1SFC132115M0201

Softstarters Type PSTX720...840

Service manual

Original instruction

This is the Service manual for Softstarter type PSTX720...840.

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This document has been carefully checked. If the user nevertheless detects any errors, he is kindly asked to notify us as soon as possible.

The data contained in this manual is intended solely for the product description and is not to be deemed to be a statement of guaranteed properties. In the interests of our customers, we constantly seek to ensure that our products are developed to the latest technological standards.

As a result, there may be some differences between the Softstarter and the information in this manual.

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https://solutions.abb/softstarters

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Safety
Warning and information

This chapter describes warning and information signs used in this manual, which the user should pay attention to.

- The service of the Softstarter shall be performed by authorized personnel only.
- This manual need to be accessible to authorized personnel working with service of Softstarters PSTX720...840.
- The manual shall always be read through before performing any service tasks.

Usage of warnings and notes

There are two types of safety instructions throughout this manual: warnings and notes. Warnings caution you about conditions which can result in serious injury or death and/or damage to the equipment, and advise on how to avoid the danger. Notes draw attention to a particular condition or fact, or give information on a subject.
The warning symbols are used as follows:

WARNING. HAZARDOUS VOLTAGE
General warning symbol indicates the presence of a hazard which could result in personal injury and damage to equipment or property.

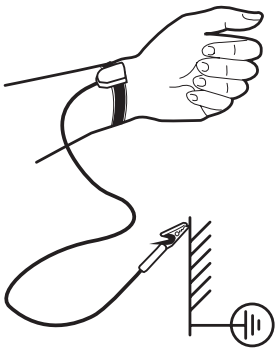
WARNING
Warning symbol indicates the presence of hazardous voltage which could result in personal injury.

Electrostatic sensitive devices warning
Electrostatic discharge is needed to not damage the equipment.

WARNING. HAZARDOUS VOLTAGE
Symbol indicates that only authorized and appropriately trained personnel are allowed to do the installation, operation and maintenance of the product. It should be done in accordance, with existing laws and regulations.

INFORMATION
Information sign tells the reader important facts and conditions.

Electrostatic sensitive devices warning
The printed circuit boards contain components sensitive to electrostatic discharge. Wear a grounding wrist band when handling the boards. Do not touch the boards unnecessarily.



Personal safety

WARNING. HAZARDOUS VOLTAGE
Service and repair shall be performed by authorized personnel only.

Service and repair shall be done in accordance with existing laws and regulations.

ABB personnel must under all circumstances, as a minimum, follow the ABB CISE 15.4 instruction.

WARNING
Use protective gloves when working with cover plates to prevent cutting injuries.

Softstarter type PSTX720...840
Service manual

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1 Introduction

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1.1 Service manual

This manual contains **step-by-step** instructions on how to perform service and maintenance on Softstarter range PSTX720...840. Service and maintenance shall be performed in accordance with this instruction to ensure product functionality, and to prevent that the lifetime of the product is shortened.

1.1.1 Intended audience

General

The service manual is intended for internal use and for the maintenance personnel responsible for service within ABB.

Reprint

Reprinting of this service manual is only promoted on approval. Reprint for internal use is permitted only for ABB service engineers.

1.1.2 Revision notes and related documents

For latest information on revisions and other documents related to the Softstarters, please check **https://solutions.abb/softstarters**

Table 1

Document	Document name
Spare parts catalogue	1SFC001013C0201

1.1.3 Acronyms and abbreviations

Acronyms and abbreviations used in this manual.

Table 2

Acronym/ Abbreviation	Description
PCBA	Printed circuit board assembly
ESD	Electrostatic sensitive device
LED	Light Emitting Diode
LCD	Liquid Crystal Display
SCR	Silicon Controlled Rectifier (Thyristor)
HMI	Human-Machine Interface
FBP	Fieldbusplug
PCBA	Printed Circuit Board Assembly
CT	Current Transformer
R\L-key	Remote or Local
i-key	Information key

1.1.4 Chapters included

Table 3

Chapter	Description
1. Introduction	Introduces the reader to this manual.
2. Description	Describes the maintenance in general.
3. Service PSTX720...840	This chapter describes how to perform service on the Softstarter step-by-step. The chapter contains: • Earth the Softstarter • How to access service parameters • Update firmware • Set the ID • Reset to factory defaults • Remove the HMI • Place new HMI • Disconnect main power cables and control cables • Connect main power cables and control cables • Change the PCBA • Change the fans • Change the bar holders • Change the current transformers • Change the bypass contactor • Change the SCR • Test the SCR • Change the stays
4. Revision	Shows revisions of this manual

2 Description

2.1 Description

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2.1 Description

This chapter outlines general information and procedures necessary for performing maintenance on Softstarters PSTX720...840.

CAUTION
Do not open the Softstarter or touch any live parts when the main and supply voltage is connected.

WARNING
If using the Rated Operational Voltage (Phase /N) as source for Control Voltage make sure to not exceed U_S 250V AC,50/60Hz.

2.1.1 Regular maintenance

Check screws

- Make sure that all mounting screws are tightened.
- Make sure that all connections of main-, control- and supply circuits are tightened.
- Make sure that all terminal screws and the screws on the connection bars are tightened.
- Make sure that the cooling airways are free from dirt and dust.
- Make sure that all LED lamps are working.
- Make sure that the HMI display is working.

Keep Softstarter clean from dirt

- Clean all dust and dirt from the products exterior using a vacuum cleaner. Any buildup of dirt or other contaminates that will not come off with vacuuming should be cleaned with lint free rags.
- All vents are to be cleaned of all dust and/or dirt. Ensure that ventilation openings are not obstructed. Dust and/or dirt in the Softstarter could lead to a short circuit.
- In environments where there is an extreme exposure to adverse conditions, the frequency of regular maintenance for Softstarters should be increased. If the Softstarter is installed in an electrical equipment room, the area should be kept cleaned of dirt and/or dust on a regular basis.
- The top of the Softstarter should be examined for evidence of water seepage. The source of the water should be immediately identified and corrective measures taken to permanently correct the condition.

Check the By-pass Contactor

- Inspect for loose, broken, or worn parts. Examine for excessive wear of moving parts. Observe that operating mechanisms function properly without binding, hanging, or without delayed action. Ensure mechanisms are clean, and all screws and screws are properly secured. Repair or replace if necessary.
- Check contacts on Softstarters for signs of wear and replace as required.

Service for By-pass Contactors
See the following operating instructions:

For PSTX720…840 1SFC 380023-en.

2.1.2 Tools required

- Slotted screwdriver
- Slotted screwdriver M3
- Long-nose plier
- Torx 15
- Torx 20
- Torx 30
- Hexagon no. 4 Screwdriver
- Hexagon no. 8 Screwdriver
- Hexagon M10 socket wrench
- Abrasive cloth P600
- Ethanol
- Silicone oil
- Megger to set on 500V

2.1.3 Service and repair

In case the Softstarter has to be repaired, a spare parts list and necessary instructions are available at:
https://solutions.abb/softstarters

- Spare part list 1SFC001013C0201

Service and repair shall be performed by authorized personnel only. Note that unauthorized service and/or repair affects the safety and the warranty.

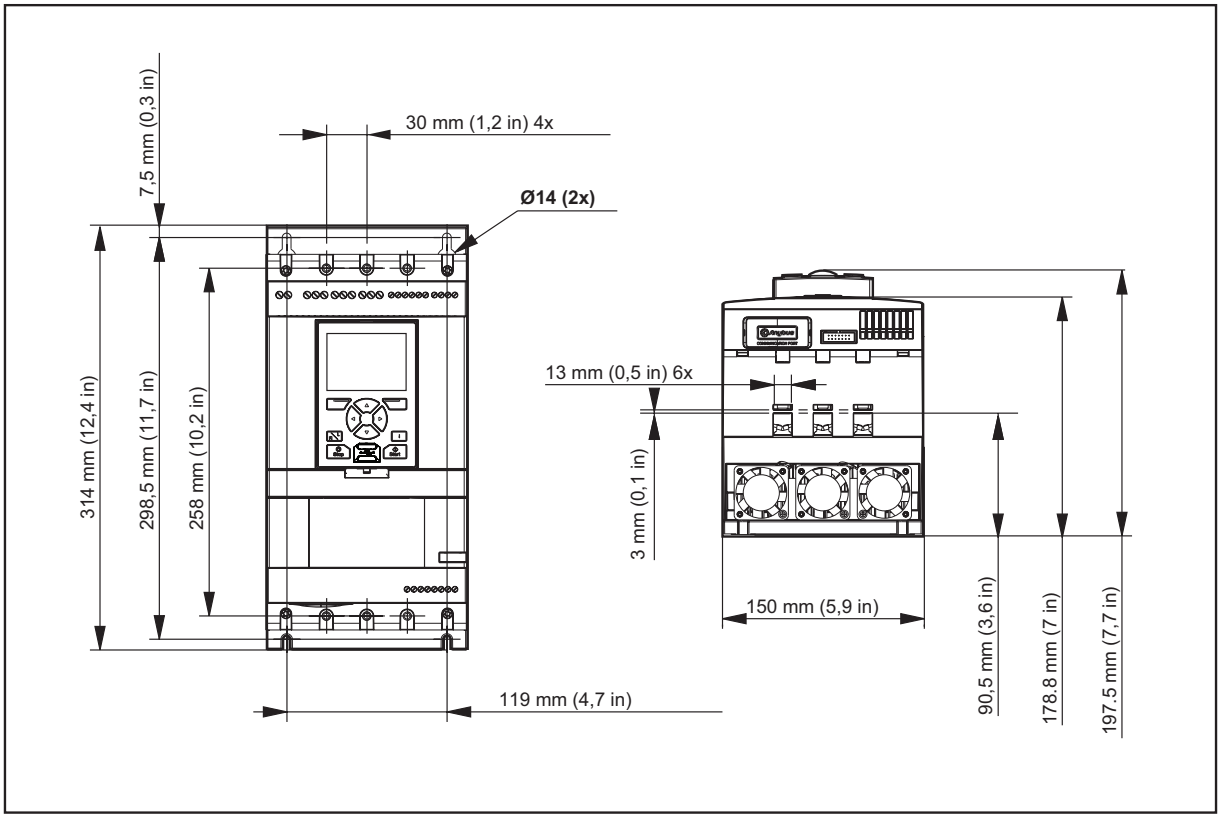
2.1.4 Weights

CAUTION
Pay attention to the weight when handling the Softstarter. Heavy lifting could result in personal injury.

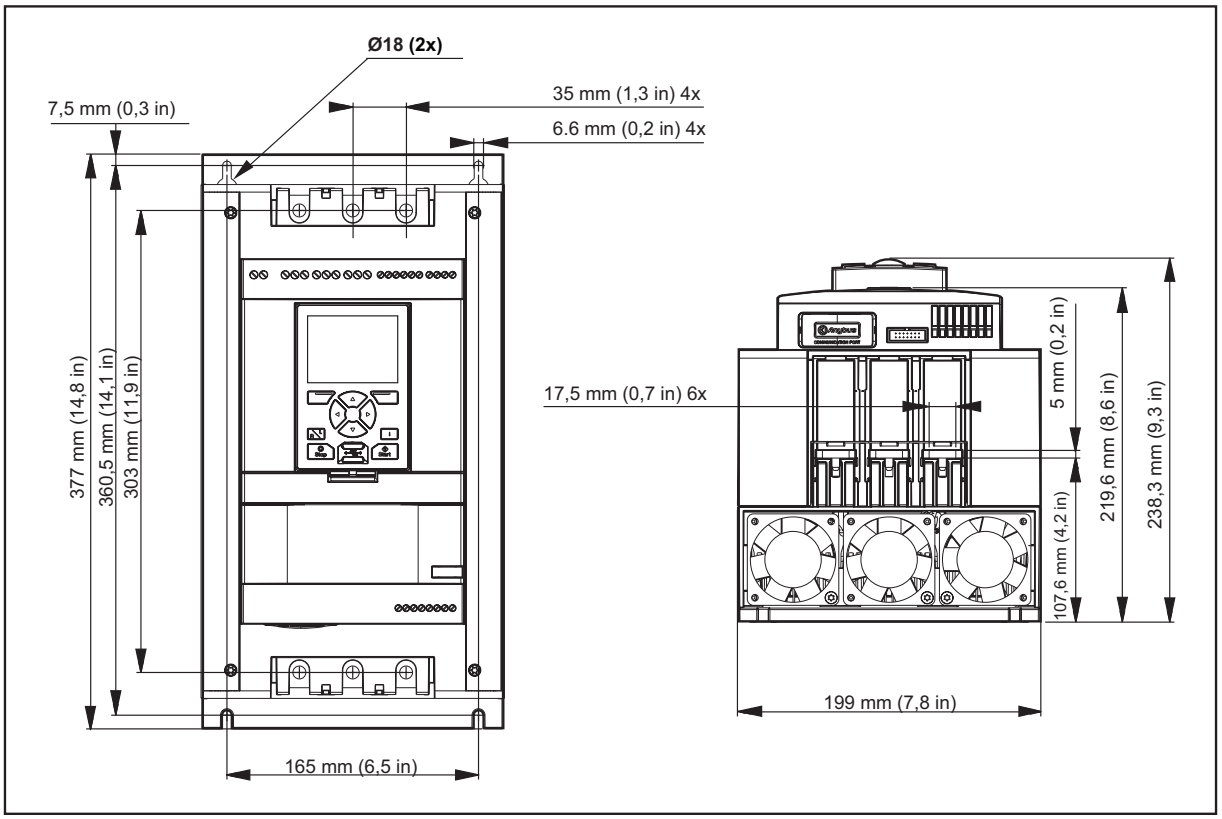
Table 4

Type	Weight in kg	Weight in lbs
PSTX 30...105	6,1	13,5
PSTX 142...170	9,6	21,2
PSTX 210...370	12,7	27,9
PSTX 470	25,5	56,2
PSTX 570	27,5	60,6
PSTX 720...840	46.2	101.4
PSTX 1050	64.5	141.1
PSTX 1250	65	143.3

