the back shield.
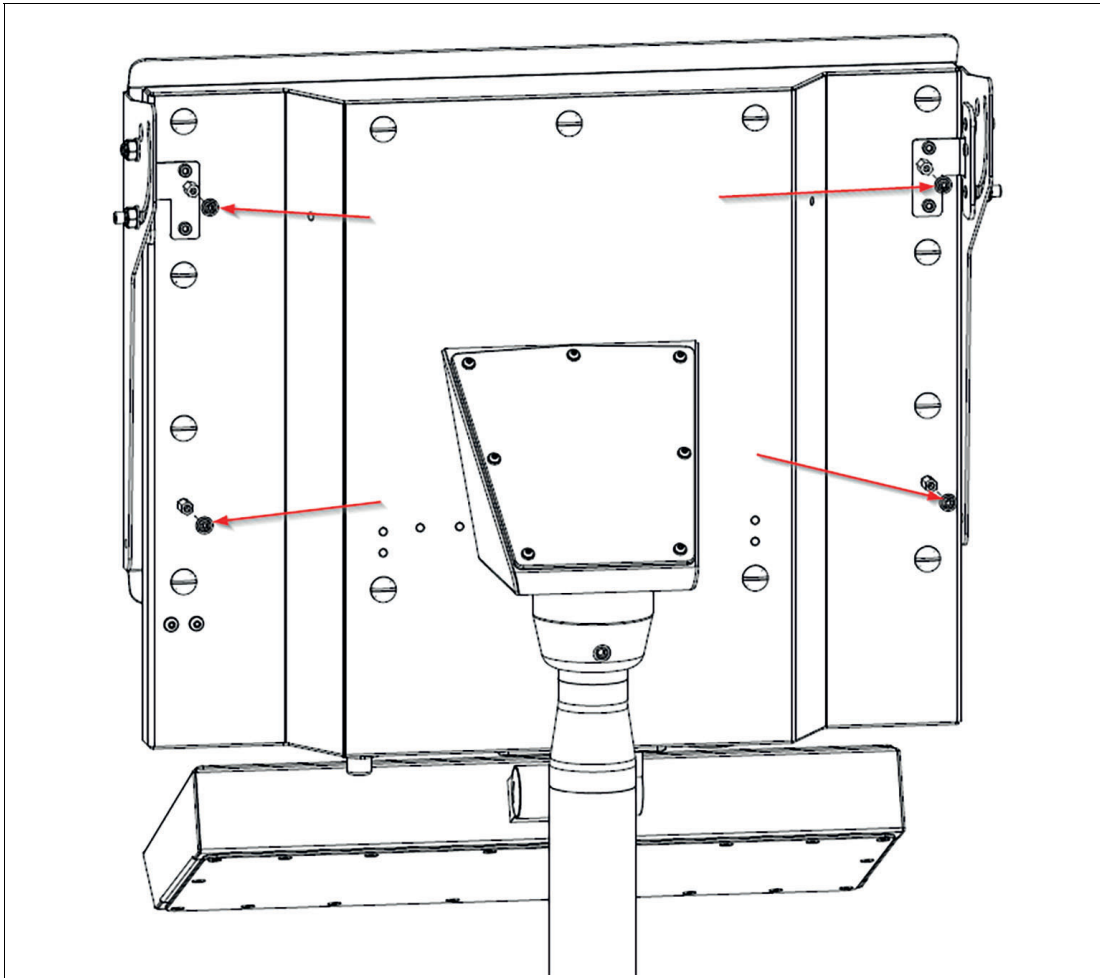

Figure 4.41

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6. Align back shield with the 2 or 4 screws with the keyhole slots and set into place.
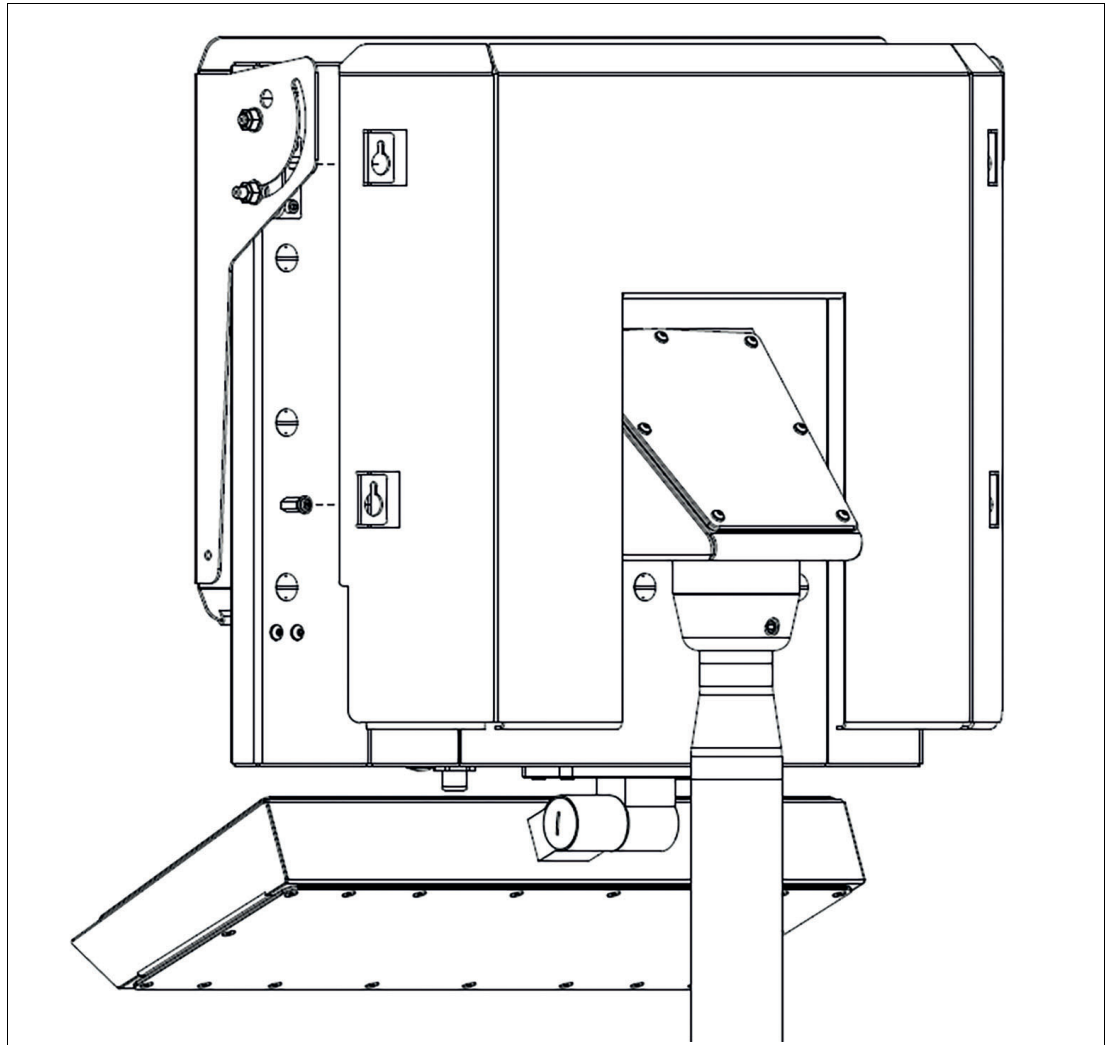

Figure 4.42

7. Tighten the 4 screws to a torque of 2.3 Nm if you do not install the sideshields. If you do install the sideshields only thighten the uper 2 screws to 2.3 Nm.

> **i** **Note**
>
> If side shields will be installed skip the next step.

8. Rotate sunshield top into desired operating position and tighten the 2 M8 nuts in slotted holes to a torque of 8 Nm.

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9. The sunshield top and back assembly are now complete.

Figure 4.43

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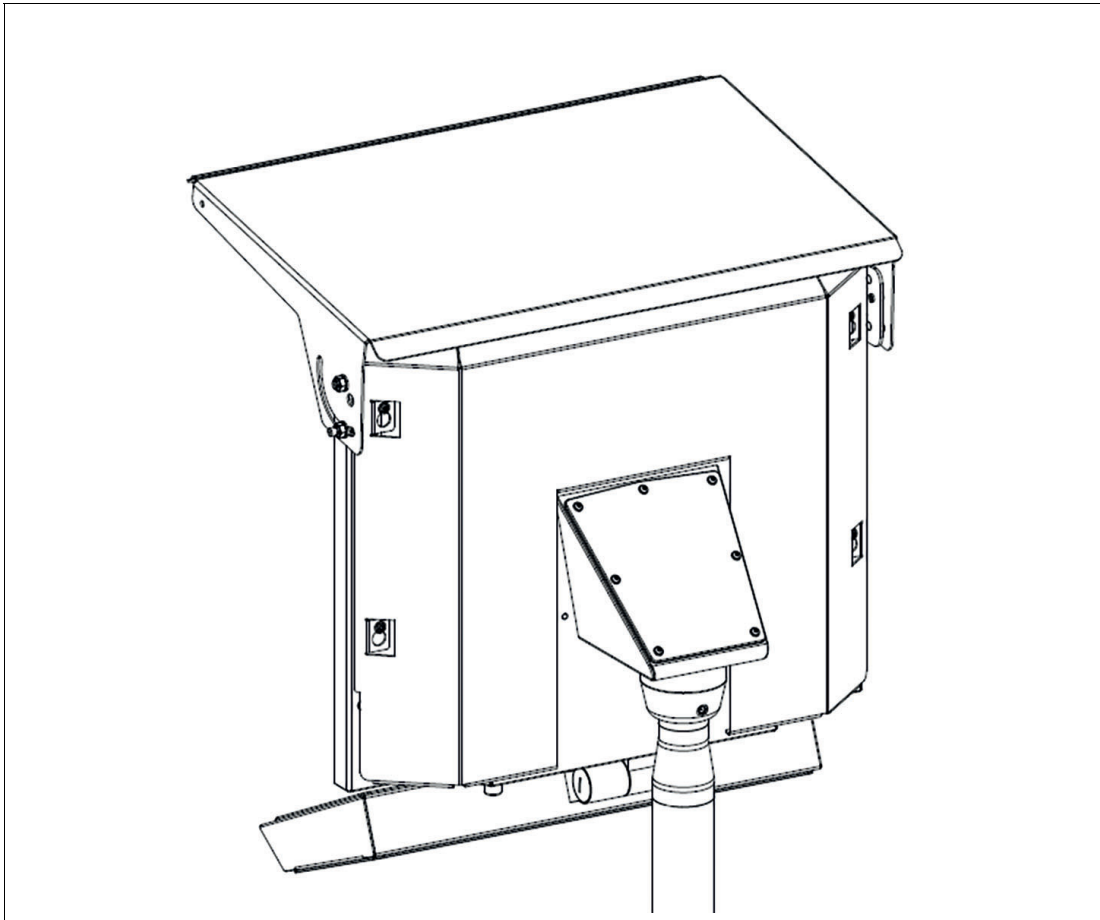
4.12.3 Side sunshield installation instructions

Note

Side sunshields can only be installed in combination with the top sunshield.

Follow the steps from see chapter 4.12.1.

1. Rotate top shield as shown until the side hole aligns with the screw mounting hole. Temporarily tighten nuts in slotted holes to hold the top shield in position.
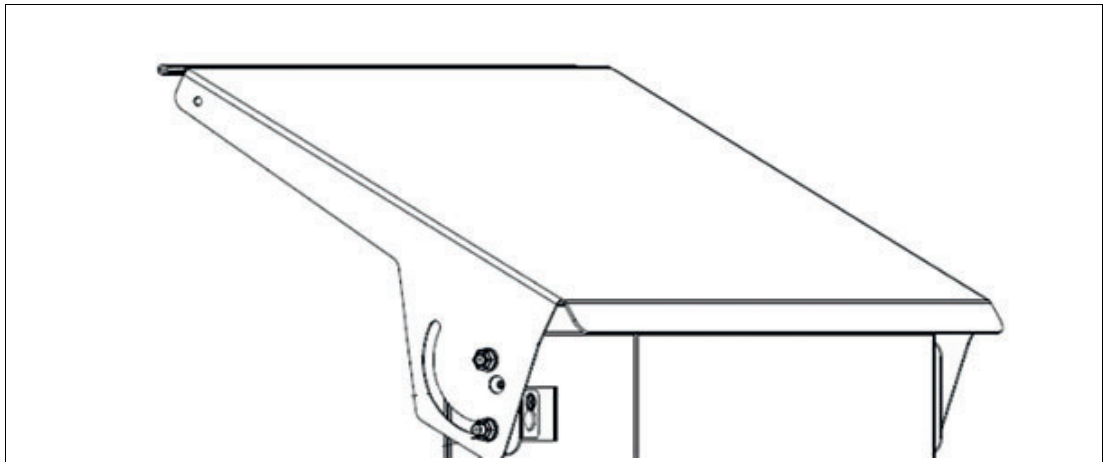

Figure 4.44

PEPPERL+FUCHS

2. Position the right side shield as shown by sliding into position between the top sunshield and the right mounting bracket. Rotate the side sunshield clockwise until the holes are aligned with the screw threads on the mounting brackets.
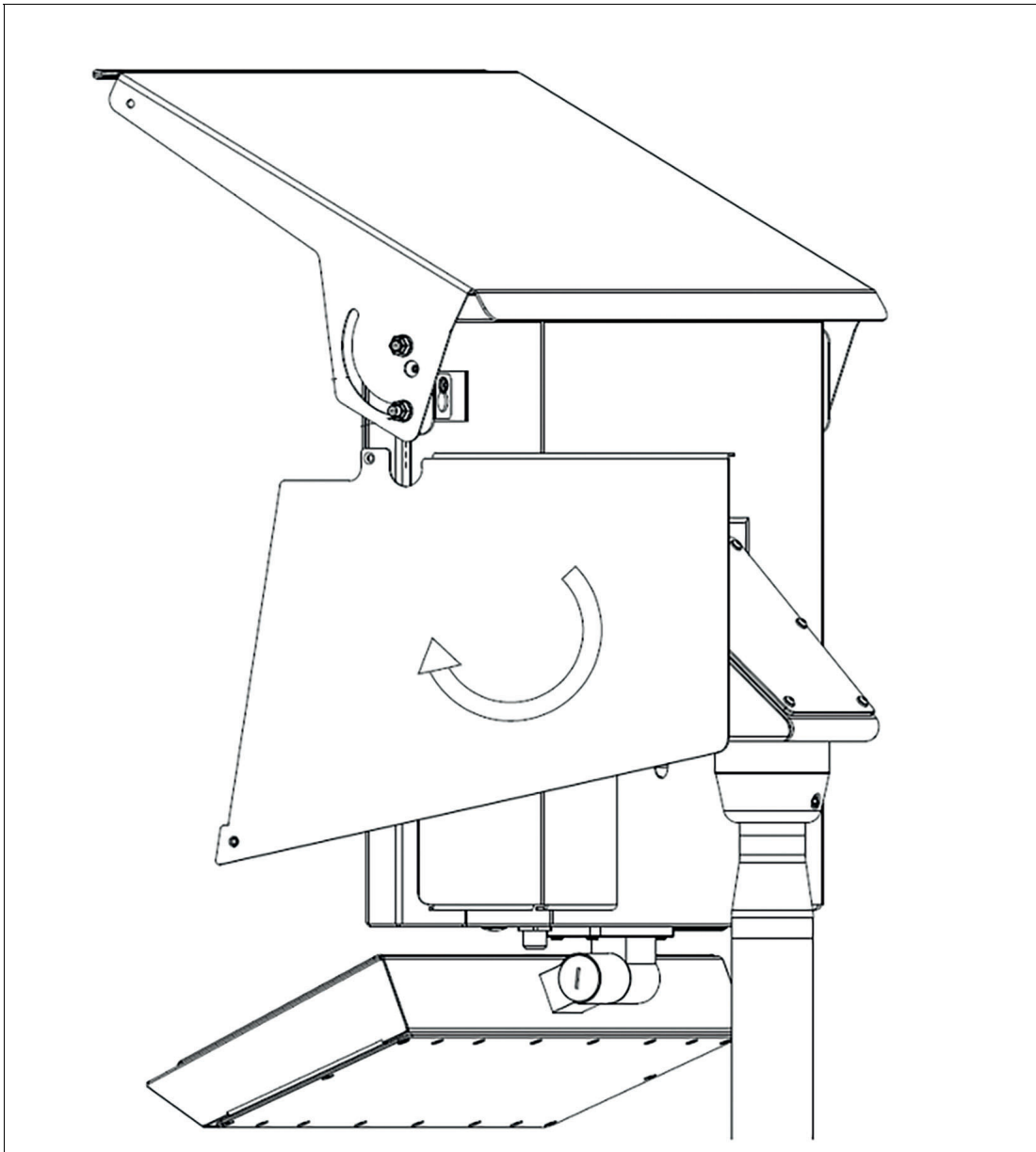

Figure 4.45

3. Install one flat head screw on the side and one button head on the back.

4. Tighten both screws to a torque of 2.3 Nm.

5. Repeat the process with the left side shield.

6. Loosen side nuts in slotted holes slightly and rotate the top shield down until the front corner holes are aligned with screw thread on the side shields.

