



X3-FORTH

**40 kW-LV / 50 kW-LV / 60 kW-LV / 70 kW-LV
75 kW / 80 kW / 100 kW / 110 kW / 120 kW
125 kW / 136 kW-MV / 150 kW-MV**

Installation Manual

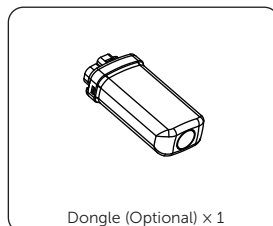
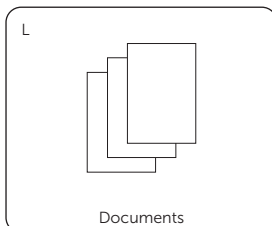
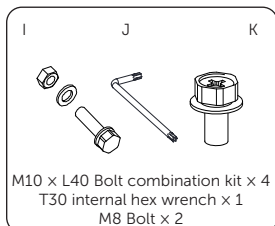
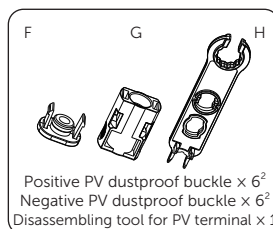
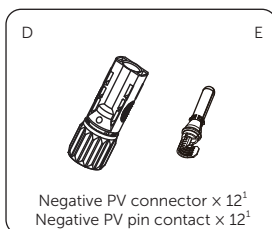
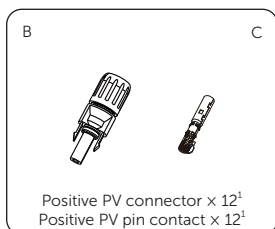
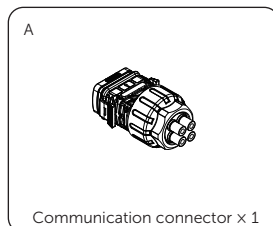
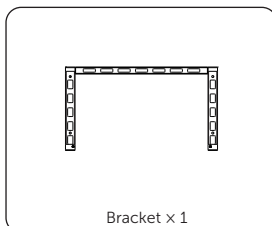
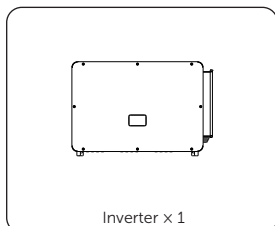
Version 1.0

www.solaxpower.com



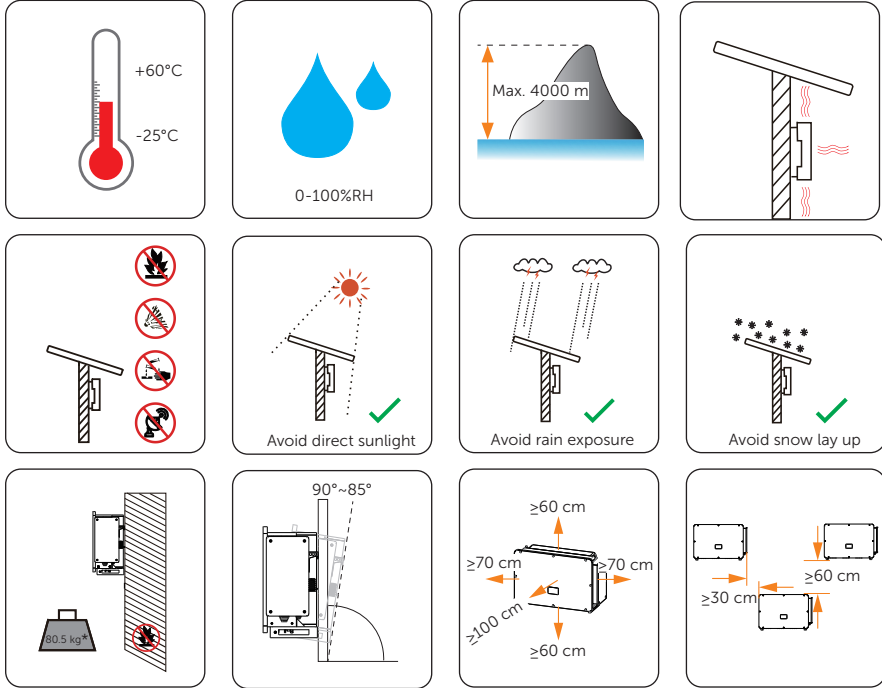
Manual in the QR code at www.solaxpower.com

Packing List / Packliste / Liste du matériel livré / Lista de piezas / Lista da embalagem / Paklijst / Contenido della confezione / Zawartość opakowania / Seznam balení / Packlista / Listă de ambalare / Опаковъчен лист / Pakkeliste / Λίστα συσκευασίας / Pakkeleht / Pakkausluettelo / Popis pakiranja / Csomaglista / Pakuotės turinys / Iepakoјuma saraksts / Zoznam položiek balenia / Seznam pakiranja / kutu listesi / lista de embalagem

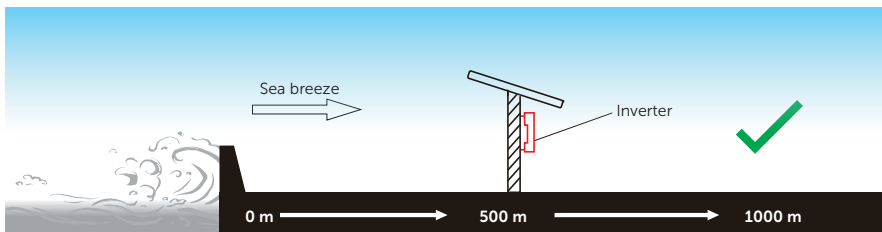


- Refer to the actual delivery for the optional accessories. Please purchase OT terminals separately.
- ¹ 12 pcs for 40 and 50 kW inverters; 18 pcs for 60, 70, 75, 80, 100 and 110 kW inverters; 24 pcs for 120, 125, 136 and 150 kW inverters.
- ² 6 pcs for 40 and 50 kW inverters; 8 pcs for 60, 70, 75, 80, 100 and 110 kW inverters; 12 pcs for 120, 125, 136 and 150 kW inverters.

