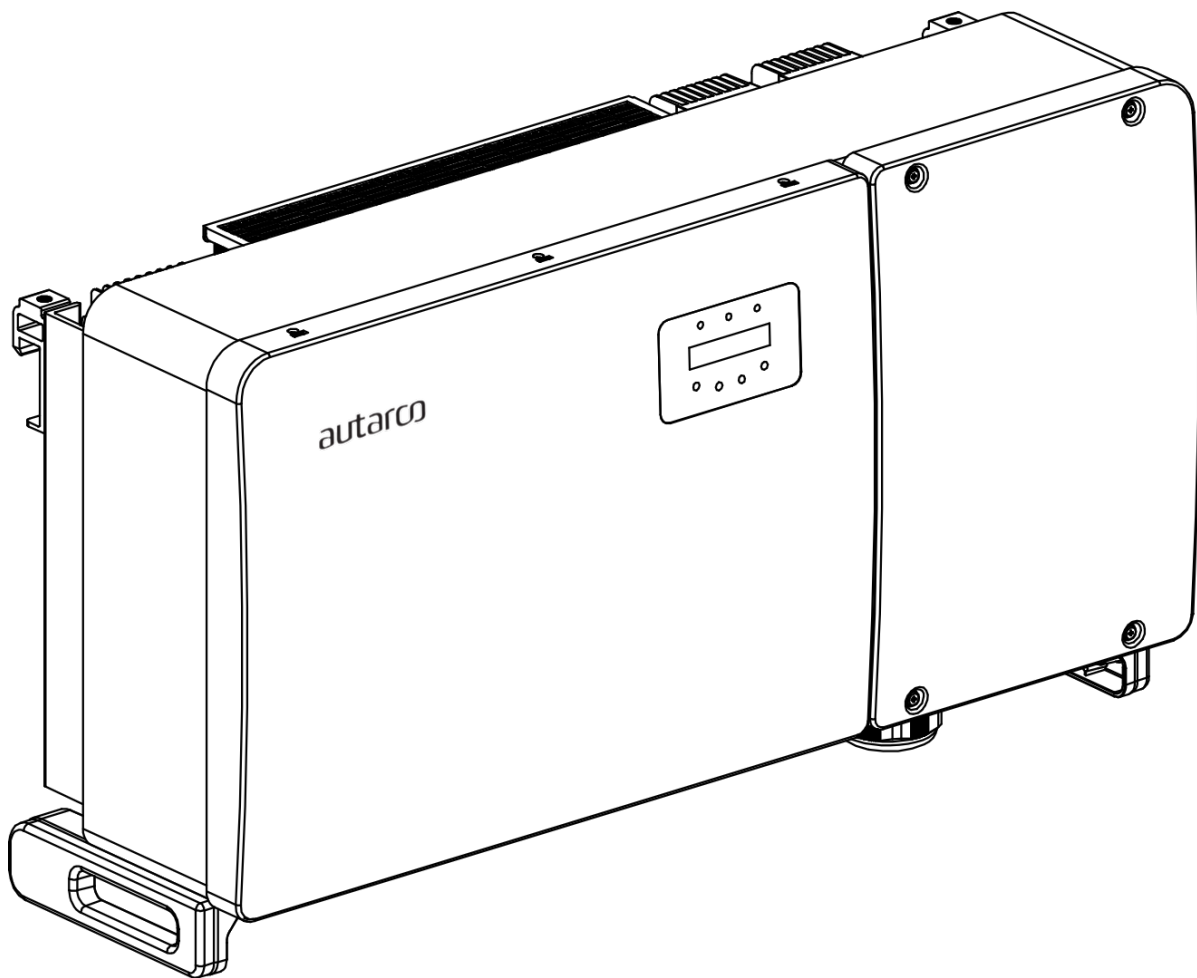


autarco

Installation and Operation Manual

Solar Inverters XLX-MII-series



Contact Information

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Other Information

This manual is an integral part of the unit. Please read the manual carefully before installation, operation or maintenance. Keep this manual for future reference.

Product information is subject to change without notice. All trademarks are recognized as the property of their respective owners.

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1. Introduction

1.1 Read this first

This manual contains important information for use during installation and maintenance of the XLX-MII-series Autarco inverter.

To reduce the risk of electrical shock, and to ensure the safe installation and operation of the XLX-MII-series Autarco inverters, the following safety symbols appear throughout this document to indicate dangerous conditions and important safety instructions.



WARNING! Indicates safety instruction, which if not correctly followed, can result in injury or property damages.



RISK OF ELECTRIC SHOCK! Indicates safety instructions, which if not correctly followed, could result in electric shock.



HOT SURFACE! Indicates safety instructions, which if not correctly followed, could result in burns.

1.2 Target Audience

This manual is intended for anyone who uses Autarco XLX-MII-series inverter. Before any further action, the operators must first read all safety regulations and be aware of the potential danger to operate high-voltage devices. Operators must also have a complete understanding of this device's features and functions.



ATTENTION! Qualified personnel means a person with valid license from the local authority in:

- Installing electrical equipment and PV power systems (up to 1000 V).
- Applying all applicable installation codes and using Personal Protective Equipment.
- Analyzing and reducing the hazards involved in performing electrical work.



WARNING! Do not use this product unless it has been successfully installed by qualified personnel in accordance with the instructions in chapter 4 "Installation".

1.3 Product versions covered by this document

The main purpose of this user manual is to provide instructions and detailed procedures for installing, operating, maintaining, and troubleshooting the XLX-MII-series of Autarco inverters which includes the following models:

For 380/400V AC grid connection:

- S2.XLX25000S-MII
- S2.XLX30000S-MII
- S2.XLX33000S-MII
- S2.XLX36000S-MII
- S2.XLX40000S-MII

The “S2.” In the product code means the product is a grid-tied inverter. If the product has an “S” at the end it comes with integrated DC switches. The -MII stands for the Mark II series.

The item code or SKU will include an additional number at the end. The final number references the default grid standard and colour of inverter. For example, S2.XLX25000S-MII.1 is the 20kW model with Dutch grid standard as default, integrated DC switch and Autarco blue cover.

Please keep this user manual available at all times in case of emergency.

2. Preparation

2.1 Safety instructions



DANGER! Do not touch any internal components whilst the inverter is in operation.



DANGER! Do not stand close to the inverter during severe weather conditions such as lightning, etc.



Make sure you completely cover the surface of all PV arrays with opaque (dark) material before wiring them or make sure the DC circuit breaker or equivalent DC isolator is disconnected. This is because photovoltaic (PV) arrays create electrical energy when exposed to light, and could cause a hazardous condition.



The XLX-MII series inverter must only be operated with PV arrays of protection class II, in accordance with IEC 61730, class A.



WARNING! The PV inverter will become hot during operation; please don't touch the heat sink or peripheral surface during or shortly after operation.



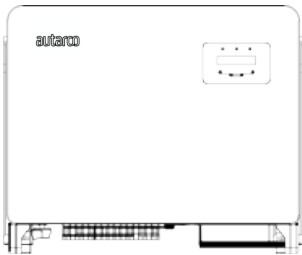
NOTICE! Do not directly connect AC output of the inverter to any private AC equipment. The PV inverter is designed to feed AC power directly into the public utility power grid.