7. Install 2 M5x8 Torx button head screws the front corners of the sunshield.

8. Tighten both screws to a torque of 2.3 Nm.

9. The sunshield (top + back + sides) assembly is now complete.

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5   General Electrical Installation Information

FLX *-320S-*A-*   FLX *-320S-*B-*

Warning!

Danger of explosion!

Only use cables and connection lines which are suitable for the application within a temperature rating of at least 80°C.

Danger!

Explosion hazard from wrong or missing equipotential bonding!

Wrong or missing equipotential bonding can cause sparks. This can ignite the surrounding potentially explosive atmosphere.

Connect the equipotential bonding of the device! Observe the equipotential bonding requirements.

Ensure that external equipotential bonding connections exist, are in good condition, and are not damaged or corroded.

Danger!

When installing the VisuNet FLX system, always ensure a proper equipotential bonding of all components, including housing and mounting parts (e.g., pedestal and wall bracket) with a cable diameter of at least 4 mm^2 (~12-24 AWG) in accordance with IEC 60079-14.

The VisuNet FLX is shipped with the following equipotential bonding (PB) wiring connections, if the AG-3200-* housing option is selected:

- PB wire from the computing platform housing PE stud to the AG-3200-*housing PB stud.

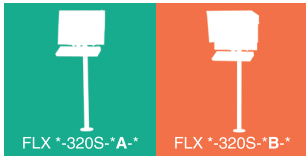- PB wire from the lens head screw of the panel to the adapter plate of the AG-3200-* housing PB stud.

Note

Refer to the manuals of the individual VisuNet FLX components for more information on electrical installation and wiring.

6 Interfaces

Caution!

Damage to the electronics!

The electronics can be damaged if plug-in connections are connected or disconnected while power is still being applied.

Make sure that no power is being applied while connecting and disconnecting cables!
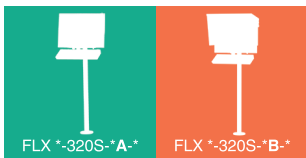
Warning!

Interfaces must have a strain relief in Ex-operation.

This can be achieved with the ATEN Locks (#548400)

6.1 Computing Unit - Interface connectors

For detailed information on the interfaces of the computing units refer to the BPC3200-* manual or DMU3200-* manual.

6.1.1 Power Limitations

Caution!

Our units are power-limited for compliance with Ex requirements and protection against overheating. For this purpose, the maximum operating conditions (maximum operating temperature at maximum load) are considered.

It is absolutely necessary to consider maximum allowed output currents when installing the VisuNet FLX in Zone 2/22 environment.

Maximum output currents VisuNet FLX system installation

Port	System
USB 2.0	250 mA
USB Ex-i Port A	100 mA
USB Ex-i Port B	100 mA
USB 3.0 Port A	500 mA
USB 3.0 Port B	-
Serial Ports (shared)	200 mA

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Note

For Non-Ex applications, these parameters serve as guide values and allow an increase of the VisuNet FLX system service life.

Refer to the VisuNet FLX Panel Mount manual and BPC3200-* manual to get detailed information on the maximum output current of these installations.

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7   Installing Peripherals

Warning!

Disconnect the entire power supply to the device before removing covers or components of the system and install/remove accessories, hardware or cables.

7.1   Mounting the Keyboard

The EXTA4-* is the system keyboard/mouse available with a mounting option for the VisuNet FLX system housing

Required Components

- VisuNet FLX pre-assembled in system housing
- EXTA4-* Keyboard

Required Installation Tools

All tools should be torque controlled if a torque is specified.

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Mounting the EXTA4-* Keyboard to VisuNet FLX Housing

Mechanical Installation description

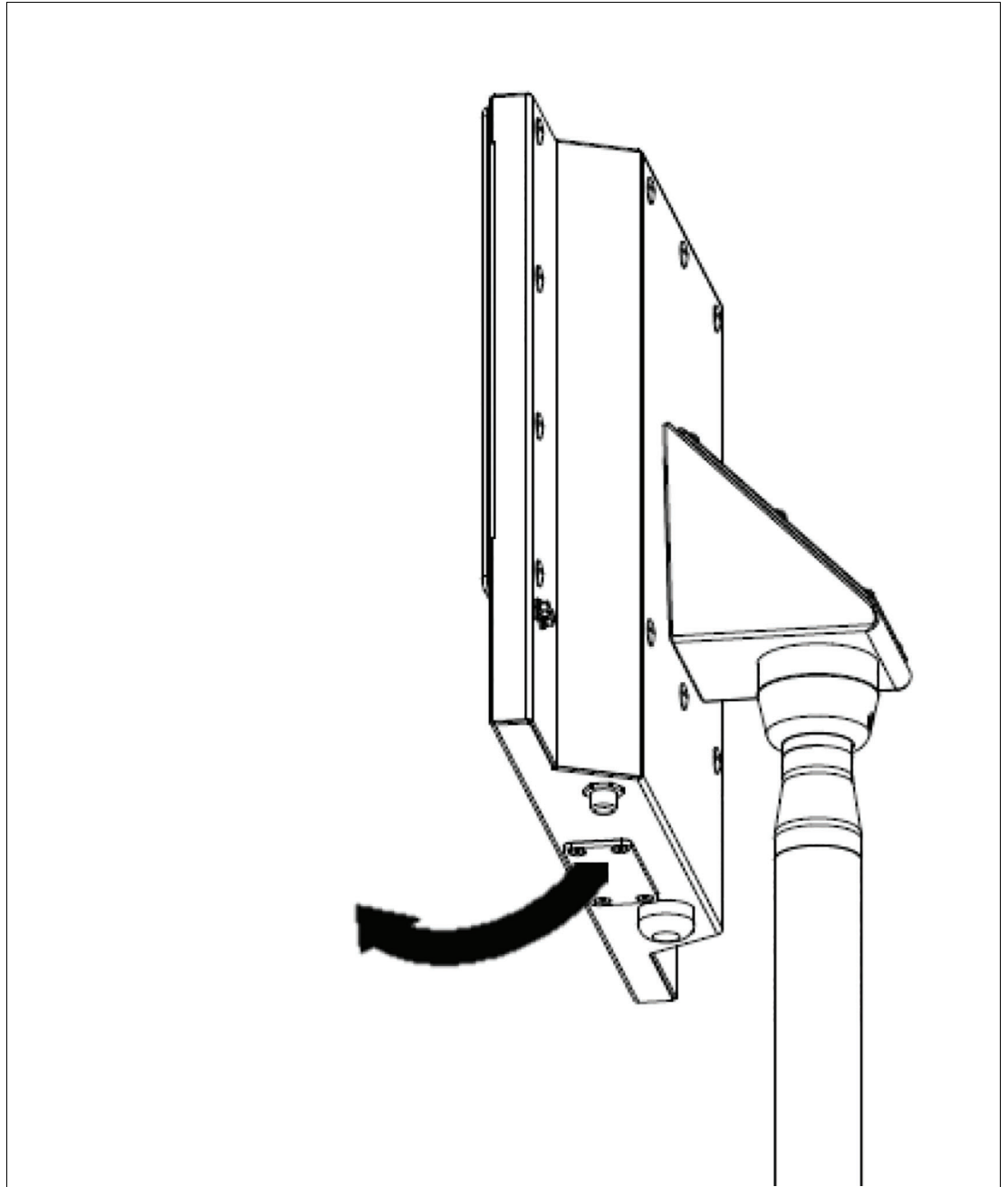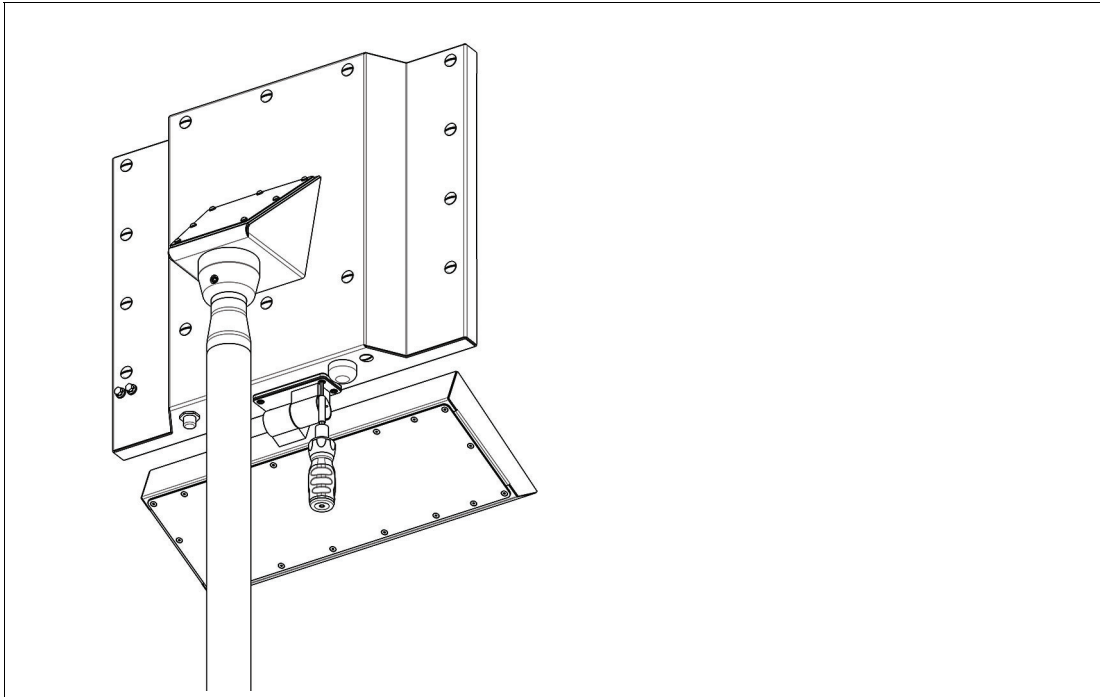1. Open and remove the four cover plate screws on the bottom-left side of the AG-3200 housing.

Figure 7.1

2. Route the keyboard cable with the USB connectors through the hole of the AG-3200 housing.

3. Using the screws and lock washers delivered with the EXTA4-*-H1-* keyboard, attach the keyboard to the AG-3200 housing.

4. Fasten the four screws with a torque of 6 Nm.

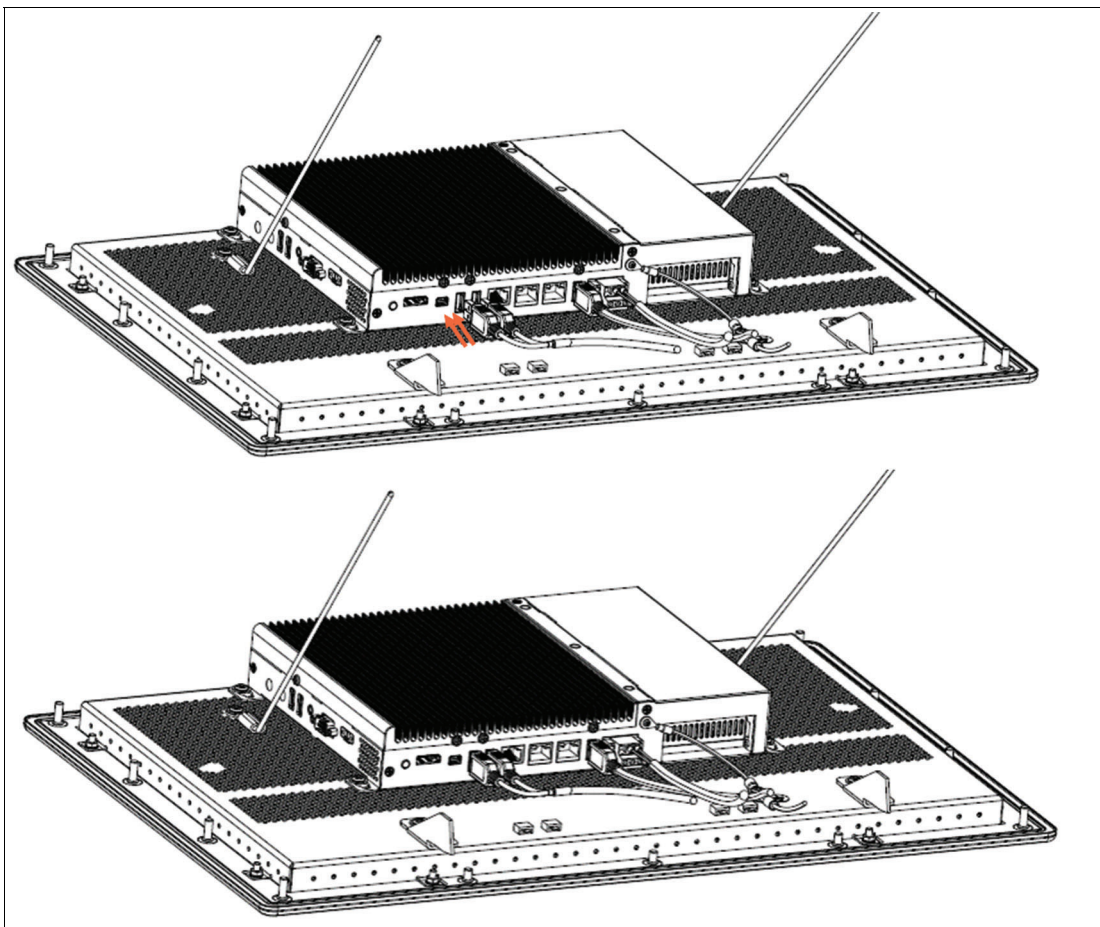5. Connect the USB connectors to the USB Ports of the BPC3200-*.
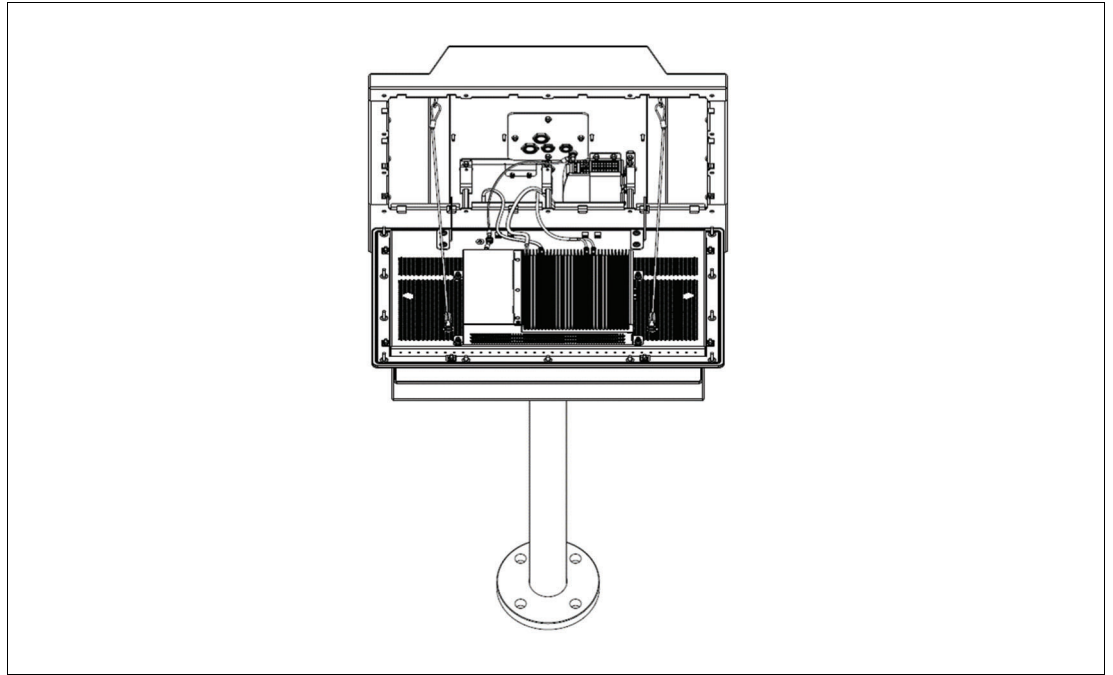

