



Installation Manual



SHARK Device Platform

ET-xx8 / MT-xx8

Series 400 Panel PCs

Series 500 Thin Clients

Series 600 KVM Systems



THE STRONGEST LINK.

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R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8
D 50829 Cologne

Telephone:	(Sales Support)	+49 (0) 221 76 806 - 1200
	(Technical Support)	- 5000
Fax:		- 4200
E-mail:	(Sales Support)	sales.dehm@r-stahl.com
	(Technical Support)	support.dehm@r-stahl.com

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1 Intended use and location


The SHARK device platform ET-/MT-xx8 devices (SERIES 400 / 500 and 600) have been developed particularly for the oil and gas industry. They can be mounted on rig floors (fixed or mobile) drilling rigs and crane / container cabins as well as in wireline applications or in tankfarms. Suitable for hazardous areas zone 1, 21, 2 and 22 (depending on device type), these devices are ideal for a great number of applications.


2 Explanation of symbols


2.1 Symbols used in the Installation Manual

Symbol	Meaning
	Useful hint for making work easier, important note
	Reference to another chapter, another section, another documentation or another web page.
	Work step, the number indicates the sequence in which the steps are to be carried out.
	Important work step, note must be complied with
	Indicator arrow (blue)
	Movement arrow (brown) indicating movement that can be / is done with or to the material.

2.2 Warning notes


	DANGER
	Non-compliance will result in serious or fatal injuries.

	WARNING
	Non-compliance may result in serious or fatal injuries.

	CAUTION
	Non-compliance may result in minor injuries.

NOTICE	
	Non-compliance may result in material damage.

3 General information

	If not otherwise specified, all information, descriptions and illustrations apply in the same way to devices x38 and x98 as well as versions "Standard" and "Top Connect", even if the illustrations only show one version.
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4 Operating the touch display

NOTICE

Material damage resulting from touching the touchscreen with pointed or sharp items !

Non-compliance may result in damage to the touch display, reduced life-span or total breakdown.

- Only operate the touchscreen with your finger or a touch pen.

NOTICE

Damage to the touch screen resulting from electromagnetic interference !

Non-compliance will result in malfunction and functional impairment of the touch display.

- Integrate the device into the facility's functional earth. The functional earth is used to suppress electromagnetic interference.

Incorrect operation of the touch screen may result in accidental functions and errors. The device will then be unable to execute orders, may execute them incorrectly or in a way not intended.



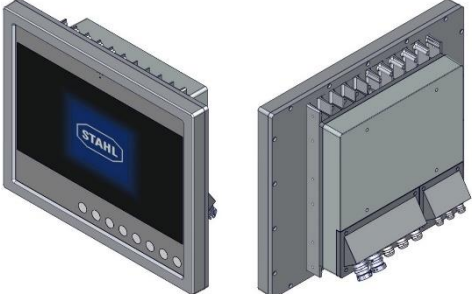


- Do not realise safety-relevant functions via the touch display.
- Avoid accidental multiple touches.
- Do not touch the touch display across a large section.
- Only use fingers, thin gloves, special gloves or a conductive touch pen for operation.
- Before operating the device, thoroughly acquaint yourself with the multi-touch functions of the operating system and the application.
- Avoid contamination of the touch display with salt water.
- Protect the device from rain, snow and splashes, for example by using a sun shade or some other protective roof-type construction. Also take into consideration possible strong winds, saltwater and rain offshore.
- Switch off the device before maintenance or cleaning.

5 Mounting

The devices with the SHARK device platform are designed to withstand vibrations and shocks. In regards of different applications and ambient conditions we recommend following installation types:

For installations in locations with greater exposure to shocks and vibration consider using wire rope isolators for absorbing these shocks and vibrations.










5.1 Mounting types









<p>Mounted on stand / pedestal with / without external keyboard</p>	<p>Wall-mounting on brackets, with / without external keyboard</p>
	
<p>Mounting on VESA 200</p>	<p>Mounting with handle and feet</p>
	
<p>Mounting with wire rope isolators</p>	
	

5.2 Recommended mounting type

The following recommended mounting types are the result of trying out many different types over the years. Please follow these recommendations to ensure the optimum mounting type for your device.

Before deciding on how to mount the device, particularly in oil and gas applications, you need to check the vibration and shock conditions. We cannot accept any responsibility if you select an unsuitable mounting type that results in damage or failure of the device !

Conditions present at the point of installation	Mounting / installation type		Recommendation
No vibration and no shocks		Mounting on stand / pedestal, with / without external keyboard	No restriction
		Mounting on VESA 200	No restriction
		Mounting with handle and feet	No restriction
		Wall-mounting with brackets, with / without external keyboard	No restriction
Vibration (sinusoidal) 5 ... 13.2 Hz: ±1 mm 13.2 ... 100 Hz: ±0.7 g change cycle 1 oct/min X, Y, Z axes acc. to IEC 60068-2-6 and DNV certification No. 2.4 (2006)		Mounting on stand / pedestal, with / without external keyboard	Mounting requires secure fixing on ground. In addition, stand should also be fixed to the wall close to the coupling. This mounting option is critical for greater acceleration forces.
		Mounting on VESA 200	Not recommended
		Mounting with handle and feet	Not recommended
		Wall-mounting with brackets, with / without external keyboard	Recommended mounting type (DNV tested)
		Mounting with wire rope isolators	Recommended mounting type

Conditions present at the point of installation	Mounting / installation type		Recommendation
Shock 18 shocks 25 g / 6 ms, X, Y, Z axes acc. to IEC 60068-2-27		Mounting on stand / pedestal, with / without external keyboard	Mounting requires secure fixing on ground. In addition, stand should also be fixed to the wall close to the coupling. This mounting option is critical for greater acceleration forces.
		Mounting on VESA 200	Not recommended
		Mounting with handle and feet	Not recommended
		Wall-mounting with brackets, with / without external keyboard	Recommended mounting type
		Mounting with wire rope isolators	Recommended mounting type
Vibrations 5...1000 Hz 5 g		Wall-mounting with brackets, with / without external keyboard	Use of wire rope isolators as vibration and shock absorbers.
			
		Other installations	Not recommended


5.3 Mounting notes

- The tightening torques for the cable glands depend on the cables and wires used. This means the users themselves have to determine the required torques.
- The recommended tightening torque for the M8 screws of the VESA bracket is 25 to 30 N.
- The recommended tightening torque for the M6 screws of the lateral mounting options is 10 to 12 N.
- The recommended tightening torque for the torx screws connecting the E-Box to the display module is 10 N.
- The recommended tightening torque for the terminal box cover screws is 1 to 1.5 N.
- The handle might have to be removed prior to mounting the sun shade.

6 Variations of operating temperature range


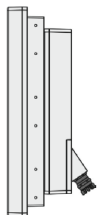

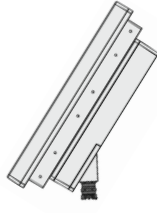

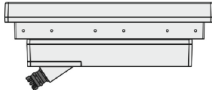
The devices' operating temperature range is impacted by how they are mounted. The minimum and maximum permitted operating temperature may vary depending on the mounting type.


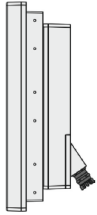

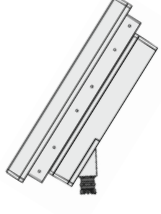

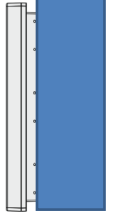
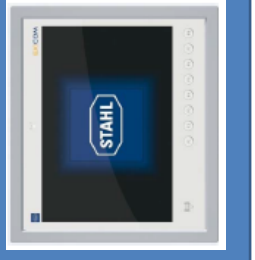
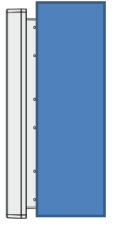
These values are listed in the table below.

	Exposure to direct sunlight might contribute to further increase in temperature of the device and may result in a further reduction of the maximum permitted operating temperature ! We recommend you protect the device from direct sunlight !
	Wind may cool down the device and thus have an impact on the minimum operating temperature.
	The storage temperature is not impacted by the type of installation.

The following values apply:

- LTC = Lower ambient temperature in °C
 - 40 °C for devices with internal heater
 - 10 °C for devices without heater
- LTF = Lower ambient temperature in °F
 - 40 °F for devices with internal heater
 - +14 °F for devices without heater
- HTC = highest permissible ambient temperature in °C
- HTF = highest permissible ambient temperature in °F

Screen position	Inclination	Description	Highest permissible ambient temperature
		landscape, horizontal 90° free standing	HTC = +65 °C HTF = +149 °F
		landscape, horizontal 45° free standing	HTC = +60 °C HTF = +140 °F
		landscape, horizontal 0° free standing minimum distance 10 cm below device	HTC = 60 °C HTF = +140 °F

Screen position	Inclination	Description	Highest permissible ambient temperature
		<p>portrait vertical 90°, free standing</p>	<p>HTC = +60 °C HTF = +140 °F</p>
		<p>portrait vertical 45°, free standing</p>	<p>HTC = +60 °C HTF = +140 °F</p>
		<p>landscape, horizontal mounted in enclosure any degree of inclination</p>	<p>HTC = +50 °C HTF = +122 °F</p>
		<p>portrait, horizontal mounted in enclosure any degree of inclination</p>	<p>HTC = +50 °C HTF = +122 °F</p>

7 Design

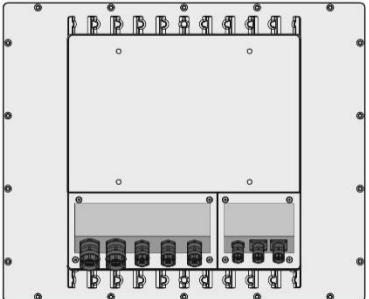
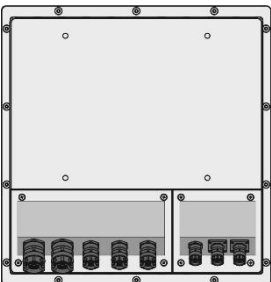
ET-/MT-x38 (15")



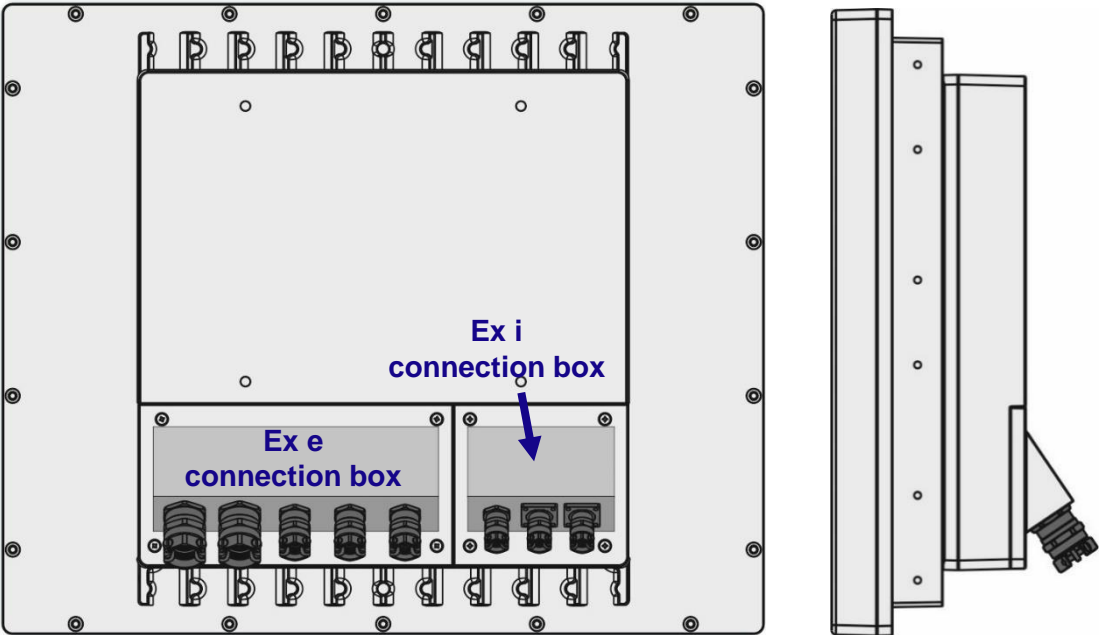
ET-/MT-x98 (21.5")



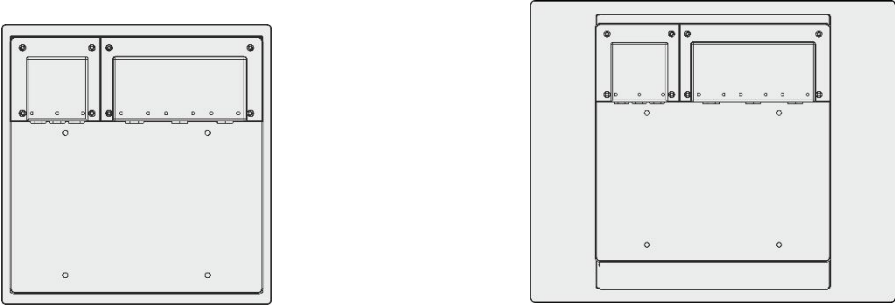
7.1 Back view VESA 200 Standard



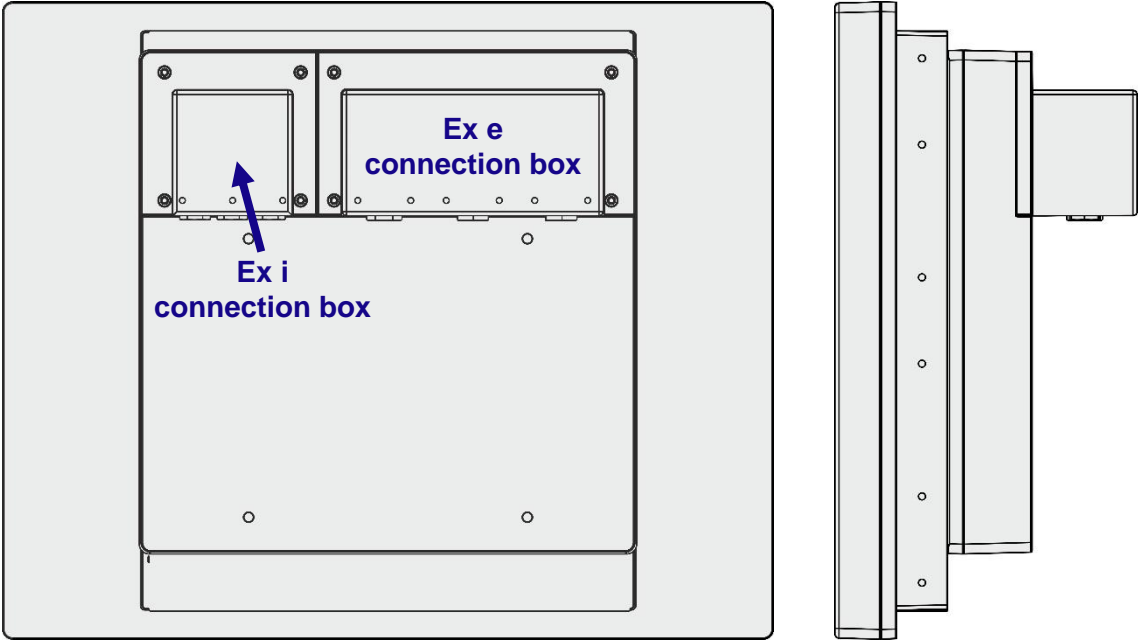
7.1.1 Connection box and lateral view



7.2 Back view VESA 200 Top Connect



7.2.1 Connection box and lateral view



8 Tools



1x side cutter
 1x wire stripper
 Spanners size SW 10, 13, 14, 17, 20, 24
 Phillips screwdrivers size 1 and 2
 Slotted screwdrivers 2.5 mm and 4.5 mm
 1x torx wrench TX 30
 1x allen key 5 mm
 1x conical drill bit ca. 16-32 mm
 1x drill

9 Mechanical Installation



WARNING

Falling or dropped device !

Non-compliance can result in severe injuries and damage to the device.

- Always have two people mount the devices.



If not otherwise specified, devices x38 and x98 as well as versions "Standard" and "Top Connect" are mounted in the same way.

9.1 Accessories

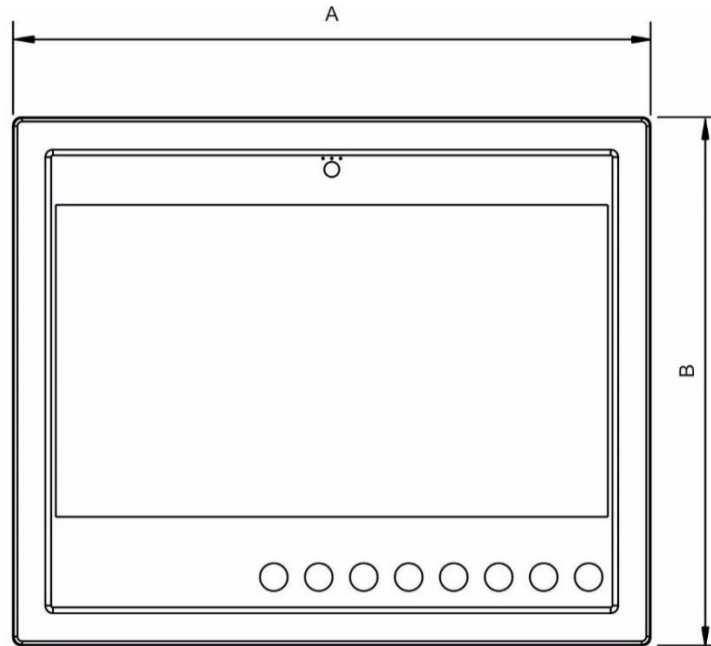


The installation instructions for further accessories not described in this manual are located in the following documents.

Connection kit		
Variant	Description	Document
CON-xx8-CAT-ROTA-AC-ROTA-00	for the CAT version with AC power supply	IM_Top-Connect_xx8-*.pdf
CON-xx8-FO-HMA-AC-ROTA-00	for the FO version with AC power supply	IM_Top-Connect_xx8-*.pdf
Power / Reset button		
CON-xx8-PSW-ext	On/off button	IFI-PB-an-xx8-Sidemounting-de-en_V_01.pdf

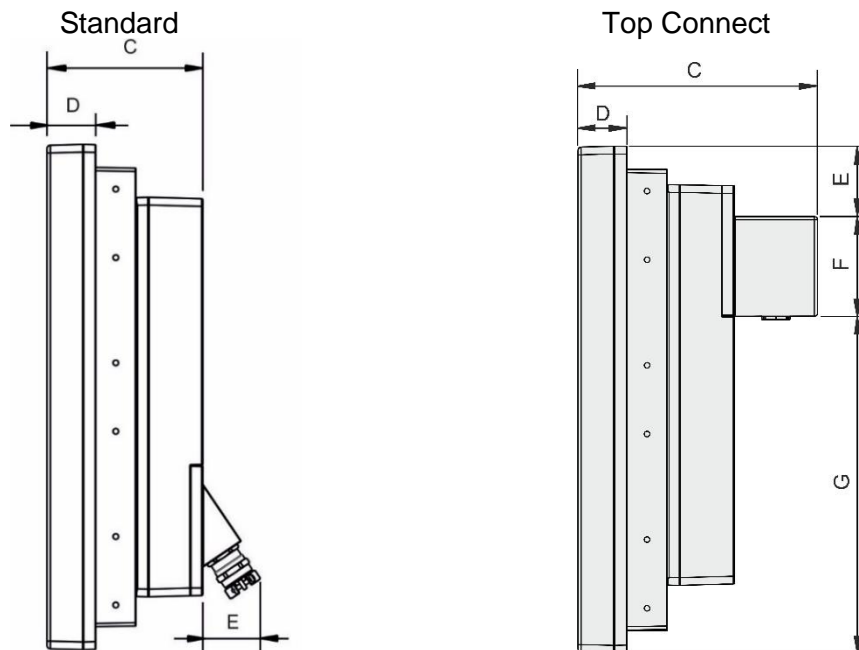
9.2 Device dimensions

9.2.1 Front:



Device	Dimensions (mm)	
	A	B
ET-x38 / MT-x38	380	394
ET-x98 / MT-x98	553	458

9.2.2 Side



Standard device	Dimensions (mm)			Top Connect device	Dimensions (mm)				
	C	D	E		C	D	E	F	G
ET-x38 / MT-x38	137	40	52	ET-x38 / MT-x38	212	40	46	90	257
ET-x98 / MT-x98	141	44	52	ET-x98 / MT-x98	216	44	64	90	304

9.3 Cable glands



You may use any Ex-certified cable glands that meet the technical requirements.

9.3.1 VESA 200 Standard

Hummel type standard gland					
Position	Number	Size	Cable diameter [mm]	Hummel type	Hummel number
Ex e connection cover	2	M25 x 1.5	14 - 18	HSK-MZ-Ex	1641250050
	3	M20 x 1.5	10 - 14	HSK-MZ-Ex	1641201650
Ex i connection cover	3	M16 x 1.5	5 - 10	HSK-MZ-Ex	1641161150

9.3.2 VESA 200 Top Connect

Screw plugs		
Position	Number	Size
Ex e connection cover	3	M20 x 1.5
Ex i connection cover	3	M16 x 1.5



In their factory state, the VESA 200 Top Connect devices come with screw plugs.

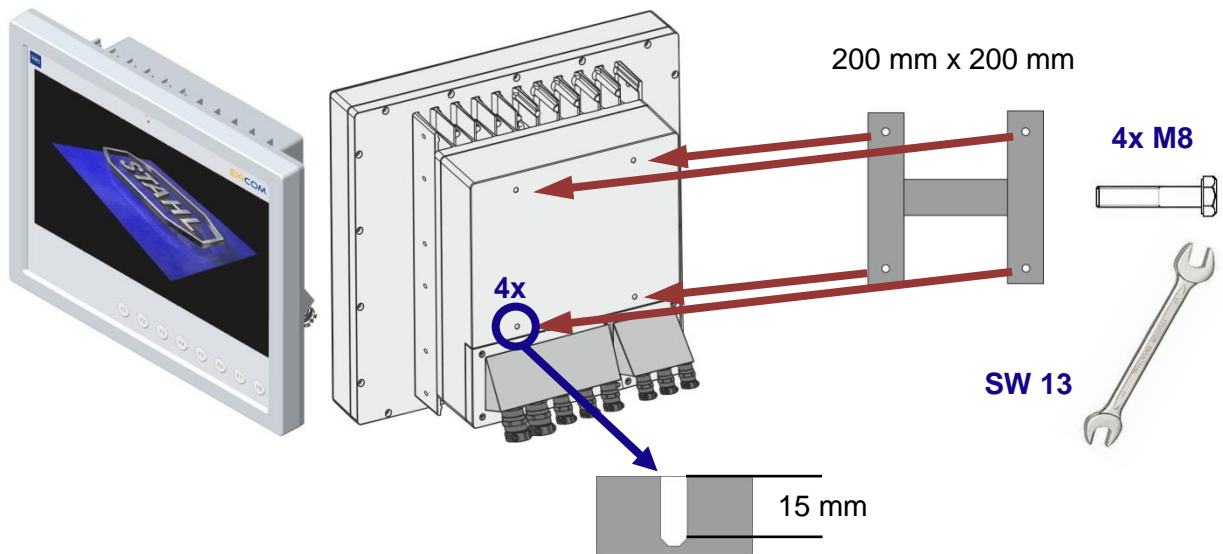
Various sets are available for the connection of cables as accessories. These must be mounted by the customer.

Connection kit		
Variant	Description	SAP no.
CON-xx8-CAT-ROTA-AC-ROTA-00	for the CAT version with AC power supply	260583
CON-xx8-FO-HMA-AC-ROTA-00	for the FO version with AC power supply	260958

9.3.3 Coupling cover

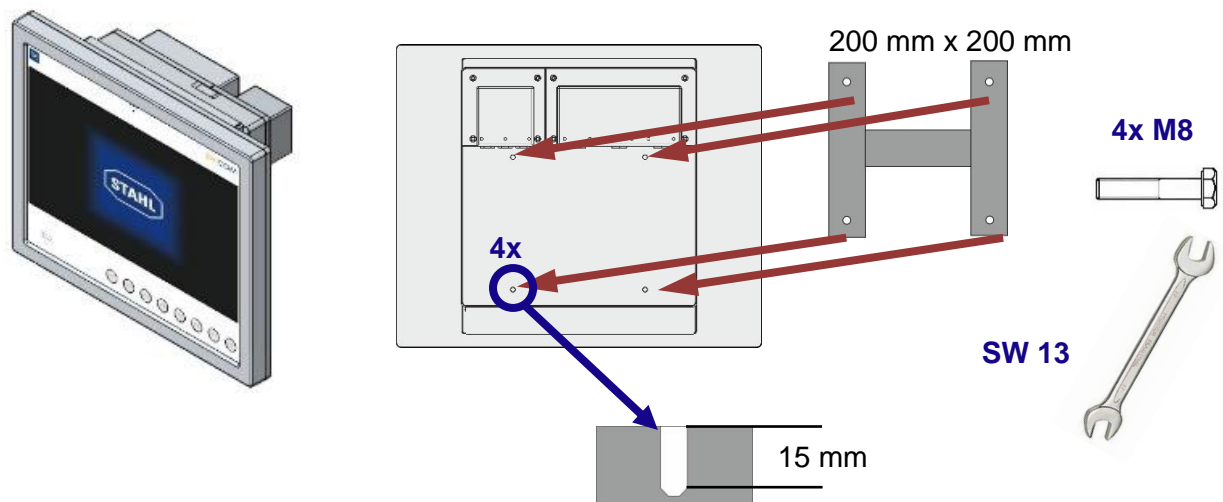
Cable gland					
Position	Number	Size	Cable diameter [mm]	Type	Number
Connection cover	2	M25 x 1.5	9 - 17	EMSKV 25	10065003
	1	M20 x 1.5	9 - 13	Perfect	50.620 M

9.4 VESA 200 Standard mounting option



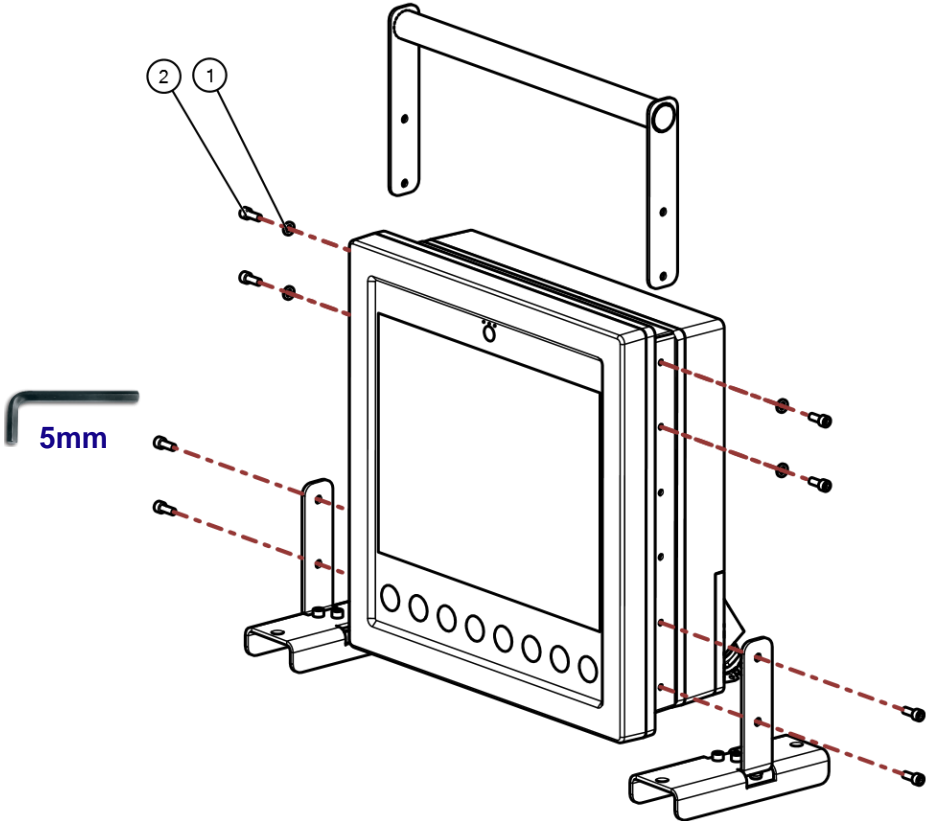
Recommended torque for M8 screws: 25 N to 30 N

9.5 VESA 200 Top Connect mounting option

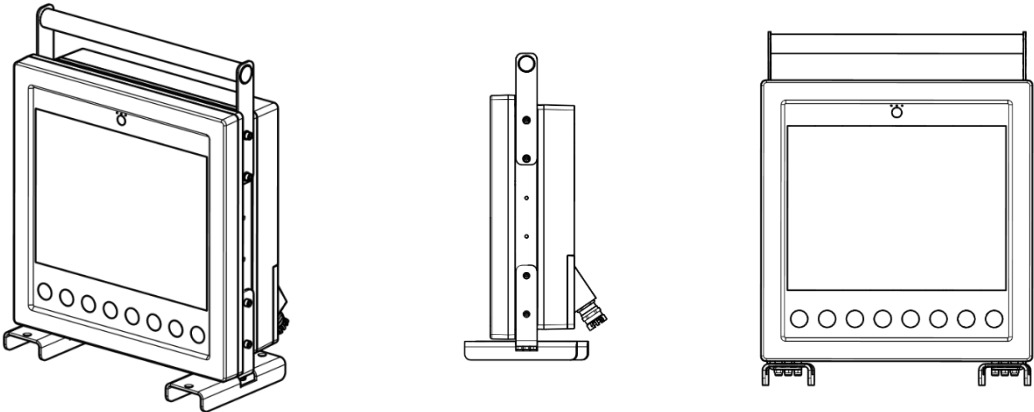


Recommended torque for M8 screws: 25 N to 30 N

9.6 Mounting option with handle and feet



No.	Designation	Number
1	Washer 6.4	8
2	Allen screw M6 x 16	8



9.7 Wall mounting

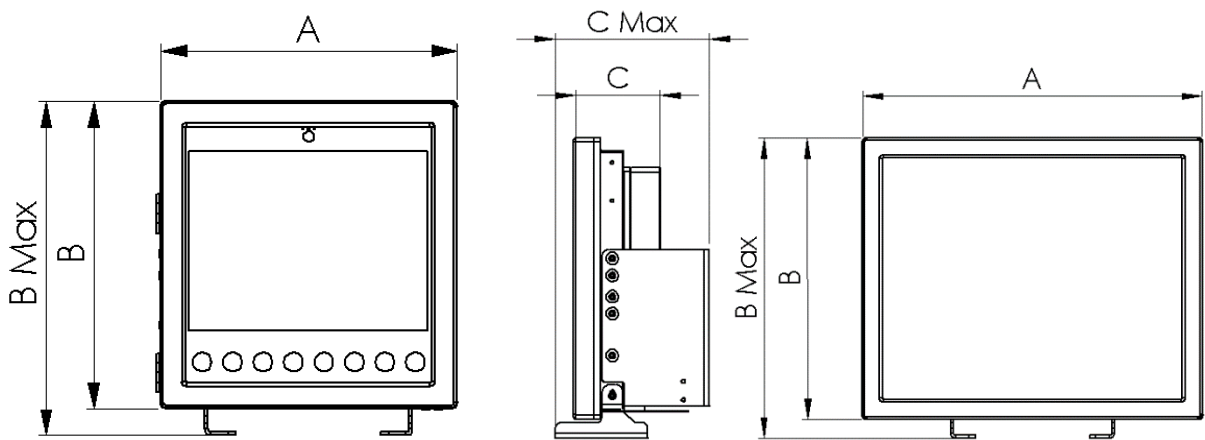
9.7.1 View

ET-/MT-x38 (15")

ET-/MT-x98 (21.5")



9.7.2 Dimensions

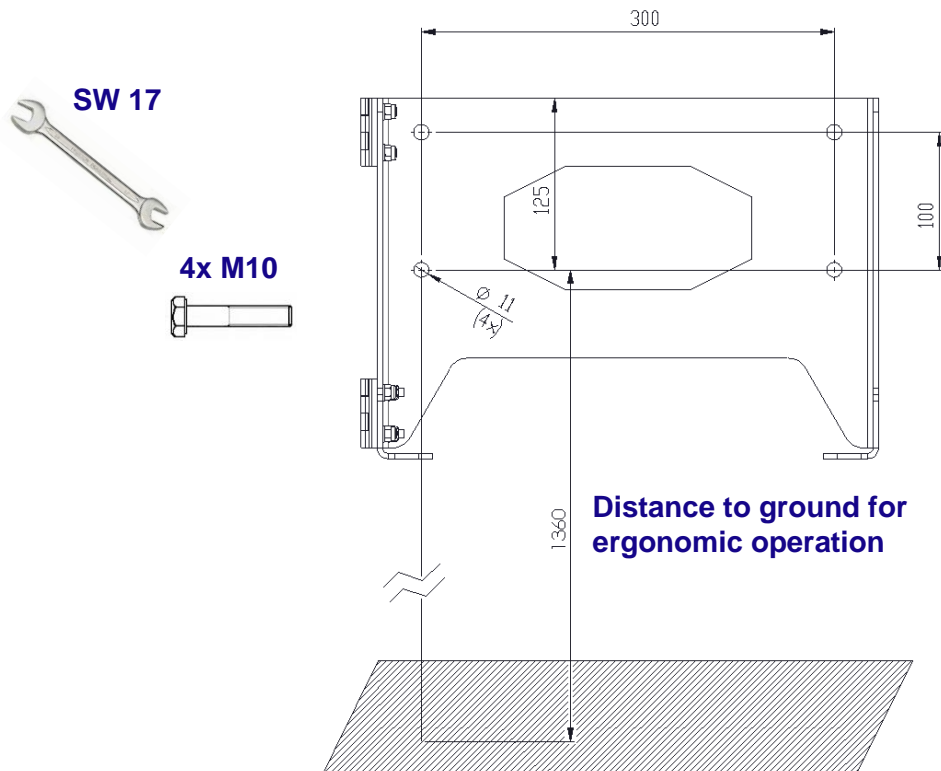


Device	Dimensions [mm]				
	A	B	B Max	C	C Max
ET-x38 / MT-x38	380	394	428	216	250
ET-x98 / MT-x98	553	458	483	220	250

9.7.3 Wall mounting bracket

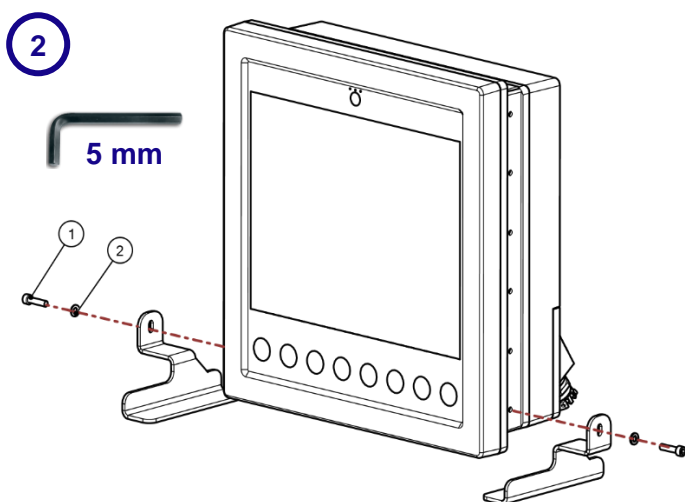


9.7.3.1 Hole sizes wall mounting



9.7.4 Step-by-step mounting instructions

1 Mount the wall mounting bracket to a wall / support first.

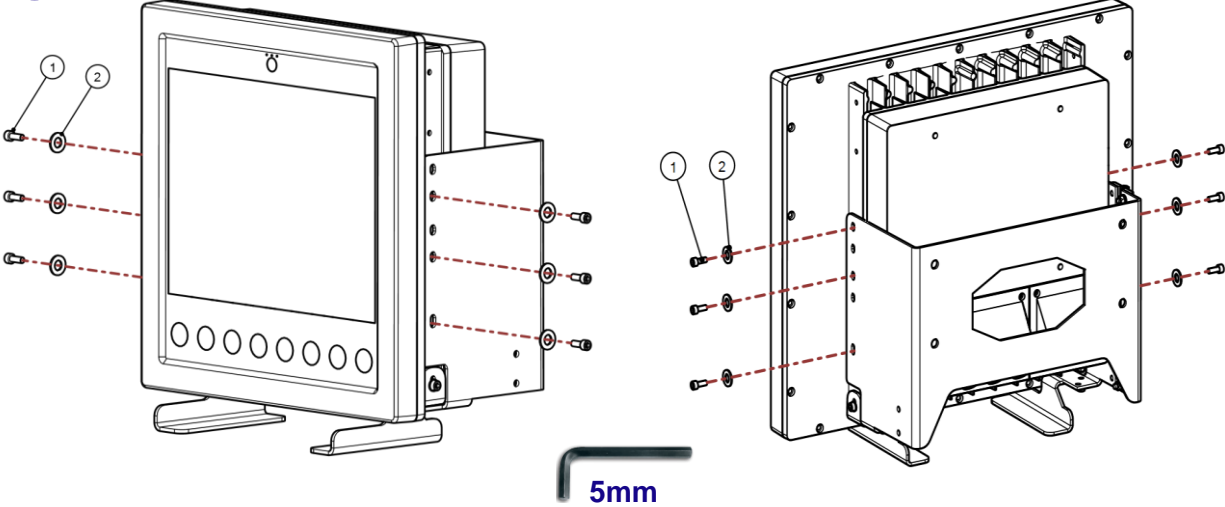


No.	Designation	Number
1	Allen screw M6 x 25	2
2	Washer 6.4	2

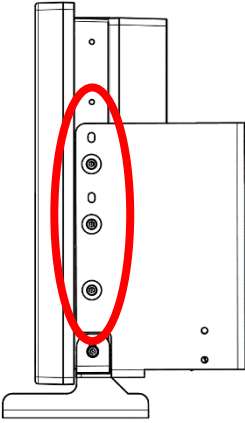
3

ET-/MT-x38 (15")

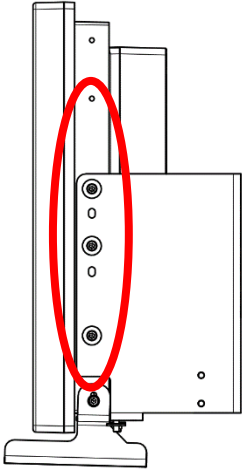
ET-/MT-x98 (21.5")



No.	Designation	Number
1	Allen screw M6 x 16	6
2	Washer 6.4	6



Note the positions of the fixing screw holes !



