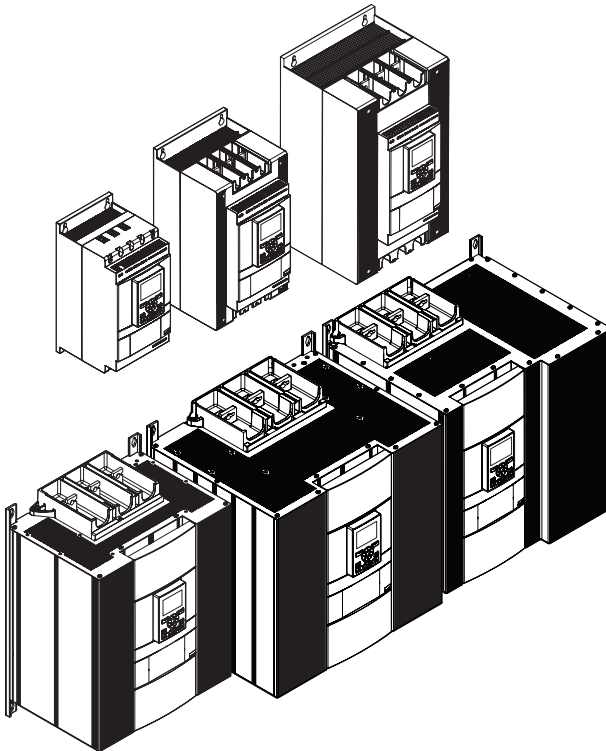

1SFC132082M9901

Softstarters Type PSTX30...PSTX1250

User Manual short form



CE according to EN /IEC 60947-4-2

This manual belongs to:

Softstarters Type PSTX30...PSTX1250 User Manual short form 1SFC132082M9901 3

1 Read this first

Thank you for selecting this ABB PSTX softstarter. Read carefully and make sure you understand all instructions before you mount, connect and configure the softstarter.

This manual is a short form manual intended for quick and easy installation of the PSTX softstarter. For complete information, see 1SFC132081M0201 - Softstarters Type PSTX30...PSTX1250, Installation and Commissioning Manual available on: <https://solutions.abb/softstarters>

- The softstarter shall be installed by authorized personnel only.
- ABB personnel must obey the ABB CISE 15.4 instructions.
- This manual is a part of the PSTX softstarter and must always be available to personnel that works with this material.
- Always read the full manual before you use the softstarter.

In the User Manual, these symbols are used:



The **caution** symbol in the left margin: if you don't obey this instruction there is a risk for personal injury.



The **warning** symbol in the left margin: if you don't obey this instruction there is a risk for damage to equipment or property



The **information** symbol in the left margin: tells the reader about relevant facts and conditions



The **graphics** symbol in the right margin: refers to graphical information.



Approved personnel are allowed to install and make the electrical connection of the softstarter in accordance with existing laws and regulations.



Examine the softstarter and the package when you unpack your new PSTX softstarter. If there are damages, please speak to the transportation company or the ABB reseller/office immediately.



Only approved personnel are allowed to do service and repair.
Note: not approved repair can effect the warranty.

Modifications to data in this manual can be applied without notice.

2 Description

The PSTX softstarter has the latest technology for soft starting and soft stopping of standard squirrel cage motors.

General data	Description
Rated insulation voltage, U_i	600 V / 690 V
Rated operational voltage, U_e	208-600 / 690 V, 50 / 60 Hz
Rated control supply voltage, U_s	100-250 V, 50 / 60 Hz
Voltage tolerance	+10% to -15%
Frequency tolerance	$\pm 10\%$
Rated impulse withstand voltage	6 kV operational circuit / 4 kV control supply circuit
Inputs	Start, stop, 3 programmable inputs, temperature sensor input
24 V output	24 V DC $\pm 5\%$ Max 250 mA
Analog output	4-20 mA, 0-20 mA, 0-10 V, 0-10 mA
Relay outputs	3 programmable
Communication	3 Fieldbus ports, Extension I/O
EMC	IEC 60947-4-2 Class A ①
Recommended fuse Control supply circuit	6 A Delayed MCB use C characteristics
Pollution degree	3



① This product has been designed for environment A. Use of this product in environment B may cause unwanted electromagnetic disturbances in which case the user may be required to take adequate mitigation measures.



For more detailed electrical data and specifications, see 1SFC132081M0201 - Softstarters Type PSTX30...PSTX1250, Installation and Commissioning Manual available on:
<https://solutions.abb/softstarters>



Suitable For Use On A Circuit Capable Of Delivering Not More Than ____ Symmetrical Amperes, ____ Volts Maximum When Protected by ____ J Class Time Delay Fuses or RK5 class Fuses or circuit breaker. Refer to 1SFC132423M0201 for corresponding current and voltage level for any given device.

For complete short circuit protection recommendations see
<https://solutions.abb/softstarters>




The product should only be used within the specified ratings. Be aware of the ambient temperature and altitude above sea level. Derating is required above 40 °C (104 °F) and above 1000 m (3281 ft). For more details, see 1SFC132081M0201 - Softstarters Type PSTX30...PSTX1250, Installation and Commissioning Manual available on:
<https://solutions.abb/softstarters>



3 Mounting

The PSTX softstarters has different sizes that you can install with M6 bolts, or bolts with the same dimension and strength.

1. Find the correct drawing with dimensions for your softstarter and make sure that you have the correct drilling plan. Drilling plan is also printed on the box.
2. If the softstarter is installed in an enclosure, make sure that the enclosure size is not smaller than the minimum recommended. Select the size from the applicable table for IEC or  .
3. Make sure that the distance to the wall and the front, and the installation angle meet the requirements.
4. Make sure that there is free flow of air through the product.
5. You can remove the HMI and use it as a remote control. Drill a hole where you want to install the HMI. Use RJ45 cable between the HMI and the softstarter. The maximum cable length is 3 m. Roll together the remaining cable to prevent blockage of the door.



Use the provided cable or another non shielded RJ45 cable. Shielded cables should not be used.



Risk of damage to property. Make sure that no liquids, dust or conductive parts can go into the softstarter.



If you do not obey these instructions, this can cause the softstarter to become overheated or not operate correctly.

4 Connection

This product is carefully manufactured and tested but there is a risk that damage can occur from such as shipment and incorrect operation. Obey to the procedure below during initial installation:



Hazardous voltage: Will cause death or serious injury. Turn off and lock out all power that supply this device before you start work on the equipment.



Mounting and electrical connection of the softstarter must be made by authorized personnel and in accordance with existing laws and regulations.



Apply the control supply voltage to make sure that the by-pass relays are in open position before you connect the softstarters PSTX30... PSTX170 to operational voltage for the first time. If not, the equipment can start accidentally.



ABB personnel must obey to the ABB CISE 15.4 instructions.

1. To mount the softstarter, refer to Chapter 3 “Mounting”.
2. Connect the main circuit: terminals 1L1 - 3L2 - 5L3 to the line side and terminals 2T1 - 4T2 - 6T3 to the motor side. Use wire connection for PSTX30...105, see Figure ❶ in graphics 7, and terminal connection for PSTX142...1250, see Figure ❷, in graphics 7.
PSTX softstarters can be connected both “In Line” and “Inside Delta” see figure 1.



Use only wires of same dimension when you connect 2 wires on each terminal (PSTX30... 105 only).

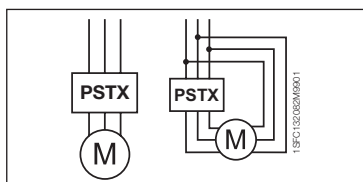


Figure 1: In Line, Inside Delta



Capacitors for power factor compensation are not allowed between the softstarter and the motor, since this can cause current peaks which can damage the thyristors in the softstarter. If you use such capacitors, they must be connected on the line side of the softstarter.

