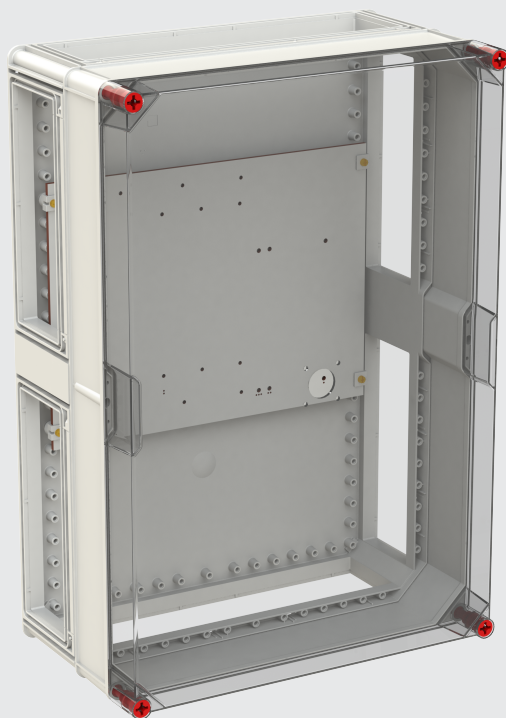


PRODUCT MANUAL

VMS - LV modular system

MCCB



Contents

- 1 Icons..... 3**
- 2 Material.....4**
 - 2.1 Material - included..... 4
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 - 2.2.1 CU strip sets.....4
 - 2.2.2 Terminals.....6
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 - 2.2.4 Telescopic Shaft..... 7
 - 2.2.5 Cable Connection Terminals.....8
- 3 Mounting indications.....9**
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 - 3.2 Mounting indications for terminals..... 11
- 4 Network types.....12**
- 5 Assembly steps.....13**

Additional drawings and instructions can be found in the ABB Library:

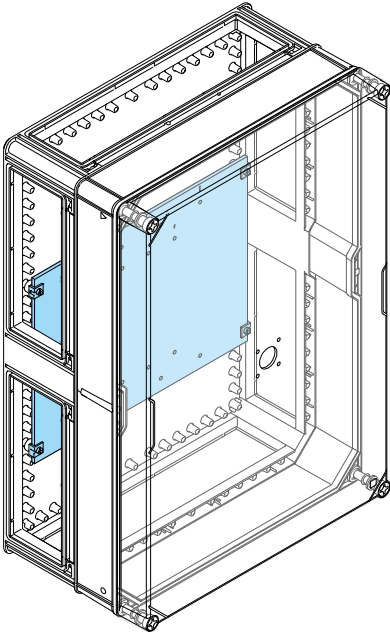


1 Icons

Icon	Description
	Warning / Caution
	Note
	Material - included
	Material - not included
	Tools
	Tightening torque (Nm)

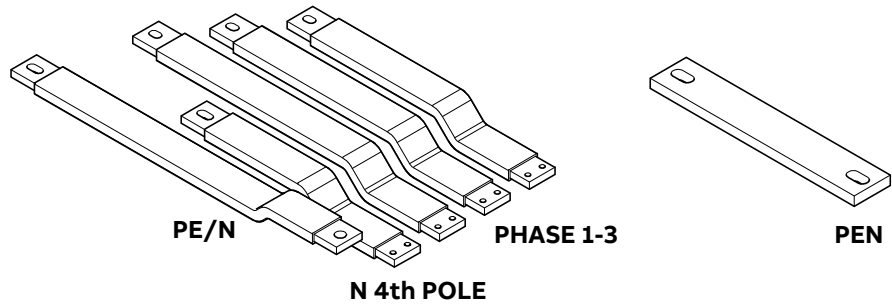
2 Material

2.1 Material - included

Box with extension frame and mounting plate		
	SKU-codes	Description
	4TBV853532C0100	VMS33 for Tmax XT1/XT2
	4TBV853534C0100	VMS43 for Tmax XT3/XT4
	4TBV853535C0100	VMS63 for Tmax XT1/XT2
	4TBV853569C0100	VMS63 for Tmax XT3/XT4
	4TBV853570C0100	VMS63 for Tmax XT5 400A
	4TBV853571C0100	VMS64 for Tmax XT5/XT6 630A
	4TBV853572C0100	VMS64 for Tmax XT7

