ORIGINAL MANUAL 2CCC444013M0202 REV. 2.0, DATE OF RELEASE: 06/2017

Preconfigured Remote Power Panel

Operation instructions

Table of contents

Pictures in this manual are given for the Remote Power Panel 500A according to the following type code:
RPP-500A-P-INT-RTI-BCM-PQ-TS
All other cabinets (250A, 750A, 1000A) can be derived from this manual. For installation/assembly, please refer to the “Assembly instruction manual” (2CCC444010M0202).

Unpacking and checking the cabinet

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01 Unpacked cabinet
—
02 Cabinet small – 250/500 A
—
03 Cabinet medium – 750 A
—
04 Cabinet large – 1000 A

—
01

Visual control of the packaging

- Check the packaging carefully for damage

Unpacking the cabinet

- Do not use a knife to cut the package sealing
- After unpacking, the cabinet should look as shown in Fig. 1
- The size of the cabinet can vary depending on your order
  - RPP-250A-X3-X4-X5-X6-X7-X8 (Fig. 2)
  - RPP-500A-X3-X4-X5-X6-X7-X8 (Fig. 2)
  - RPP-750A-X3-X4-X5-X6-X7-X8 (Fig. 3)
  - RPP-1000A-X3-X4-X5-X6-X7-X8 (Fig. 4)
- Attention: The cabinet is top-heavy!

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02

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03

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04

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05 Correct transportation of the cabinet
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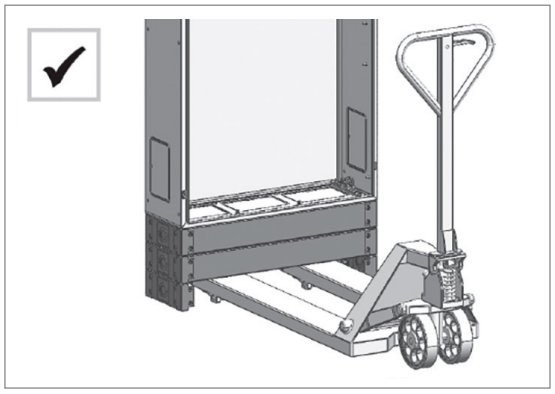
06 Incorrect transportation of the cabinet



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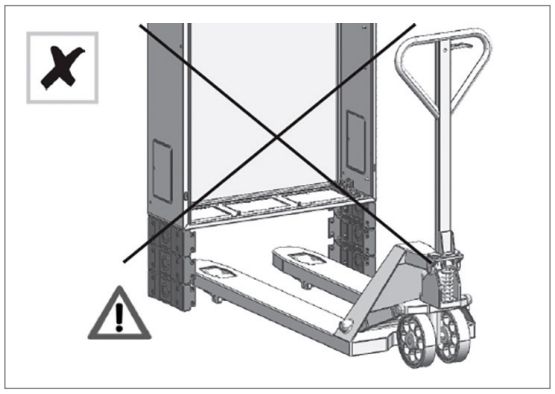

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Transportation of the cabinet

- The transportation of the cabinet is only allowed as shown in Fig. 5 on the left
- Fig. 6 shows the incorrect transportation of the cabinet
- For further information please refer to the manual of the enclosure socket, which will be delivered with the cabinet

Otherwise or for detailed information, please contact ABB or download the specific instruction manual on the following homepage:
https://www.striebelundjohn.com/mounting-instructions/category/allgemein-sockel-bausatz-0

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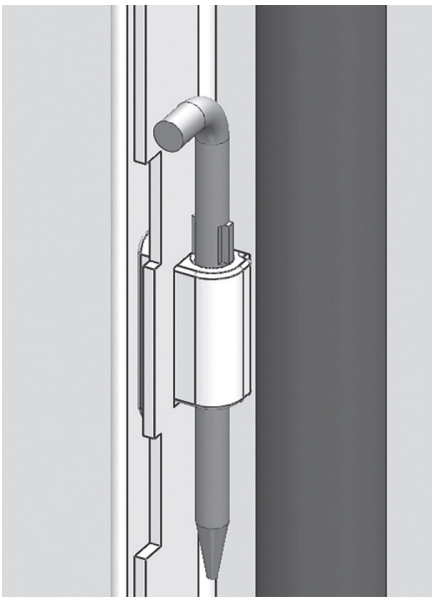
07 Cabinet key
—
08 Correct mounting
—
09 Incorrect mounting

—
07

Opening cabinet

- Only authorized/skilled people are allowed to open the cabinet
- To open the electrical cabinet it is necessary to use a common cabinet key, displayed in Fig. 7
- Each door can be opened to a maximum angle of 180°