3. Connect control supply voltage to terminals 1 and 2.



4. Connect terminal 22 to the functional earth.



The earthing is not a protective earth, it is a functional earth.
The earthing cable must be as short as possible. Maximum length 0.5 m. The earthing cable must be connected to the mounting plate, which must also be earthed.

5. Look at the diagram and connect the start/stop circuits: terminal 13, 14, 18, 19 and 20/21, with the internal 24V DC terminal. When using internal 24 V DC (terminals 20 or 21), the terminals 18 and 19 should be connected to each other.



Terminal 15, 16 and 17 are programmable inputs for purposes such as reset, slow speed forward, slow speed reverse, stand still brake etc.



For usage of external supply see 1SFC132081M0201 - Softstarters Type PSTX30...PSTX1250, Installation and Commissioning Manual available on: <https://solutions.abb/softstarters>



Use 24V DC only when you connect terminal 13, 14, 15, 16 and 17. Other voltages can cause damage to the softstarter and the warranty will no longer be valid.

6. Connect terminals 4, 5, 6, 7, 8, 9, 10, 11 and 12 to use the signal output relays. These are potential free contacts for maximum 250 V AC, 1.5 A AC-15 and 30 V DC, 5 A DC-12.



7. Check that the operational voltage and control supply voltage correspond to the softstarter ratings.

8. Switch ON the control supply voltage, terminals 1 and 2.

9. Configure applicable parameters given in chapter 6, Softstarter settings.

10. Switch the operational voltage to ON.

You can be flexible when you connect the PSTX softstarter, but following the previous steps will enable operation of the PSTX softstarter. You can find an example of a full installation in the graphics section. The first one uses fuses and contactors and the second one uses a circuit breaker.



NE

Refer to the timing diagram graphics 13 for the basic behaviour of PSTX softstarter.



Built in Modbus RTU

The PSTX softstarter has an RS485 physical interface (terminals 23 and 24), that can be connected to external devices which have support for RS485 based communication. Through this interface it is possible to control the softstarter, retrieve status information and upload and download parameters. The softstarter has a Modbus RTU slave implemented via the RS485 interface. See **Figure 2**.

PTC/PT100 temperature sensor input

The softstarter has input terminals for PTC and PT100 elements (terminals 25, 26 and 27). Please note that both PTC and PT100 cannot be used at the same time. See **Figure 2**.

Analogue output

The softstarter has one output for a configurable analog output signal (terminals 29 and 30). The load resistance is maximum 500 ohm for current output and minimum 500 ohm for voltage output. See **Figure 2**.

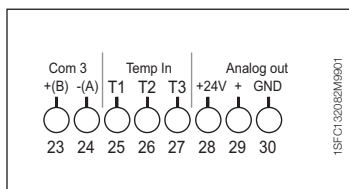


Figure 2: Terminal connection



For instructions and programming see
1SFC132081M0201 - Softstarters Type PSTX30...PSTX1250, Installation and Commissioning Manual available on:
<https://solutions.abb/softstarters>

5 Human machine interface (HMI)

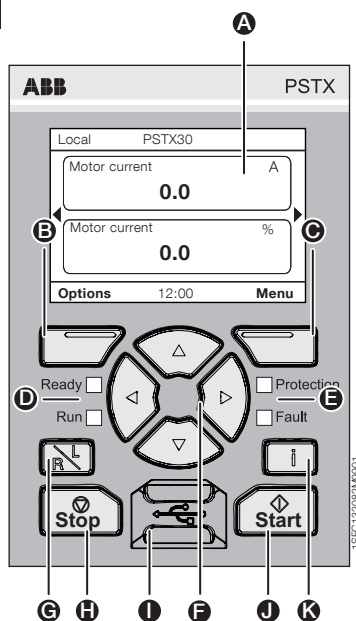


Figure 3: HMI

Refer to **figure 3** for the HMI parts:

- A** Display for information.
- B** Left selection soft key. The function is showed to the left in the display above the key.
- C** Right selection soft key. The function is showed to the right in the display above the key.
- D** Left LED indicators. Ready (green) and Run (green).
- E** Right LED indicators. Protection (yellow) and Fault (red)
- F** Navigation keys. To navigate in the menu and change the parameter values. Highlighted black board on numbers or text shown in the display indicates that the menu/value can be changed or scrolled
- G** Remote/local-key. Switch between local control from the HMI and remote control from hardwire input or fieldbus.
- H** Stop-key. Stop-switch for the softstarter. To stop the motor according to the set parameters. (Only active in local control mode).
- I** Mini USB port. For communication with external devices, eg. a PC.
- J** Start-key. Start-switch for the softstarter. To start the motor and operate it according to the set parameters. (Only active in local control mode).
- K** Information-key. For context-sensitive information about the softstarter status and settings.

Refer to the timing diagram in **graphics 13** for the basic behaviour of PSTX softstarter.

6 Softstarter settings

6.1: First start-up

When the softstarter is powered up for the first time the HMI will enter the Basic set-up assistant **. See figure 6, graphics 14.





After the set-up is complete you will enter the **Home view**.






6.2: Assistants menu

For an initial configuration of the softstarter it is recommended to use the Assistants. An Assistant is a step-by-step wizard which guides the user through a group of tasks to set-up and configure the softstarter.

Menu ► Assistants

Push , **Menu**, to enter the menu. Use  or  to highlight **Assistants** and push , **Select**.

Assistants menu	
Basic set-up	Application set-up
1. Language	1. Application set-up
2. Date and time	2. Keep/Change values
3. Motor data **	3. Tune settings
4. System configuration	4. Set-up complete
5. Set-up complete	

Use ,  and , to navigate through the steps and change the values.

See table 6.3 for a list of the parameters, and their recommended values, which can be configured through the Application set-up assistant.



**** All PSTX softstarters must be configured to the rated current of the motor. If the PSTX is connected In Line, set the parameter "01.01 Motor rated current I_e " to the value found on the rating plate of the motor. If the PSTX is connected Inside Delta, set the parameter "01.01 Motor rated current I_e " to $(1 / (\sqrt{3})) = 58\%$ of the rated motor current.**

Table 6.3: Application settings

		Recommended basic setting						
		Start ramp time	Stop ramp time	Start ramp initial level	Stop ramp end level	Current limit level	Start mode	Stop mode
Normal start (class 10)	Band saw	10	-	30	30	4	Voltage ramp	No ramp
	Bow thruster	10	-	30	30	3	Voltage ramp	No ramp
	Centrifugal pump	10	10	30	30	4	Voltage ramp	Torque ramp
	Circular saw	10	-	30	30	4	Voltage ramp	No ramp
	Conveyor belt short	10	-	40	30	3,5	Voltage ramp	No ramp
	Cutter	10	-	30	30	4	Voltage ramp	No ramp
	Escalator	10	-	30	30	3,5	Voltage ramp	No ramp
	High pressure pump	10	10	40	30	4,5	Voltage ramp	Torque ramp
	Hydraulic pump	10	-	30	30	3	Voltage ramp	No ramp
	Lift/Elevator	10	-	30	30	3,5	Voltage ramp	No ramp
	Piston compressor	5	-	50	30	3	Voltage ramp	No ramp
	Scroll compressor	2	-	50	30	3	Voltage ramp	No ramp
Heavy duty start (class 30)	Axial fan	10	-	30	30	4	Voltage ramp	No ramp
	Conveyor belt long	10	-	40	30	3,5	Voltage ramp	No ramp
	Crusher	10	-	30	30	4	Voltage ramp	No ramp
	Centrifugal fan	10	-	30	30	4	Voltage ramp	No ramp
	Grinder	10	-	30	30	4	Voltage ramp	No ramp
	Mixer	10	-	30	30	3,5	Voltage ramp	No ramp







Use the parameter values above as guidance only. Additional tuning can be necessary because of variations in load conditions.

