

Quick installation and start-up guide  
PRO-33.0-TL-OUTD

EN



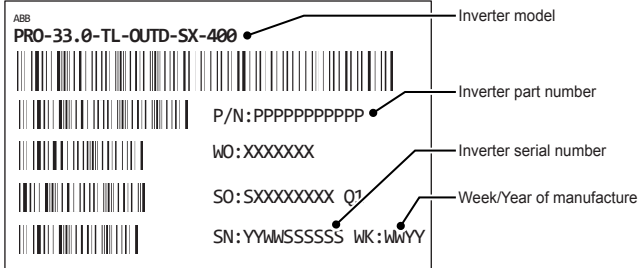
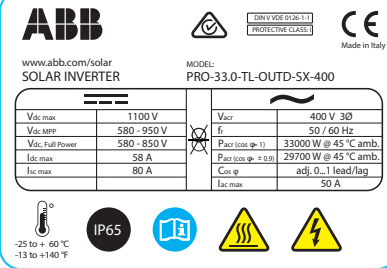
In addition to this guide, read and obey the safety and installation information in the product manual. Use the unit only as described in the documentation. Failure to do so can cause a risk of injury or equipment malfunction.

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1. Labels and Symbols

The labels on the unit contain the primary technical data and identify the equipment and manufacturer.



Do not remove, hide, cover or damage any labels that are attached to the unit.

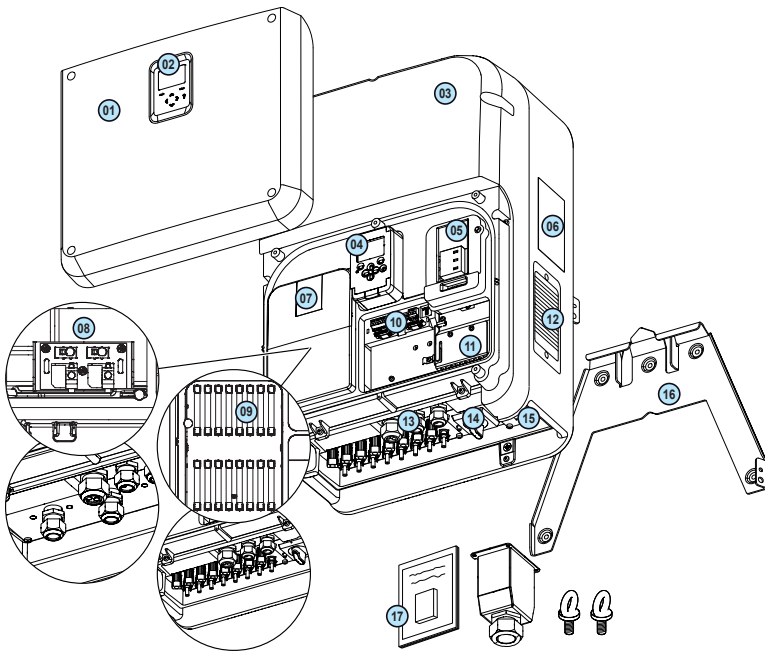
The warnings and symbols used in this document and on the equipment:

	Refer to the instructions		Risk of danger		Risk of electric shock		Hot surface
	Ingress protection rating		Operating temperature range		No isolation transformer		Direct current
	Positive and negative poles for DC input		Use safety clothing and personal safety equipment		Protective ground terminal		Risk of electric shock for the indicated time after equipment isolation

2.

Inverter Models and Components

Model	Description
PRO-33.0-TL-OUTD-400 (Standard model)	1 DC input connection with screw terminals to an external string combiner box.
PRO-33.0-TL-OUTD-S-400 (-S model)	Standard model specification with an added integrated DC switch which isolates the PV array from the electrical grid. Advanced integrated string combiner box with: <ul style="list-style-type: none"><li>• Integrated DC switch, which isolates the PV array from the electrical grid.</li><li>• 8 string inputs with PV quick connectors.</li><li>• Monitored string fuses (16 pcs) for both positive and negative inputs.</li><li>• String current monitoring with configurable alarm limit.</li><li>• Replaceable monitored surge protection device for DC input, Type II.</li></ul>
PRO-33.0-TL-OUTD-SX-400 (-SX model)	