- **PSTX30...105**

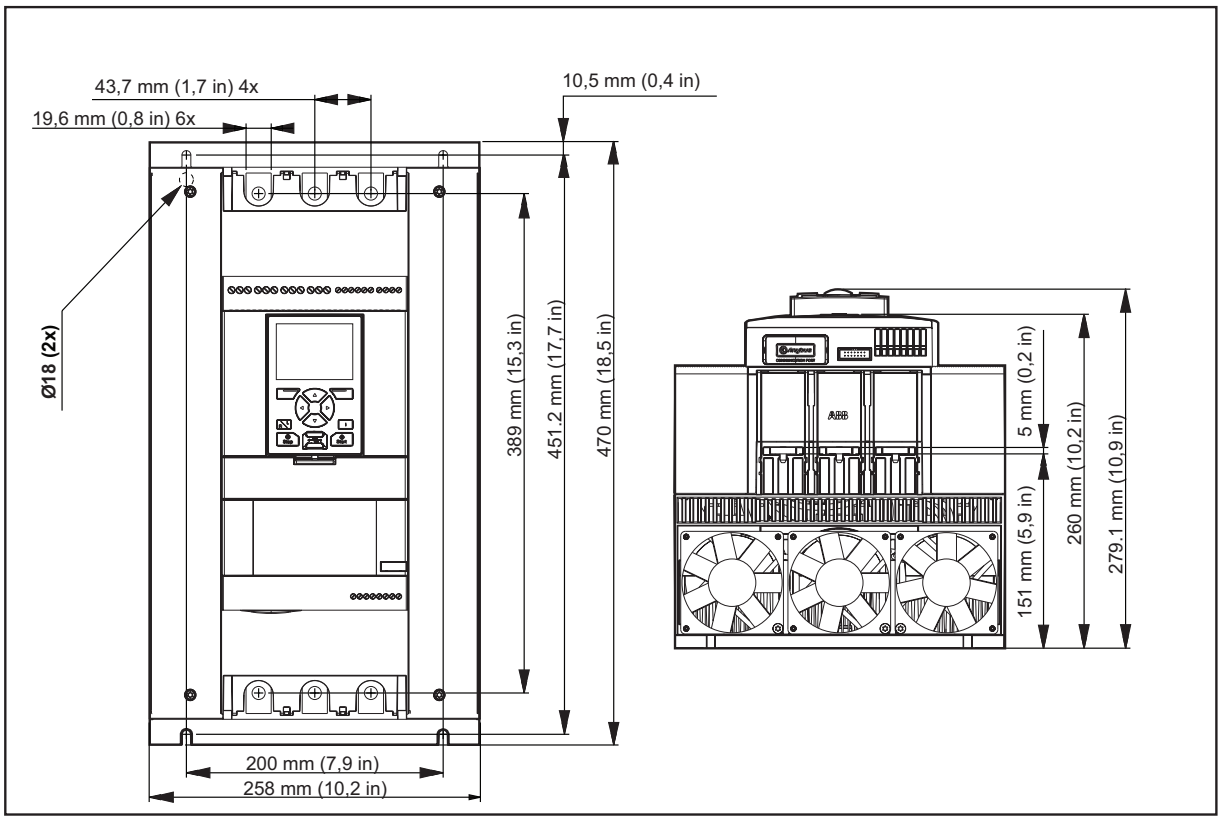


- **PSTX142...170**

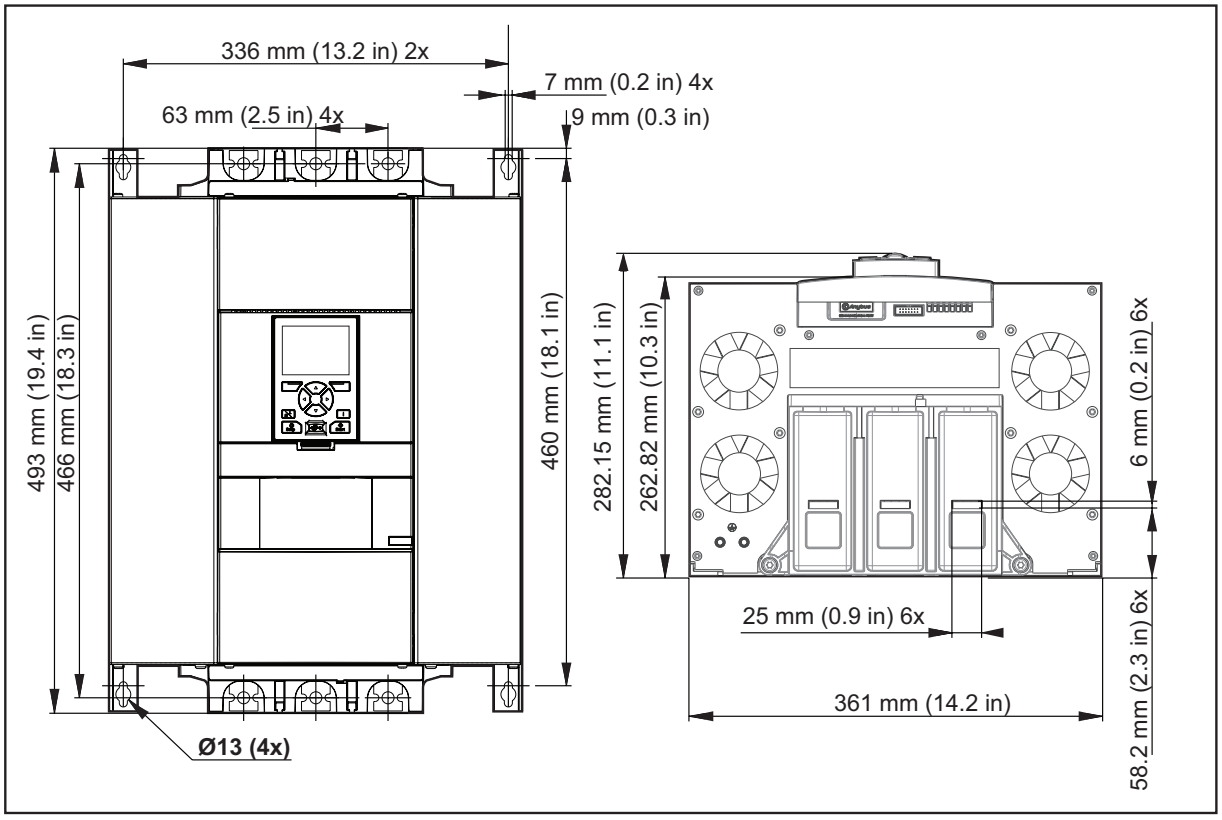


2.1.6 Dimension prints PSTX210...370, PSTX470...570

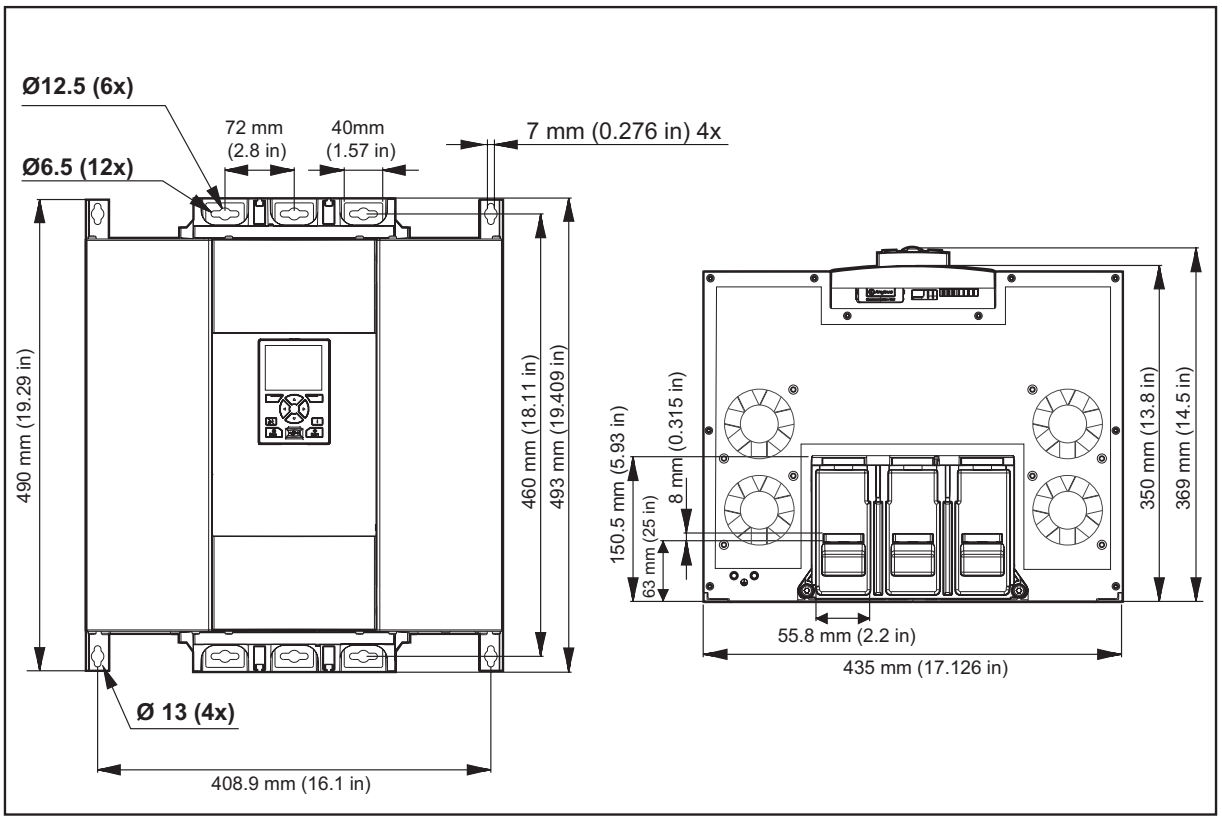
- **PSTX210...370**



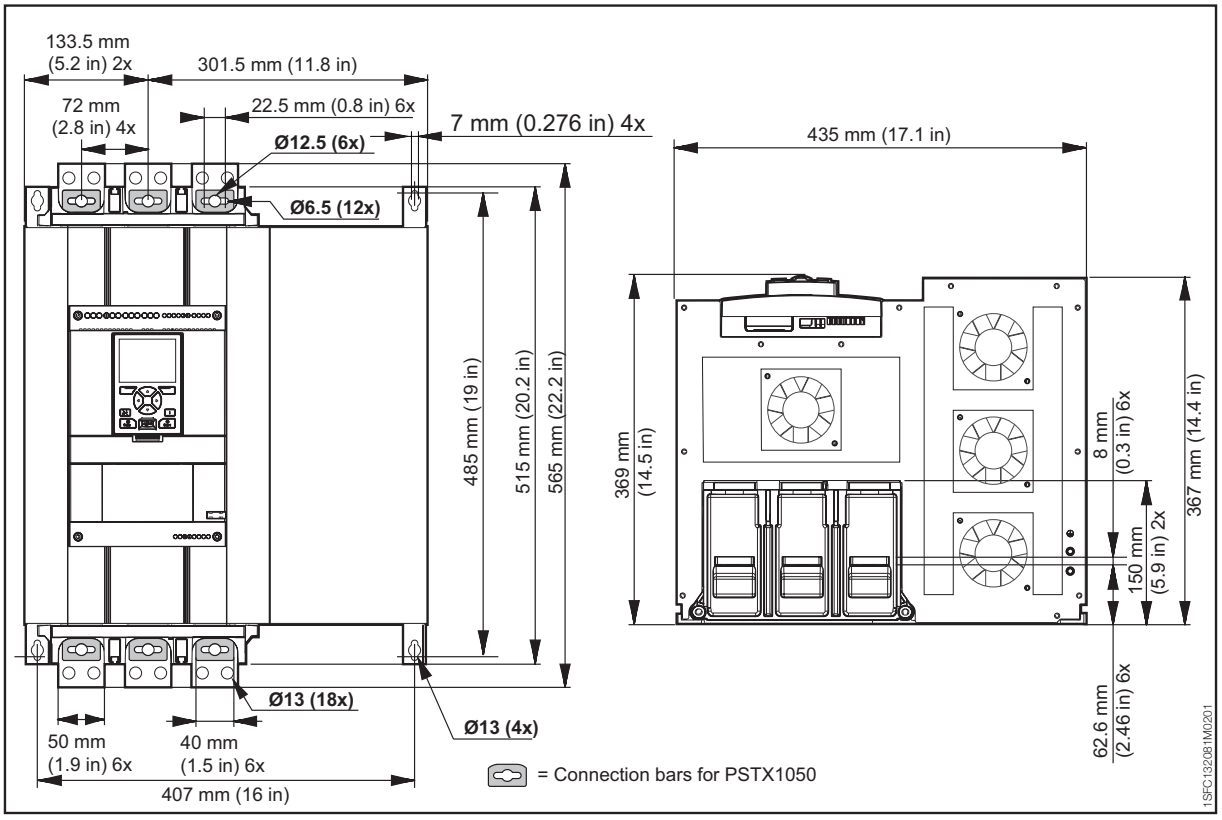
- **PSTX470...570**

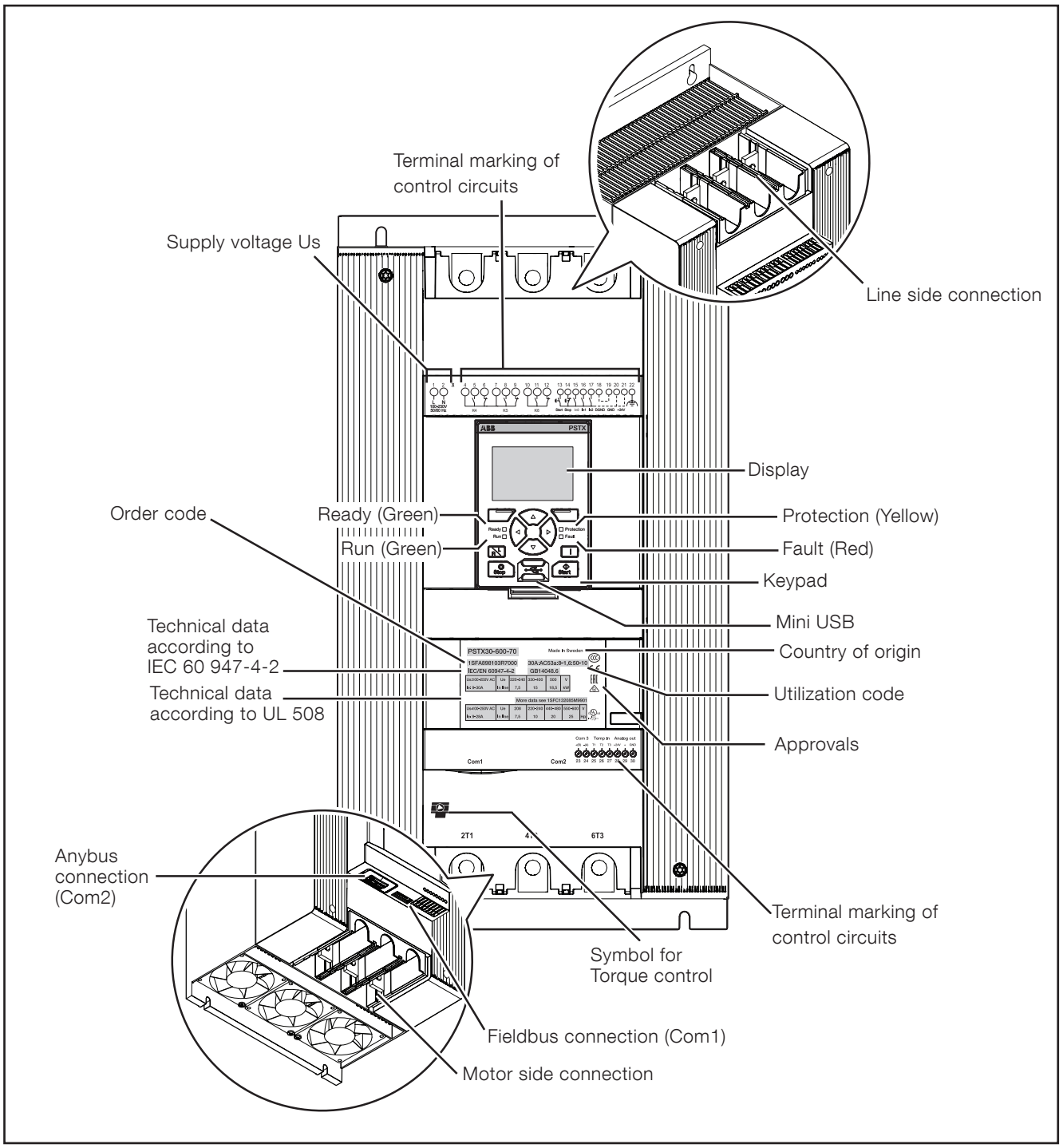


- **PSTX720...840**



- **PSTX1050...1250**





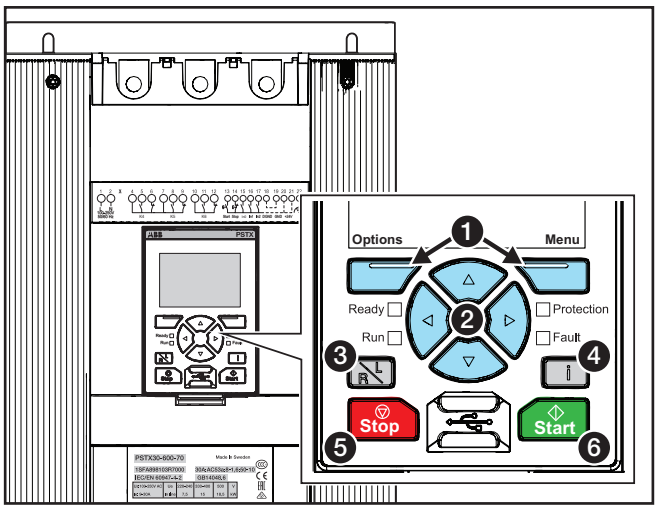
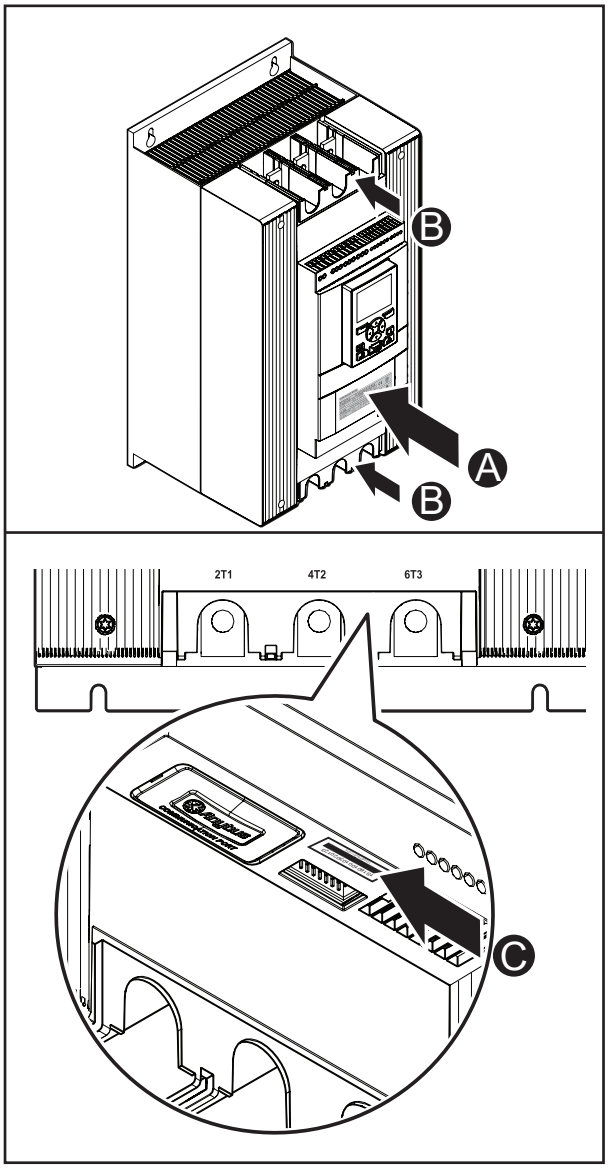


Table 4

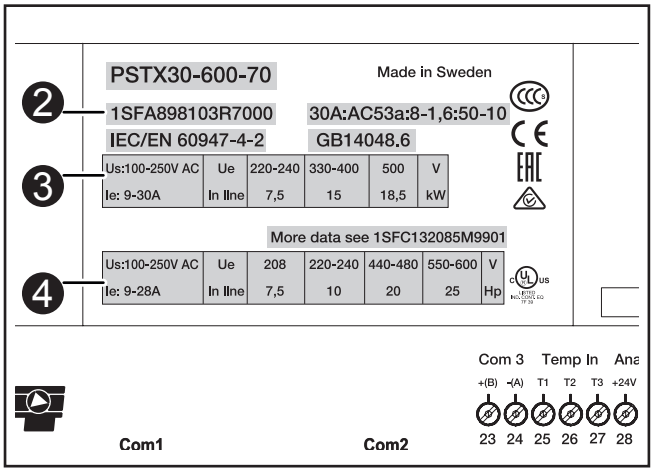
Position	Key
❶	Selection soft keys
❷	Navigation keys
❸	R\L-key = Remote or Local control
❹	i-key = Information
❺	Stop key
❻	Start key

NOTE
The service kits and spare parts varies depending on the type and serial number of the Softstarter. It is essential that the corresponding service kits and spare parts is used. Always refer to the spare parts catalogue when ordering service kits and spare parts. The spare parts catalogue, 1SFC001013C0201, is to be found on https://solutions.abb/softstarters

Identification
The Softstarter is identified by the front label Ⓐ.
Terminal marking of main circuit Ⓑ.



Ⓐ Front label
Order code ❷.
Technical data according to IEC 60947-4-2 ❸.
Technical data according to UL 508 ❹.
The label shows the Softstarter and the serial number.



Ⓒ Serial number information
The ABB Serial number within business unit Control Products has the following structure:

Table 5

Prefix	Register Id	Individual identity number part			
1S	160	PPPP	YY	WW	NNNN

Prefix = Defined in ABB Corporate Standard 9AAK100359
Register Id = Defined in BAATLV Instruction 1SFD2000-8

Individual identity number part
PPPP = Identification for product type / part of product
YY = Manufacturing year. Two digits.
(e.g. 02 for year 2002)
WW = Manufacturing Week. Two digits.
NNNN = Running number with week. Minimum four digits, starting with 1000 each week.

3 Service PSTX720...840

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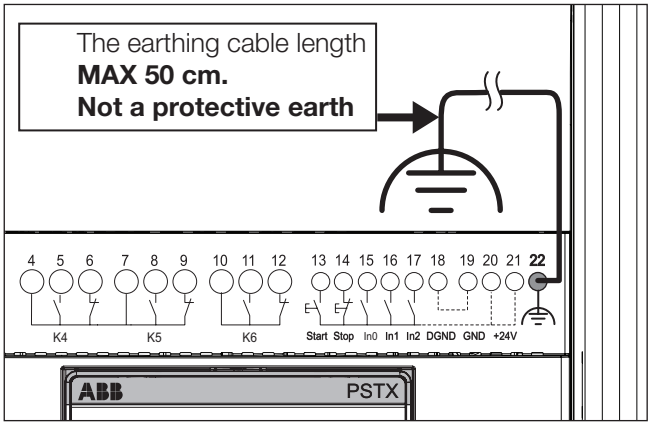
3.1 Introduction

This service instruction contains **step-by-step** service of the PSTX720...840 Softstarter.



3.1.1 Earth the Softstarter

1. **Maximum cable length of the earthing**
   The Softstarter should be earthed from **terminal 22**. The earthing cable length must not be longer than **50 cm**. Note that the earthing is not a protective earth.

3.1.2 How to access service parameters

Follow this instruction in order to make the service parameters available on the Softstarter:

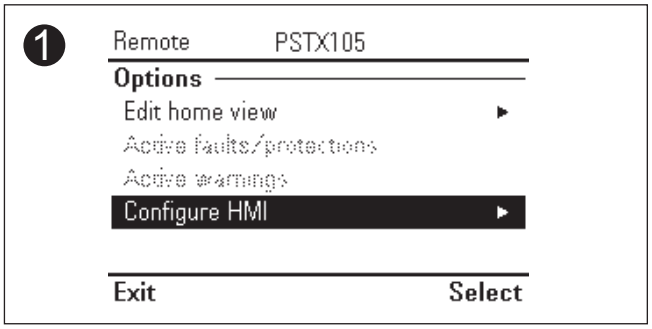
1. Switch on the power supply (terminal 1 and 2).

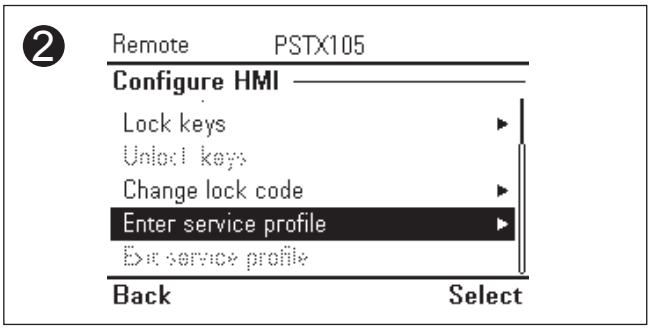
2. ❶ Press ▭ "Options" to reach Options menu. Use ◈ or ◈ to navigate to **Configure HMI** and then press ▭ "Select"**.**

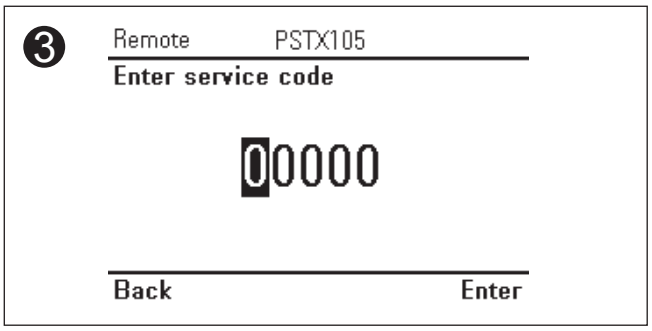
3. ❷ Use ◈ or ◈ to navigate to **Enter service profile** and then press ▭ "Select".

4. ❸ Use ◈, ◈ and ◈, ◈ to enter the **service code.**
   Enter the following code: **73758**, and then press ▭ "Enter".

5. When the message **Service profile OK** appears, the code is set.







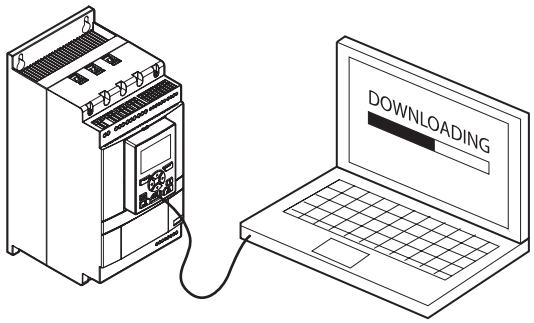
3.2 Configuring the HMI

This chapter describes how update firmware, set the ID and how to reset the Softstarter to default.

3.2.1 Update Firmware

Firmware needs to be updated when changing the HMI. Please contact your ABB sales office for information.
See Figure 1.

1



3.2.1_1

3.2.2 Set the ID

The ID of the Softstarter has to be changed when the PCBA has been changed and after updating firmware. Choose between 720…840 due to type of Softstarter.

1. Switch on the power supply (terminal 1 and 2).

2. ❶ Press ▭ ”Menu” to reach Menu.
Use ◈ or ◈ to navigate to **Parameters** and then press ▭ ”Select”.

3. ❷ Use ◈ or ◈ to navigate to **Complete list** and then press ▭ ”Select”.