6.4: Navigation overview

The softstarter has 10 keys on the keyboard, see **chapter 5** for details of the key function.






Menu

Push  to go to the menu and then use  or  to select a menu item. Push  to make your selection, see **figure 1, graphics 14**. The settings in the HMI can be set with numerical setting, switch setting or selection list.








The numerical setting




Use the numerical setting when a numerical value is to be set in the softstarter.

Use  and  key to select a figure, a black board highlights the selected figure. Then push  or  to change the value of the selected figure. Push , to save. See **figure 2, graphics 14**.

On/off switch

With the switch you can select 1 or 0 (on or off). Use  and , a black board highlights the selected switch. Then push  or  to change the value of the selected switch. Push , to save. See **figure 3, graphics 14**.





Selection list

Use  or , a black board highlights the selected option. Push , to save.

See **figure 4, graphics 14**.

6.5: Parameters

Menu ► Parameters

Push , **Menu**, to enter the menu. Use  or  to select **Parameters** and then push , **Select**.

- Complete list - Set parameters
- Favourites - Create your own parameter list
- Modified - All parameters that differs from default

You can find the most common parameters in **table 6.7**.

6.6: Options settings

The options menu have the following selectable sub menus:

- Edit home view
- Active faults/protections
- Active warnings
- Configure HMI

Active faults/protections and Active warnings gives information about any fault, protection and warning that have occurred during operation. For fault solution see chapter 7 Trouble shooting.

See figure 5, graphics 14.



For the sub-menus "Edit home view" and "Configure HMI" see 1SFC132081M0201 - Softstarters Type PSTX30...PSTX1250, Installation and Commissioning Manual available on:
<https://solutions.abb/softstarters>



The motor can start unexpectedly if there is a start signal present, while you do any of the procedures below:

- *Change from one type of control to a different one (i.e. fieldbus control to hardwire control or local to remote control)*
- *Reset events*
- *If you use automatic event reset*
- *If you use Auto restart*

Table 6.7: Parameter list for operational function

This is a selection of the most commonly used parameters.

For complete parameter list and setting range, see:

1SFC132081M0201 - Softstarters type PSTX30...PSTX1250, Installation and Commissioning Manual
available on: <https://solutions.abb/softstarters>

Operation functions		
Parameter name	Setting range	Default value
1.1 Motor rated current I _e	PSTX30: 9 ... 30 A ①	30 A
2.1 Start mode	Voltage ramp, Torque ramp, Full voltage start	Voltage ramp
2.2 Stop mode	Voltage ramp, Torque ramp, No ramp, Dynamic brake	No ramp
2.3 Start ramp initial level	10 ... 99 %	30%
2.4 Start ramp time	1 ... 120s	10s
2.5 Stop ramp end level	10 ... 99%	30%
2.6 Stop ramp time	1 ... 120s	10s
3.1 Current limit type	Off, Normal, Dual, Ramp	Normal
3.2 Current limit level	1.5 ... 7.5 xI _e	4.0 xI _e
Kick start ①	On/Off	Off
Slow speed ①		
Motor heating ①		
Motor braking ①		
Sequence start ①		
Automatic restart ①		
26.12 Faulty connection operation	Stop-Manual, Stop-Automatic	Stop-Manual
28.5 Step down level	10 ... 100%	80%
28.41 System mode	Normal, Demo, Small motor	Normal
28.43 Mains connection	Auto, In line, Inside delta UI, Inside delta IU, Two phase (L1 Shorted), Two phase (L2 Shorted), Two phase (L3 Shorted)	Auto
28.42 Limp mode	On/Off	Off

① For full parameter list, see 1SFC132081M0201
- Softstarters Type PSTX30...PSTX1250, Installation and Commissioning Manual
available on: <https://solutions.abb/softstarters>

Protections

Parameter name	Setting range	Default value
13.1 EOL mode	Normal/Dual	Normal
13.2 EOL class	10 A, 10, 20, 30	10
13.3 EOL dual class	10 A, 10, 20, 30	20
13.5 EOL operation	Off, Stop-Manual, Stop-Automatic, Indication	Stop-Manual
13.10 Locked rotor operation	Off, Stop-Manual, Stop-Automatic, Indication	Off
14.5 Current underload operation	Off, Stop-Manual, Stop-Automatic, Indication	Off
15.4 Over voltage operation	Off, Stop-Manual, Stop-Automatic, Indication	Off
15.7 Under voltage operation	Off, Stop-Manual, Stop-Automatic, Indication	Off
16.2 Phase reversal operation	Off, Stop-Manual, Stop-Automatic, Indication	Off
16.9 By-pass open operation	Off, Stop-Manual, Stop-Automatic, Indication	Indication
18.5 Earth fault trip time	0,1s ... 10,0s	0,5s
18.7 Earth fault operation	Off, Stop-Manual, Stop-Automatic, Indication	Off

Warnings

Parameter name	Setting range	Default value
20.1 EOL level	40 ... 99%	90%
20.3 EOL warning	On/Off	Off
20.7 Locked rotor	On/Off	Off
20.9 Thyristor overload	On/Off	Off
21.5 Current underload	On/Off	Off
22.4 Over voltage	On/Off	Off
22.8 Under voltage	On/Off	Off
23.1 EOL time-to-trip	On/Off	Off
23.4 THD(U) level	1...10%	10%
23.6 THD(U)	On/Off	Off
24.1 Number of starts limit	1 ... 65535	65535
24.3 Number of starts	On/Off	Off
23.8 Short circuit	On/Off	Off

7 Troubleshooting

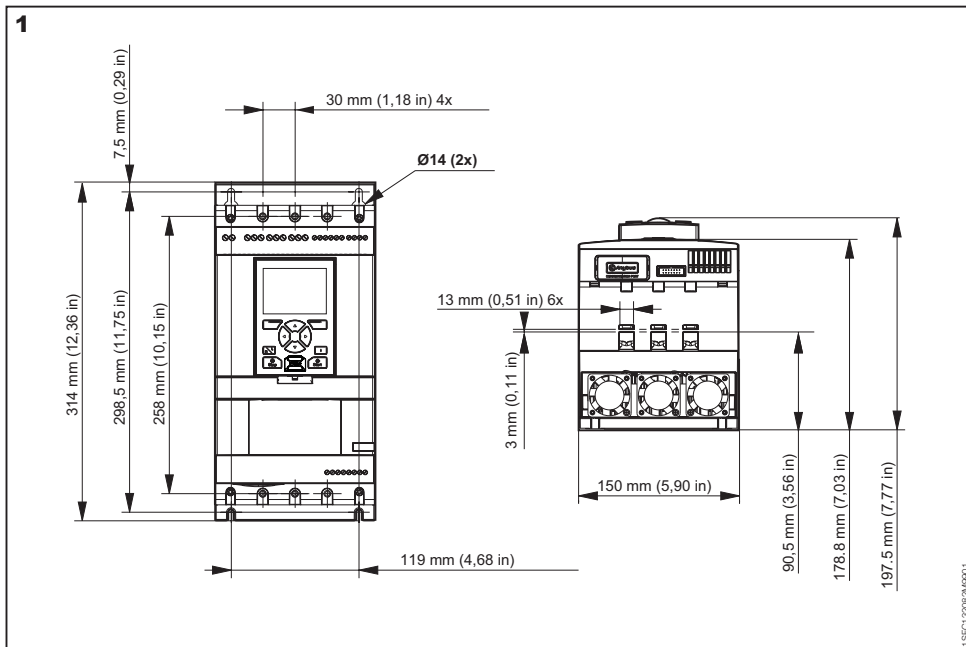
Depending on PSTX Softstarter configuration, different events may be signalled on the display. See Event list Table 7.1.