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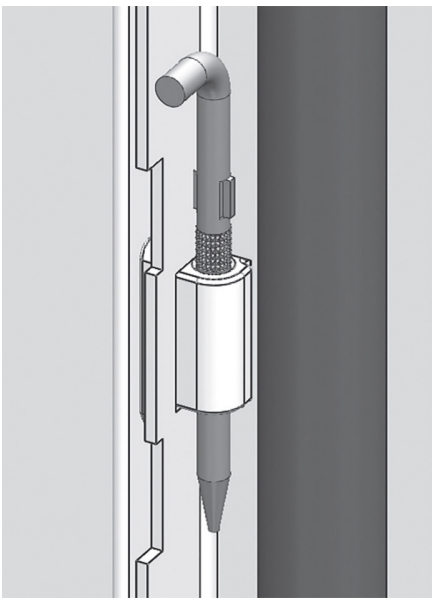
Checking door hinge

- Check that all bolts of the door hinge are positioned as shwon in Fig. 8
- Fig. 9 shows an incorrect mounting



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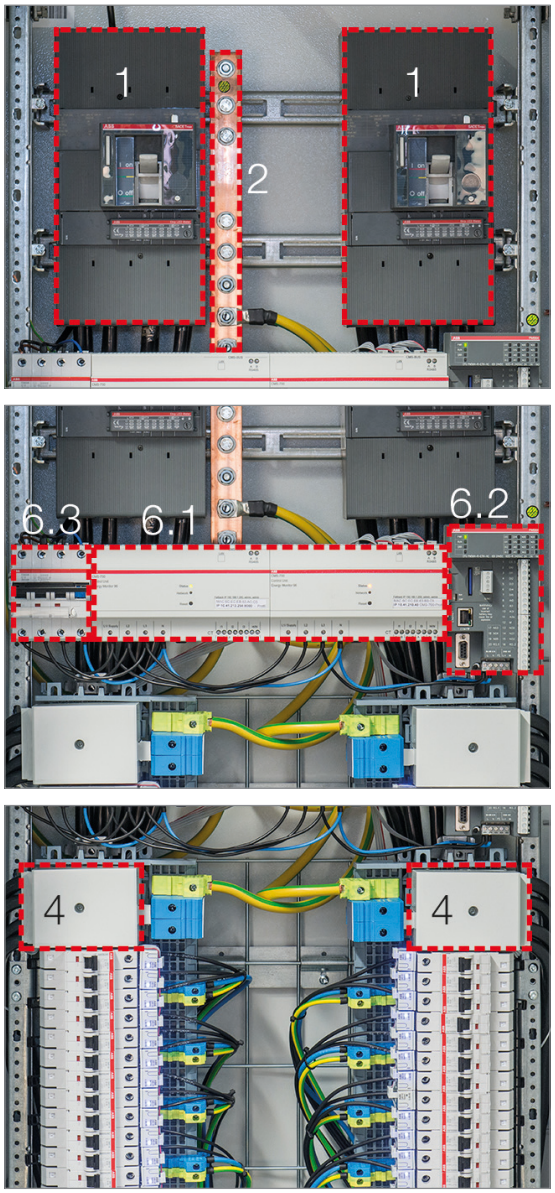
10 Overview of all screws which shall be checked after transportation



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Checking proper function and screws

- Check all screws and nuts in the cabinet after transportation (Fig. 10).

- If necessary, retighten all screws and nuts in the cabinet after transportation (Fig. 4).

- Especially pay attention to the screws which are in contact with conductive parts
  1. All screws for each terminal "D120/42.FF" (8Nm)
  2. All screws for the earthing terminal (8 Nm)
  3. All screws for the earthing of the cabinet (8 Nm)
  4. All screws at the incoming terminal blocks – ZLS224
  5. All screws for the earthing of the door (8 Nm)
  6. All screws at the devices on the DIN rail
     6.1. CMS-600/CMS-700
     6.2. AC500-eco
     6.3. 4-pole RCCB/MCB
  7. All screws of additional controlling devices which are mounted on the DIN rail
  8. All screws of the controlling devices in the front door of the panel

For further details of each tightening torque please check the technical specification of each device.