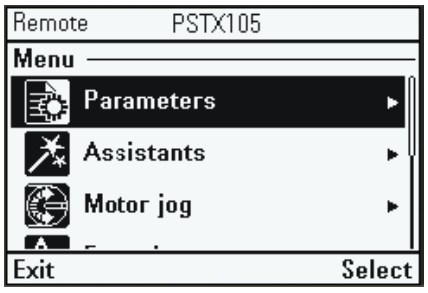
4. ❸ Use ◈ or ◈ to navigate to **28 Service** and then press ▭ ”Select”.

5. ❹ Use ◈ or ◈ to navigate to **28.01 ID** and then press ▭ ”Edit”.

6. ❺ Use ◈, ◈ to set **28.01 ID** to **105** and then press ▭ ”Save”.

Changing the ID parameter will result in all Ie parameters being set to their default value followed by a restart of the device.

❶



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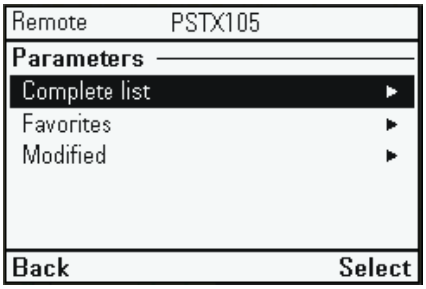

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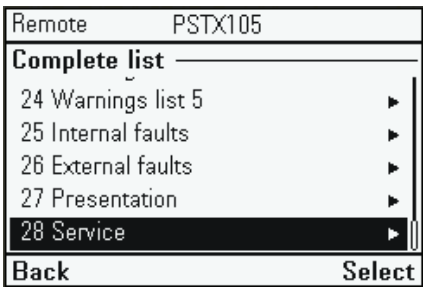
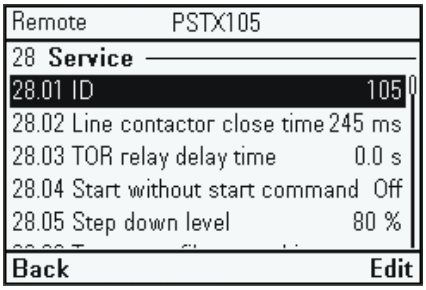
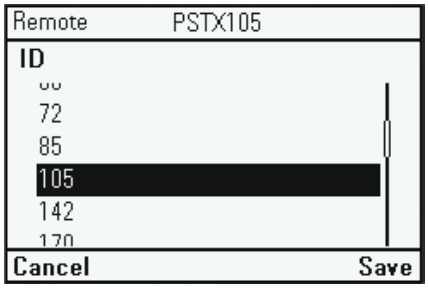


❹



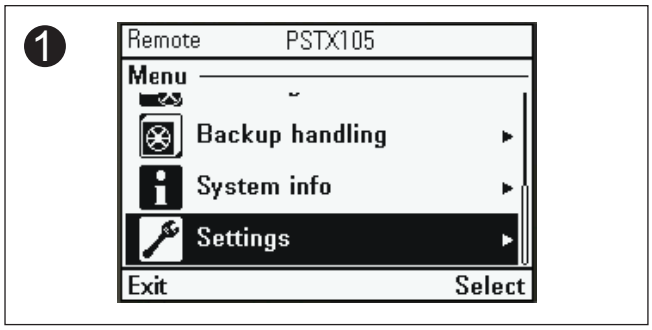
❺



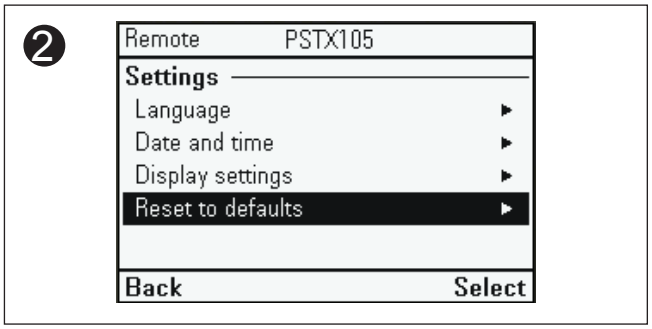
Reset to factory defaults

1. Switch on the power supply (terminal 1 and 2).

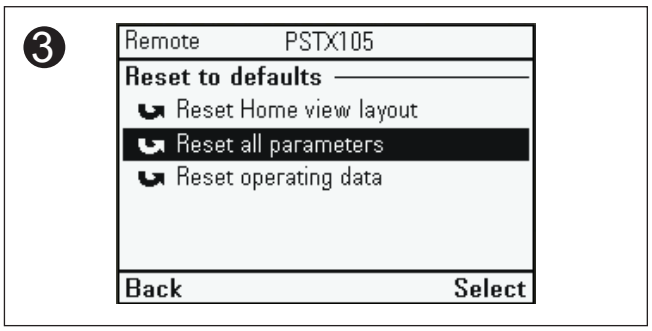
2. ❶ Press ▭ ”Menu” to reach Menu.
Use ◈ or ◈ to navigate to **Settings** and then press ▭ ”Select”.



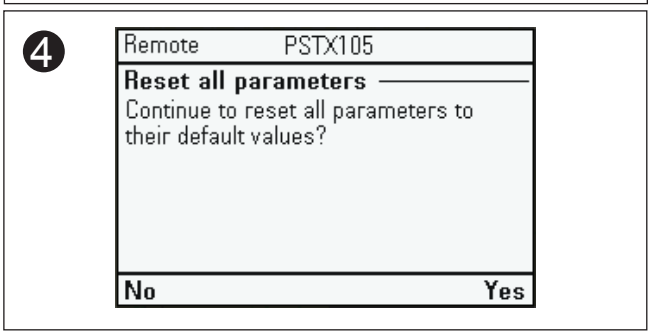
3. ❷ Use ◈ or ◈ to navigate to **Reset to defaults** and then press ▭ ”Select”.



4. ❸ Use ◈ or ◈ to navigate to **Reset all parameters** and then press ▭ ”Select”.



5. ❹ Following message will appear on the display:
Continue to reset all parameters to their default values?
Press ▭ ”Yes” to reset all parameters
or ▭ ”No” if you whish to cancel the operation.



Change the HMI, Disconnect/Connect the main power cables and the control cables

This chapter describes how to change the HMI, disconnect or connect the main power cables and the control cables prior to performing service on the softstarter.

CAUTION

Always make sure that the power supply is switched off before doing maintenance on the Softstarter.

WARNING

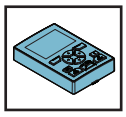
When performing maintenance on the Softstarter, an antistatic strap must be used. The antistatic strap should be worn on the wrist, and be connected to an electrical ground, to prevent electrostatic discharge (ESD) damage to the Softstarter.

WARNING

The life span of electronics can be affected by damage caused by electrostatic discharge. This can happen if a charged tool or person touches a component. Therefore it is very important that all tools and personnel are discharged by touching an earthed point before the PCBA or any of the components are touched. It is equally important to discharge the package with the new component before opening it.
A person walking on a carpet can be charged with up to fifteen thousand volt (15000V). Compare this with the fact that some sensitive components can be destroyed when discharged on a much lower level (about 100V). We kindly ask you to pay notice to this, as this is a vital point in order to ensure the life span and function of the product.

Tools required:

- Slotted screwdriver for removing the HMI
- Slotted screwdriver M3 for removing the control cables
- Hexagon screwdriver no. 8 for removing the main power cables

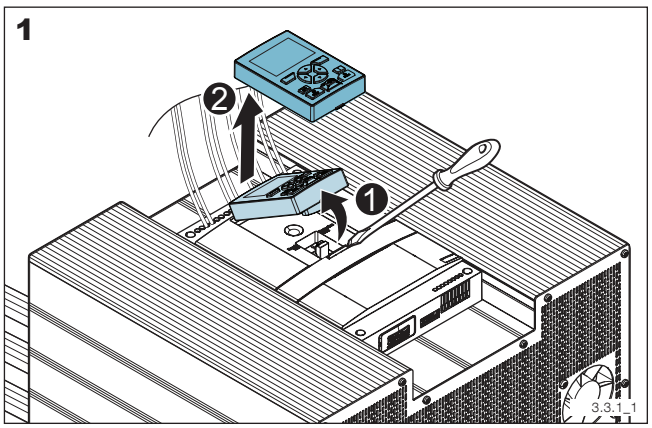


3.2.1 Remove the HMI

1. Remove HMI module

❶ Push back the locking bar preferably using a slotted screwdriver.

❷ Remove the HMI module from the unit.

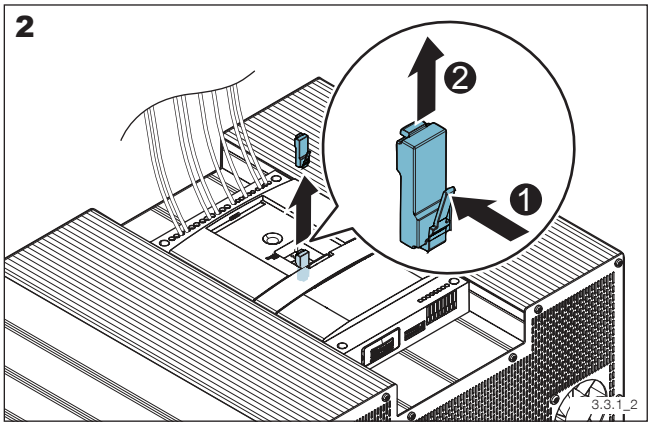


2. Disconnect RJ45 plug

❶ Press down the locking clip.

❷ Remove the RJ45 plug (while locking clip held down) by pulling it upwards from unit.

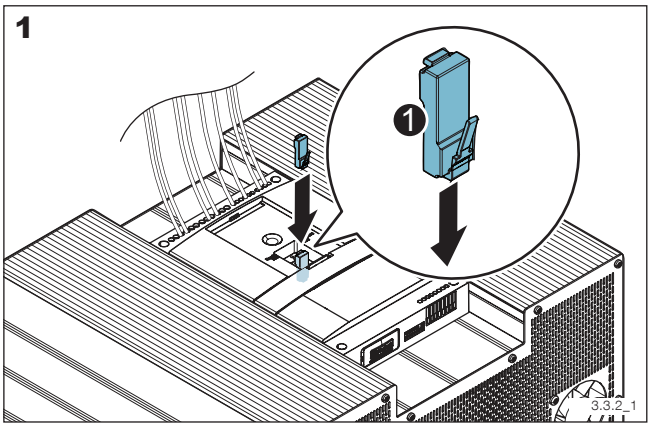
Be careful not to damage the locking clip.



3.2.2 Place the new HMI

1. Connect RJ45 plug

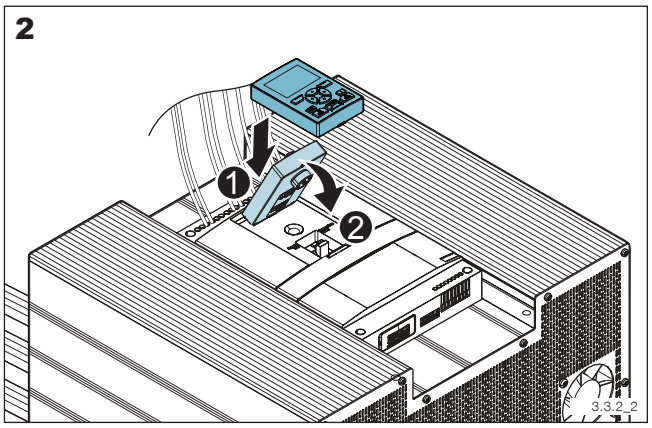
❶ Connect the RJ45 plug to its socket. Make sure the plug gets properly connected; listen for a “clicking sound” from the locking clip when mounting the plug.



2. Place new HMI module

❶ Place the new HMI module on top of the unit with the front end facing downwards and the rear end facing upwards.

❷ Dock the HMI module by pushing the rear end downwards and carefully snap the module into position.



Procedures after HMI replacement

Firmware needs to be updated when changing the HMI. Please contact your ABB sales office for information.

3.2.3 Disconnect the main power cables and the control cables

CAUTION

Always make sure that the power supply is switched off before doing maintenance on the Softstarter.

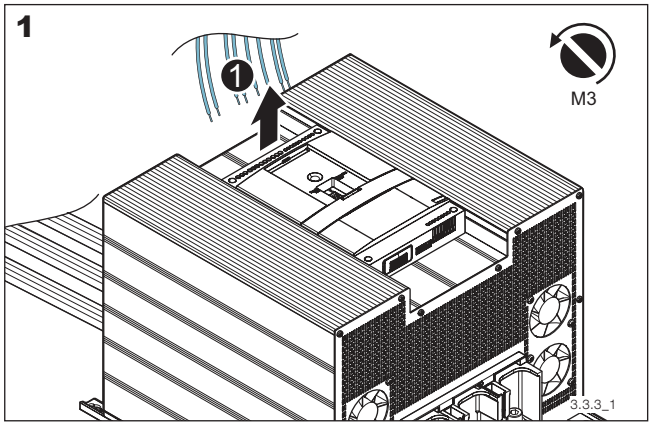
WARNING

When performing maintenance on the Softstarter, an antistatic strap must be used. The antistatic strap should be worn on the wrist, and be connected to an electrical ground, to prevent electrostatic discharge (ESD) damage to the Softstarter.

1. Disconnect control cables

Mark the control cables prior to disconnecting them to enable proper re-connection.

❶ Loosen the **M3** screws using a slotted screwdriver and disconnect the control cables from the terminals.



2. Mark main power cables

Mark the power cables prior to disconnecting them.

❶ Mark the main power cables on the top terminals 1L1, 3L2 and 5L3 with 1, 3 and 5.

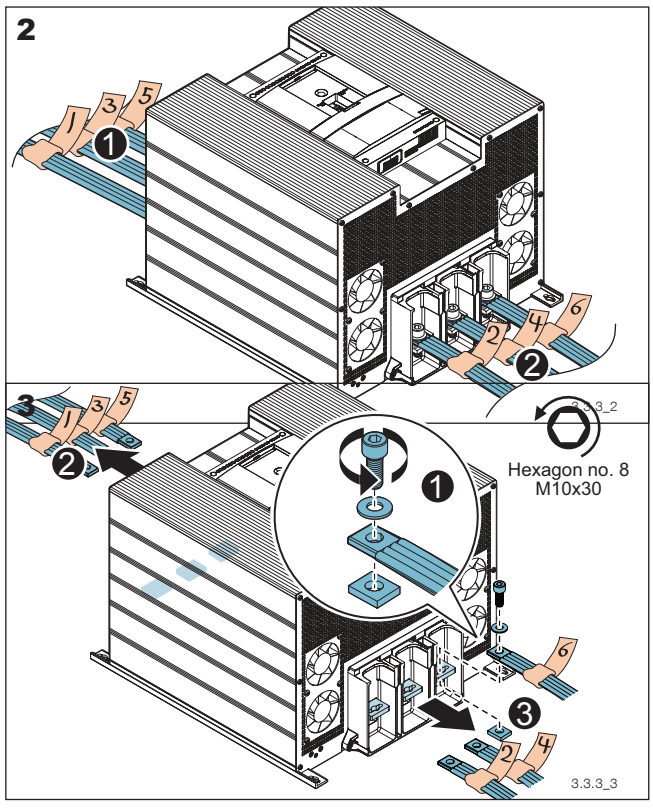
❷ Mark the main power cables on the bottom terminals 2T1, 4T2 and 6T3 with 2, 4 and 6.

3. Disconnect main power cables

❶ Loosen **(6x) Hexagon no. 8 M10x30** (including washers and square nuts).

❷ Disconnect the main power cables from the top terminals 1L1, 3L2 and 5L3.

❸ Disconnect the main power cables from the bottom terminals 2T1, 4T2 and 6T3.



3.2.4 Connect the main power cables and the control cables

CAUTION

Always make sure that the power supply is switched off before doing maintenance on the Softstarter.

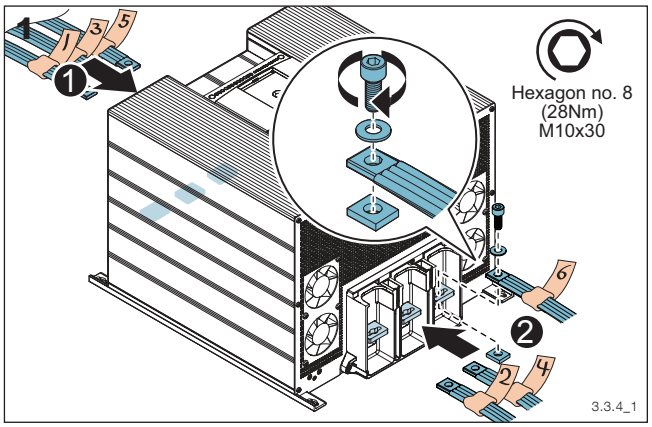
WARNING

When performing maintenance on the Softstarter, an antistatic strap must be used. The antistatic strap should be worn on the wrist, and be connected to an electrical ground, to prevent electrostatic discharge (ESD) damage to the Softstarter.

1. Connect main power cables

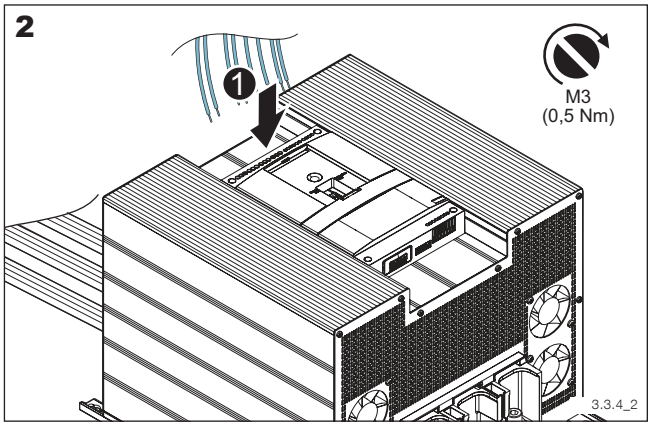
❶ Fasten the main power cables, according to previously made markings (1, 3 or 5), to top terminals 1L1, 3L2 and 5L3. ⬡ **Hexagon no. 8 M10x30 (28Nm)**. Washers and square nuts to be used.

❷ Fasten the main power cables, according to previously made markings (2, 4 or 6), to bottom terminals 2T1, 4T2 and 6T3. ⬡ **Hexagon no. 8 M10x30 (28Nm)**. Washers and square nuts to be used.

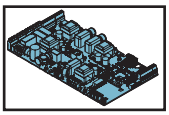


2. Connect control cables

❶ Connect the control cables (according to previously made markings) to the terminal block and fasten the **M3** screws **(0,5Nm)** using a slotted screwdriver.



3.3 Service of the PCBA



This chapter describes changing of the PCBA.

CAUTION

Always make sure that the power supply is switched off before doing maintenance on the Softstarter.

WARNING

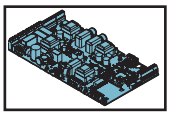
When performing maintenance on the Softstarter, an antistatic strap must be used. The antistatic strap should be worn on the wrist, and be connected to an electrical ground, to prevent electrostatic discharge (ESD) damage to the Softstarter.

WARNING

The life span of electronics can be affected by damage caused by electrostatic discharge. This can happen if a charged tool or person touches a component. Therefore it is very important that all tools and personnel are discharged by touching an earthed point before the PCBA or any of the components are touched. It is equally important to discharge the package with the new component before opening it.
A person walking on a carpet can be charged with up to fifteen thousand volt (15000V). Compare this with the fact that some sensitive components can be destroyed when discharged on a much lower level (about 100V). We kindly ask you to pay notice to this, as this is a vital point in order to ensure the life span and function of the product.

Tools required:

- Torx 15 for removing the front cover
- Torx 20 for removing the front cover
- Long-nose plier for removing the cables from the PCBA



3.3.1 Change the PCBA

CAUTION

Always make sure that the power supply is switched off before doing maintenance on the Softstarter.

WARNING

When performing maintenance on the Softstarter, an antistatic strap must be used. The antistatic strap should be worn on the wrist, and be connected to an electrical ground, to prevent electrostatic discharge (ESD) damage to the Softstarter.

DISMANTLE THE SOFTSTARTER

Remove main power cables and control cables

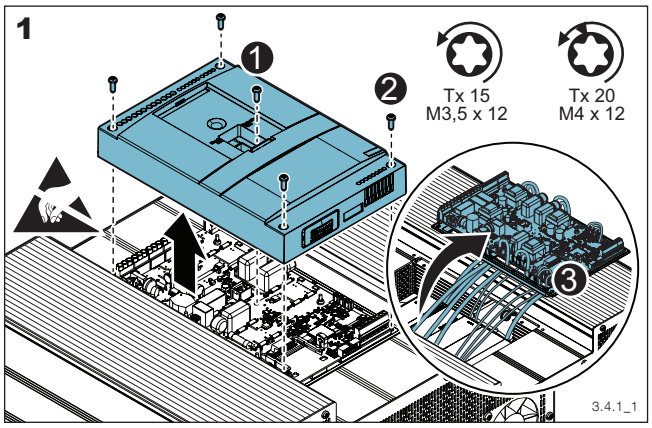
Disconnect the main power cables and the control cables as described in **chapter 3.3.3, step 1-3**.

1. Remove HMI cover

❶ Loosen **(1x) Torx 15 M3,5x12** from the HMI bracket.