	Table 7.1: Event list	Description
Protections	Electronic overload	The motor has been overloaded because of too high current over a certain time. Check starting conditions and EOL settings.
	Locked rotor	The motor is running stiff. A damaged bearing or a stucked load could be possible causes. Check the load and the motor.
	Phase reversal	The phase sequence is not correct. Change the phase sequence on the line side to (L1→L2→L3).
	Current imbalance	Current imbalance between the phases. Restart the motor and check the main currents and voltage.
	Current underload	The motor current has fallen below the settable value. Check that the motor current parameter (Ie) is set correctly.
	User defined protection	Check the external sensor.
	Earth fault	Equipment protection. In a symmetrical three phase system, the sum of the instantaneous line currents is equal to zero. Earth fault indicates if the sum differs more than a settable value. This can indicate a serious condition of the motor.
	Over voltage	The mains voltage is too high. Check the mains voltage.
	Under voltage	The mains voltage is too low. Check the mains voltage.
	Voltage imbalance	Voltage imbalance between the phases. Restart the motor and check the mains voltage.
	PT100 protection	The external thermal sensor has detected a temperature higher than the trip level. Check the root cause of the overheating.
	PTC protection	The external thermal sensor has detected a temperature higher than the trip level. Check the root cause of the overheating.
	Power factor underload	The power factor has fallen below the trip level.
	Too long current limit	The time at current limit has exceeded the set value. The starting condition is too heavy for the set current limit. Check starting conditions and parameters.
	Bypass open fault	The bypass contactor or relay does not close when reached TOR. Contact ABB sales office for service.
	Fieldbus communication failure	There is a communication disturbance between the softstarter and PLC.
	24V output	Check the hardwire inputs.
	HMI failure	There is communication disturbance between the softstarter and the HMI. Check the connection to the HMI.
	Extension IO failure	There is communication disturbance between the softstarter and the extension I/O module. Check the connection to the I/O module.
	Max number of starts	The settable maximum number of starts per hour has been reached.
	Auto-restart time-out	The time between trip and auto-restart attempt exceeds setting.
	Too long start time	It takes too long time to soft start the motor. Check starting conditions and current limit setting.
	Frequency range	The frequency has been outside the allowed range longer than the allowed time.

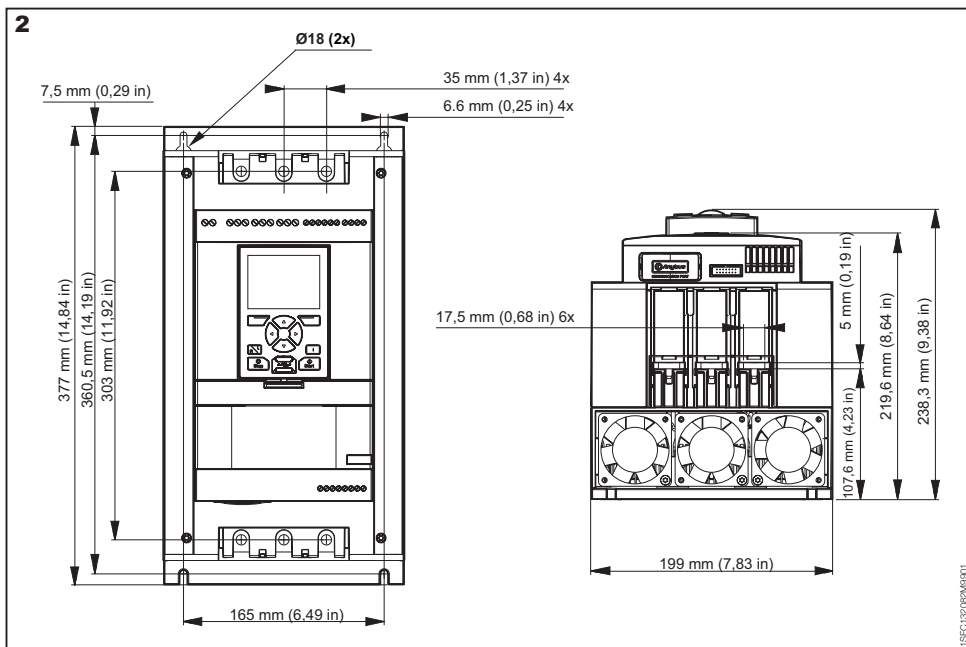
		Description
Faults	High current	A fault current, higher than 8 times the softstarter ratings, has occurred. Check the circuits including the motor for any insulation fault, phase to phase fault or earth fault.
	Phase loss	Voltage to one or more phases missing. Check that the mains are connected and that no line contactor or breaker is open.
	Heat sink overtemperature	The heat sink temperature is too high. Check the starting conditions and the fans. Increase current limit if needed. Let the softstarter cool down before restart.
	Bad network quality	Excessive disturbances in the operational supplying network. Check for harmonics or frequency disturbance in the supply network.
	Shunt fault	The softstarter can not stop the motor due to internal short circuit. Contact ABB sales office for service.
	Low supply voltage	Too low control supply voltage on terminals 1 and 2. Check for voltage dips or interruptions.
	Thyristor overload	The thyristors are overheated. Check the starting conditions and the fans. Increase current limit if needed. Let the thyristors cool down before restart.
	Short circuit thyristor	One or several thyristors are shorted. Contact ABB sales office for service.
	Open circuit thyristor	One or several thyristors are not conducting. Contact ABB sales office for service.
	Unspecified fault	Internal fault in the softstarter. Disconnect and reconnect the supply voltage. If fault remains, contact ABB sales office for service.
	Invalid ID	A valid softstarter ID has not been set.
	Faulty connection	Motor is connected in a faulty way.
	Faulty usage	It is not allowed to use the functions jog, motor heating and stand still break when the softstarter is connected inside delta.

		Description
Warning	Current imbalance	Current imbalance between the phases. Restart the motor and check the mains currents and voltage.
	Current underload	The motor current has fallen below the warning level. Check that the motor current parameter (Ie) is set correctly.
	Fan failure	One or several fans are not working properly. Risk of overheating. Contact ABB sales office for service.
	EOL warning	The motor is nearly overloaded because of too high current over a certain time. Check starting conditions and EOL settings.
	Locked rotor	The motor current has exceeded the warning level. The motor is running stiff. A damaged bearing or a stucked load could be possible causes. Check the load and the motor.
	Over voltage	The main voltage is nearly out of range.
	Under voltage	The main voltage is nearly out of range.
	Power factor underload	The power factor has fallen below the warning level.
	THD(U)	THD has exceeded the warning level. Check quality of the network.
	Thyristor overload	The calculated thyristor temperature has exceeded the warning level. Check the starting conditions and the fans. Increase current limit if needed.
	Voltage imbalance	Voltage imbalance between the phases has exceeded the warning level. Check the mains voltage.
	Short circuit	There is an internal short circuit and the softstarter is running in limp mode. Contact ABB sales office for service.
	EOL time-to-trip	The predicted time before EOL trip has fallen below the warning level.
	Phase loss	Voltage to one or more phases missing. Check that the mains are connected and that no line contactor or breaker is open.
	Number of starts limit	The configurable limit for Number of starts (resettable) have been reached. The warning will stay active until the Number of starts (resettable) value have been reset. Use menu: Menu → Settings → Reset to defaults → Reset operating data and select Number of starts (resettable) to perform the reset.
	Motor run time limit	The configurable limit for Motor run time (resettable) have been reached. The warning will stay active until the Motor run time (resettable) value have been reset. Use menu: Menu → Settings → Reset to defaults → Reset operating data and select Motor run time (resettable) to perform the reset.