2.2 Material - not included

2.2.1 CU strip sets



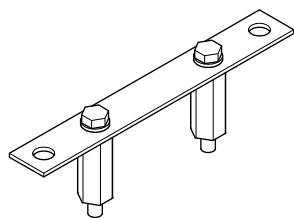
Devices / VMS BASE	PHASE1-3 (TOP)	PHASE1-3 (BOTTOM)	N 4th POLE (TOP)	N 4th POLE (BOTTOM)
XT1 / VMS33	N.A.	N.A.	N.A.	N.A.
XT2 / VMS33	4TBV854214C0100	4TBV854215C0100	4TBV854218C0100	4TBV854219C0100
XT1 / VMS63V	N.A.	N.A.	N.A.	N.A.
XT2 / VMS63V	4TBV854220C0100	4TBV854221C0100	4TBV854224C0100	4TBV854225C0100
XT3 / VMS43V	4TBV854226C0100	4TBV854227C0100	4TBV854230C0100	4TBV854231C0100
XT4 / VMS43V	4TBV854238C0100	4TBV854239C0100	4TBV854242C0100	4TBV854243C0100
XT3 / VMS63V	4TBV854232C0100	4TBV854233C0100	4TBV854236C0100	4TBV854237C0100
XT4 / VMS63V	4TBV854244C0100	4TBV854245C0100	4TBV854248C0100	4TBV854249C0100
XT5 / VMS63V	4TBV854250C0100	4TBV854251C0100	4TBV854256C0100	4TBV854257C0100
XT5 / VMS64V	4TBV854258C0100	4TBV854259C0100	4TBV854264C0100	4TBV854265C0100
XT6 / VMS64V	4TBV854266C0100	4TBV854267C0100	4TBV854272C0100	4TBV854273C0100
XT7 / VMS64V	4TBV854274C0100	4TBV854275C0100	4TBV854280C0100	4TBV854281C0100

Devices / VMS BASE	PE TOP / N BOT		N TOP / PE BOT		PEN
XT1 / VMS33	N.A.		N.A.		4TBV854282C0100
XT2 / VMS33	4TBV854216C0100		4TBV854217C0100		4TBV854282C0100
XT1 / VMS63V	N.A.		N.A.		4TBV854282C0100
XT2 / VMS63V	4TBV854222C0100		4TBV854223C0100		4TBV854282C0100
XT3 / VMS43V	4TBV854228C0100		4TBV854229C0100		4TBV854283C0100
XT4 / VMS43V	4TBV854228C0100		4TBV854229C0100		4TBV854283C0100
XT3 / VMS63V	4TBV854234C0100		4TBV854235C0100		4TBV854283C0100
XT4 / VMS63V	4TBV854234C0100		4TBV854235C0100		4TBV854283C0100
XT5 / VMS63V	4TBV854254C0100		4TBV854255C0100		4TBV854284C0100
XT5 / VMS64V	100% PE/N	4TBV854262C0100	100% PE/N	4TBV854263C0100	4TBV854285C0100 (630A)
	50% PE	4TBV854260C0100	50% PE	4TBV854261C0100	4TBV854284C0100 (400A)
XT6 / VMS64V	100% PE/N	4TBV854270C0100	100% PE/N	4TBV854271C0100	4TBV854286C0100 (800A)
	50% PE	4TBV854268C0100	50% PE	4TBV854269C0100	4TBV854285C0100 (630A)
XT7 / VMS64V	100% PE/N	4TBV854278C0100	100% PE/N	4TBV854279C0100	4TBV854288C0100 (1250A)
	50% PE	4TBV854276C0100	50% PE	4TBV854277C0100	4TBV854287C0100 (1000A)

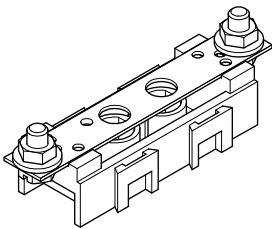


Hardware for mounting the switches is not included!

2.2.2 Terminals



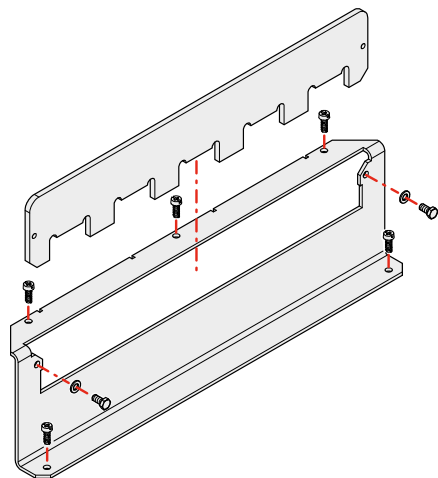
Custom terminal



Standard terminal

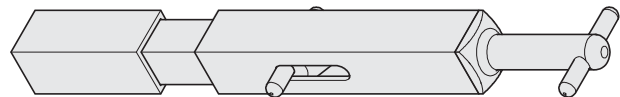
Device	Terminal SKU		Terminal Description	
XT1	4TBV853216C0100		Standard terminal 160A clamps	
XT1	4TBV853700C0100		Standard terminal 160A bolts	
XT2	4TBV853216C0100		Standard terminal 160A clamps	
XT2	4TBV853700C0100		Standard terminal 160A bolts	
XT3	4TBV853682C0100		Custom terminal 250A	
XT4	4TBV853682C0100		Custom terminal 250A	
XT5	4TBV853683C0100		Custom terminal 400A	
XT5	100% PE/N	4TBV853685C0100	100% PE/N	Custom terminal 630A
	50% PE	4TBV853684C0100	50% PE	Custom terminal 630A 50%
XT6	100% PE/N	4TBV853687C0100	100% PE/N	Custom terminal 800A
	50% PE	4TBV853686C0100	50% PE	Custom terminal 800A 50%
XT7	100% PE/N	4TBV853690C0100	100% PE/N	Custom terminal 1250A
	50% PE	4TBV853688C0100	50% PE	Custom terminal 1000A 50%