Mounting Location / Montageort / Emplacement de montage / Ubicación de montaje / Localização de montagem / Bevestigingslocatie / Posizione di montaggio / Lokalizacja miejsca montażu / Montážní místo / Monterings plats / Locație de montare / Место за монтаж / Monteringssted / Τοποθεσία στερέωσης / Paigalduskoht / Asennuspaikka / Mjesto postavljanja / Rögzítési hely / Montavimo vieta / Montāžas vieta / Miesto inštalácie / Mesto namestitve / Montaj Konumu / Local de montagem



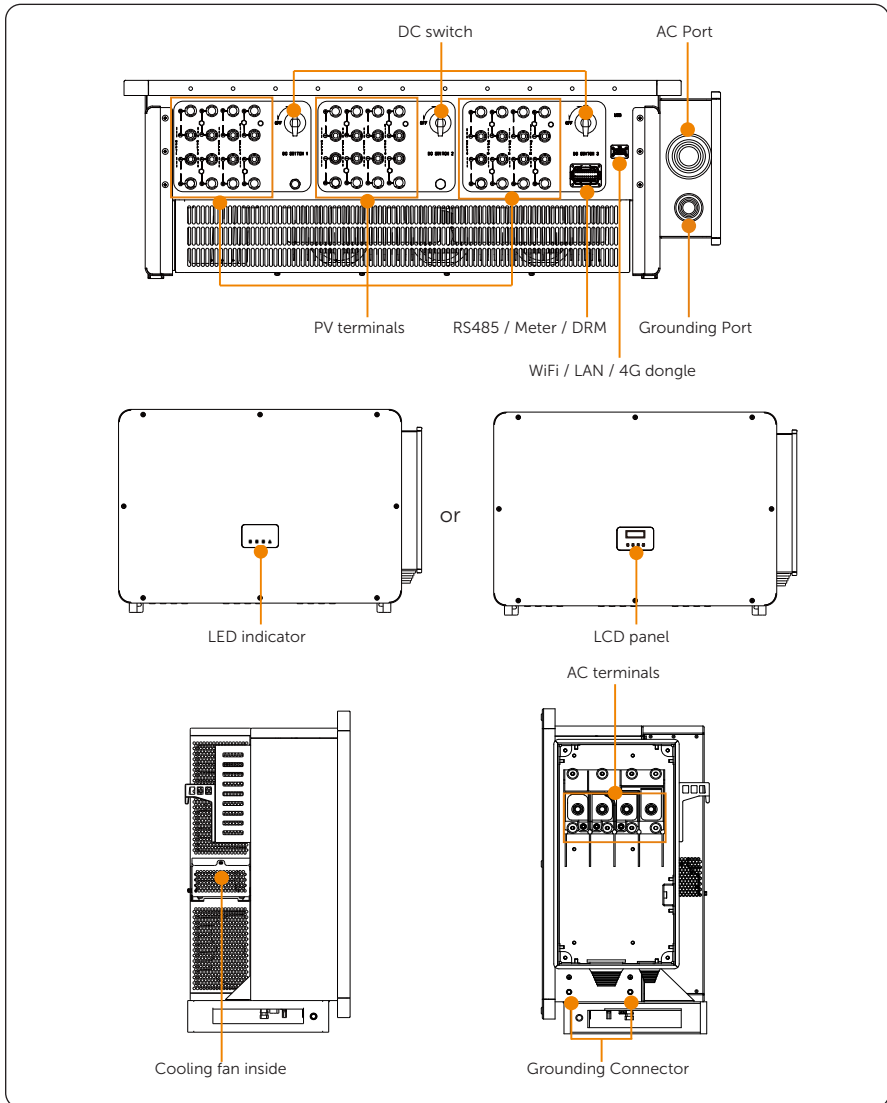
* The weight of 40 and 50 kW inverters is 80.5 kg; The weight of 60, 70, 75, 80, 100 and 110 kW inverters is 83 kg; The weight of 120, 125, 136 and 150 kW inverters is 87 kg.



NOTICE!

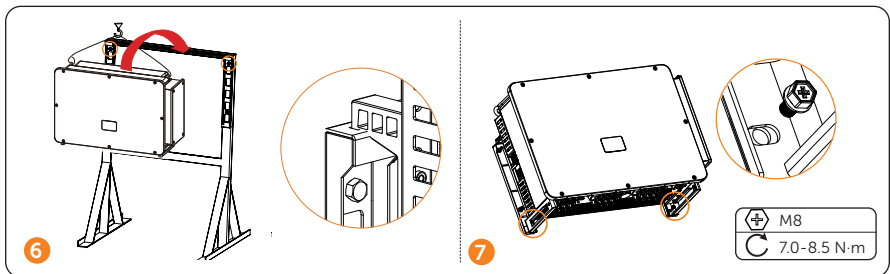
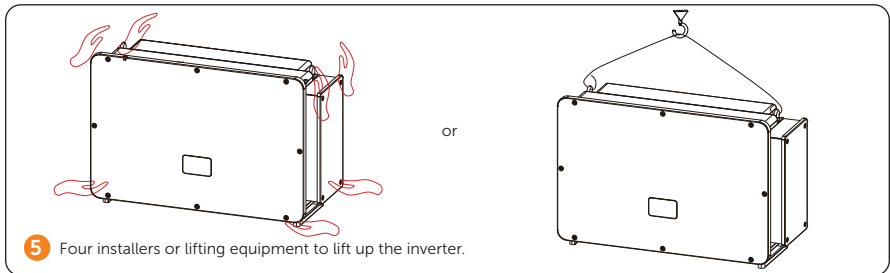
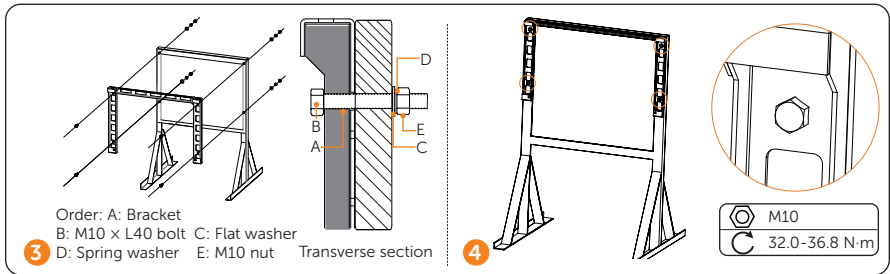
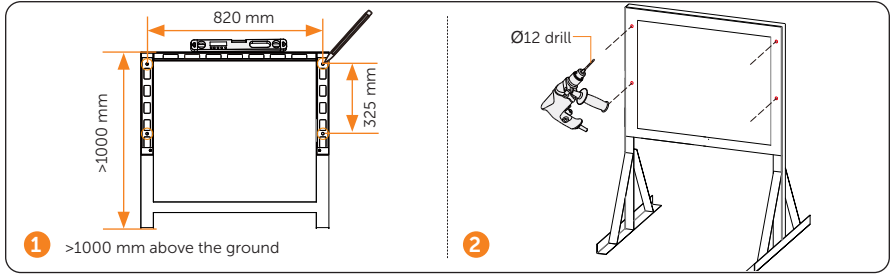
- For outdoor installation, precautions against direct sunlight, rain exposure and snow accumulation are recommended.
- Exposure to direct sunlight raises the temperature inside the device. This temperature rise poses no safety risks, but may impact the device performance.