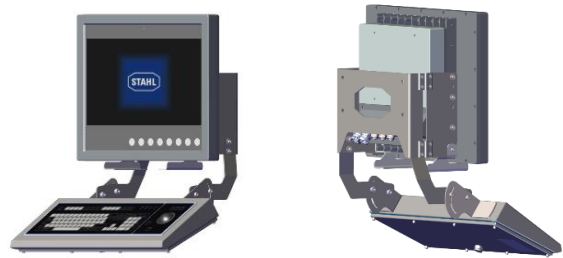
9.8 Wall mounting with keyboard

9.8.1 View

ET-/MT-x38 (15")

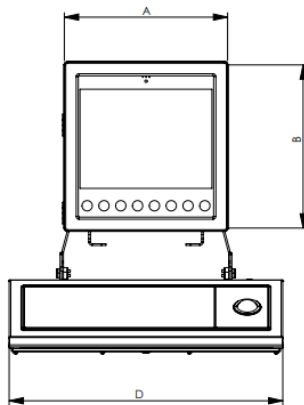


ET-/MT-x98 (21.5")

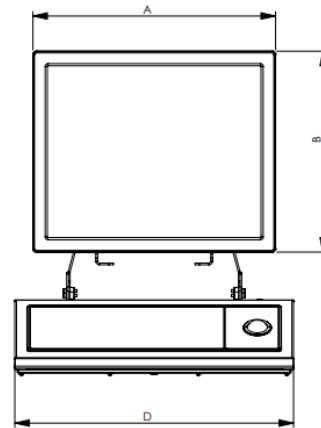


9.8.2 Dimensions

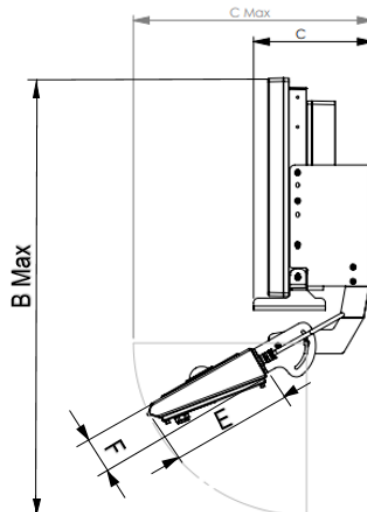
ET-/MT-x38 (15")



ET-/MT-x98 (21.5")

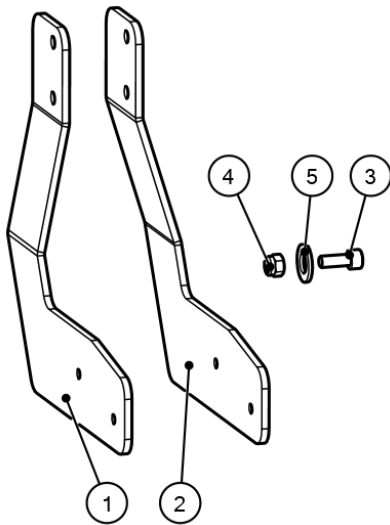


ET-/MT-xx8 (15" / 21.5")



Device	Dimensions [mm]							
	A	B	B Max	C	C Max	D	E	F
ET-x38 / MT-x38	380	394	804	250	501	635	260	68
ET-x98 / MT-x98	553	458	864	250	501	635	260	68

9.8.3 Keyboard



No.	Designation	Number
1	Keyboard holder left	1
2	Keyboard holder right	1
3	Allen screw M6 x 16	2
4	M6 lock nut	2
5	Washer 6.4	4

9.8.4 Wall mounting bracket

 See chapter 9.7.3

9.8.5 Step-by-step mounting instructions

1 Mount the wall mounting bracket to a wall / support first.

2

No.	Designation	Number
1	Keyboard holder left	1
2	Keyboard holder right	1
3	Allen screw M6 x 16	2
4	M6 lock nut	2
5	Washer 6.4	4

5 mm
SW 10

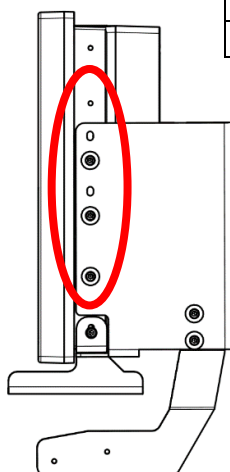
3

ET-/MT-x38 (15")

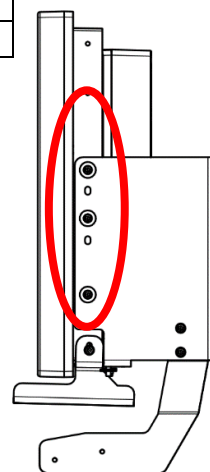
ET-/MT-x98 (21.5")

5 mm

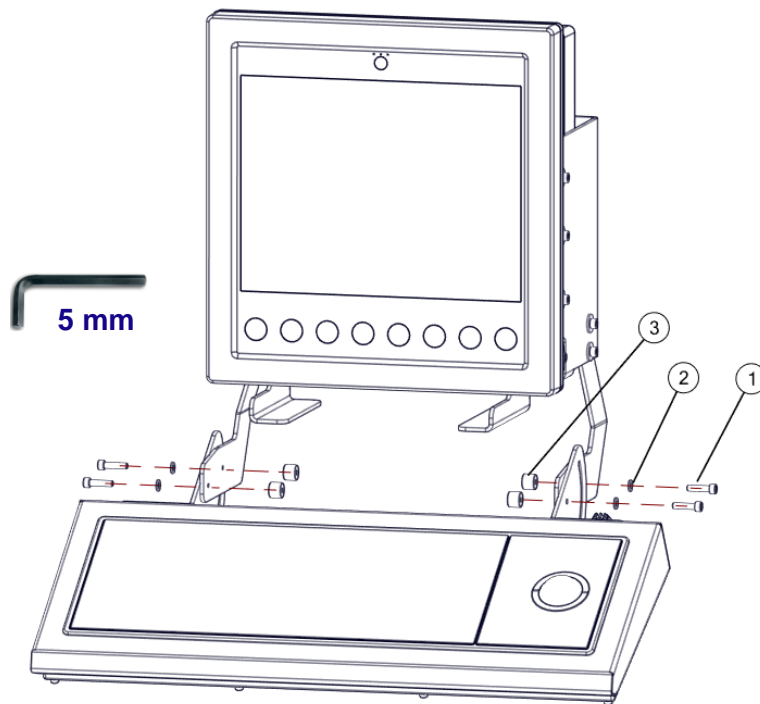
No.	Designation	Number
1	Allen screw M6 x 16	6
2	Washer 6.4	6



Note the positions of the fixing screw holes!



4



No.	Designation	Number
1	Allen screw M6 x 16	4
2	Washer 6.4	4
3	M6 lock nut	4

5

Adjustable angle / inclination



9.9 Wall mounting with barcode scanner

9.9.1 View

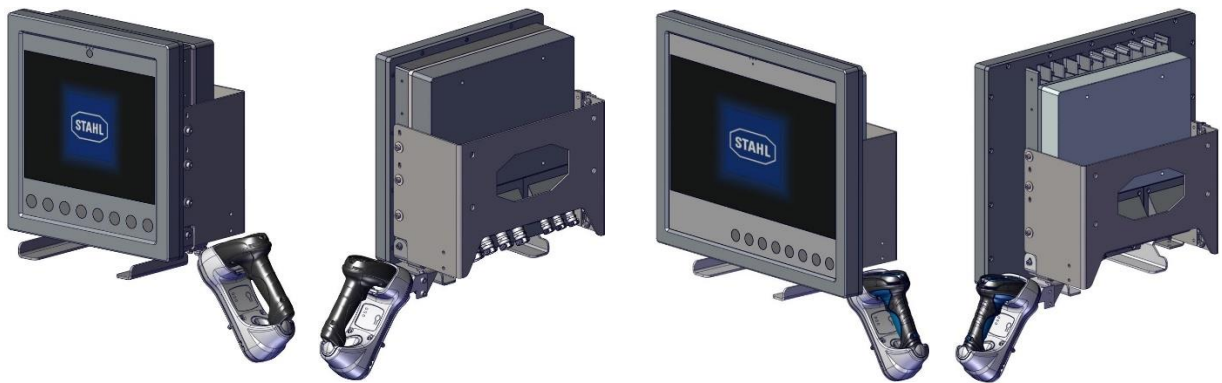
ET-/MT-x38 (15")

ET-/MT-x98 (21.5")

Wired barcode scanner

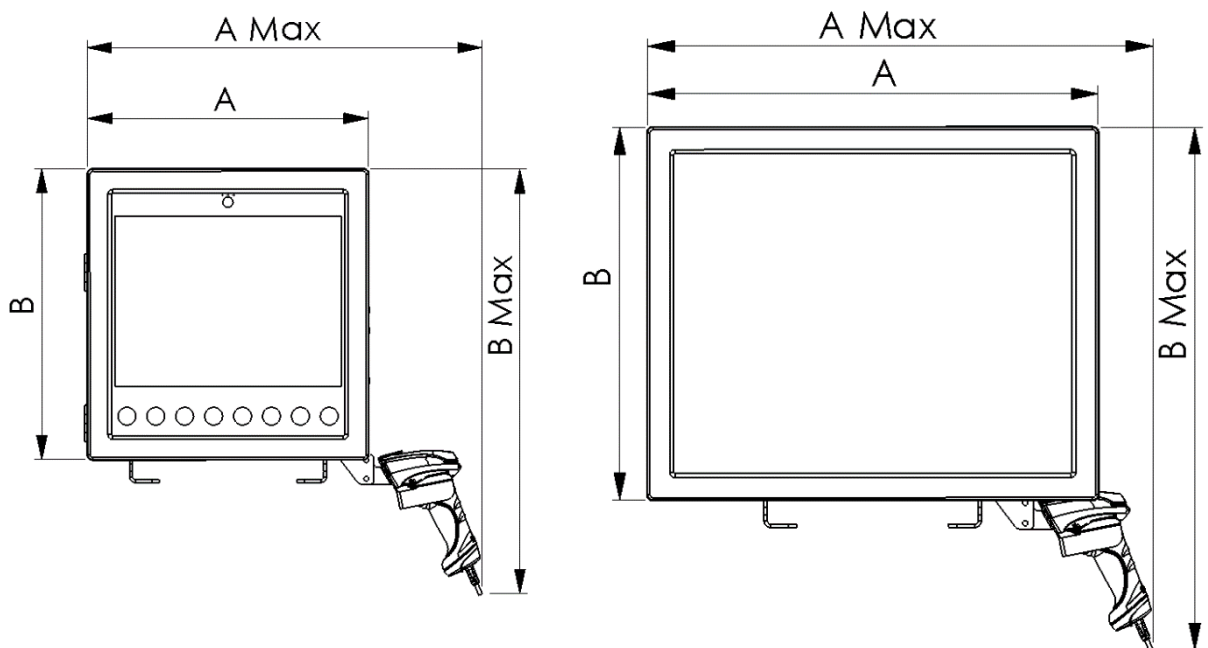


Bluetooth barcode scanner

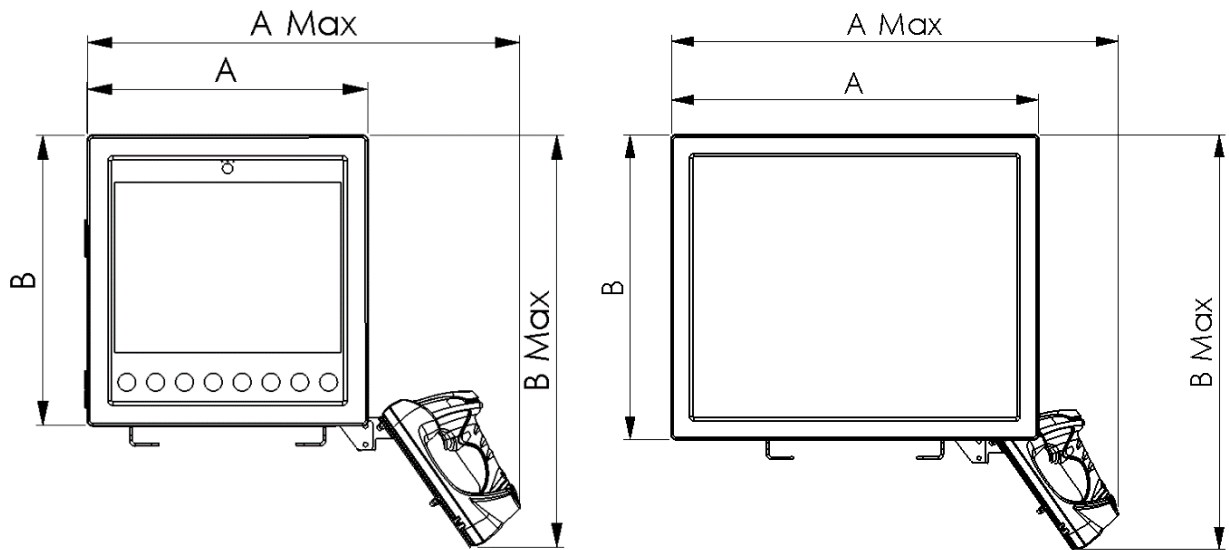


9.9.2 Dimensions

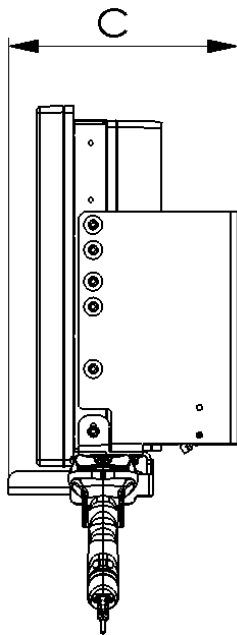
Wired barcode scanner



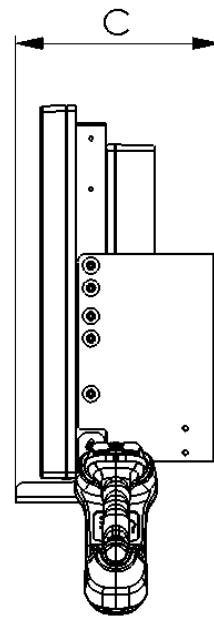
Bluetooth barcode scanner



Wired barcode scanner



Bluetooth barcode scanner

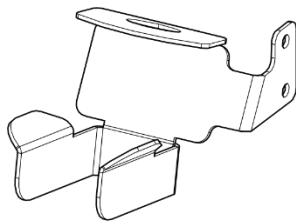


Dimensions (mm) for wall mounting with wired barcode scanner					
Device	A	A Max	B	B Max	C
ET-x38 / MT-x38	380	533	394	574	250
ET-x98 / MT-x98	553	618	458	640	250
Dimensions (mm) for wall mounting with Bluetooth barcode scanner					
Device	A	A Max	B	B Max	C
ET-x38 / MT-x38	380	584	394	558	250
ET-x98 / MT-x98	553	677	458	632	250

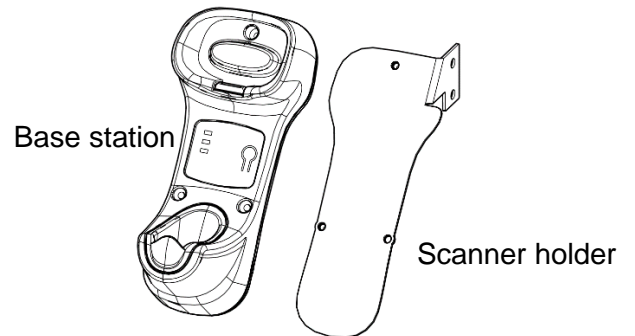
9.9.3 Mounting versions

9.9.3.1 Scanner holder

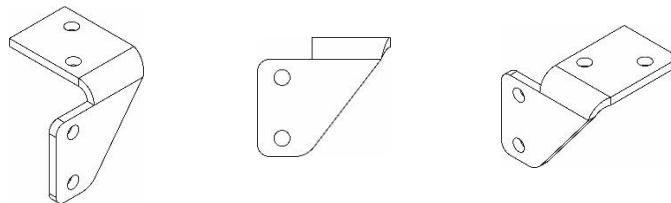
Scanner holder for wired barcode scanner



Scanner holder for Bluetooth barcode scanner



9.9.3.2 Adapter for scanner holder

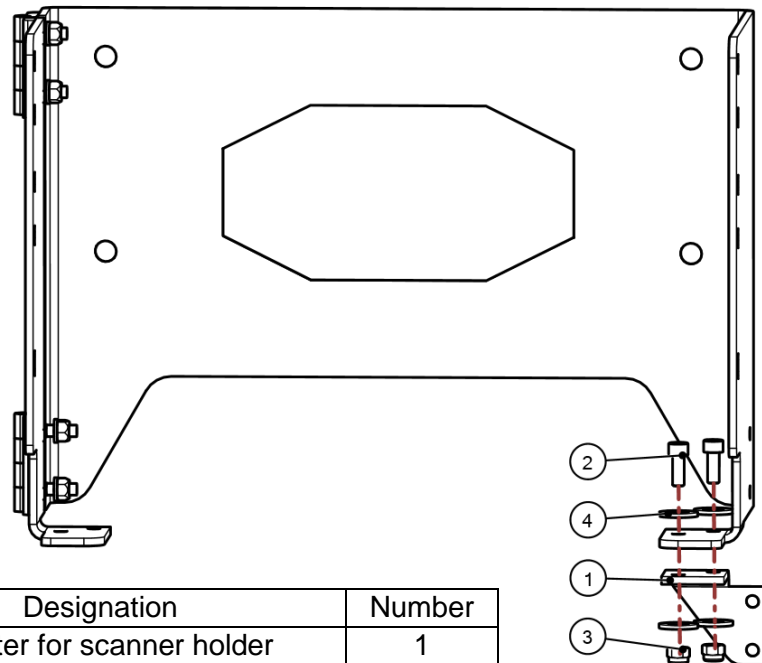


9.9.4 Step-by-step mounting instructions

1

Mount the wall mounting bracket to a wall / support first.

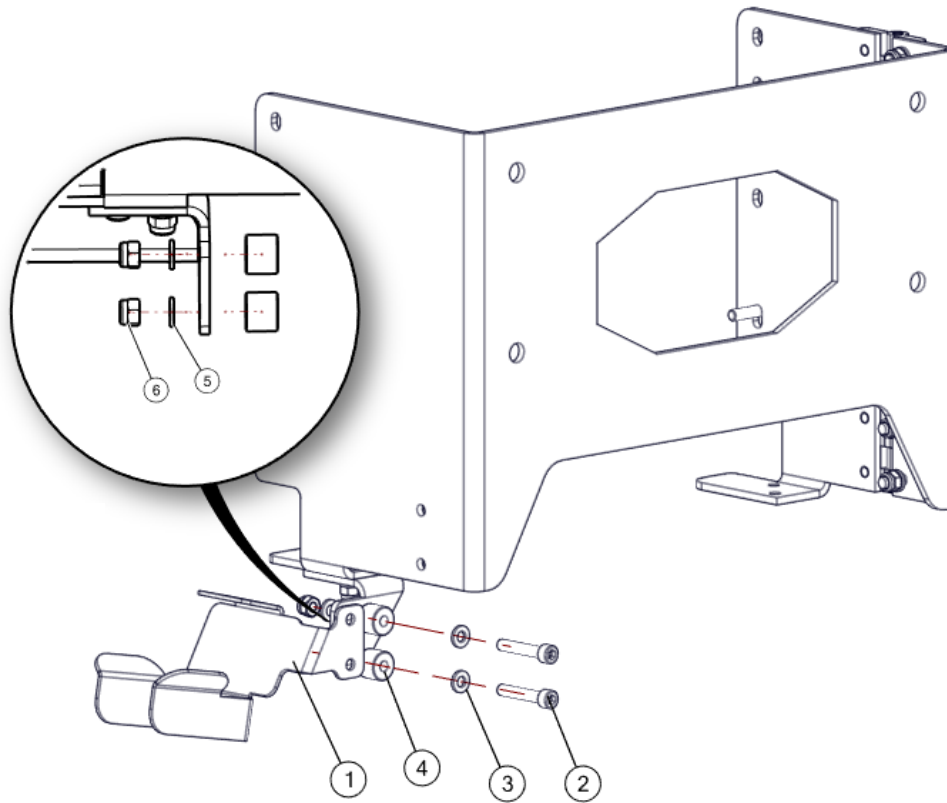
2



No.	Designation	Number
1	Adapter for scanner holder	1
2	Allen screw M6 x 16	2
3	Self-locking M6 nut	2
4	Washer 6.4	4

3

Mounting for wired barcode scanner

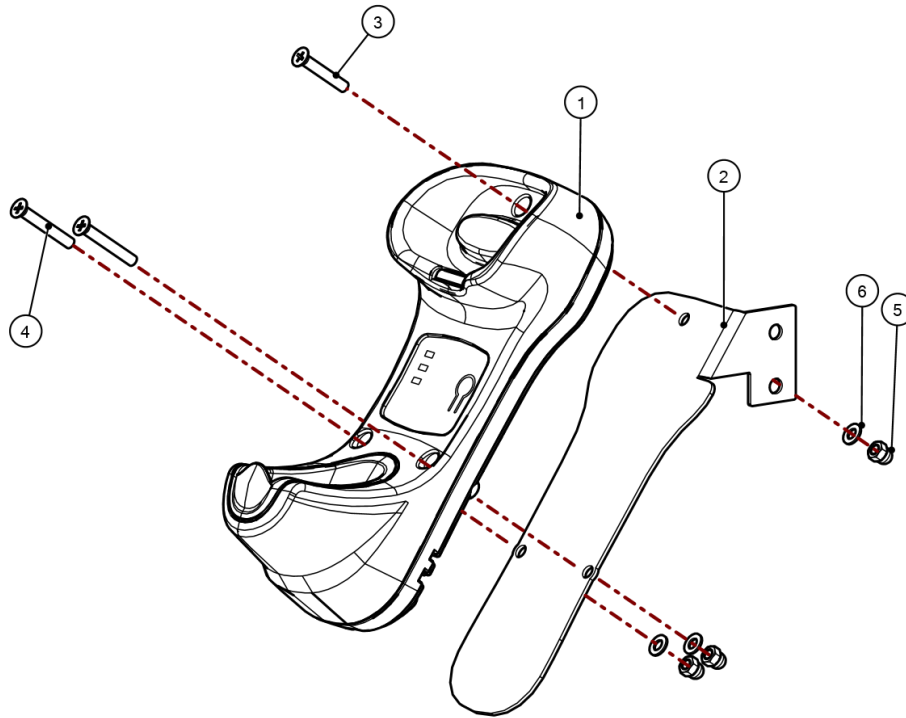


No.	Designation	Number
1	Scanner holder for wired barcode scanner	1
2	Allen screw M6 x 35	2
3	Washer 6.4	2
4	Spacer	2
5	Washer 6.4	2
6	Self-locking M6 nut	2

4a

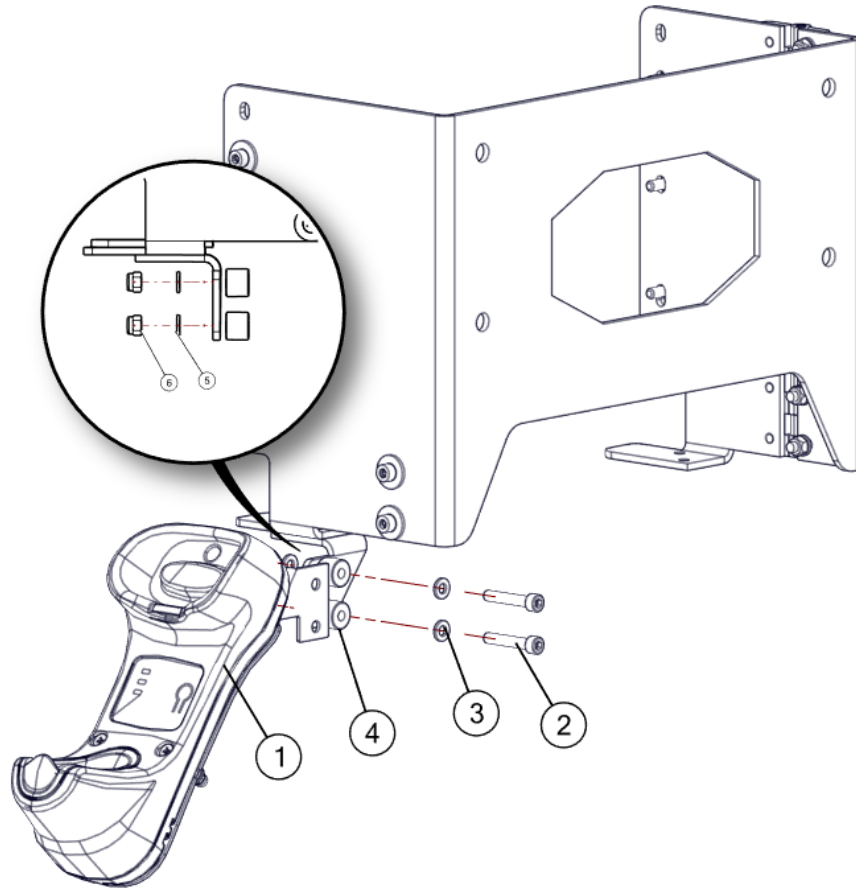


Extra step for Bluetooth barcode scanner only



No.	Designation	Number
1	Base station	1
2	Scanner holder for Bluetooth barcode scanner	1
3	Countersunk screw M5 x 30	1
4	Countersunk screw M5 x 35	2
5	Self-locking M5 nut	3
6	Washer 5.3	3

4b Mounting for Bluetooth barcode scanner

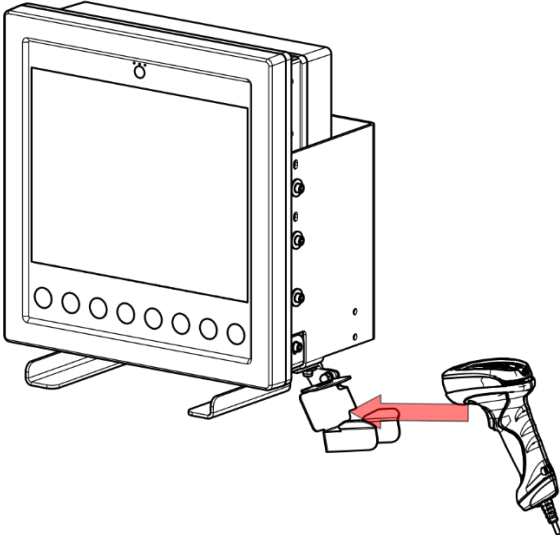


No.	Designation	Number
1	Scanner holder for Bluetooth barcode scanner with mounted base station	1
2	Allen screw M6 x 35	2
3	Washer 6.4	2
4	Spacer	2
5	Washer 6.4	2
6	Self-locking M6 nut	2

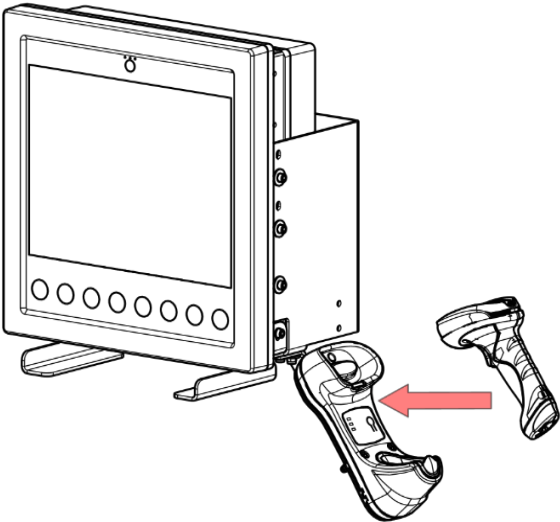
5  Take steps 2 and 3 from chapter 8.7.4

6

Wired barcode scanner



Bluetooth barcode scanner



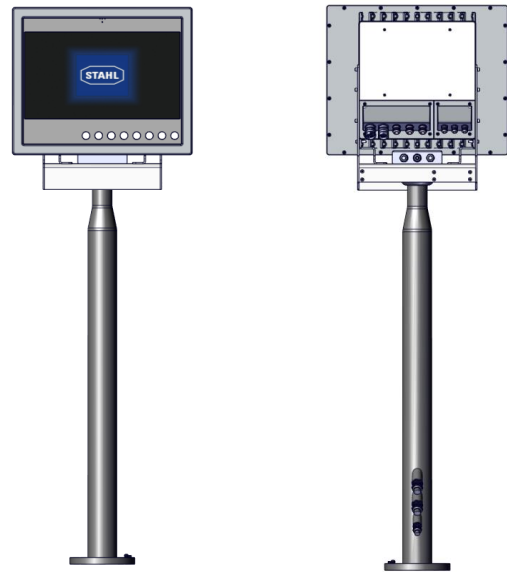
9.10 Mounting on stand

9.10.1 View

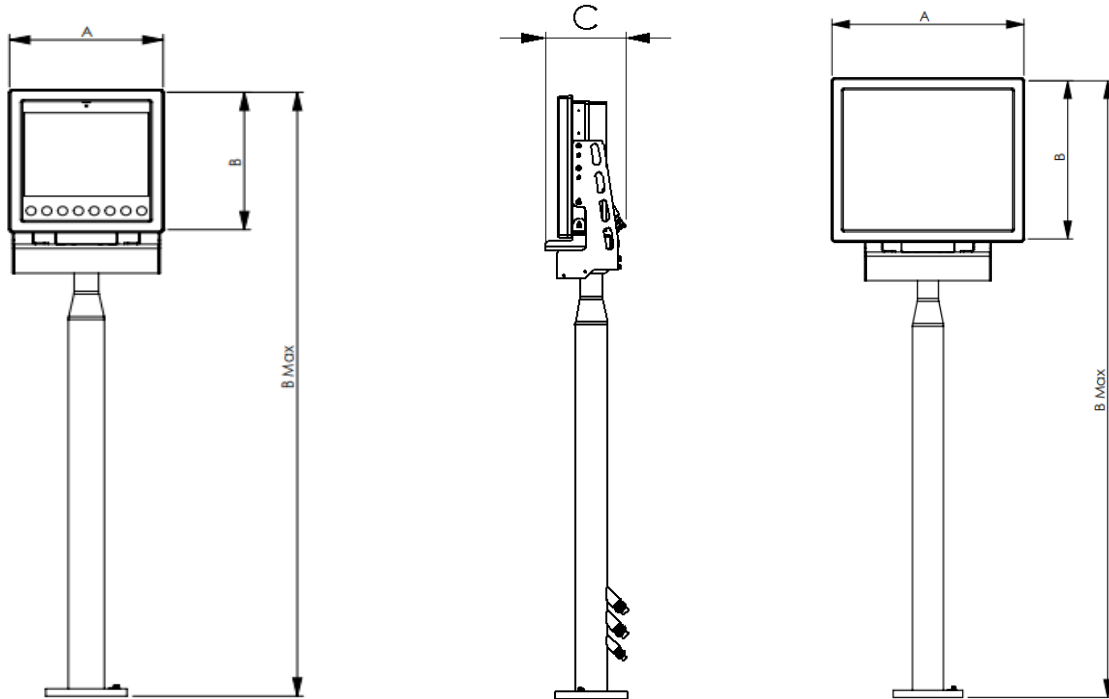
ET-/MT-x38 (15")