WARNING! The installation, service, recycling and disposal of the inverters must be performed by qualified personnel in compliance with national and local standards and regulations. Please contact your dealer to get the information of authorized repair facility for any maintenance or repairmen.

Any unauthorized actions including modification of product functionality of any form will affect the validation of warranty service; Autarco may deny the obligation of warranty service accordingly.

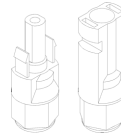
2.2 Package contents



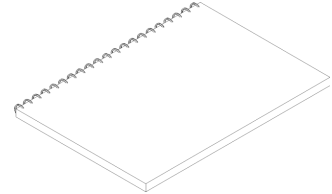
Autarco XLX-MII-series
inverter



Mounting bracket
Incl. screws



MC4 connector
pairs
S4.MC4F/MC4M



Instruction manual

2.3 Internal DC switch

Please verify whether your Autarco XLX-MII-series inverter is equipped with an internal DC switch. If there is an internal DC switch the product code will end in an “S”. The switch can be found on the bottom of the inverter (see **Error! Reference source not found.**). If there isn’t an internal DC switch it is important to apply an external DC disconnecter in order to completely disconnect the solar PV module strings from the inverter.

2.4 Explanations of symbols on inverter



DANGER - HIGH ELECTRIC VOLTAGE

This device is directly connector to public grid. All work to the inverter shall be carried out by qualified personnel only. There might be residual currents in inverter for up to 10 minutes because of large capacitors.



ATTENTION

This device directly connected to electricity DC generators and the public AC grid.



DANGER – HOT SURFACES

The components inside the inverter will get hot during operation, DO NOT touch aluminum housing during operating.



ATTENTION

In case of any work to the inverter, always refer to this manual for detailed product information.



ATTENTION

This device SHALL NOT be disposed of in residential waste. Please go to Chapter 9 “Recycling and Disposal” for proper treatments.



CE MARK

This equipment conforms to the basic requirements of the EU guideline governing low voltage and electromagnetic compatibility.

3. Product information

3.1 Overview

Autarco XLX-MII-series grid tied inverters are state of the art, high efficiency, robust and reliable grid tied inverters at the best price quality ratio available. They are easy to install and carry a standard 5 year product warranty. Our rigorous quality control and testing facilities guarantee Autarco inverters meet the highest quality standards possible. These inverters are the key to our international track record of delivering extremely reliable solar power solutions.

Key features:

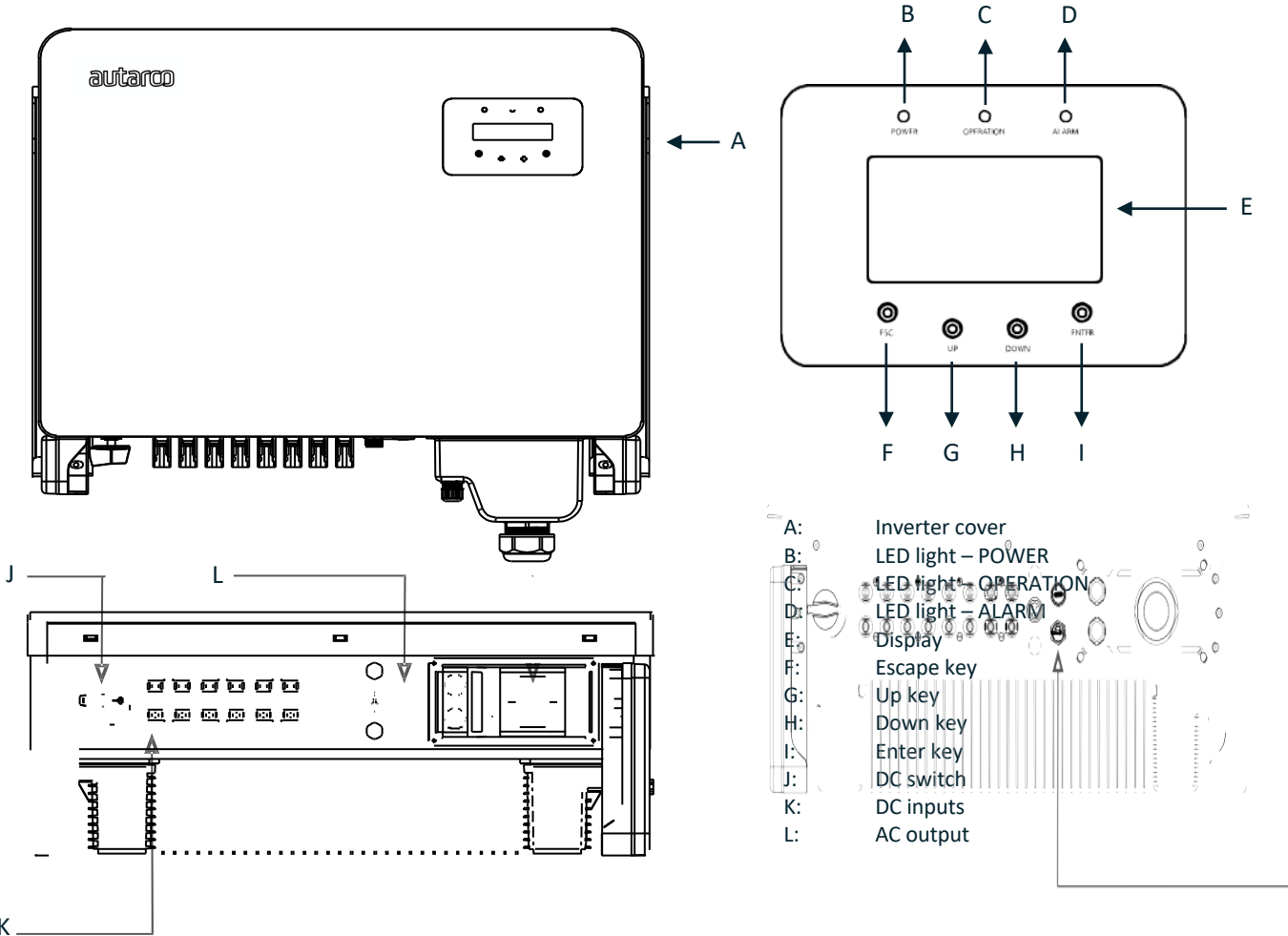
- Maximum efficiency of 98.6%
- 7" LCD colour display
- 3/4 MPPT with wide voltage range
- Low turn off voltage
- High enclosure protection class IP65
- Silent design using convection cooling principle
- Standard ten year product warranty
- Standard with wireless monitoring
- Optional integrated DC switch
- High range of protective functions

For full specifications please see chapter 11 "Product specifications".

3.2 Product identification

You can identify the inverter by the serial number (S/N) sticker on the side of the inverter. Important electrical specification can also be found on the label which can be found on the right side of the inverter housing. Do not remove the label or the serial number as this voids the product warranty.

3.3 Product overview



4. Installation

4.1 Safety



DANGER! Do not install the inverter near flammable or explosive items.