Terminals and Parts of Inverter / Terminals und Teile des Wechselrichters / Bornes et pièces de l'onduleur / Terminales y partes del inductor / Terminais e peças do inductor / Aansluitingen en onderdelen van de omvormer / Terminali e parti dell'inverter / Zaciski i części falownika / Svorky a součásti střídače / Växelriktarens plintar och delar / Terminale și părți ale invertorului / Клеми и части на инвертора / Terminaler og dele af inverteren / Ακροδέκτες και εξαρτήματα του μετατροπέα / Inverteri klemmid ja osad / Inverterin liittimet ja osat / Terminali i dijelovi izmjenjivača / Az inverter termináljai és alkatrészei / Inverterio gnybtai ir dalys / Termināļi un invertora daļas / Svorky a části invertora / Priključki in deli pretvornika / Terminaler ve İnvörtör Parçaları / Terminais e peças do inductor

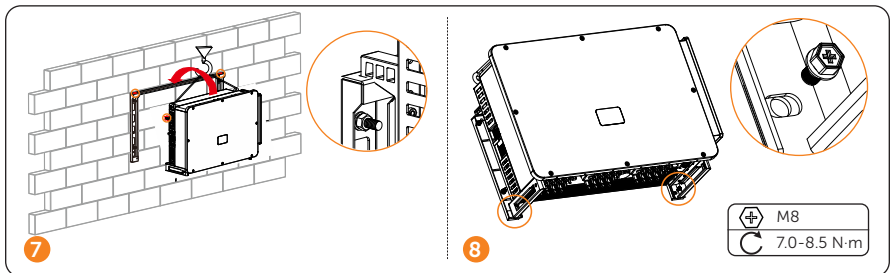
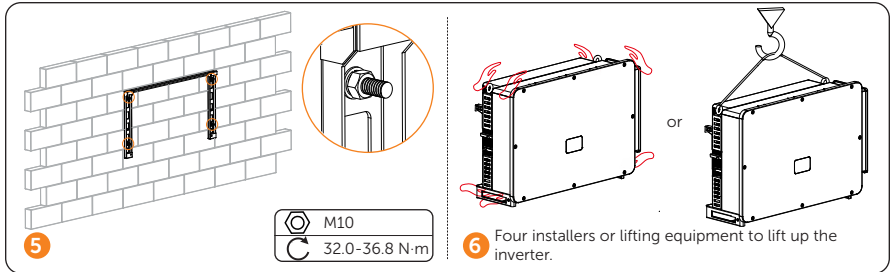
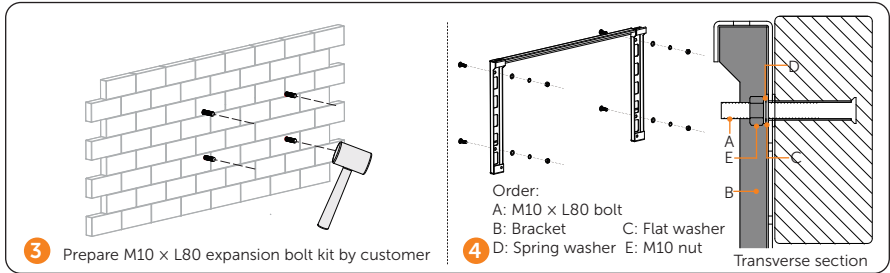
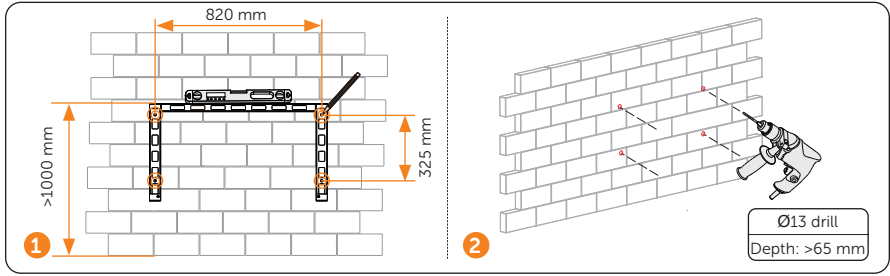


Mechanical Installation / Mechanische Installation / Installation mécanique / Instalación mecánica / Instalação mecânica / Mechanische installatie / Installazione meccanica / Instalacja mechaniczna / Mechanická instalace / Mekanisk installation / Instalare mecanică / Механичен монтаж / Mekanisk installation / Μηχανική εγκατάσταση / Mehaaniline paigaldus / Mekaaninen asennus / Mehanička ugradnja / Mechanikai telepítés / Mechaninis montavimas / Mehāniskā uzstādīšana / Mechanická inštalácia / Mehanska namestitev / mekaniik kurulum / instalação mecânica

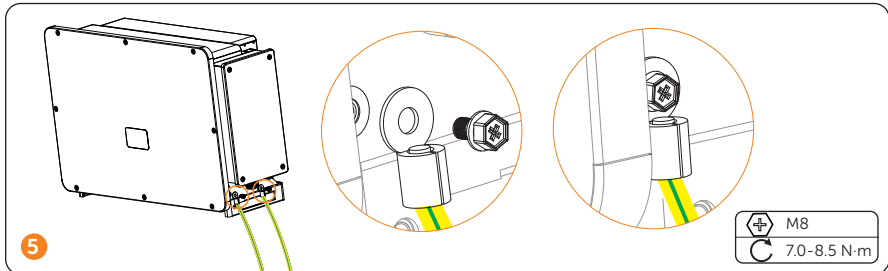
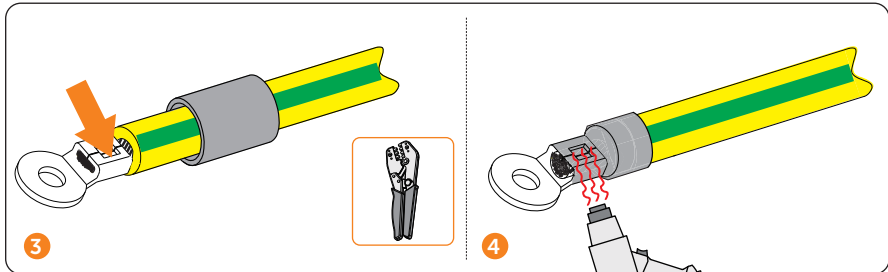
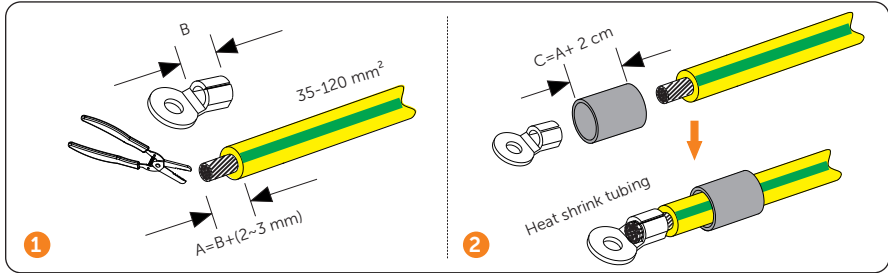
• Stand-mounting