2.2.3 Blast Shield Kits



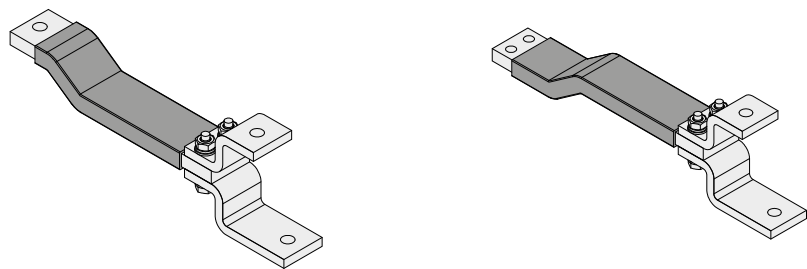
Devices / VMS BASE	MCCB Shield Kits SKU	MCCB Shield Kits Description
XT1 / VMS33	4TBV853573C0100	VMS 320mm XT1 Shield kit
XT2 / VMS33	4TBV853574C0100	VMS 320mm XT2 Shield kit
XT1 / VMS63V	4TBV853573C0100	VMS 320mm XT1 Shield kit
XT2 / VMS63V	4TBV853574C0100	VMS 320mm XT2 Shield kit
XT3 / VMS43V	4TBV853575C0100	VMS 320mm XT3 Shield kit
XT4 / VMS43V	4TBV853576C0100	VMS 320mm XT4 Shield kit
XT3 / VMS63V	4TBV853575C0100	VMS 320mm XT3 Shield kit
XT4 / VMS63V	4TBV853576C0100	VMS 320mm XT4 Shield kit
XT5 / VMS63V	4TBV853599C0100	VMS 320mm XT5 Shield kit
XT5 / VMS64V	4TBV853600C0100	VMS 440mm XT5 Shield kit
XT6 / VMS64V	4TBV853601C0100	VMS 440mm XT6 Shield kit
XT7 / VMS64V	4TBV853609C0100	VMS 440mm XT7 Shield kit

2.2.4 Telescopic Shaft



Devices / VMS BASE	MCCB Telescopic Shaft SKU	MCCB Telescopic Shaft Description
XT4	4TBV853850C0100	VMS with XT4 telescopic shaft

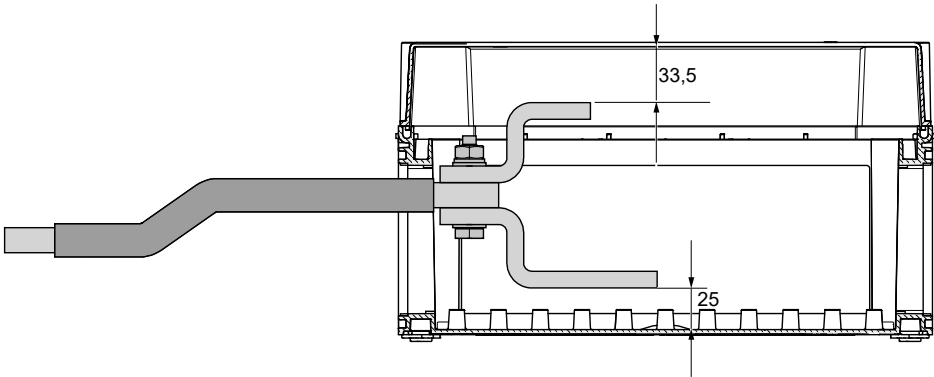
2.2.5 Cable Connection Terminals



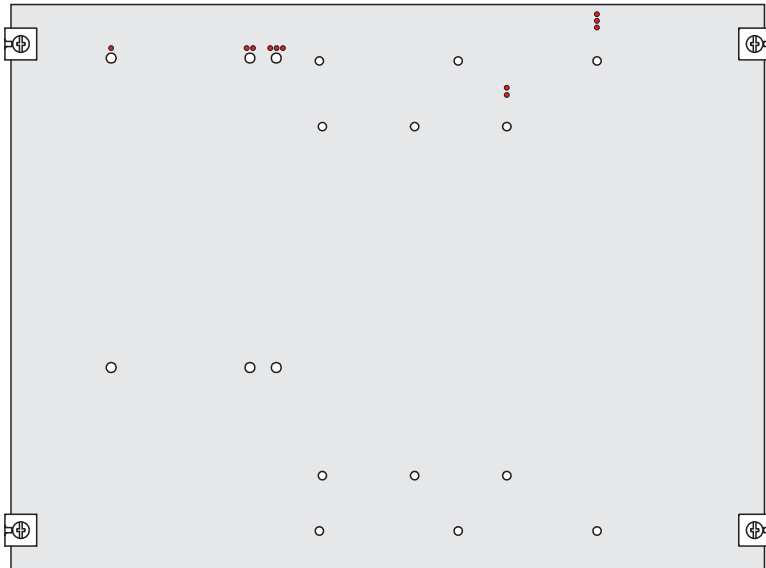
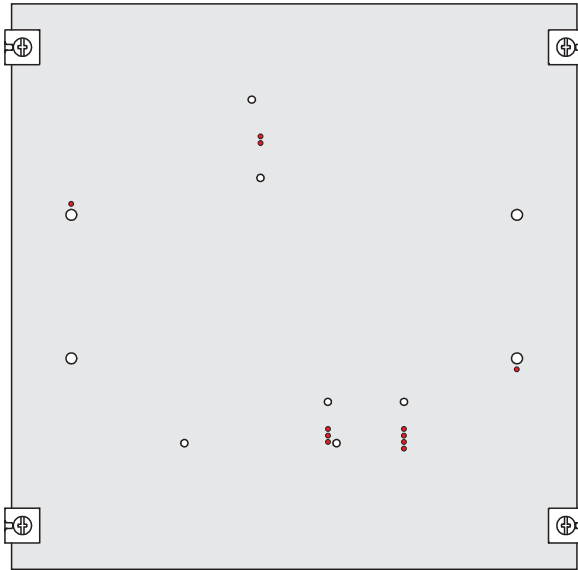
XT7 Cable connection terminal PE