❷ Loosen **(4x) Torx 20 M4x12.** Remove the HMI cover by lifting it upwards from unit. Ensure that screws do not come loose and fall down on the PCBA upon removal.

❸ Lift out the PCBA from unit (at this point still mounted on bracket) to facilitate continued service.

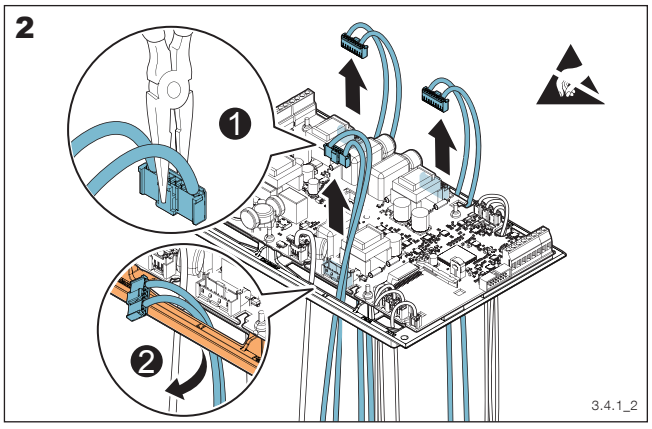


2. Disconnect SCR cables from PCBA

Mark the SCR cables with 1, 2, 3 prior to disconnecting them to ensure proper re-connection. Note that markings are to be made in accordance with existing data available on the PCBA bracket.

❶ Disconnect the three SCR cables from their terminals on the PCBA using a long-nose plier.

❷ Pull out the three SCR cables from the cable inlets on the PCBA bracket.

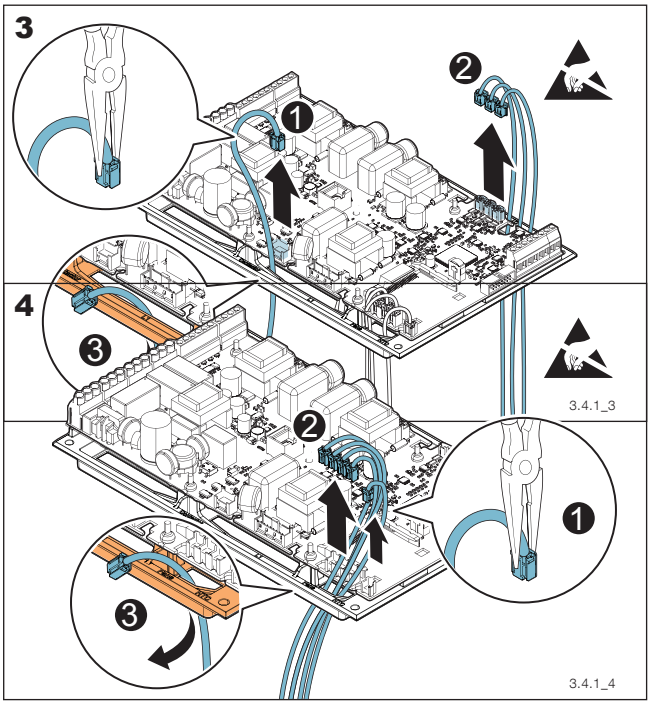


3. Disconnect bypass contactor cable and CT cables from PCBA

Mark the CT cables with 1, 2, 3 prior to disconnecting them to ensure proper re-connection. Note that markings are to be made in accordance with existing data available on the PCBA bracket.

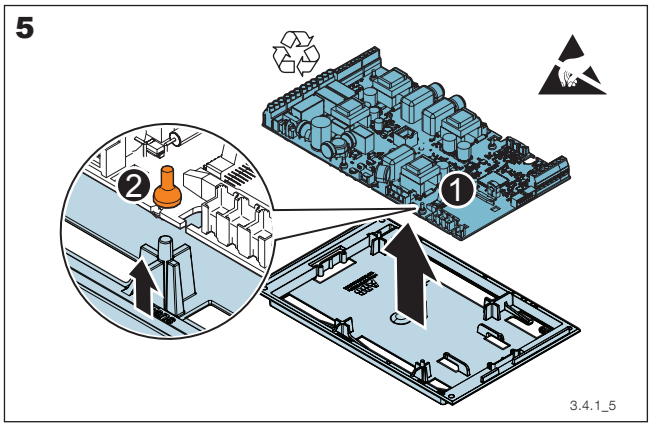
❶ Disconnect the bypass contactor cable from its

terminal on the PCBA using a long-nose plier.
❷ Disconnect the three CT cables from their terminals on the PCBA using a long-nose plier.
❸ Pull out the bypass contactor cable, and the three CT cables, from the cable inlets on the PCBA bracket.



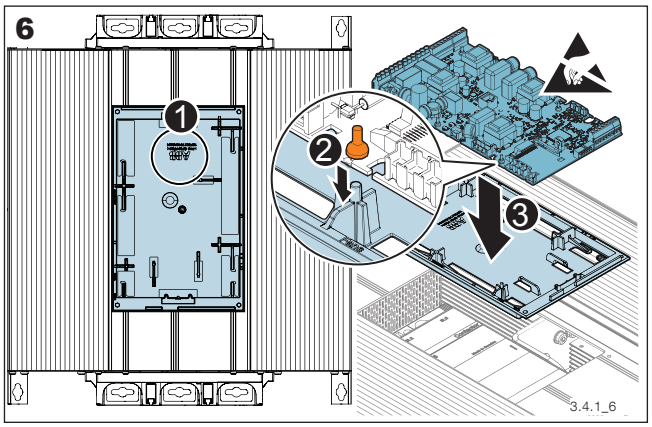
4. Remove thermal sensor cable and fan cables from PCBA

❶ Disconnect the thermal sensor cable from its terminals on the PCBA using a long-nose plier.
❷ Disconnect the four fan cables from their terminals on the PCBA using a long-nose plier.
❸ Pull out the thermal sensor cable, and the four fan cables, from the cable inlets on the PCBA bracket.



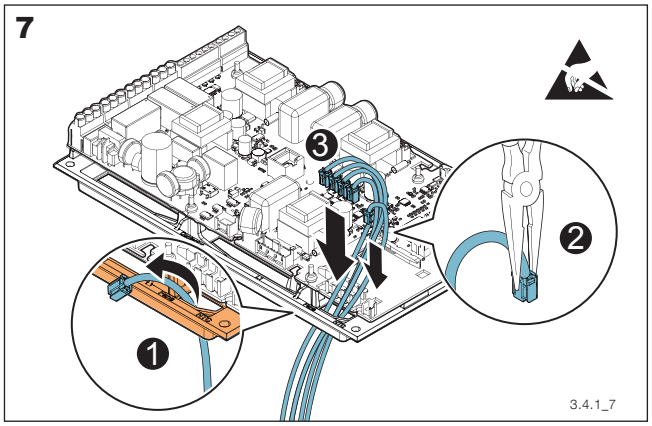
5. Remove PCBA from PCBA bracket

❶ Gently loosen the PCBA from the bracket peg in the upper right corner.
❷ Gently pull the PCBA out of the bracket to the right direction until loosened from the bracket peg in the lower left corner. Dispose of expended PCBA.



6. Place new PCBA on PCBA bracket

Note that rubber bushings shall be mounted on the PCBA prior to assembly.
❶ Position the bracket so that ABB:s logotype appears upside down on the upper end.
❷ Place the new PCBA on the bracket by sliding it onto bracket from the right direction until attached to the peg in the lower left corner.
❸ Gently press the PCBA onto the bracket peg in the upper right corner until firmly fitted.



7. Connect thermal sensor cable and fan cables to PCBA

When reconnecting cables; read markings on the PCBA bracket.
❶ Thread the thermal sensor cable, and the four fan cables, through the cable inlets on the PCBA bracket.
❷ Connect the thermal sensor cable to its terminal on the PCBA.
❸ Connect the four fan cables to their terminals on the PCBA.

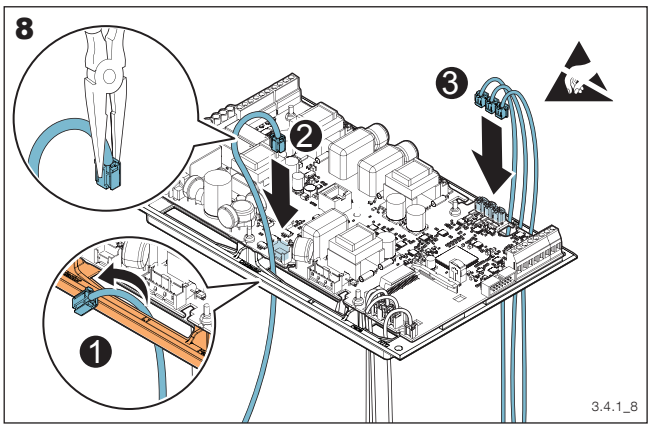
8. Connect bypass contactor cable and CT cables to PCBA

When reconnecting cables; read markings on the PCBA bracket.

❶ Thread the bypass contactor cable, and the three CT cables, through the cable inlets on the PCBA bracket.

❷ Connect the bypass contactor cable to its terminal on the PCBA.

❸ Connect the three CT cables, according to previously made markings (1, 2 or 3), to their terminals on the PCBA.

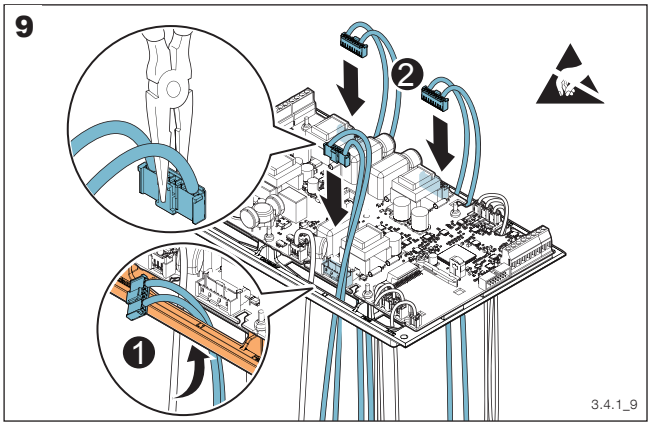


9. Connect SCR cables to PCBA

When reconnecting cables; read markings on the PCBA bracket.

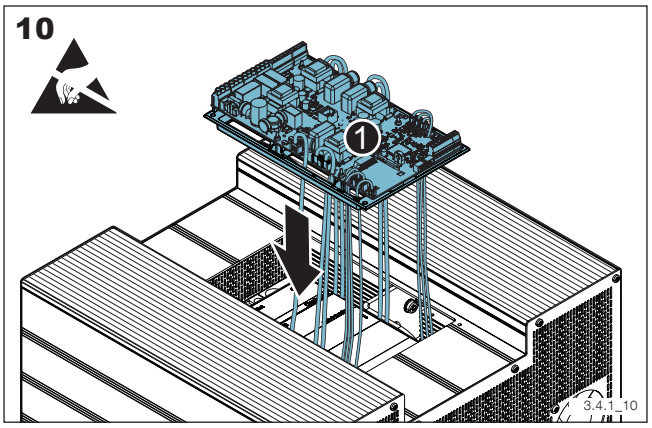
❶ Thread all three SCR cables through the cable inlets on the PCBA bracket.

❷ Connect the three SCR cables, according to previously made markings (1, 2 or 3), to their terminals on the PCBA.



10. Place new PCBA and PCBA bracket

❶ Place the new PCBA (mounted to bracket) on the unit. Make sure cables do not get stuck in between the bracket frame and Softstarter when mounted.

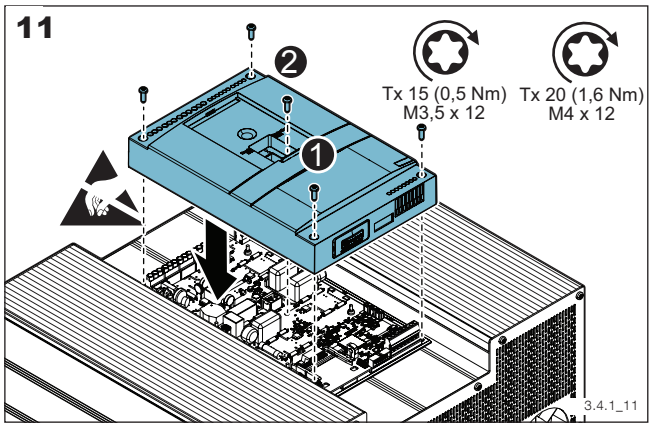


11. Place HMI cover

Place the HMI cover on the unit and align it to the plastic screw sleeves located on lower housing.

❶ Fasten the HMI cover with **(4x) Torx 20 M4x12 (1,6Nm)**.

❷ Fasten **(1x) Torx 15 M3,5x12 (0,5 Nm)** on the HMI bracket.



REASSEMBLE THE SOFTSTARTER

Connect main power cables and control cables

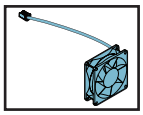
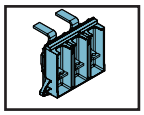
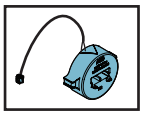
Connect the main power cables and the control cables as described in **chapter 3.3.4, step 1-2**.

Procedures after PCBA replacement

Set the ID of the Softstarter after changing the PCBA, as described in **chapter 3.2.2, step 1-6**.

Firmware needs to be updated when changing the HMI. Please contact your ABB sales office for information.

3.4 Change the Fans, Bar holders and Current transformers

This chapter describes changing of the Fans, Current transformers and Bar holders.

CAUTION

Always make sure that the power supply is switched off before doing maintenance on the Softstarter.

WARNING

When performing maintenance on the Softstarter, an antistatic strap must be used. The antistatic strap should be worn on the wrist, and be connected to an electrical ground, to prevent electrostatic discharge (ESD) damage to the Softstarter.

WARNING

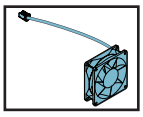
The life span of electronics can be affected by damage caused by electrostatic discharge. This can happen if a charged tool or person touches a component. Therefore it is very important that all tools and personnel are discharged by touching an earthed point before the PCBA or any of the components are touched. It is equally important to discharge the package with the new component before opening it.
A person walking on a carpet can be charged with up to fifteen thousand volt (15000V). Compare this with the fact that some sensitive components can be destroyed when discharged on a much lower level (about 100V). We kindly ask you to pay notice to this, as this is a vital point in order to ensure the life span and function of the product.

Tools required:

- Torx 20 for removing the fan cover
- Torx 20 for removing the fans
- Torx 20 for removing top cover
- Torx 30 for removing bar holders

- Hexagon no. 8 for removing bar holders
- Hexagon no. 8 for removing bar holders

3.4.1 Change the Fans

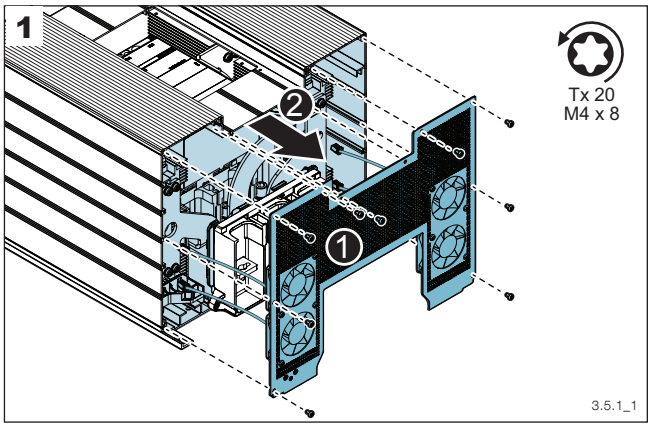


DISMANTLE THE SOFTSTARTER

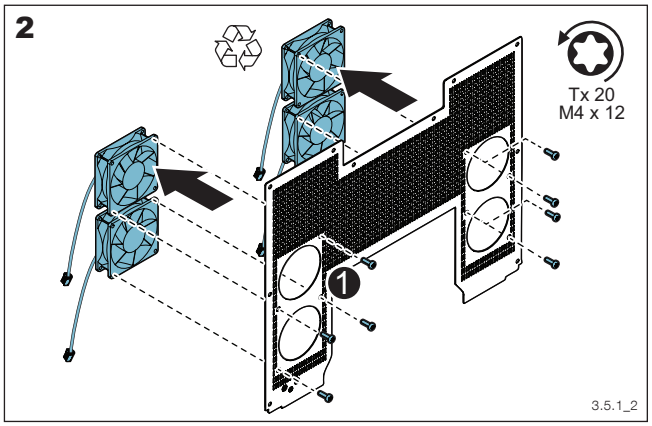
Remove main power cables and control cables
Disconnect the main power cables and the control cables as described in **chapter 3.3.3, step 1-3**.

Remove HMI cover and PCBA
Dismantle the HMI cover, all cables and the PCBA as described in **chapter 3.4.1, step 1-5**.

1. Remove fan cover
❶ Loosen **(10x) Torx 20 M4x8** from the fan cover.
❷ Pull the fan cover outwards from unit with the fans still mounted to fan cover.

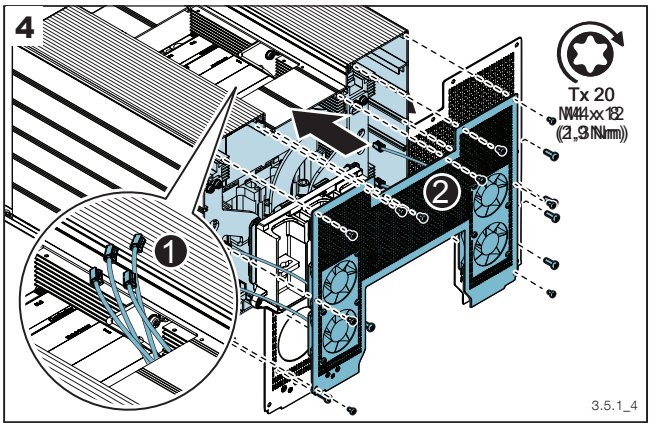


2. Remove fans from fan cover
❶ Loosen **(8x) Torx 20 M4x12** to separate the four fans from the fan cover. Screws are placed diagonally with two screws per fan. Dispose of expended fans.



3. Fasten new fans to fan cover
Note that fans are to be mounted with regards to air-flow directions.
❶ Fasten **(8x) Torx 20 M4x12 (1,3Nm)** to attach the four fans on the fan cover. Screws are to be mounted diagonally with two screws per fan.

4. Place fan cover
❶ Thread the fan cables through the cable inlets.
❷ Fasten the fan cover to the unit with **(10x) Torx 20 M4x8 (2,9Nm)**.

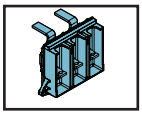


REASSEMBLE THE SOFTSTARTER

Place PCBA, cables and HMI cover
Place the PCBA, connect all cables and install the HMI cover as described in **chapter 3.4.1, step 6-11**.

Connect main power cables and control cables
Connect the main power cables and the control cables as described in **chapter 3.3.4, step 1-2**.

3.4.2 Change the Bar holders



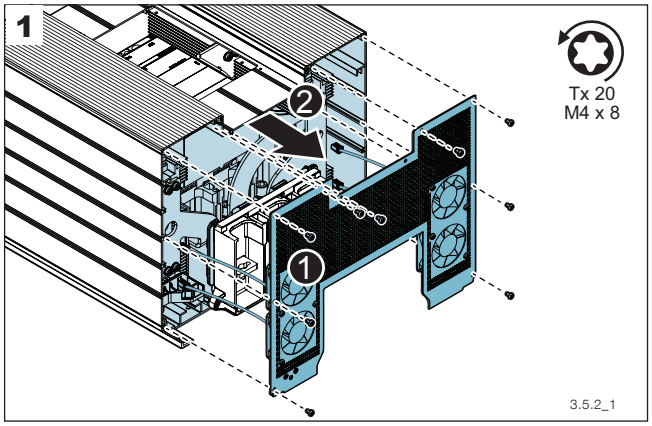
DISMANTLE THE SOFTSTARTER

Remove main power cables and control cables
Disconnect the main power cables and the control cables as described in **chapter 3.3.3, step 1-3**.

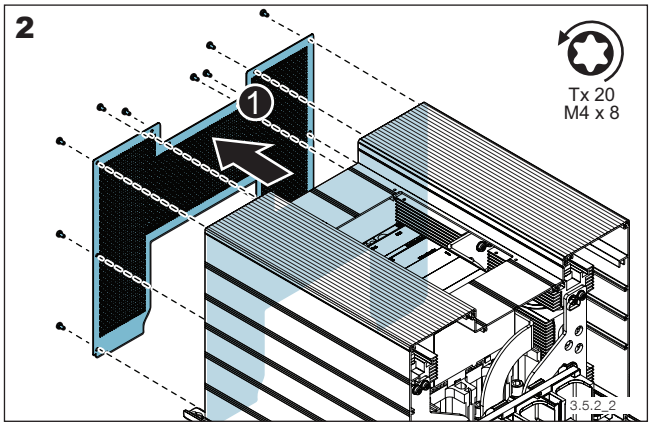
Remove HMI cover and PCBA
Dismantle the HMI cover, all cables and the PCBA as described in **chapter 3.4.1, step 1-4**.