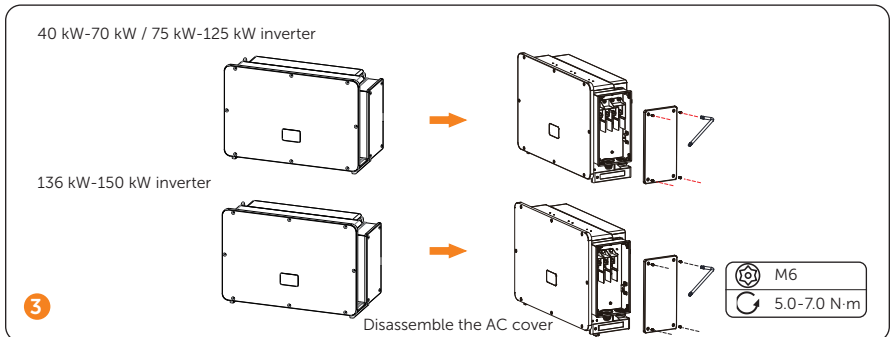
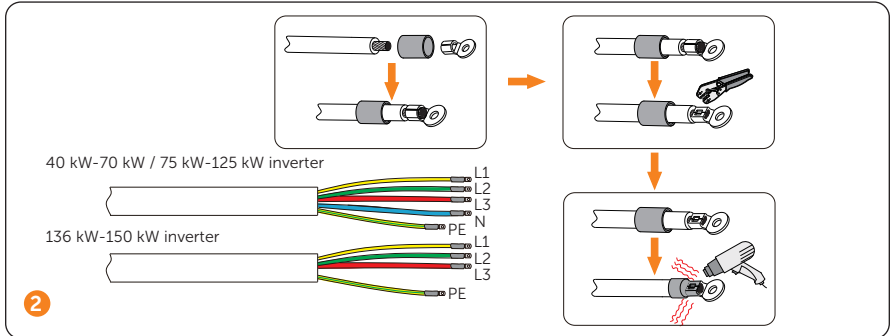
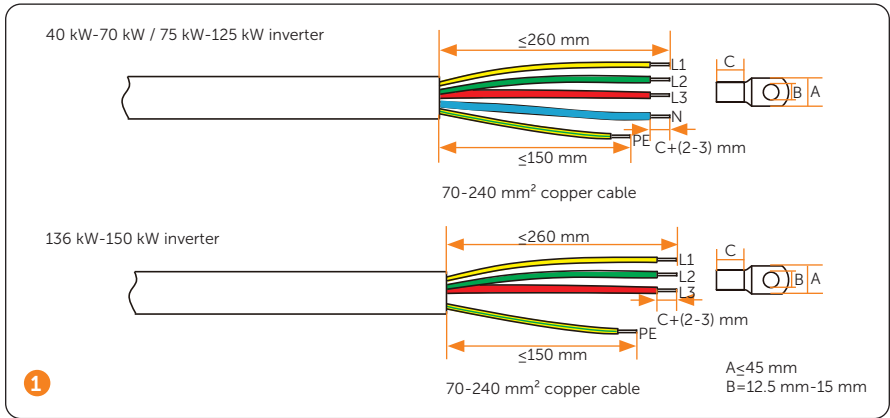
• Wall-mounting



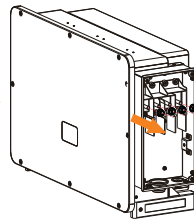
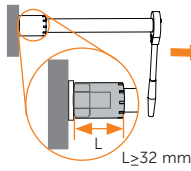
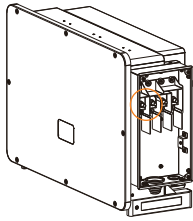
PE Connection / Schutzerdungs-Anschluss / Connexion PE / Conexión PE / Ligação à Terra / PE-aansluiting / Collegamento PE / Połączenie PE / PE připojení / PE-anslutning / Conexiune PE / PE връзка (земя) / Jordforbindelse / Σύνδεση PE / PE ühendus / PE-yhteys / PE priključak / PE bekötés / PE (apsauginio įžeminimo) kontaktas / PE savienojums / Pripojenie ochranného vodiča / PE povezava / PE Bağlantısı / Conexão PE



AC Side Connection / Wechselstrom-seitiger Anschluss / Connexion côté CA /
 Conexión lateral de CA / Ligação lateral CA / Aansluiting wisselspanningszijde /
 Collegamento lato CA / Połączenie po stronie AC / Bočni pripojení střídavého proudu
 / Anslutning på AC-sidan / Conexiune laterală c.a. / Свързване от AC страната / AC-
 sidetilslutning / Πλαϊνή σύνδεση AC / Vahelduvoolpooloolne ühendus / AC-puolen
 liitântä / Priključak za izmjeničnu struju (AC) / Váltóáram-oldali bekötés / AC (kint. sr.)
 šoninis kontaktas / Maiņstrāvas puses savienojums / Pripojenie na strane striedavého
 prúdu / AC stranska povezava / AC Yan Bağlantı / Conexão do Lado CA

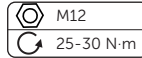


40 kW-70 kW / 75 kW-125 kW inverter for example



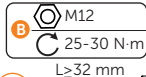
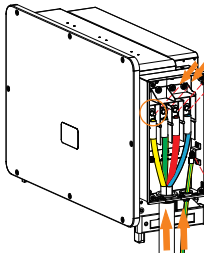
Cut off the pagoda-shaped coil according to the actual cable size.