- All other parts shall be checked

Checking touch proof security IP20B

- Ensure that all required items in the cabinet are positioned properly, especially the parts which are responsible for touch proof security

- Parts that shall be in place are
  - Terminal covers of all ZLS224
  - Terminal covers of all XT4
  - Protection covers of all terminals "120/42.FF"

- Ensure that the minium cross section of all power cables feeding the SMISSLINE busbar system including neutral and earthing cable are 50 mm²

- Only if these parts are mounted correctly the panel is protected IP20B

- Check the complete cabinet for touch proof security

- If any device is not installed correctly, it will not be allowed to proceed with the installation

Cabinet mounting

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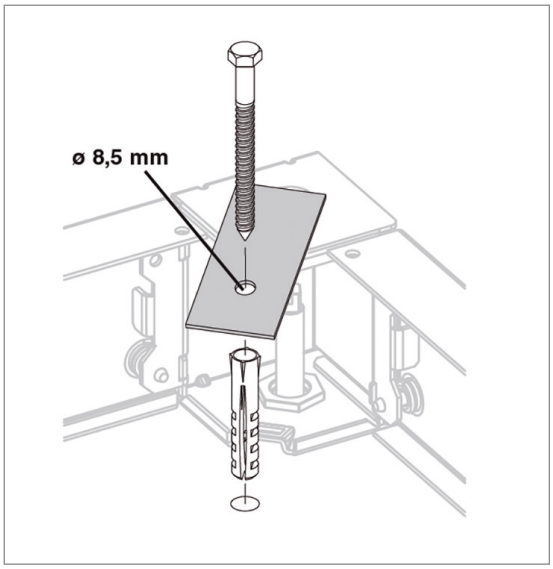
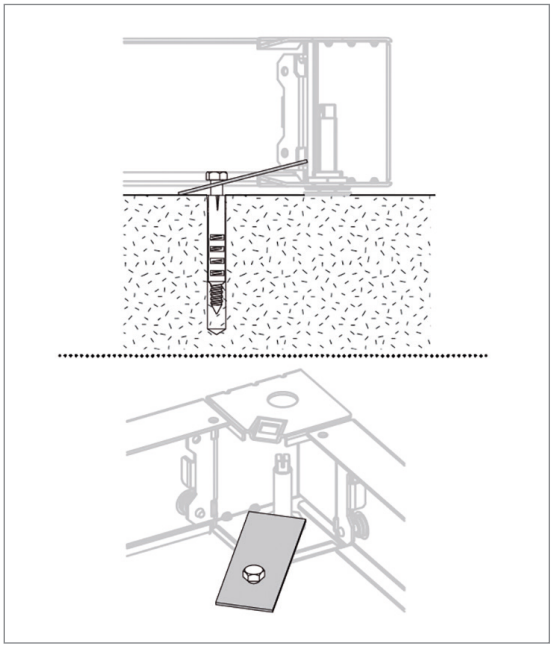
11 Floor fastener for plinth





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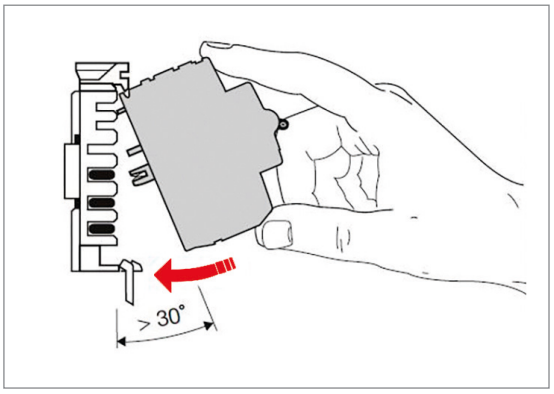
Bottom fastening

- The cabinet will be delivered with up to three sockets
- At least one socket shall be mounted below the cabinet
  - Necessary for the fixing of the cable
  - Necessary for the fixing of the cabinet to the ground/floor
- The maximum amount of sockets mounted simultaneously is three
- To mount the electrical cabinet to the floor, use all four “Floor fastener for plinth” brackets which are delivered with the cabinet (Fig. 11)
- For a detailed mounting instruction please refer to manual “RZ3P4“ provided from Striebel&John
- Due to safety reasons it is forbidden to install the cabinet without the “Floor fastener for plinth”
- The maximum weight of the cabinet including SMISSLINE is mentioned in the technical data