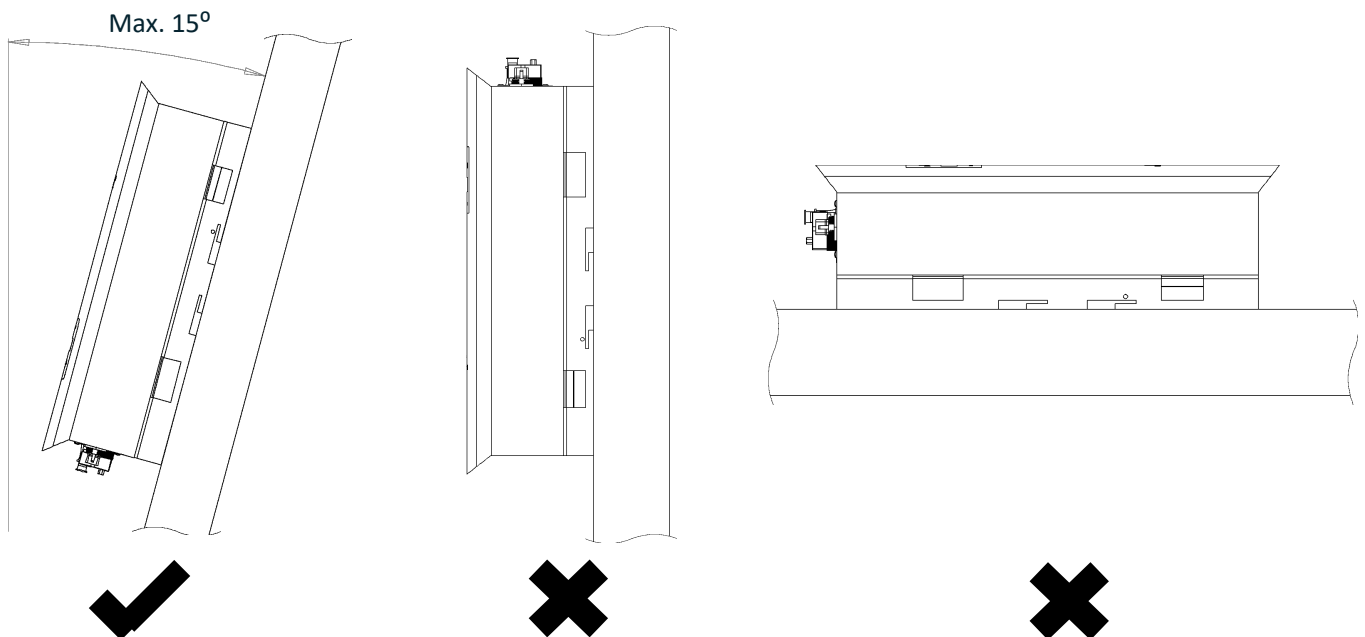
WARNING! The installation must be performed by qualified personnel and in compliance with national and local standards and regulations.
This inverter will be connected to a high voltage DC power generator and AC grid. Inappropriate installation may also jeopardize the life span of the inverter.



The installation site must have good ventilation conditions. Direct exposure to intense sunshine is not recommended.

4.2 Mounting instructions

- The inverter is suitable for outdoor and indoor installation.
- Vertical installation is recommended, with a maximum inclination of 15° backwards.
- Make sure the mounting wall is strong enough to hold the weight of the inverter.
- The ambient temperature of installation site should be between -20 °C and +60 °C.
- It is not recommended that the inverter is exposed to the direct sunshine.
- Make sure of ample ventilation at installation site, insufficient ventilation may reduce the performance of the electronic components inside the inverter and shorten the life span of the inverter.