CAUTION
Use protective gloves when working with cover plates to prevent cutting injuries.

1. **Remove fan cover**
   ❶ Loosen **(10x) Torx 20 M4x8** from the fan cover.
   ❷ Pull the fan cover outwards from unit with the fans still mounted to fan cover.



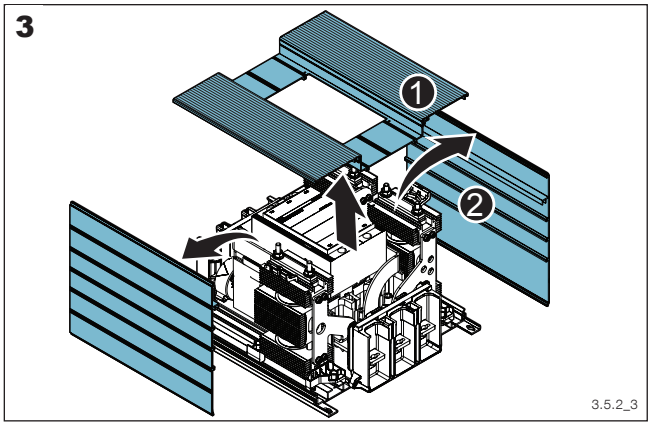
2. **Remove top cover**
   ❶ Loosen **(10x) Torx 20 M4x8** and pull the top cover outwards from unit.



3. Remove front- and side covers

❶ Remove the front cover by lifting it upwards from unit.

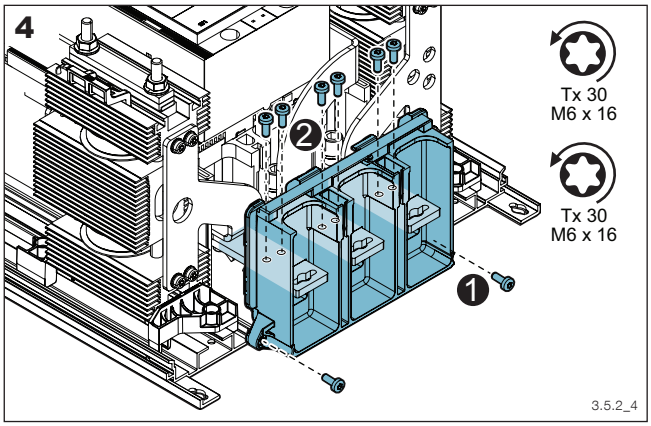
❷ Remove the side covers by slightly tilting them outwards from unit and then sliding them sideways until disengaged from locking rails.



4. Remove screws from bottom bar holder

❶ Loosen **(2x) Torx 30 M6x16** from the lower corners of the bar holder.

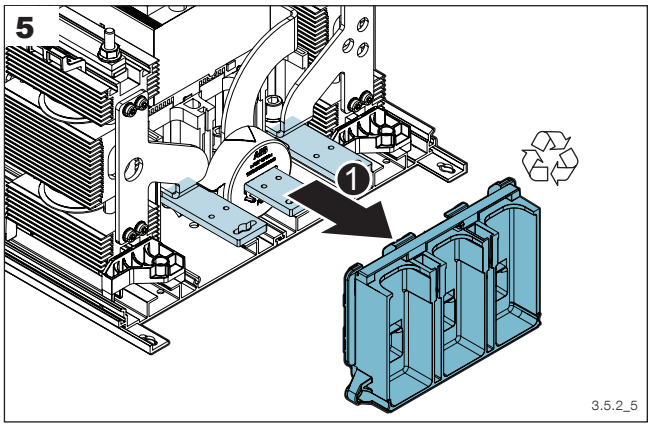
❷ Loosen **(6x) Torx 30 M6x16** to disengage the bar holder from the phase bars.



5. Remove bottom bar holder

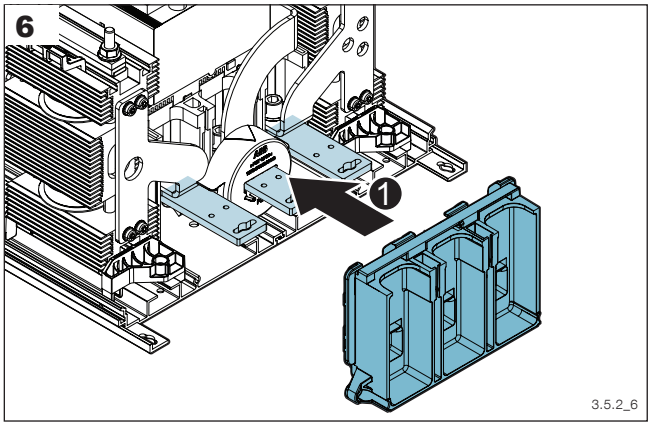
❶ Pull the bar holder outwards until separated from phase bars. Dispose of expended bar holder. Reuse phase bars when changing bar holders.

If needed; Dismantle/assemble current transformers from/to the Softstarter as described in **chapter 3.5.3**

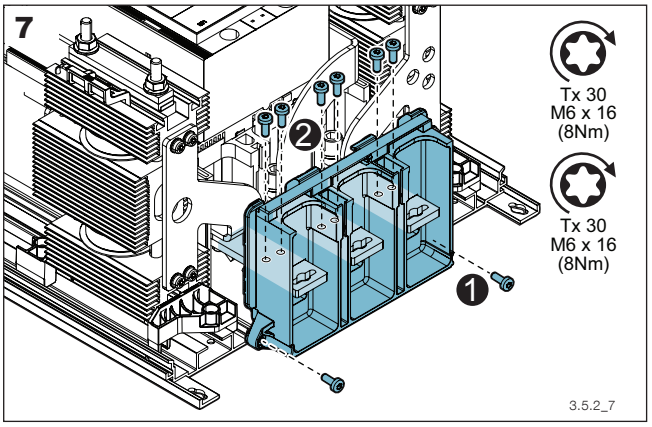


6. Place new bottom side bar holder

❶ Place the new bar holder onto phase bars.



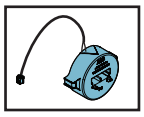
7. **Fasten screws to bottom bar holder**
❶ Fasten **(2x) Torx 30 M6x16 (8Nm)** to the lower corners of the bar holder.
❷ Fasten **(6x) Torx 30 M6x16 (8Nm)** to attach the bar holder to the phase bars.



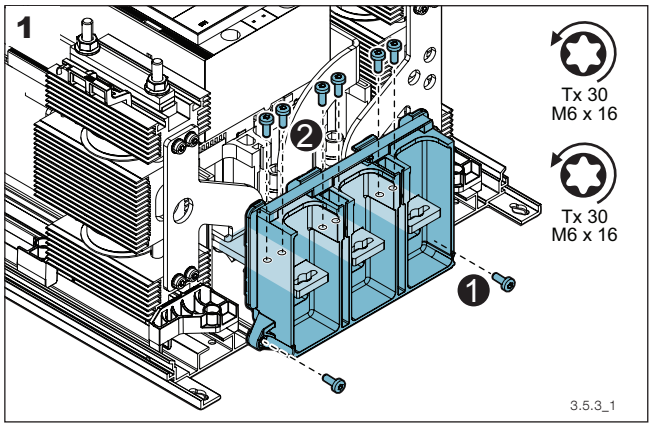
REASSEMBLE THE SOFTSTARTER

Reassemble the Softstarter as described in chapter 3.5.4, 1-3.

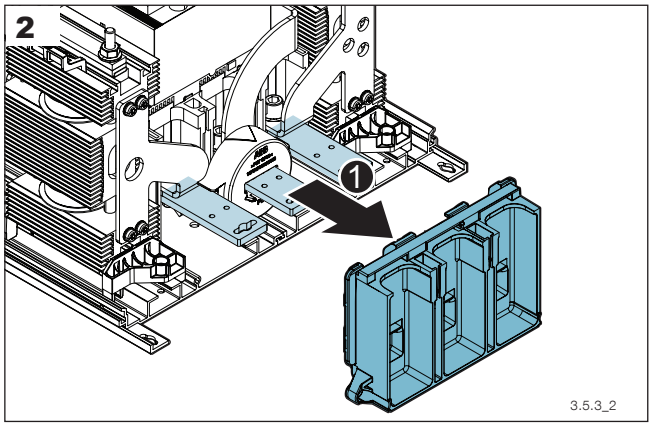
3.4.3 Change the Current transformers



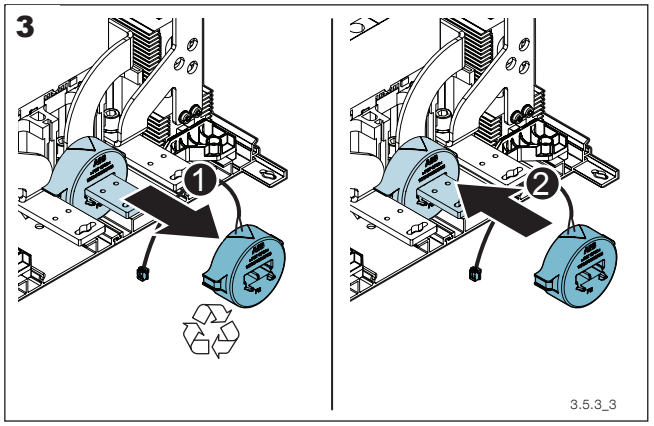
1. **Remove screws from bottom bar holder**
❶ Loosen **(2x) Torx 30 M6x16** from the lower corners of the bar holder.
❷ Loosen **(6x) Torx 30 M6x16** to disengage the bar holder from the phase bars.



2. **Remove bottom bar holder**
❶ Pull the bar holder outwards until separated from phase bars.



3. **Replace bottom side current transformer**
❶ Slide the current transformer outwards from phase bar until unattached. Dispose of expended current transformer.
Make sure that the ratio value of the new current transformer correspond to previously installed current transformer. Verify the ratio according to **Table 7** below.
Make sure cable of new current transformer gets connected in accordance to previously made markings.
❷ Position the new current transformer with the cable facing upwards and the current direction arrow facing towards the bar holder. Slide the current transformer onto the middle phase bar.



4. Place bottom bar holder

❶ Place the bar holder onto phase bars and fasten **(2x) Torx 30 M6x16 (8Nm)** to the bar holders lower corners.

❷ Fasten **(6x) Torx 30 M6x16 (8Nm)** to attach the bar holder to the phase bars.

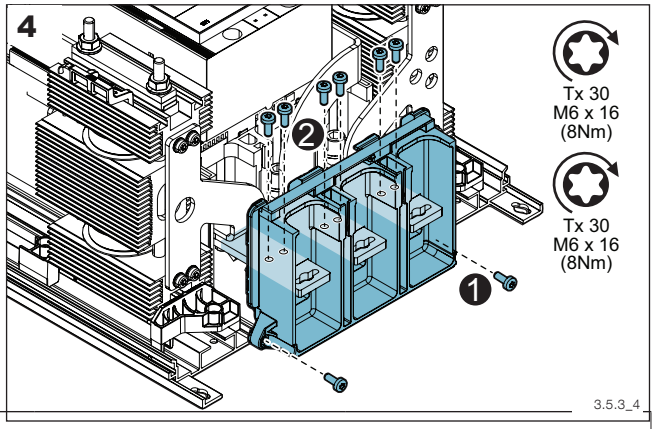


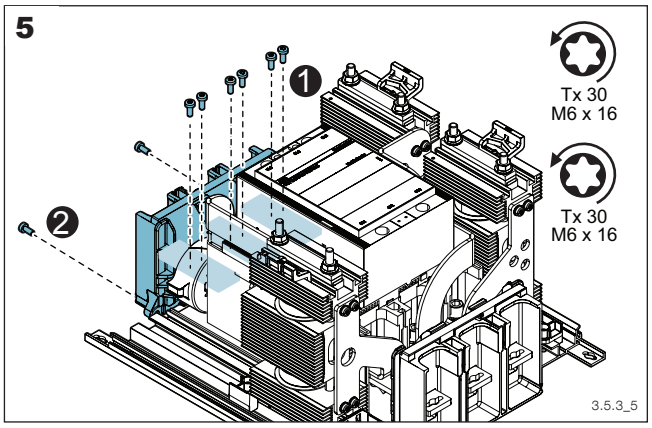
Table 7

Softstarter size	Ratio	Order code	Type
PSTX470…570	570/0,2	1SFA899302R1570	PSCT-570
PSTX720…840	840/0,2	1SFA899302R1840	PSCT-840
PSTX1050…1250	1250/0,2	1SFA899302R2250	PSCT-1250

5. Remove screws from top bar holder

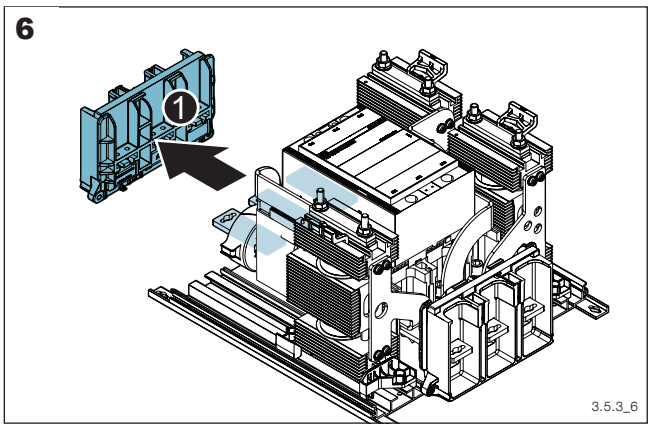
❶ Loosen **(2x) Torx 30 M6x16** from the lower corners of the bar holder.

❷ Loosen **(6x) Torx 30 M6x16** to disengage the bar holder from the phase bars.



6. Remove top bar holder

❶ Pull the bar holder outwards until separated from phase bars.



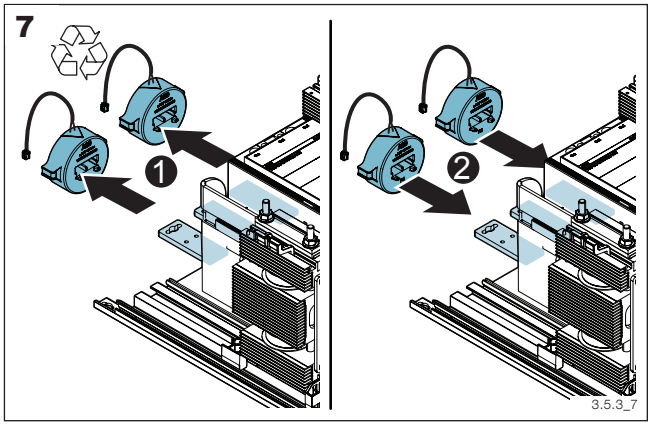
7. Replace top side current transformer

❶ Slide the current transformer outwards from phase bar until unattached. Dispose of expended current transformer.

Make sure that the ratio value of the new current transformer correspond to previously installed current transformer. Verify the ratio according to **Table 7** below.

Make sure cable of new current transformer gets connected in accordance to previously made markings.

❷ Position the new current transformer with the cable facing upwards and the current direction arrow facing towards the bypass contactor. Slide the current transformer onto outer phase bar.



8. Place top bar holder

❶ Place the bar holder onto phase bars and fasten **(2x) Torx 30 M6x16 (8Nm)** to the bar holders lower corners.

❷ Fasten **(6x) Torx 30 M6x16 (8Nm)** to attach the bar holder to the phase bars.

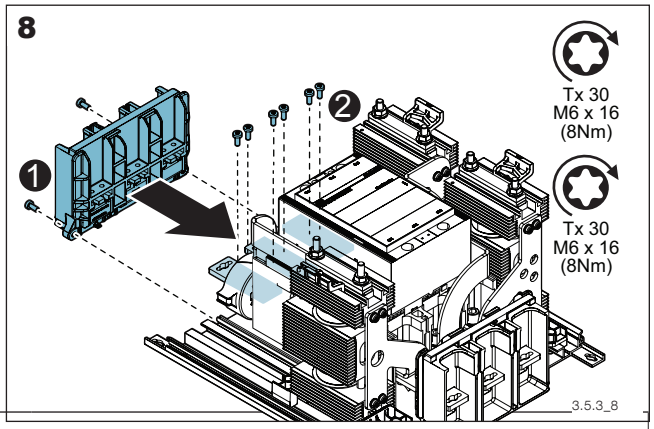


Table 7

Softstarter size	Ratio	Order code	Type
PSTX470…570	570/0,2	1SFA899302R1570	PSCT-570
PSTX720…840	840/0,2	1SFA899302R1840	PSCT-840
PSTX1050…1250	1250/0,2	1SFA899302R2250	PSCT-1250

3.4.4 Assemble the Softstarter

CAUTION

Use protective gloves when working with cover plates to prevent cutting injuries.

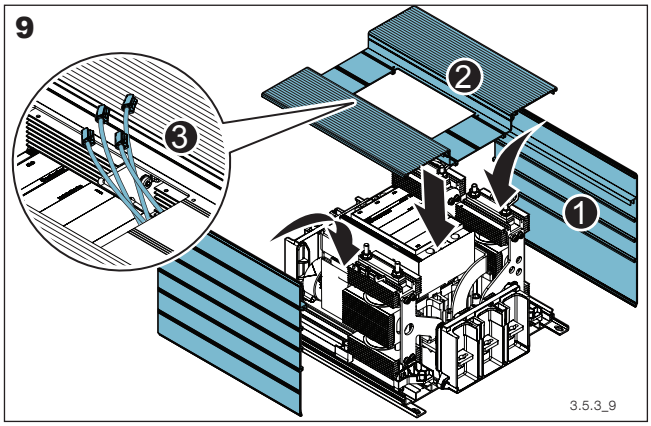
9. Place side- and front covers

Make sure to position side covers with dual locking rails facing upwards prior to assembly.

❶ Interlock the side covers to rails and slide them sideways into position. Attach side covers to support brackets mounted on cooling towers.

❷ Place the front cover on the unit and interlock to rails.

❸ Thread the cables through the cable inlets opening in the front cover.



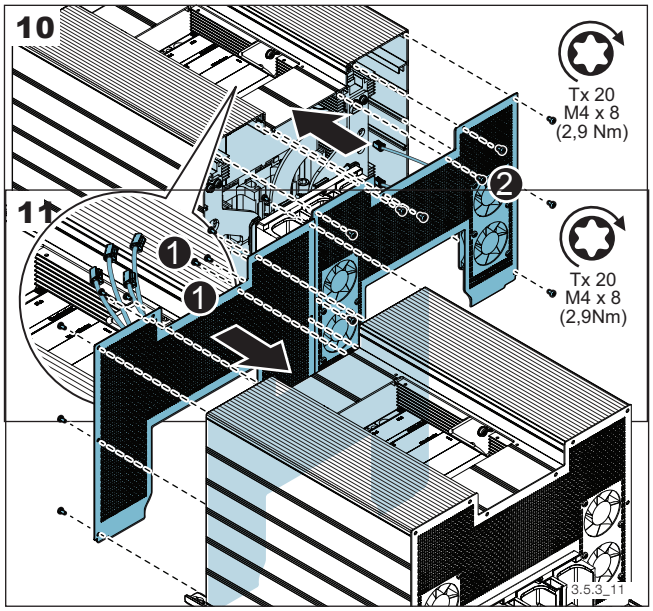
10. Place fan cover

❶ Thread the fan cables through the cable inlets.

❷ Fasten the fan cover to the unit with **(10x) Torx 20 M4x8 (2,9Nm)**.

11. Place top cover

❶ Fasten the top cover to the unit with **(10x) Torx 20 M4x8 (2,9Nm)**.

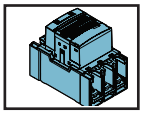


REASSEMBLE THE SOFTSTARTER

Place PCBA, cables and HMI cover
Place the PCBA, connect all cables and install the HMI cover as described in **chapter 3.4.1, step 6-11**.

Connect main power cables and control cables
Connect the main power cables and the control cables as described in **chapter 3.3.4, step 1-2**.

3.5 Change the Bypass contactor



This chapter describes how to change of the By-pass Contactor.

CAUTION
Always make sure that the power supply is switched off before doing maintenance on the Softstarter.

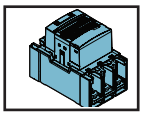
WARNING
When performing maintenance on the Softstarter, an antistatic strap must be used. The antistatic strap should be worn on the wrist, and be connected to an electrical ground, to prevent electrostatic discharge (ESD) damage to the Softstarter.

WARNING
The life span of electronics can be affected by damage caused by electrostatic discharge. This can happen if a charged tool or person touches a component. Therefore it is very important that all tools and personnel are discharged by touching an earthed point before the PCBA or any of the components are touched. It is equally important to discharge the package with the new component before opening it.
A person walking on a carpet can be charged with up to fifteen thousand volt (15000V). Compare this with the fact that some sensitive components can be destroyed when discharged on a much lower level (about 100V). We kindly ask you to pay notice to this, as this is a vital point in order to ensure the life span and function of the product.