4 Disassemble the M12 nut

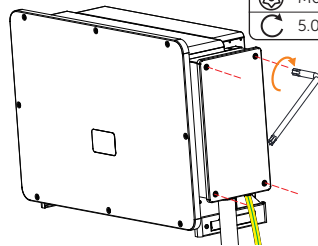


5

40 kW-70 kW / 75 kW-125 kW inverter for example

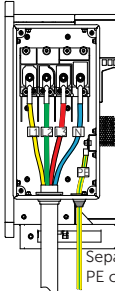


6 Tighten PE cable before connecting L and N cable.

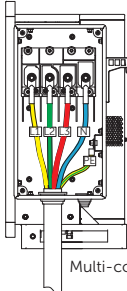


7 Note: Before closing the AC junction box, plug the cut pagoda-shaped coil with fireproof mud. Prepare your own fireproof mud that meets local environmental standards.

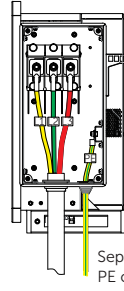
Wiring connection diagrams for PE cable



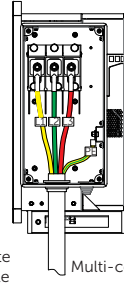
40 kW-70 kW / 75 kW-125 kW inverter



Multi-core cable



Separate PE cable



Multi-core cable

136 kW-150 kW inverter

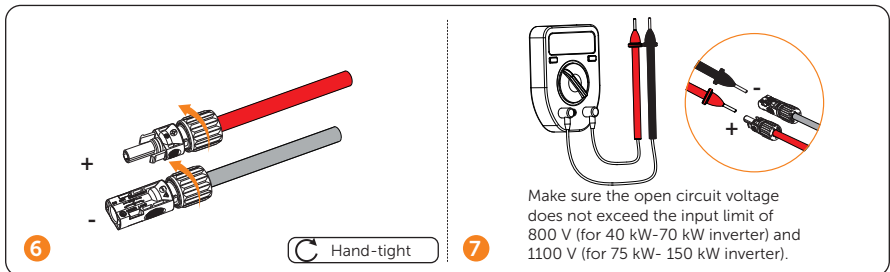
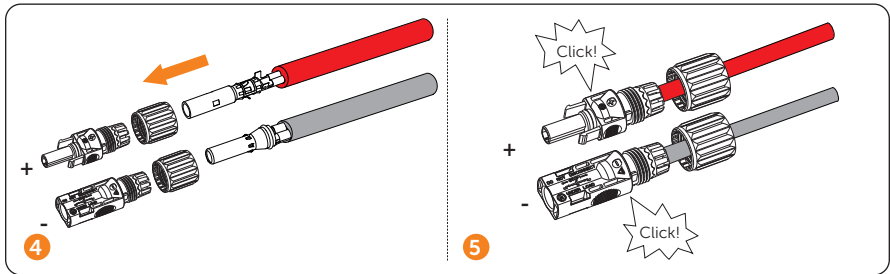
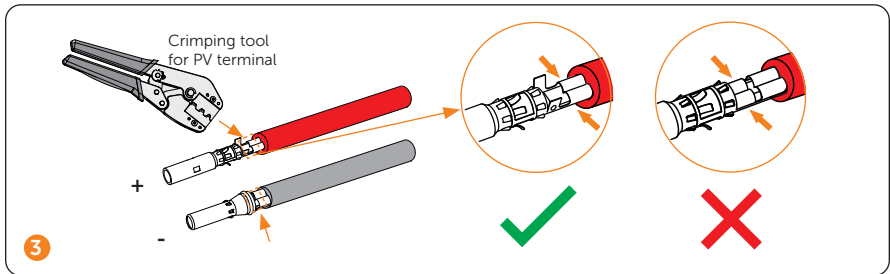
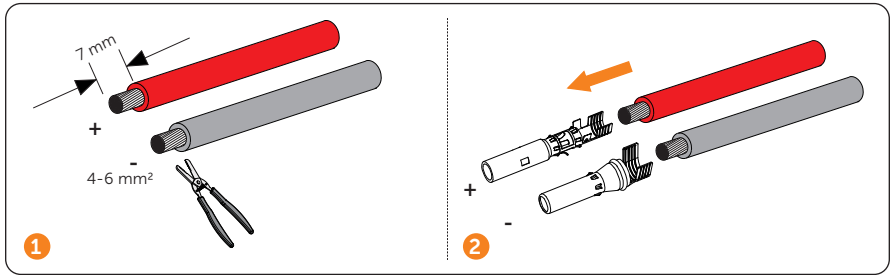
Note:

Recommended breaker for X3-FORTH

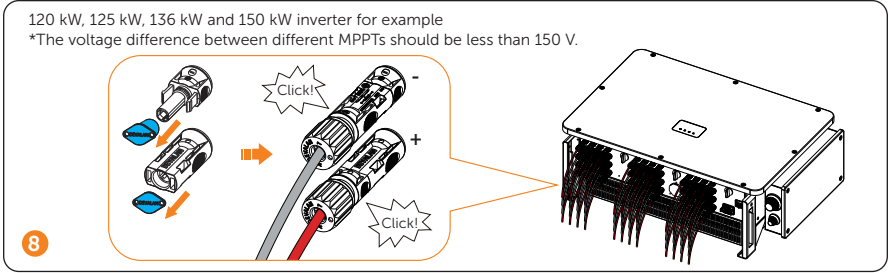
Model	40 kW	50 kW	60 kW	70 kW	75 kW	80 kW
AC Breaker	150 A	200 A	250 A	250 A	250 A	200 A

Model	100 kW	110 kW	120 kW	125 kW	136 kW	150 kW
AC Breaker	250 A	250 A	250 A	250 A	200 A	250 A

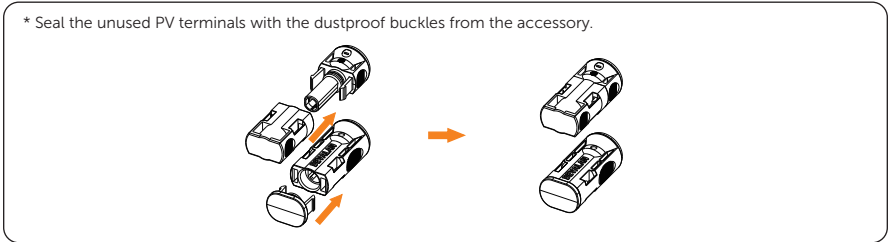
DC Side Connection / Gleichstrom-seitiger Anschluss / Connexion côté CC / Conexión lateral de CC / Ligação lateral CC / Aansluiting gelijkspanningszijde / Collegamento lato CC / Potáczenie po stronie DC / Boční připojení stejnosměrného proudu / Anslutning på DC-sidan / Conexiune laterală c.c. / СВЪРЗВАНЕ ОТ DC СТРАНАТА / DC-sidtilslutning / Πλαϊνή σύνδεση DC / Alalisvoolupoolne ühendus / DC-puolen liitântä / Priključak za istosmjernu struju (DC) / Egyenáram-oldali bekötés / DC (nuol. sr.) šoninis kontaktas / Līdzstrāvas puses savienojums / Pripojenie na strane jednosmerného prúdu / DC stranska povezava / DC Yan Bağlantı / Conexão do Lado CC