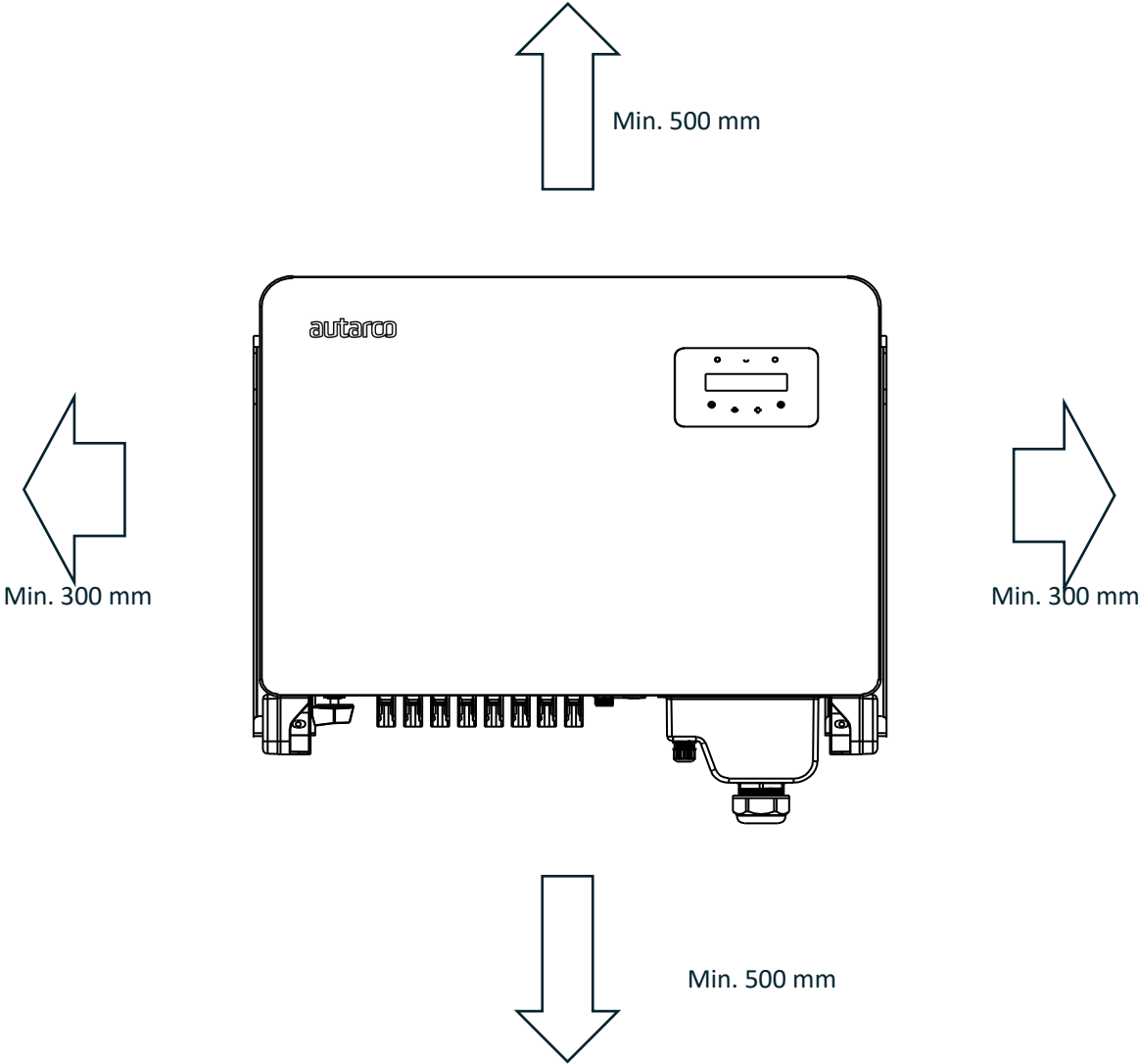


4.3 Safety clearance



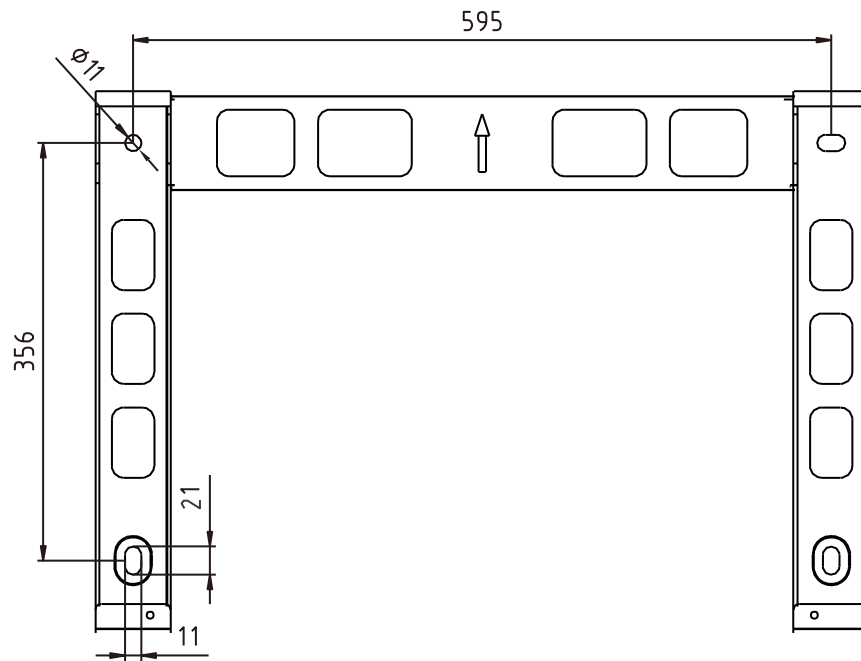
Caution! Make sure heat sinks are out of reach of children.

Observe the following minimum clearances to walls:

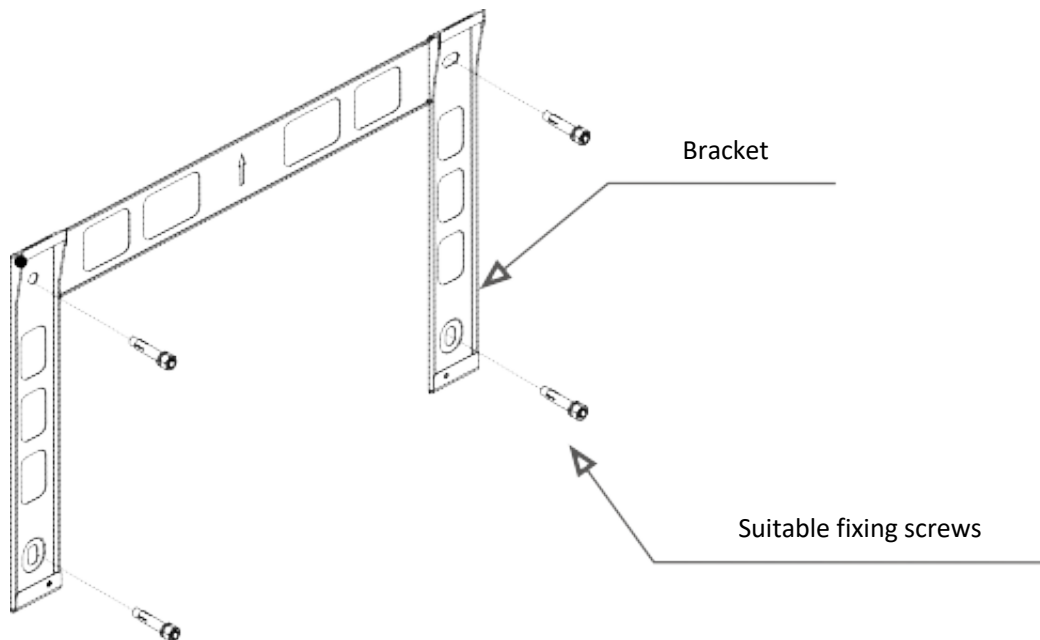


4.4 Mounting procedure

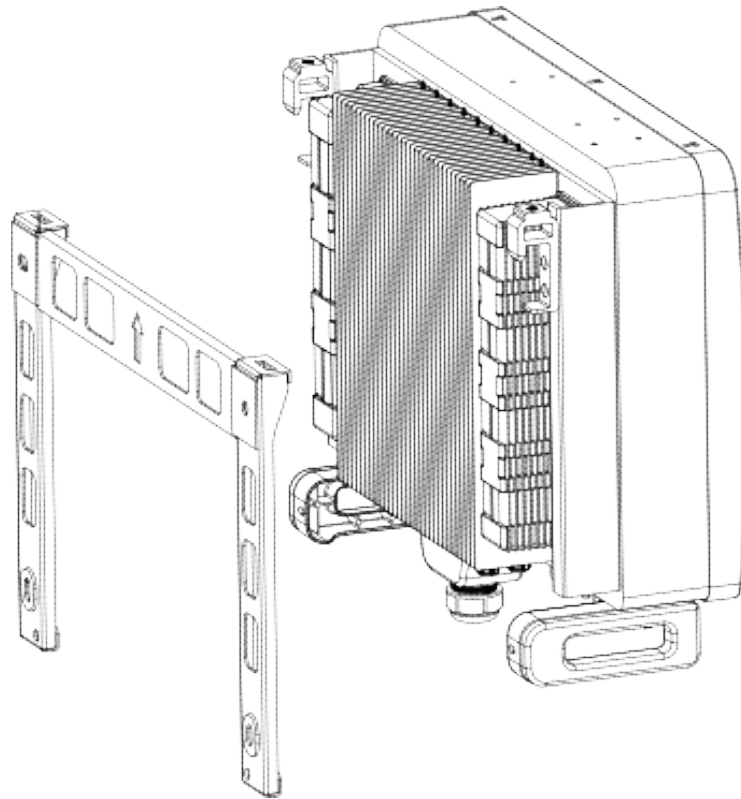
Step 1 — The wall bracket has the dimensions below. Please ensure the positions of the holes are suitable for fitting expansion bolts.