XT7 Cable connection terminal

Devices / VMS BASE	Cable Connection Terminals SKU	Cable Connection Terminals Description
XT7 / VMS64V	4TBV854205C0100	XT7 Cable connection terminal PE
XT7 / VMS64V	4TBV854204C0100	XT7 Cable connection terminal



3 Mounting indications

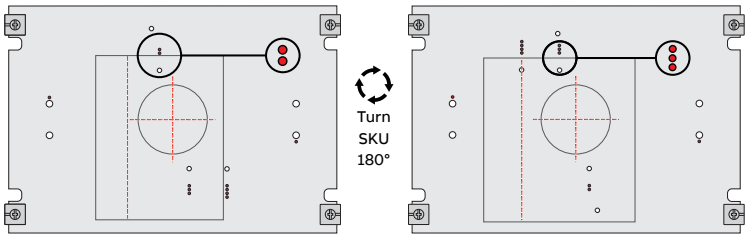
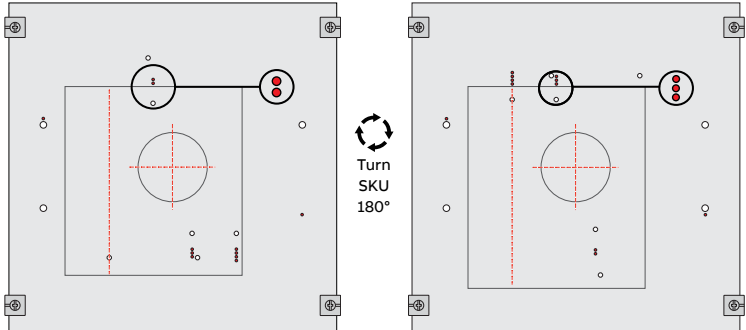
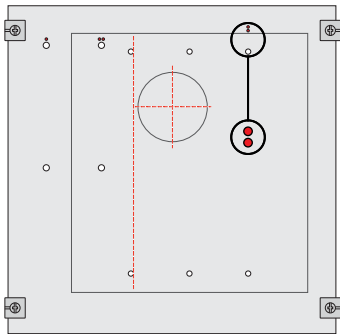
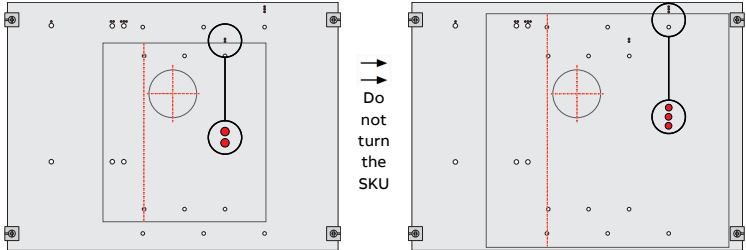


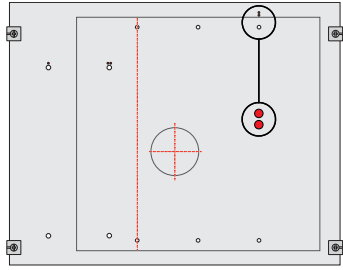
For XT1-4 align the indicated hole with the middle assembly hole of the device.

For XT5-7 align the indicated hole with the upper right assembly hole of the device.

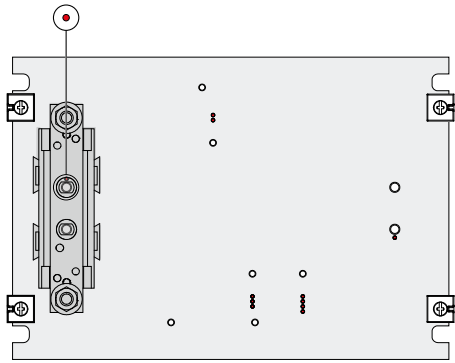
- Vertical dots: device mounting.
- Horizontal dots: terminal mounting.

