ABB solar inverters Quick installation guide TRIO-50.0-TL-OUTD

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In addition to the information given below, it is mandatory to read and observe the safety information and installation instructions shown in the installation manual. The technical documentation and the interface and management software for the product are available on the website.

The equipment must be used in accordance with this manual and all other ABB documentation. Otherwise, the protections provided and performance guaranteed by the inverter may be affected.

The inverter model must be chosen by a specialized technician who has a good knowledge of the installation conditions, the devices that will be installed externally to the inverter and whether it will eventually be integrated into an existing system. The power module is the same for all inverters, however different AC and DC wiring boxes will depend on the site design

DC wiring box models: Standard; -S; -SX; -SY.

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c	The labels or The below la	n the inverter have the c bels are intended as exa	onformity m mple only: ir	arking, main technic n fact other models o	al data ar f DC Wirir	nd identific ng Box and	ation of the equi	pment and r are available	nanufacturer	:	
od evenho	ABB www.abb.com/solar POWER MODULE comventor Model: THE-0ab-1 MECE:: TRIO-50.0-TL-OUTD-PO	Made in Italy -n.com (MICCALLER) CC OWER MODULE					5	() () () () () () () () () () () () () (Inverter or wiri Inverter or wiri Inverter or wiri Week/Year of	ing box model ing box part number ing box serial number manufacture	_
l abole a	SOLAR INVERTER MCCC: TRI0-50.0-TL-OUTD Vis.user 10000 Vis.user Vis.user 200.95 Vis.listPower Vis.user 450-85 Vis.user Insent 150.0	Interster Interster C € V V 00 (0) (0) (0) (0) (0) (0) (0) (0) (0) (ABB www.abb.com/solar DC WIRING BOX (COMPORENT OF MODEL TRIO MCORE: DCWB-SY-TRIO-50		AC WIRING (COMPONENT OF N MODEL: ACWB-SX-1	oolar BOX ACOEL THRO-50.0-TL-OUTRY IRIO-50.0-TL-OUT	D	MO	DEL NAME	P/N:PPPPPPPPPPP W0:X000000X	0) 02 03
	-20 to + 60 °C IP65 -10 to + 60 °C IP64 Cooling -10 + 140 °F Section		Job 140 T	▣ 🛦 🔺	8 -355+ 60'E -455+160'F	65 🕕 🖉	<u>A</u>			SO: SXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Y 04
	POW The labels at	VER MODULE	DC V ent must NC	VIRING BOX DT be removed, tari	nished, d	AC WIRING lirtied, hid	BOX den, etc.		Ident	ifying label	
	In the manua	al and/or in some cases	on the equip	oment, the danger ar	nd cautior	n zones ar	e indicated with	signs, labels	, symbols or	· icons.	
		ways refer to the manual	\triangle	General warning - Important safety info	ormation	4	Hazardous volt	age		Hot surfaces	
	Protection rating of equipment Temperature			Temperature range		X	Without insulati transformer	hout insulation		Direct and alternatin current, respectively	ng /
	+- Pos pole	sitive pole and negative les of the input voltage (DC		Always use safety of and/or personal pro equipment	tection		Point of connect grounding prote	tion for ection		Stored energy disch time	narge
	2.										
location	Installation site and position - Consult technical data to confirm the environmental specifications will be met Installation of the unit in a location exposed to direct sunlight is acceptable Do not install in closed spaces where air does not freely circulate Always ensure that the flow of air around the inverter is not blocked, so as to prevent overheating Always ensure that the flow of air around the inverter (so not blocked, so as to prevent overheating Always ensure that the deguingmental substances (minimum distance: 3m)							<u>;;;;;</u> ок <u>;;</u> • • •	∭ок ● []		
 Do not install the equipment on wooden walls or other flammable surfaces. Do not install in inhabited rooms or where the prolonged presence of people or animals is expected due to inverter's noise level during operation. The sounds level is heavily influenced by its location (for example, the surface around the inverter, the environment, etc.) and grid quality. Install on a wall or structure capable of bearing the weight of the inverter. 							//// 	(ок			
Install vertically or horizontally (i.e. with the inverter on its back), with a maximum inclination as indicated in the adjacent figures. Maintain minimum clearance and spacing between inverters as indicated in the adjacent figures to prevent limitations on air circulation. Ensure sufficient working area in front of the inverter for wiring box access. Inossible install at evel-level so that the LEDs can be assilt seen.											
c	 Install at a h Position mu outermost e Multiple inve 	 Install at a height that allows the equipment to be serviced considering its size and weight. Position multiple inverters side-by-side, maintaining minimum clearances (measured from the outermost edge of the inverter). Multiple inverters can also be placed in a staggered arrangement. Minimum clearances for staggered 							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,) NO	
	or below. - All installation	arrangements include the width of the inverter plus additional allowances for inverters arranged above or below. - All installations over 6500' (2,000 meters) must be assessed by ABB Technical Sales to determine the							. t. Ľ. <u>†</u>.0 .:	+ <u>,0,</u> +, <u>,</u> , <u>+,0,</u>	
	Do not block Please refer	k access to the externation to the warranty terms	I AC and D and conditi	C disconnects. ons and avoid void	ling the v	varranty v	vith improper	l fr)))))OH	()))))ок	
	 All installation Do not block Please refer 	ons over 6500' (2,000 n out derating. k access to the externa to the warranty terms	he inverter p neters) must I AC and D and conditi	blus additional allowa be assessed by AB C disconnects. ons and avoid void	B Technic	inverters a al Sales to varranty v	vith improper		<u>, а</u> ,,,,,он	к <u>))))</u> ок	