Load connections

12 Assembly of a SMISSLINE device

13 Plug-in position



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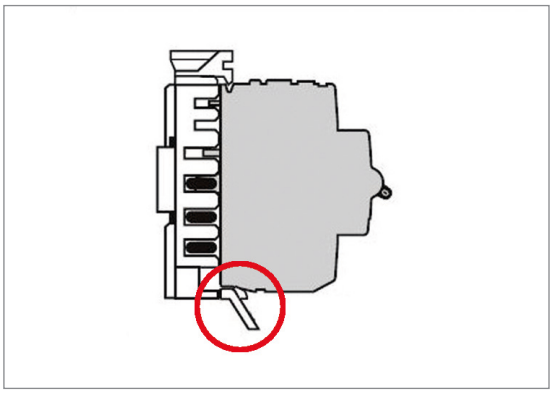

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For detailed information please contact ABB or download the specific instruction manual for SMISSLINE TP on the ABB homepage:
http://new.abb.com/low-voltage/products/system-pro-m/smissline-tp

Installation of SMISSLINE TP devices

- Ensure that each powerbus does not exceed 250A rated current referring to the consumption of the servers
  - Note: For data center applications it might be preferable to feed each MCCB with maximum 125A due to redundancy in case of a breakdown/failure of the other MCCB
- Load connection of SMISSLINE TP devices
- To ensure that the devices are correctly connected, please check the position of the fixing clip of each MCB
- The position shall be in the upper position as shown in Fig. 13

Wiring of SMISSLINE TP devices

- Wiring of each SMISSLINE TP device depends on the local regulations and standards
- Only authorized personnel is allowed to wire electrical devices/components inside the cabinet
- Tightening torque for the screws are 2.8 Nm

For detailed information please contact ABB or download the specific technical instructions manual on the ABB homepage:
https://goo.gl/fFZcba
Document Number: 2CCC451059C0203

Line connection of „XT4N 250A“

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14 Protection housing of “XT4N 250A”
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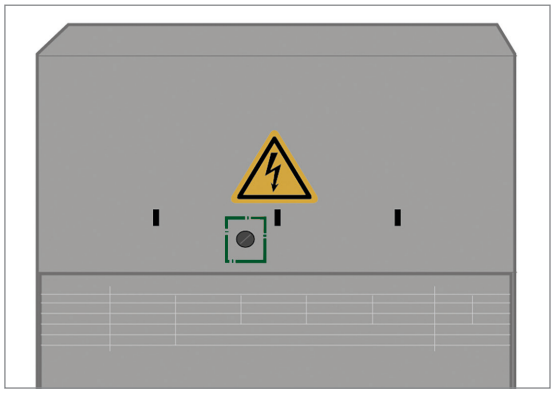
15 Protection housing "CPUF120"



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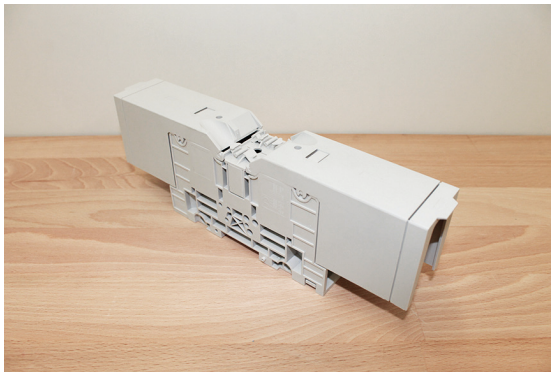
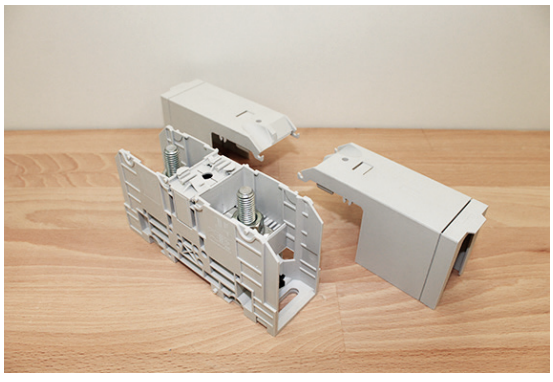
For detailed information please contact ABB or download the specific instructions manual for the XT4N 250A on the ABB homepage:
https://goo.gl/kMV7ct
– Document Number: 1SDH000722R0001

https://goo.gl/WXluwI
– Document Number: 1SDH000721R0506

https://goo.gl/1GzEtT
– Document Number: 1SDC007406G0202





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Removing the protection housing of "XT4N 250A"

- Unbolt the tiny screw in the center of the housing (one or two screws) (s. Fig. 14)
- Remove the protection housing

Removing the protection housing "CPUF120"

- Remove the protection housing "CPUF120" as shown in Fig. 15
- Store the protection housing "CPUF120" at a save place