ET-/MT-x98 (21.5")

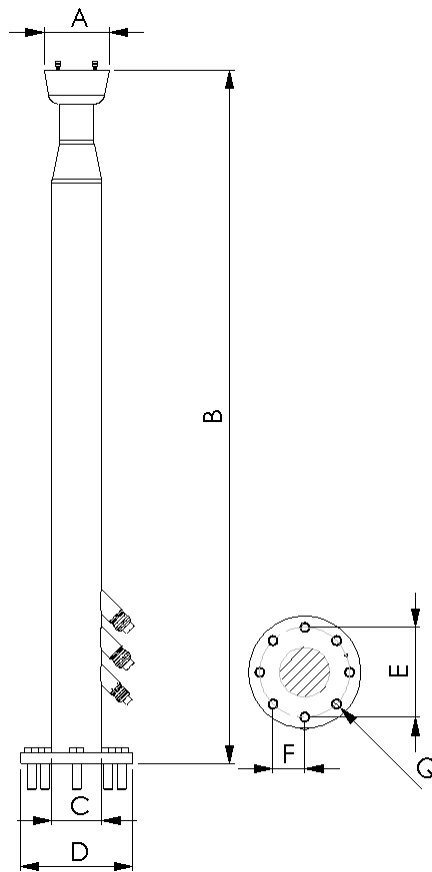


9.10.2 Dimensions



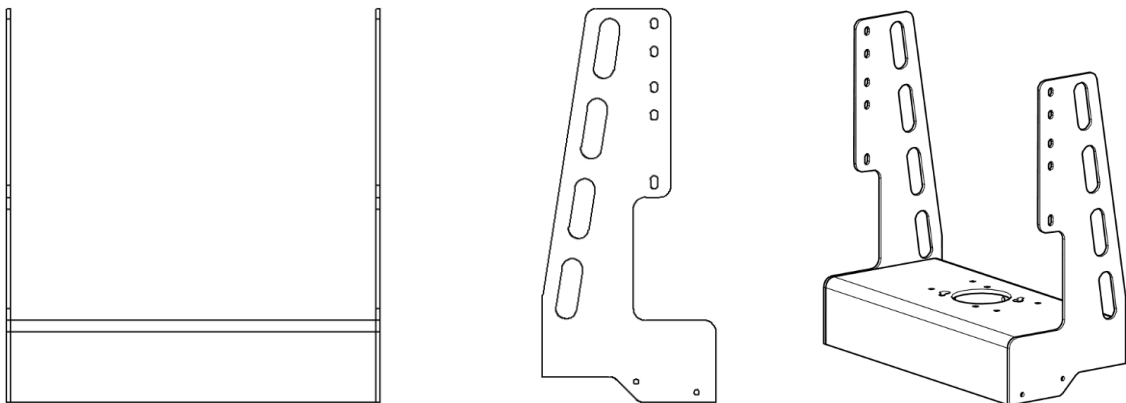
Device	Dimensions [mm]			
	A	B	B Max	C
ET-x38 / MT-x38	380	394	1673	221
ET-x98 / MT-x98	553	458	1733	190

9.10.3 MPFL stand

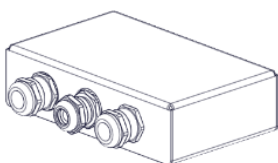


Dimensions (mm)						
A	B	C	D	E	F	G
Ø 116	1240	Ø 88.9	200	160	45° (8x)	Ø 18 (8x)

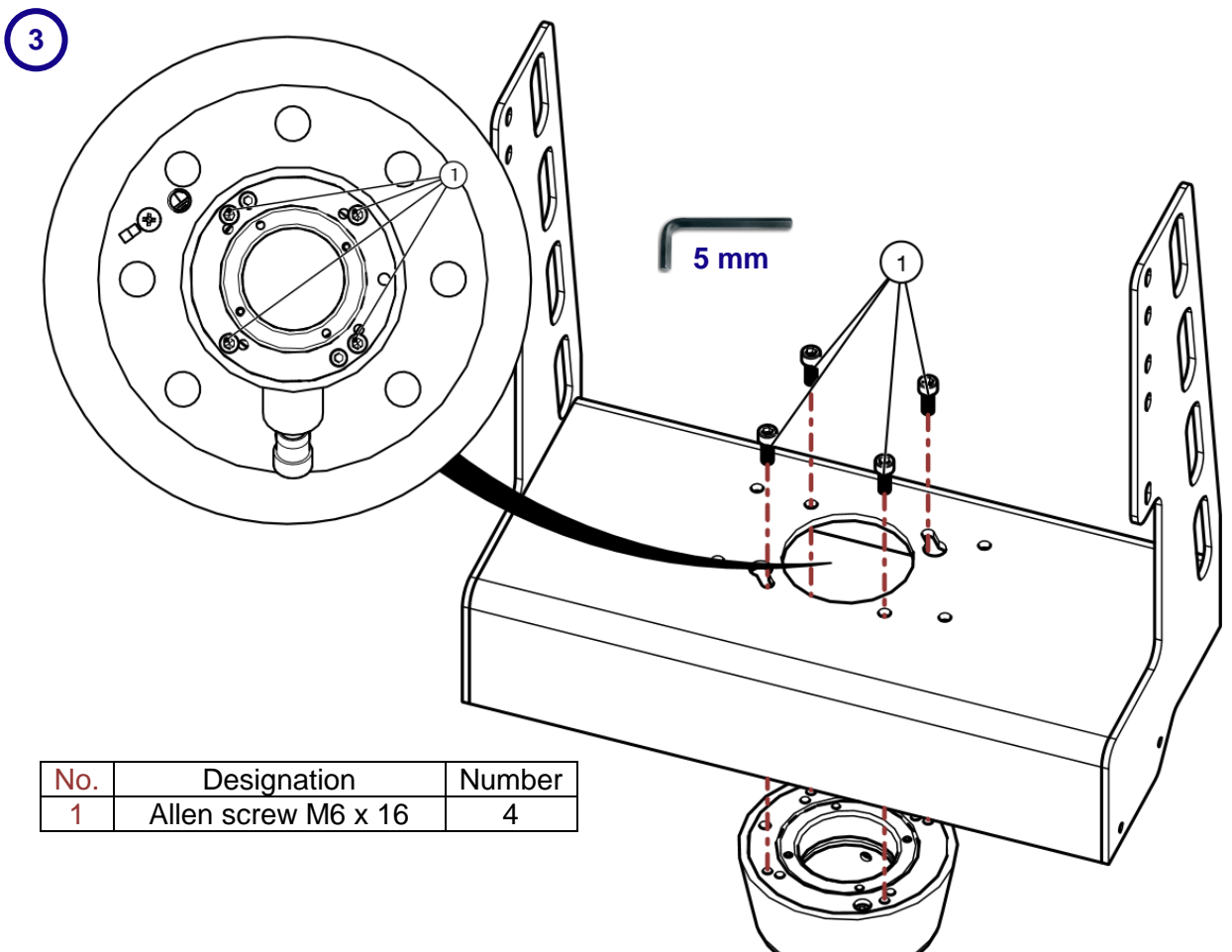
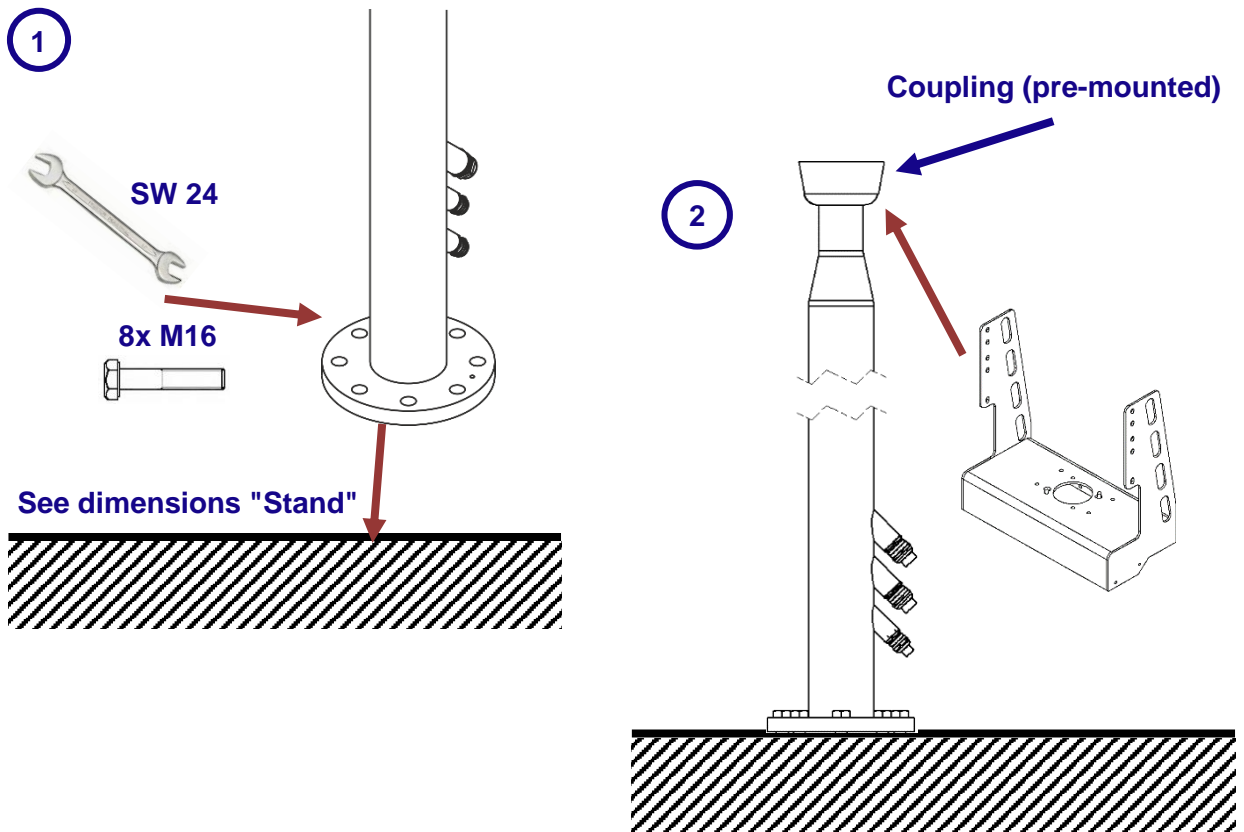
9.10.4 Yoke



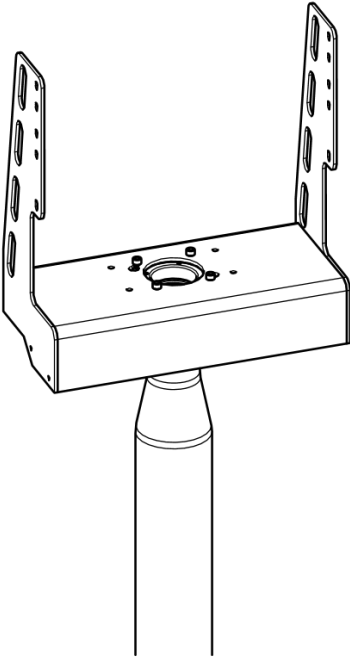
9.10.5 Coupling cover



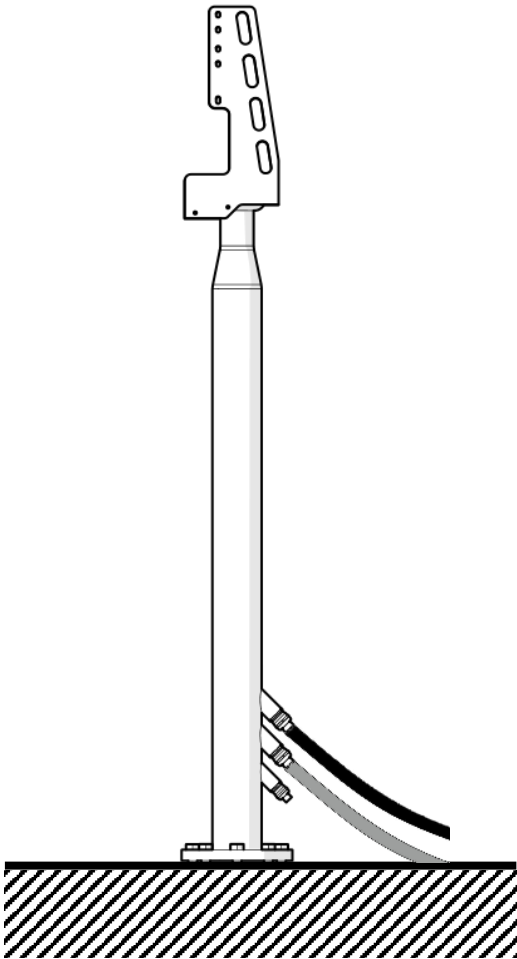
9.10.6 Step-by-step mounting instructions



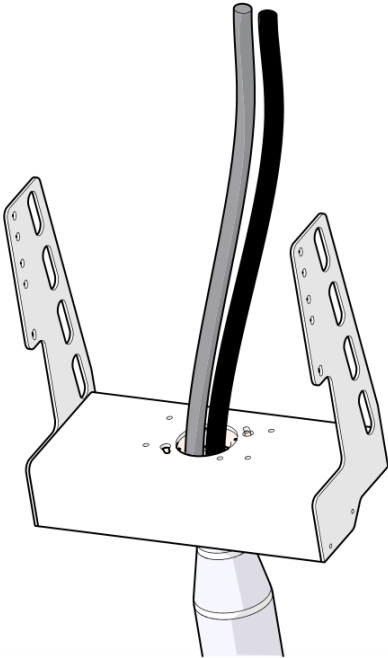
4



5

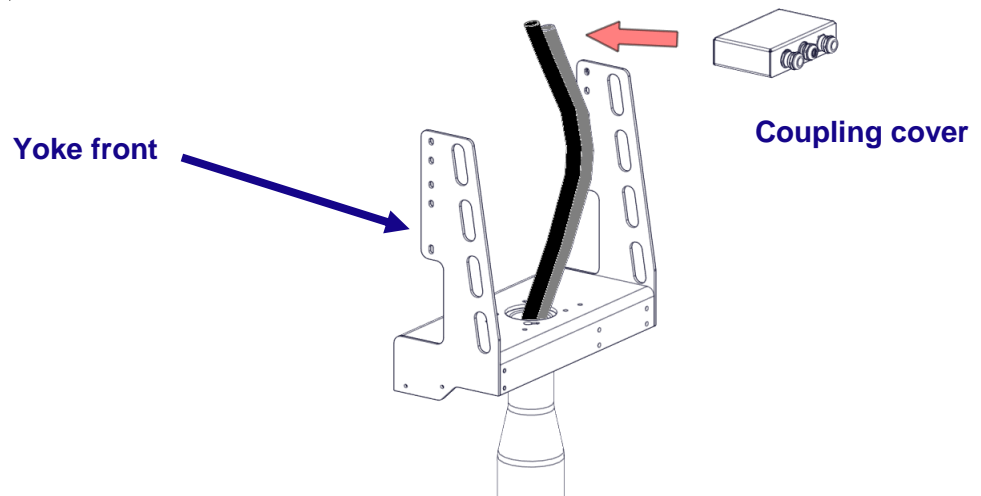


6

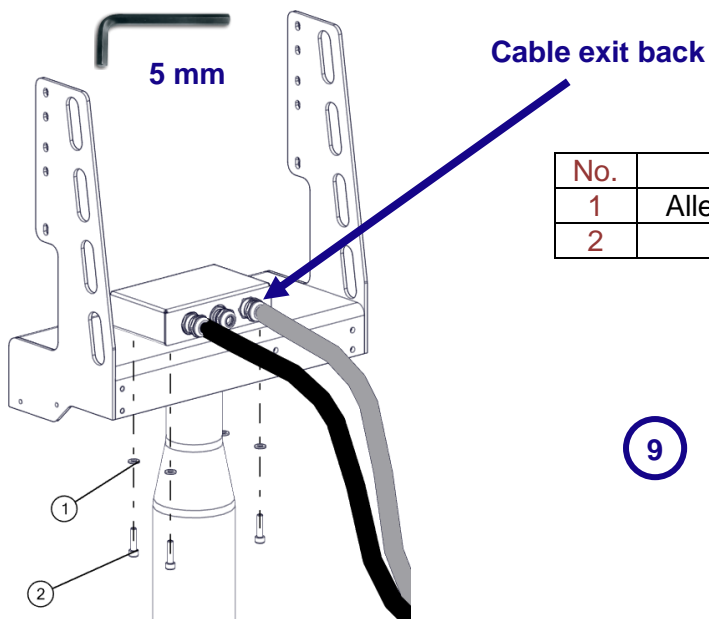


7

 Adhere to direction of mounting !

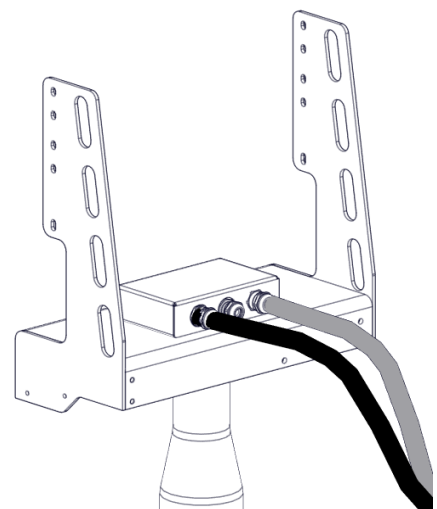


8

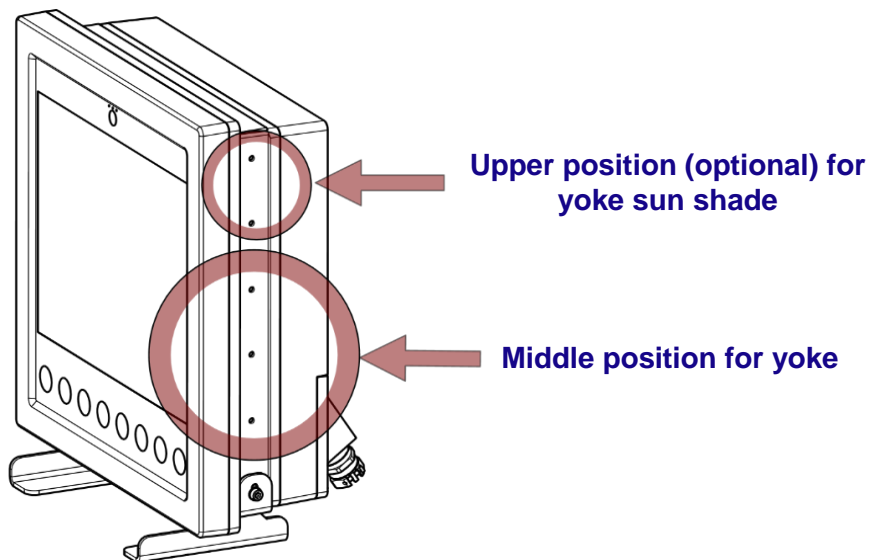
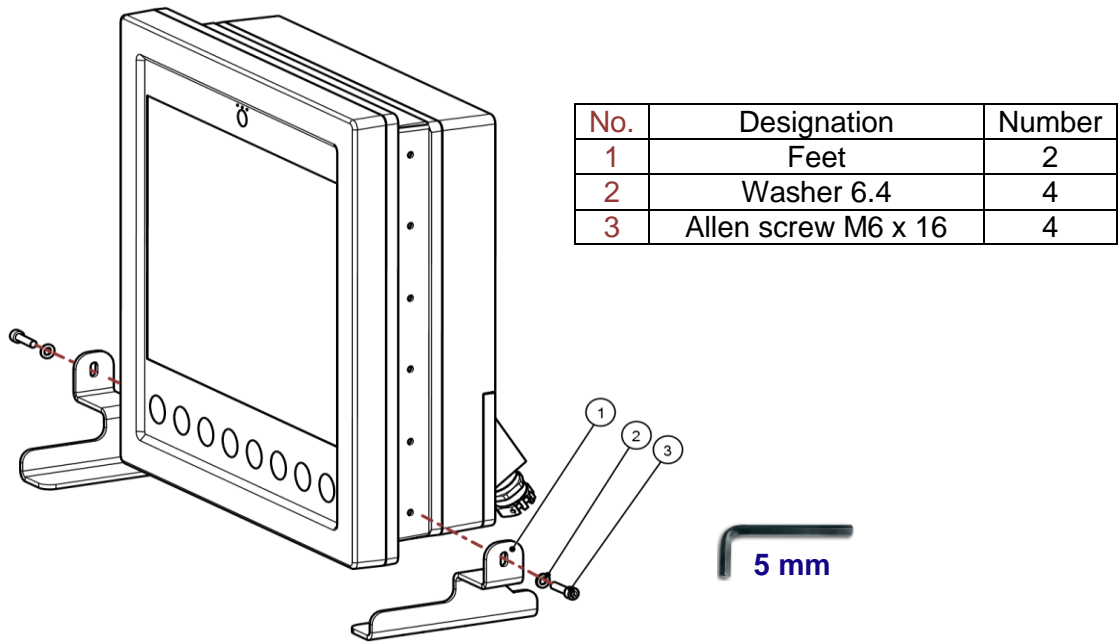


No.	Designation	Number
1	Allen screw M6 x 16	4
2	Washer 6.4	4

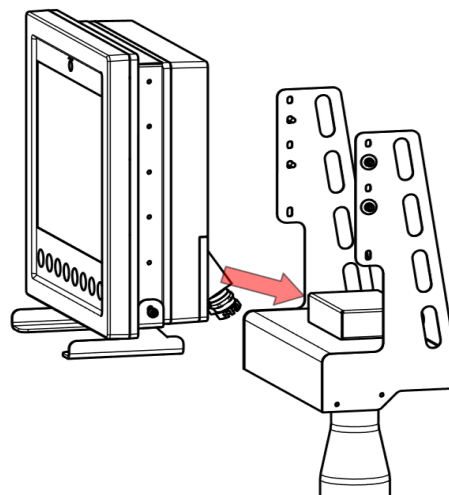
9



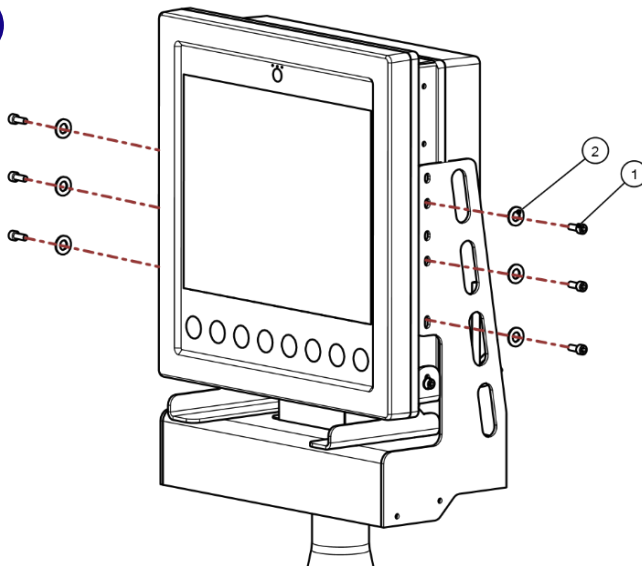
10



11

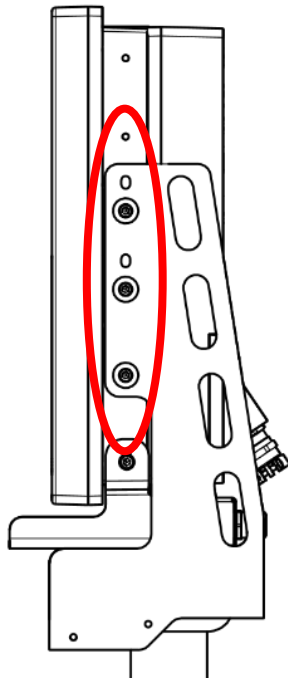


12

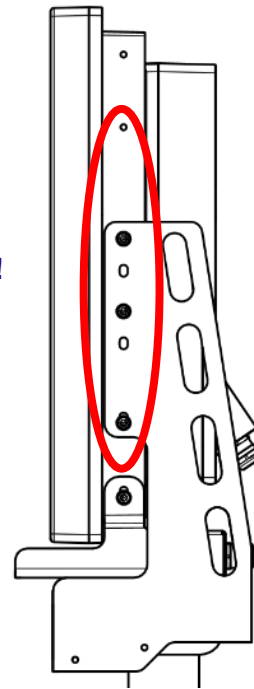


No.	Designation	Number
1	Allen screw M6 x 16	6
2	Washer 6.4	6

ET-/MT-x38 (15")



ET-/MT-x98 (21.5")



Note the positions of the fixing screw holes !

9.11 Mounting on stand with keyboard

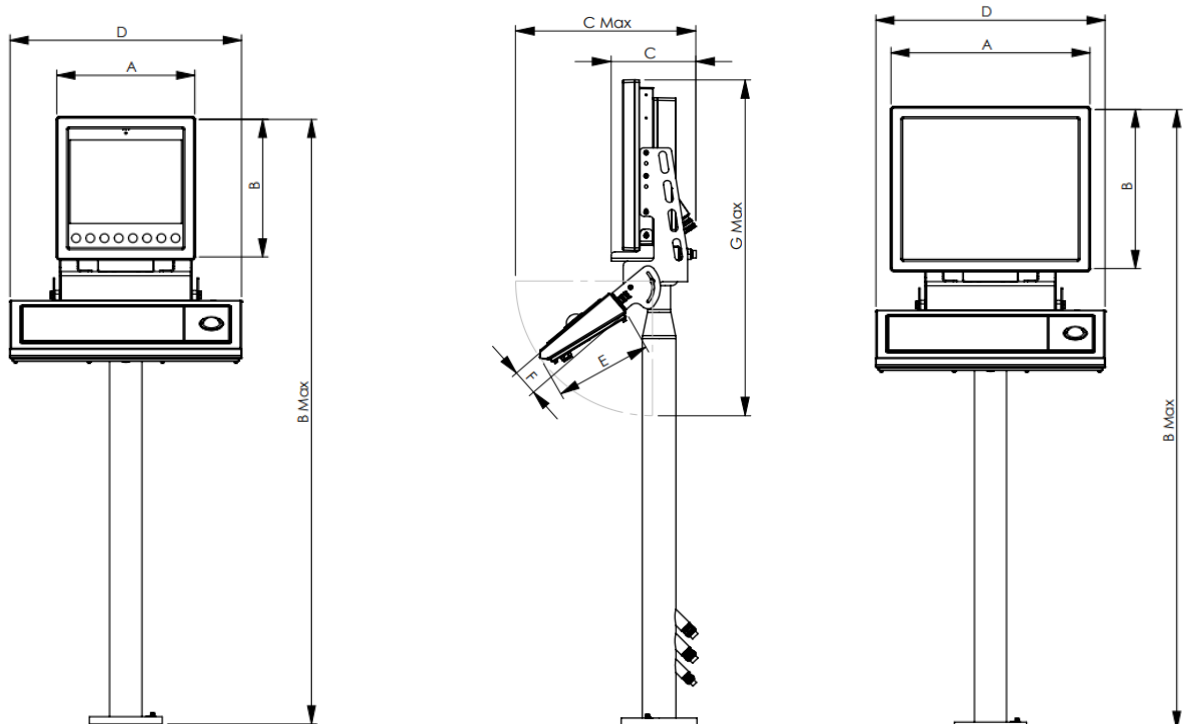
9.11.1 View

ET-/MT-x38 (15")

ET-/MT-x98 (21.5")

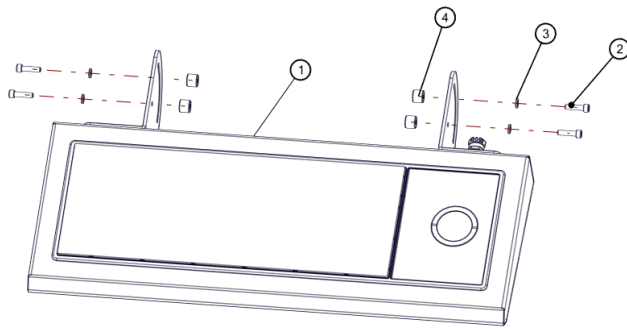


9.11.2 Dimensions



Device	Dimensions [mm]								
	A	B	B Max	C	C Max	D	E	F	G Max
ET-x38 / MT-x38	380	394	1673	223	475	635	260	68	847
ET-x98 / MT-x98	553	458	1731	223	475	635	260	68	900

9.11.3 Keyboard



No.	Designation	Number
1	Keyboard	1
2	Allen screw M6 x 25	4
3	Washer 6.4	4
4	Spacer	

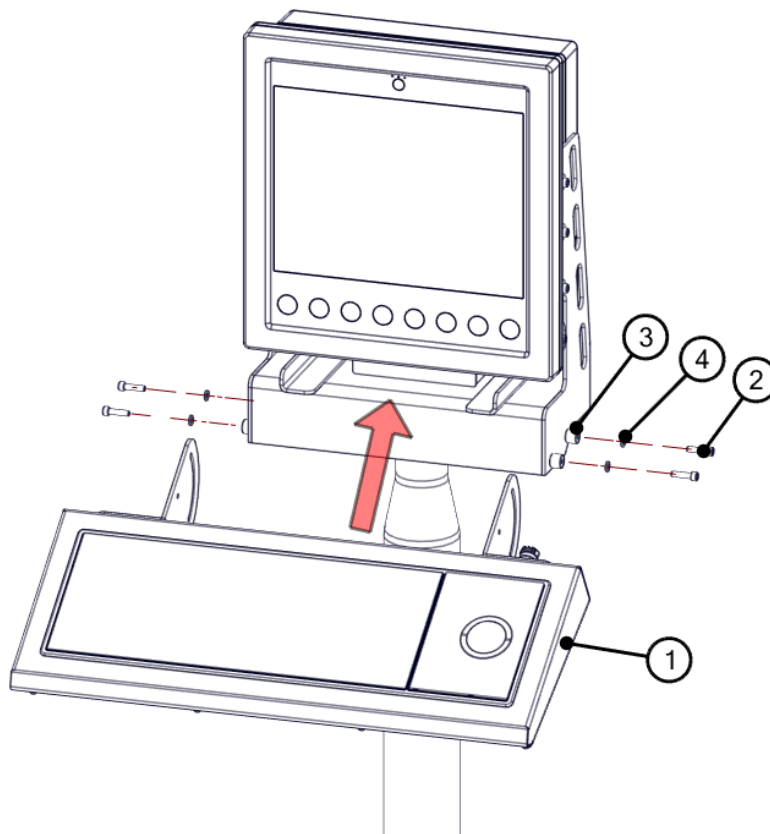
9.11.4 Step-by-step mounting instructions

1



Proceed exactly as outlined in chapter 9.10.6.