Figure 7.2

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PEPPERL+FUCHS

Figure 7.3

PEPPERL+FUCHS

7.2   Installing the IDM Zone 2/22 Barcode Reader

FLX *-320S-*A-*   FLX *-320S-*B-*

Mounting the IDM-* Barcode Reader Holder Bracket

SCANNER-HOLDER-U1-3200-N0 is a holder for the IDM-* handheld barcode reader family. The holder is compatible with the VisuNet FLX housing.

Required Components

- VisuNet FLX pre-assembled in AG-3200 housing with ADAPTER-3200-10-304B-M12
- SCANNER-HOLDER-U1-3200-N0 (#70129840, screws included) or HOLDER-BRACKET-3200-IDMx61-B-N (#70129841)

Required Installation Tools

- Size 8-socket wrench for housing screws
- 3-mm hex wrench for scanner holder screws

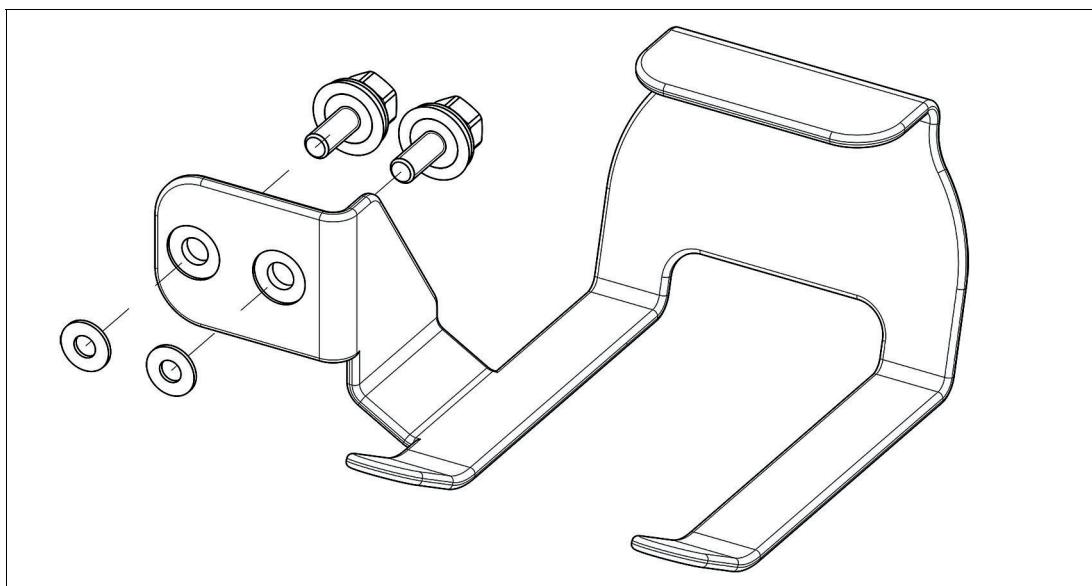All tools should be torque controlled if a torque is specified.

Figure 7.4

PEPPERL+FUCHS

Mounting SCANNER-HOLDER-U1-3200-N0 to AG-3200 Housing

1.   Remove the blind plugs on the right site of the back of the housing

Figure 7.5

PEPPERL+FUCHS

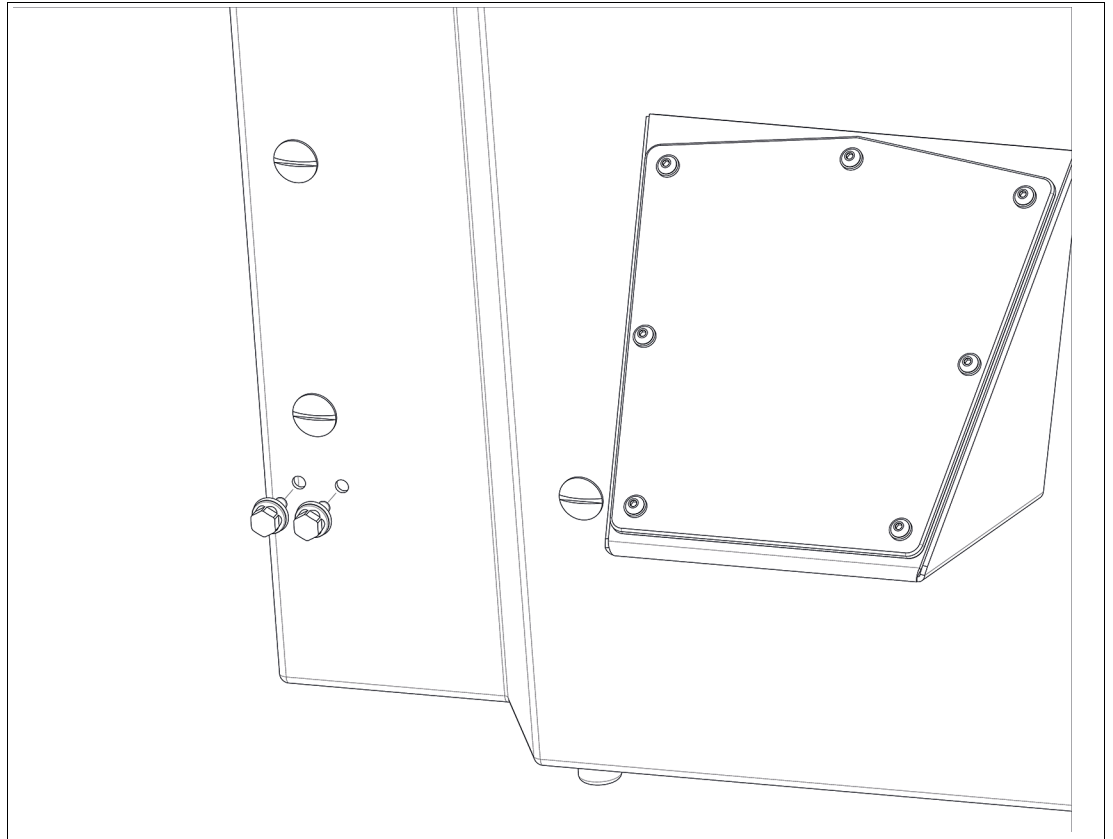**2.** Connect the scanner holder with the enclosed screws by pressing it against the housing from the outside and fasten the screws using a torque of 4 Nm.
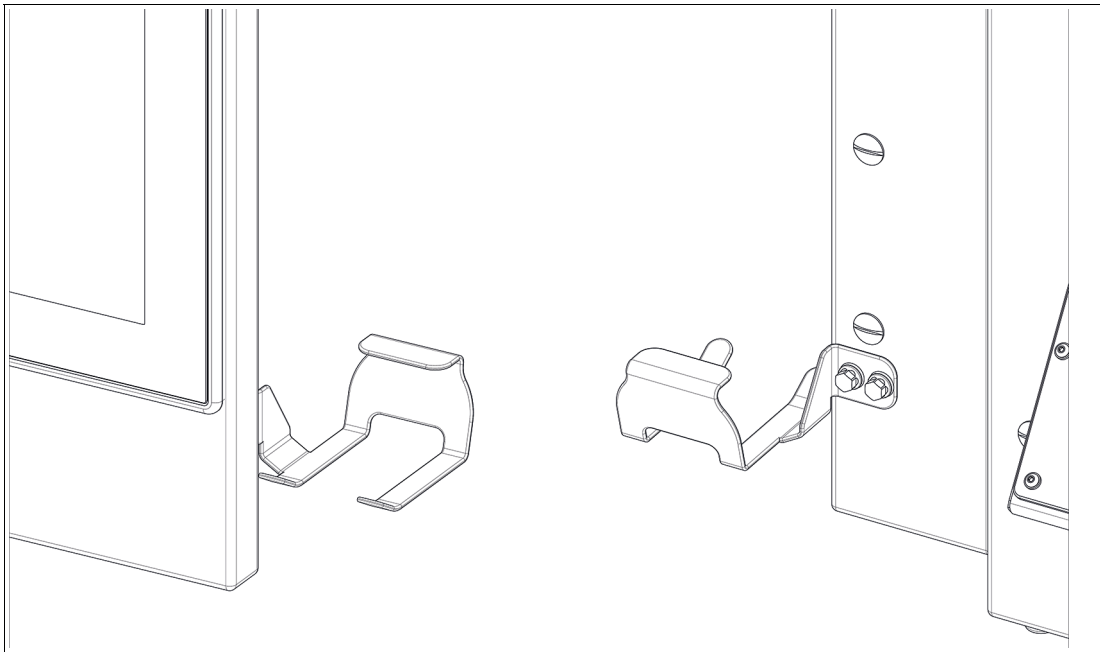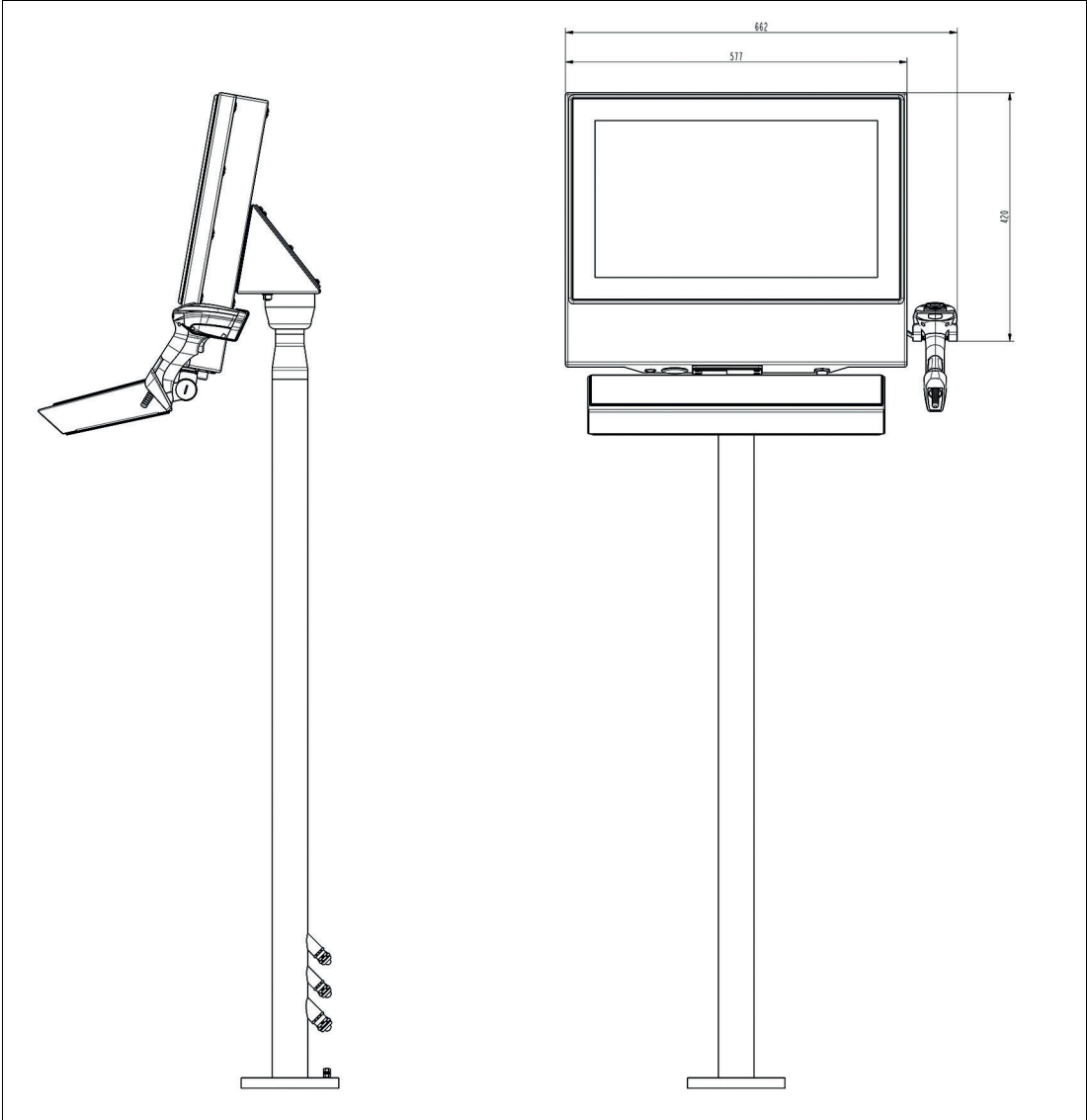