Tools:

- Torx 20 for removing the fan cover
- Torx 20 for removing the top cover
- Torx 30 for removing bar holders
- Hexagon no. 8 for removing the bar holders
- Hexagon no. 4 for removing the bypass contactor
- Hexagon no. 8 for removing the bypass contactor

3.5.1 Change the Bypass contactor

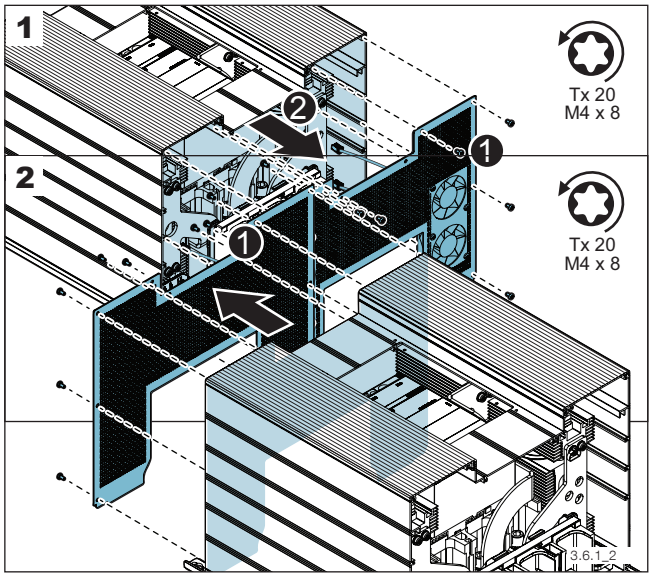


DISMANTLE THE SOFTSTARTER

Remove main power cables and control cables
Disconnect the main power cables and the control cables as described in **chapter 3.3.3, step 1-3**.

Remove cover and PCBA
Dismantle the HMI cover, all cables and the PCBA as described in **chapter 3.4.1, step 1-5**.

CAUTION
Use protective gloves when working with cover plates to prevent cutting injuries.



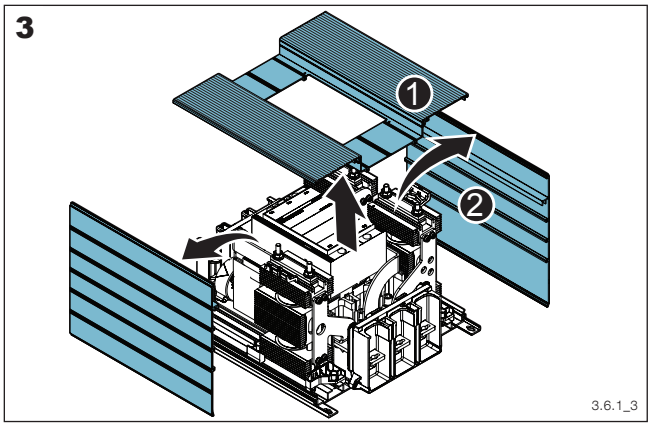
1. **Remove fan cover**
   ❶ Loosen **(10x)** ✪ **Torx 20 M4x8** from the fan cover.
   ❷ Pull the fan cover outwards from unit with the fans still mounted to fan cover.

2. **Remove top cover**
   ❶ Loosen **(10x)** ✪ **Torx 20 M4x8** and pull the top cover outwards from unit.

3. Remove front- and side covers

❶ Remove the front cover by lifting it upwards from unit.

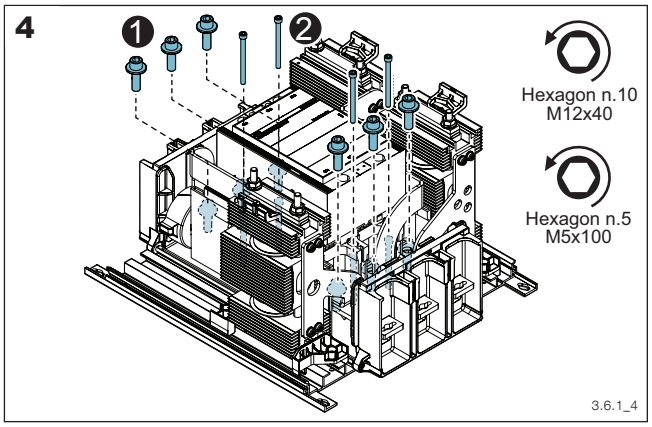
❷ Remove the side covers by slightly tilting them outwards from unit and then sliding them sideways until disengaged from locking rails.



4. Remove phase screws

❶ Loosen **(6x) Hexagon no. 10 M12x40** from the phases of the bypass contactor. Removing the screws will also loosen the square nuts located under each phase bar.

❷ Loosen **(4x) Hexagon no. 5 M5x100** from the bypass contactor.



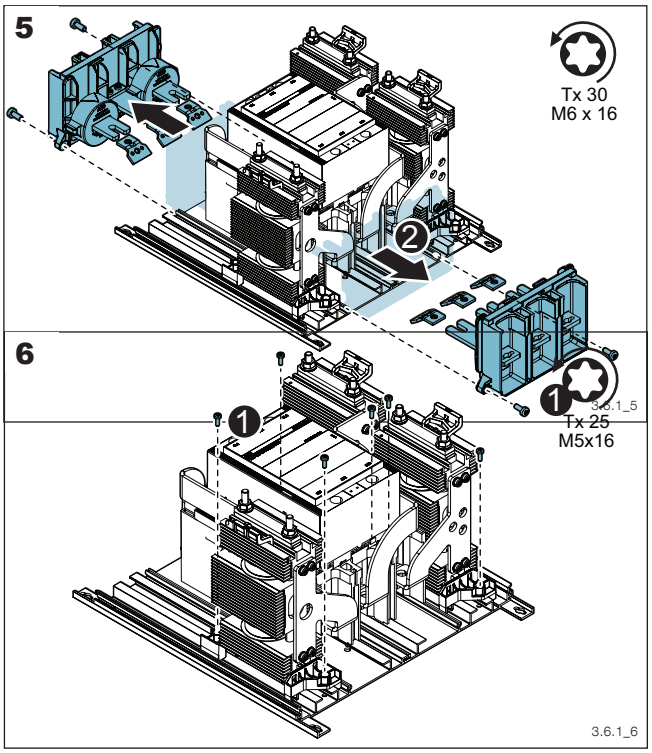
5. Remove top and bottom bar holders

❶ Loosen in total **(4x) Torx 30 M6x16** from the lower corners of the bar holders.

❷ Pull the bar holders (including phase bars) outwards from unit and remove the square nuts.

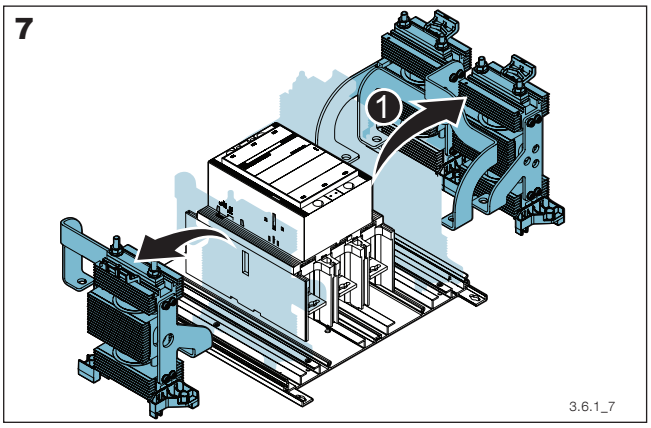
6. Remove screws from cooling towers

❶ Loosen **(6x) Torx 25 M5x16** to disengage the cooling towers from base plate.



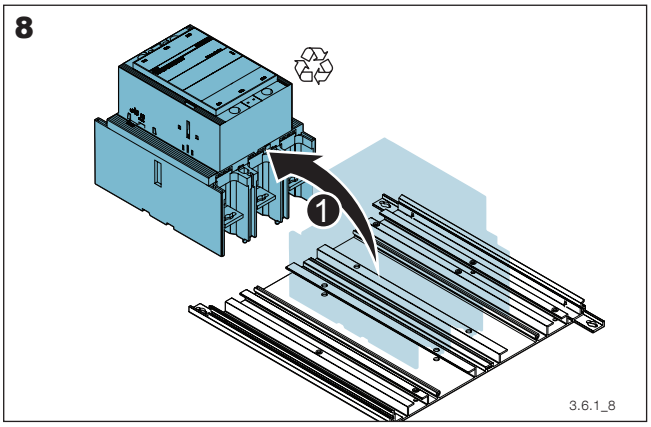
7. Remove cooling towers

1 Lift off all three cooling towers from base plate.



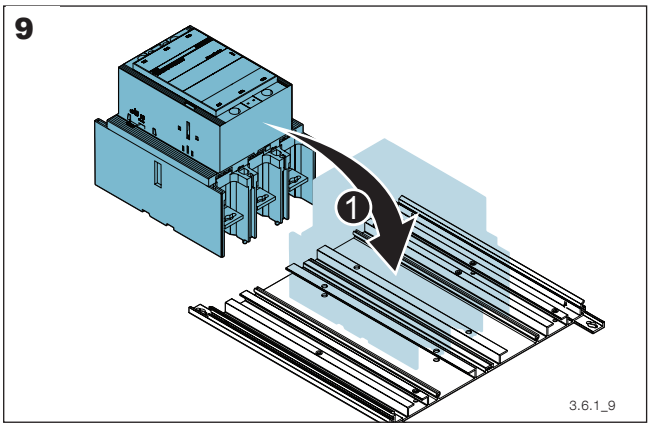
8. Remove bypass contactor

1 Remove the bypass contactor from base plate. Dispose of expended bypass contactor.



9. Place new bypass contactor

1 Place the new bypass contactor on the base plate with terminals 2T1, 4T2 and 6T3 facing downwards.

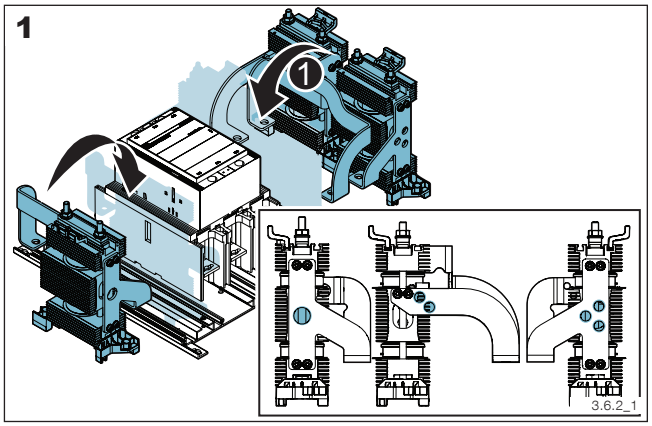


3.5.2 Assemble the Softstarter

Please don't forget to vacuum clean the Softstarter from dirt and dust when reassembling.

CAUTION

Use protective gloves when working with cover plates to prevent cutting injuries.



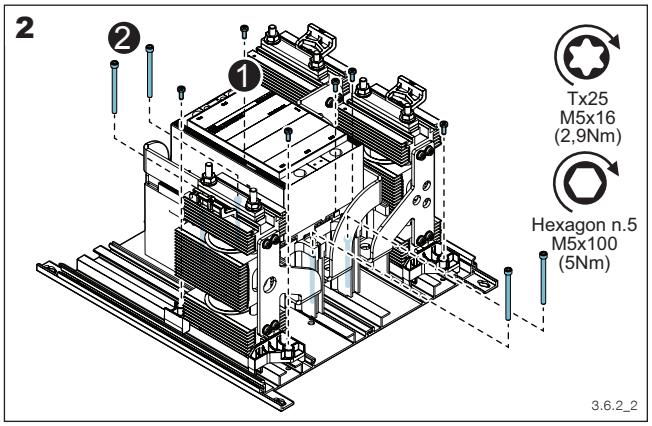
1. Place cooling towers

❶ Place all three cooling towers on the base plate and align to screw holes.

Cooling tower 1: To be placed on the lower left side of the base plate and have one drill hole on the internal phase bar.

Cooling tower 2: To be placed on the upper right side of the base plate and have two drill holes on the internal phase bar.

Cooling tower 3: To be placed on the lower right side of the base plate and have three drill holes on the internal phase bar.



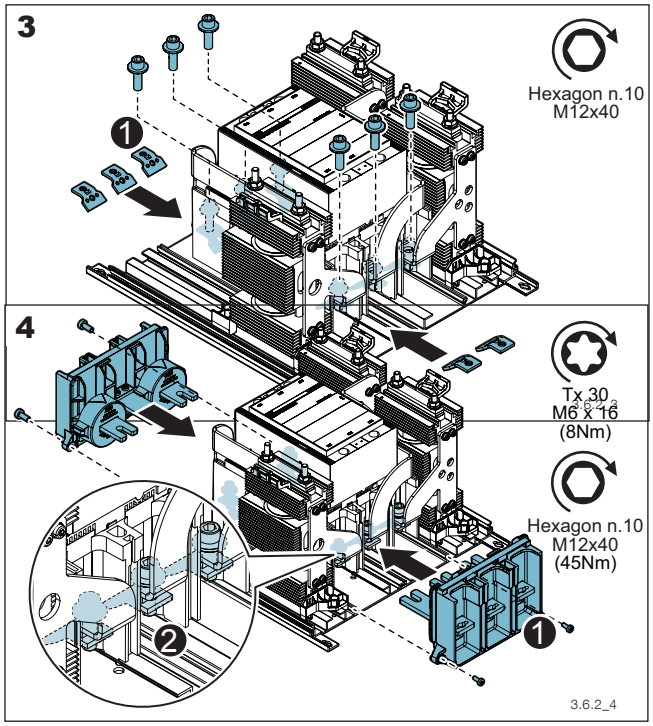
2. Fasten cooling towers

❶ Fasten cooling towers to base plate with **(6x) Torx 25 M5x16 (2,9Nm)**.

❷ Fasten the bypass contactor to base plate with **(4x) Hexagon no. 5 M5x100 (5Nm)**.

3. **Fasten phase screws**

❶ Place the square nuts with the angled sides inwards and slightly tighten **(6x) ⬡ Hexagon no. 10 M12x40**.



4. **Place top and bottom bar holders**

❶ Place the bar holders (with phase bars mounted) to the unit and fasten **(4x) ✪ Torx 30 M6x16 (8Nm)** to the lower corners of the bar holders.

❷ Fully fasten **(6x) ⬡ Hexagon no. 10 M12x40 (45Nm)** to the phases of the bypass contactor.

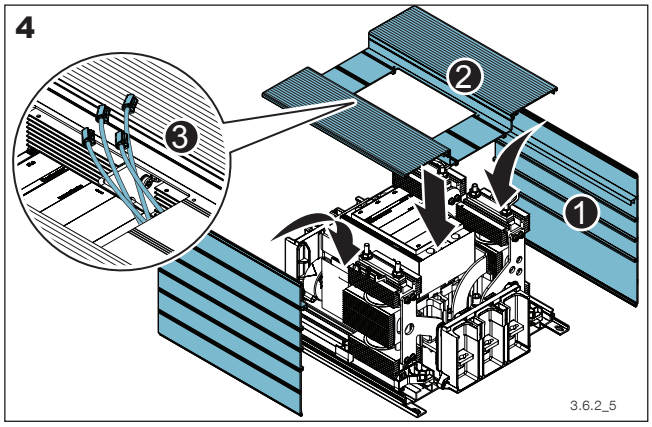
5. **Place side- and front covers**

Make sure to position side covers with dual locking rails facing upwards prior to assembly.

❶ Interlock the side covers to rails and slide them sideways into position. Attach side covers to support brackets mounted on cooling towers.

❷ Place the front cover on the unit and interlock to rails.

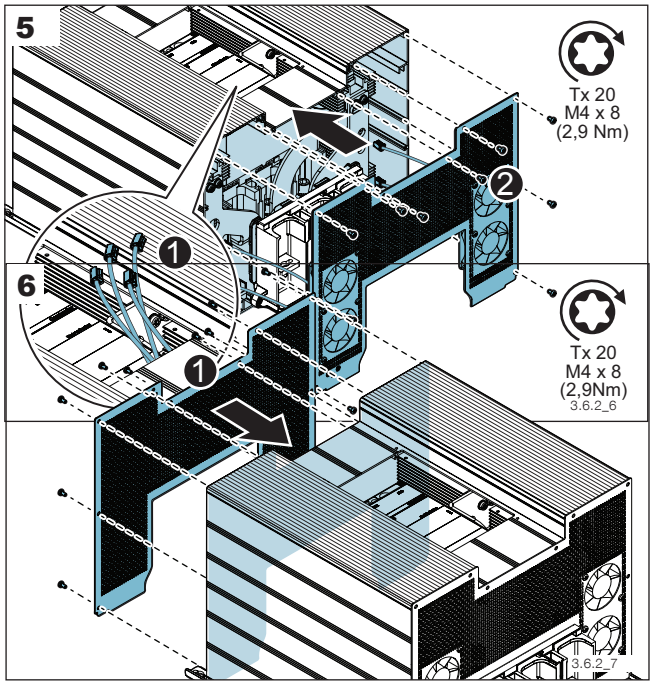
❸ Thread the cables through the cable inlets opening in the front cover.



6. **Place fan cover**

❶ Thread the fan cables through the cable inlets.

❷ Fasten the fan cover to the unit with **(10x) ✪ Torx 20 M4x8 (2,9Nm)**.



7. **Place top cover**

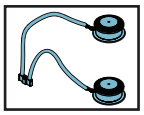
❶ Fasten the top cover to the unit with **(10x) ✪ Torx 20 M4x8 (2,9Nm)**.

REASSEMBLE THE SOFTSTARTER

Place PCBA, cables and HMI cover
Place the PCBA, connect all cables and install the HMI cover as described in **chapter 3.4.1, step 6-11**.

Connect main power cables and control cables
Connect the main power cables and the control cables as described in **chapter 3.3.4, step 1-2**.

3.6 Change the SCR



This chapter describes how to change the SCR.

CAUTION
Always make sure that the power supply is switched off before doing maintenance on the Softstarter.

WARNING
- SCR and heat sinks must be handled carefully to avoid scratches and other marks.
- Do not touch the contact surfaces.
- Do not lift the SCR by the SCR wires.
- Make sure that there is no damage to the welding flange or to the contact surface.

WARNING
When performing maintenance on the Softstarter, an antistatic strap must be used. The antistatic strap should be worn on the wrist, and be connected to an electrical ground, to prevent electrostatic discharge (ESD) damage to the Softstarter.

WARNING

The life span of electronics can be affected by damage caused by electrostatic discharge. This can happen if a charged tool or person touches a component. Therefore it is very important that all tools and personnel are discharged by touching an earthed point before the PCBA or any of the components are touched. It is equally important to discharge the package with the new component before opening it.
A person walking on a carpet can be charged with up to fifteen thousand volt (15000V). Compare this with the fact that some sensitive components can be destroyed when discharged on a much lower level (about 100V). We kindly ask you to pay notice to this, as this is a vital point in order to ensure the life span and function of the product..

The following instruction shows service on Softstarter model PSTX720...840.
Depending on model small changes in the service procedure may differ but the principle of the service is the same.

Tools required:

- Torx 20 for removing the fan cover
- Torx 20 for removing the top cover
- Torx 30 for removing internal phase bars
- Torx 30 for removing the bar holders
- Hexagon no. 8 for removing the bar holders
- Hexagon socket wrench for removing M10 screw-nut
- Abrasive cloth P600 to polish the SCR
- Ethanol to clean the SCR
- Silicone oil to prepare new SCR

3.6.1 Change the SCR

DISMANTLE THE SOFTSTARTER

Remove main power cables and control cables
Disconnect the main power cables and the control cables as described in **chapter 3.3.3, step 1-3**.

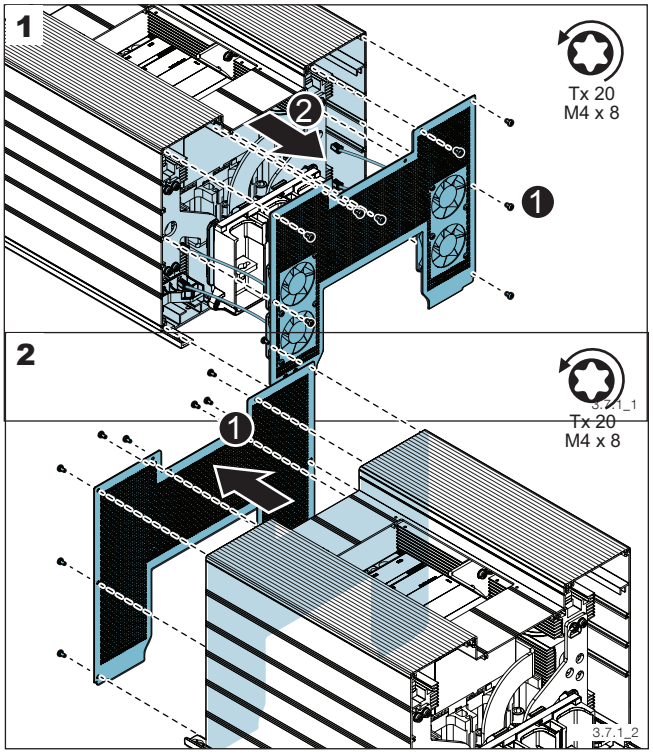
Remove HMI cover and PCBA
Dismantle the HMI cover, all cables and the PCBA as described in **chapter 3.4.1, step 1-4**.