PSTX30...PSTX105

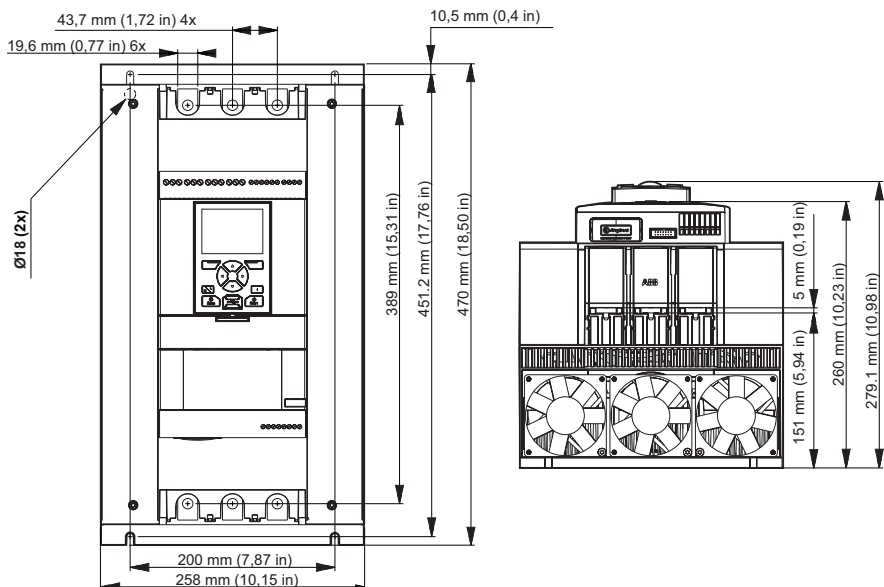


PSTX142...PSTX170



PSTX210...PSTX370

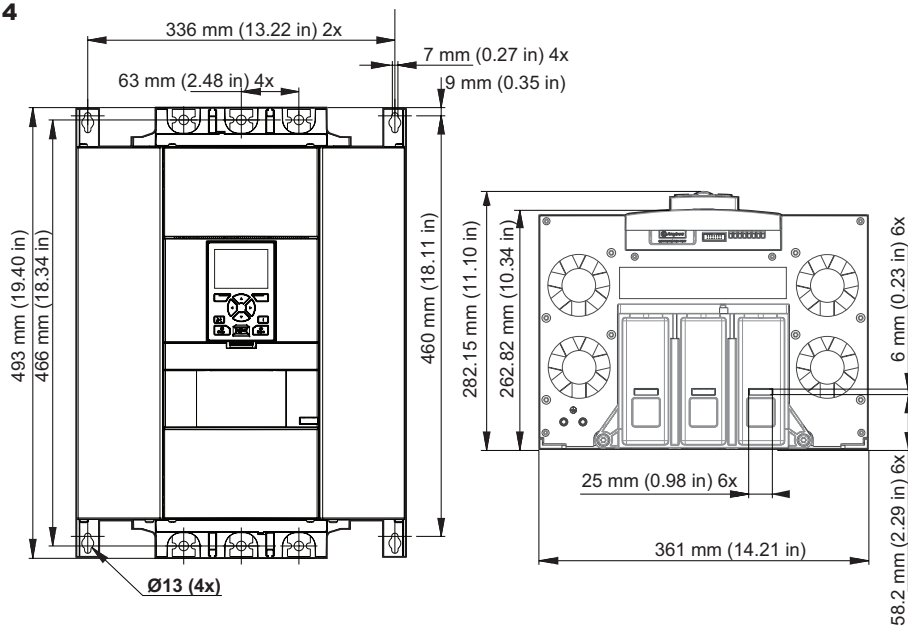
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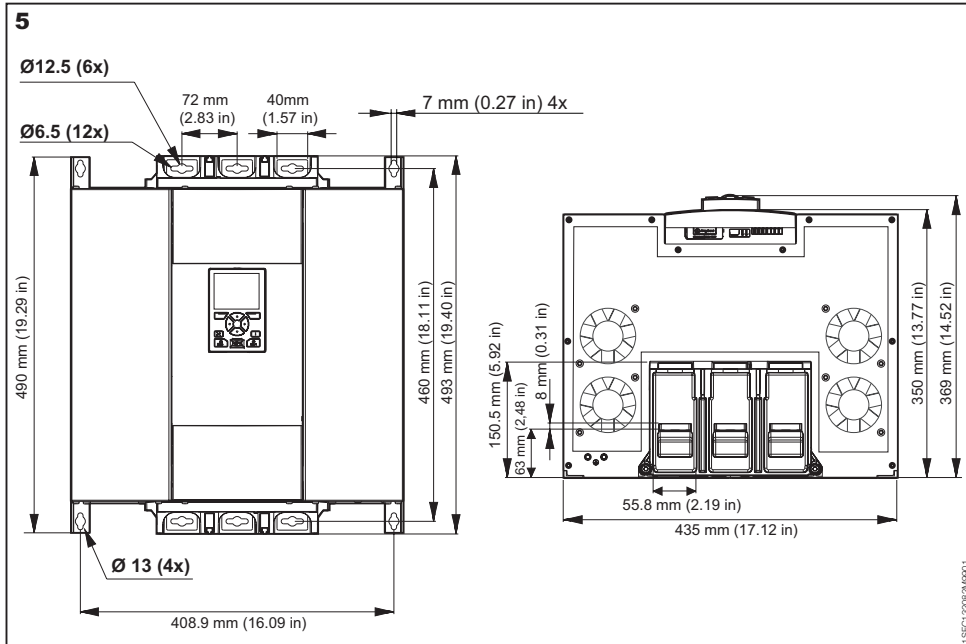
PSTX470...PSTX570

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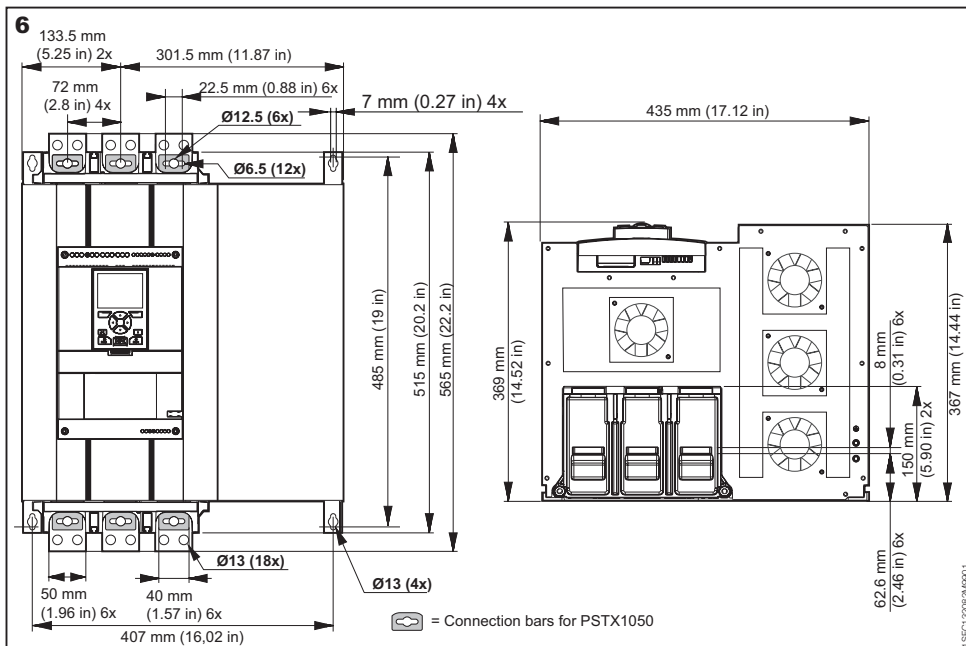


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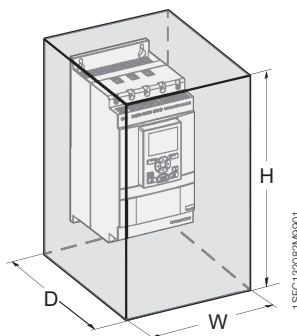
PSTX720...PSTX840