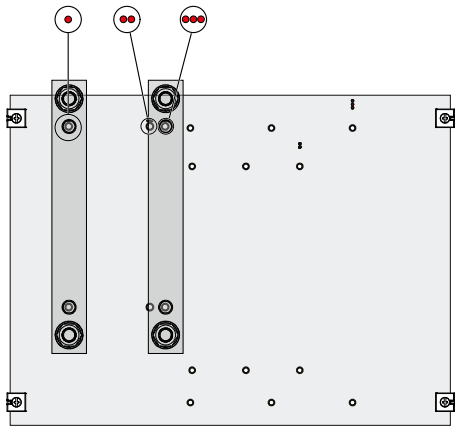
3.1 Mounting indications for devices

Description			
 Turn SKU 180°		XT1 (3P and 4P)	XT2 (3P and 4P)
 Turn SKU 180°		XT3 (3P and 4P)	XT4 (3P and 4P)
		XT5 (3P and 4P)	
 Do not turn the SKU		XT5 (3P and 4P)	XT6 (3P and 4P)

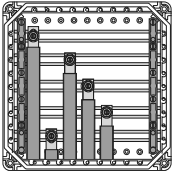
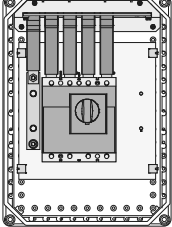
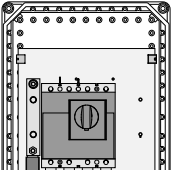
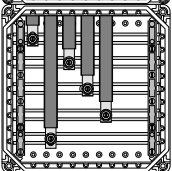
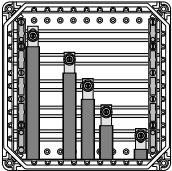
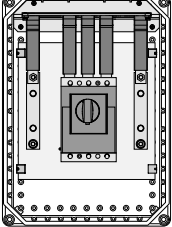
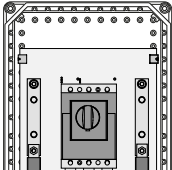
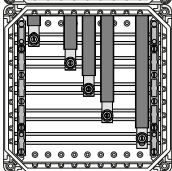
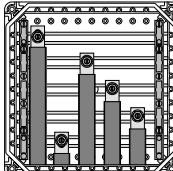
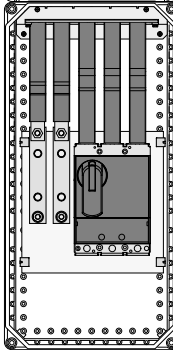
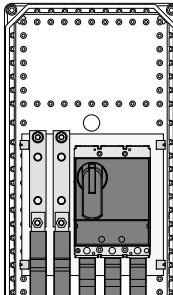
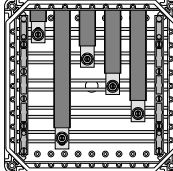
Description	●●	●●●
	XT7 (3P and 4P)	

3.2 Mounting indications for terminals

Terminals XT1-4	● PE-N terminal
	Std. TML 160A clamps (XT1-2) Std. TML 160A bolts (XT1-2) Custom terminals 250A (XT3-4)

Terminals XT5-7	● PE Terminal	●● N Terminal	●●● N Terminal
	Custom terminals 400A (XT5) Custom terminals 630A (XT5) Custom terminals 800A (XT6) Custom terminals 1250A (XT7)	Custom terminals 400A (XT5) Custom terminals 800A (XT6) Custom terminals 1250A (XT7)	Custom terminals 630A (XT5)

4 Network types

XT1-7		XT1-4	XT5-7
TNS 4 pole		TNS 3 pole	TNS 3 pole
 PE L1 L2 L3 N    PE L1 L2 L3 N 		 PE L1 L2 L3 N    PE L1 L2 L3 N 	 PE L1 L2 L3 N    PE L1 L2 L3 N 



The copper strips version is shown here. This configuration also applies to a wired configuration.

5 Assembly steps

1. Material: overview



1 VMS base with mounting plate

2 Cover

3 Cover screws (4x)

4 Extension frame screws (4x)

5 Extension frame



6 Blast shield kit

7 N/PE terminal

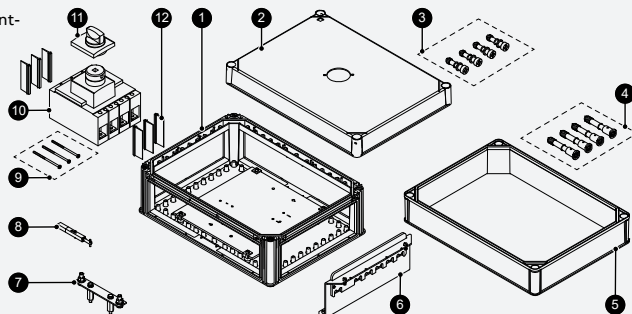
8 Telescopic shaft

9 Device screws

10 Device

11 Handle

12 Phase separators



2. Remove extension frame and mount bottom part of blast shield



1 Extension frame screws (4x)

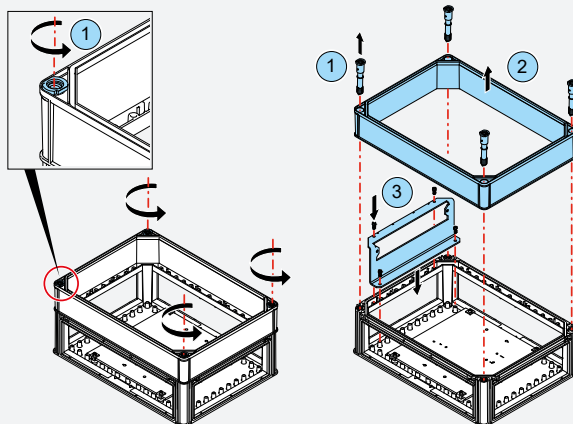
2 Extension frame

3 Blast shield kit + screws

For the extension frames with 640 mm side, remove the 2 metallic screws in the middle of those long sides too.