CAUTION

Use protective gloves when working with cover plates to prevent cutting injuries.

1. **Remove fan cover**
   ❶ Loosen **(10x)** **Torx 20 M4x8** from the fan

cover.
❷ Pull the fan cover outwards from unit with the fans still mounted to fan cover.

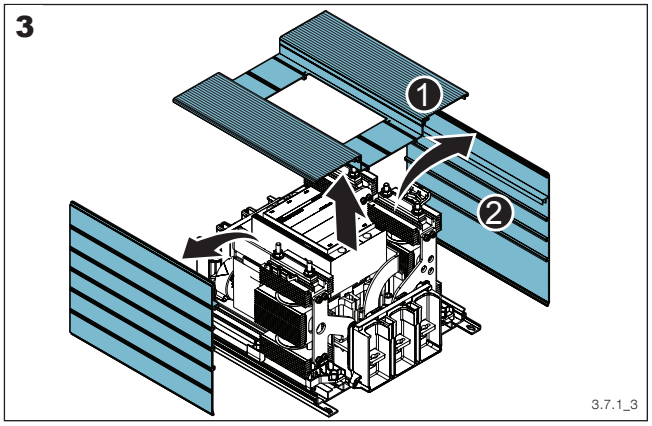


2. Remove top cover

❶ Loosen **(10x) Torx 20 M4x8** and pull the top cover outwards from unit.

3. Remove front- and side covers

❶ Remove the front cover by lifting it upwards from unit.
❷ Remove the side covers by slightly tilting them outwards from unit and then sliding them sideways until disengaged from locking rails.

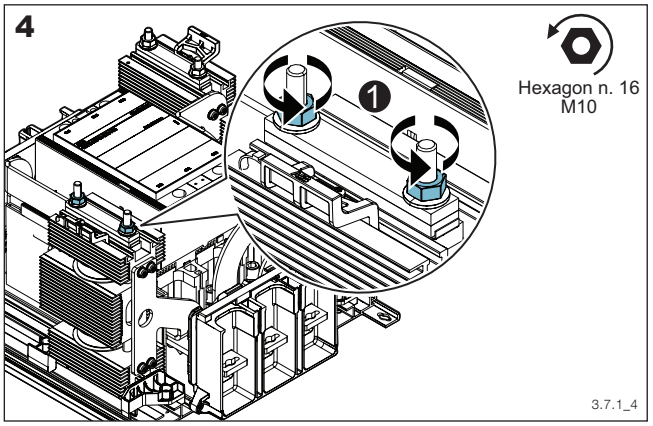


INFORMATION

It is important to untighten the hexagon screw-nuts while the cooling tower is still mounted to the unit through the internal phase bar. This prevent the cooling tower from being bent due to torque forces.

4. Untighten screw-nuts from cooling tower

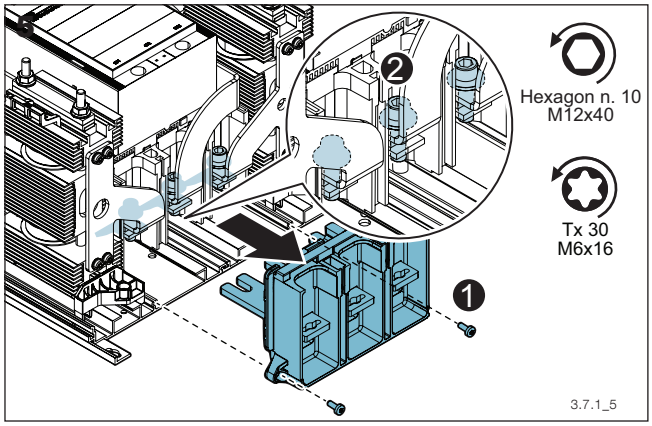
❶ Untighten **(2x) Hexagon n. 16 M10 Screw-nut** while the cooling tower is still mounted to the unit through the internal phase bar.



5. Remove phase screws and bottom bar holder

❶ Loosen **(2x) Torx 30 M6x16** from the lower corners of the bar holder.

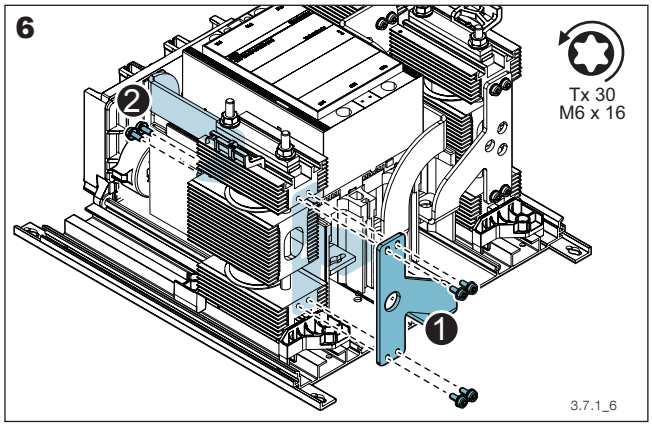
❷ Loosen **(3x) Hexagon no. 10 M12x40** and pull the bar holders (including phase bars) outwards from unit and remove the square nuts.



6. Remove phase bars from cooling tower

❶ Loosen **(4x) Torx 30 M6x16** and remove the internal phase bar from cooling tower.

❷ Loosen **(2x) Torx 30 M6x16** to separate cooling tower from the internal phase bar.

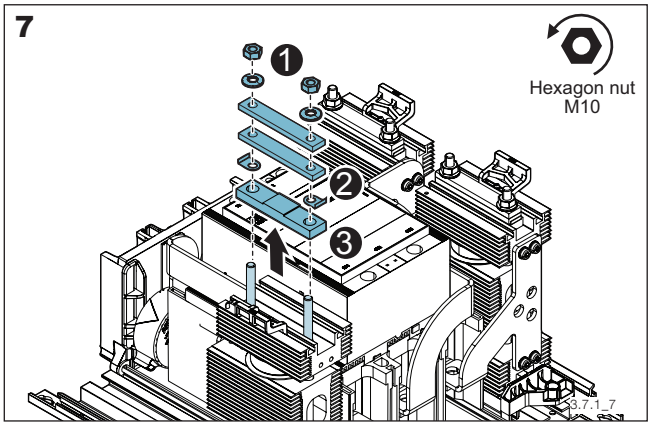


7. Remove screw-nuts and tension bars from cooling tower

❶ Loosen and remove **(2x) Hexagon M10 Screw-nut** and the two spring washers from cooling tower.

❷ Remove the tension bars and the two torque washers from cooling tower.

❸ Remove the spacing bar from cooling tower.

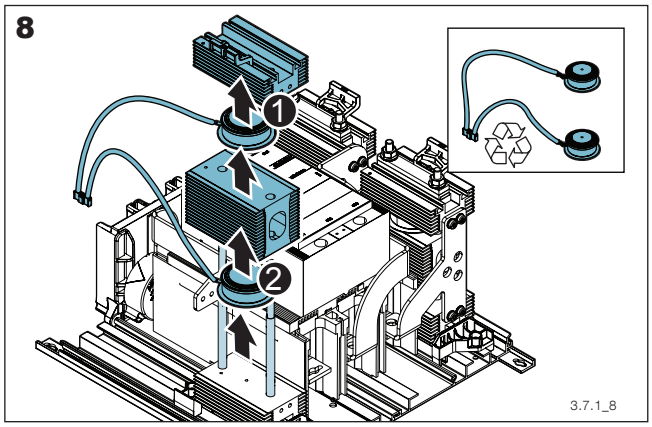


8. Remove heat sinks and SCR from cooling tower

❶ Remove the upper heat sink and upper SCR unit by lifting them upwards from stud bolts.

❷ Remove the middle heat sink and lower SCR unit by lifting them upwards from stud bolts.

Do not remove the insulation plastic pipes from stud bolts. Dispose of expended SCR.



WARNING

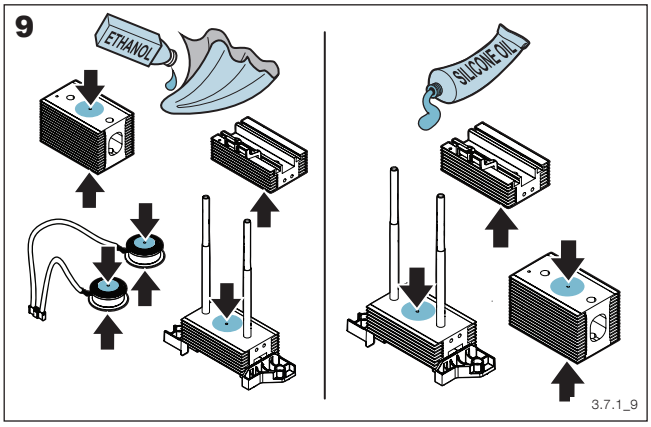
- SCR:s and heat sinks must be handled with care to avoid scratches and other marks.
- Do not scratch the contact surfaces with the guide pins.
- Do not touch the contact surfaces.
- Do not lift the SCR by the wire.
- Ensure there is no damage to the welding flange or to the contact surface.

9. Preparation of heat sink and SCR

- Clean all polished contact surfaces carefully with Ethanol.

- Use well moistened lint-free paper.
- Avoid contact with surface.
- Lubricate directly after polishing/cleaning, within 5 minutes. The contact surfaces must be dry before lubrication.
- Apply a couple of drops of silicone oil on the cleaned contact surfaces, avoid getting oil in the guide hole. Smooth the oil lightly over the whole surface using lint-free paper. Then wipe off the surface in order to get a very thin layer of oil.
- Avoid contact with the surfaces after lubrication.

Use the service kit in the spare part catalog 1SFC001013C0201.



3.6.2 Assemble the Softstarter

Please don't forget to vacuum clean the Softstarter from dirt and dust when reassembling.

CAUTION

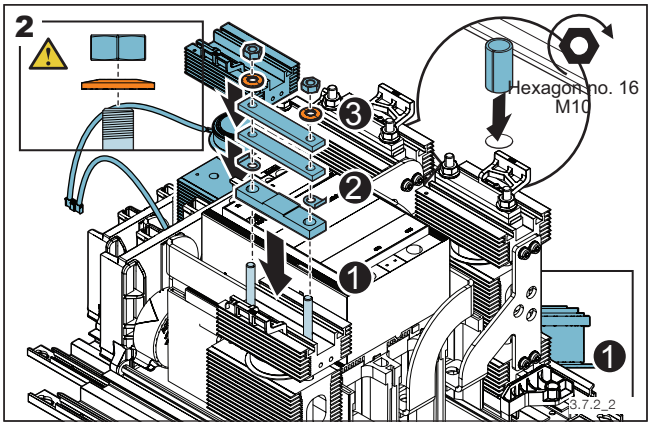
Use protective gloves when working with cover plates to prevent cutting injuries.

INFORMATION

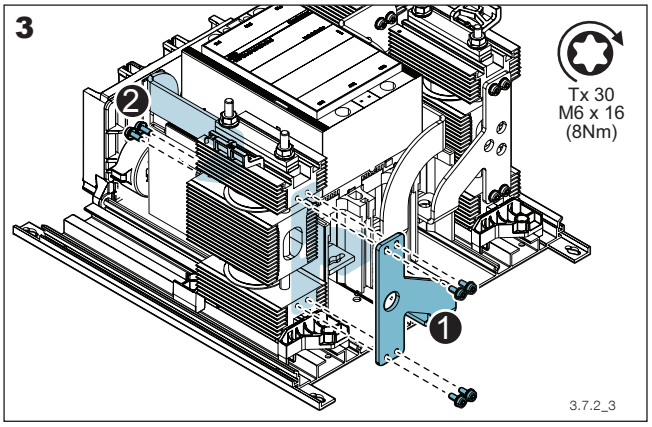
It is important that the cooling tower is mounted to the unit through the internal phase bar before tightening the hexagon screw-nuts. This prevent the cooling tower from being bent due to torque forces.

1. **Place new SCR**
   Make sure that the symbol and type specification of the new SCR corresponds to previously installed SCR prior to assembly. Do not scratch the contact surfaces with the guide pins. Turn the component

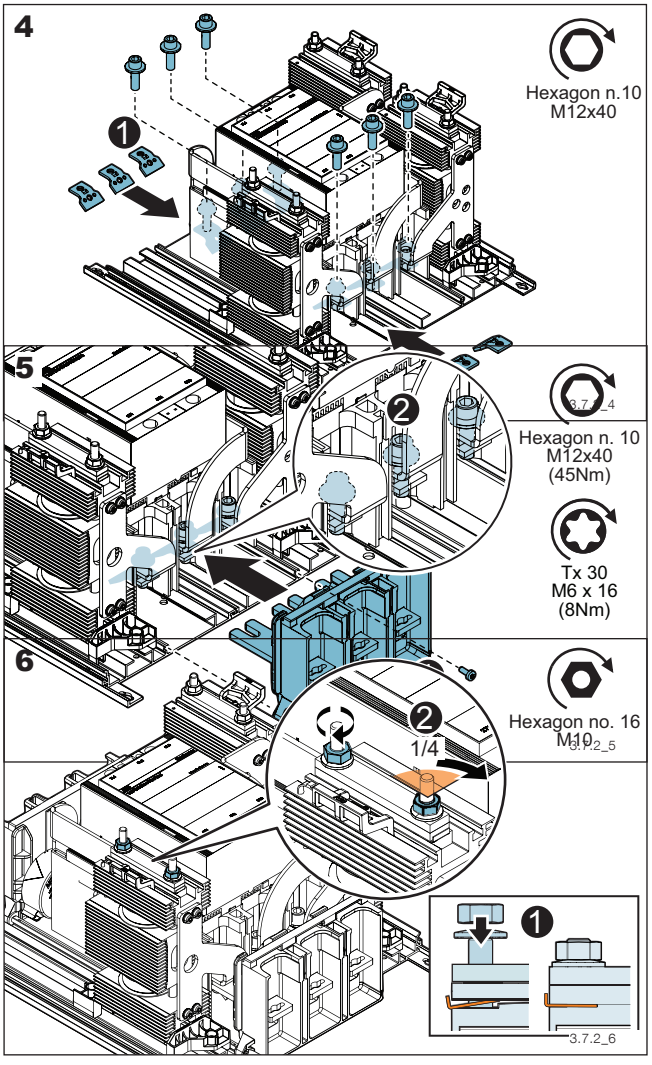
so that the SCR wires point towards the bypass contactor.
❶ Make sure to place the SCR units with the correct sides facing upwards; see illustration.
❷ Place the lower SCR unit and middle heat sink onto stud bolts on cooling tower. Align to guide pins.
❸ Place the upper SCR unit and upper heat sink onto stud bolts on cooling tower. Align to guide pins.



2. Place tension bars and screw-nuts to cooling tower
❶ Place the spacing bar onto stud bolts on cooling tower.
❷ Place the two torque washers and tension bars onto stud bolts on cooling tower.
❸ Place **(2x) ◯ Hexagon no. 16 M10 Screw-nut** and the two spring washers onto stud bolts on cooling tower (do not yet fasten). Spring washers are to be placed with the concave side facing downwards.



3. Place phase bars to cooling tower
❶ Place the internal phase bar on the cooling tower and fasten with **(4x) ✪ Torx 30 M6x16 (8Nm)**. Washers to be used.
❷ Fasten the second internal phase bar to the cooling tower with **(2x) ✪ Torx 30 M6x16 (8Nm)**. Washers to be used.

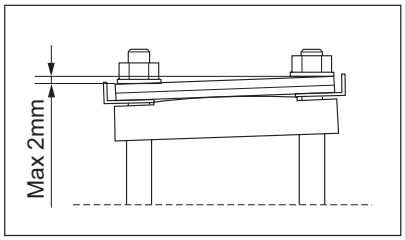


4. Fasten phase screws
❶ Place the square nuts with the angled sides inwards and slightly tighten **(6x) ◯ Hexagon no. 10 M12x40**.

5. Place bottom side bar holder
❶ Place the bar holder (with phase bars mounted) to the unit and fasten **(2x) ✪ Torx 30 M6x16 (8Nm)** to the lower corners of the bar holder.
❷ Fasten the phase screws, **(3x) ◯ Hexagon no. 10 M12x40 (45Nm)**.

6. Fasten screw-nuts to cooling tower
❶ Fasten **(2x) ◯ Hexagon no. 16 M10 Screw-nut** by hand until clamps are tightened.
❷ Fasten each nut additionally by half a turn alternately until the spring gap indicators are just trapped, then tighten 1/4 turn.

The slope may not be more than 2 mm.
See figure below:



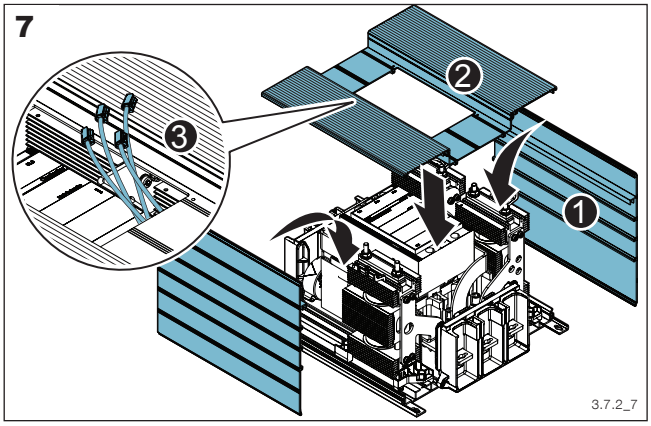
7. Place side- and front covers

Make sure to position side covers with dual locking rails facing upwards prior to assembly.

❶ Interlock the side covers to rails and slide them sideways into position. Attach side covers to support brackets mounted on cooling towers.

❷ Place the front cover on the unit and interlock to rails.

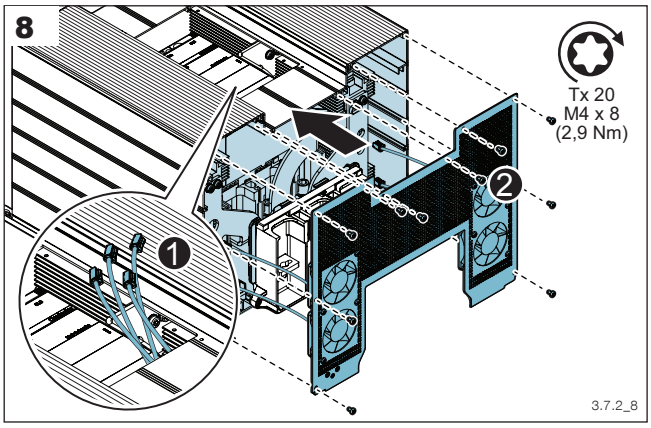
❸ Thread the cables through the cable inlets opening in the front cover.



8. Place fan cover

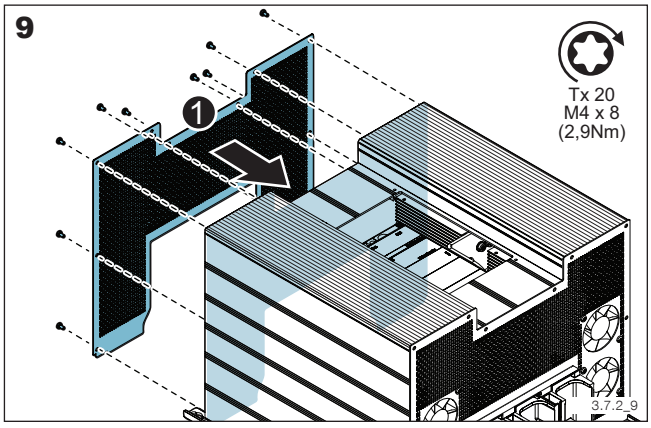
❶ Thread the fan cables through the cable inlets.

❷ Fasten the fan cover to the unit with **(10x) Torx 20 M4x8 (2,9Nm)**.



9. Place top cover

❶ Fasten the top cover to the unit with **(10x) Torx 20 M4x8 (2,9Nm)**.



REASSEMBLE THE SOFTSTARTER

Place PCBA, cables and HMI cover
Place the PCBA, connect all cables and install the HMI cover as described in **chapter 3.4.1, step 6-11**.

Connect main power cables and control cables
Connect the main power cables and the control cables as described in **chapter 3.3.4, step 1-2**.

3.7 Instructions for testing the SCR

IMPORTANT NOTE

Only perform the SCR-test if the Softstarter displays one of the following commandos: “Short circuit fault” or “Open circuit thyristor fault”.

Replace SCR if the result of the test shows under 1 Mohm.

CAUTION

Always make sure that the power supply is switched off before doing maintenance on the Softstarter.

WARNING

When performing maintenance on the Softstarter, an antistatic strap must be used. The antistatic strap should be worn on the wrist, and be connected to an electrical ground, to prevent electrostatic discharge (ESD) damage to the Softstarter.