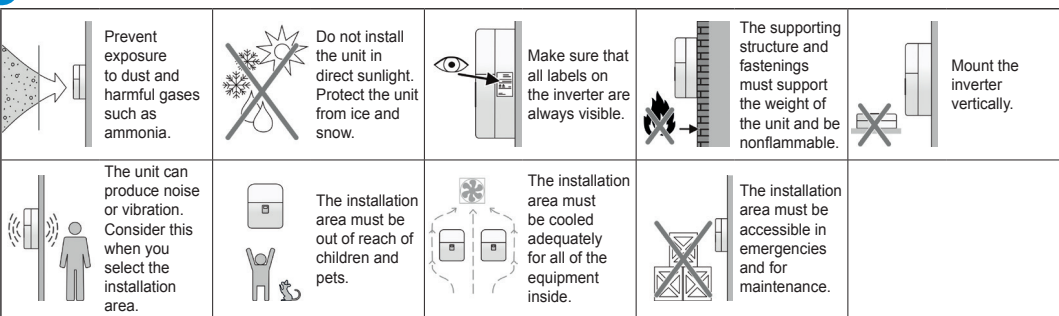


Main components

- 01 First cover
- 02 Display and keypad
- 03 Second cover
- 04 Control unit
- 05 Monitored input surge protection devices (-SX)
- 06 Type designation label
- 07 DC input cover
- 08 DC input (standard & -S): Screw terminals and cable glands
- 09 DC input (-SX): PV quick connectors and monitored string fuses, 16 pcs
- 10 Control board terminals
- 11 Internal fan
- 12 External fans, 2 pcs (one on each side)
- 13 Cable glands for control cables, 3 pcs
- 14 DC switch (-S & -SX)
- 15 AC output terminal
- 16 Wall mounting plate
- 17 Supplied accessories: Documentation and installation accessories

3.

Installation requirements

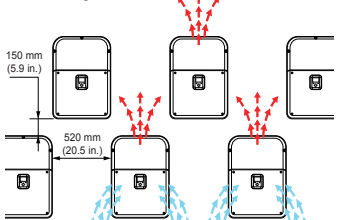
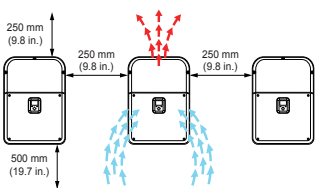


Make sure that:

- You obey the minimum installation clearances.
- There is sufficient cooling airflow.
- The cooling fans can be accessed for maintenance.
- The inverter labels can be read.

Recommendations:

- If it is possible, install several inverters in one row, not on top of each other.
- Leave as much space between several inverters as possible.
- Install inverters as low as possible.
- When you install inverters on top of each other, obey the minimum clearances in the figure.



4.

Mechanical installation

**WARNING!** ABB recommends that you use a hoist to lift the heavy unit. Obey local working safety regulations. The unit weighs approximately 67 kg (148 lbs) and it is top heavy.

Mechanical installation procedure

- 1.Examine the delivery for damage.
- 2.Unpack the delivery.
- 3.Make sure that the delivery has the correct items.
- 4.Make sure that the installation area is ready.
- 5.Install the wall-mounting plate.
- 6.Move the unit to the installation area.
- 7.Lift the unit onto the wall-mounting plate.
- 8.Lock the unit to the wall-mounting plate.

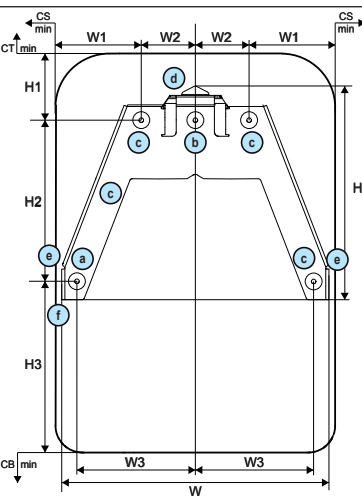
Wall-mounting plate

- a Wall-mounting plate (place behind inverter)
- b Pilot securing point, Ø 8.5 mm
- c Wall securing points, 4 pcs, Ø 8.5 mm
- d Cantilever support to hang inverter
- e Securing point to inverter, 2 pcs
- f Slot for padlock

Mounting dimensions						Clearances				
Units	H	H1	H2	H3	W	W1	W2	W3	CB	CS
mm	395	128	300	319	497	162	100	220	500	250
inches	15.55	5.04	11.81	12.56	19.57	6.38	3.94	8.67	20	10

To install the wall-mounting plate

- 1.Use the pilot securing point (b) to mark the position of the wall-mounting plate.
- 2.Make a hole in the surface and install a plug, if it is necessary.
- 3.Install the pilot screw, but do not tighten it.
- 4.Let the wall-mounting plate hang from the pilot screw or use a spirit level to make sure it is level.
- 5.Mark the remaining 4 securing points (c).
- 6.If it is necessary, make holes in the mounting surface and install plugs.
- 7.Fasten the wall-mounting plate to the mounting surface.
- 8.Tighten the pilot securing screw.



Move the unit

Move the unit to the installation area.