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16 Indent crimping
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17 Indent crimping – practical example
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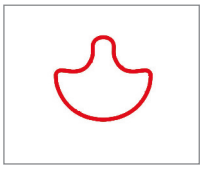
18 Details on connection of XT4



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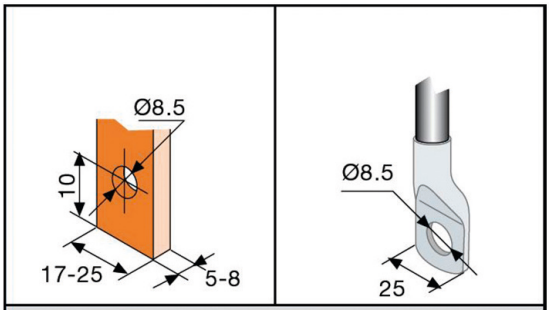

Bars/Cable lugs	
Tightening torques [Nm]	Supplied clamping screw
8	M8

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18

Connecting main power supply

- All electrical connections shall always correspond to the national and local standards

- Connect the Cu cable in the same way as on the load side (N L1 L2 L3)
  - Each cable cross section shall be according to current load of XT4N 250A or the terminals D120/42.FF
    - N, L1, L2, L3: min. 120 mm²; Cu
    - PE: min. 70 mm²; Cu

- Cable shall be according to IEC 60228 Class 5 or Class 6, 105 °C

- For connection to XT4N 250A use cable lugs according to Fig. 17
  - Cable lugs shall be suitable for Cu 120 mm² and switchgear connection (or bigger, depending on the cross section of the line/incoming cable)
  - For the connection to D120/42.ff we recommend to use 106R10 cable lugs by Klauke®
  - For the connection to the MCCB we recommend to use 106R8 cable lugs by Klauke®

- To comply with the required minimum force according to IEC 61238 T1 we recommend the crimp-type-method “indent crimping” as illustrated in the Fig. 16 and 17
  - Example: Minimum 7200N when 120mm² is installed

- Use a heat shrinking tube for each phase to isolate the cable lug

- For further connection options, please refer to the document 1SDC007406G0202 provided by ABB

- Connect the cable with the XT4N 250A and fix the screws with a torque of 8 Nm as shown in Fig. 18

- For connection to the terminal block, please refer to the instruction manual of "D120/42.FF"
  - 2 cable lugs can be installed above

- For detailed information please refer to the assembly instruction of the RPP

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19 Protection housing of XT4N 250A
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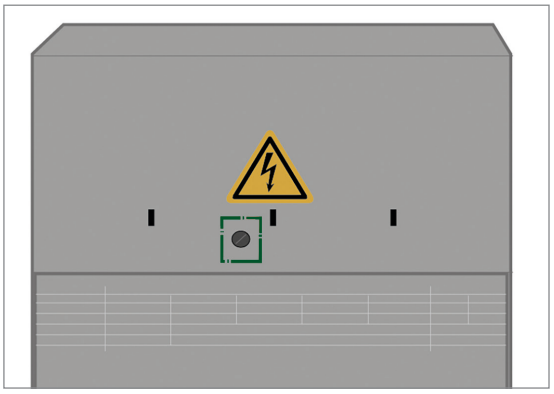
20 D120/42.FF with protection housing "CPUF120"
—
21 Surge protection device with pluggable surge protective device cartridges



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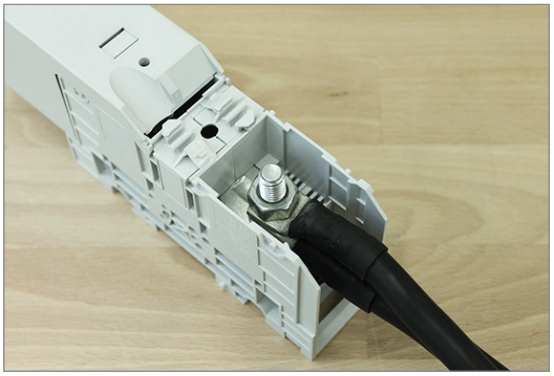