Figure 7.6

PEPPERL+FUCHS

Figure 7.7

PEPPERL+FUCHS

3. Follow the same steps to mount HOLDER-BRACKET-3200-IDMx61-B-N (#70129841). This bracket holds the IDM base station.

Figure 7.8

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Figure 7.9

![PEPPERL+FUCHS]
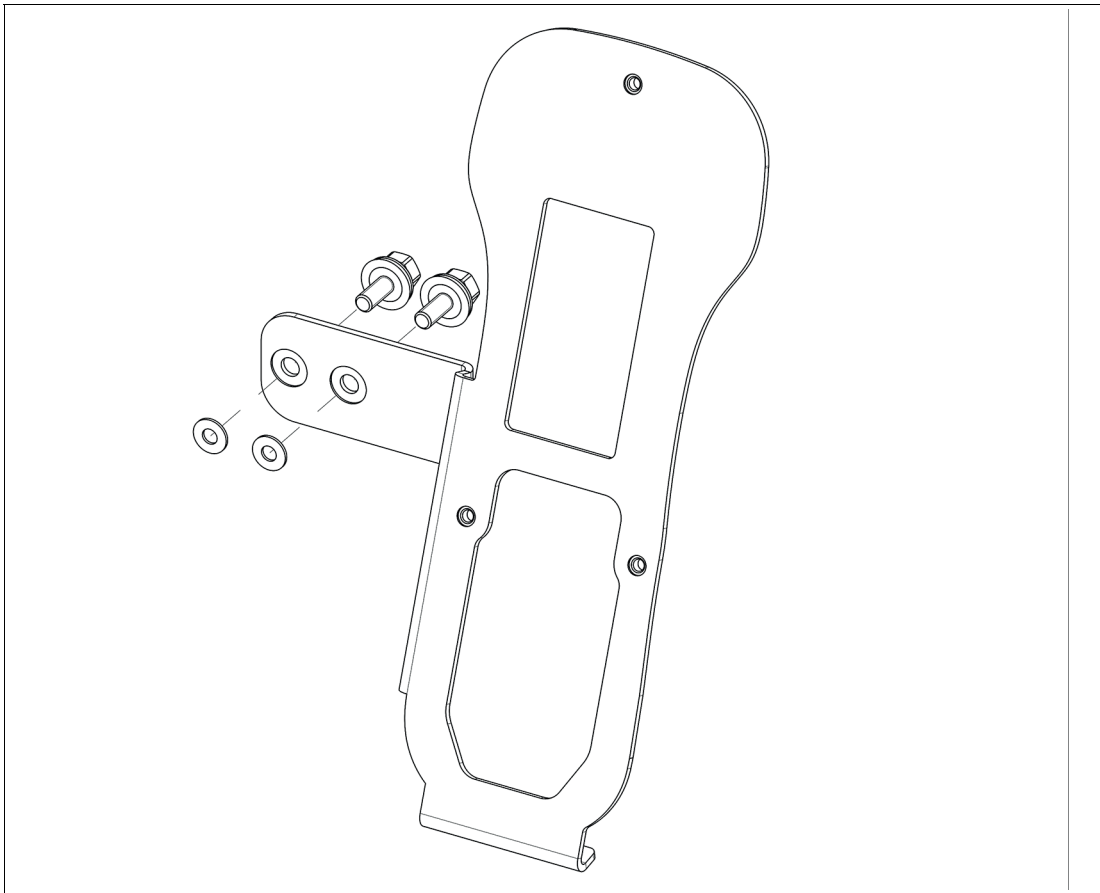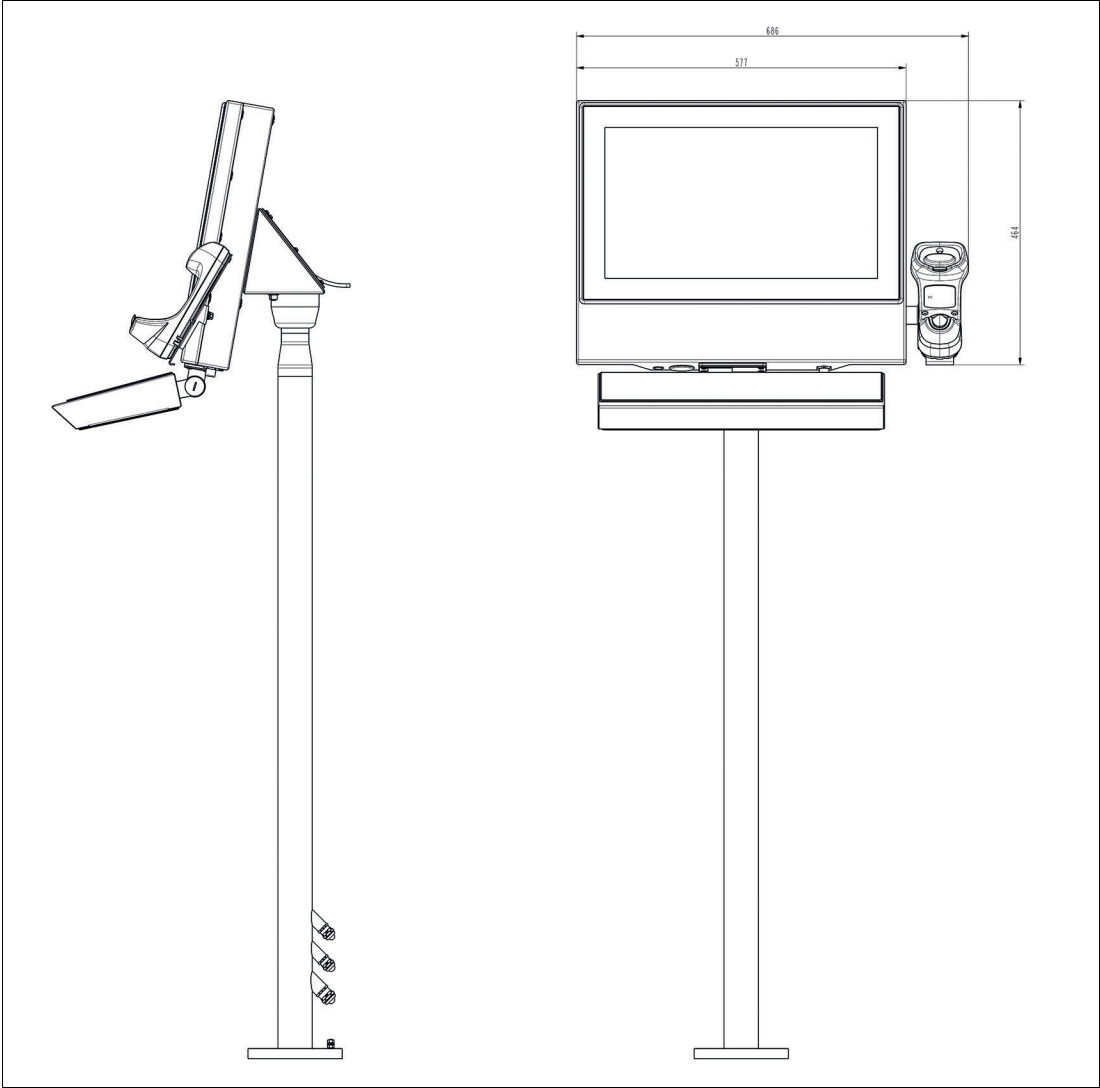
Cable installation for IDM Zone 2/22 Barcode Readers and Base Stations

For the installation of the IDM barcode readers the USB supply cable SK-IDM-Z2-J2-1M-U-N is necessary.

Required Components

- ADAPTER-3200-10-304B-M12
- KIT-IDM-Z2-USB-N0

- SK-IDM-Z2-J2-1M-U-N USB supply cable
- CBL-IDM160-D-J1-U-* USB connection cable
- IDM-Z2-160-D-1D-J2-*, IDM-Z2-164-D-1D-J2-*, IDM-Z2-260-D-2D-J2-S1-N-N0, IDM-Z2-264-D-2D-J2-S1-N-N0, IDM-Z2-x61-B-J2-BT-N0, IDM-Z2-x64-B-J2-BT-N0 and IDM-x61-* in combination with required Bluetooth® handheld barcode reader
- Optional: Scanner Holder or Holder brackets

Required Installation Tools

- Flat head screwdriver
- 19-mm socket wrench for counter nut and connector
- Size 2.5-hex wrench for cable tie screws
- Safety gloves

All tools should be torque controlled if a torque is specified.

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USB Supply cable SK-IDM-Z2-J2-1M-U-N

Figure 7.10   Supply cable for wired barcode readers IDM-Z2-160-D-*, IDM-Z2-164-D-* and base station IDM-Z2-x60-B-*, IDM-Z2-x64-B-* with USB connection - IDM barcode reader connection via M12 connector.

Note

Supports only USB barcode reader / base station

PEPPERL+FUCHS

Installing the supply cable SK-IDM-Z2-J2-1M-U-N

1. Open the housing. See chapter 4.5 and open die back plate of the adapter.

2. Fix the M12 connector in the hole of the adapter. Tighten the M12 socket with 0.6 Nm. The lock nut of the coupling in the adapter with 2 Nm.

Figure 7.11

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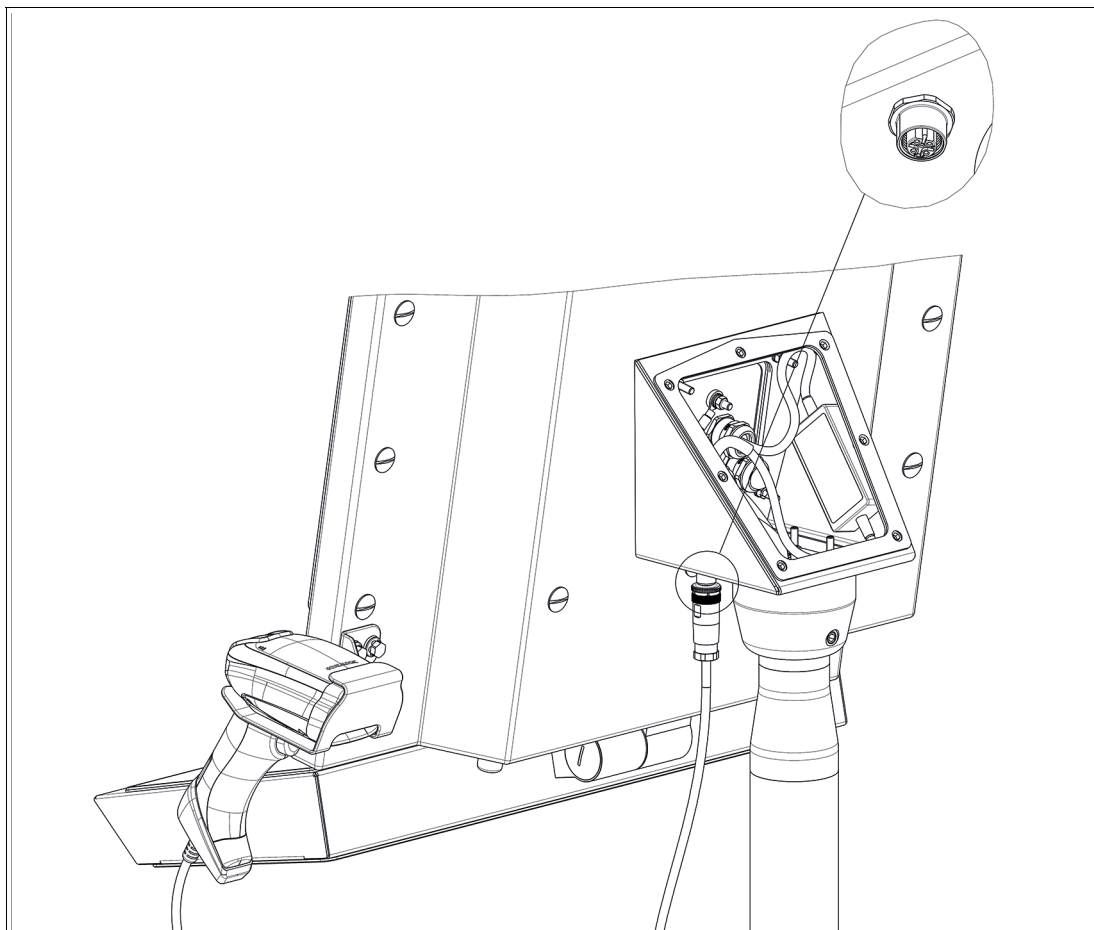
3. After installing the Ethernet and Power cables, remove cable gland N° 4 (M20 Ø7-12 mm)

Figure 7.12

4. Fix the integrated cable gland of the supply cable in the section that has become free. Fix it with a torque of 10 Nm.

Figure 7.13

PEPPERL+FUCHS
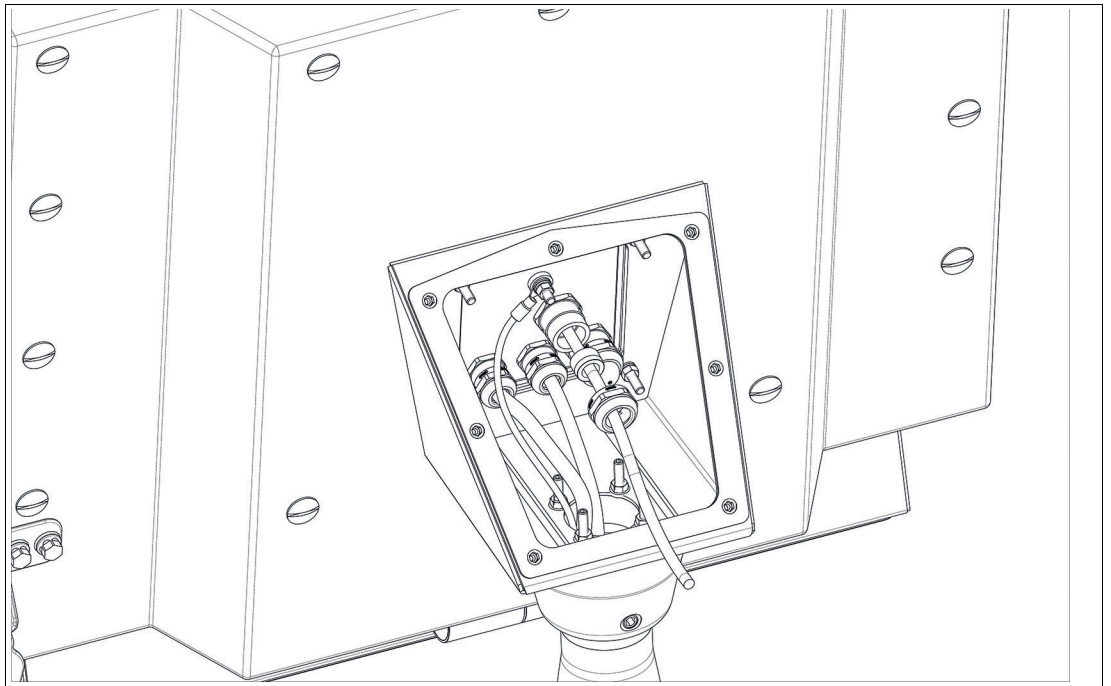
Figure 7.14

5. Connect the M12 plug of the supply cable to the connector in the adapter and tighten it firmly.

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6. Bend the cable as shown in the following graph.
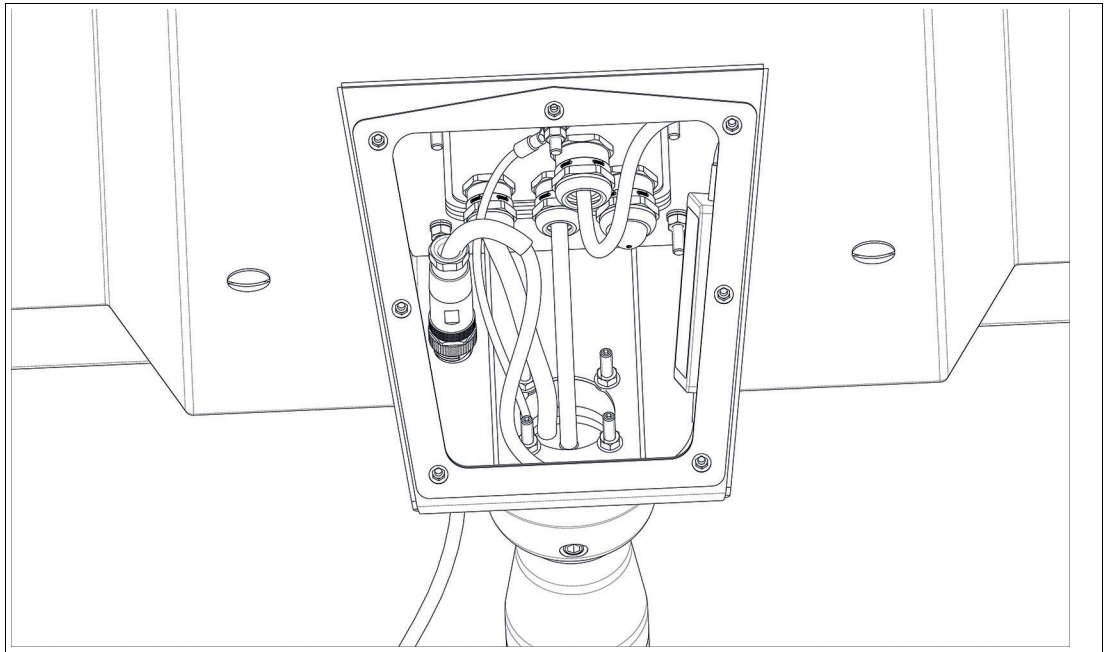
Figure 7.15

Figure 7.16

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> ⚠ **Warning!**
>
> Bending radius must be maintained.
>
> The maximum allowed bending radius is 80°.