2



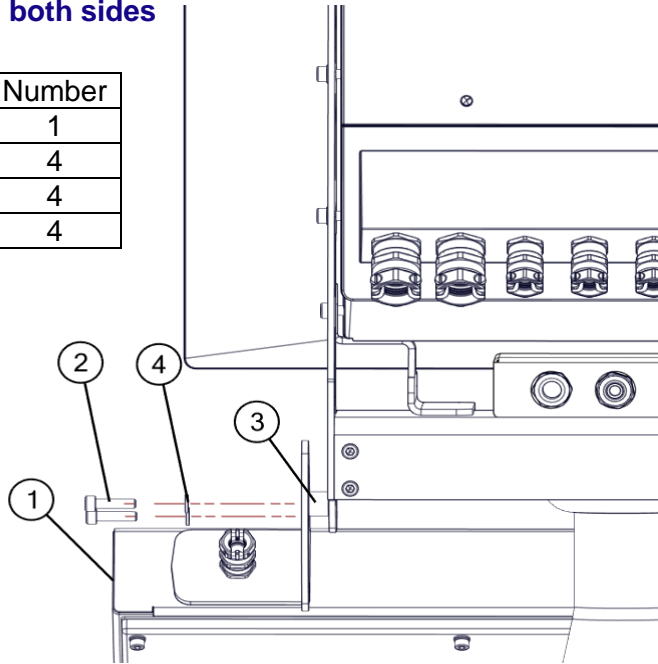
No.	Designation	Number
1	Keyboard	1
2	Allen screw M6 x 25	4
3	Spacer	4
4	Washer 6.4	4

3

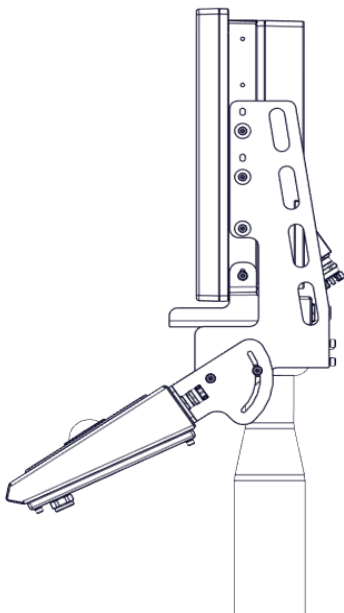


on both sides

No.	Designation	Number
1	Keyboard	1
2	Allen screw M6 x 16	4
3	Spacer	4
4	Washer 6.4	4

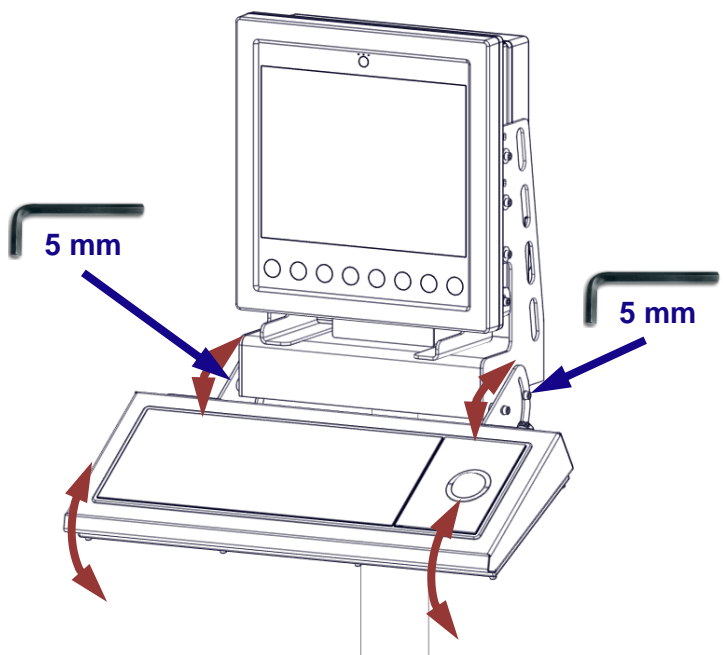


4



5

Adjustable angle / inclination



9.12 Mounting on stand with barcode scanner

9.12.1 View

ET-/MT-x38 (15")

ET-/MT-x98 (21.5")

Wired barcode scanner

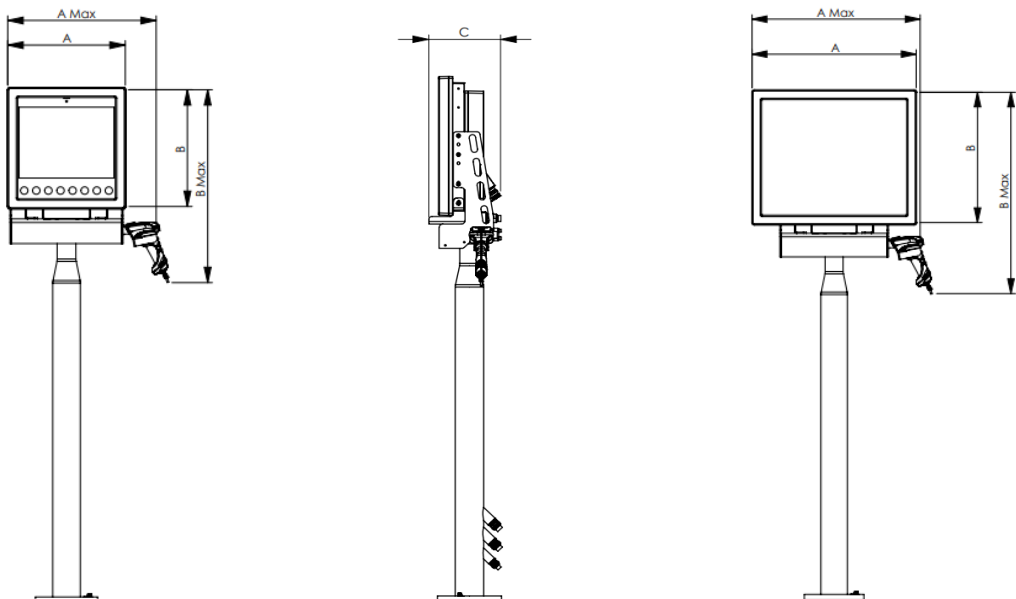


Bluetooth barcode scanner

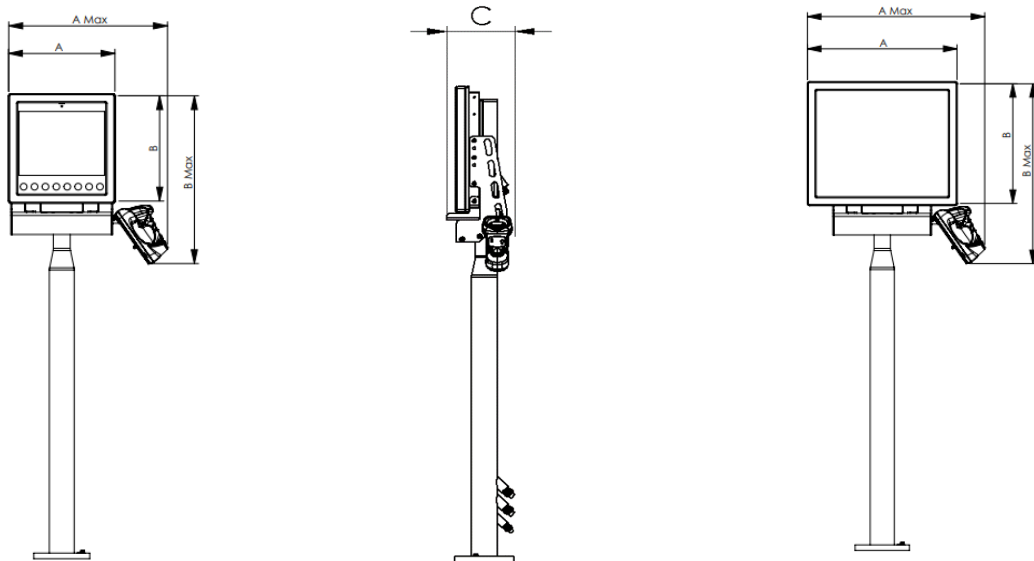


9.12.2 Dimensions

Wired barcode scanner



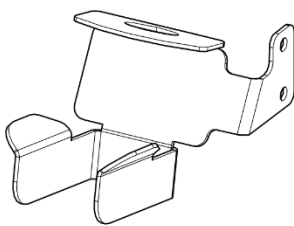
Bluetooth barcode scanner



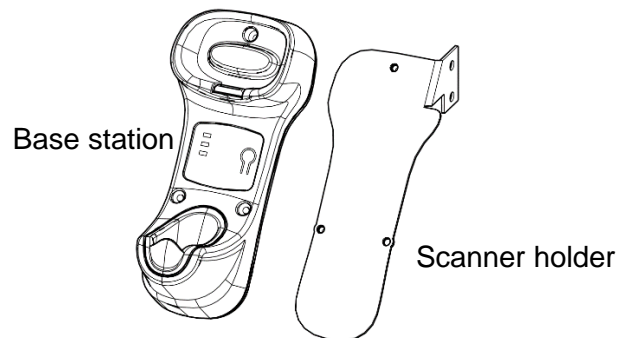
Dimensions (mm) for mounting on stand with wired barcode scanner					
Device	A	A Max	B	B Max	C
ET-x38 / MT-x38	380	477	394	517	202
ET-x98 / MT-x98	553	564	458	576	209
Dimensions (mm) for mounting on stand with Bluetooth barcode scanner					
Device	A	A Max	B	B Max	C
ET-x38 / MT-x38	380	568	394	615	214
ET-x98 / MT-x98	553	653	458	674	227

9.12.3 Scanner holder

Scanner holder for wired barcode scanner



Scanner holder for Bluetooth barcode scanner



9.12.4 Step-by-step mounting instructions

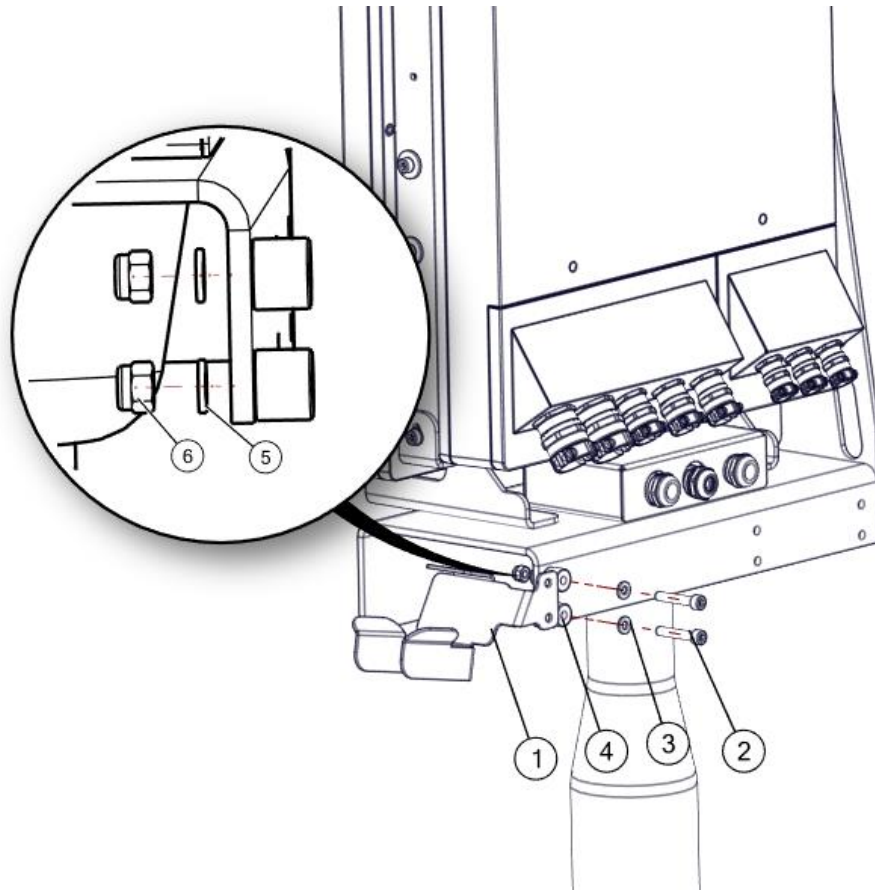
1



Proceed exactly as outlined in chapter 9.10.6.

2

Mounting for wired barcode scanner

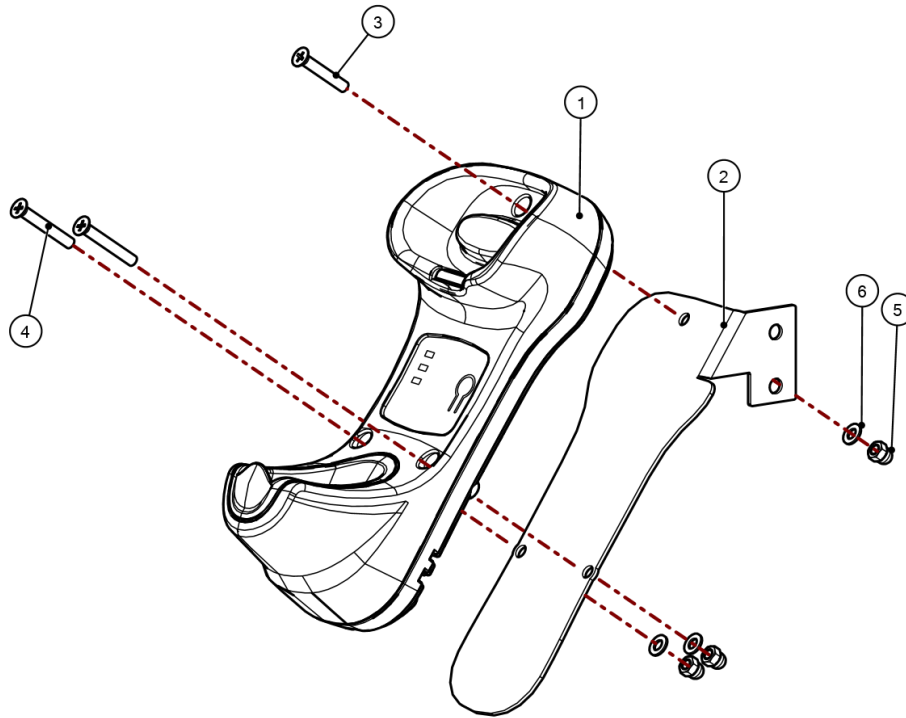


No.	Designation	Number
1	Scanner holder for wired barcode scanner	1
2	Allen screw M6 x 35	2
3	Washer 6.4	2
4	Spacer	2
5	Washer 6.4	2
6	Self-locking M6 nut	2

3a

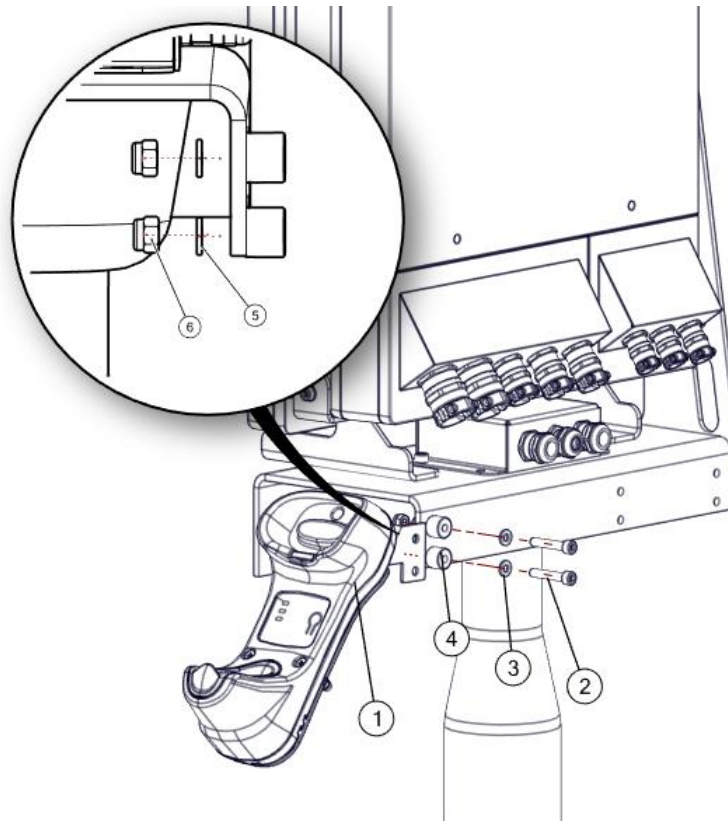


Extra step for Bluetooth barcode scanner only



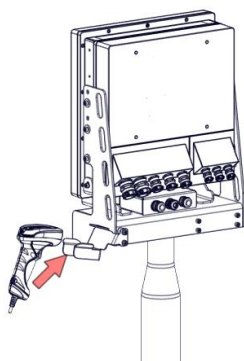
No.	Designation	Number
1	Base station	1
2	Scanner holder for Bluetooth barcode scanner	1
3	Countersunk screw M5 x 30	1
4	Countersunk screw M5 x 35	2
5	Self-locking M5 nut	3
6	Washer 5.3	3

3b Mounting for Bluetooth barcode scanner

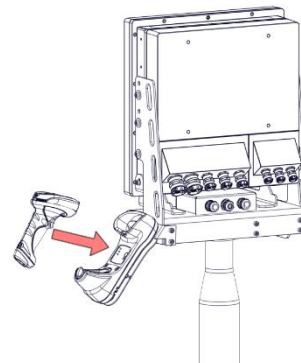


No.	Designation	Number
1	Scanner holder for Bluetooth barcode scanner with mounted base station	1
2	Allen screw M6 x 35	2
3	Washer 6.4	2
4	Spacer	2
5	Washer 6.4	2
6	Self-locking M6 nut	2

4 Wired barcode scanner



Bluetooth barcode scanner

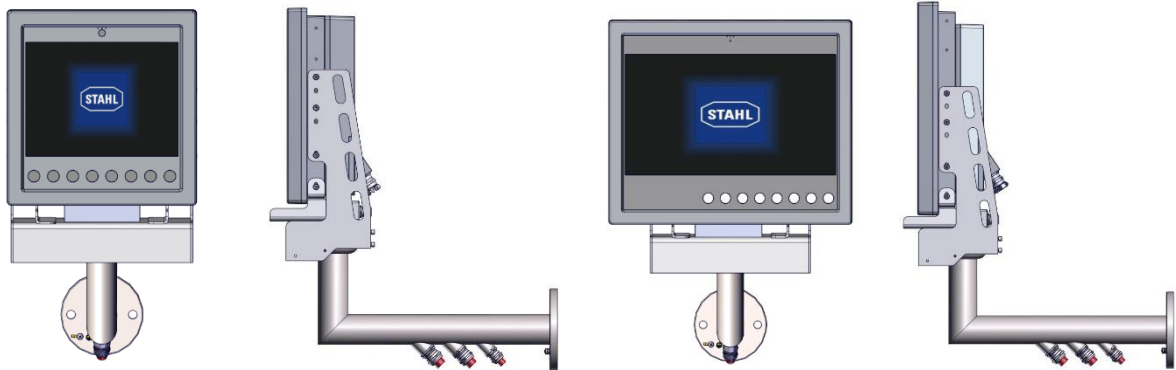


9.13 Mounting on elbow

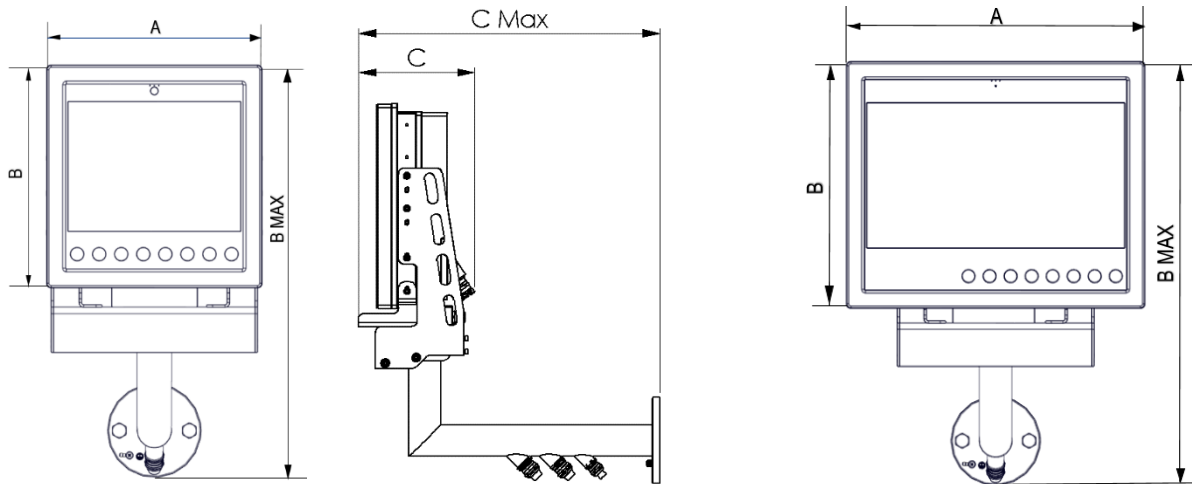
9.13.1 View

ET-/MT-x38 (15")

ET-/MT-x98 (21.5")

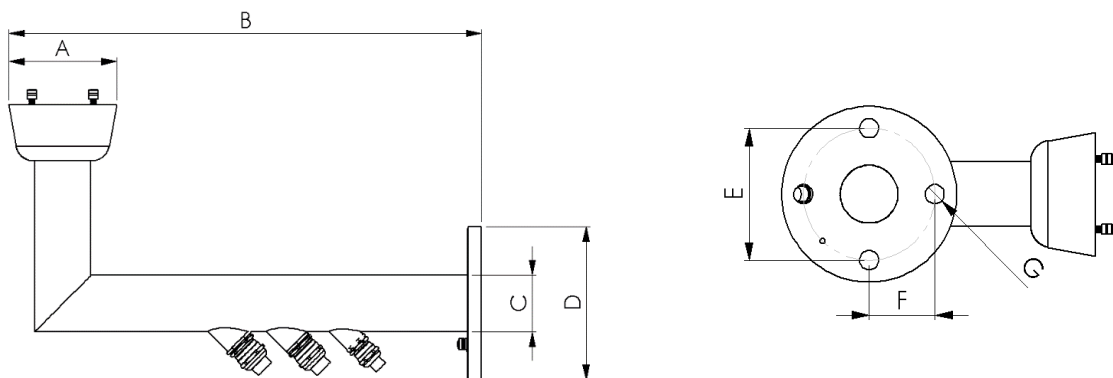


9.13.2 Dimensions



Device	Dimensions [mm]				
	A	B	B Max	C	C Max
ET-x38 / MT-x38	380	394	729	221	578
ET-x98 / MT-x98	553	458	786	221	578

9.13.3 MPW elbow



Dimensions (mm)						
A	B	C	D	E	F	G
Ø 116	509	Ø 60.30	Ø 165	124	90° (4x)	Ø 18 (4x)

9.13.4 Yoke

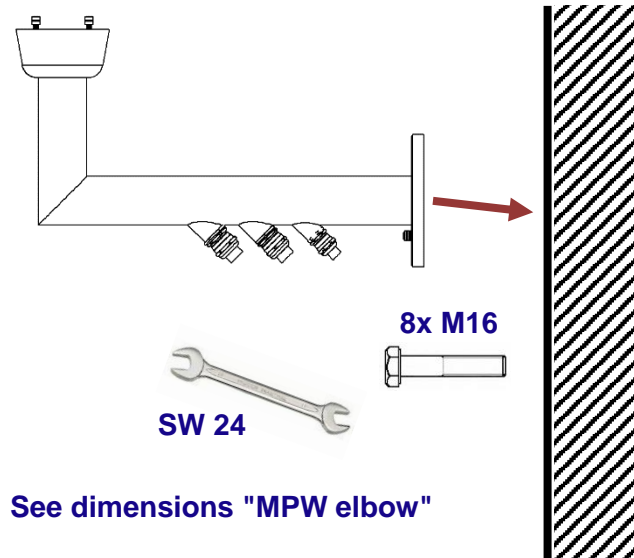
 See chapter 9.10.4

9.13.5 Coupling cover

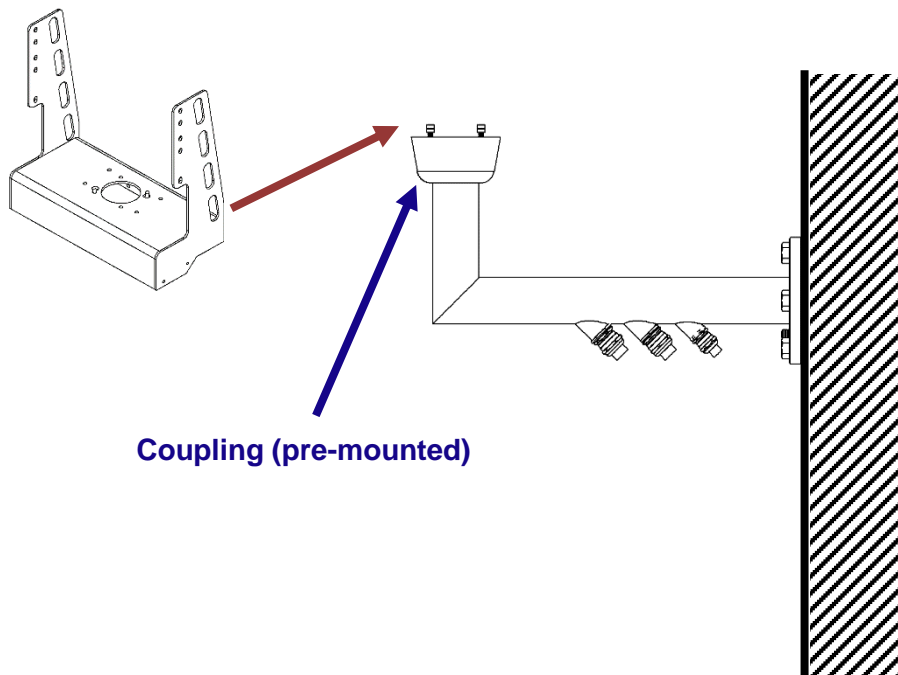
 See chapter 9.10.5

9.13.6 Step-by-step mounting instructions

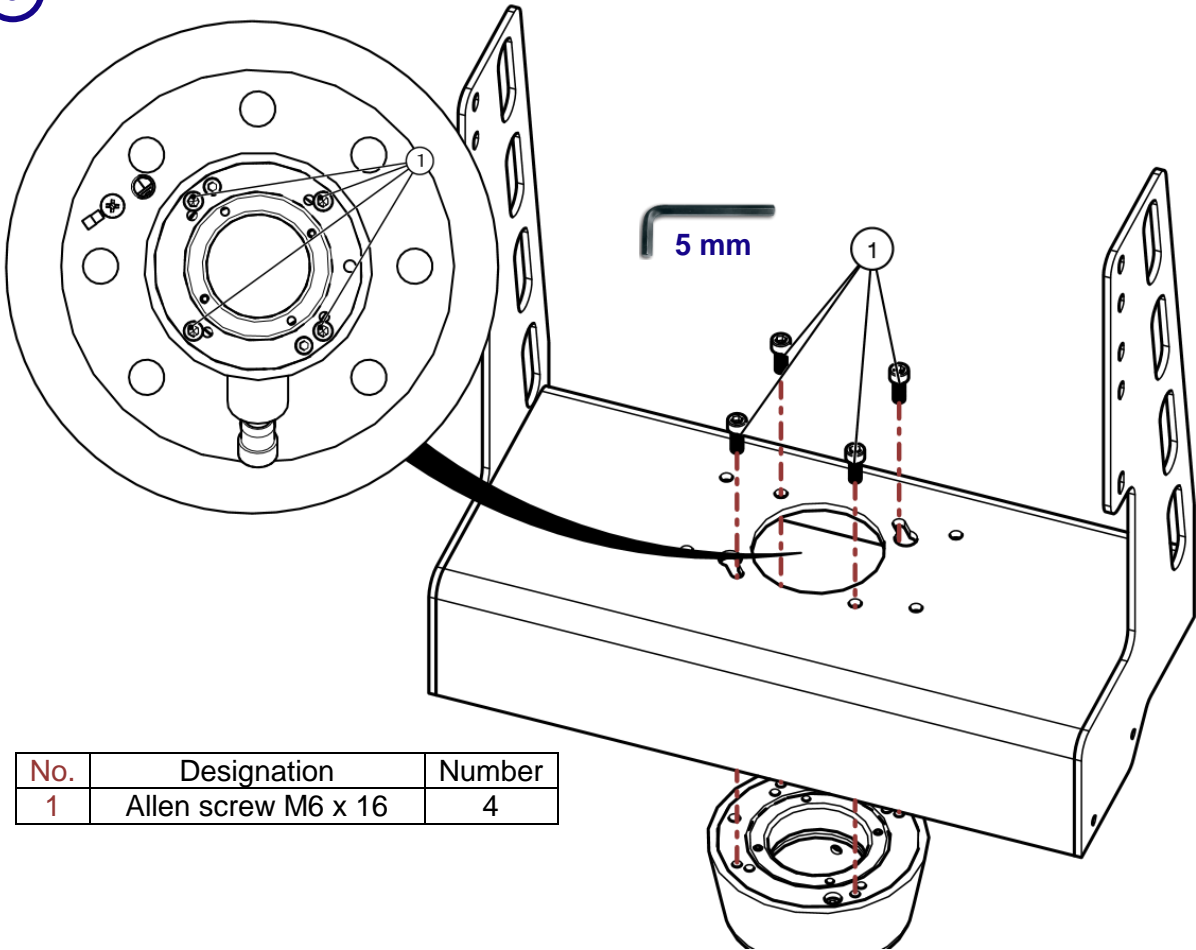
1



2

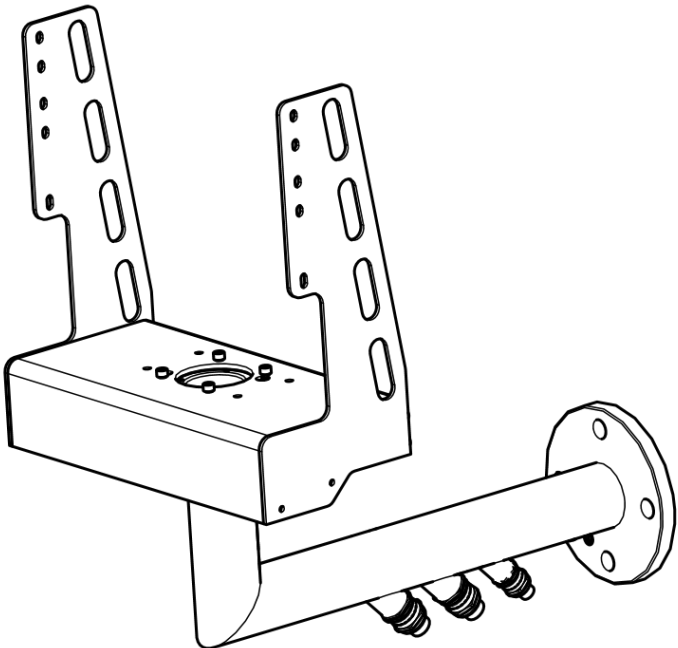


3

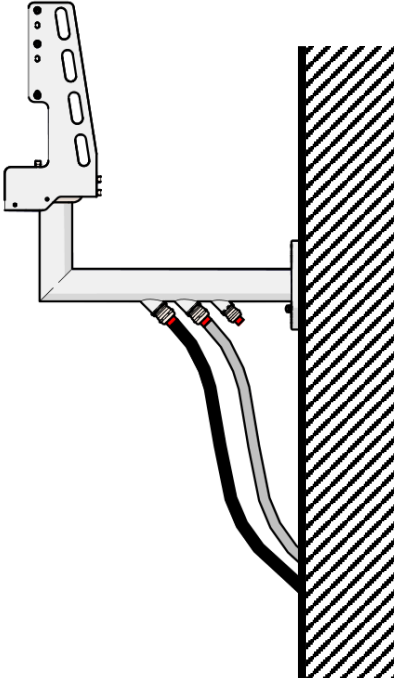


No.	Designation	Number
1	Allen screw M6 x 16	4

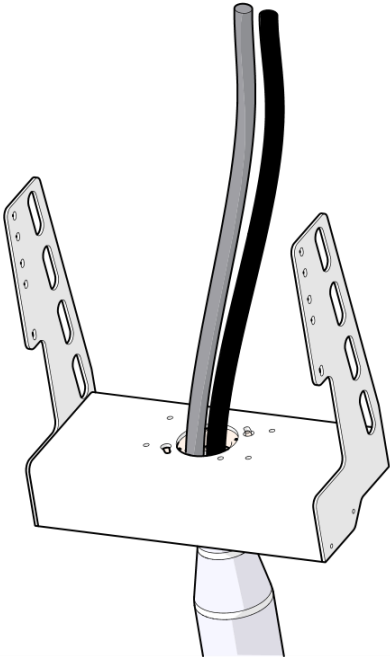
4



5



6



7

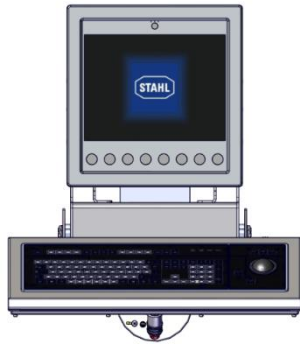


For further mounting steps see chapter 9.10.6 from step 7

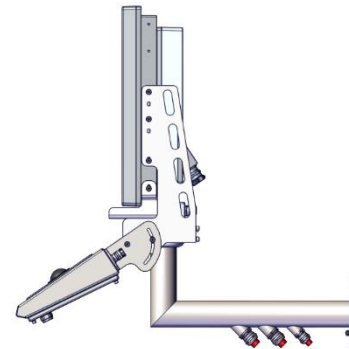
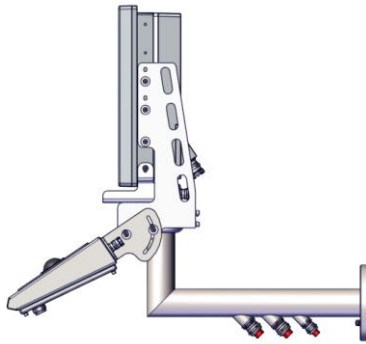
9.14 Mounting on elbow with keyboard

9.14.1 View

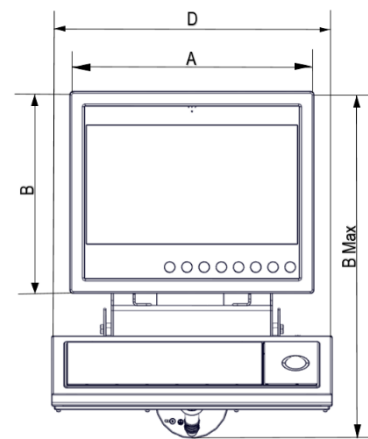
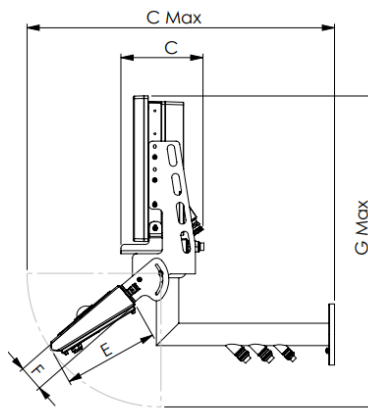
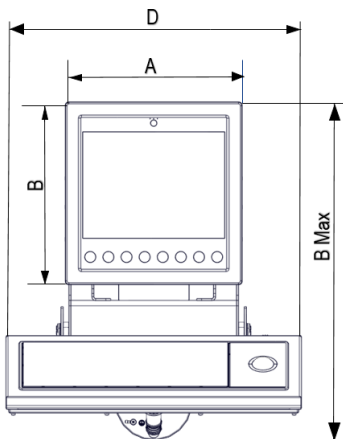
ET-/MT-x38 (15")



ET-/MT-x98 (21.5")



9.14.2 Dimensions





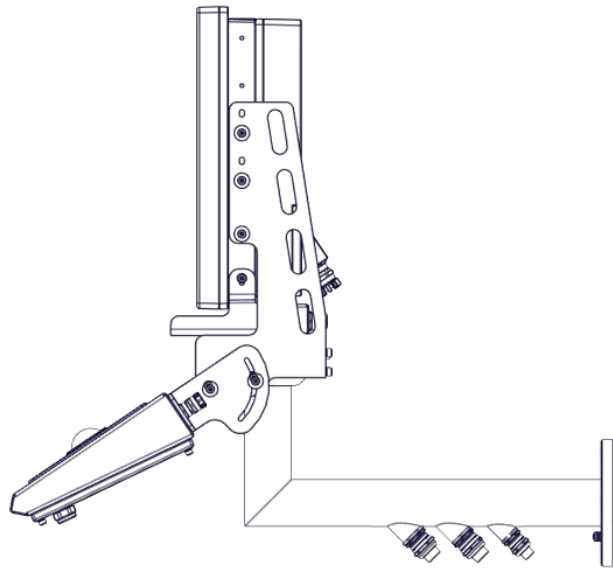
Device	Dimensions [mm]								
	A	B	B Max	C	C Max	D	E	F	G Max
ET-x38 / MT-x38	380	394	729	223	829	635	260	68	840
ET-x98 / MT-x98	553	458	786	223	829	635	260	68	900