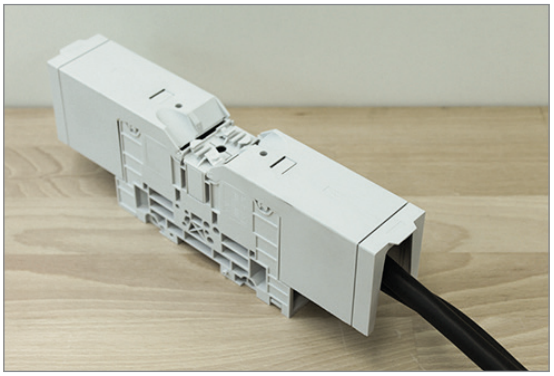

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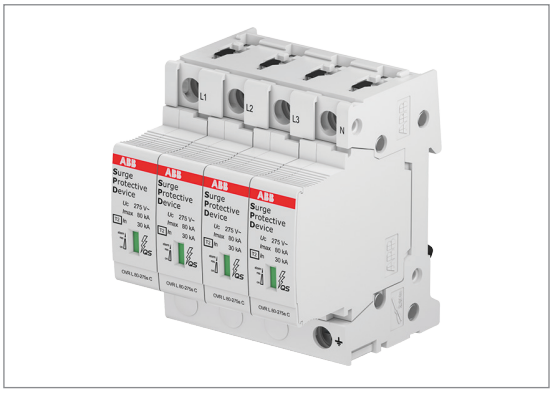

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Mounting of protection housing

- Reassemble the dismounted electrical shock protection

- Fix the protection housing using the previously unfastened screw

Mounting of the protection housing "CPUF120"

- Mount the protection housing "CPUF120" as shown in Fig. 20 and check the terminal for IP20B

Overvoltage protection

End of life indicator of the standard surge protective device (Fig. 21).
This option enables the indication of the surge protective device state via a mechanical indicator which changes from green to red when the surge protective device comes to end-of-life. If this occurs, the surge protective device must be changed as protection is no longer guaranteed.

Technical features of the integrated auxiliary contact

- Contacts information: Normally-opened (NO)/ Normally-closed (NC)
- Min. load: 12 V DC - 10 mA
- Max. load: 250 V AC - 1 A
- Connection cross section: 1.5 mm²

For detailed information please contact ABB or download the specific technical instructions manual on the ABB homepage:
https://goo.gl/eOhONG
– Document Number: 2CTC432096M1701

Operation

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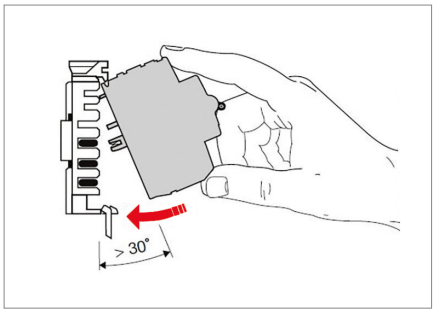
22 Assembly of a SMISSLINE device
—
23 Plug-in position
—
24 Disconnecting a device
—
25 Change position of plug contacts



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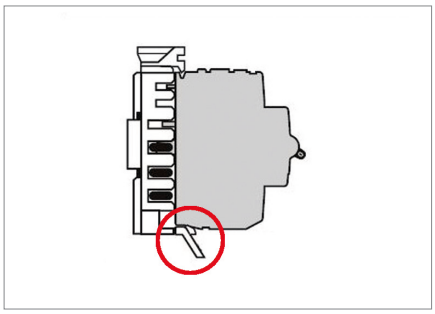

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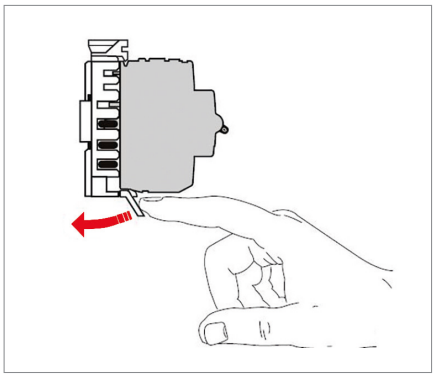

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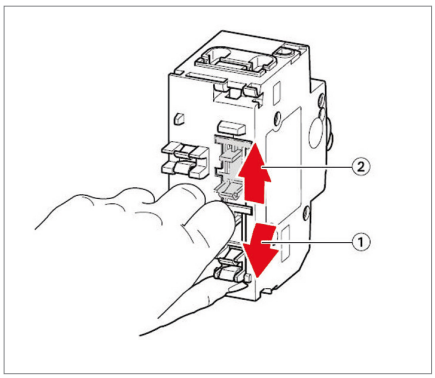

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Ekip Display for “XT4N 250A”
For further information please refer to the user and operator manual.
Address of ABB library:
https://goo.gl/yqlxSi
– Document Number: 1SDH000892R0002