To use a hoist:

- 1.Install the 2 eye bolts (M12) to the top of the inverter.
- 2.Attach the lifting hooks to both eye bolts.
- 3.Lift the inverter carefully and steady it manually.

To move the inverter by hand:

- At least two persons are required (obey local occupational safety regulations).
- Lift the inverter upright carefully.
- Use the handholds on the bottom of the inverter.

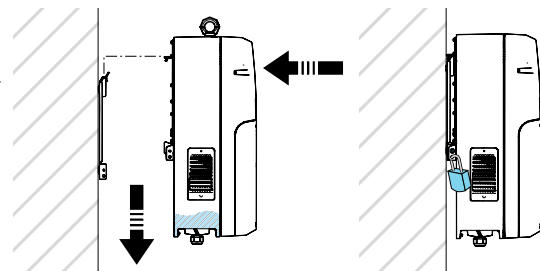
Mechanical installation

5.

Electrical installation

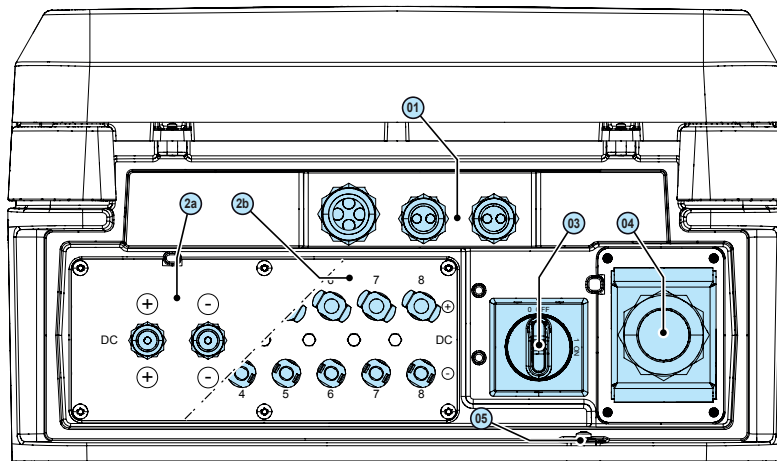
Lift the inverter onto the wall-mounting plate

- 1.Lift the inverter vertically from the lifting positions on the sides of the connection area.
- 2.Move the inverter so that it is slightly above and that it touches the wall-mounting plate.
- 3.Lower the inverter on to the wall-mounting plate.
- 4.Install and tighten the 2 M5x20 (T25) screws (one on each side) to secure the inverter to the wall-mounting plate.
- 5.Place a padlock to prevent unauthorized removal of the inverter.



**WARNING!** Do not do electrical work on the unit unless you are a qualified electrician. Failure to obey the safety instructions can cause injury or death, electromagnetic interference and equipment malfunction.

**WARNING!** Do not do electrical installation or cabling work, if the inverter is connected to the electrical grid or to the PV arrays.

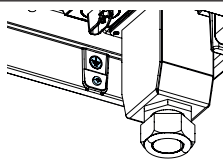


Connection area layout

- Cable glands for control cables:
  - 1x M32 with a plug insert with four 8 mm holes and plugs.
  - 2x M25 with a plug insert with two 6 mm holes and plugs.
- Standard and -S models: DC input cable glands 2x M20 for cable diameters 6...12 mm.
- SX model: DC inputs with PV quick connectors (16 pcs)
- DC switch (-S & -SX)
- AC output connection
- Position for additional PE cable and cable lug, M5 thread

Connection procedure

- 1.Connect the AC cabling.
- 2.If it is necessary, install a protective earth (PE) connection to the auxiliary PE point.
- 3.Connect the DC input cables to the inverter.
- 4.Install the control cables.
- 5.Install the option modules and cables.
- 6.Make sure that all wiring is correct, safe and secure.



6.

AC connection

AC cabling connection

- 01 Isolate the inverter from all power sources.
- 02 Remove 120 mm of the outer insulation jacket from the AC cable.
- 03 Remove 19 mm of the insulation jacket of each conductor. Use only non-insulated wire-end sleeves. Insulated sleeves can cause damage to the AC connector. If a cable screen/shield is used as a PE conductor, mark the screen with yellow/green insulation tape.
- 04 Put the AC cable through the AC connector body and rubber grommet.
- 05 Install the conductors in the correct L3, L2, L1, N and PE terminals.
- 06 Tighten the terminal screws to 4...4.5 N·m with a 1.0x5.5 flat screwdriver.
- 07 Put the connector housing over the terminals in the correct orientation. Make sure that the rubber seal of the connector housing is in position.
- 08 Tighten the 4 screws to 4 N·m (T25).
- 09 Tighten the cable gland of the connector housing to 7.5 N·m.
- 10 If it is necessary, attach an additional PE connector with a cable lug to the second PE connection point.