PSTX1050...1250



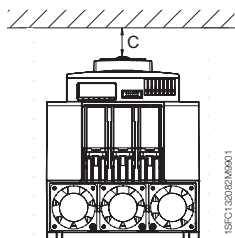
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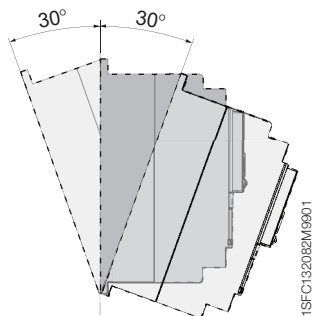
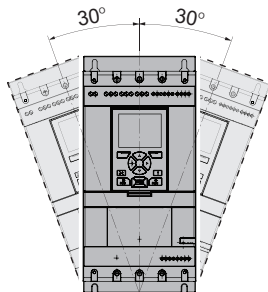
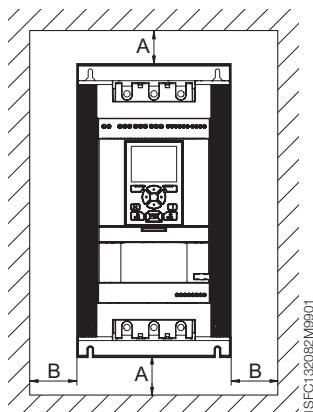
IEC	H (mm)	W (mm)	D (mm)
PSTX30...105	610	508	305
PSTX142...170	762	610	305
PSTX210...370	914	762	305
PSTX470...570	1219	914	405
PSTX720...840	1524	914	405
PSTX1050...1250	1524	914	405

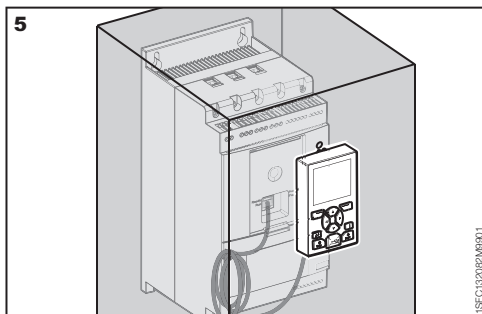
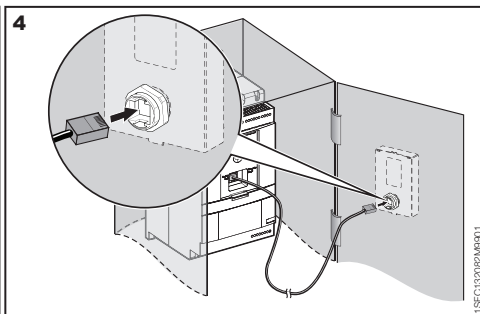
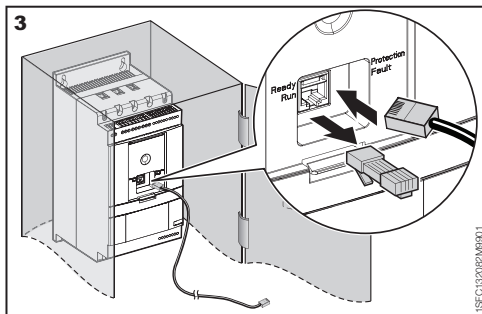
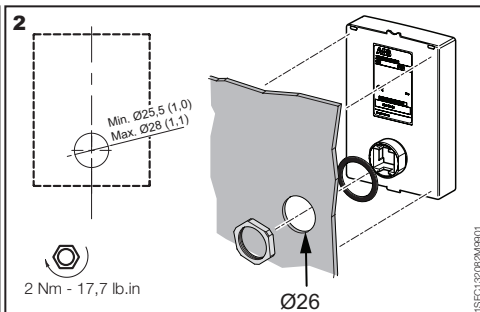
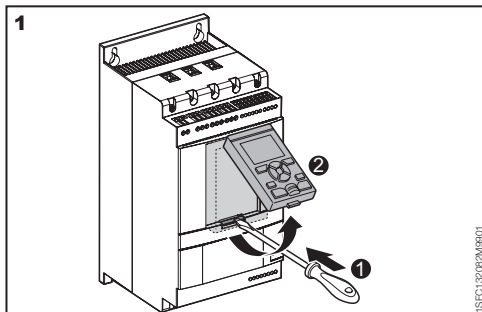
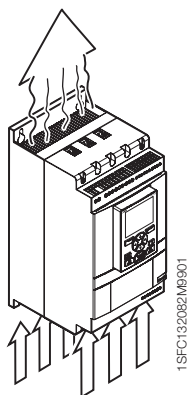
cULus	H (in)	W (in)	D (in)	Minimum number of latches
PSTX30...105	24	20	10	2
PSTX142...170	30	24	12	4
PSTX210...370	30	24	12	4
PSTX470...570	48	36	16	8
PSTX720...840	60	36	16	8
PSTX1050...1250	60	36	16	8

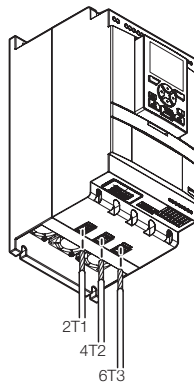
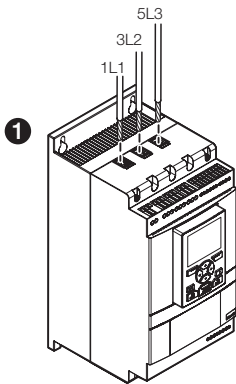
04



	A (mm)	B (mm)	C (mm)	A (in)	B (in)	C (in)
PSTX30...105	100	10	20	3.94	0.39	0.787
PSTX142...170	100	10	20	3.94	0.39	0.787
PSTX210...370	100	10	20	3.94	0.39	0.787
PSTX470...570	150	15	20	5.905	0.590	0.787
PSTX720...840	150	15	20	5.905	0.590	0.787
PSTX1050...1250	150	15	20	5.905	0.590	0.787

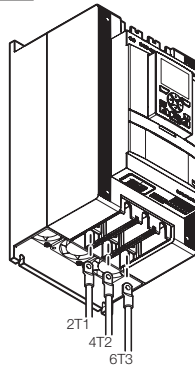
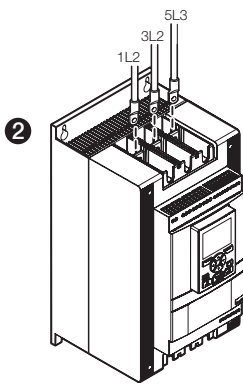