Please refer to the warranty terms and conditions and avoid voiding the warranty with improper installation



Vertical installation bracket OK NO Ċ 75° MAX Horizontal installation bracket οκ

🕽 15° MAX

NO

NO

Transport and handling

Transport of the equipment, especially by road, must be carried out by suitably so as to protect the components from violent shocks, humidity, vibration, etc.

Lifting

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The means used for lifting must be suitable for bearing the weight of the equipment. The handling kit (B) (ABB part number "TRIO HANDLING KIT") should be used to correctly handle the power module **Do not pick up the inverter by the cover.**

Unpacking and checking

The components of the packaging must be disposed of in compliance with all laws and regulations applicable in the country where the equipment is being installed. When you open the package, check that the equipment is not damaged and make sure all components are present. If you find any defect or damage, stop unpacking, contact the carrier, and promptly inform the ABB Service department Weight of the equipment units

nodule	66 kg	
ig box	Std / -S : 13 kg	-SX / -SY : 14 kg
g box	Std / -S : 14 kg	-SX : 15 kg



	Componen	ts available for all DC wiring box models		Quantity	Components	s available in the bracket kit	Quantity (vertical	Quantity (horizontal	
		Configurable relay connectors		2			kit)	kit)	
		Control and communications signal conr	nectors	2		Bracket for vertical wall mounting	1	0	
5	6	Two-hole gasket for PG 21 signal cabl	e glands 🚳	2 + 2	-1	Bracket 🖲 for horizontal mounting	0	1	
	<u></u>	Two-hole gasket for PG 16 signal cabl	e glands 🚳	1+1	•	countersunk M5 x 14 hex screws for assembling the attachment bracket	4	10	
5		M6 hex nut to clamp the grounding ter	minal on the	1	Ø	M6x16 hex screw (4 to clamp ground brackets and 2 for caged nuts)	6	6	
		AC wiring box Serrated lock M6 washer for securing terminal to the AC wiring box	the ground	2	For	Stabilization brackets to attach the Power module to the wiring box	2	2	
		Technical documentation			N	Back spacers (2) for wall alignment (vertical installation)	4	0	
	Component	s available for -SX / -SY DC wiring box model:	s Qua	antity		Ground brackets for wiring box-power module connection	2	2	
		Fuseholder	12 (depend type of v	or 16 ling on the viring box)	0	M6 flat washer (4 for ground brackets and 2 for cage nuts)	6	6	
		Negative string fuses (-) @ (gPV - 1000Vdc - max rating 20A)	12 (depend) type of v	or 16 ling on the viring box)	0	M6 serrated washer to clamp the ground connection bracket	4	4	
•						Conducting springs	0	0	
	Mounting on a vertical wall								
	1. The bracket (1) is supplied in two separate parts, assemble them using the four M5x14 countersunk screws. (FIG. 1)								
	2. Installs the two cage nuts in the (i) fixing points.								
	3. Position the bracket perfectly level on the wall and use it as a drilling template. (FIG. 1)								
	 It is the ate numbrate numbrate numbrate numbrate the type 4 times the Attach the Dependin (a) to mou and at lead in either location in either location	e installer's responsibility to choose wer and distribution of attachment points based on the type of wall, frame or of anchors to be used, and their abilit e inverter's weight (4 x 95 kg=380 kg ft e bracket to the wall with at least 10 attact g on the type of anchor chosen, drill the req in the bracket. Put at least four screws in st four in the lower side, with the remainder wath. (FIG. 1)	an appropr The choic ther support ty to support or all models chment srews uired 10 hole the upper sid (up to 20 tota	i- (1)	6				

5. Attach the bracket to the wall or frame (FIG. 1)



wise remove the strings co

When wiring is complete, attach the front cover @ to the DC wiring box (8 screws, tightening torque 2.4Nm). Install the 3 conducting springs @ between the power module cover @ and the DC wiring box cover, in the unpainted areas. (Paragraph 6 - FIG. 9)

See the manual for details on the connections and functions available on the communication and control board.