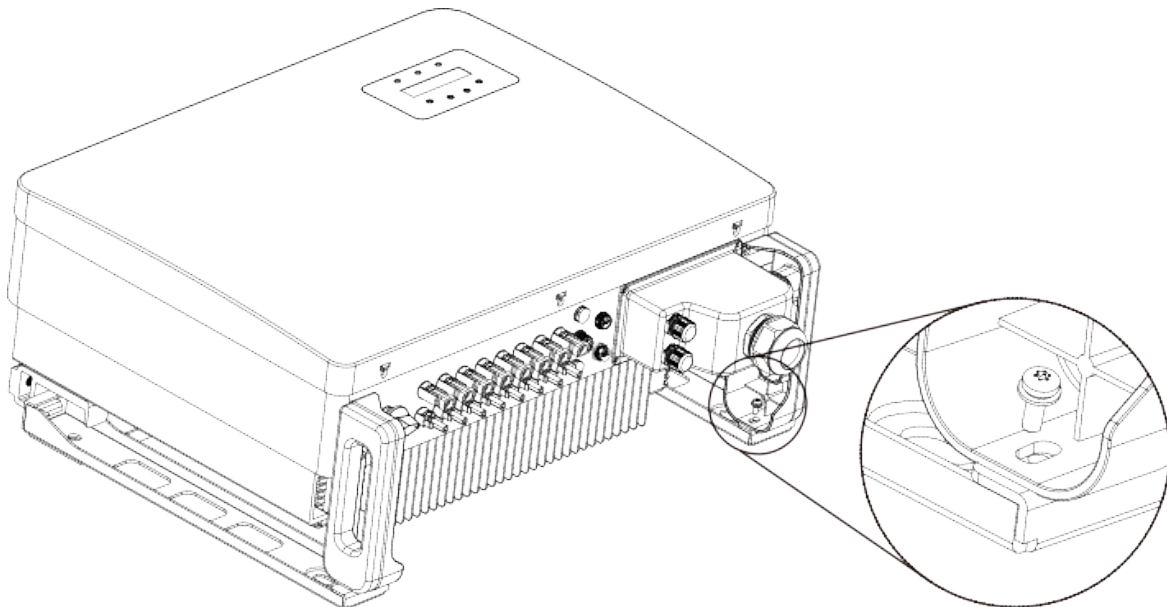
Step 2 — Mount the wall bracket onto the mounting wall with appropriate screws/plugs.



Step 3 — Lower the inverter onto the bracket. Lower the inverter onto the bracket. The screw holes in the wall bracket should align with the raised convex on the inverter bracket.



Step 4 — Fix the bottom of the inverter to the wall bracket with the M4x9mm screws:



5. Electrical installation



DANGER! This inverter will be connected to a high voltage DC power generator and AC grid. The installation must be performed by qualified personnel and in compliance with national and local standards and regulations

5.1 AC connection



DANGER! Never connect or disconnect the connectors under load.



NOTICE! The AC connection to the electrical distribution grid must be performed only after receiving authorization from the utility that operates the grid.



NOTICE! Make sure to set the correct grid standard as part of system commissioning, see chapter 6.6.

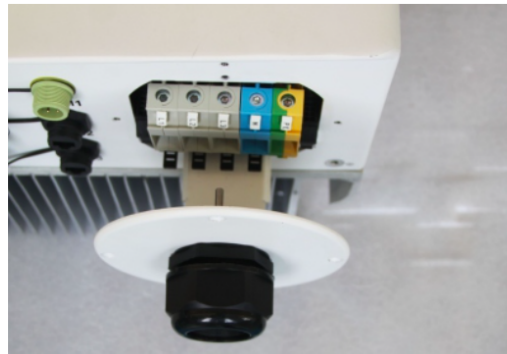
The Autarco inverter is equipped with an integrated Residual Current Protective Device (RCPD) and Residual Current Operated Monitor (RCOM). The RCOM will detect the volume of the leakage current and compare it with the expected value, if the leakage current exceeds the permitted range, the RCPD will disconnect the inverter from the AC load.

If regulations in the country of installation stipulate an external Residual Current Device (RCD), you must use a device with a tripping threshold of 100 mA or more. For the XLX-series we recommend to use a 300 mA RCD. A type "A" RCD can be used in accordance with our "Manufacturer's declaration for usage of residual current devices". Contact Autarco for advice.

The AC cable used must be dimensioned in accordance with any local and national directives on cable dimensions which specify requirements for the minimum conductor cross-section. Cable dimensioning factors are e.g.: nominal AC current, type of cable, type of routing, cable bundling, ambient temperature and maximum specified line losses.

We recommend 10-35mm 105°C cable with resistance lower than 1.5 ohm. If cable is longer than 100m, we recommend to use 16-35mm cable.

Step 1 — Unscrew the 4 screws on the AC wiring box cover and pull out the wiring box.



Step 2 — Insert the cable into the terminal and use a M6 hexagon screwdriver to tight the screws. The torque is 10 Nm.



WARNING! Please do not put the insulating layer of the cable in to the terminal when tightening the screw, otherwise it will cause poor contact.

Step 3 — Push the AC terminal along the rail to the inside of the inverter, and then tighten the 4 screws.





NOTICE! It is important that the AC wires are connected to the right terminals as indicated by the “L”, “N” and “Earthing” symbols on each AC connector.

In some countries a second protective conductor is required as a matter of principle. In each case, observe the applicable regulations for the site.



The AC connection to the electrical distribution grid must be performed only after receiving authorization from the utility that operates the grid.

Always use separate fuses for consumer load. Use dedicated circuit breakers with load switch functionality for load switching.

The selection of the mains circuit breaker rating depends on the wiring design (wire cross-section area), cable type, wiring method, ambient temperature, inverter current rating etc. Derating of the circuit breaker rating may be necessary due to self-heating or if exposed to heat.

	S2.XLX25000S- MII	S2.XLX30000S- MII	S2.XLX33000 S-MII	S2.XLX36000 S-MII	S2.XLX40000 S-MII
Max. AC current (A)	41.8	50.2	55.1	60.2	66.9
Recommended fuse type gL/gG or comparable automatic circuit breaker rating (A)	40	63	63	63	



DANGER! No consumer load should be applied between the mains circuit breaker and the inverter.

5.2 DC connections

Please always use the MC4 connectors from the inverter box to connect strings to the inverter.



DANGER! Never connect or disconnect the connectors under load.

XLX-series inverters have two MPP trackers. The DC characteristics of each model is shown in the table below:

Inverter	MPP tracker	Max DC power	Max DC voltage	Max. DC current per MPPT
S2.XLX25000S-MII	3	33kW	1100V	3*26A
S2.XLX30000S-MII	3	39kW		
S2.XLX33000S-MII	3	43kW		

S2.XLX36000S-MII	4	47kW	4*26A
S2.XLX40000S-MII	4	52kW	



DANGER! Do not connect the strings with an open circuit voltage greater than the Max DC voltage of the inverter.

To connect the PV generator to the inverters we use 4mm² or 6mm² PV cable and MC4 connectors. For details on how to assemble MC4 connector please refer our MC4 connector manual.



DANGER! For protection against electric shock, MC4 connectors must be isolated from the PV array while being assembled or disassembled.



DC connections must not be unplugged while under load. They can be placed in a no-load state by switching off the DC/AC converter or breaking the DC circuit interrupter. Plugging and unplugging while under voltage is permitted.



CAUTION! MC4 connectors are watertight IP67 but cannot be used permanently under water. Do not lay the MC4 connectors on the roof surface.



If any tools or parts are used in the MC4 connector assembly other than those listed in the MC4 connector manual, neither safety nor compliance with the technical data can be guaranteed.

5.3 Commissioning and Decommissioning sequence

Turn ON	Turn OFF
1. Connect AC side (if not connected yet)	1. Switch OFF the AC switch
2. Connect DC side (if not connected yet)	2. Switch OFF the DC switch
3. Switch ON the DC switch	
4. Switch ON the AC switch	

If the voltage of PV is higher than the start-up voltage, the inverter will turn on and the initial interface of LCD will show “Current status: Waiting” on the upper left corner.