Figure 7.17

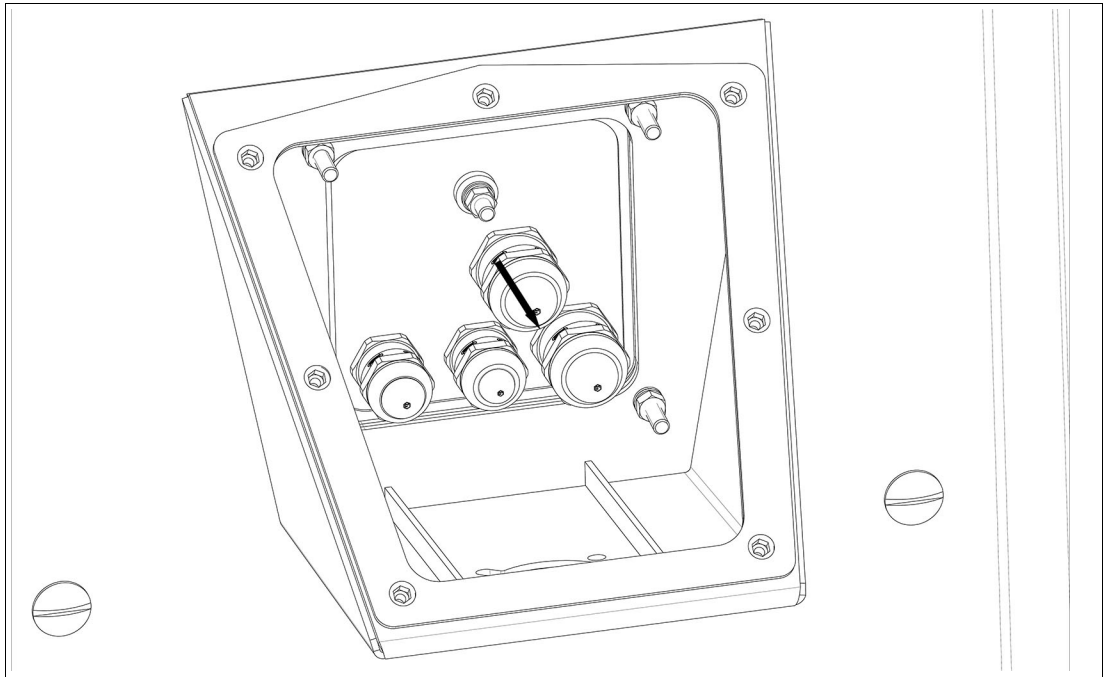**7.** Place the USB supply cable with the Velcro tape on the left side of the inner side of the adapter.

8. Connect the USB connector of the supply cable to the BPC3200-*.
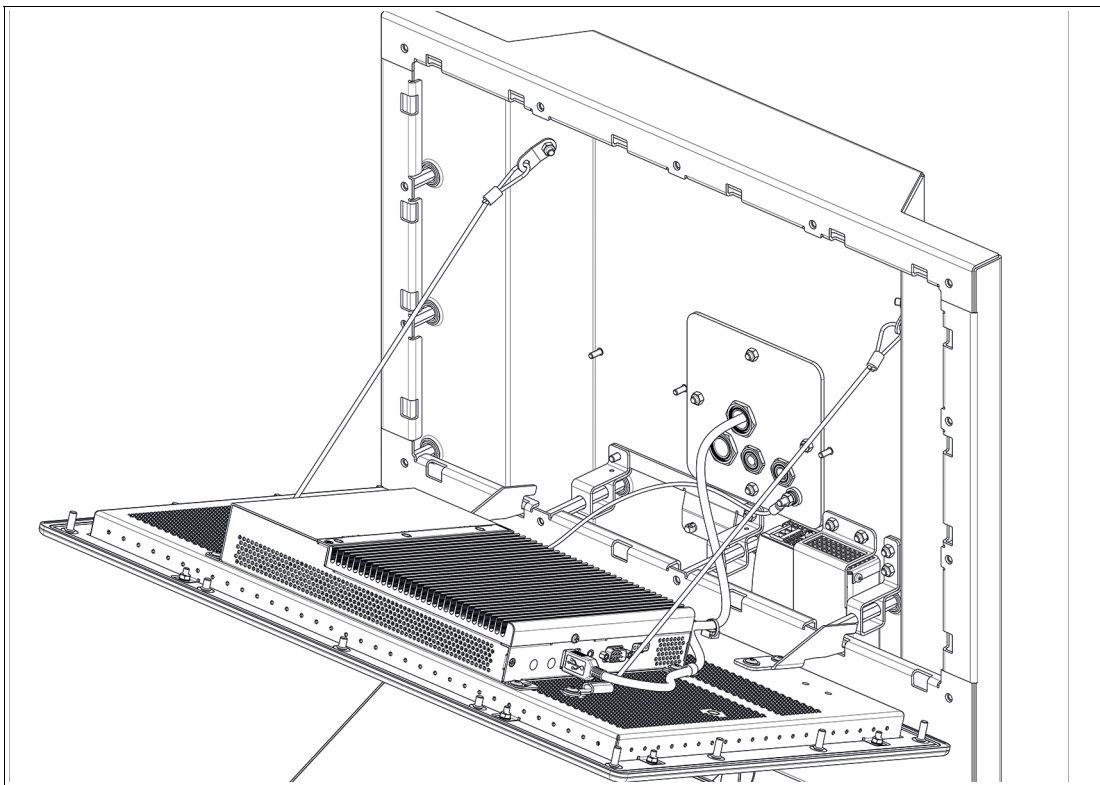
Figure 7.18

> ⚠ **Warning!**
>
> For operation in hazardous areas the interfaces of the BPC3200-* must be mechanically secured!
>
> The strain relief-locking mechanism can be provided by installing the available accessory ATEN-LockPro.

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PEPPERL+FUCHS
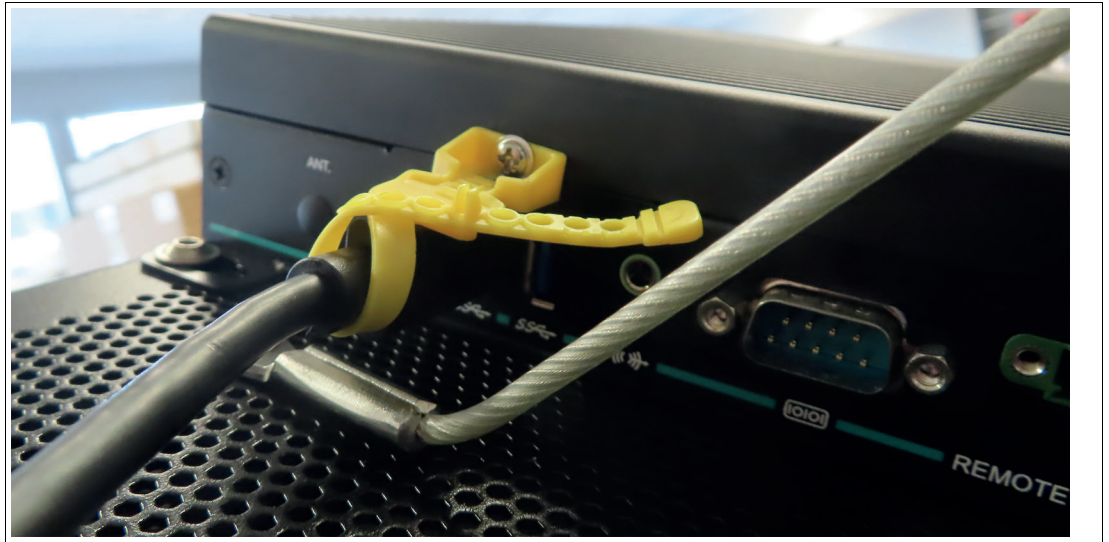
Figure 7.19

9. Use the cable clamp of the KIT-IDM-Z2-USB-N0 and cable ties to route the supply cable as shown in the following graph.

⚠ **Warning!**
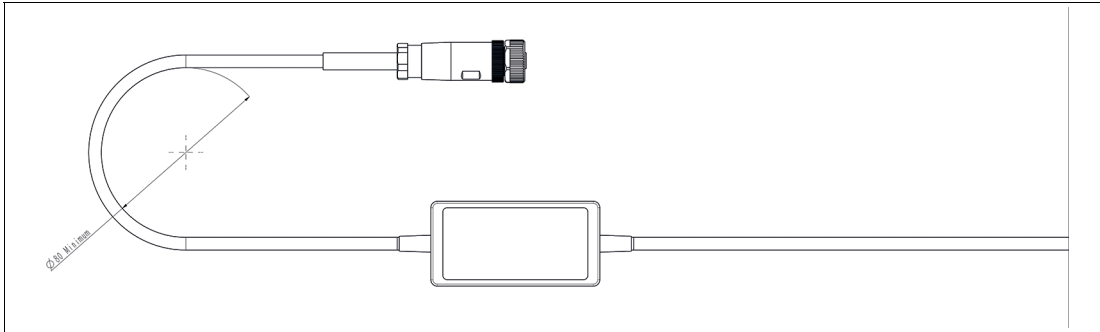Bending radius must be maintained. The maximum allowed bending radius is 80°.
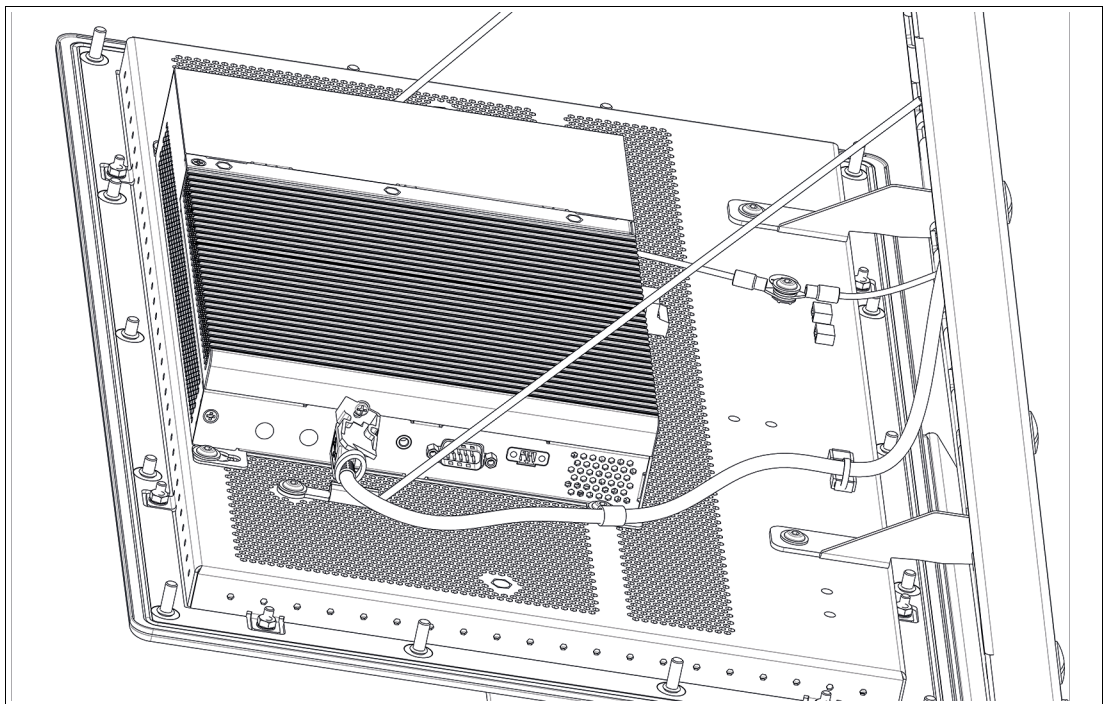
Figure 7.20

⚠ **Warning!**
Risk of cable damage!

The cables may become damaged during the closing process. Properly fasten all cables before closing the housing.

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10. Connect the plug of the barcode reader connection cable or base station connection cable to the M12 connector of the adapter and tighten it firmly.
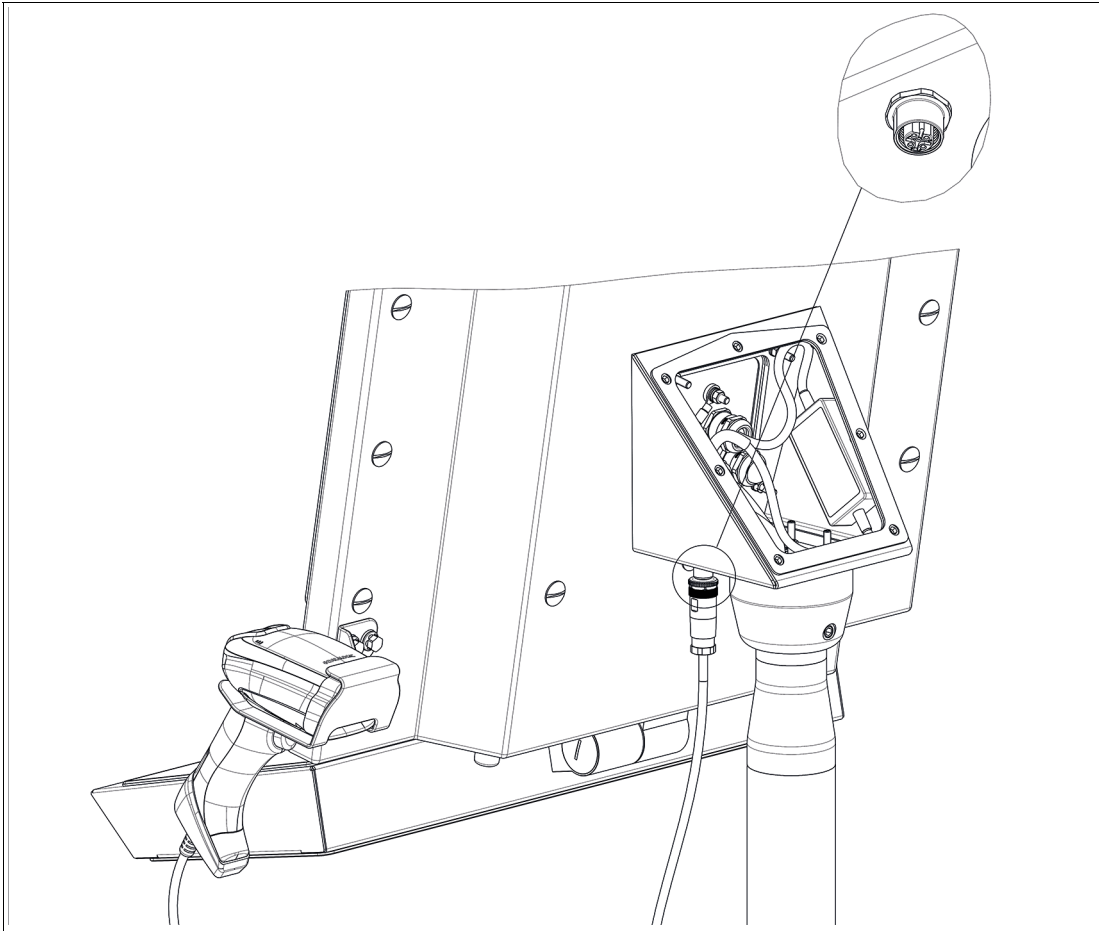
Figure 7.21

Coded Plug and Socket
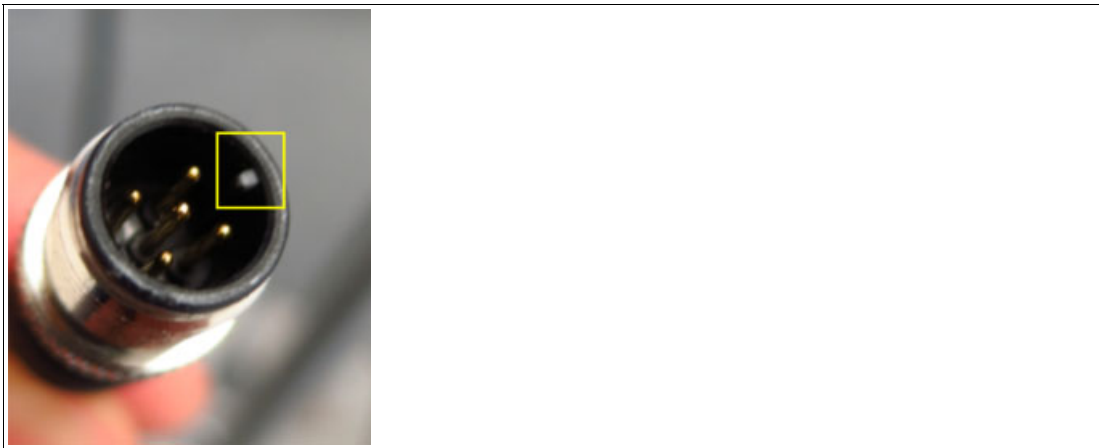
Figure 7.22   The plug and socket are coded. Match the coding on the plug and socket before tightening.