Inverter Ref. Manual Description of the communication and control board

	J15	a02	Expansion board connector (optional)		
	A5	a04	SD CARD housing		
e table shows the main	S8 - S9	a05	Rotary switches for country standard settings		
nponents and connections	J5 - J6	a09	Connection to the multifunction relay (ALARM and AUX)		
ilable on the communication	J7	a11	RS485 serial connection; 5V auxiliary, remote ON/OFF		
control board (09). Each	S6	a12	Switch for setting the termination resistance of the RS485 (1) line		
nection cable reaches the	S5	a13	Switch for setting the termination resistance of the RS485 (2) line		
munication board through	J9 - J10	a14	Connection of the RS485 (1) line on RJ45 connector		
inducation board through	J8	a15	RS485 communication board slot (1)		
vice cable glands (34) (35).	J11 - J12	a16	Connection of the RS485 (2) line on RJ45 connector		
	J16	a17	RS485 communication board slot (2)		
	S7	a18	Switch for setting the inverter to normal or service mode		
	J22	a19	Inverter data memory card slot		
	X5	a20	Battery housing		
	J1	a22	Grounding kit housing (optional)		
	J18	a23	Connector for PMU card installation (optional)		



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ne	commissioning	nroconiiro	OT THE	INVATOR	10	20	TOILOW/C
	CONTINUESSIONING	DIOCCUUIC		IIIVCILCI	10	as	10110443

- Any configuration of the inverter must be carried out through Aurora Manager LITE software. The software and its own manual are available at www.abb.com/solarinverters Close (turn ON) the external AC disconnect switch. For the moment, leave the AC disconnect on the inverter OFF.
- Close (turn ON) DC disconnect switch(es).
- Watch for the green "Power" LED to begin flashing a few seconds after the DC disconnect is closed. Wait for the yellow "alarm" LED to light up and remain on, indicating there is no AC mains.
- Close (turn ON) the inverter AC disconnect.
- Valch for the yellow LED to turn off, while the green LED continues to flash while the inverter runs self-tests and grid checks. The time required varies from ~30 seconds to a few minutes, depending on the grid condition and standards.
- Watch for the green LED to stop flashing remain ON if when self-tests and grid checks are complete and the inverter starts production.

Possible LEDs behaviour:

- a. Green LED continues to flash the solar irradiation is not sufficient to power on the inverter
- b. Yellow alarm light illuminates requires debug using Aurora Manager software.
- c. Red "GFI" LED lights the inverter detected ground leakage current. Turn the inverter OFF, open the disconnect switches and locate the ground fault.
 d. Lighting of the LEDs in sequence The firmware versions of the various equipment devices need to be aligned and are being updated. Wait for the complete
- tion of this automatic operation (it can requires several minutes). Once the firmware update process is completed the LEDs will quickly blink three times

Communication						
Remote monitoring	VSN300 Wifi Logger Card (optional), VSN700 Data Logger (optional)					
Wireless local monitoring	VSN300 Wifi Logger Card (optional)					
User interface	LEDs					
Available ports	2 (RS485)					
Environment						
Ambient temperature	-25+60°C /-13140°F with derating over 50°C / 122°F					
Storage temperature	-40°C+85°C / -40°F185°F					
Relative humidity	4100% condensing					
Sound pressure level, typical	75 dB(A) @ 1 m					
Maximum operating altitude without derating	2000 m / 6560 ft					
Environmental pollution classification for external environment	3					
Environmental category	Outdoor					
Physical						
Environmental Protection Rating	IP 65 (IP54 for cooling section)					
Cooling system	Forced air					
Size (H x W x D)	725 mm x 1491 mm x 315 mm / 28.5" x 58.7" x 12.4"					
Weight	95 kg / 209 lbs overall, 66 kg / 145 lbs electronic compartment, 15 kg / 33 lbs					
vveignt	AC wiring box (full optional), 14kg / 31 lbs DC wiring box (full optional)					
Mounting system	Wall bracket, horizontal support					
Over voltage category according to IEC 62109-1	II (DC input) III (AC output)					
Safety						
Isolation level	Transformerless					
Marking	CE					
Safety class	1					

The output voltage range may vary depending on specific country grid standard

The output frequency range may vary depending on specific country grid standards n case of fallure, it is limited by the external protection device on the AC circuit derfor to document "String inverten= - Product manual appendix" available on ABB Web site www.abb.com/solarinverters for the quick fit connector brand and model used in the inv Maximum allowed current for each group of inputs (3 or 4 strings based on the DC wiring box version) is 54A

Note. Features not specifically listed in the current data sheet are not included in the product.

Contact us

ww.abb.com/solarinverters

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