Then the inverter will check both its internal parameters and the parameters if the AC and DC input to ensure that they are within the acceptable limits.

After around 30-180 seconds (based on local requirement), the inverter will start to generate power. The green LED will be on continually and the LCD displays “Current status: Generating”.



NOTICE! If torn on DC input switch before grid breaker, inverter may show fault messages “No_Grid” on current status, the fault will be clear if grid voltage is normal.

6. Operation

6.1 LED indicator lights

There are three LED status indicator lights in the front panel of XLX-MII series inverters. The left POWER light (red) indicates power status of the inverter. The middle OPERATION light (green) indicates the operation status. The right ALARM light (yellow) indicates the alarm status. Table 3.1 explains their meanings.

Light	Status	Description
● POWER (red)	ON	The PV array provides power to the inverter
	OFF	The PV array does not provide power to the inverter
● OPERATION (green)	ON	The inverter is feeding AC power to the grid
	OFF	The inverter is not feeding AC power to the grid
	FLASHING	The inverter is initializing
● ALARM (yellow)	ON	There is a fault. Refer to the inverter display and chapter 10 of this manual for details
	OFF	The inverter is operation normally

When inverter DC switch and AC switch have been turned on the inverter will start initializing. After approx. 3 minutes the inverter will start normal operation with the inverter display showing GENERATING.

6.2 Inverter display



NOTICE! During normal operation, make sure the optional integrated DC switch is switched “on”.

The XLX-MII series inverters come with a 7” LCD screen with graphic displays and interactive menus. Pressing the ENTER button gives access to the main menu which has four sub menus:

- Information, described in detail in chapter 6.3.
- Settings, described in detail in chapter 6.4.
- Advanced information, described in detail in chapter 6.5.
- Advanced settings, described in details in chapter 6.6.

By pressing UP or DOWN keys you can cycle through these sub menus and click ENTER to go into the submenu.

6.3 Information


The XLX-MII series inverters main menu provides access to operational data and information. The information is displayed by selecting "Information" from the main menu. By default the inverter display will scroll through the information states below. Pressing the ENTER key will lock or unlock the current display. You can also press UP or DOWN keys to move to the next screen. By pressing the ESC key returns to the main menu.

State	Description
V_DC01 %VALUE% V I_DC01 %VALUE% A	Shows the input voltage (V) of the MPPT1 Shows the input current (A) of the MPPT1
V_DC02 %VALUE% V I_DC2 %VALUE% A	Shows the input voltage (V) of the MPPT2 Shows the input current (A) of the MPPT2
V_DC03 %VALUE% V I_DC03 %VALUE% A	Shows the input voltage (V) of the MPPT3 Shows the input current (A) of the MPPT3
V_DC04 %VALUE% V I_DC04 %VALUE% A	Shows the input voltage (V) of the MPPT4 Shows the input current (A) of the MPPT4
V_A %VALUE% V I_A %VALUE% A	Shows the voltage (V) of the grid L1 Shows the current (A) of the grid L1
V_B %VALUE% V I_B %VALUE% A	Shows the voltage (V) of the grid L2 Shows the current (A) of the grid L2
V_C %VALUE% V I_C %VALUE% A	Shows the voltage (V) of the grid L3 Shows the current (A) of the grid L3
Status: %VALUE% Power: %VALUE% W	Shows the status of the inverter Shows current output power (W) of the inverter For any status other than "Generating" and "Initializing" please refer to chapter 10 for troubleshooting
Rea_Power: %VALUE% Var App_Power: %VALUE% VA	Shows the real power generated Shows the apparent power generated
Grid frequency F_Grid %VALUE% Hz	Shows current frequency (Hz) of the grid
Total Energy %VALUE% kWh	Shows total energy output (kWh)
This Month: %VALUE% kWh Last Month: %VALUE% kWh	Total energy output in this month (kWh) Total energy output of last month (kWh)
Today: %VALUE% kWh Yesterday: %VALUE% kWh	Total energy output in this day (kWh) Total energy output of yesterday (kWh)
Inverter S/N	Serial ID of the inverter

Export_P: %VALUE% W	Shows the exported power
Export_I: %VALUE% A	Shows the exported current
Work Mode:	Demand response mode (only relevant for some markets)
DRM Number:	The demand response number (1-8) of the inverter
I_DC01 %VALUE% A	Shows the input current (A) of the DC input 1
I_DC02 %VALUE% A	Shows the input current (A) of the DC input 2
I_DC03 %VALUE% A	Shows the input current (A) of the DC input 3
I_DC04 %VALUE% A	Shows the input current (A) of the DC input 4
I_DC05 %VALUE% A	Shows the input current (A) of the DC input 5
I_DC06 %VALUE% A	Shows the input current (A) of the DC input 6
I_DC07 %VALUE% A	Shows the input current (A) of the DC input 7
I_DC08 %VALUE% A	Shows the input current (A) of the DC input 8

6.4 Settings

The following options are available under the Settings submenu:

Set Time and Date	<p>Press UP/DOWN keys to set change element</p> <p>Press ENTER key to move to next element</p> <p>Press ESC key to save date and return</p>
Set Address	<p>Assign a number (##) to the inverter to distinguish between multiple inverters when using parallel communication with WIFI-BOX or GPRS-BOX</p> <p>Press UP/DOWN keys to set change number</p> <p>Press ENTER key to save the setting</p> <p>Press ESC key to return.</p> <div style="text-align: center;">  <p>Changing the Address when using WIFI-STICK or LAN-STICK may result in monitoring to stop working.</p> </div>
Restore Settings	Delete alarm messages that have been generated

Press ENTER to enter the sub-menu and UP/DOWN to change the setting. Press ENTER to save or move to the next setting. Press the ESC key to cancel and return to the previous menu.

6.5 Advanced info



WARNING! Access to this section of the menu is for Autarco qualified and accredited technicians only. Unauthorized access will void the product and system warranty.

Screen can be scrolled through with UP/DOWN keys to see the information as per the table below. Press ENTER key to enter a submenu. Press ESC key to go back to the main menu.


Alarm Messages	Scroll through the last ten alarm messages for trouble shooting purposes.
Running Message	The screen shows the internal operation parameters of the inverter
Version	The screen shows the operating software version of the inverter
Communication data	The screen shows information interpretable to qualified technicians only
Daily Energy	The screen shows a graph of daily energy output
Monthly Energy	The screen shows a graph of the monthly energy output
Yearly Energy	The screen shows a graph of the yearly energy output
Totally Energy	The screen shows a graph of the inverter total energy detail
Daily records	The screen shows the inverter work log, the information is interpretable to qualified technicians only

6.6 Advanced Settings



WARNING! Access to this section of the menu is for Autarco qualified and accredited technicians only. Unauthorized access will void the product and system warranty.

Screen can be scrolled through with UP/DOWN keys to see the information as per the table below. Press ENTER key to enter a submenu. Press ESC key to go back to the main menu.



WARNING! Set GRID OFF (see below) before changing this setting.