WARNING

The life span of electronics can be affected by damage caused by electrostatic discharge. This can happen if a charged tool or person touches a component. Therefore it is very important that all tools and personnel are discharged by touching an earthed point before the PCBA or any of the components are touched. It is equally important to discharge the package with the new component before opening it.
A person walking on a carpet can be charged with up to fifteen thousand volt (15000V). Compare this with the fact that some sensitive components can be destroyed when discharged on a much lower level (about 100V). We kindly ask you to pay notice to this, as this is a vital point in order to ensure the life span and function of the product.

Tools:

- Torx 15 for removing the HMI cover
- Torx 20 for removing the HMI cover
- Long-nose plier for removing the cables from the PCBA
- Megger to set on 500V

3.7.1 Test the SCR

IMPORTANT NOTE

Only perform the SCR-test if the Softstarter displays one of the following commandos: “Short circuit fault” or “Open circuit thyristor fault”.

Replace SCR if the result of the test shows under 1 Mohm.

DISMANTLE THE SOFTSTARTER

Remove main power cables and control cables

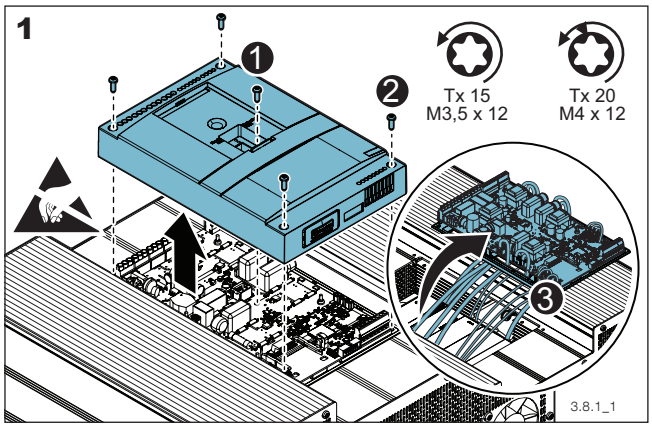
Disconnect the main power cables and the control cables as described in **chapter 3.3.3, step 1-3**.

1. Remove HMI cover

❶ Loosen **(1x) Torx 15 M3,5x12** from the HMI bracket.

❷ Loosen **(4x) Torx 20 M4x12.** Remove the HMI cover by lifting it upwards from unit. Ensure that screws do not come loose and fall down on the PCBA upon removal.

❸ Lift out the PCBA from unit (at this point still mounted on bracket) to facilitate continued service.

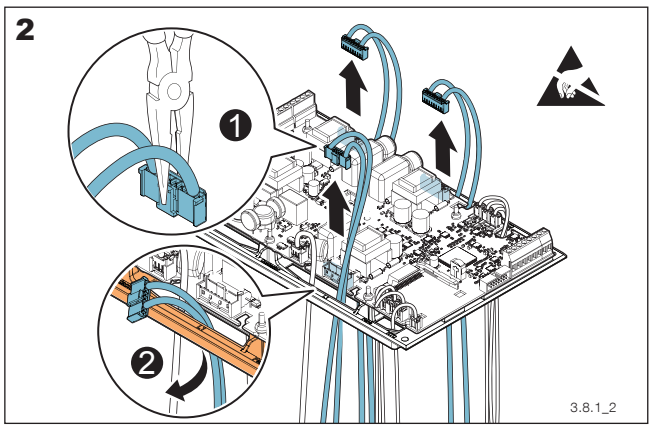


2. Disconnect SCR cables from PCBA

Mark the SCR cables with 1, 2, 3 prior to disconnecting them to ensure proper re-connection. Note that markings are to be made in accordance with existing data available on the PCBA bracket.

❶ Disconnect the three SCR cables from their terminals on the PCBA using a long-nose plier.

❷ Pull out the three SCR cables from the cable inlets on the PCBA bracket.

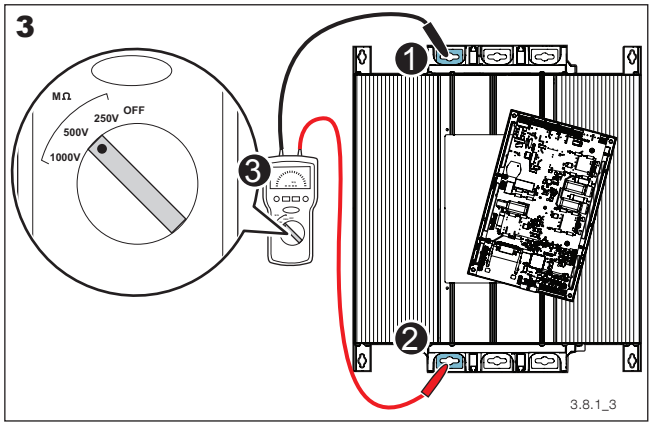


3. Connect Megger to Softstarter

❶ Connect the black megger contact to the main terminal 1L1 on the Softstarter.

❷ Connect the red megger contact to the main terminal 2T1 on the Softstarter.

❸ Set the megger on 500V. Press and hold the Test button. Note the result.



Also use 500V for 690V softstarters.

4. Switch Megger cables

Switch the connection according to figure 4:

❶ Connect the red megger contact to the main terminal 1L1 on the Softstarter.

❷ Connect the black megger contact to the main terminal 2T1 on the Softstarter.

❸ Set the megger on 500V. Press and hold the Test button. Note the result.

Repeat step
5. Connect the Megger to the Softstarter
and
6. Switch the Megger cables
on the two remaining phases between
3L2 - 4T2 and 5L3 - 6T3.

5. Detect a shorted SCR

The three different phases will give six values.
If any of the values shows lower than 1 Mohm there is probably a shortage. Proceed with changing the SCR, see chapter **3.7.1 Change the SCR**.

6. Connect SCR cables to PCBA

When reconnecting cables; read markings on the PCBA bracket.
❶ Thread all three SCR cables through the cable inlets on the PCBA bracket.
❷ Connect the three SCR cables, according to previously made markings (1, 2 or 3), to their terminals on the PCBA.

7. Place HMI cover

❶ Place back the PCBA and the bracket in the Softstarter. Make sure cables do not get stuck in between the bracket frame and Softstarter when mounted.
Place the HMI cover on the unit and align it to the plastic screw sleeves located on lower housing.
❷ Fasten the HMI cover with **(4x) Torx 20 M4x12 (1,6Nm)**.
❸ Fasten **(1x) Torx 15 M3,5x12 (0,5 Nm)** on the HMI bracket.

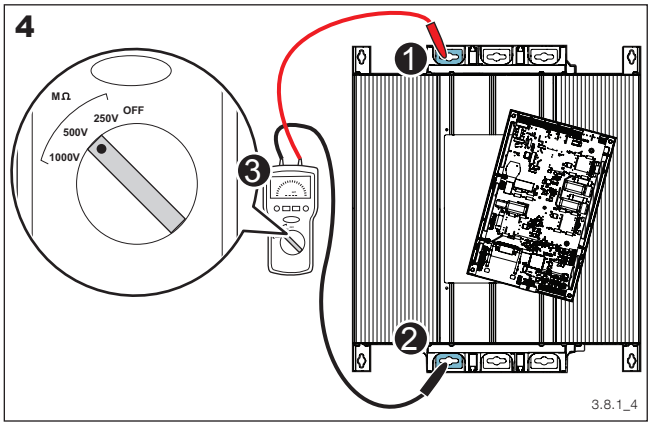
REASSEMBLE THE SOFTSTARTER

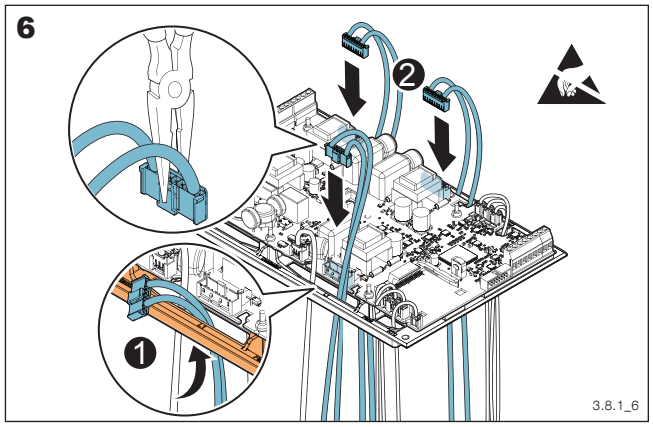
Connect main power cables and control cables

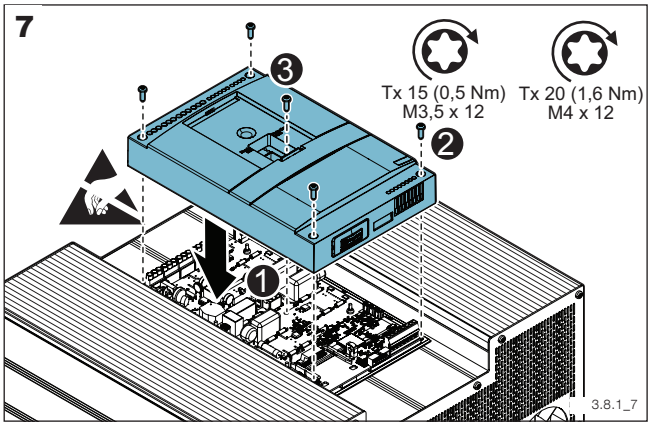
Connect the main power cables and the control cables as described in **chapter 3.3.4, step 1-2**.

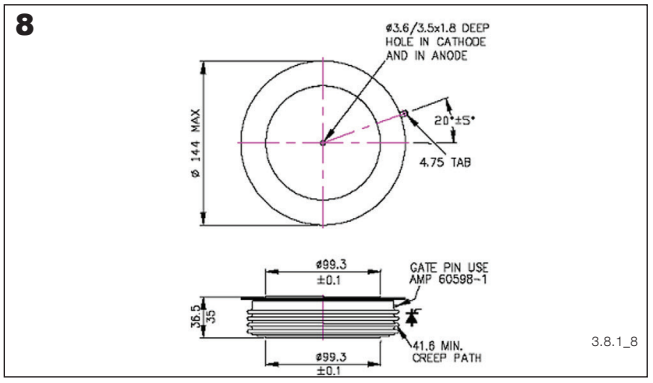
8. Examples of SCR for PSTX

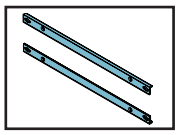
For Softstarters type PSTX720...840 we are using SCR:s of capsule types. **See figure 8**.
Please note that this type of SCR has to be correctly mounted when tested to get the correct result.











3.8 Change the Stays

This chapter describes how to change the Stays.

CAUTION

Always make sure that the power supply is switched off before doing maintenance on the Softstarter.

WARNING

When performing maintenance on the Softstarter, an antistatic strap must be used. The antistatic strap should be worn on the wrist, and be connected to an electrical ground, to prevent electrostatic discharge (ESD) damage to the Softstarter.

WARNING

The life span of electronics can be affected by damage caused by electrostatic discharge. This can happen if a charged tool or person touches a component. Therefore it is very important that all tools and personnel are discharged by touching an earthed point before the PCBA or any of the components are touched. It is equally important to discharge the package with the new component before opening it.
A person walking on a carpet can be charged with up to fifteen thousand volt (15000V). Compare this with the fact that some sensitive components can be destroyed when discharged on a much lower level (about 100V). We kindly ask you to pay notice to this, as this is a vital point in order to ensure the life span and function of the product.

Tools:

- Torx 30 for removing the stays

3.8.1 Change the Stays

DISMANTLE THE SOFTSTARTER

Remove main power cables and control cables

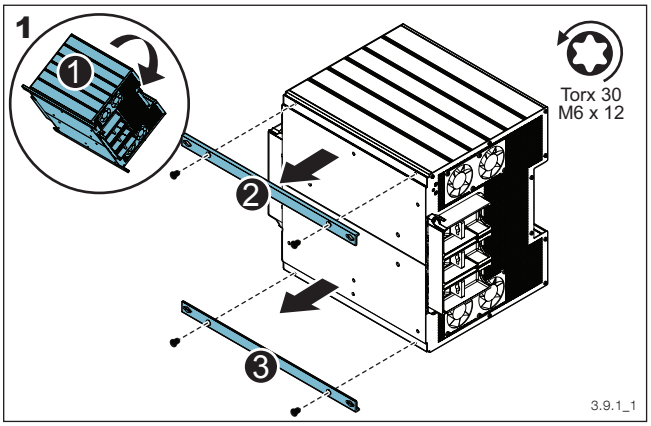
Disconnect the main power cables and the control cables as described in **chapter 3.3.3, step 1-3**.

CAUTION

Use protective gloves when working with stays to prevent cutting injuries.

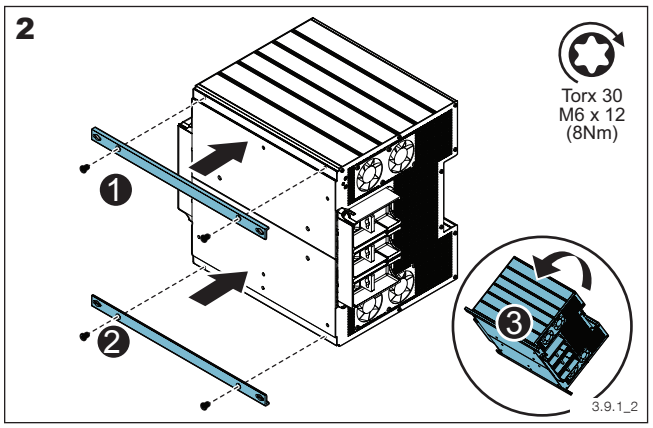
1. Remove left and right stays

❶ Rotate the Softstarter to the right.
❷ Loosen **(2x) Torx 30 M6x12** and remove the left stays.
❸ Loosen **(2x) Torx 30 M6x12** and remove the right stays.



2. Place stays

❶ Place the new left stays on the Softstarter and fasten with **(2x) Torx 30 M6x12 (8Nm)**.
❷ Place the new right stays on the Softstarter and fasten with **(2x) Torx 30 M6x12 (8Nm)**.
❸ Rotate the Softstarter to the left.



REASSEMBLE THE SOFTSTARTER

Connect main power cables and control cables

Connect the main power cables and the control cables as described in **chapter 3.3.4, step 1-2**.

4 Circuit Diagrams

4.1 Circuit diagram PSTX

4.1.1 Circuit diagram PSTX30...PSTX1250 (IEC version) 56

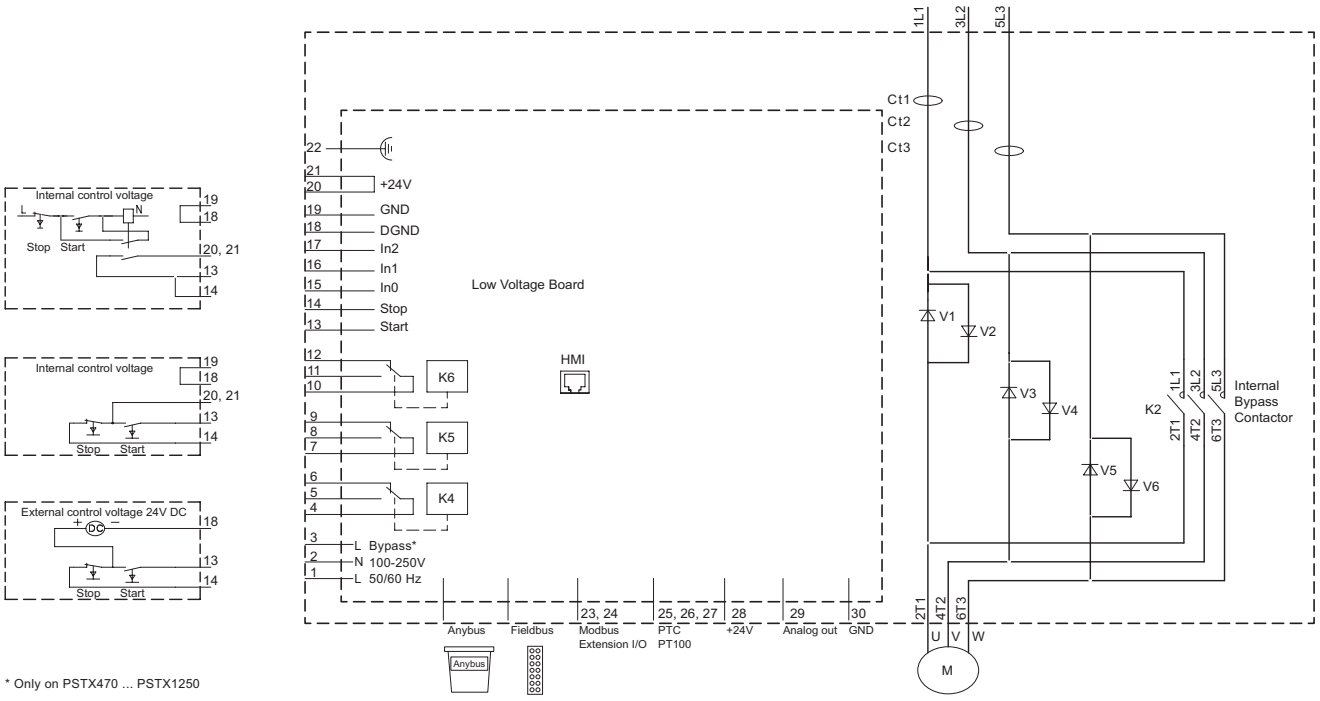
4.1.2 Circuit diagram PSTX30...PSTX1250 (UL version) 56

4.1 Circuit diagram PSTX

4.1.1 Circuit diagram PSTX30...PSTX1250 (IEC version)

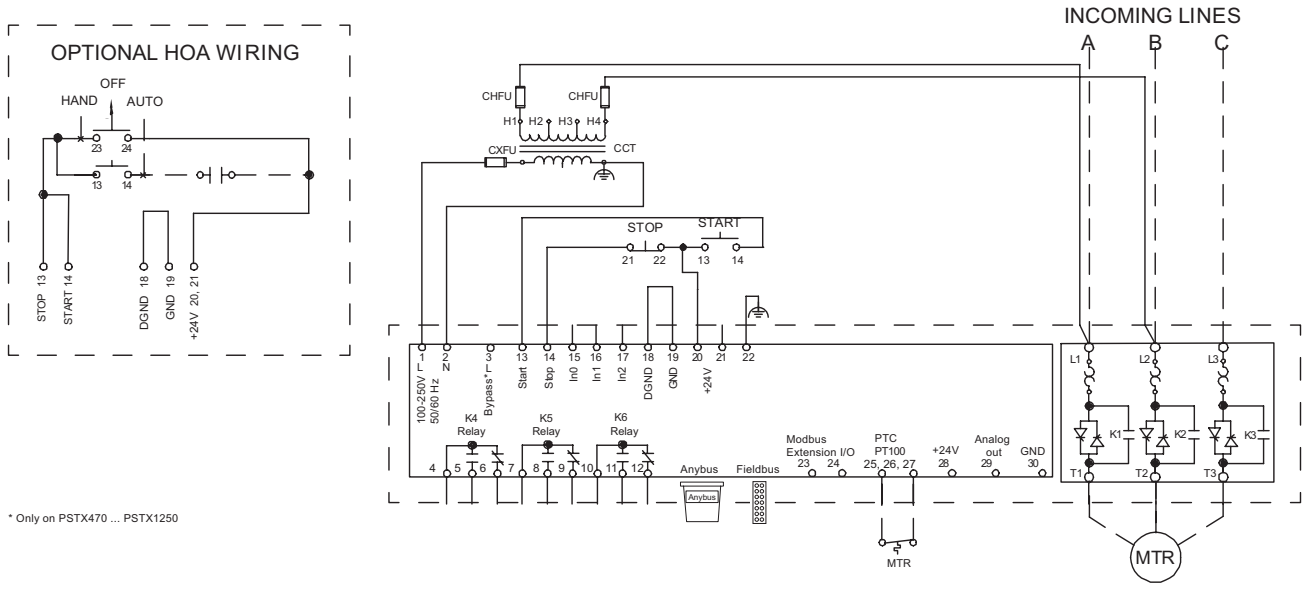
CAUTION

Terminal 22 is a function earth, it is not a protection earth. It shall be connected to the mounting plate.



* Only on PSTX470 ... PSTX1250

4.1.2 Circuit diagram PSTX30...PSTX1250 (UL version)



* Only on PSTX470 ... PSTX1250

5 Revisions

The following revisions is done on this document:

Table 5

Document number	Revision	Chapter	Description	Date
1SFC132115M0201	A		First release	2015-12-18
1SFC132115M0201	B	3	Updates	2017-06-30
1SFC132115M0201	C		Updates	2021-07-28

ABB Electrification Sweden AB
Smart Power - Motor Starting & Safety
SE-721 61 Västerås, Sweden

https://solutions.abb/softstarters

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Softstarters Type PSTX720...840 Service manual, 1SFC132115M0201 rev. C, july 2021, ABB Electrification Sweden AB