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<p>PSTX30...105</p>	<p>M8</p> <p>8 Nm - 71 lb.in</p> <p>AWG6 ... 2/0 Cu 75°C only Rigid: 10 ... 95 mm² Flexible: 10 ... 70 mm² Rigid/flexible: 2x6 ... 2x35 mm²</p>
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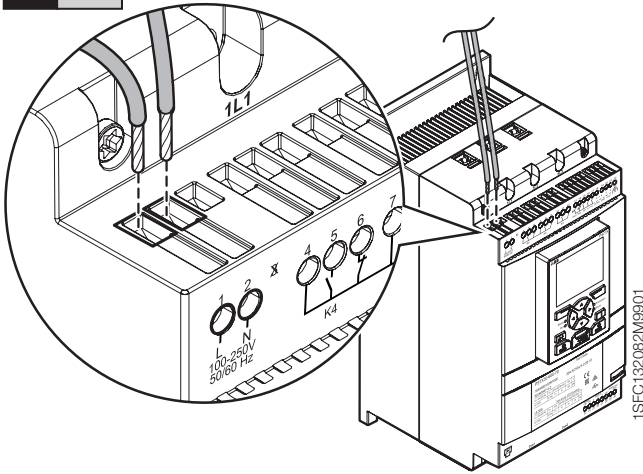
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<p>PSTX142...170</p>	<p>11/6-16 UNF-2A</p> <p>275 lb.in</p>	<p>Using connection module</p> <p>ATK185: AWG4 to 300kcmil Al Cu 75°C only</p>	<p>M8</p> <p>18 Nm - 160 lb.in</p>	<p>Using connection bars</p>
<p>PSTX210...370</p>	<p>3/4-16 UNF-2A</p> <p>375 lb.in</p>	<p>Using connection module</p> <p>ATK300: AWG4 to 400kcmil ATK300/2: AWG4 to 500kcmil or 2xAWG4 to 2x500kcmil Al Cu 75°C only</p>	<p>M10</p> <p>28 Nm - 240 lb.in</p>	<p>Using connection bars</p>
<p>PSTX470...570</p>	<p>5/8-18 UNF-2A</p> <p>275 lb.in</p> <p>3/4-16 UNF-2A</p> <p>375 lb.in</p>	<p>Using connection module</p> <p>ATK580/2: 2xAWG2/0 to 2x500 kcmil ATK750/3: 3xAWG2/0 to 3x500 kcmil Al Cu 75°C only</p>	<p>M10</p> <p>35 Nm - 310 lb.in</p>	<p>Using connection bar</p>
<p>PSTX720...840</p>	<p>5/8-18 UNF-2A</p> <p>275 lb.in</p> <p>3/4-16 UNF-2A</p> <p>375 lb.in</p>	<p>Using connection module</p> <p>ATK580/2: 2xAWG2/0 to 2x500 kcmil ATK750/3: 3xAWG2/0 to 3x500 kcmil Al Cu 75°C only</p>	<p>M12</p> <p>45 Nm - 398 lb.in</p>	<p>Using connection bars</p>
<p>PSTX1050...1250</p>			<p>M12</p> <p>45 Nm - 398 lb.in</p>	<p>Using connection bars</p>

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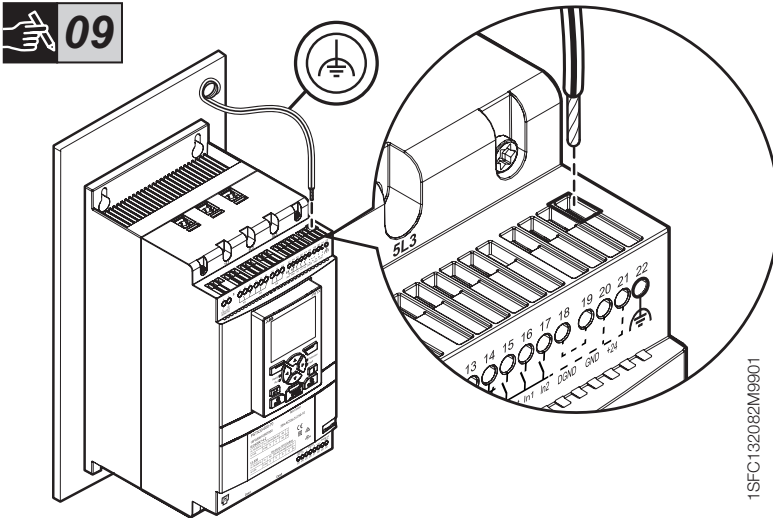
08



	<p>M3,5</p> <p>0,5 Nm 4,3 lb.in</p>	<p>3,5 x 0,6 mm (0.138 x 0.024 in)</p>	<p>AWG 12 ... 24</p> <p>0,2 .. 2,5 mm² 2x0,2 .. 1,5 mm²</p> <p>0,2 .. 2,5 mm² 2x0,2 .. 1,5 mm²</p>
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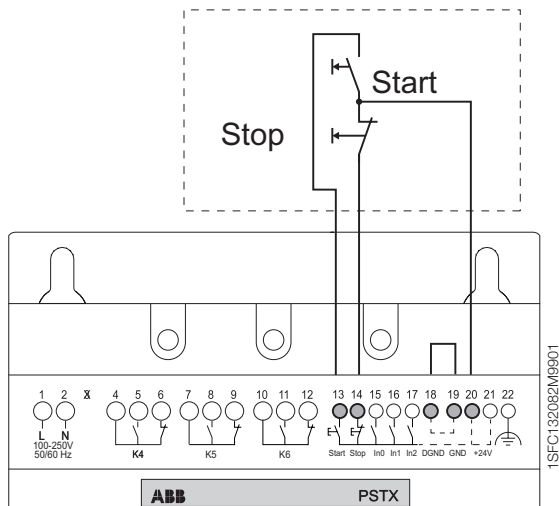
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09



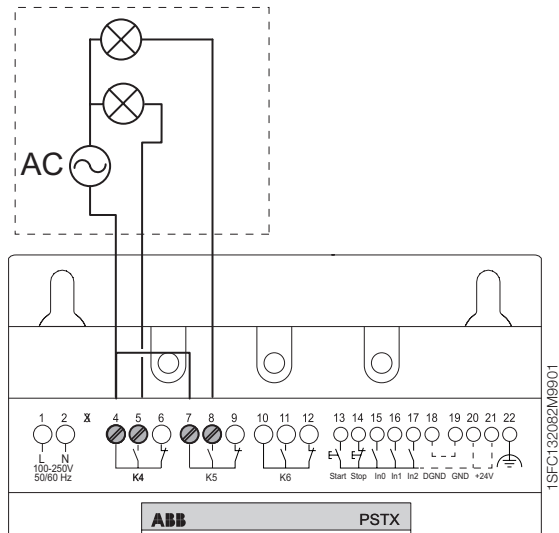
	<p>M3</p> <p>0,5 Nm 4,3 lb.in</p>	<p>3,5 x 0,6 mm (0.138 x 0.024 in)</p>	<p>AWG 12 ... 24</p> <p>0,2 .. 2,5 mm² 2x0,2 .. 1,5 mm²</p> <p>0,2 .. 2,5 mm² 2x0,2 .. 1,5 mm²</p>
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**10**

	M3 0,5 Nm 4,3 lb.in	3,5 x 0,6 mm (0.138 x 0.024 in) 	AWG 12 ... 24 0,2 .. 2,5 mm ² 2x0,2 .. 1,5 mm ² 0,2 .. 2,5 mm ² 2x0,2 .. 1,5 mm ²
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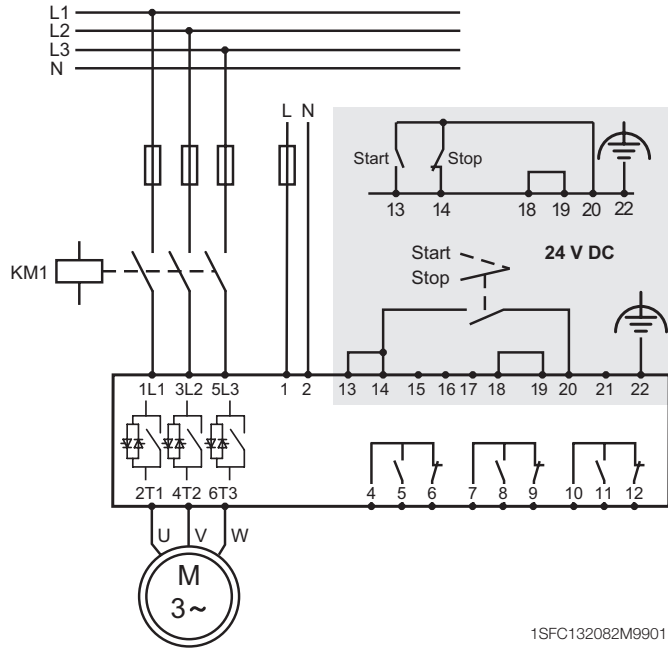
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**11**