9.14.3 Keyboard

 See chapter 9.11.3

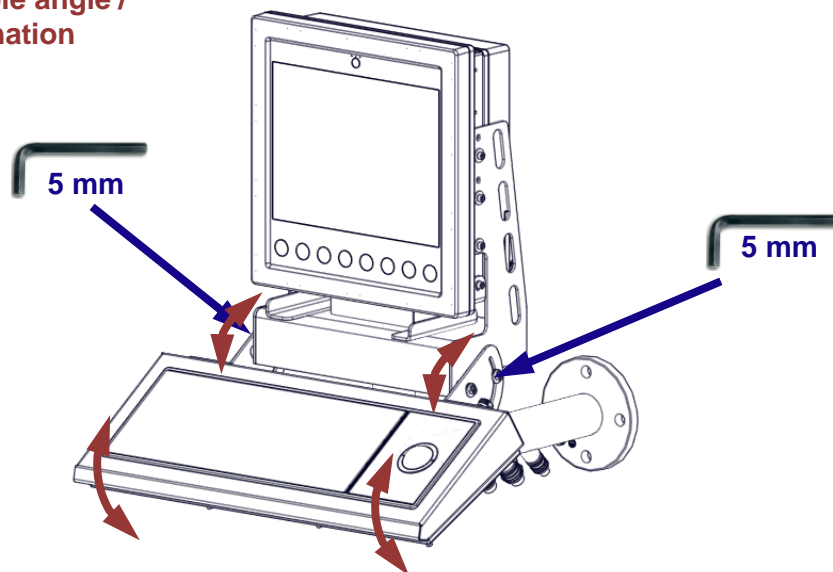
9.14.4 Step-by-step mounting instructions

- 1  Proceed exactly as outlined in chapter 9.13.6.
- 2  Mount keyboard as described in chapter 8.11.4 from step 2
- 3



- 4

Adjustable angle / inclination



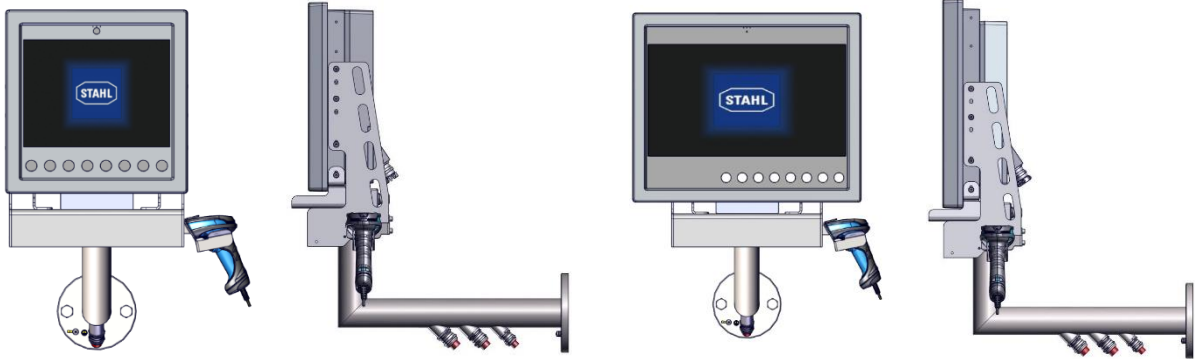
9.15 Mounting on elbow with barcode scanner

9.15.1 View

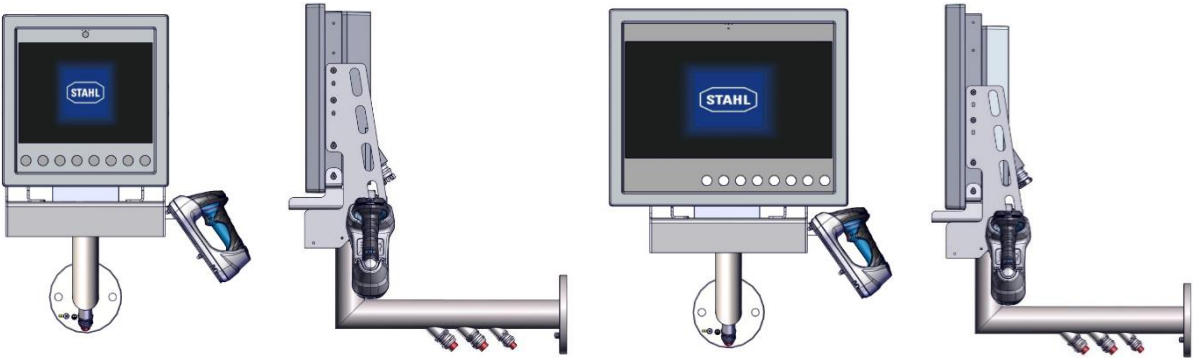
ET-/MT-x38 (15")

ET-/MT-x98 (21.5")

Wired barcode scanner

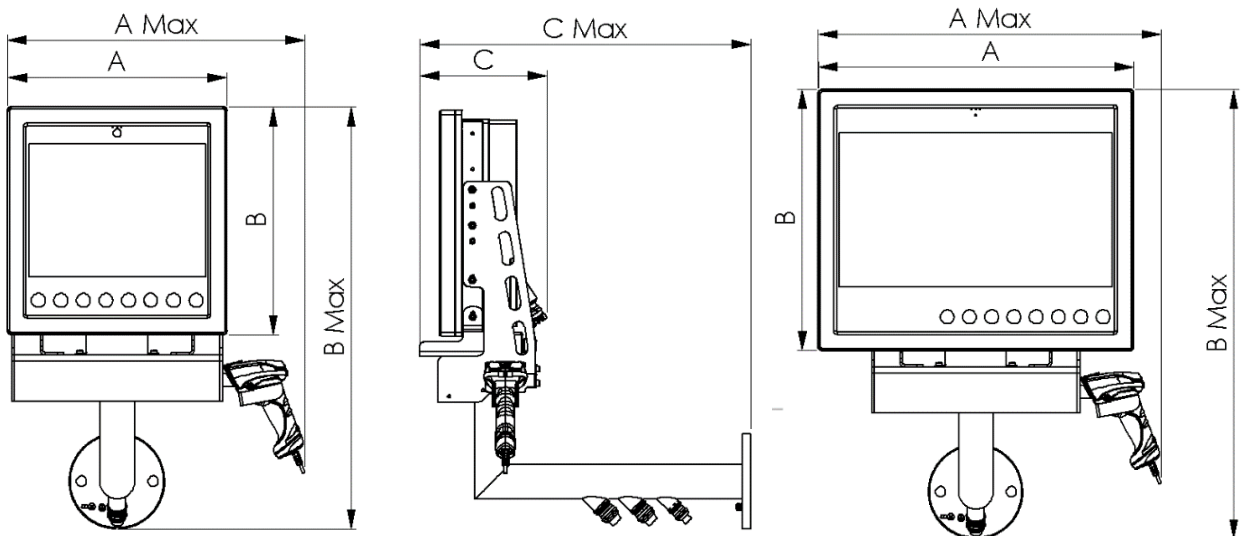


Bluetooth barcode scanner

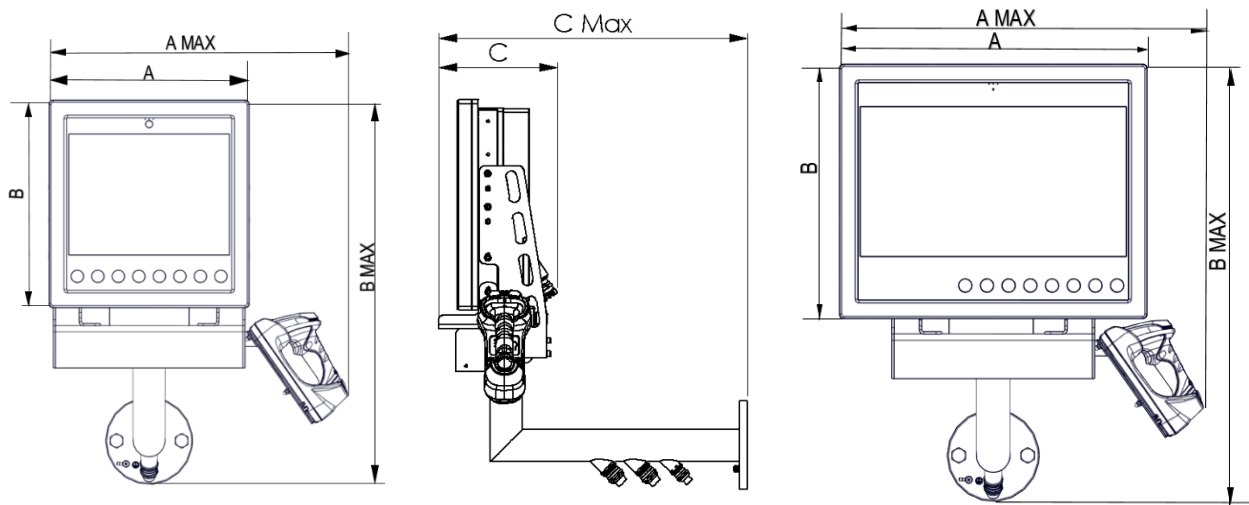


9.15.2 Dimensions

Wired barcode scanner



Bluetooth barcode scanner



Dimensions (mm) for mounting on elbow with wired barcode scanner					
Device	A	A Max	B	B Max	C
ET-x38 / MT-x38	380	515	394	517	221
ET-x98 / MT-x98	553	564	458	576	221
Dimensions (mm) for mounting on elbow with Bluetooth barcode scanner					
Device	A	A Max	B	B Max	C
ET-x38 / MT-x38	380	568	394	729	221
ET-x98 / MT-x98	553	653	458	786	221

9.15.3 Scanner holder

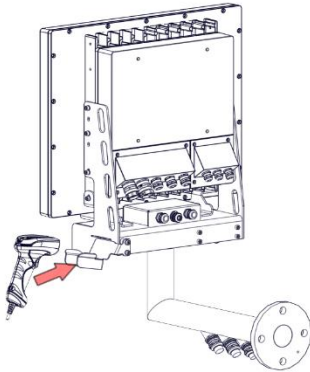
	See chapter 9.12.3
--	--------------------

9.15.4 Step-by-step mounting instructions

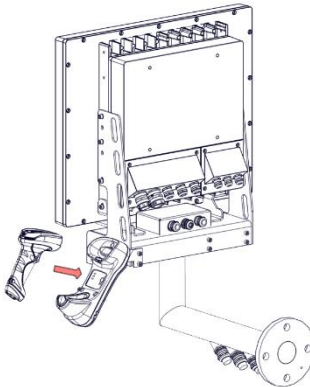
- 1 Proceed with steps as described in chapter 8.13.6
- 2 Mount scanner holders as described in chapter 8.12.4 from step 2

3

Wired barcode scanner



Bluetooth barcode scanner

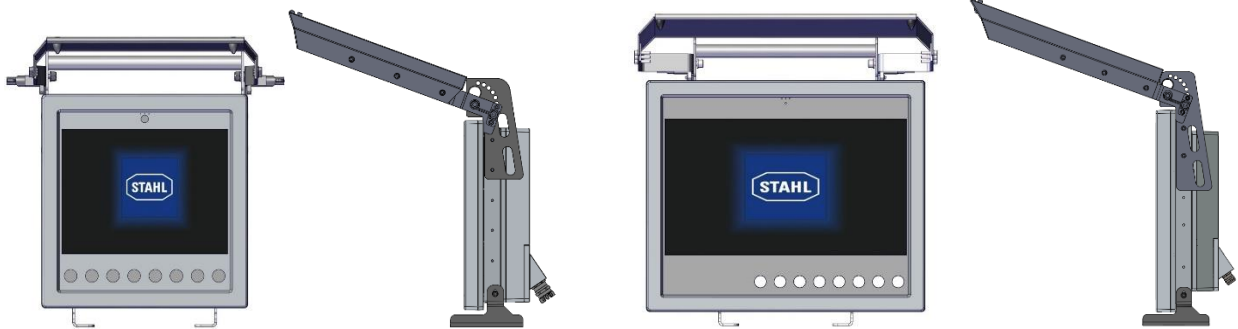


9.16 Mounting of sun shade

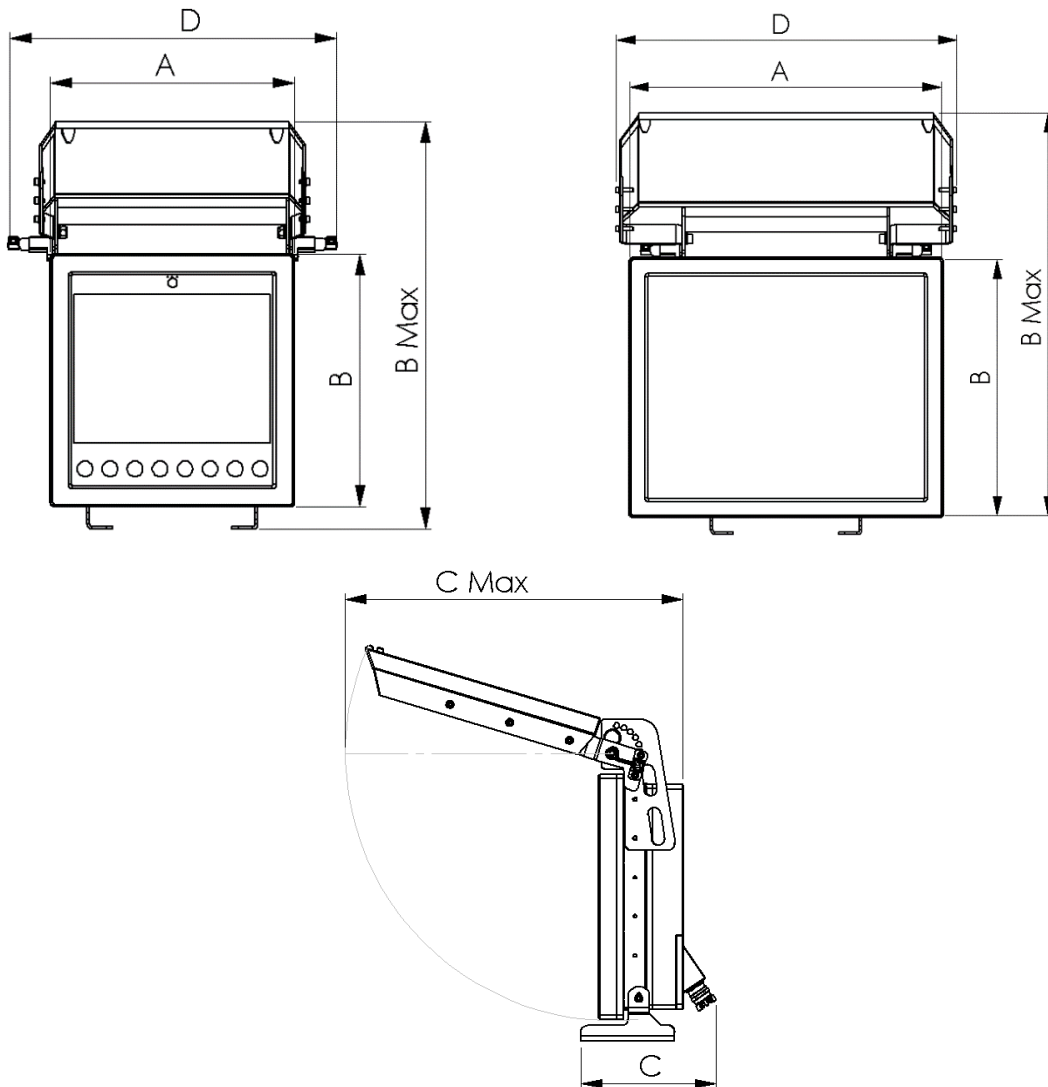
9.16.1 View

ET-/MT-x38 (15")

ET-/MT-x98 (21.5")

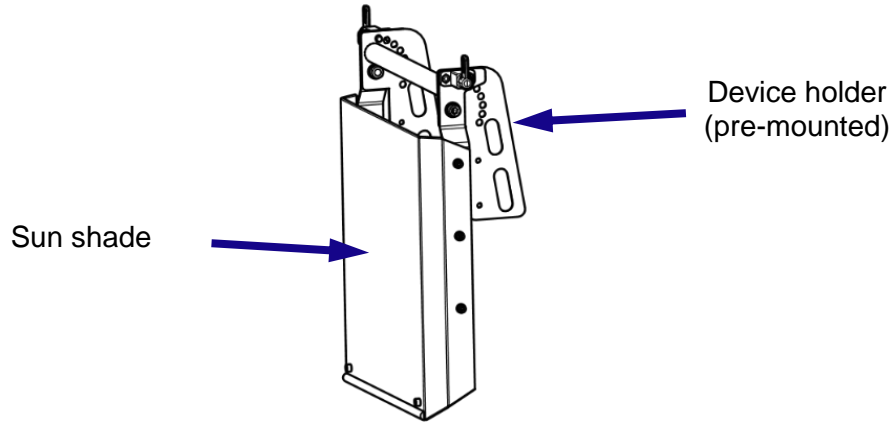


9.16.2 Dimensions



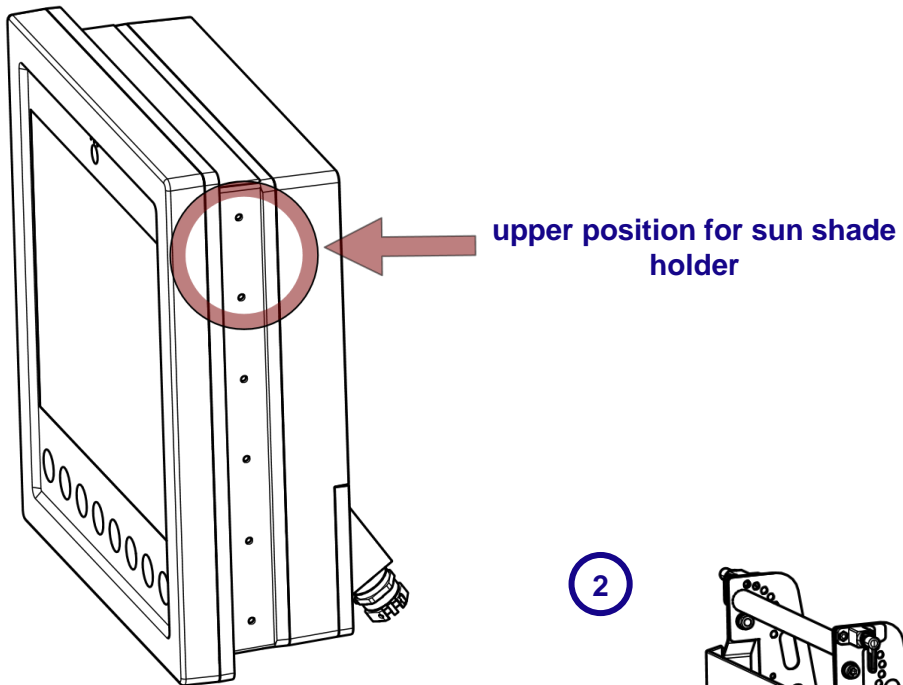
Device	A	B	B Max	C	C Max	D
ET-x38 / MT-x38 (15")	380	394	657	216	540	513
ET-x98 / MT-x98 (21.5")	553	458	741	220	603	600

9.16.3 Sun shade

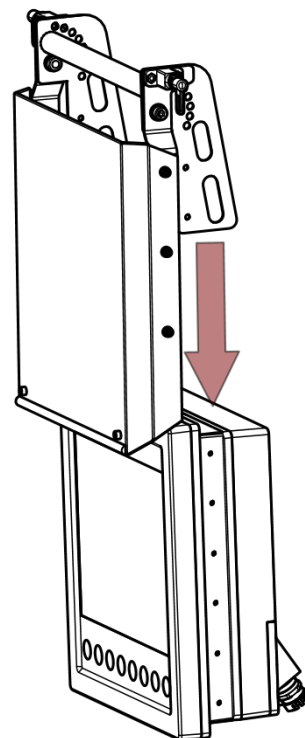


9.16.4 Step-by-step mounting instructions

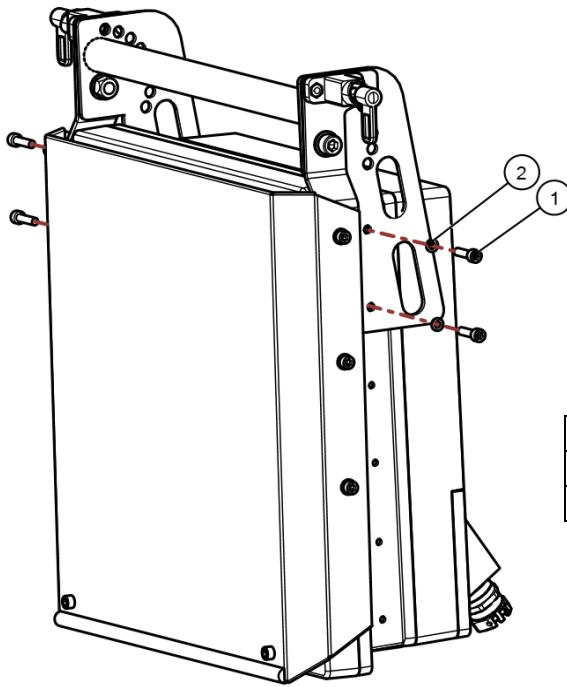
1



2



3



Recommended torque for allen screws: 10 to 12 N

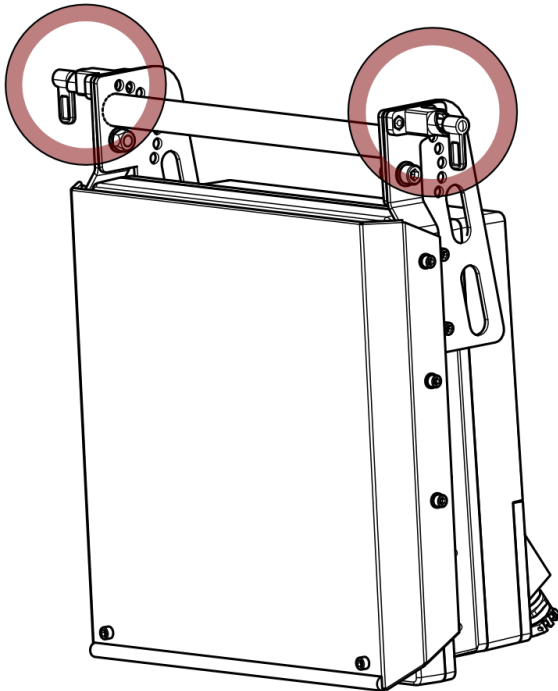


No.	Designation	Number
1	Allen screw M6 x 16	4
2	Washer 6.4	4

9.16.5 Sun shade lock

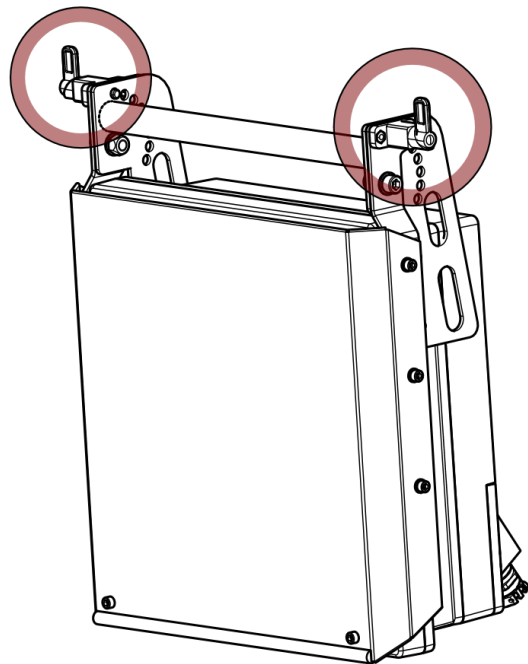
Lock open

Lever down = open




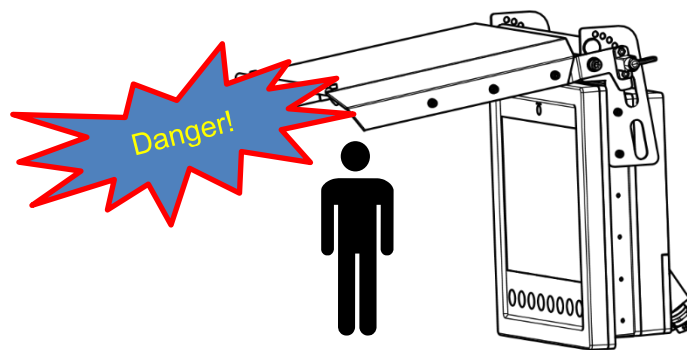
Lock closed

Lever up = closed



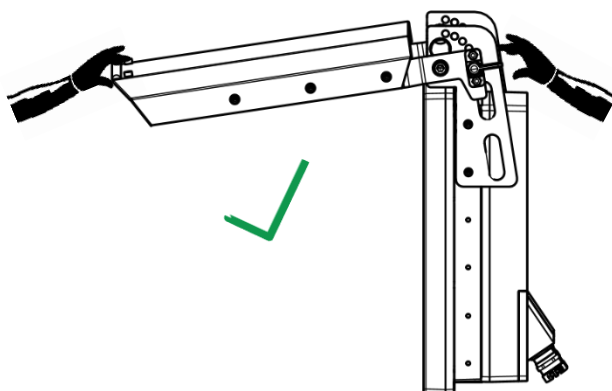
9.16.6 Adjusting angle of sun shade

	WARNING
	<p>Dropping sun shade ! Non-compliance can result in serious injuries. Sun shade may crush fingers or knock on head.</p> <ul style="list-style-type: none">• Always adjust sun shade angle with both hands (see illustration)

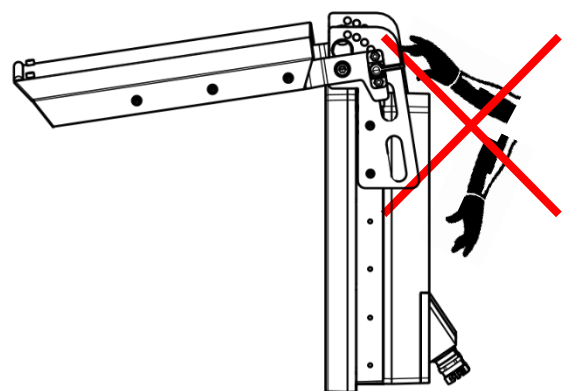


Operate with both hands only !

Correct

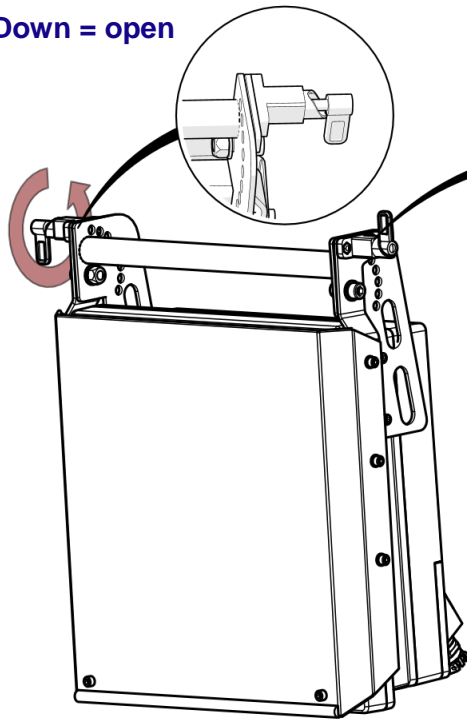


Wrong

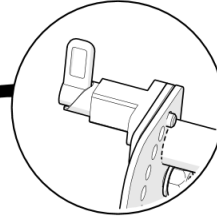


1 Open locks one after the other

Down = open

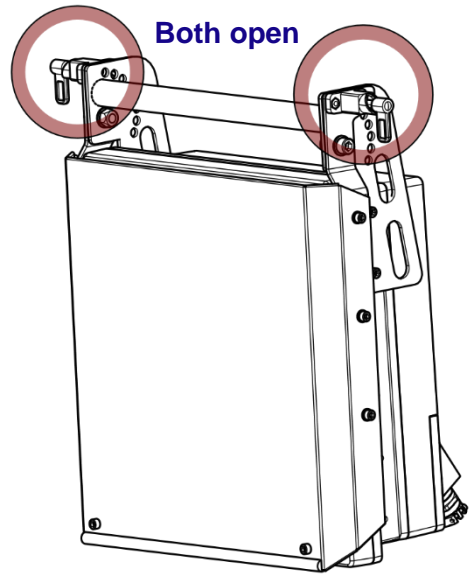


Up = closed

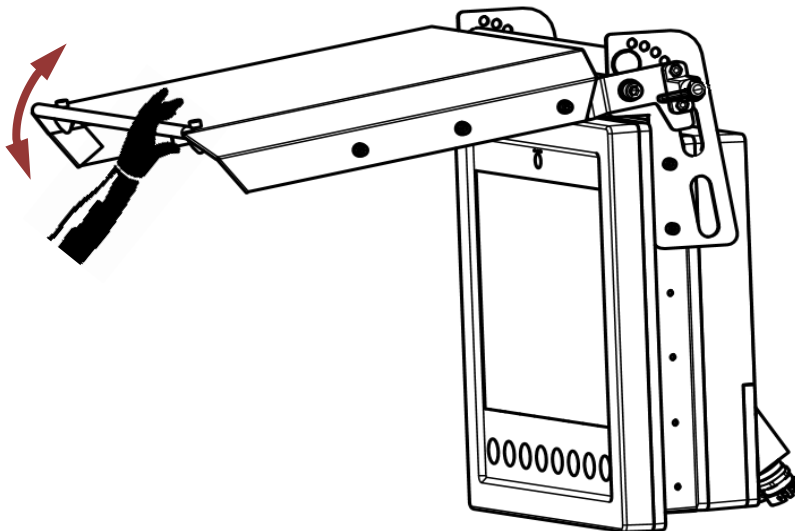


2

Both open



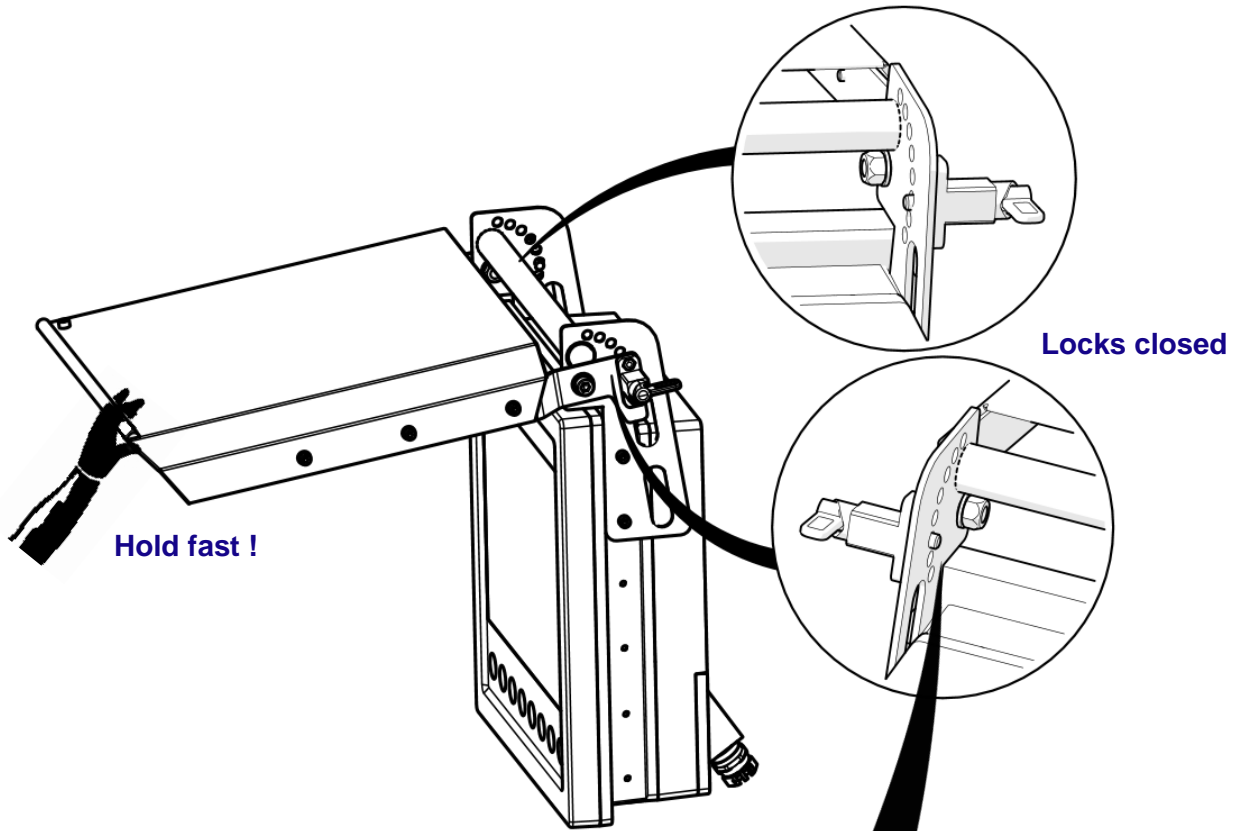
3 Adjust angle



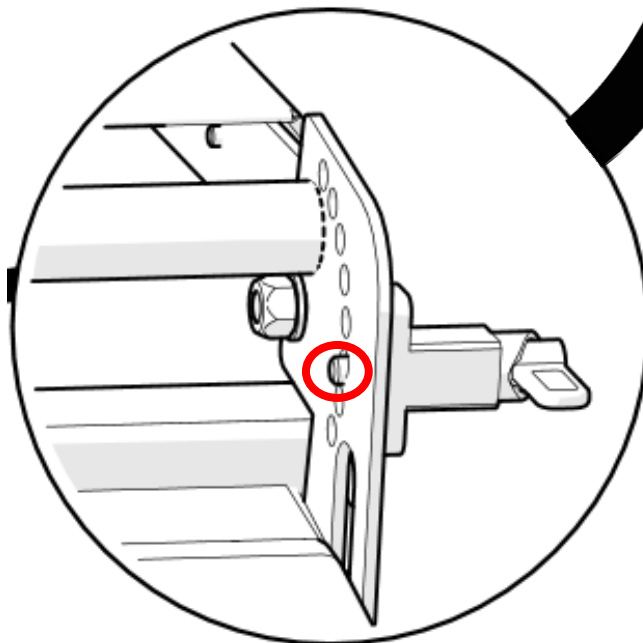
8 possible angles / positions

4

Close both locks



Make sure locks are arrested on both sides !