Note

For further information regarding the IDM Zone 2/22 barcode reader portfolio refer to the IDM barcode reader manuals.

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Important:

In case of an optional RFID Reader configuration it is necessary to install a ferrite core to the SK-IDM-Z2-J2-1M-U-N cable in order to meet certain electrical noise emission limits and to protect the VisuNet FLX from external influences. Please refer to chapter Installing the RFID Reader RFID20-* for detailed information.

7.3 Installing the Bluetooth®-Kit

FLX *-320S-***A**-*   FLX *-320S-***B**-*

Warning!

When the Bluetooth Kit is installed, the VisuNet FLX System is certified for ATEX and IECEx Zone 2/22 installations, not for use in Div. 2.

Optional Bluetooth® Installation:

Note

Steps 1 to 4 are obsolete if your VisuNet FLX has already a preinstalled Bluetooth® dome.

Hardware:

1. Remove the guide plate.

Figure 7.23

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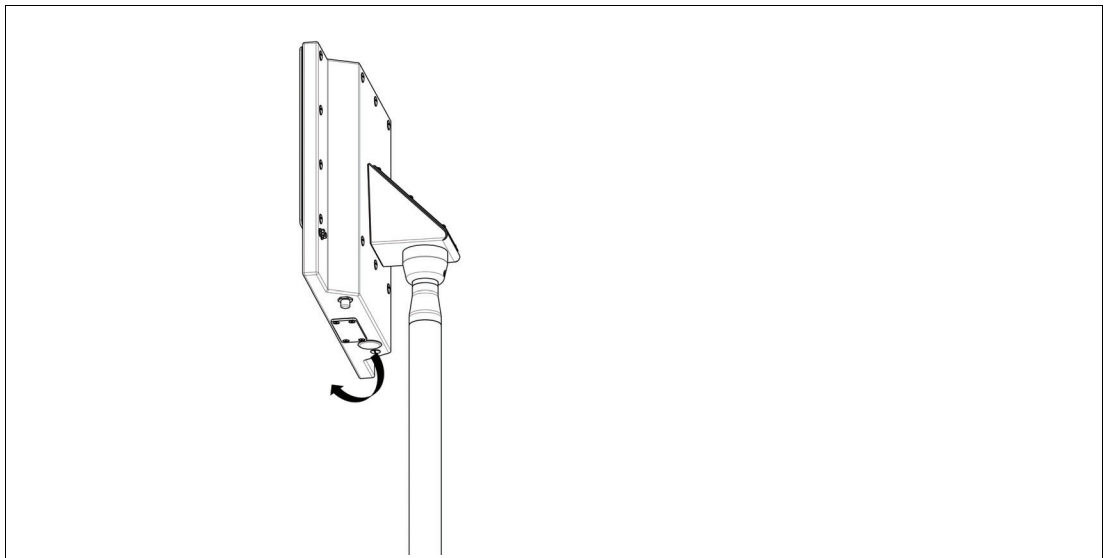
2.   Loosen the wing nut inside either with pliers or your hands.

Figure 7.24

3.   Remove the cover and the seal from the inside.

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4. Insert the black Bluetooth® dome and lock it with an enclosed nut:
a) Make sure that the locking lug is in the right position.
b) Use a socket wrench to fix the nut.

Figure 7.25

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5. Attach the prepared Bluetooth® assembly (dongle + holder + cable) and snap it into place by turning clockwise.

Figure 7.26

6. Plug the USB cable into the BPC.

Software:

1. No additional driver is necessary for the Bluetooth® application.

2. Open the Windows® Dialog and follow the steps to pair the devices.

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7.4 Installing the RFID Reader RFID20-*

The RFID reader comes preinstalled in the VisuNet FLX housing.

3x ferrite cores are included in the delivery.

For details how to set up the software please refer to the RM Shell manual or to ELATEC directly.

For mechanically details and cleaning and maintenance please refer to the RFID reader RFID20-* manual.

Important:

To meet certain electrical noise emission limits and to protect the VisuNet FLX from external influences, it is necessary to install a ferrite core on the following cables connected to the BPC3200-*:

- every Ethernet cable

- SK-IDM-Z2-J2-1M-U-N cable for IDM handheld reader connection

To install the ferrite, simply route the cable through the center of the core and then take one wrap around the outside of the core and route the cable through again, in total there must be 2 turns.
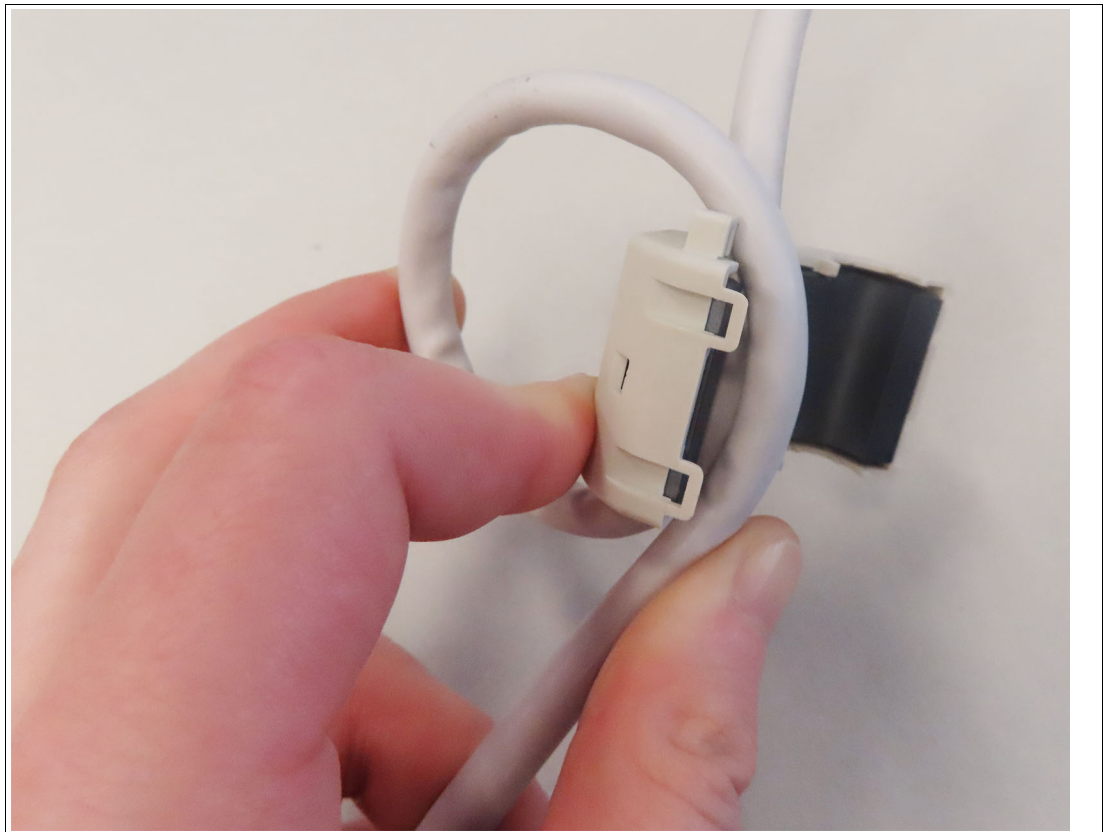
Figure 7.27

This should be done as close to the enclosure as possible. Fix the ferrite cores with cable ties.

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Figure 7.28

PEPPERL+FUCHS

8 Equipping the System with Expansion Modules
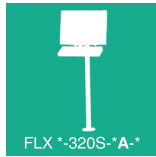
FLX *-320S-***A**-*

Expansion modules can only be configured with VisuNet FLX *-320S-*A-* (stainless steel housing).

Warning!

Functionality is only ensured when using the expansion modules available from Pepperl+Fuchs.

Expansion units with operating elements

For customized solution a large selection of different operating elements like push buttons which are already qualified is available.

Figure 8.1

Note

Indoor use only!

Warning!

VisuNet FLX systems with installed control elements are suitable for indoor use only.

Additional control elements must be protected from direct sunlight and ultraviolet radiation.

Note

Depending on the configuration of the control elements the IP rating may differ from the standard configuration.

Let our Solution Engineering Centers (SEC), which are located all over the world, derive an individual solution based on VisuNet FLX that is tailored to your application.

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Warning!

Keep the distances of the installed cables according to IEC 60079-14.

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9 Maintenance, Cleaning and Disposal

FLX *-320S-***A**-* FLX *-320S-***B**-*

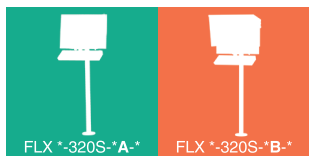All VisuNet FLX models perform a degree of thermal management to avoid overheating under heavy load. The VisuNet FLX devices have an internal temperature sensor, which software on the GPU polls to ensure that temperatures do not exceed a predefined limit.

Note

Operating temperature has influence on the VisuNet FLX lifetime.

Caution!

Suitability for Zone 2/22 and DIV 2!

Substitution of components may compromise suitability for Zone 2/22 and DIV 2.

Caution!

Use only approved spare parts.

The installation of spare parts not intended for the VisuNet FLX may damage the device, machine or system. The warranty is void if you install spare parts that are not permitted.

Only original service parts from P+F are allowed to be used.

9.1 Frequency Management

FLX *-320S-***A**-* FLX *-320S-***B**-*

The following maintenance intervals must be observed

Interval	Location	Activity
Daily	Overall device	Visually inspect for loose objects and visible damage
Monthly	Fixing screws	Check that they are seated securely; tighten as necessary
Optional, if installed:		
Daily	Emergency stop button	Check that it functions correctly

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9.2 Maintenance

FLX *-320S-*A-*   FLX *-320S-*B-*
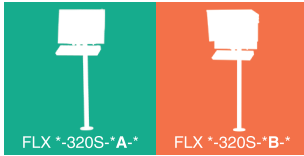
Warning!

When exchanging any components, it is mandatory to follow the single de-/installation steps!

Warning!

Before cleaning the device with a water jet (e.g. by using a high-pressure cleaner), make sure that there is no damage to the device (e.g. display, housing, cable glands, etc.).

9.2.1 Dismounting the Display Unit

FLX *-320S-*A-*   FLX *-320S-*B-*
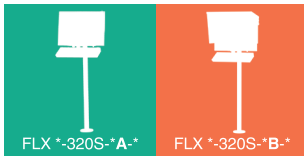
If repairs are required, the DPU can be dismounted from the BPC3200-* or DMU3200-* and be replaced.

Warning!

Danger of Explosion!

An ignition may be triggered if the BPC3200-* or DMU3200-* is still energized when its terminal compartment is opened. Turn off the BPC3200-* or DMU3200-* and wait 3 minutes after de-energizing before opening the terminal compartment.

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Dismounting the DPU 3200-*

1. Open the AG-3200-* housing. See chapter **4.5 Open the Housing**. After de-energizing (see above), open the terminal compartment of the BPC3200-*/DMU3200-*.

2. Remove the two PB conductors from the PB stud on the back of the DPU.[1]
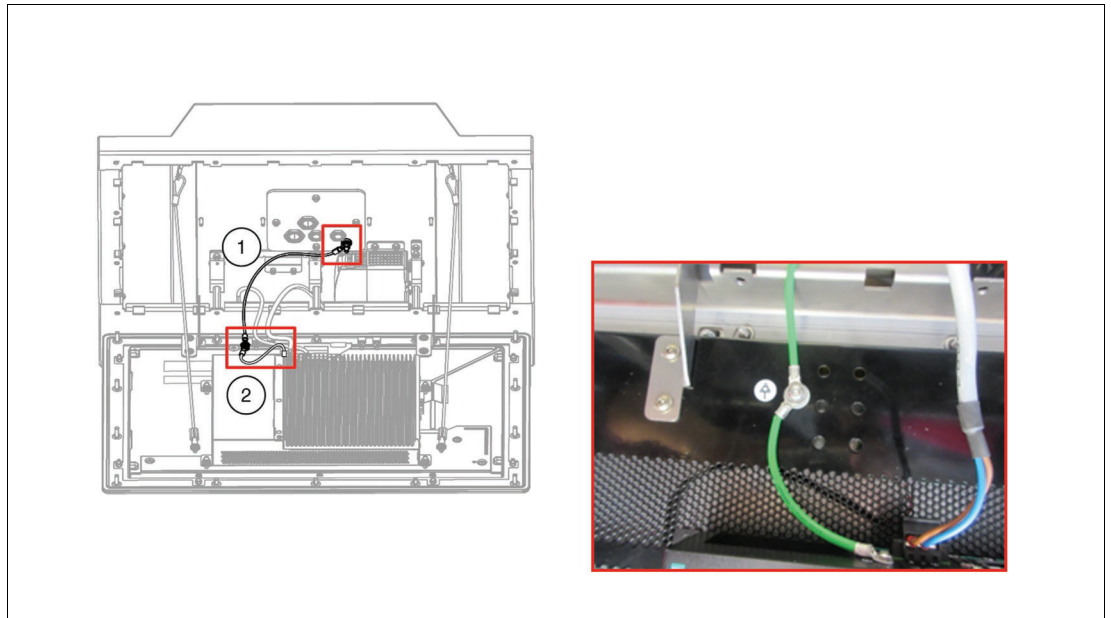
Figure 9.1

3. Open the side cover of the BPC3200-* in case of a DMU3200-* remove the cover plate and remove the pins (USB-Touchscreen signal, LVDS-video signal and Inverter - LCD backlight) from the sockets of the DPU. Make sure to pull all cables evenly and smooth.