Mounting of plug-in SMISSLINE TP devices
- The device has to be switched off before mounting
- Mount all devices onto the SMISSLINE TP system as visualized in Fig. 22
- Ensure that each powerbus does not exceed 250 A
  - Cf. technical data
  - Note: For data center applications/crictical power applications it might be preferable to feed each powerbus with maximum 125 A due to redundancy in case of a breakdown/failure of one MCCB

Mounting of plug-in SMISSLINE TP devices
- To ensure that the device is correctly connected please check the position of the fixing clip
- The position shall be in the upper position as shown in Fig. 23

Disconnection of a device
- Before disconnecting, the device shall be switched off
- To remove the device open the fixing clip shown in Fig. 24
- Remove or change the device

Position plug-in connector
- First: Lift contact gate (Fig. 25)
- Second: Bring plug contacts to required position (L1, L2 or L3) (Fig. 25)

Maintenance

No maintenance is necessary.

Approved SMISSLINE TP devices

Only the listed devices may be used in combination with the RPP panel.

MCB 1-pole

Rated current	Product ID	Catalog description
16A	2CCS571001R0164	S401 M-C16
16A	2CCS571001R0467	S401 M-K16
32A	2CCS571001R0324	S401 M-C32
32A	2CCS571001R0537	S401 M-K32

MCB 2-pole (with protected neutral)

Rated current	Product ID	Catalog description
16A	2CCS571103R8164	S401 M-C16NP
16A	2CCS571103R8467	S401 M-K16NP
32A	2CCS571103R8324	S401 M-C32NP
32A	2CCS571103R8537	S401 M-K32NP

MCB 3-pole

Rated current	Product ID	Catalog description
16A	2CCS573001R0164	S403 M-C16
16A	2CCS573001R0467	S403 M-K16
32A	2CCS573001R0324	S403 M-C32
32A	2CCS573001R0537	S403 M-K32

MCB 4-pole (with protected neutral)

Rated current	Product ID	Catalog description
16A	2CCS573103R8164	S403 M-C16NP
16A	2CCS573103R8467	S403 M-K16NP
32A	2CCS573103R8324	S403 M-C32NP
32A	2CCS573103R8537	S403 M-K32NP

Other devices for SMISSLINE

	Product ID	Catalog description
Auxiliary switch and signal contacts		
Signal contact, 1NO (right side mounting)	2CCS500900R0216	SK40010-R SA
Signal contact, 1NO (left side mounting)	2CCS500900R0141	SK40010-L SA
Surge Protection Device		
Universal adapter SMISSLINE TP/DIN-Rail	2CCA180550R001	ZLS964
Surge arrester OVR typ 2 pluggable	2CTB803873R5200	OVR T2 4L 40-275 P TS QS
Circuit breaker for surge arrester OVR	2CCS573103R8324	S403M-C32NP

Technical data

RPP-250A-X3-X4-X5-X6-X7-X8

Rated voltage (U_n)	240/415 V
Rated insulation voltage of a circuit (U_i)	440 V
Rated impulse withstand voltage of the assembly (U_{imp})	Line/input 8 kV Load/output 4 kV
Rated frequency (f_n)	50/60 Hz
Rated current assembly (I_{nA})	max. 250 A
Rated current of each circuit/powerbus (I_{nc})	max. 250 A
Number of outgoing circuits	max. 128
Rated current of all outgoing circuits (I_{nc})	max. 32 A
Rated peak withstand current (I_{pk})	52.5 kA (with internal MCCB) max. 17 kA (with external MCCB)
Rated conditional short-circuit current assembly (I_{cc})	25 kA (with internal MCCB) max. 10 kA (with external MCCB)
Rated diversity factor (RDF)	0.8
Type of current	AC
Ambient air temperature	-5° … +40°
Storage temperature	-25° … +70°
Pollution degree	3
Material group	III
Protection against mechanical impact	IK07 (with steel door)
Protection against mechanical impact	IK06 (with glass door)
Degree of protection (vertical planes)	IP55
Degree of protection (top and bottom)	IP20B
Earthing system	TN-S
Assembly is intended for use by	Skilled persons
Weight without SMISSLINE TP devices	150 kg
Climatic compatibility	IEC 61439-2
Vibration	IEC 61439-2

Dimensions

Depth	350 mm
Height (min. with one socket)	1950 mm
Height of socket	100 mm
Maximum height (max. three sockets)	2150 mm
Width	550 mm