8 possible positions

9.16.7 Mounting versions with sun shade

xx8 with sun shade and on stand



xx8 wall-mounted with sun shade



xx8 with sun shade and keyboard on stand



xx8 with sun shade and keyboard wall-mounted



xx8 with sun shade and on elbow



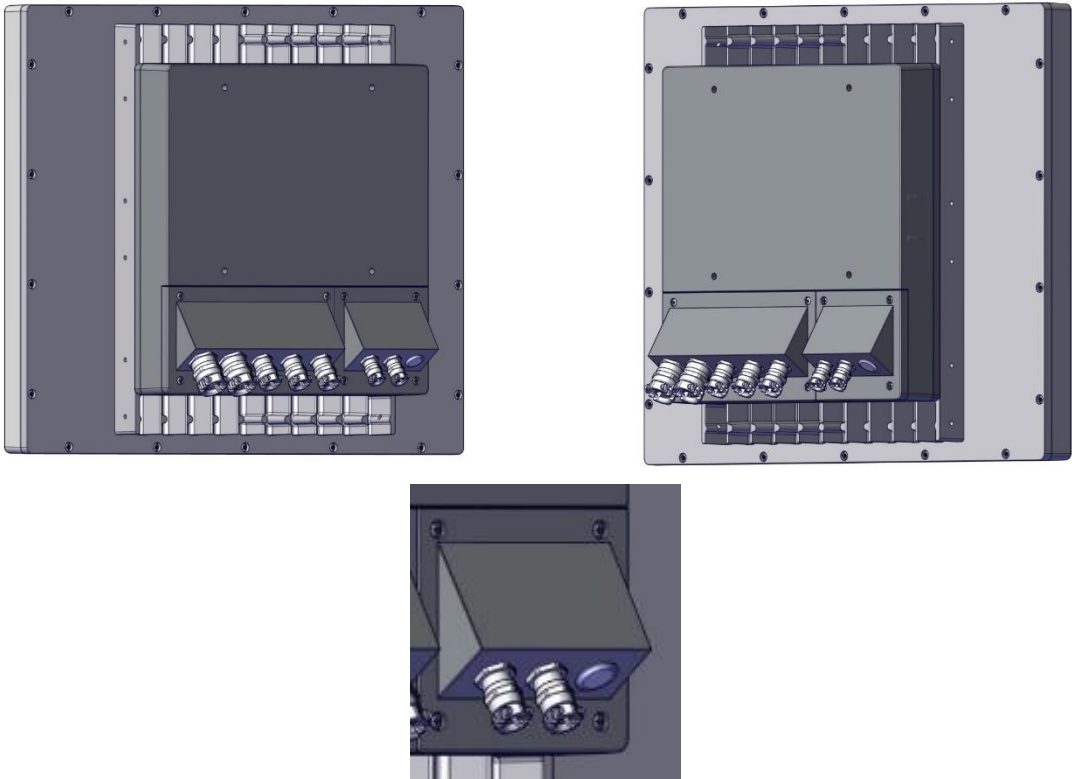
xx8 with sun shade and keyboard on elbow



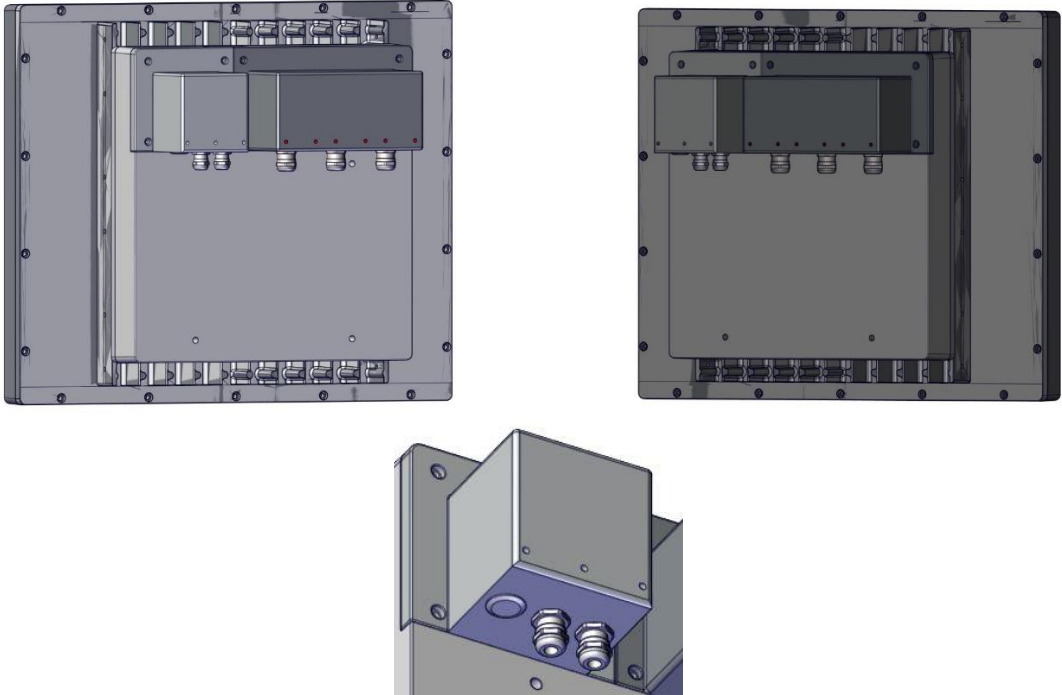
9.17 Mounting of button

9.17.1 View

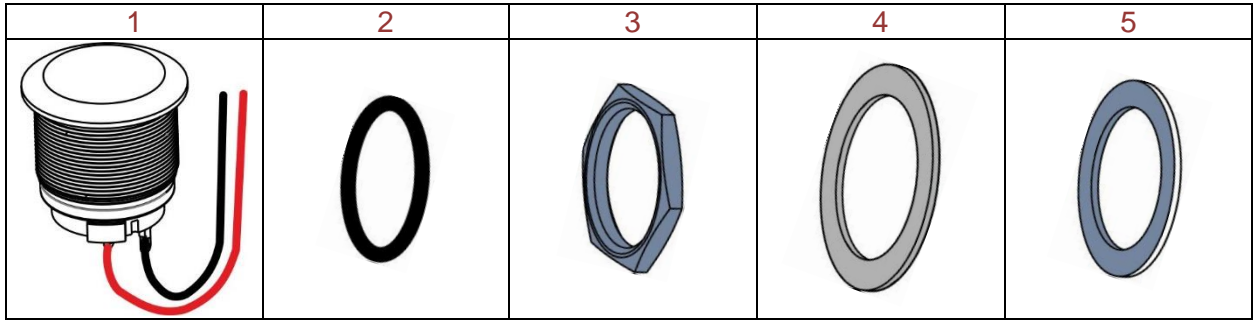
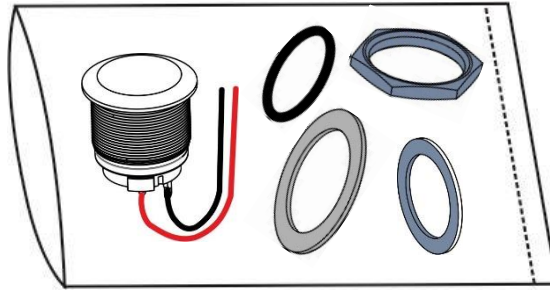
VESA 200 Standard



VESA 200 Top Connect



9.17.2 Button components

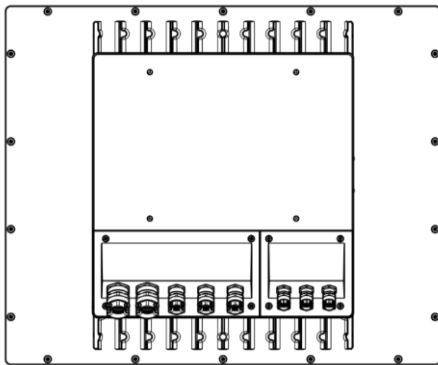


No.	Name / scope of delivery	Number
1	VB-PB-22mm (button inc. 0.2 m cable)	1
2	O-ring	1
3	VB-PB-22mm nut	1
4	Washer 30 x 22 x 1 mm	1
5	Washer 26 x 19 x 0.5 mm	1

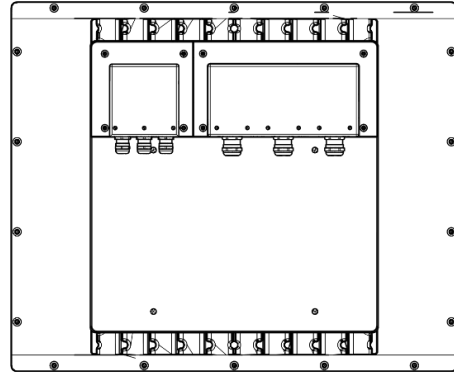
9.17.3 Step-by-step mounting instructions

1

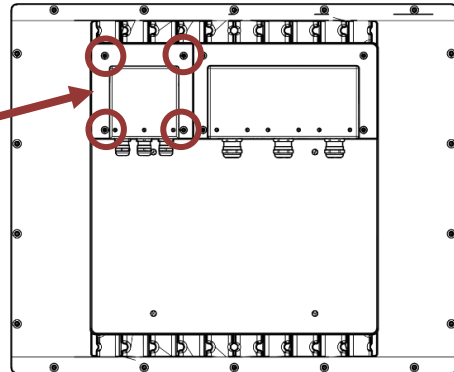
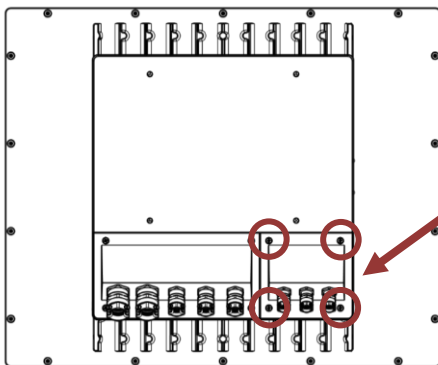
VESA 200 Standard

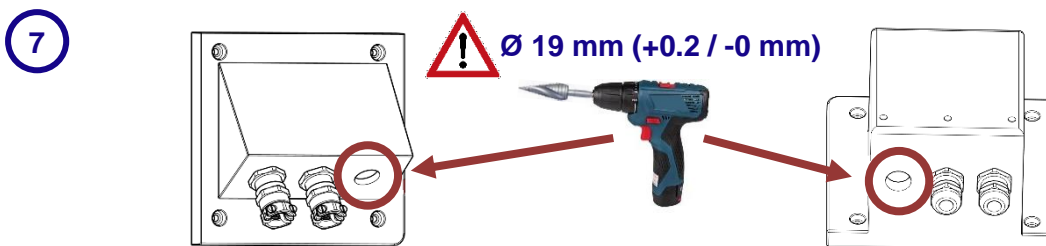
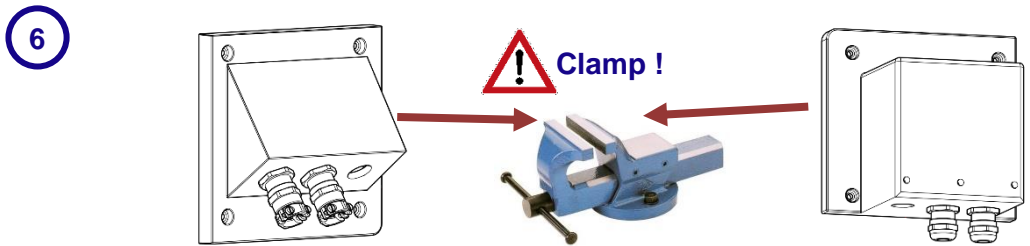
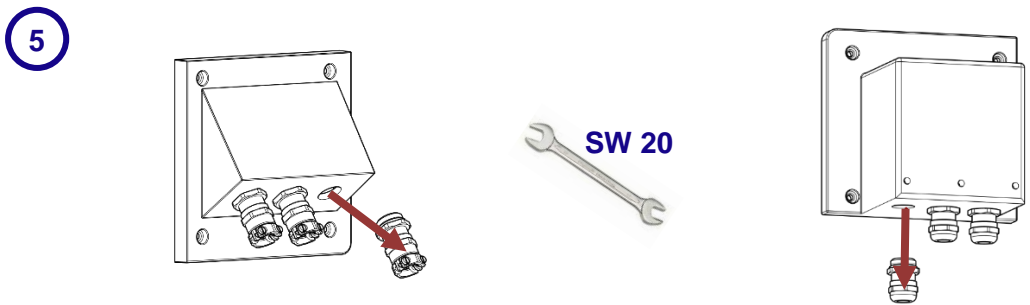
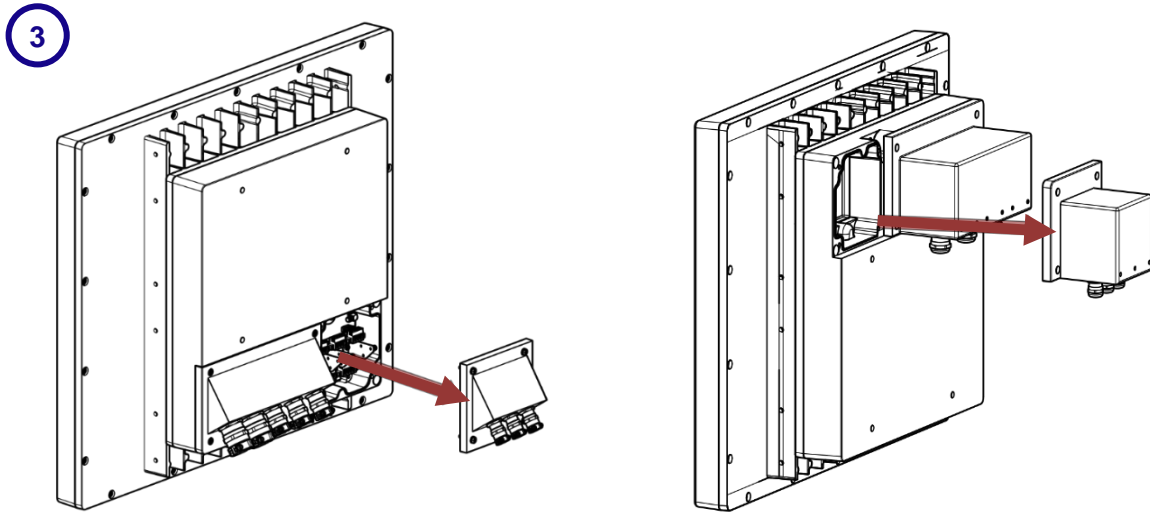


VESA 200 Top Connect

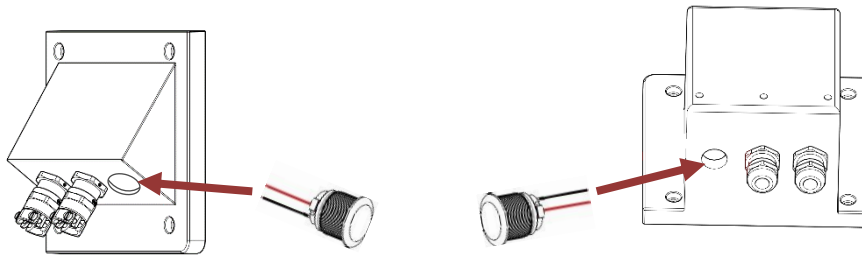


2

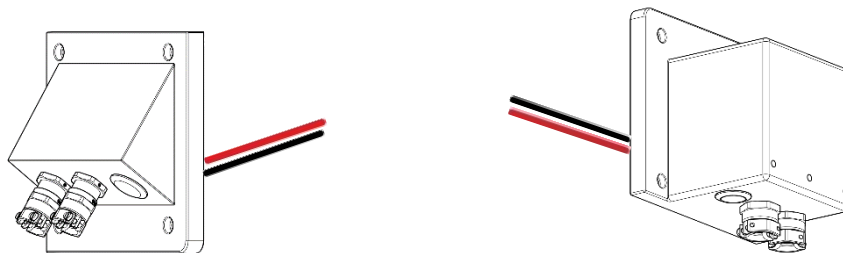




8



9

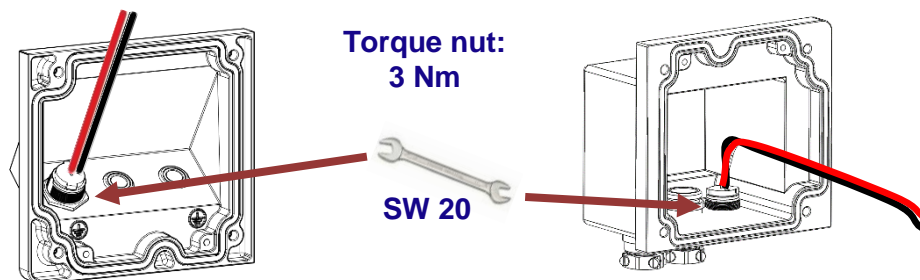


10

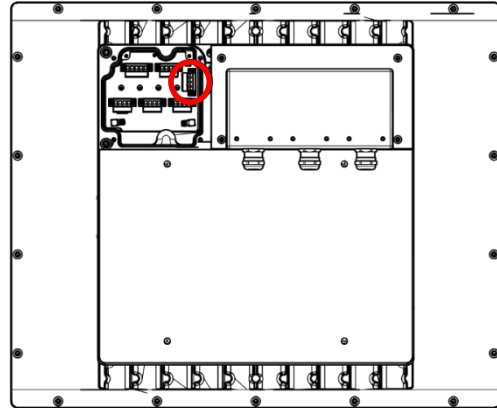
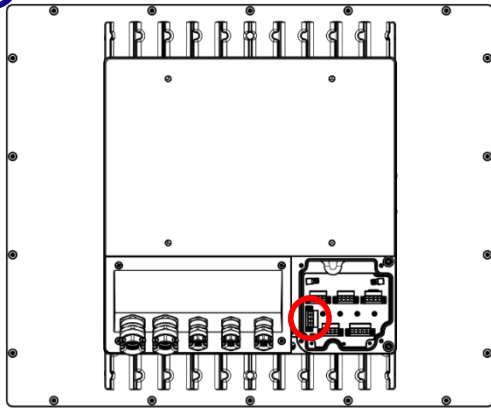


No.	Designation	Number
1	O-ring	1
2	Washer 30 x 22 x 1 mm	1
3	Washer 26 x 19 x 0.5 mm	1
4	VB-PB-22mm nut	1

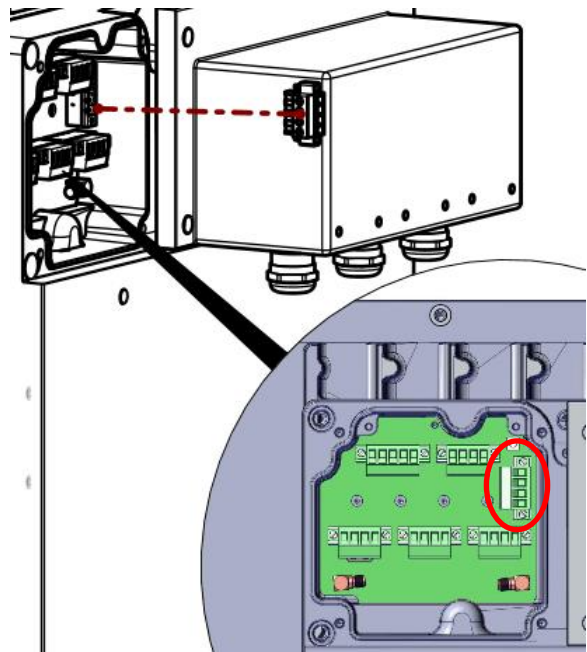
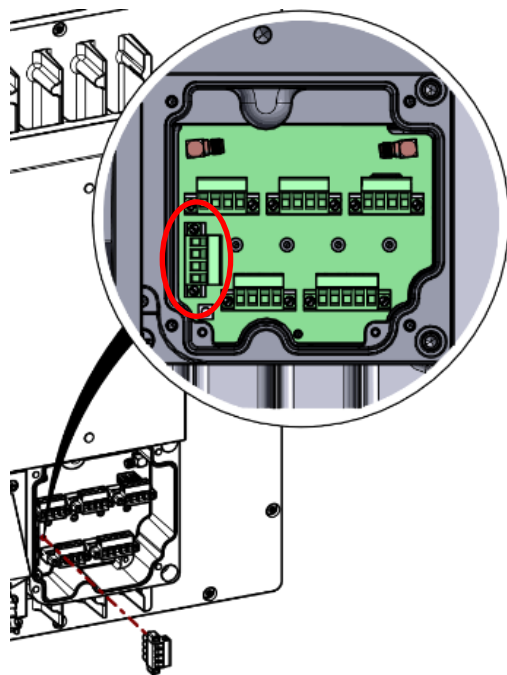
11



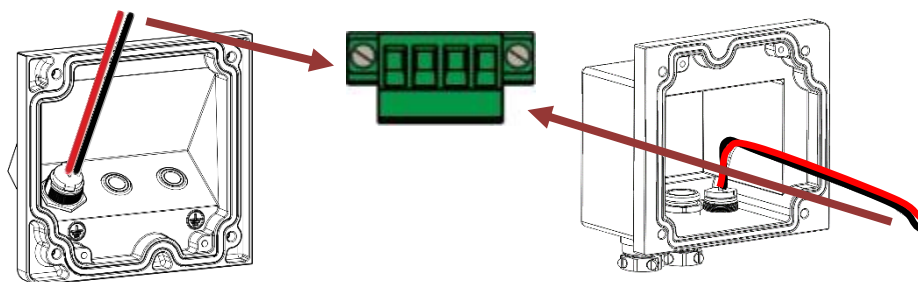
12



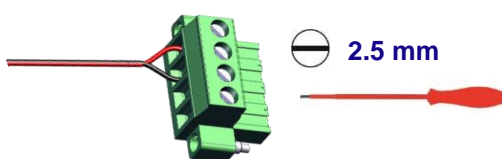
13



14



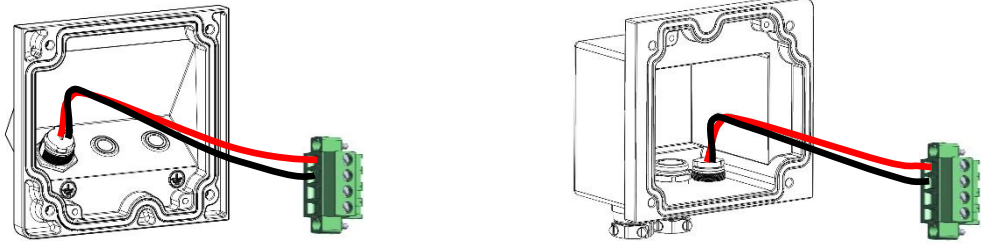
15



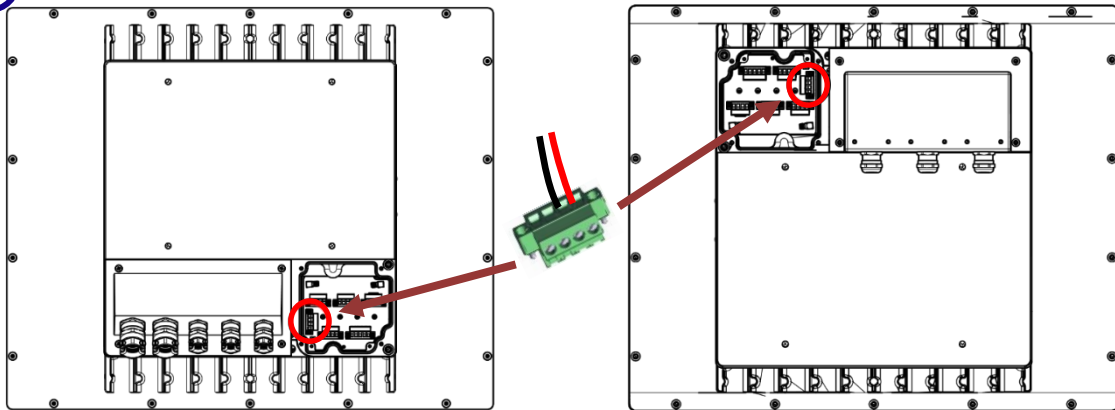
	PIN	Designation	Colour
X30	1	PB	red
PB	2	GND	black

Torque clamps: 0.55 Nm

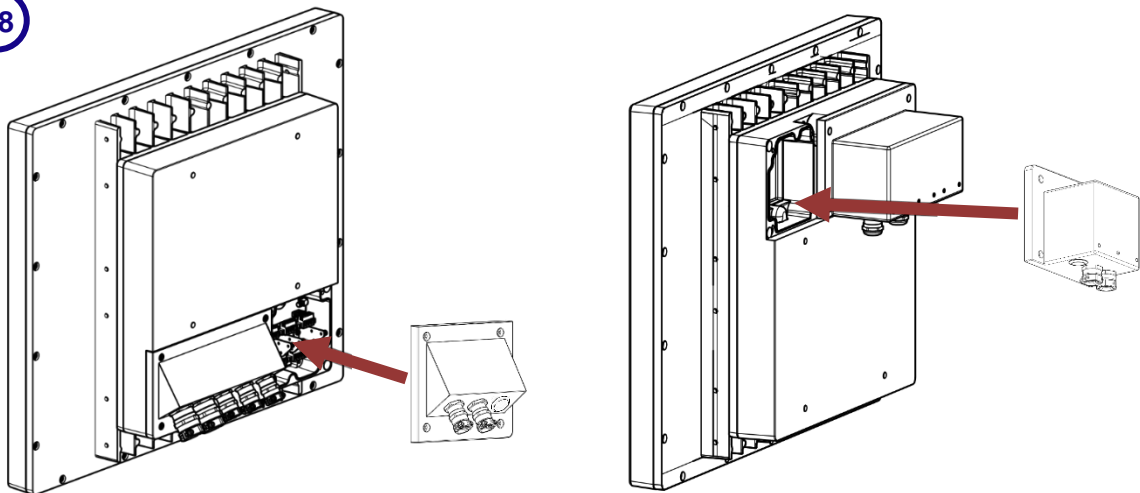
16



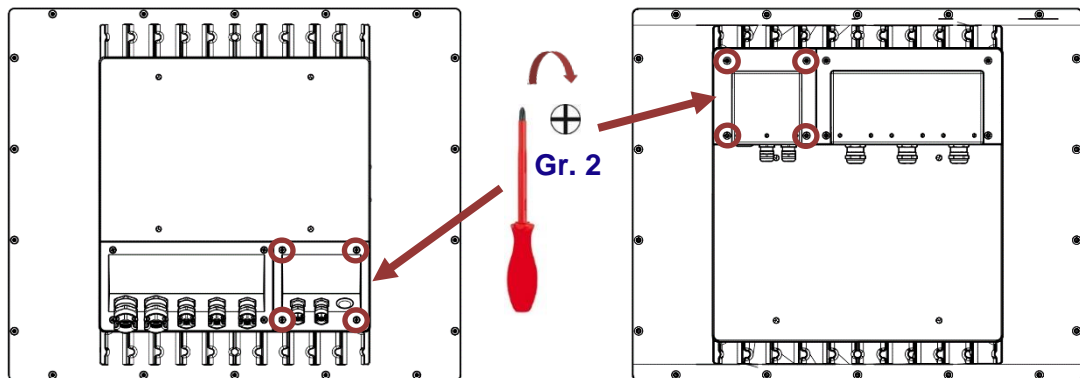
17



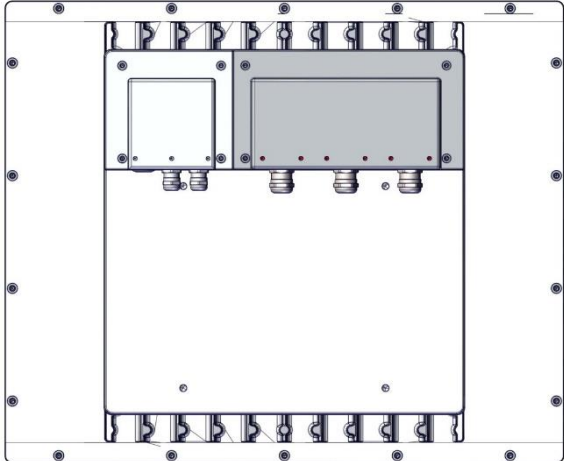
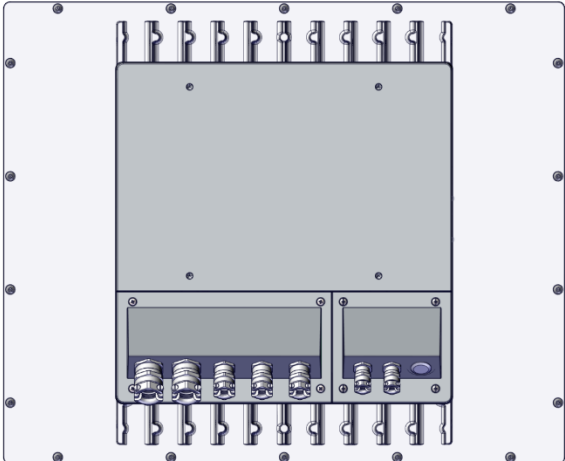
18



19









20



10 Electrical Installation

10.1 Status LED

Position: on the front plate, centre top

Pictogram	LED colour	Meaning
	 blue	The internal heater is switched on, the device is warming up.
	 orange	Supply voltage present and power supply ok.
	 green	The required operating temperature has been reached and the device is ready. *






* The xx8 devices can be fitted with an optional heating system which switches on and off independently.


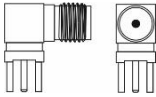
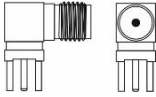
At temperatures below -10 °C the display may stay dark until the required operating temperature has been reached.

10.2 Connection overview terminal assignment

Terminal	Pin	Designation (PCB) / view		Typical colour coding / plug type	Connection / function
Ex e terminal box / terminals					
X1 POWER	1	+24 V / L		Black	Power supply of the HMI device (either AC or DC)
	2	+24 V / L		Black	
	3	GND / N		Blue	
	4	GND / N		Blue	
	5	PE / earth		Green / yellow	
	6	PE / earth		Green / yellow	
X2 * CAT1		1000Base-TX	100Base-TX		Data cable Copper connection 1
	1	D1+	TX+	Orange / white	
	2	D1-	TX-	Orange	
	3	D2+	RX+	Green / white	
	4	D2-	RX-	Green	
	5	D3+		White / blue	
	6	D3-		Blue	
	7	D4+		White / brown	
X3 * CAT2		1000Base-TX	100Base-TX		Data cable Copper connection 2 (2. Connection not possible for SERIES 600)
	1	D1+	TX+	Orange / white	
	2	D1-	TX-	Orange	
	3	D2+	RX+	Green / white	
	4	D2-	RX-	Green	
	5	D3+		White / blue	
	6	D3-		Blue	
	7	D4+		White / brown	
8	D4-		Brown		

Terminal	Pin	Designation (PCB) / view	Typical colour coding / plug type	Connection / function	
Ex e terminal box / terminals					
X20 * FO 1			SC Duplex Socket	Data cable FO connection 1 for SERIES 400 / 500 Type FX (100Base-FX) for SERIES 600: Type SX (1000Base-SX) or Type LX (1000Base-LX)	
X21 * FO 2			SC Duplex Socket	Data cable FO connection 2 (2. Connection not possible for SERIES 600) for SERIES 400 / 500 Type FX (100Base-FX)	
X4 DC out	1	+12 V		12 and / or 24 V DC Output Max. load 500 mA per output	
	2	GND			
	3	GND			
	4	+ 24 V			
X5 CAN	1	CAN1 L		CAN bus connection (no longer available)	
	2	CAN1 H			
	3	CAN2 L			
	4	CAN2 H			
X6 USB	1	+5 V		USB connection USB 2.0 max. load 500 mA	
	2	D -			
	3	D +			
	4	GND			
X7 RSxxx		RS-232	RS-422	RS-485	Serial interface (COM) RS-232 / RS-422 / RS-485
	1	TxD	TxD-A	A	
	2	RxD	RxD-B		
	3	RTS	TxD-B	B	
	4	CTS	RxD-A		
	5	GND			
X8				Not in use	
X9 Audio / Video				Audio / video connection Line out left Line out right (audio for AMD and SERIES 600 only) Video input (not possible for SERIES 600)	
	1	L out			
	2	R out			
	3	GND			
	4	Video			
	5	GND			

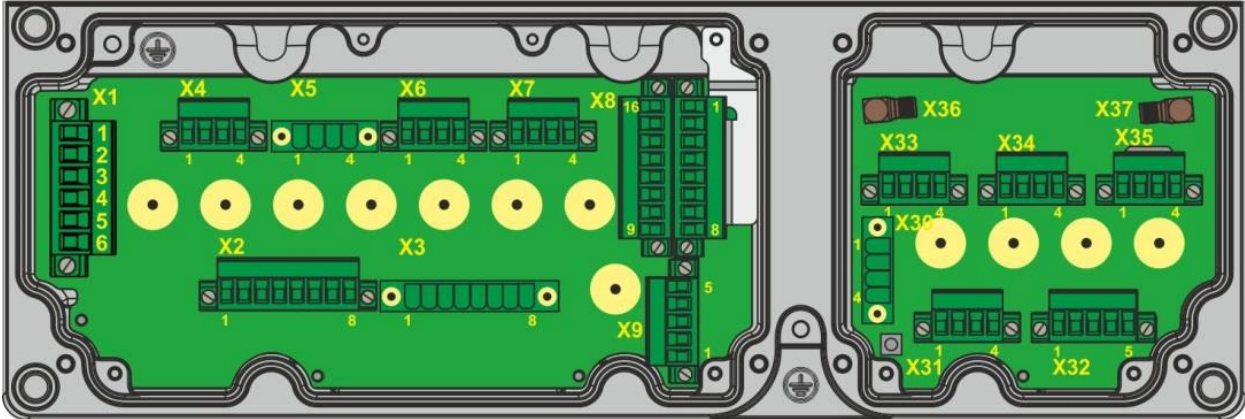
 * Ethernet connection is available in two versions: copper or fibre optic (see order versions).
SERIES 600 devices only have one Ethernet connection. Although SERIES 600 devices have the X3 terminal block (CAT2), this is not assigned / connected.