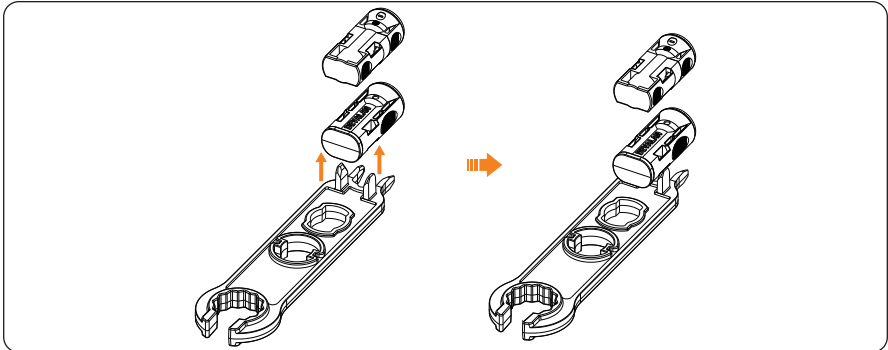
120 kW, 125 kW, 136 kW and 150 kW inverter for example
*The voltage difference between different MPPTs should be less than 150 V.



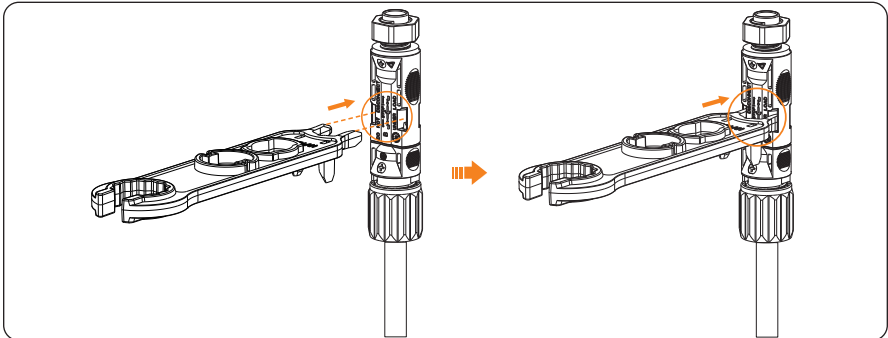
* Seal the unused PV terminals with the dustproof buckles from the accessory.



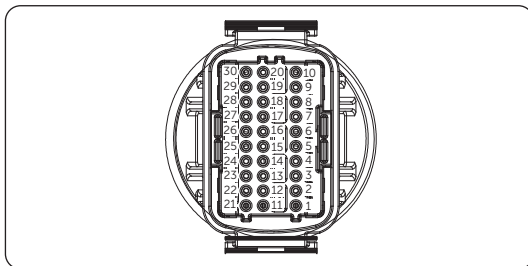
*Disassembling the dustproof buckles



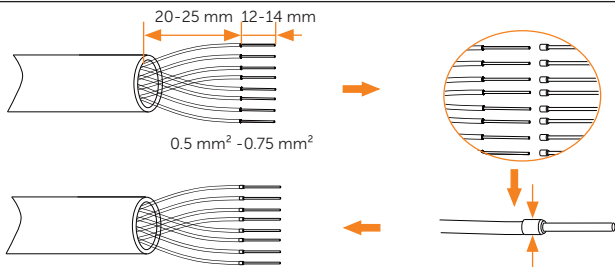
*Disassembling the PV cables



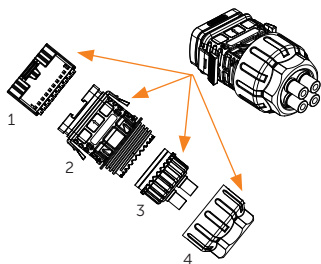
Communication Connection / Kommunikations-Anschluss / Branchement de communication / Conexión de comunicación / Ligação à Comunicação / Communicatie-aansluiting / Collegamento comunicazione / Połączenie komunikacyjne / Komunikáční pøipojení / Kommunikationsanslutning / Conexiune de comunicare / Коммуникационная вðязка / Kommunikationsforbindelse / Σύνδεση επικοινωνίας / Sideühendus / Tiedonsiirtoliitântä / Prikluèak za komunikaciju / Kommunikációs bekötés / Duomenų ryšys / Sakaru savienojums / Pripojenje komunikácie / Komunikacijska povezava / Iletişim Bağlantısı / Conexão de Comunicação



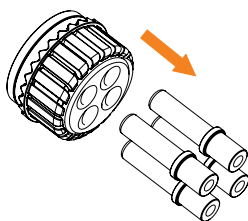
Port	Pin	Definition	Remark
RS-485-1	1	RS485A IN+	Inverter RS485 networking or connect the data collector
	2	RS485B IN	
	3	Reserved	
	4	RS485A OUT+	
	5	RS485B OUT	
	6	Reserved	
RS-485-2	7	RS485A METER	Connect the RS485 meter or other devices
	8	RS485B METER	
	9	Reserved	
DRM	10	Reserved	Reserved for DRM/RRCR
	11	DRM1/5	
	12	DRM2/6	
	13	DRM3/7	
	14	DRM4/8	
	15	RG/0	
DI	16	CL/0	Input digital signal
	21	Digital IN+	
DO	22	Digital IN-	Output digital signal
	29	Digital OUT+	
	39	Digital OUT-	



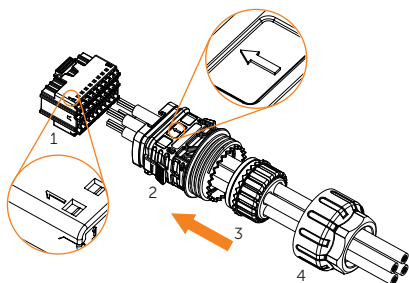
- 1** ENY0512 nylon terminal for 0.5 mm² / 22 AWG conductor;
ENY7512 nylon terminal for 0.75 mm² / 20 AWG conductor



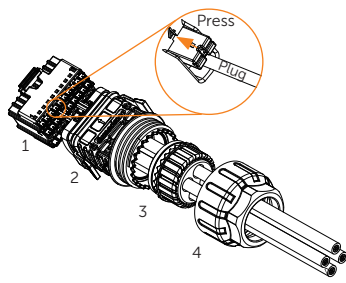
- 2** Component 1: Housing; 2: Body;
3: Seal part; 4: Nut



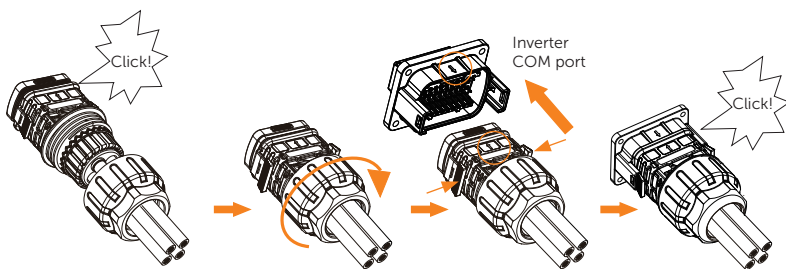
- 3** Remove the waterproof plug based on actual needs.