Press UP/DOWN keys to cycle through available standards

Press ENTER key to save the setting - Press ESC key to cancel and return



When selecting User defined the following upper and lower values have to be set for voltage and frequency:


Select grid standard	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">OV-G-V1: 300---480V</td> <td style="width: 50%;">OV-G-F1: 50.2-63Hz</td> </tr> <tr> <td>OV-G-V1-T: 0.01---9s</td> <td>OV-G-F1-T: 0.01---9s</td> </tr> <tr> <td>OV-G-V2: 300---490V</td> <td>OV-G-F2: 51-63Hz</td> </tr> <tr> <td>OV-G-V2-T: 0.01---1s</td> <td>OV-G-F2-T: 0.01---9s</td> </tr> <tr> <td>UN-G-V1: 173---336V</td> <td>UN-G-F1: 47-59.5Hz</td> </tr> <tr> <td>UN-G-V1-T: 0.01---9s</td> <td>UN-G-F1-T: 0.01---9s</td> </tr> <tr> <td>UN-G-V2: 132---319V</td> <td>UN-G-F2: 47-59Hz</td> </tr> <tr> <td>UN-G-V2-T: 0.01---1s</td> <td>UN-G-F2-T: 0.01---9s</td> </tr> </table>	OV-G-V1: 300---480V	OV-G-F1: 50.2-63Hz	OV-G-V1-T: 0.01---9s	OV-G-F1-T: 0.01---9s	OV-G-V2: 300---490V	OV-G-F2: 51-63Hz	OV-G-V2-T: 0.01---1s	OV-G-F2-T: 0.01---9s	UN-G-V1: 173---336V	UN-G-F1: 47-59.5Hz	UN-G-V1-T: 0.01---9s	UN-G-F1-T: 0.01---9s	UN-G-V2: 132---319V	UN-G-F2: 47-59Hz	UN-G-V2-T: 0.01---1s	UN-G-F2-T: 0.01---9s
OV-G-V1: 300---480V	OV-G-F1: 50.2-63Hz																
OV-G-V1-T: 0.01---9s	OV-G-F1-T: 0.01---9s																
OV-G-V2: 300---490V	OV-G-F2: 51-63Hz																
OV-G-V2-T: 0.01---1s	OV-G-F2-T: 0.01---9s																
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UN-G-V1-T: 0.01---9s	UN-G-F1-T: 0.01---9s																
UN-G-V2: 132---319V	UN-G-F2: 47-59Hz																
UN-G-V2-T: 0.01---1s	UN-G-F2-T: 0.01---9s																

Press UP/DOWN keys to scroll through these values
 Press ENTER key to edit the selected value
 Press UP/DOWN keys to change the selected value
 Press ENTER key to save and return
 Press ESC key to cancel and return



WARNING! Set GRID ON (see below) before new standard is activated.

	 <p>WARNING! Please note that the User-Def standard is not to be used without the agreement of the local grid authority.</p>
Grid ON/OFF	<p>Press UP/DOWN keys to cycle through grid ON/OFF options Press ENTER key to save Press ESC key to return</p>
Clear Energy	<p>Reset the inverters total kWh output to zero.</p>  <p>Using this function without previous approval from Autarco will void any existing kWh Guarantees.</p>
New Password	<p>Change the password to enter Advanced Info and Advanced Settings. Enter the current password before setting a new password. Press the DOWN key to move the cursor, Press the UP key to change the digit. Press the ENTER key to execute the setting. Press the ESC key to return to the previous menu.</p>
Power Control	<p>Inverter output active power and reactive power control can be set through this menu if the grid is unbalanced:</p> <ol style="list-style-type: none"> 1. Set output power 2. Set reactive power 3. Out_P with restore 4. Rea_P with restore 5. Select PF curve
Calibrate Energy	<p>Maintenance or replacement could clear or cause a different value for total energy. Use this function to allow user to revise the value of total energy to the same value as before.</p> <p>Press the DOWN key to move the cursor, Press the UP key to revise the value. Press the ENTER key to execute the setting. Press the ESC key to return to the previous menu.</p>
Special Settings	<p>Special settings can switch off functions temporarily for testing purposes. These tests should only be done by qualified Autarco personnel or trained installers when requested to do so. Submenu includes:</p> <ol style="list-style-type: none"> 1. Grid Filter Set 2. Relay_Protect Set 3. ILeak_Protect Set 4. GROUND_Protect Set 5. GRID INTF.02 Set 6. MPPT Parallel Mode 7. Cnst. Voltage Mode 8. LV/FRT Set 9. IgZero_COMP. Set 10. PI Set 11. IgADCheckPRO Set

	<ul style="list-style-type: none"> 12. NoSmallPulse Set 13. VarCompensation 14. AFCI Set
STD Mode Settings	<p>STD Mode Settings are used when demand response is required by grid operators.</p> <ul style="list-style-type: none"> 1. Working Mode Set 2. Power Rate Limit 3. Freq Derate Set 4. 10mins Voltage Set 5. Power Priority 6. Initial Settings 7. Voltage PCC Set
Restore Settings	Restore Settings resets the inverter to factory defaults.
HMI Updater	Selecting HMI Updater will show the current software version the LCD screen is based on.
Internal EPM Set	<p>Internal power export management.</p> <ul style="list-style-type: none"> 1. Mode 2. Backflow power 3. Fail safe ON/OFF
External EPM Set	<p>External power export management.</p> <ul style="list-style-type: none"> 1. 5G-EPM 2. Others-EPM
Restart HMI	This function is used to restart reset the HMI software.
Debug parameter	Shows debug parameters.
Fan test	Test intelligent fan
DSP Update	Selecting DSP Update will show the current internal software version.
Compensation Set	<p>This function is used to calibrate inverter output energy. It will not impact the energy count for inverter with RGM.</p> <ul style="list-style-type: none"> 1. Power parameter 2. Voltage parameter <p> Using this function without previous approval from Autarco will void any existing kWh Guarantees.</p>
I/V Curve	<p>Used to create I/V curves for all DC inputs.</p> <ul style="list-style-type: none"> 1. Set I/V curve 2. I/V curve scan

7. Monitoring setup and system registration

The instructions about monitoring setup and system registration can be found in separate manuals enclosed in the documentation that came with this Autarco system. For more information manual please contact your Autarco installer or refer to our website www.autarco.com.

8. Maintenance

The XLX-MII-series inverters do not require regular maintenance. However, impurities such as dust and dirt accumulation on the heat sink may negatively affect the inverter's ability to dissipate heat. Any dirt or dust can be removed with a cloth or soft brush.



CAUTION! Do not touch the heat sink when the inverter is in operation. Turn OFF the inverter (see section 0) and allow for cooling down before cleaning.



CAUTION! Never use any solvents, abrasives or corrosive materials to clean the inverter.

9. Disposal

To comply with European Directive 2002/96/EC on waste Electrical and Electronic Equipment and its implementation as national law, electrical equipment that has reached the end of its life must be collected separately and returned to an approved recycling facility. Ignoring this EU Directive may have severe effects on the environment and your health.

10. Troubleshooting

10.1 General

Display message	Action
Blank screen	<ul style="list-style-type: none"> • Check that all switches are in the ON position (including internal DC switch if present) • Check AC and DC power supply. If DC power is greater than 10W and string voltage greater than 100V the inverter should start. • If switches are on and AC and DC power supplies are available, please contact installer.