Terminal	Pin	Designation (PCB) / view	Typical colour coding / plug type	Connection / function
Ex i terminal box / terminals				
X30 PB	1	PB		On / off switch Connection (not possible for SERIES 600)
	2	GND		
	3	GND		
	4	GND		
X31 FAN	1	+FAN		Fan connection
	2	GND		
	3	+FAN		
	4	GND		
X32 RS232 / Power	1	+10.4V		Barcode / card reader Connection
	2	+5.4V		
	3	GND		
	4	RxD		
	5	TxD		
X33 USB	1	+5 V	Red	USB connection
	2	D -	White	
	3	D +	Green	
	4	GND	Black	
X34 USB	1	+5 V	Red	USB connection
	2	D -	White	
	3	D +	Green	
	4	GND	Black	
X35 USB	1	+5 V	Red	USB connection (Terminals or sockets)
	2	D -	White	
	3	D +	Green	
	4	GND	Black	
			USB socket Type A	
X36			SMA reverse socket	WiFi Antenna connection 1 (not possible for SERIES 600) (for 2.4 GHz antenna)
X37			SMA reverse socket	WiFi Antenna connection 2 (not possible for SERIES 600) (for 5 GHz antenna)

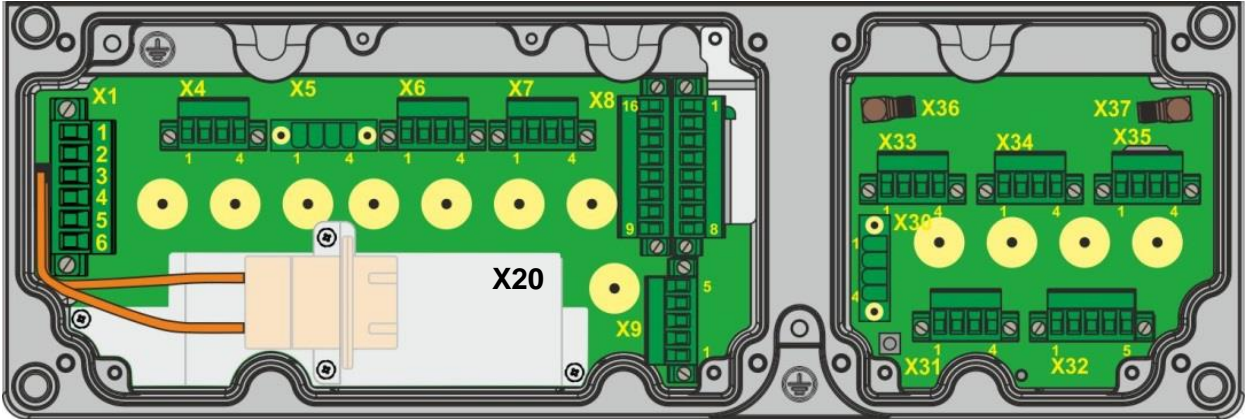
10.3 Terminal view VESA 200 Standard

10.3.1 SERIES 600

10.3.1.1 TX version (copper)

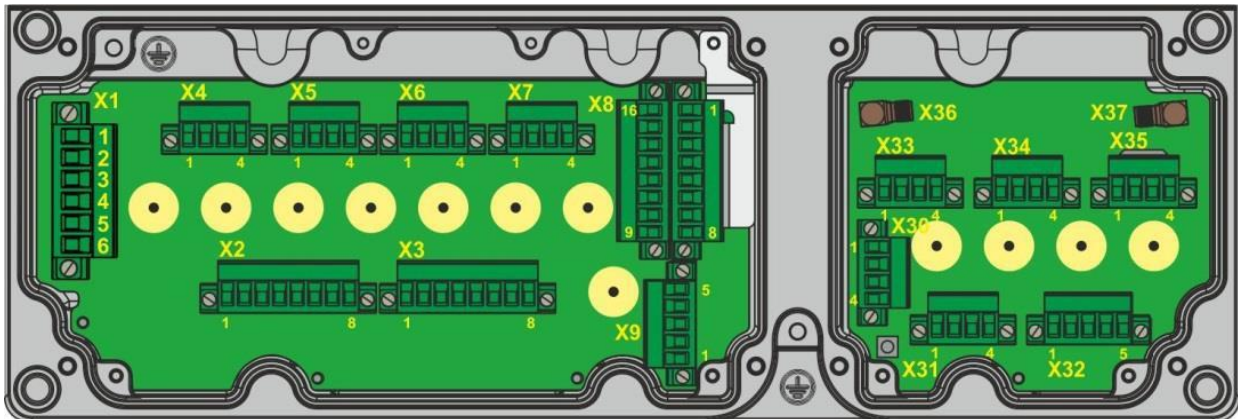


10.3.1.2 SX or LX version (FO)

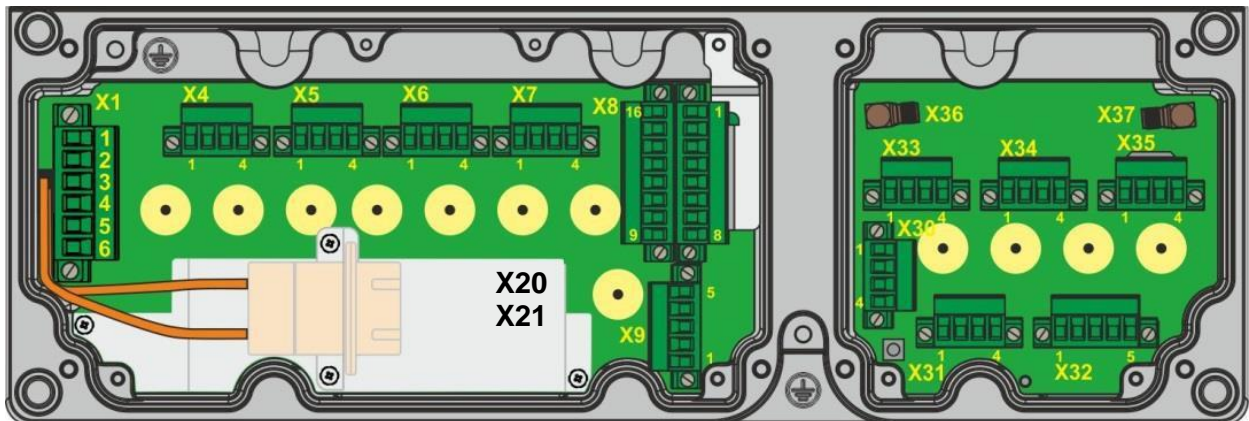


10.3.2 SERIES 400 / 500

10.3.2.1 TX version (copper)



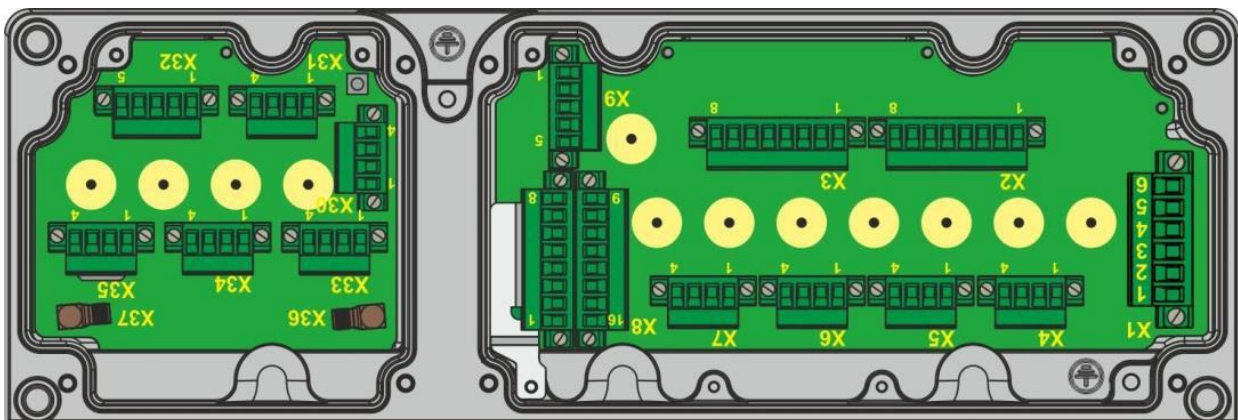
10.3.2.2 FX version (FO)



10.4 Terminal view VESA 200 Top Connect

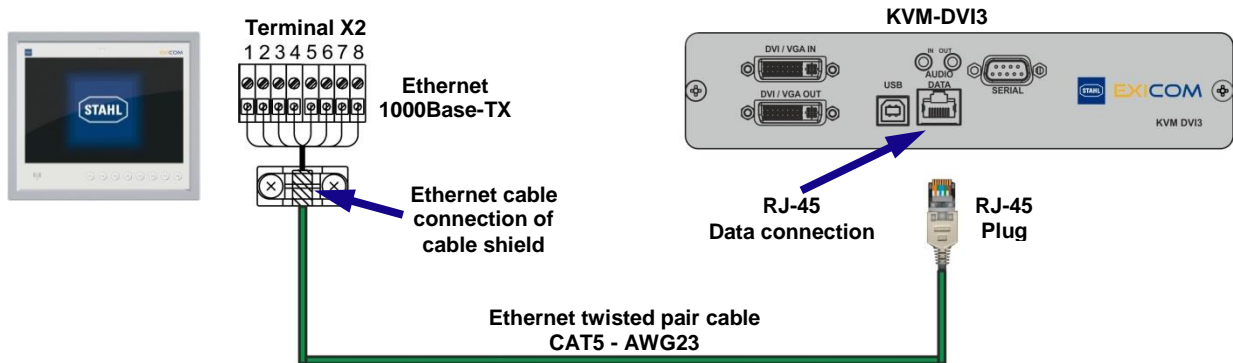
! The terminal view and assignment of the VESA 200 Top Connect devices is identical to that of the Standard devices, but rotated by 180°.

Example:

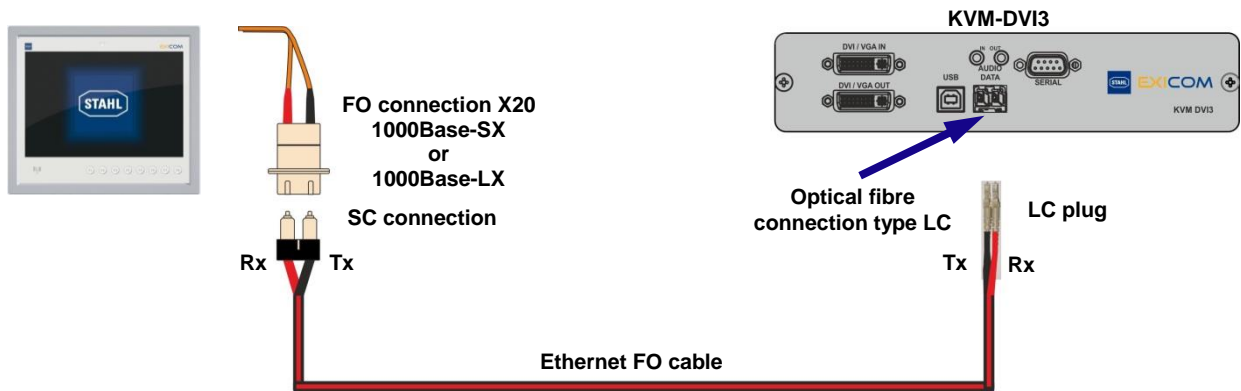


10.5 Connection overview for KVM box

10.5.1 TX version (copper)

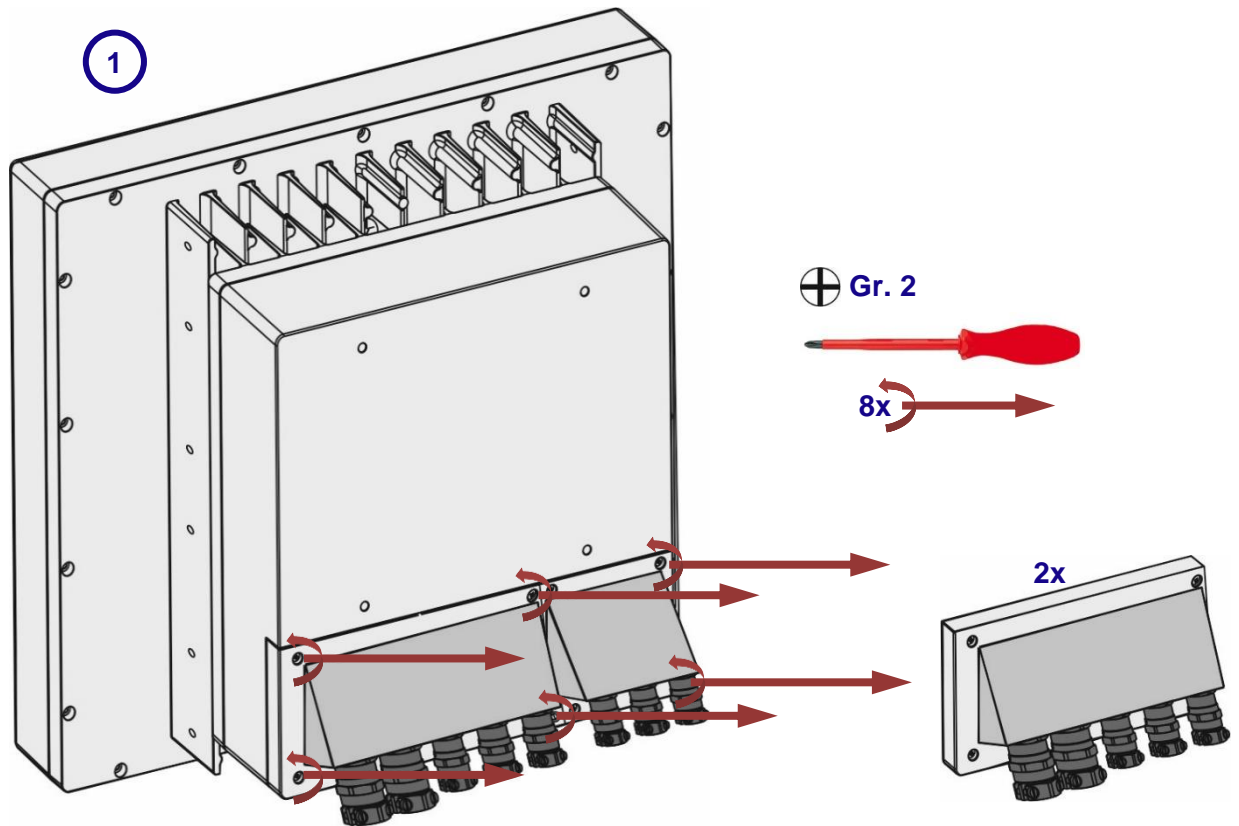


10.5.2 SX or LX version (FO)

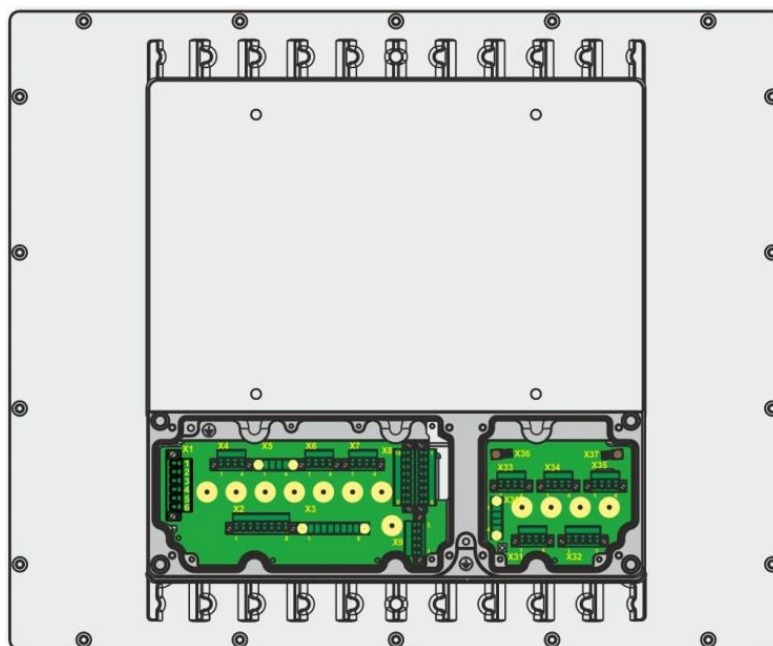


10.6 Electrical connection of VESA 200 Standard – step by step instructions

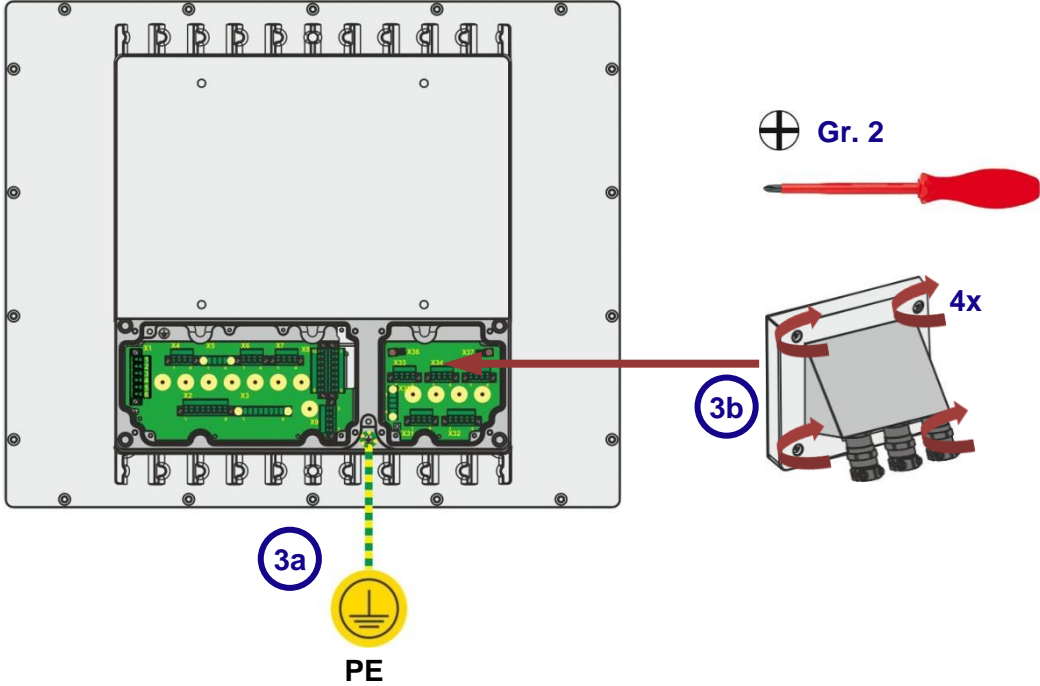
10.6.1 Earthing



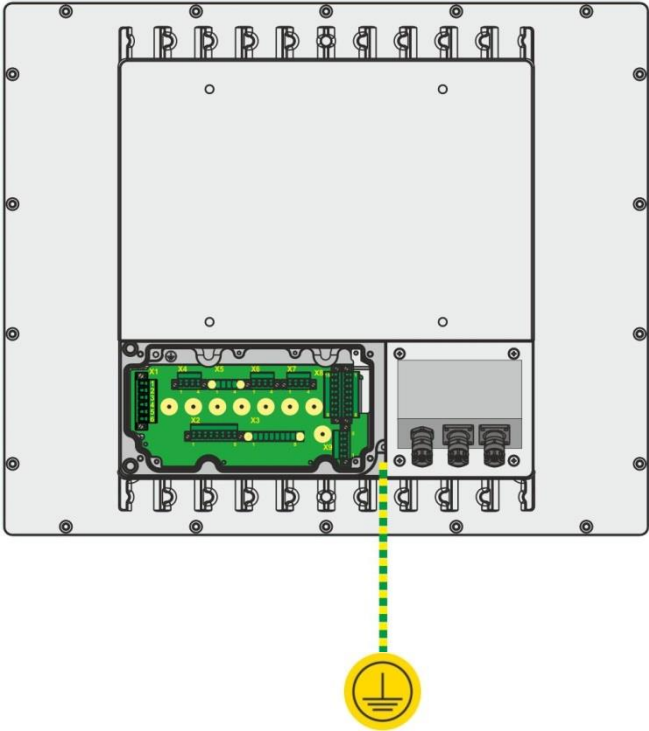
2



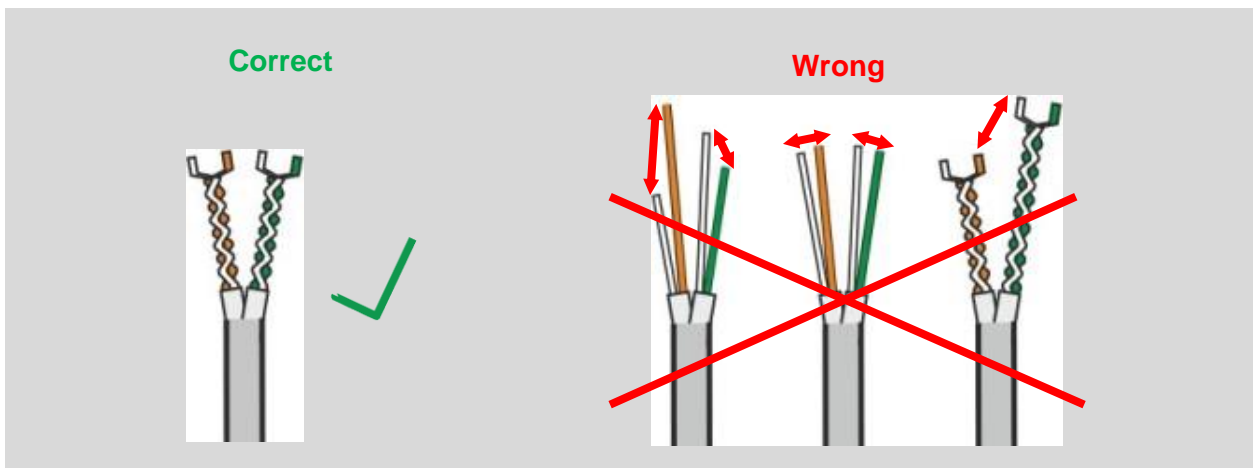
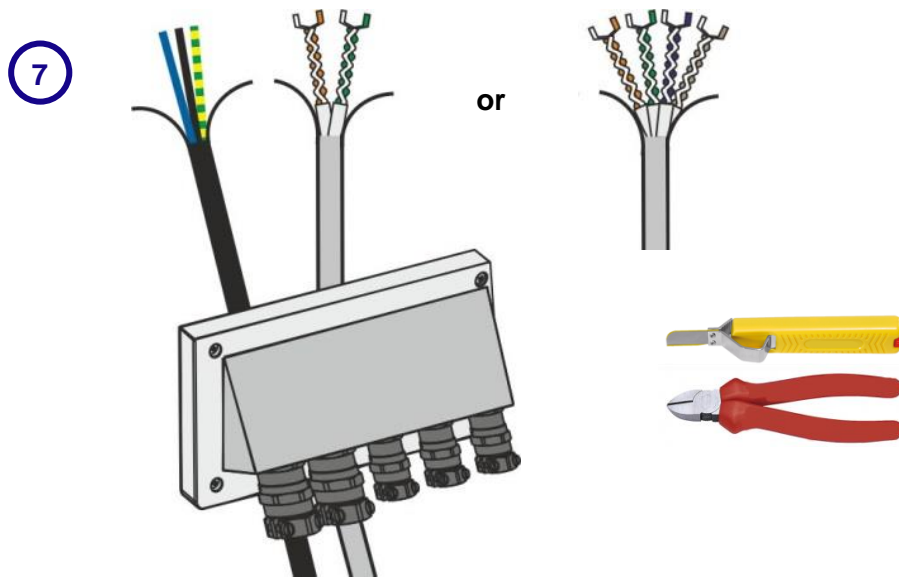
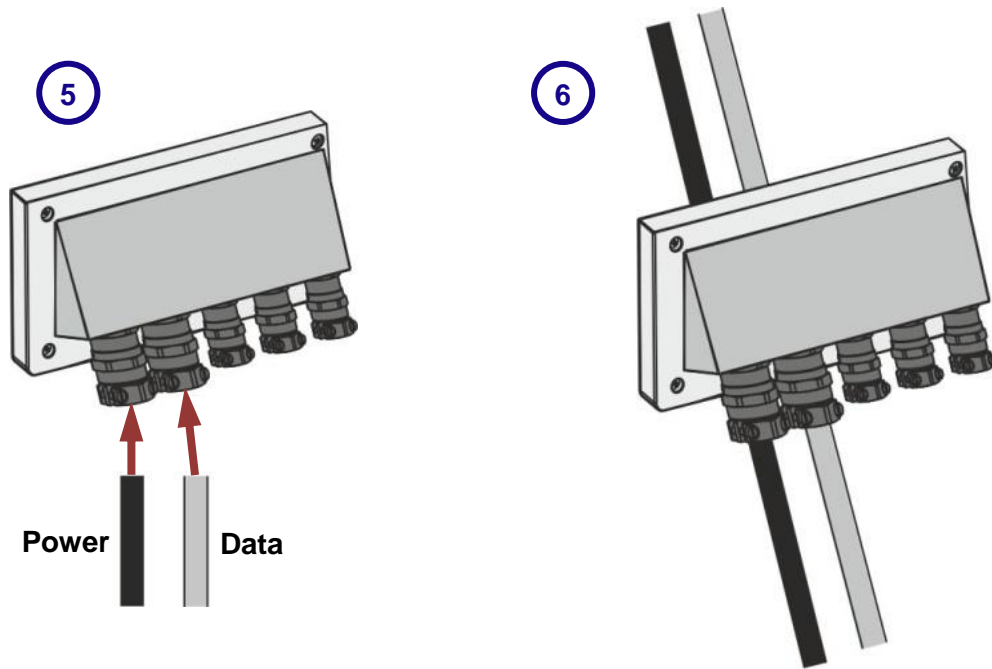
3

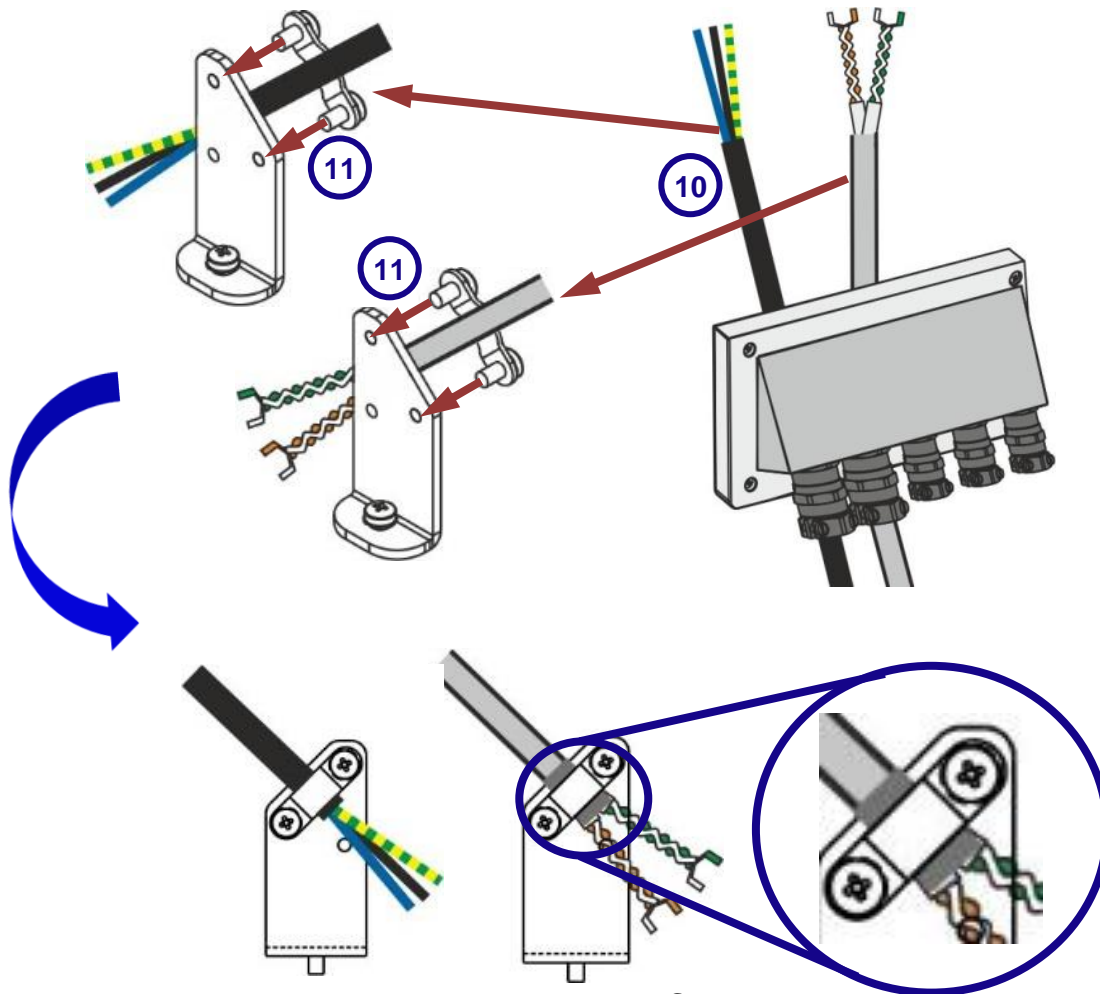
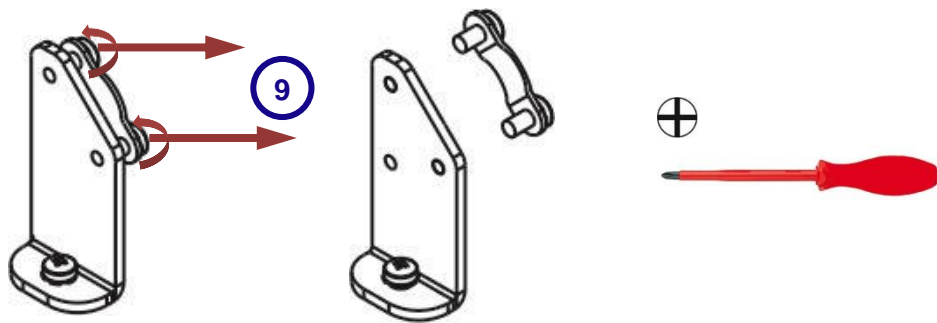
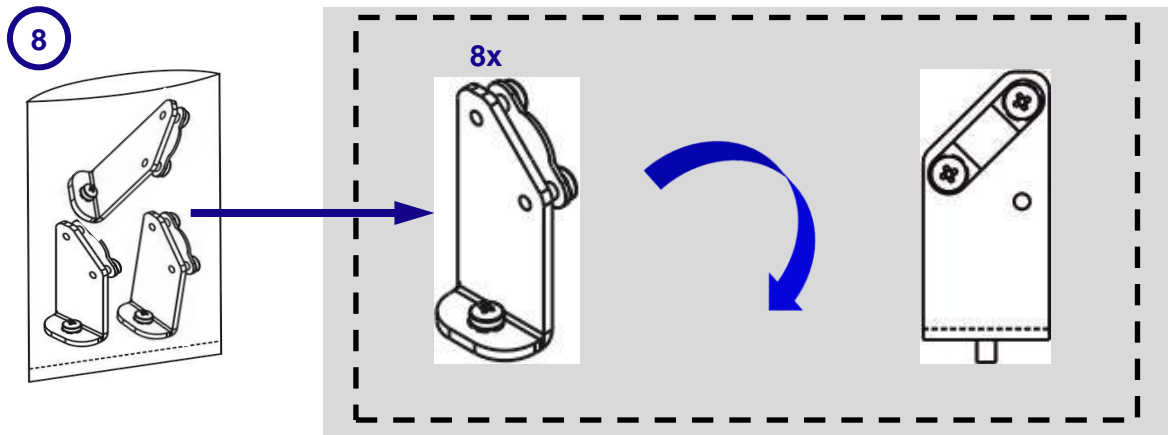


4

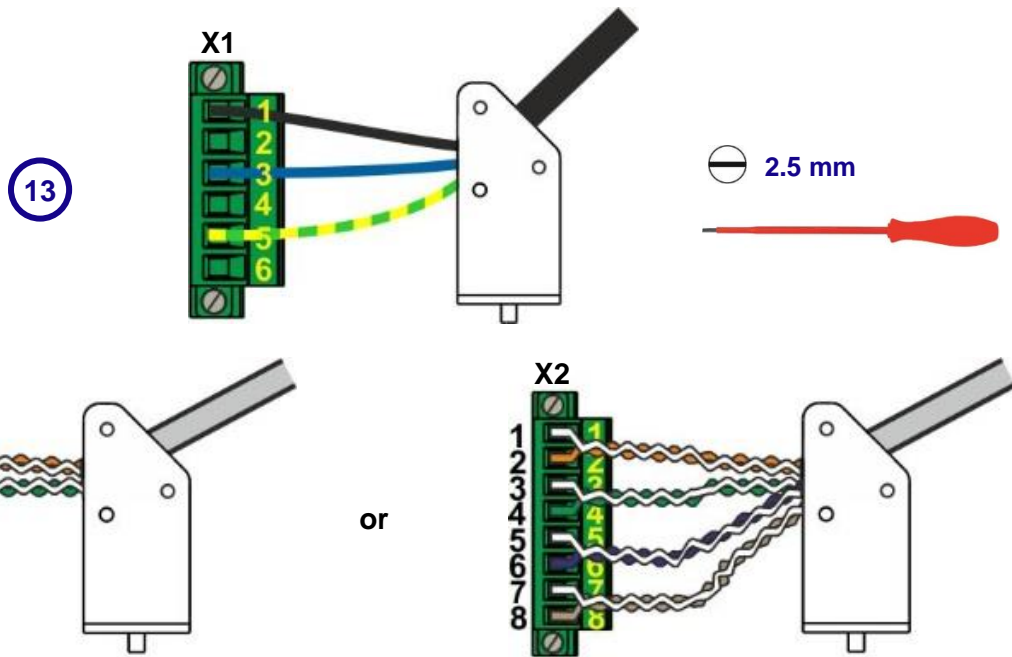
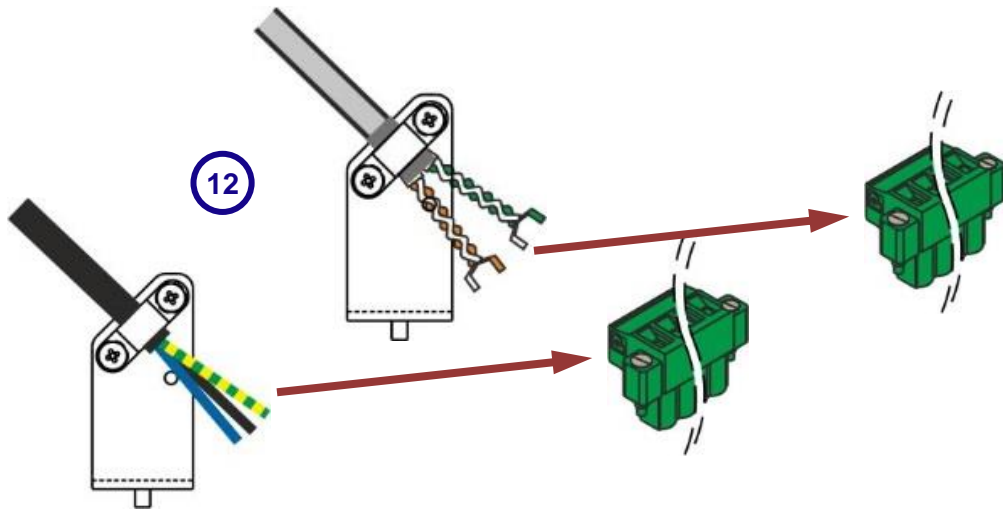