- 4** Route the COM cable through Component 4-3-2.

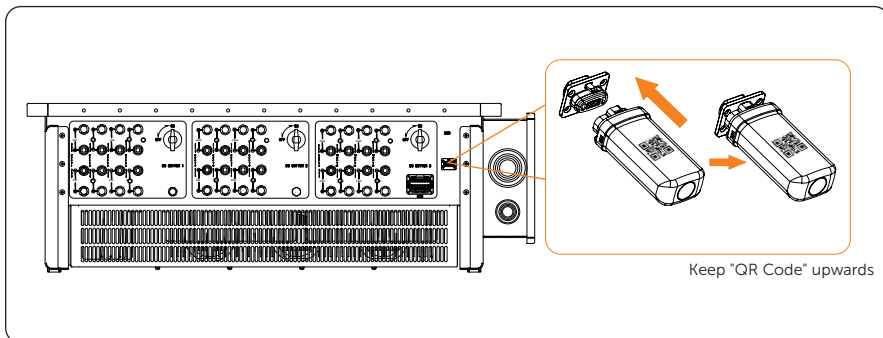


- 5** Plug the cable into Component 1 in accordance.

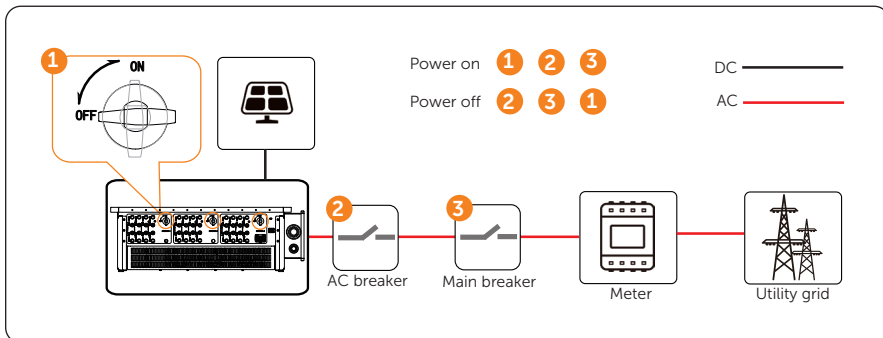


- 6**

Monitoring Connection / Überwachungs-Anschluss / Branchement de surveillance / Conexión de monitorización / Ligação à Monitorização / Monitoring-aansluiting / Collegamento monitoraggio / Połączenie na potrzeby monitorowania / Pripojení ke sledování / Övervakningsanslutning / Conexiune de monitorizare / Мониторингова връзка / Overvågningsforbindelse / Σύνδεση παρακολούθησης / Seire ühendus / Valvontaliitäntä / Priključak za nadzor / Monitoring bekötés / Stebėjimo ryšys / Uzraudzības savienojums / Pripojenie monitorovania / Povezava za spremljanje / Izleme Bağlantısı / Conexão de Monitoramento

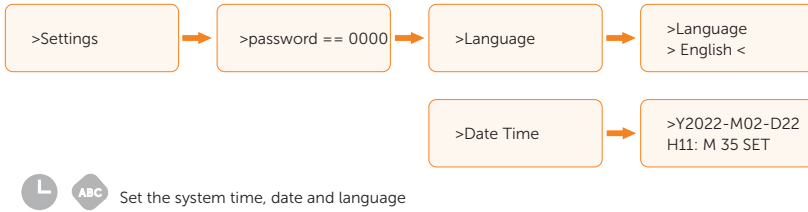


Power On/Off / Einschalten/Ausschalten / Marche/Arrêt / Encendido/apagado / Ligar/Desligar / In-/uitschakelen / Accensione/Spengimento / Włączanie/wyłączanie zasilania / ZAP/VYP / Strøm på/av / Pornire/Oprire / Включване/изключване / Strøm til/fra / Ενεργοποίηση/Απενεργοποίηση / Toide sisse/välja / Virta päälle/pois / Uključivanje/isključivanje napajanja / Be-/kikapcsolás / Maitinimo įjungimas / išjungimas / Barošanas ieslēgšana/izslēgšana / Napájanie zapnuté/vypnuté / Vklop/ izklop / Güç Açık/Kapalı / Ligar/Desligar



General Setting / Allgemeine Einstellungen / Paramètres généraux / Configuración general / Definição Geral / Algemene instelling / Impostazione generale / Ustawienia ogólne / Obecné nastavení / Generell inställning / Setare general / Обща настройка / Generel indstilling / Γενική τοποθέτηση / Üldine seadistus / Yleisasetus / Орče postavke / Άλταλάνος beállitás / Bendrasis nustatymas / Vispārīgs iestatījums / Všeobecné nastavenie / Splošna nastavitve / Genel Ayar / Configuração Geral

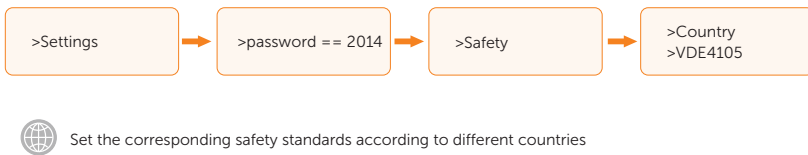
1 User settings



* **Note:** The initial password of user setting is 0 0 0 0 which should be changed for the consideration of account security.

2 Advanced settings

- Safety

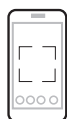


- Export Control



* **Note:** The initial password of advanced setting is 2 0 1 4 which should be changed for the consideration of account security.