RPP-500A-X3-X4-X5-X6-X7-X8

Rated voltage (U_n)	240/415 V
Rated insulation voltage of a circuit (U_i)	440 V
Rated impulse withstand voltage of the assembly (U_{imp})	Line/input 8 kV Load/output 4 kV
Rated frequency (f_n)	50/60 Hz
Rated current assembly (I_{nA})	max. 500 A
Rated current of each circuit/powerbus (I_{nc})	max. 250 A
Number of outgoing circuits	128
Rated current of all outgoing circuits (I_{nc})	max. 32 A
Rated peak withstand current (I_{pk})	52.5 kA (with internal MCCB) max. 17 kA (with external MCCB)
Rated conditional short-circuit current assembly (I_{cc})	25 kA (with internal MCCB) max. 10 kA (with external MCCB)
Rated diversity factor (RDF)	0.8
Type of current	AC
Ambient air temperature	-5° … +40°
Storage temperature	-25° … +70°
Pollution degree	3
Material group	III
Protection against mechanical impact	IK07 (with steel door)
Protection against mechanical impact	IK06 (with glass door)
Degree of protection (vertical planes)	IP55
Degree of protection (top and bottom)	IP20B
Earthing system	TN-S
Assembly is intended for use by	Skilled persons
Weight without SMISSLINE TP devices	160 kg
Climatic compatibility	IEC 61439-2
Vibration	IEC 61439-2

Dimensions

Depth	350 mm
Height (min. with one socket)	1950 mm
Height of socket	100 mm
Maximum height (max. three sockets)	2150 mm
Width	550 mm

RPP-750A-X3-X4-X5-X6-X7-X8

Rated voltage (U_n)	240/415 V
Rated insulation voltage of a circuit (U_i)	440 V
Rated impulse withstand voltage of the assembly (U_{imp})	Line/input 8 kV Load/output 4 kV
Rated frequency (f_n)	50/60 Hz
Rated current assembly (I_{nA})	max. 750 A
Rated current of each circuit/powerbus (I_{nc})	max. 250 A
Number of outgoing circuits	max. 192
Rated current of all outgoing circuits (I_{nc})	max. 32 A
Rated peak withstand current (I_{pk})	52.5 kA (with internal MCCB) max. 17 kA (with external MCCB)
Rated conditional short-circuit current assembly (I_{cc})	25 kA (with internal MCCB) max. 10 kA (with external MCCB)
Rated diversity factor (RDF)	0.8
Type of current	AC
Ambient air temperature	-5° … +40°
Storage temperature	-25° … +70°
Pollution degree	3
Material group	III
Protection against mechanical impact	IK07 (with steel door)
Protection against mechanical impact	IK06 (with glass door)
Degree of protection (vertical planes)	IP55
Degree of protection (top and bottom)	IP20B
Earthing system	TN-S
Assembly is intended for use by	Skilled persons
Weight without SMISSLINE TP devices	175 kg
Climatic compatibility	IEC 61439-2
Vibration	IEC 61439-2

Dimensions

Depth	350 mm
Height (min. with one socket)	1950 mm
Height of socket	100 mm
Maximum height (max. three sockets)	2150 mm
Width	800 mm

RPP-1000A-X3-X4-X5-X6-X7-X8

Rated voltage (U_n)	240/415 V
Rated insulation voltage of a circuit (U_i)	440 V
Rated impulse withstand voltage of the assembly (U_{imp})	Line/input 8 kV Load/output 4 kV
Rated frequency (f_n)	50/60 Hz
Rated current assembly (I_{nA})	max. 1000 A
Rated current of each circuit/powerbus (I_{nc})	max. 250 A
Number of outgoing circuits	256
Rated current of all outgoing circuits (I_{nc})	max. 32 A
Rated peak withstand current (I_{pk})	52.5 kA (with internal MCCB) max. 17 kA (with external MCCB)
Rated conditional short-circuit current assembly (I_{cc})	25 kA (with internal MCCB) max. 10 kA (with external MCCB)
Rated diversity factor (RDF)	0.8
Type of current	AC
Ambient air temperature	-5° … +40°
Storage temperature	-25° … +70°
Pollution degree	3
Material group	III
Protection against mechanical impact	IK07 (with steel door)
Protection against mechanical impact	IK06 (with glass door)
Degree of protection (vertical planes)	IP55
Degree of protection (top and bottom)	IP20B
Earthing system	TN-S
Assembly is intended for use by	Skilled persons
Weight without SMISSLINE TP devices	200 kg
Climatic compatibility	IEC 61439-2
Vibration	IEC 61439-2

Dimensions

Depth	350 mm
Height (min. with one socket)	1950 mm
Height of socket	100 mm
Maximum height (max. three sockets)	2150 mm
Width	1050 mm

Additional information
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

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