> **i** **Note**
>
> Pull all cables evenly. Use slightly more force on the LVDS cable.

Figure 9.2

---

1. Use a torque of 4 Nm for tightening the PB hardware during the DPU reassembly process when these steps are performed in reverse order.

4. Remove all 4 screws from the back of the BPC3200-*/DMU3200-* and take it off the DPU[1].
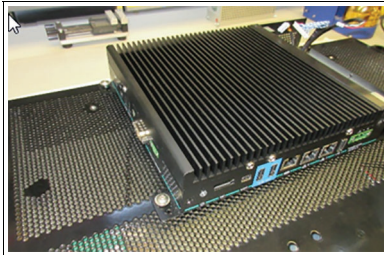
Figure 9.3

5. To simplify replacement of the DPU, temporarily hold the BPC3200-*/DMU3200-* in place using cable ties. Put cable ties through both mounting holes at the top-left and top-right corners, and hang the BPC3200-*/DMU3200-* from the top of the housing frame.
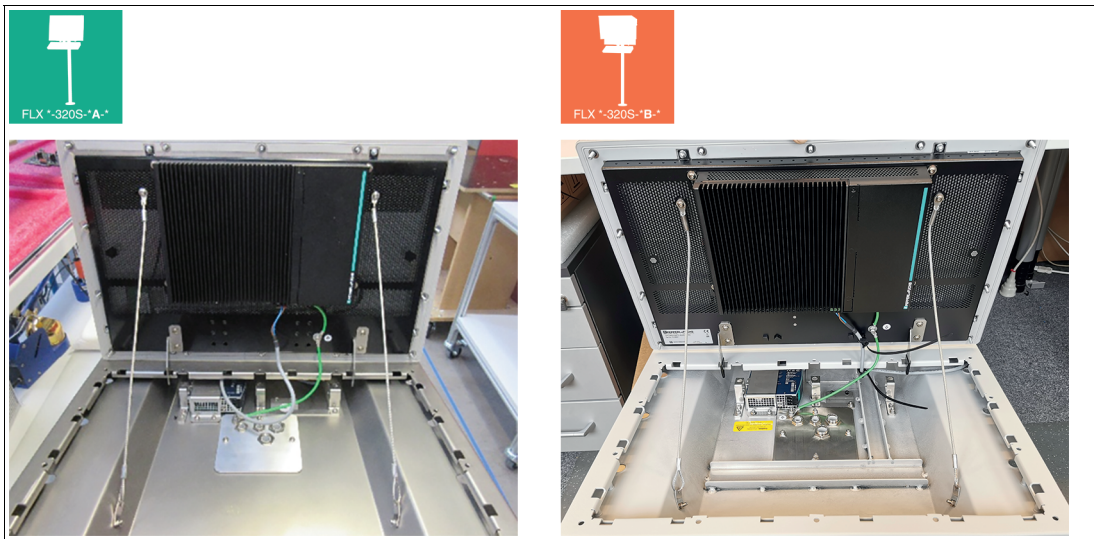
Figure 9.4

6. Remove PB and cable ties.

7. Now the DPU can be removed from the housing. During the removal process, hold the DPU steady so it cannot fall down, preferably with the help of another person. Place the DPU on an even, cushioned surface after removal. To remove the DPU from the housing, take the cables out of the carabiners and unhook the DPU from the housing cover.

8. See pictures below: Remove the two holder brackets (1) and the 10 bolts at the top, sides, and bottom of the DPU (2). Remove the carabiners (3) from their brackets, take out the 6 bracket screws (4), and loose the screws of the carabiner brackets.[2]

> **Note**
>
> When mounting back the BPC3200-* or DMU3200-* to the DPU, be sure to slide it all the way up - leave no clearance at the top of the screw bracket.

---

1. Use a torque of 4 Nm for tightening the 4 screws of the computer unit when these steps are performed in reverse order.

2. Fasten the safety lines to the back of the screen with a torque of 4 Nm and attach the hooks back by pulling them tight with the screws with a torque of 4 Nm when steps are performed in reverse order.

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VisuNet FLX *-320S-*A-*
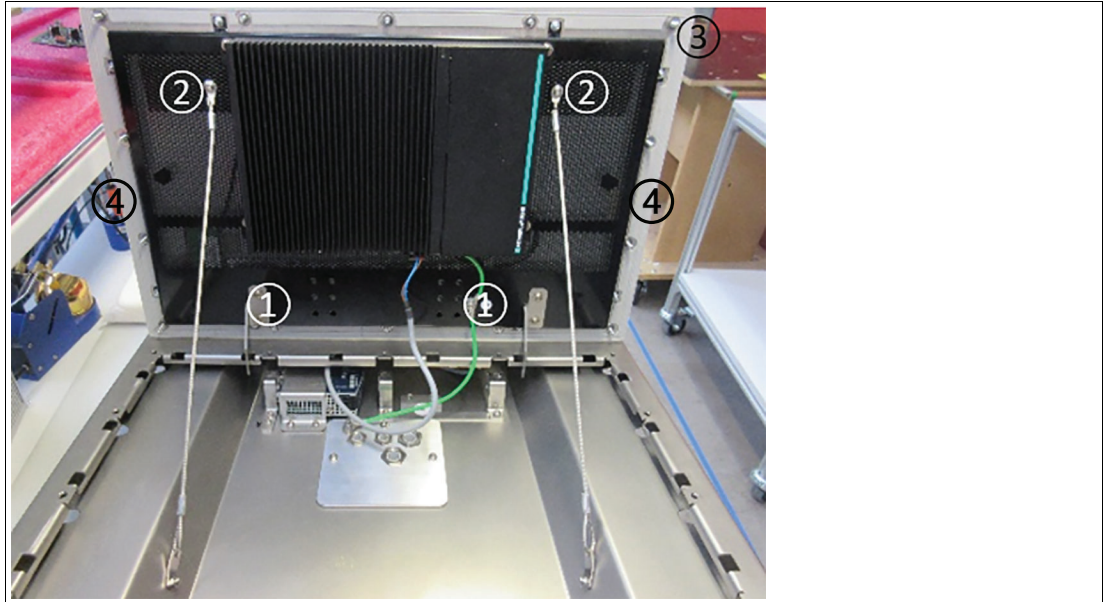
FLX *-320S-*A-*

Figure 9.5

VisuNet FLX *-320S-*B-*

Figure 9.6

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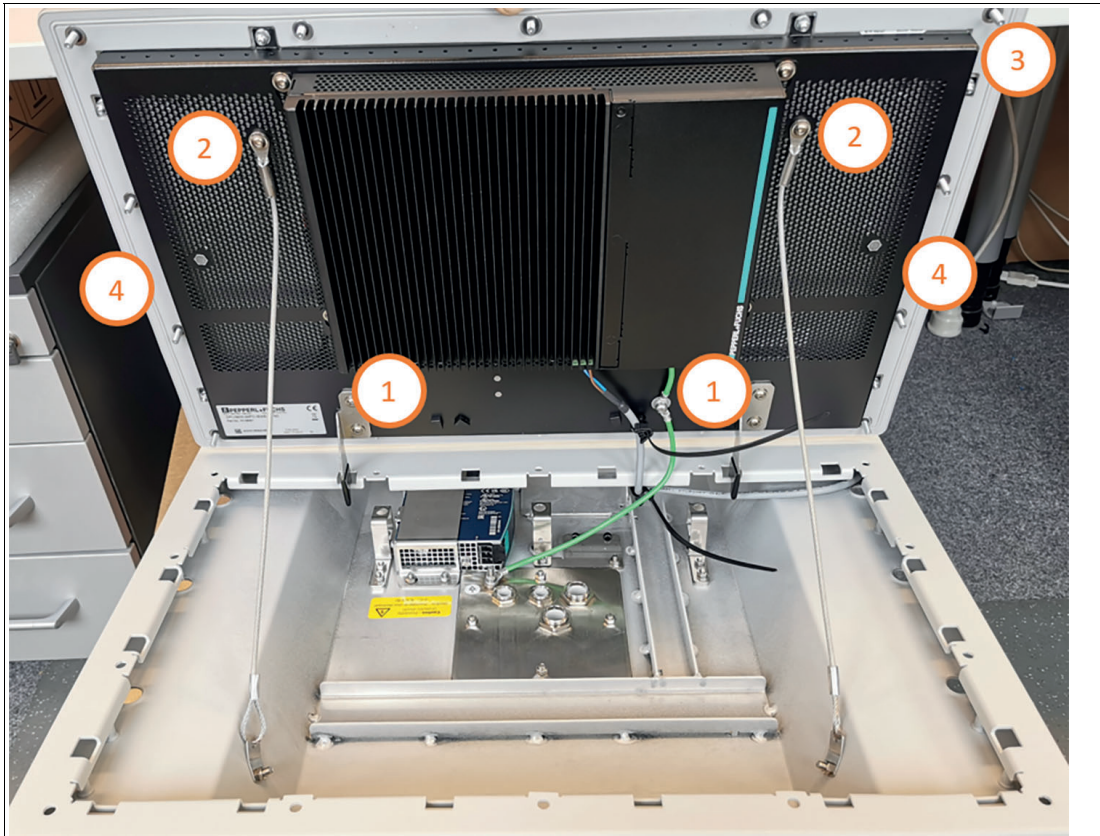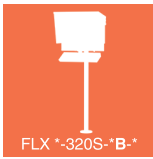
9.2.2 Exchanging the PSU

FLX *-320S-***A**-*   FLX *-320S-***B**-*
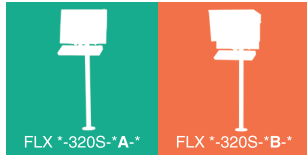
Procedure

1. Remove the connected field input cables from the PSU.

2. Remove the metal holder from the system.[1]
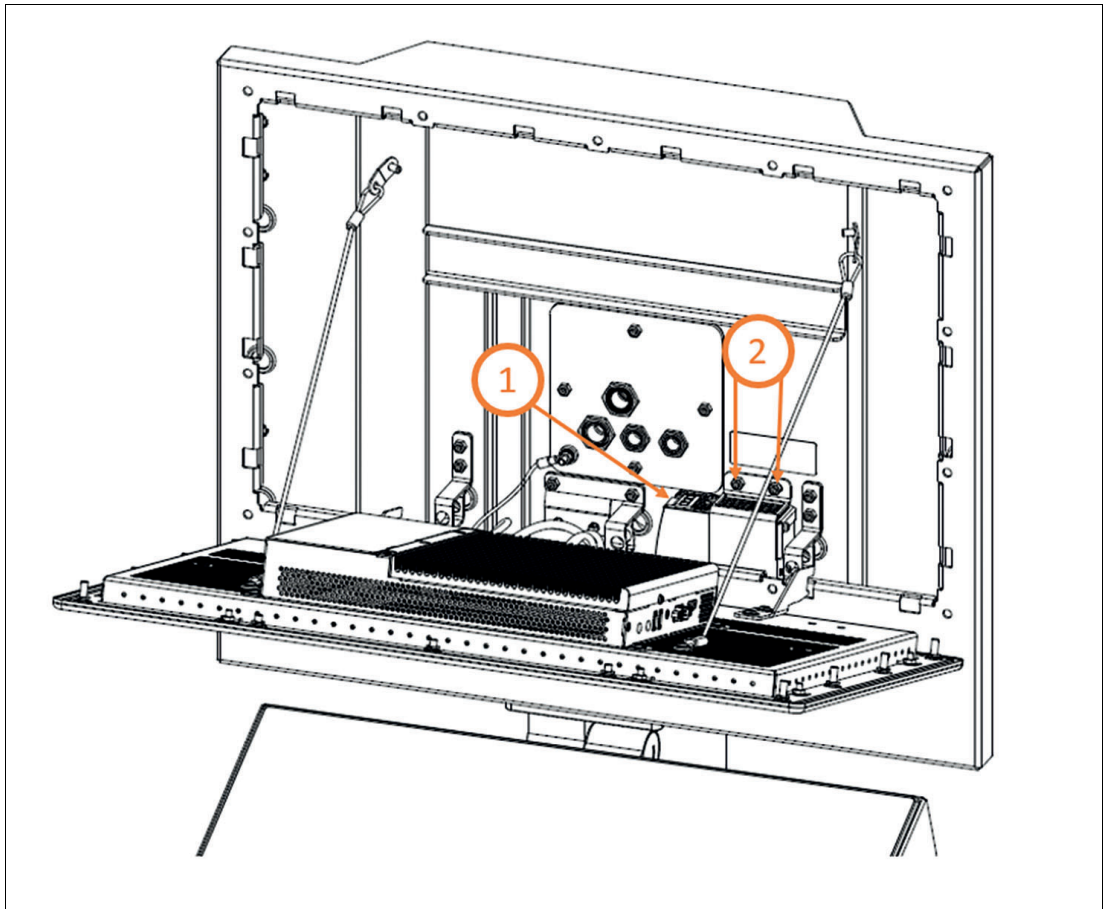
Figure 9.7

3. Remove the output cables from the PSU.

4. Remove the PSU from the metal holder.[2]

---

1. Use a torque of 2.3 Nm for tightening the PSU to the housing with two nuts when these steps are performed in reverse order.

2. Use a torque of 0.8 Nm for tightening the screws when these steps are performed in reverse order.

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9.3 Exchanging the BPC3200-* or DMU3200-*

FLX *-320S-*A-* FLX *-320S-*B-*

Procedure

1. Open the AG-3200-* housing. See chapter 4.7. After de-energizing (see above), open the terminal compartment of the TCU/PCU/DMU.

2. Please refer to the VisuNet FLX Panel Mount manual chapter 7.1 for detailed information. From step 2 you will find all relevant information.

9.4 Cleaning

FLX *-320S-*A-* FLX *-320S-*B-*
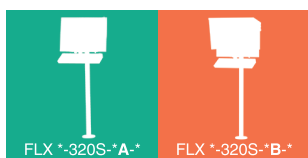
How often it becomes necessary to clean the system depends on the operating and environmental conditions. If necessary, follow the on-site cleaning plan.

Clean and maintain your system regularly.