HI-PLAST max. 3.2 Nm
SCREW 5X13



3. Prepare device

For Terminals of the following devices, see corresponding installation instructions:

Front Terminals: RHE - Rotary handle operating mechanism:

XT1-4



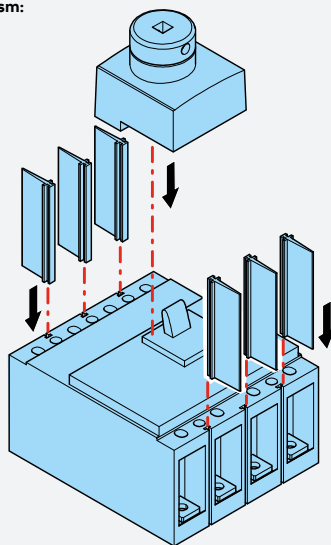
XT5



XT6



XT7



4. Install device on mounting plate



1 Device

2 Device screws (3x)

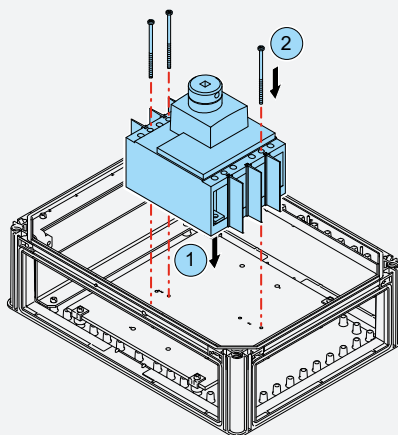


XT1-4 M4 1.1 Nm

XT5 M5 2.0 Nm

XT6 M5 2.0 Nm

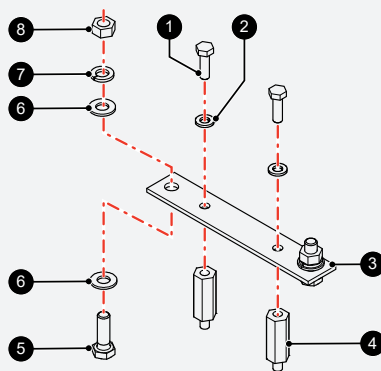
XT7 M5 2.5 Nm



5. Mounting a custom terminal: overview



- 1 Hex bolt (2x)
- 2 Washer (2x)
- 3 Terminal strip (1x)
- 4 Terminal spacer (2x)
- 5 Hex bolt (2x)
- 6 Washer (4x)
- 7 Spring washer (2x)
- 8 Hex nut (2x)



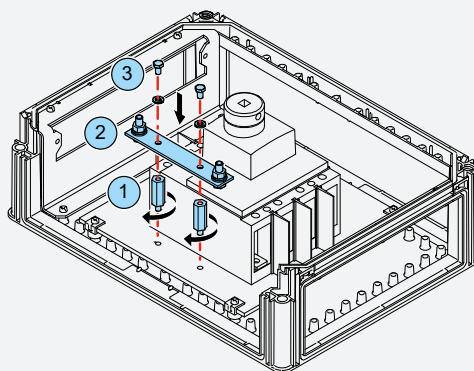
6. A: Mounting a custom terminal on the mounting plate



- 1 Terminal spacers (2x)
- 2 Terminal strip
- 3 Terminal bolts + washer (2x)



- 1 4 Nm
- 3 6 Nm



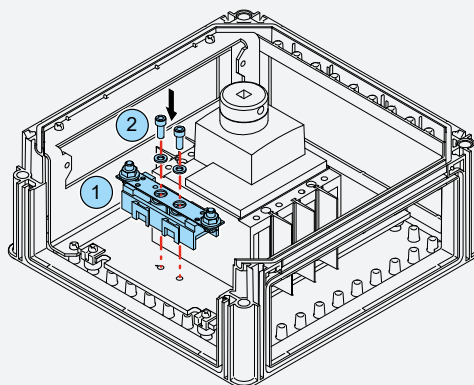
B: Mounting a standard terminal on a mounting plate



- 1 Terminal strip
- 2 Terminal bolt + washer (2x)



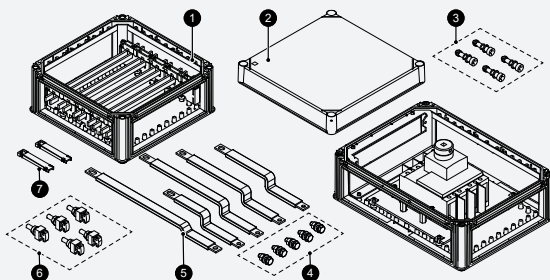
- | | | |
|----------------------|---------|------|
| Std. TML 160A clamps | M6 x 16 | 4 Nm |
| Std. TML 160A bolts | M6 x 16 | 4 Nm |



7. Installing the busbar box and box covers: overview



- 1 Busbar box
- 2 Busbar box cover
- 3 Busbar cover screws (4x)
- 4 Copper strip screws (5x)
- 5 Copper strips
- 6 Anchor bolts (5x)
- 7 Coupling dowels (2x)