10.6.2 Power supply and data cable

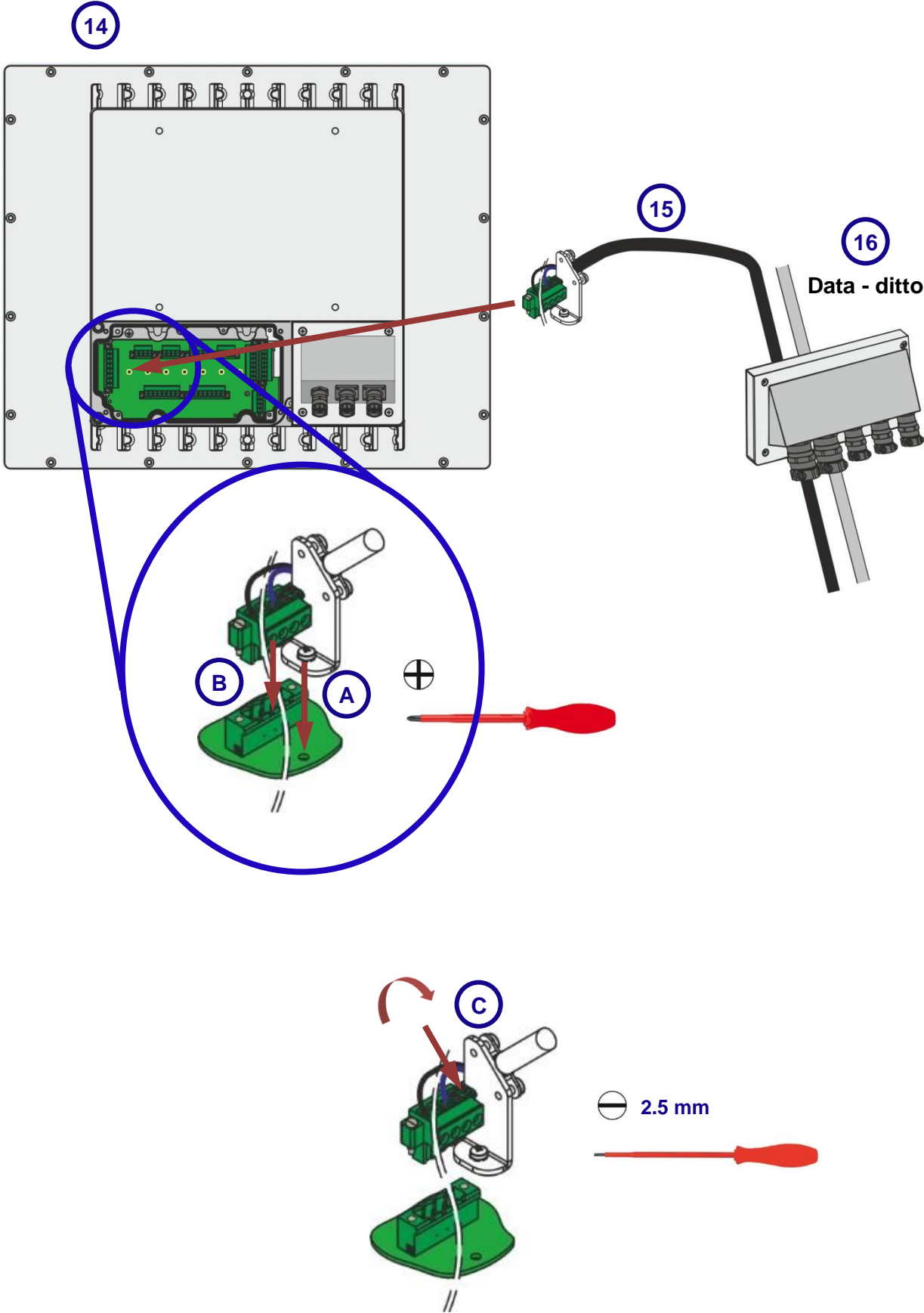


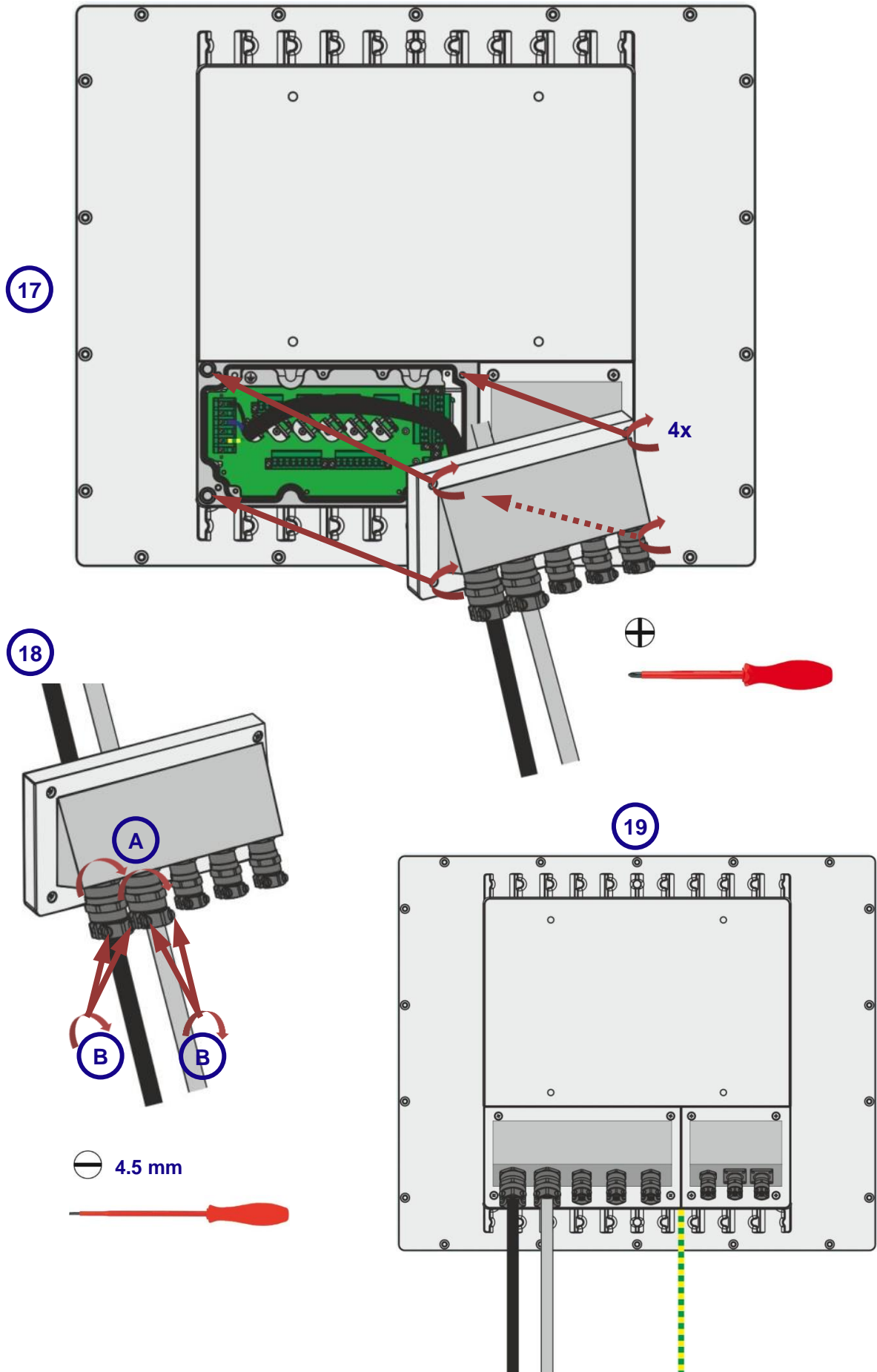


Screen



Associated pairs must be twisted up to the terminal !

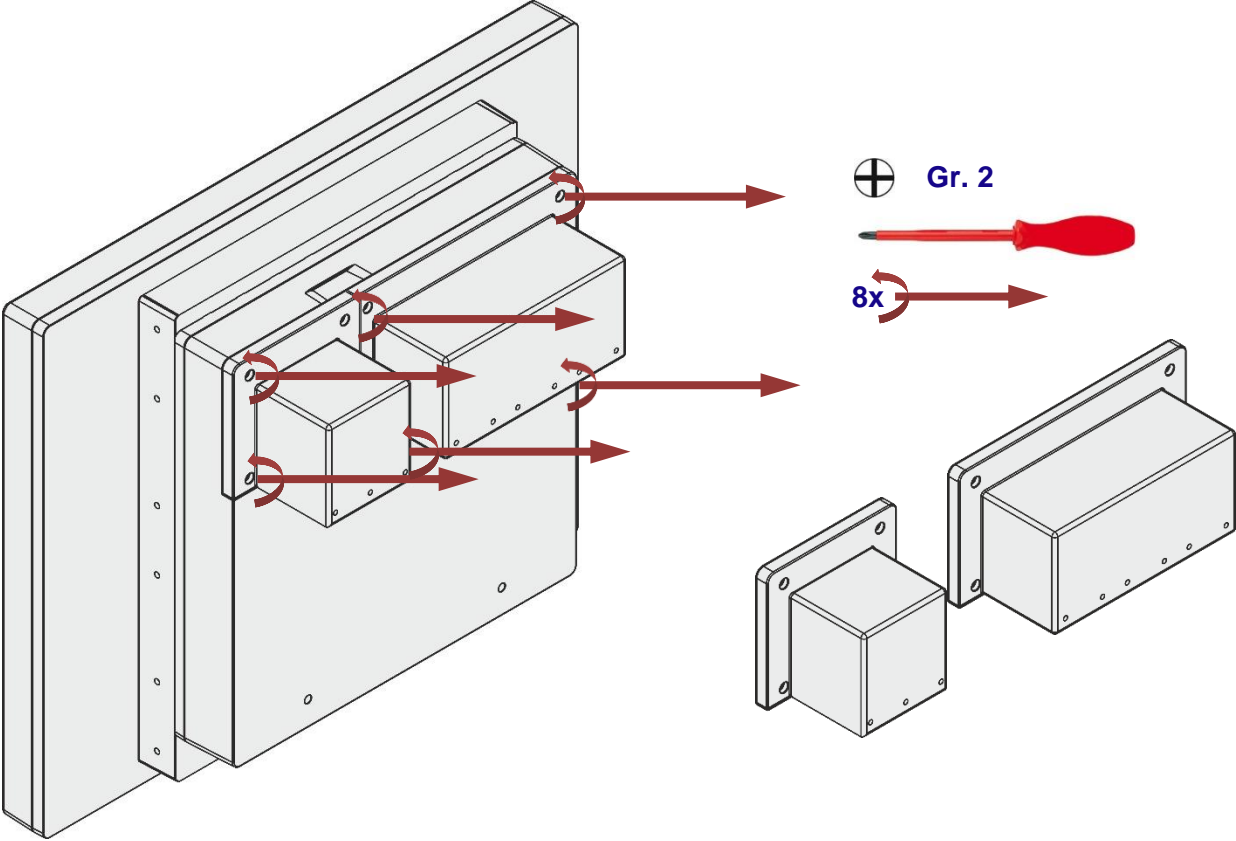




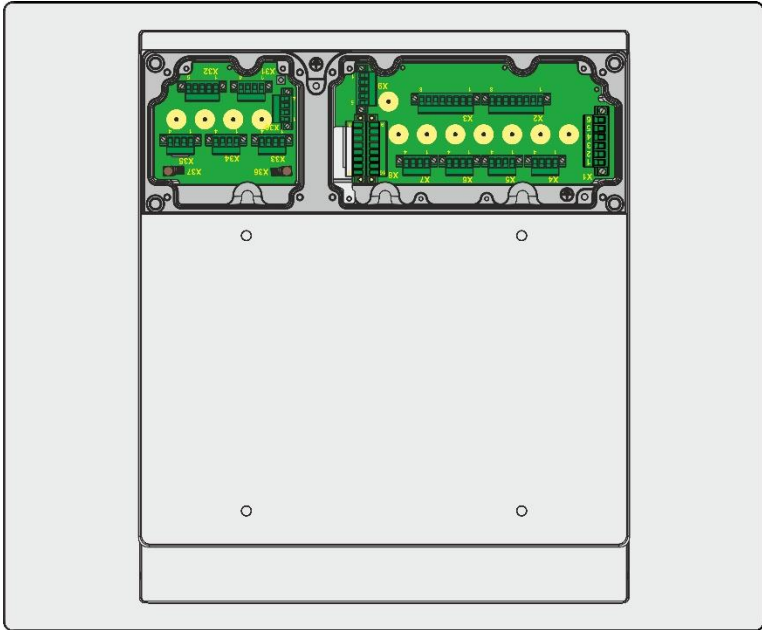
10.7 Electrical connection VESA 200 Top Connect – step by step instructions

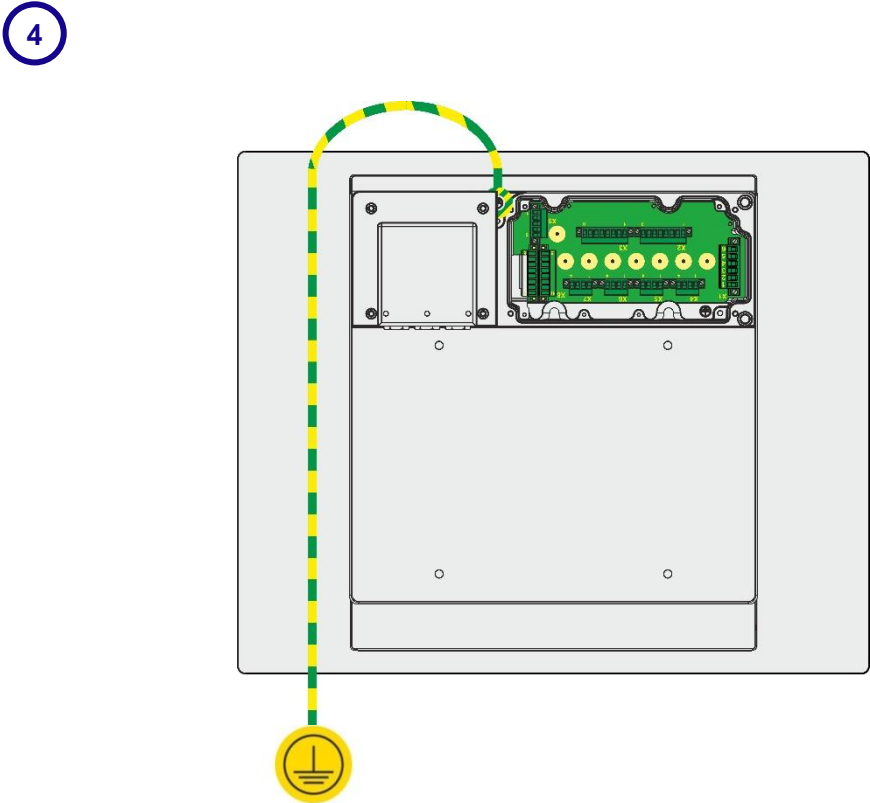
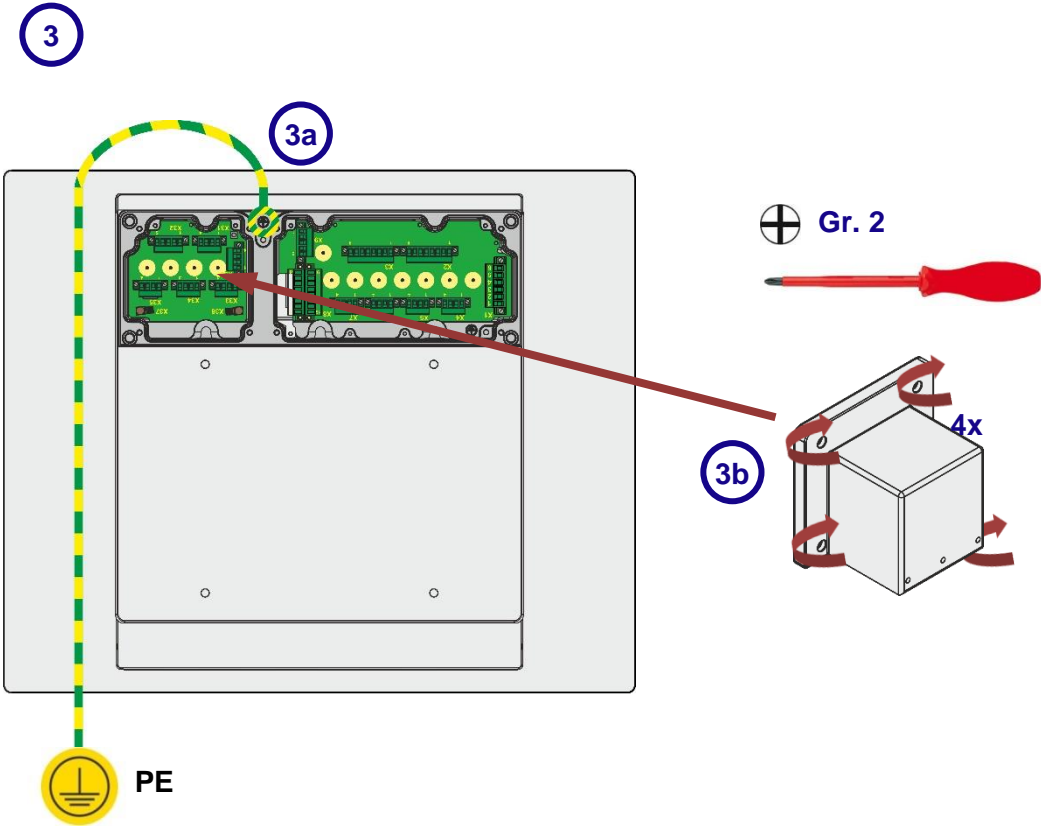
10.7.1 Earthing

1



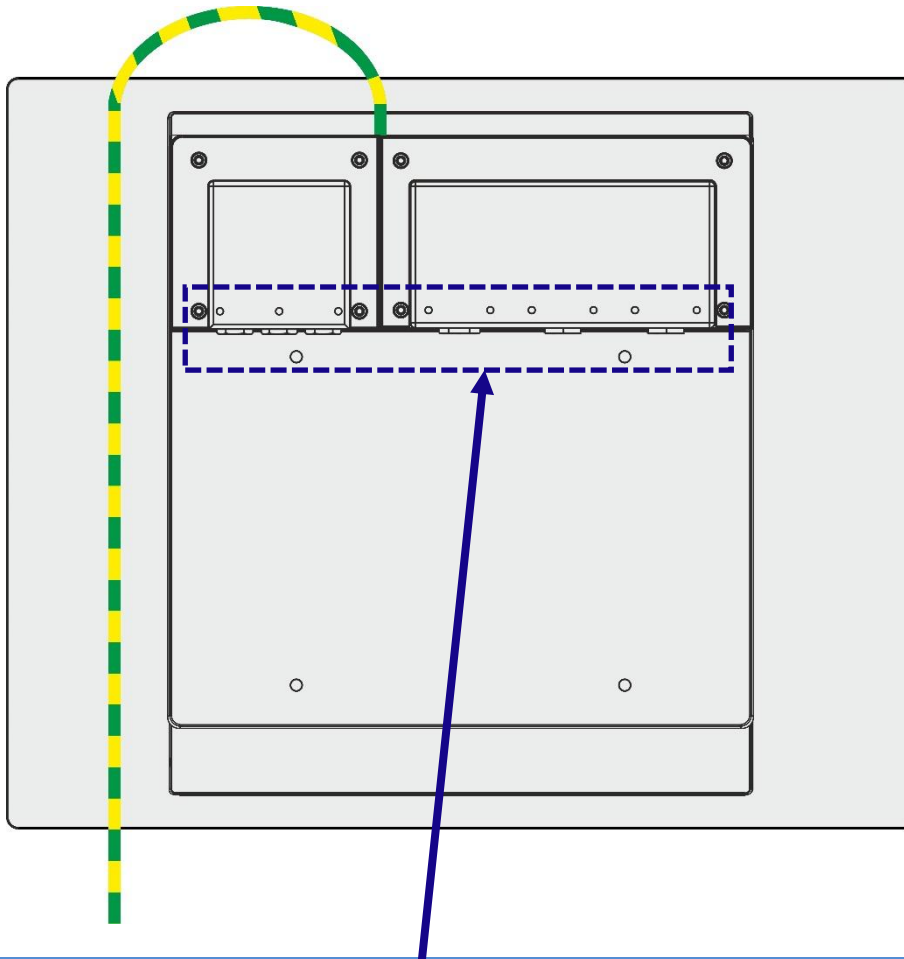
2






10.7.2 Power supply and data cable

5

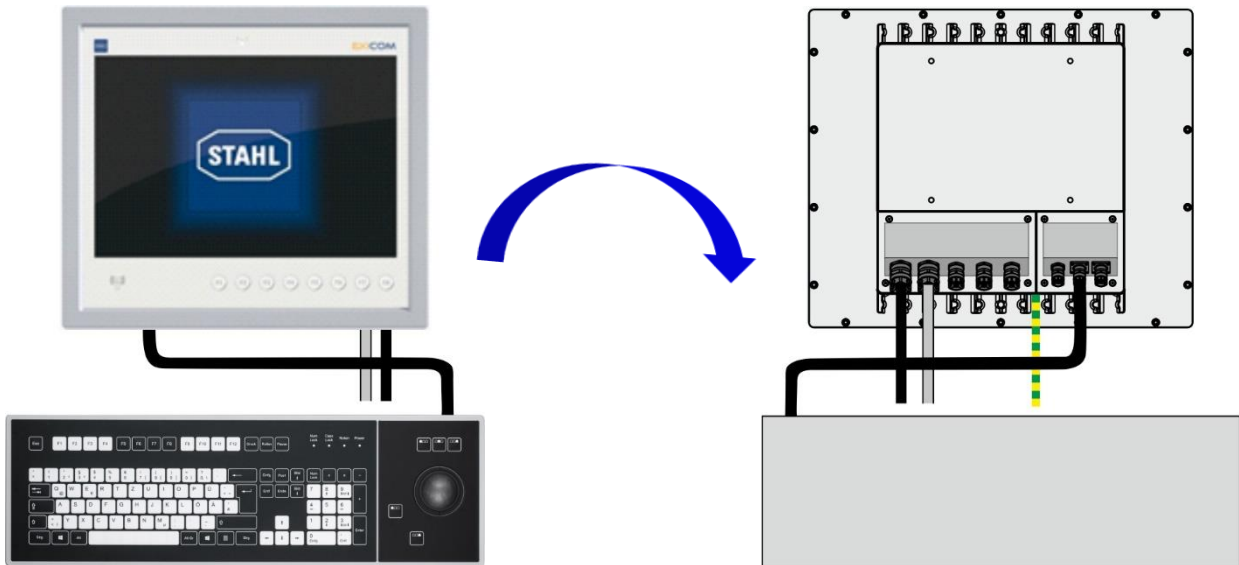


 Possible designs and connection kits and their description / mounting for the Top Connect devices are listed in "IM_Top-Connect_xx8".

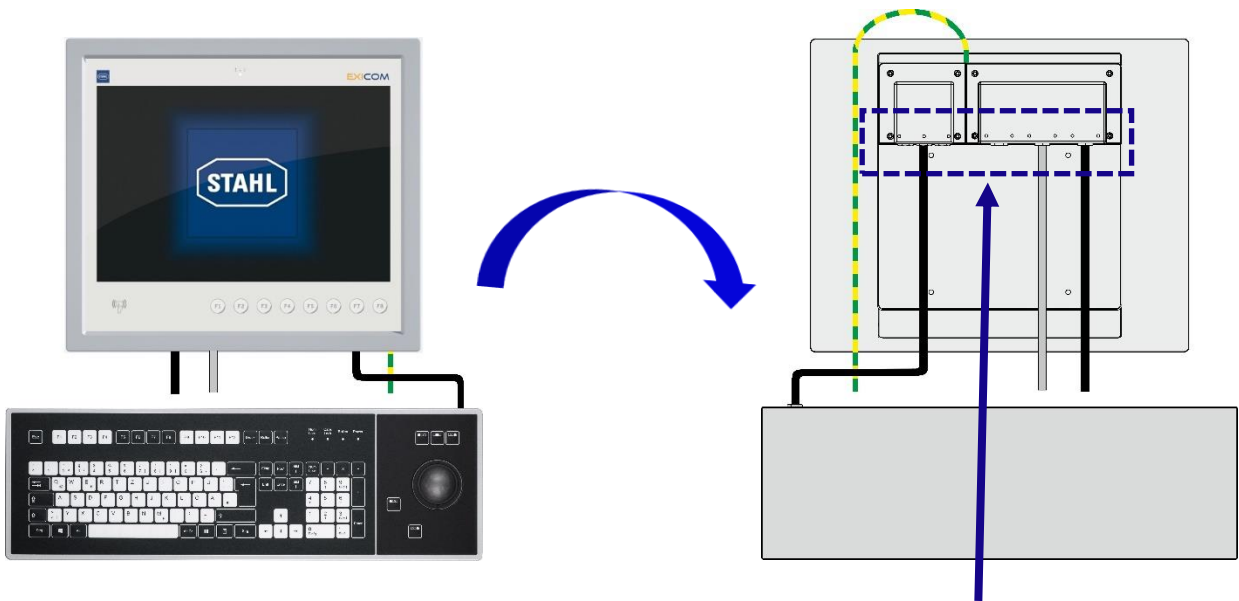
10.8 Accessories

10.8.1 KB2 keyboard

10.8.1.1 VESA 200 Standard view




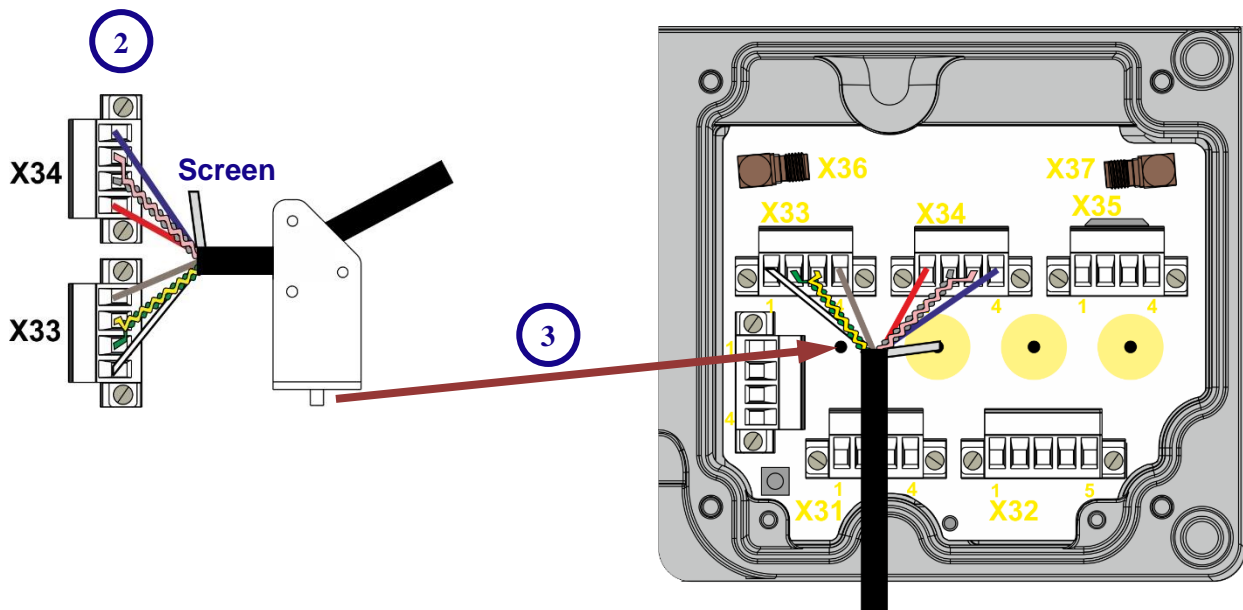
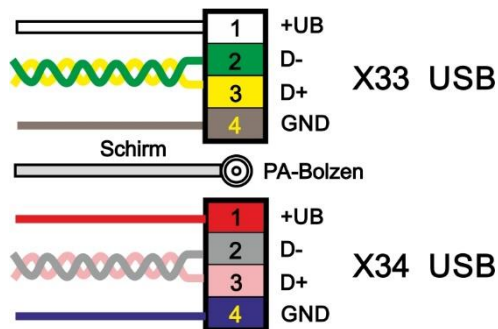
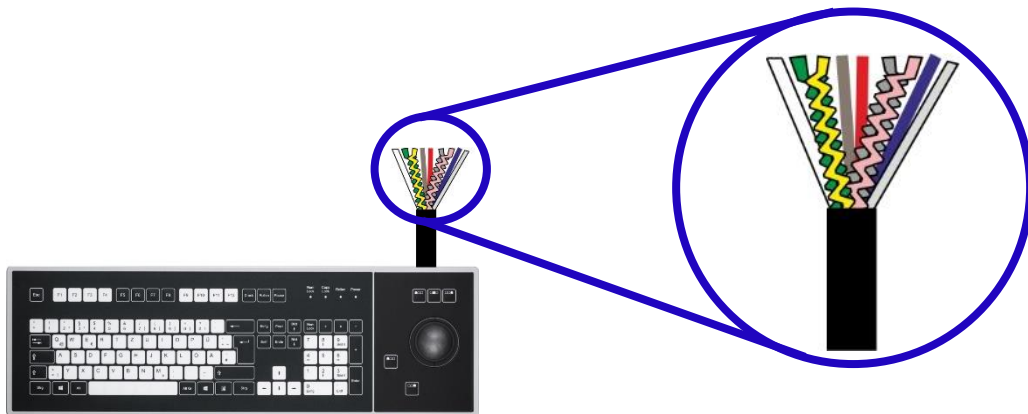
10.8.1.2 VESA 200 Top Connect view



Document "IM_Top-Connect_xx8"

10.8.1.3 Keyboard connection and wiring

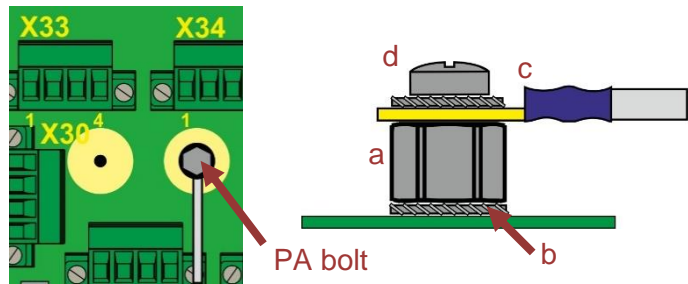
 Connect and mount the cables and the cable holders as described in chapter [10.6.2 Power supply and data cable](#).



4

Earthing (shielding) connection

- Screw on distance bolt I/A (a) with tooth lock washer (b) (tightening torque 1 Nm)
- Attach ring cable lug (c) with combined screw and tooth lock (d)



Earthing material see Operating Instruction OI_Keyboard_KB2 chapter 4.1.7 Scope of delivery.

11 Release notes

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

Version 01.01.00

- Mechanical mounting adapted for new designs
- Changes to publisher's note, new e-mail addresses
- Change to address field on back

Version 01.01.01

- Correction / addition to tables on page 24
- Layout changes

Version 01.01.02

- Addition of "Sun shield on wall elbow"
- Addition of section "Mounting on wall elbow"
- Addition of section "Mounting on wall elbow with keyboard"
- Addition of section "Mounting on wall elbow with barcode scanner"
- Addition of section "Mounting of button"
- Change to illustrations in section "Mounting"
- Changes to section "Tools"
- Layout changes

Version 01.01.03

- All illustrations featuring a keyboard were replaced with illustrations featuring a KB2 keyboard
- Change coupling cover, now screws from below
- Spacer added to scanner holder
- Modification HW-Rev on cover page
- Correction of telephone and fax numbers
- Addition to chapter "Explanation of symbols"
- Restructuring chapter "Operation of touch display"
- Addition of section "Coupling cover" to section "Cable glands"
- Changing all illustrations with "coupling cover"
- Modification of section "Connection overview terminal assignment" in line with OI
- Addition of section "KB2 keyboard" in chapter "Electrical Installation"
- Deletion of section "KBDi keyboard" from chapter "Electrical Installation"
- Correction of cable gland values for Ex i connection cover
- Changes to section "Tools"
- Layout changes

R. STAHL HMI Systems GmbH
Adolf-Grimme-Allee 8
D 50829 Cologne

T:	(Sales Support)	+49 221 768 06 - 1200
	(Technical Support)	+49 221 768 06 - 5000
F:		+49 221 768 06 - 4200
E:	(Sales Support)	sales.dehm@r-stahl.com
	(Technical Support)	support.dehm@r-stahl.com

r-stahl.com



THE STRONGEST LINK.