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10 Chemical Resistance

FLX *-320S-*A-*   FLX *-320S-*B-*

The VisuNet FLX HMI product line is made of different materials that have different characteristics in terms of chemical resistance. Main materials that are used in this product line include:

- Hardened glass (Display cover glass)
- Stainless steel 1.4301 (AISI 304) (Display bezel and System Housing option P1)
- Powder-coated marine-grade aluminum alloy (EN AW-5754) (System housing options A1)
- Nickel-plated brass (Blind Plugs/Screw covers on housing backside; optional in stainless steel)
- Polymers (e.g. Gaskets & sealing)

Following materials have been tested in particular for their chemical resistance:

No.	Item	Base Material	Product Configuration	Location
1)	Glass Sealing		FLX Panel PCs & Systems	Display front, between Glass & stainless steel bezel
2)	Panel Gasket		FLX Panel PCs & Systems	Display, bezel gasket
3)	Radio Dome		FLX Systems with optional Bluetooth® Radio Dome	Optional part. Installed at housing bottom. Default: Stainless steel cover plate
4)	Screw covers/Blind plugs	Nickel-plated brass	FLX Systems with housing Option P1/A1	Housing Backside **Alternative:** Stainless steel Screw covers/Blind plugs

Figure 10.1

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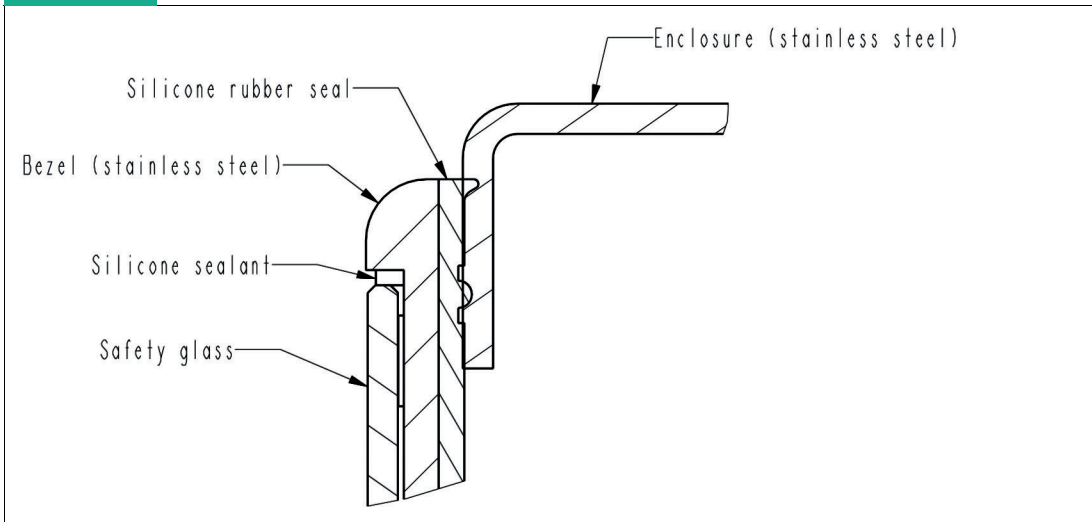
Figure 10.2　　　VisuNet FLX *-320S-*A-* System (stainless steel housing)
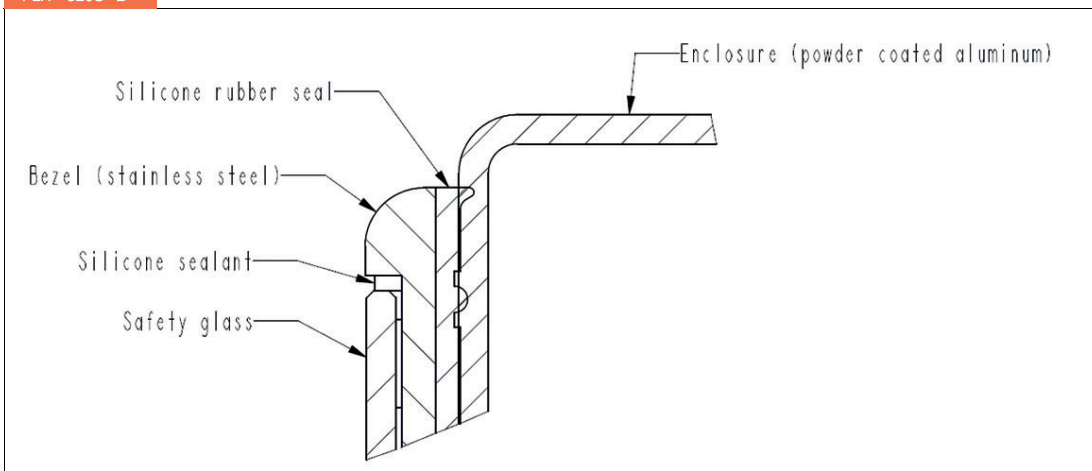
Figure 10.3　　　VisuNet FLX *-320S-*B-* System (aluminum alloy housing)

The chemical resistance of materials highly depends on various factors, including exposure time, temperature, humidity etc. and can lead to different forms of product alterations including discoloration, change in shore, tearing strength, volume etc.

The above listed materials have been assessed against following chemicals using an immersion test (min. 48 h immersion @23 °C) and based on original manufacturer's material datasheet. Following test criteria have been defined for the assessment: visual parameters change (e.g. color change, chalking, readability of texts) and degradation of mechanical properties.

Caution!

The powder-coated aluminum system housing shows different resistance and the properties of the aluminum alloy must be taken into account and assesesed individually!

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Symbol	Meaning
++	very good resistance (no alterations) under given test requirements
+	good resistance (small and/or temporary alterations, without impact on mechanical properties) under given test requirements
NR	Strong, permanent alternations under given test requirements
NT	Material not tested / resistance not defined

	Panel Gasket	Glass Sealing	Radio Dome	Screw covers / Blind Plugs
Acetic acid (concentrated 50%)	++	++	++	+
Acetone	++	+	++	NT
Ammonia (concentrated)	+	++	++	NT
Ethanol	++	++	++	NT
Formic acid (concentrated 50%)	+	++	NR	+
Glycol	++	+	++	NT
Hydrofluoric acid, 5%	NR	NT	NT	NT
Hydrogen peroxide (30%)	++	++	++	++
Isopentanol	NR	NT	NT	NT
Isopropanol	++	++	+	NT
Methanol	++	NT	++	NT
Nitric acid (concentrated)	NR	NR	NT	NT
n-Hexane	NR	NR	NR	NT
Concentrated mineral Acids, Concentrated alkaline Solutions, High-pressure steam above 100°C	NR	NR	NR	NT

Note

This list is not exhaustive! Other substances or parameters (e.g. exposure time, temperature, humidity etc.) can have a negative impact on the resistance of the materials. Other chemicals or parameters must be assessed individually and case by case.

Note

Cosmetic (e.g. discoloration, change of surface structure) and/or temporary alterations that have no impact on the product functionality (e.g. ingress protection) and/or safety are not considered as a relevant reduction of the product quality.

Note

It is the user's responsibility to periodically review the quality of the gaskets and - in case of degradation - implement appropriate counter measures to ensure the safety of the product.

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11 Appendix

11.1 Accessories

FLX *-320S-*A-*   FLX *-320S-*B-*
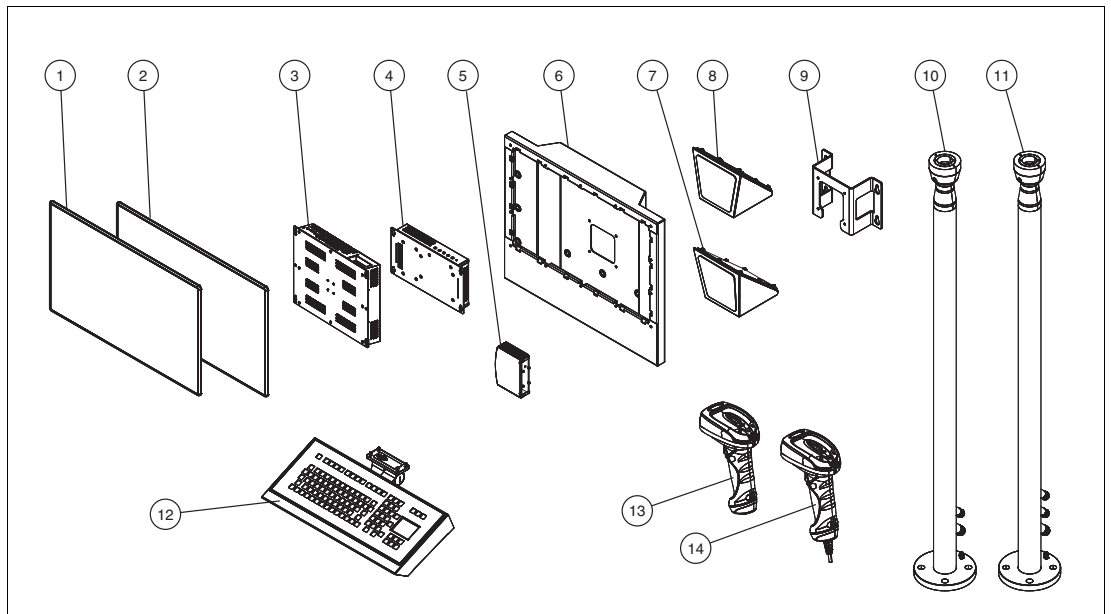

Figure 11.1   VisuNet FLX System - possible configurations

FLX *-320S-*B-*

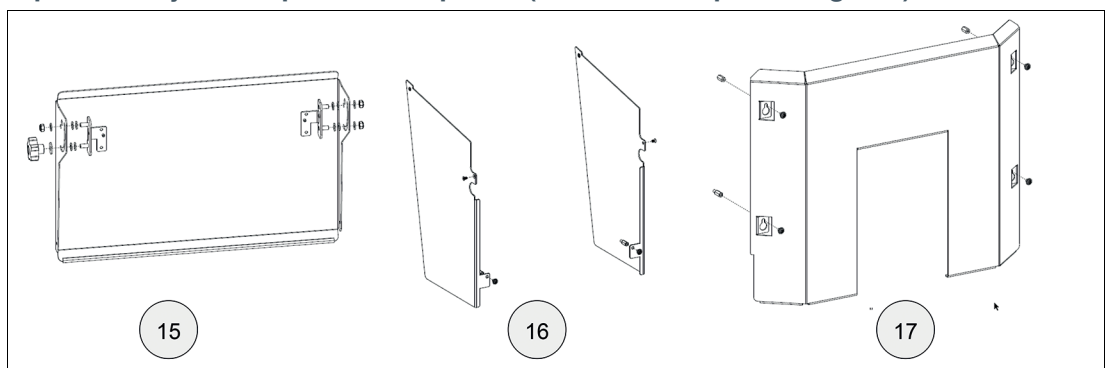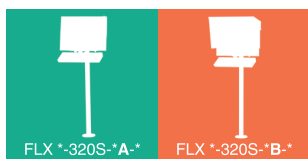**Optional only for temperature B options (Extended temperature grade)**

Figure 11.2   VisuNet FLX extended temperature - optional accessories

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FLX *-320S-*A-*   FLX *-320S-*B-*

Spare Parts

No.	Type code	Item No.	Description
(1)	DPU3200-22GT-304A-V1-N0	70128300	**ONLY for Temperature A option (industrial temperature range)** 21.5" Display (Full HD) - Display option "22GT" with capacitive touch screen
(2)	DPU3200-22FC-304A-V1-N0	70128301	21.5" Display (Full HD), optically bonded - Display option "22FC" with capacitive touch screen
(3)	BPC3200-*	must be configured	available as thin client or PC configuration
(4)	DMU3200-22GT-V1-N0	70128304	**ONLY for Temperature A option (industrial temperature range)** Compatible with display N° 1
	DMU3200-22FC-V1-N0	70128305	Compatible with display N° 2
(5)	PS1000-A6-24.5	70103517	AC power supply Option
(6)	AG-320S-A-22F-304B-NNN0	70125555-100002	FLX 21,5" Replacement Housing (P1 option)
(6a)	AG-320S-B-22F-5754-NNN0	70125555-100004	FLX 21,5" Replacement Housing (A1 option)
-	AG-320S-A-22F-304B-RFN0	70125555-100003	FLX 21,5" Replacement Housing (P1 option) Special accessories: Standard housing, w/ RFID Cutouts & Bolts
-	AG-320S-B-22F-5754-RFN0	70125555-100005	FLX 21,5" Replacement Housing (A1 option) Special accessories: Standard housing, w/ RFID Cutouts & Bolts
-	SPAREPART-AG-320S-BP-H1	70136528	Spare part housing blind plugs Standard - 15x M20 Ex-rated blind plugs for housing - Material: Nickel-plated brass
-	SPAREPART-AG-320S-SPACERS	70136527	Spare part housing spacers &- 6x M5x80 mm & 8x M5x25 mm - spacer nuts to affix display unit in enclosure
-	SPAREPART-AG-320S-BP-P1	70136529	Spare part housing blind plugs - GMP - 15x M16 Ex-rated blind plugs for housing - 2x M5 GMP screws for mounting scanner holder - Material: Stainless Steel

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FLX *-320S-***A**-*   FLX *-320S-***B**-*

Mounting and Installation

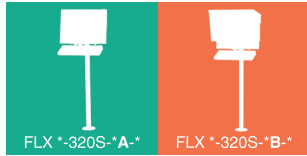| No.	Type code	Item No.	Description
(7)	ADAPTER-3200-00-304B-N0	70129832	0° tilted adapter for pedestal, wall arm, ceiling mounting for AG-3200-* housing Surface finish: brushed (Ra <= 0.8 µm) incl. mounting material to fix adapter to housing
(8)	ADAPTER-3200-10-304B-N0	70129831	10° tilted adapter for pedestal mounting for AG-3200-* housing Surface finish: brushed (Ra <= 0.8 µm) incl. mounting material to fix adapter to housing
(8a)	ADAPTER-3200-10-304B-M12	70144012	10° tilted adapter for pedestal mounting for AG-3200-* housing prepared for IDM barcode reader (via M12 connector) Surface finish: brushed (Ra <= 0.8 mm) incl. mounting material to fix adapter to housing
(9)	WALL-BRACKET-3200-304A-N0	70129835	Adapter for direct wall mounting compatible with Housing AG-3200-*
(10)	PEDESTAL-3200-131-2-304A-T-N0	70129833	Swivel Pedestal, floor mounting compatible with Housing AG-3200-* - Height: approx. 131 cm - Cable glands: 1x M20, 1x M16 (at bottom)
(11)	PEDESTAL-3200-131-3-304A-T-N0	70129834	Swivel pedestal, floor mounting compatible with housing AG-3200-* - Height: approx. 131 cm - Cable glands: 1x M20, 2x M16 (at bottom)
-	KIT-IDM-Z2-USB-N0	70147948	IDM Z2 USB scanner Kit for VisuNet FLX 3200 System compatible with mounting adapter ADAPTER-3200-10-304B-M12 compatible with IDM Z2 USB scanner & base station Consists of: - 1x M12 Panel Feed Through for FLX mounting adapter (ADAPTER-3200-10-304B-M12) - 1x strain relief latch ATEN Lockpro - 1x cable clamp
(15)	KIT-SUNSHIELD-3200-TOP-A1-N0	70171176	**ONLY for Temperature B option (Extended temperature range)** Canopy with Display protection function and adjustable position angle - Material: Aluminum Alloy 5754, powder coated - incl. Mounting material

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No.	Type code	Item No.	Description
(16)	KIT-SUNSHIELD-3200-SIDES-A1-N0	70171177	**ONLY for Temperature B option (Extended temperature range)** Side Reflector Shields Material: Aluminum Alloy 5754, powder coated - incl. Mounting material NOTE: Requires pre-installed Sun Protection Canopy KIT-SUNSHIELD-3200-TOP-A1-N0
(17)	KIT-SUNSHIELD-3200-BACK-A1-N0	70171178	**ONLY for Temperature B option (Extended temperature range)** Backside Heat Reflector Material: Aluminum Alloy 5754, powder coated - incl. Mounting material NOTE: Requires pre-installed Sun Protection Canopy

FLX *-320S-***A**-*   FLX *-320S-***B**-*

Peripherals and Accessories

No.	Type code	Item No.	Description
(12)	EXTA4-*	must be configured	Compatible keyboard with different mouse options
(13)	IDM Zone 2/22 Bluetooth® barcode reader	must be configured	Easy plug-and-play installation with required accessories
(14)	IDM Zone 2/22 corded barcode reader	must be configured	Easy plug-and-play installation with required accessories

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FLX *-320S-*A-*   FLX *-320S-*B-*

Connectivity

No.	Type code	Item No.	Description
-	ST-RJ45-1-BTR	218119	RJ45 Connector for Dual Ethernet
-	KIT-BT-V1-N0	70130677	Bluetooth® Kit for VisuNet FLX 3200 System compatible with Housing AG-3200-* - Consists of USB stick, cable and mounting adapter - Bluetooth® standards: v4.0 (and backwards compatible) - Certification: CE, FCC and others - Prepared for mounting into VisuNet FLX system housing

Note

For more options and accessories, contact your local Pepperl+Fuchs sales representative.

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- Wireless Solutions
- Level Measurement

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- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- Fieldbus Modules
- AS-Interface
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