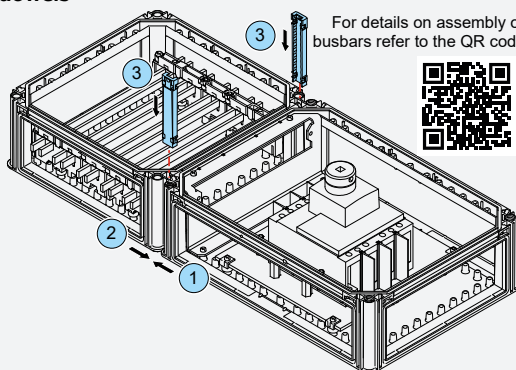
8. Installing the busbar box: connecting the boxes and inserting the coupling dowels



- 1 MCCB device box



- 2 Busbar box
- 3 Coupling dowels



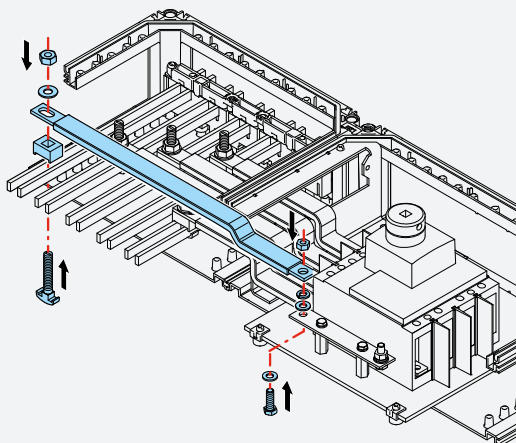
9. Connect the device to the busbar box with copper strips (or with cables)



Make the connections to the device first and then to the busbar box.



- M8 15-22 Nm
- M10 30-44 Nm
- M12 50-75 Nm



10. A: Mount the blast shield comb over the connections

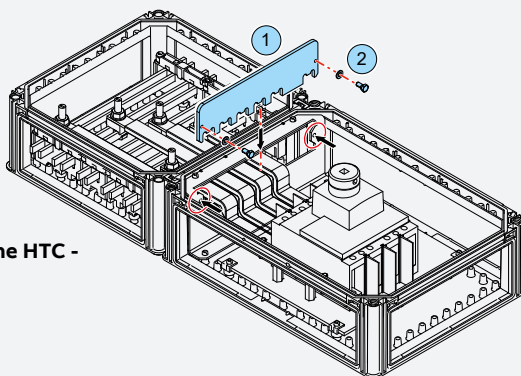


1 Blast shield

2 Blast shield screws+ washers (2x)



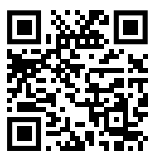
M5 1.5 Nm



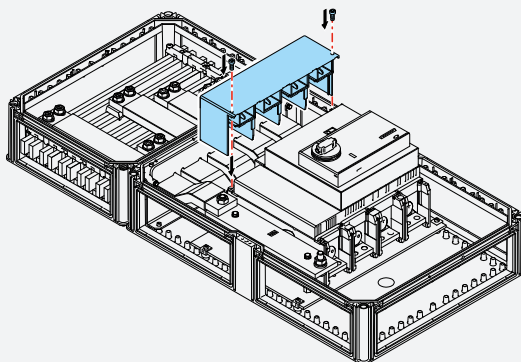
B: Mount for XT5-7 devices also the HTC - High Insulating terminal covers

See corresponding installation instruction:

XT5-XT6

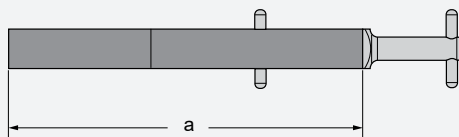


XT7



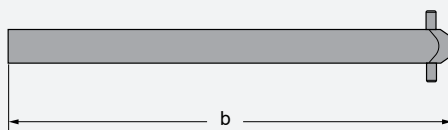
11. A: Telescopic shaft for XT4

Device	Compressed length "A"
XT4	80 mm



B: Cut shaft for XT1-3 and XT 5-7 to correct length

Device	Length "B"
XT1	90 mm
XT2	80 mm
XT3	90 mm
XT5	95 mm
XT6	105 mm
XT7	135 mm

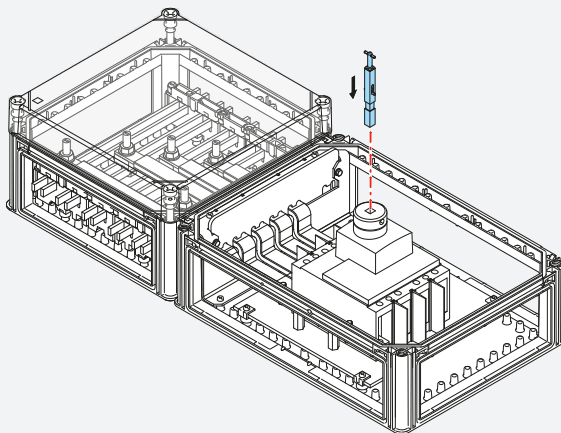


12. Install the shaft and fastening the busbar box cover

For fixation of the shaft, see installation instruction for RHE - Rotary handle operating mechanism, mentioned here on page 14.

For fastening busbar box cover:

- Snap the cover screws in the four corner holes. The cover screws will be captive.
- Fit the cover on the correct box (one turn on the screws, max. 2.5 Nm).
- If necessary, stick the double isolation symbol on the cover.