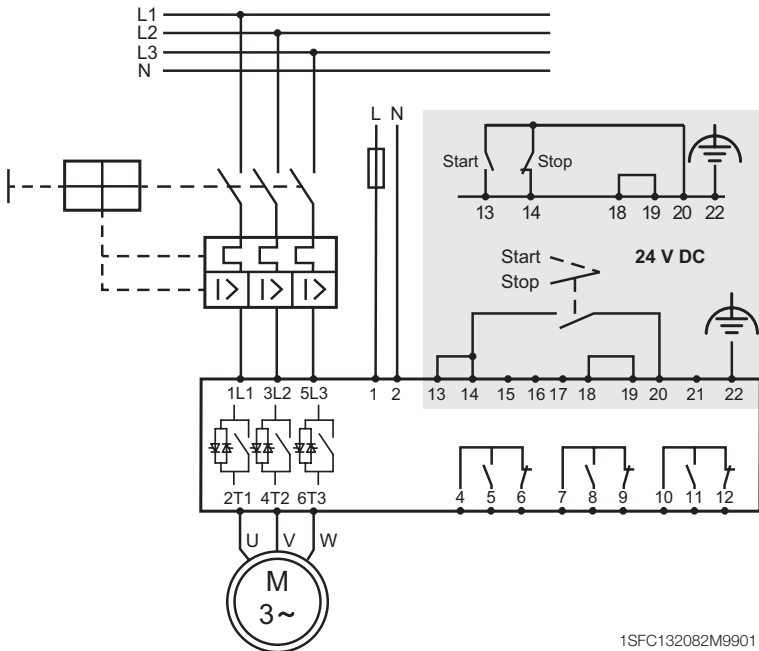
	M3,5 0,5 Nm 4,3 lb.in	3,5 x 0,6 mm (0.138 x 0.024 in) 	AWG 12 ... 24 0,2 .. 2,5 mm ² 2x0,2 .. 1,5 mm ² 0,2 .. 2,5 mm ² 2x0,2 .. 1,5 mm ²
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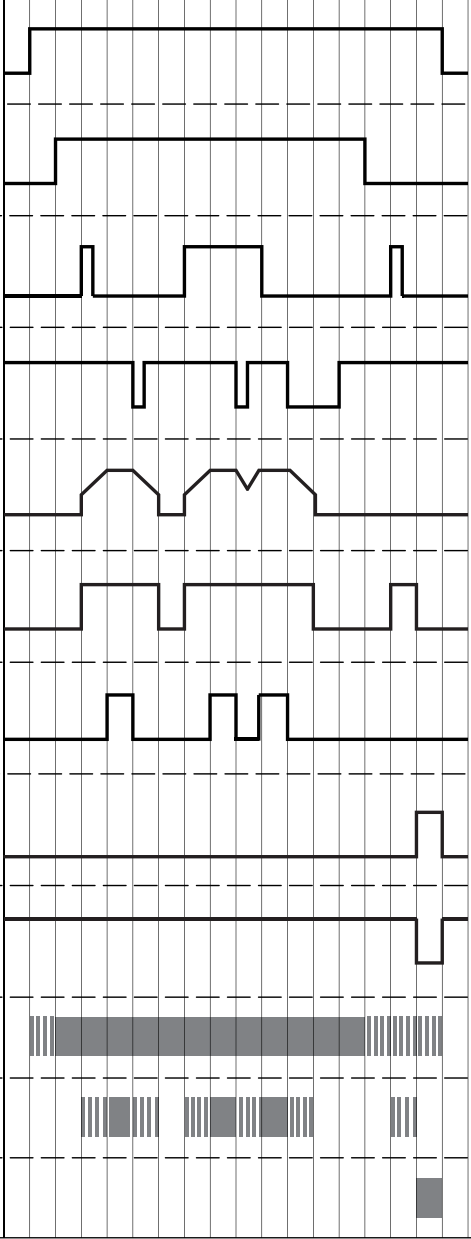
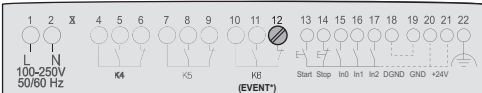
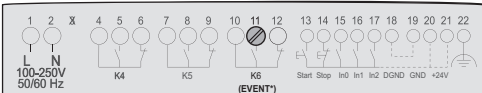
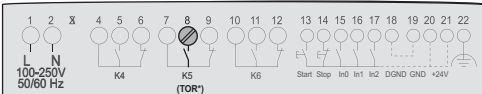
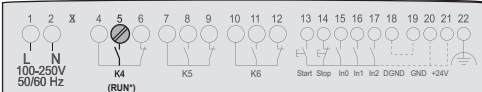
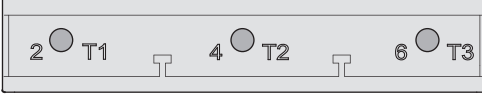
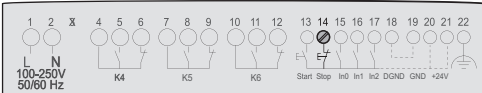
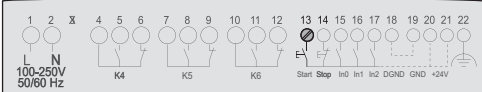
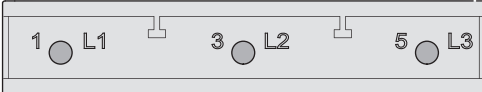




Circuit diagram PSTX30...PSTX1250 (Fuse and contactor version)



Circuit diagram PSTX30...PSTX1250 (MCCB version)



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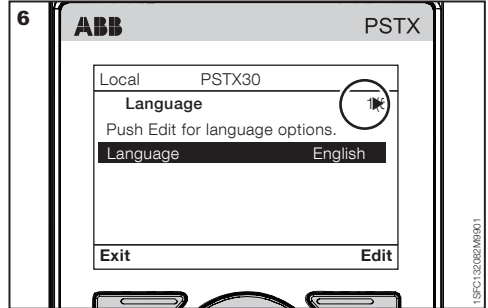
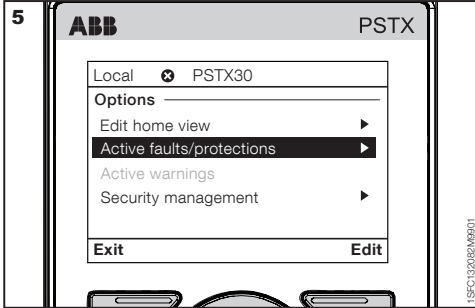
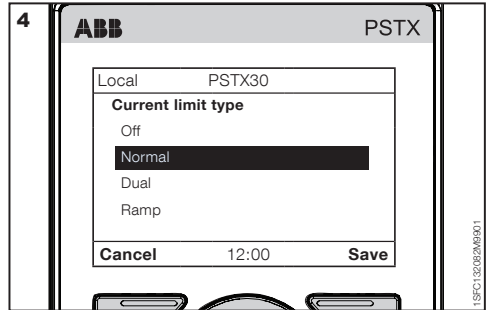
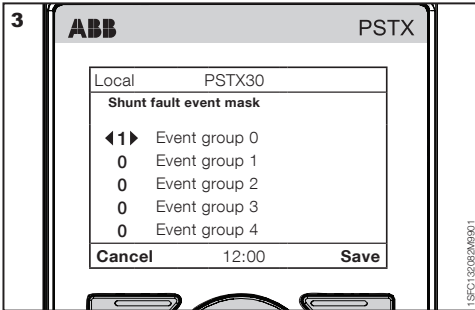
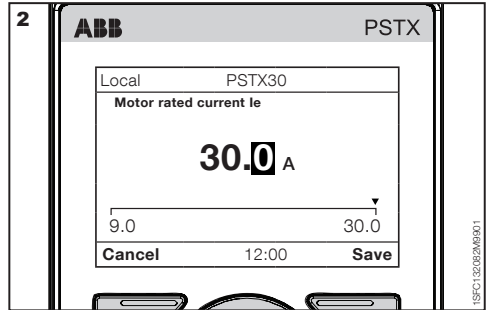




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