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- DC input of 40 kW-70 kW inverter

Model	X3-FTH-40K-LV	X3-FTH-50K-LV	X3-FTH-60K-LV	X3-FTH-70K-LV
Max. PV input voltage [d.c. V]	800	800	800	800
MPP tracker voltage range [d.c. V]	180-650	180-650	180-650	180-650
No. of MPP trackers	6	6	9	9
Max. PV input current per MPPT [d.c. A]	32	32	32	32
Max. short circuit current per MPPT [d.c. A]	46	46	46	46
Max. inverter backfeed current to the array [d.c. A]	0	0	0	0

- AC output of 40 kW-70 kW inverter

Model	X3-FTH-40K-LV	X3-FTH-50K-LV	X3-FTH-60K-LV	X3-FTH-70K-LV
Nominal AC output power [kW]	40	50	60	70
Nominal AC output current [a.c. A]	105	131.3	157.5	183.7
Max. AC output apparent power [kVA]	44	55	66	70
Max. AC output continuous current [a.c. A]	115.5	144.5	173.5	183.7
Current (inrush) [a.c. A]	115.5	144.5	173.5	183.7

Model	X3-FTH-40K-LV	X3-FTH-50K-LV	X3-FTH-60K-LV	X3-FTH-70K-LV
Nominal AC voltage [a.c. V]	127/220, 3W/(N)/PE			
Nominal AC frequency/AC frequency range [Hz]*	50/60; ±5			
Displacement power factor	0.8 leading - 0.8 lagging			
Max. output fault current [a.c. A]	370			
Max. output overcurrent protection [a.c. A]	370			

* **Note:** The AC voltage and the frequency range may vary from different country codes.

- Other informations of 40 kW-70 kW inverter

Model	X3-FTH-40K-LV	X3-FTH-50K-LV	X3-FTH-60K-LV	X3-FTH-70K-LV
Operating temperature range [°C]	-25 to +60			
Max. operation altitude [m]	4000			
Relative humidity [%]	0-100			
Pollution degree	III			
Ingress protection	IP66			
Protective class	I			
Overvoltage category	III(MAINS), II(DC)			
Inverter topology	Non-isolated			
Safety	IEC/EN 62109-1; IEC/EN 62109-2; NB/T 32004			
Active anti-islanding method	Frequency shift			
Certification	NB/T 32004; IEC 61727; IEC 62116; VDE4110; VDE4105; EN50549; NRS097; G99; RD1699; PPDS; CEI0-21; CEI0-16; VFR 2019; IEC 61683; IEC 60068; EN 50530; AS4777.2			

- DC input of 75 kW-150 kW inverter

Model	X3-FTH-75K(L) X3-FTH-75K	X3-FTH-80K(L) X3-FTH-80K	X3-FTH-100K(L) X3-FTH-100K	X3-FTH-110K(L) X3-FTH-110K	X3-FTH-120K(L) X3-FTH-120K	X3-FTH-125K(L) X3-FTH-125K	X3-FTH-136K-MV(L) X3-FTH-136K-MV	X3-FTH-150K-MV(L) X3-FTH-150K-MV
Max. PV input voltage [d.c. V]	1100	1100	1100	1100	1100	1100	1100	1100
MPP tracker voltage range [d.c. V]	180-1000	180-1000	180-1000	180-1000	180-1000	180-1000	180-1000	180-1000
No. of MPP trackers	9	9	9*	9*	12	12	12	12
Max. PV input current per MPPT [d.c. A]	32	32	32	32	32	32	32	32
Isc PV array short circuit current per MPPT [d.c. A]	46	46	46	46	46	46	46	46
Max. inverter backfeed current to the array [d.c. A]	0	0	0	0	0	0	0	0

* **Note:** Optional 12MppTs version.

- AC output of 75 kW-150 kW inverter

Model	X3-FTH-75K(L) X3-FTH-75K	X3-FTH-80K(L) X3-FTH-80K	X3-FTH-100K(L) X3-FTH-100K	X3-FTH-110K(L) X3-FTH-110K	X3-FTH-120K(L) X3-FTH-120K	X3-FTH-125K(L) X3-FTH-125K	X3-FTH-136K-MV(L) X3-FTH-136K-MV	X3-FTH-150K-MV(L) X3-FTH-150K-MV
Rated AC output power [kW]	75	80	100	110	120	125	136	150
Rated AC output current [a.c. A]*	113.7 /108.7	121.3 /116	151.6 /145	166.7 /159.5	181.9 /174	189.4 /181.2	157.1 /145.4	173.2 /160.4
Max. AC output apparent power [kVA]	75	88	110	121	132	132	149.6	165
Max. AC output continuous current [a.c. A]*	113.7 /108.7	133.4 /127.6	166.7 /159.5	183.4 /175.4	200 /191.3	200 /191.3	172.8 /160	190.6 /176.5
Current (inrush) [A]*	113.7 /108.7	133.4 /127.6	166.7 /159.5	183.4 /175.4	200 /191.3	200 /191.3	172.8 /160	190.6 /176.5
Nominal AC voltage [a.c. V]**	220/380, 230/400, 3W/(N)/PE						500/540, 3W/PE	
Nominal AC frequency/AC frequency range [Hz]**	50/60; ±5							
Max. output fault current [a.c. A]	370							
Max. output overcurrent protection [a.c. A]	370							
Power Factor range	0.8 leading - 0.8 lagging							

* **Note:** The two data refer to different grid voltage 220V/230V or 500V/540V.

** **Note:** The AC voltage and the frequency range may vary from different country codes.

- Other informations of 75 kW-150 kW inverter

Model	X3-FTH-75K(L) X3-FTH-75K	X3-FTH-80K(L) X3-FTH-80K	X3-FTH-100K(L) X3-FTH-100K	X3-FTH-110K(L) X3-FTH-110K	X3-FTH-120K(L) X3-FTH-120K	X3-FTH-125K(L) X3-FTH-125K	X3-FTH-136K-MV(L) X3-FTH-136K-MV	X3-FTH-150K-MV(L) X3-FTH-150K-MV
Operating ambient temperature range [°C]	-25 to +60							
Max. operation altitude [m]	4000							
Relative humidity [%]	0-100							
Pollution degree	III							
Ingress protection	IP66							
Protective class	I							
Overvoltage category	III(MAINS), II(DC)							
Inverter topology	Non-isolated							
Safety	IEC/EN 62109-1; IEC/EN 62109-2; NB/T 32004							
Active anti-islanding method	Frequency shift							
Certification	NB/T 32004; IEC 61727; IEC 62116; VDE4110; VDE4105; EN50549; NRS097; G99; RD1699; PPD5; CEI0-21; CEI0-16; VFR 2019; IEC 61683; IEC 60068; EN 50530; AS47772							

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Warranty Registration

Please visit the website: <https://www.solaxcloud.com/user-center/> to complete the warranty registration. For more detailed warranty terms, please visit SolaX official website: www.solaxpower.com.



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