13. Fastening extension frame, handle on device box cover and then the cover on the extension frame



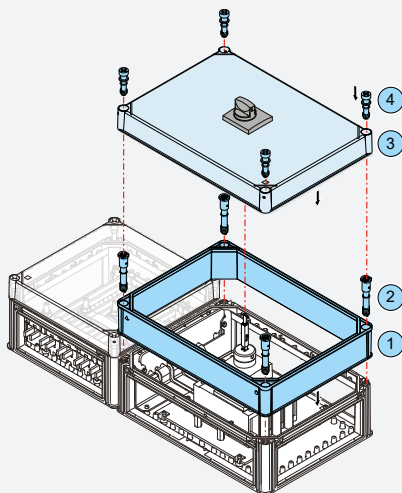
- Extension frame
- Extension frame screws (4x)
- Cover
- Cover screws (4x)

For fixation of the handle on the cover, see installation instruction for RHE - Rotary handle operating mechanism, mentioned here on page 14.

For fastening the extension frame and thereafter the device box cover:

- Snap the extension frame screws/cover screws in the four corner holes. The extension frame screws/cover screws will be captive.
- Fit the extension frame/device box cover on the device box/extension frame (one turn on the screws, max. 2.5 Nm).
- If necessary, stick the double isolation symbol on the cover.

For the extension frames with 640 mm side, fix again the 2 metallic screws in the middle of those long sides.



14. Installation complete

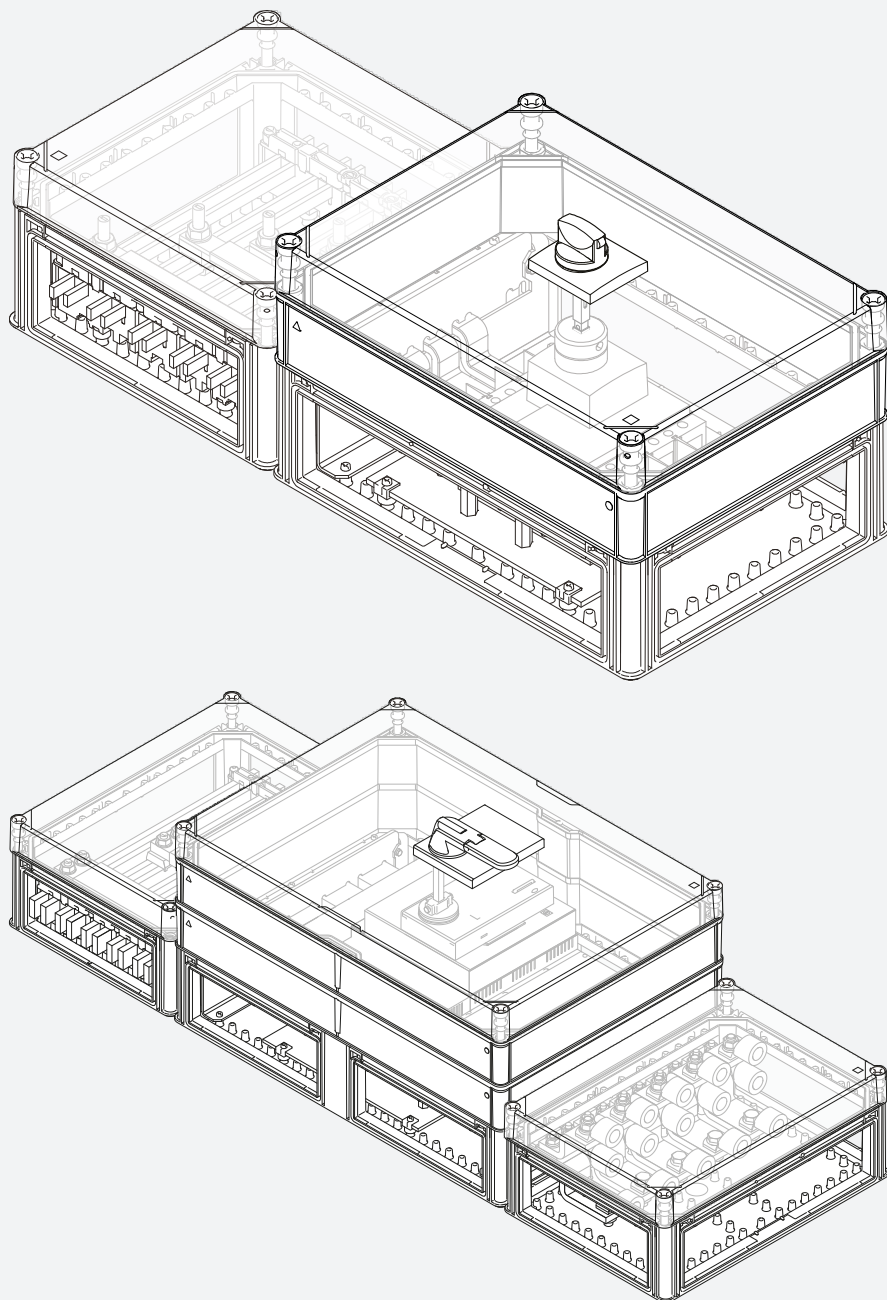




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