10.2 Internal component fault

Error type	Display message	Error code	Error description	Action
Over BUS DC voltage	OV-BUS	1021	Internal fault	<ol style="list-style-type: none"> 1. Restart inverter (up to three times). 2. If error persists contact installer for replacement inverter.
Under BUS DC voltage	UN_BUS	1012	Internal fault	
BUS pressure fault	UNB2_BUS	1024	Internal fault	
System initial fault	INI-PRO	1031	Internal fault	
Relay fault	Relay_PRO	1035	Internal fault	
DSP_B fault	DSP_B_PRO	1036	Internal fault	
DC injection	DCInj_PRO	1037	Internal fault	
12V under voltage fault	12Power_PRO	1038	Internal fault	

10.3 Grid errors

Error type	Display message	Error code	Error description	Action
Over voltage	OV-G-V	1010	Grid voltage exceeds the standard set in the inverter	<ol style="list-style-type: none"> 1. Wait to see if the grid voltage returns within limits. 2. If problem persists, check whether the grid standard is set correctly in Advanced Settings (see 6.6).
Under voltage	UN-G-V	1011	Grid voltage is below the standard set in the inverter	<ol style="list-style-type: none"> 3. Check V_AC, grid voltage, in Information display of inverter (see 6.3) and perform independent measurement of grid voltage to confirm that the inverter reading is correct. If the measured voltage is outside the local grid standard limits, please contact your local utility as it may require monitoring and adjustment 4. With agreement from utility it is possible to set a user defined voltage range (see 6.6).
Over frequency	OV-G-F	1012	Grid frequency exceeds the standard set in the inverter.	<ol style="list-style-type: none"> 1. Wait to see if the grid frequency returns within limits. 2. If a problem persists, check whether the grid standard is set correct in Advanced Settings (see 6.6).
Under frequency	UN-G-V	1013	Grid frequency is below the standard set in the inverter.	<ol style="list-style-type: none"> 3. Check grid frequency, in Information display of inverter (see 6.3) and perform independent measurement of grid frequency to confirm that the inverter reading is correct. If the measured frequency is outside the local grid standard limits, please contact your local utility as it may require monitoring and adjustment. 4. With agreement from utility it is possible to set a user defined frequency range (see 6.6).
Grid impedance	G-IMP	1014	High grid impedance	<ol style="list-style-type: none"> 1. Wait to see if the grid returns within limits. 2. If problem persists please contact your local utility as it may require monitoring and adjustment.
No Grid	NO Grid	1015	The inverter cannot detect a grid.	<ol style="list-style-type: none"> 1. Check your AC power connections and switches. 2. Restart the inverter. 3. Call your local grid to resolve the black out.

10.4 System and design fault

Error type	Display message	Error code	Error description	Action
Over DC voltage	OV-DC	1020	The DC input of the solar strings exceeds the inverters limits.	<ol style="list-style-type: none"> 1. Restart inverter (up to three times). 2. Contact installer to: <ol style="list-style-type: none"> a. Perform independent measurement of string voltage to confirm that the inverter reading is correct. 3. Rewire strings so that string voltage is within accepted range.
Over temperature	TEM-PRO	1032	The internal temperature of inverter exceeds limits.	<ol style="list-style-type: none"> 1. Check location of inverter. Ensure it has adequate ventilation and is not exposed to direct sunlight. 2. Contact installer to replace inverter in case problem persists.
Short circuit fault	SHORT-PRO	1030	A short circuit has been detected in the system.	<ol style="list-style-type: none"> 1. Restart inverter (up to three times). 2. Call installer to: <ol style="list-style-type: none"> a. Check for pinched, crimped or otherwise damaged cables and connections. b. Check all switches for short circuit. 3. If error persists contact Autarco for replacement inverter.
Ground fault	GROUND-PRO	1033	Current flow detected through ground conductor.	<ol style="list-style-type: none"> 1. Restart inverter (up to three times). 2. Call installer to: <ol style="list-style-type: none"> a. Check if there is any current on the ground conductor using a clamp meter. b. Check for pinched, crimped or otherwise damaged cables and connections. 3. If error persists contact Autarco for replacement inverter.
Current leakage	ILeak_PRO	1034	A current leak has been detected.	<ol style="list-style-type: none"> 1. Restart inverter (up to three times). 2. Call installer to: <ol style="list-style-type: none"> a. Check if there is any current on the ground conductor using a clamp meter. b. Check for pinched, crimped or otherwise damaged cables and connections. 3. If error persists contact Autarco for replacement inverter.

11. Product specifications

	S2.XLX25000S- MII	S2.XLX30000S- MII	S2.XLX33000S- MII	S2.XLX36000S- MII	S2.XLX40000S- MII
Input					
Max. DC voltage (V)	1100	1100	1100	1100	1100
MPPT voltage range (V)	200-1000	200-1000	200-1000	200-1000	200-1000
Turn on voltage (V)	350	350	350	350	350
Turn off voltage (V)	180	180	180	180	180
# MPPT	3/4	3/4	3/4	3/4	3/4
Max. DC current per MPPT (A)	26	26	26	4*26	4*26
# Strings per MPPT	2	2	2		
Total number of strings	8	8	8		
DC connection type	MC4	MC4	MC4	MC4	MC4
Output					
Nominal AC power (W)	25000	30000	33000	36000	40000
Max. AC power (W)	27500	33000	36300	39600	44000
Nominal AC current (A)	38.0/36.1	45.6/43.3	50.1/47.6	57.7/52.0	60.8/57.7
Max. AC current (A)	41.8	50.2	55.1	60.2	66.9
Power connection	Three phase				
Grid voltage range	According to VDE4105, UL-1741, G59/3, AS4777				
Grid frequency range	According to VDE4105, UL-1741, G59/3, AS4777				
Power factor	>0.99				
Harmonic distortion at nominal output	<3%				
AC connector	Terminal connectors				
Overvoltage category	OVC III (MAINS), OVC II (PV)				
Power consumption					
Nighttime power consumption (W)	< 1				
Standby power consumption (W)	< 30				
Efficiencies					
Max. efficiency	98.6%				
Euro efficiency	98.3%				
MPPT efficiency	99.9%				

	S2.XLX25000S- MII	S2.XLX30000S- MII	S2.XLX33000S- MII	S2.XLX36000S- MII	S2.XLX40000S- MII
Safety protection					
DC reverse-polarity protection			Yes		
Short circuit protection			Yes		
Output over current protection			Yes		
Output over voltage protection			Yes		
Insulation resistant monitoring			Yes		
Residual current detection			Yes		
Surge protection			Yes		
Grid monitoring			Yes		
Islanding protection			Yes		
Temperature protection			Yes		
Integrated DC switch			Optional		
General data					
Dimensions (W x H x D) (mm)			647 X 629 X 252		
Weight			45kg		
Installation environment			Indoor or outdoor		
Mounting			Wall bracket		
Operating temperature range (°C)			-25 to 60		
Max. relative humidity			95% (without condensation)		
Maximum altitude			4000m		
IP protection rating			IP65		
Isolation type			Transformerless		
Cooling concept			Convection		
Noise level (dBA)			< 30		
LED indicators			3		
LCD display			7" LCD color screen		
Communication interfaces			1xRS485		
Optional interfaces			Wi-Fi, GPRS, Z-Wave, LAN		

Standard warranty	10 years
Integrated DC switch	Optional