



Quick Installation Guide

RPI-M15A

RPI-M20A



Europe



Australia



New Zealand



This manual applies for solar inverter models:

- RPI-M15A
- RPI-M20A

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Table of contents

1 General safety instructions 3

2 Components of the inverter 4

3 Information on the type label 5

4 Scope of delivery 5

5 Planning the installation 6

6 Mounting the inverter. 7

7 Connecting to the grid (AC) 8

8 Connecting to the solar modules (DC) 10

9 Connecting to a datalogger via RS485 (optional) 11

10 Connecting EPO and dry contacts (optional). 12

11 Commissioning - basic settings 13

12 Commissioning - further settings (optional) 14

 Date and time 14

 Display language. 15

 Baud rate for RS485 16

 Inverter ID 17

 Constant cos phi (cos φ). 18

 Power limitation 19

 AC connection type 20

13 Technical data. 22

 Service Europe 24

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This manual is included with our solar inverter and is intended for use by the installer and end user.

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All information and specifications can be modified without prior notice.

The latest version of this manual is available at www.solar-inverter.com.

1 General safety instructions

DANGER



Risk of death by electrocution

Potentially fatal voltage is applied to the solar inverter during operation. This potentially fatal voltage is still present for 80 seconds after all power sources have been disconnected.

- ▶ Never open the solar inverter.
- ▶ Always disconnect the solar inverter from power before installation, open the AC/DC isolating switch and make sure neither can be accidentally reconnected.
- ▶ Wait at least 80 seconds until the capacitors have discharged.

DANGER



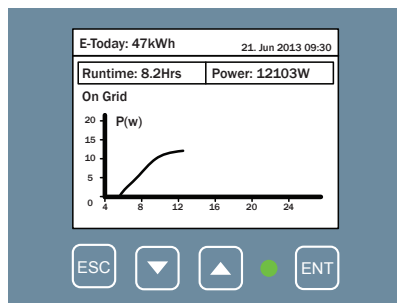
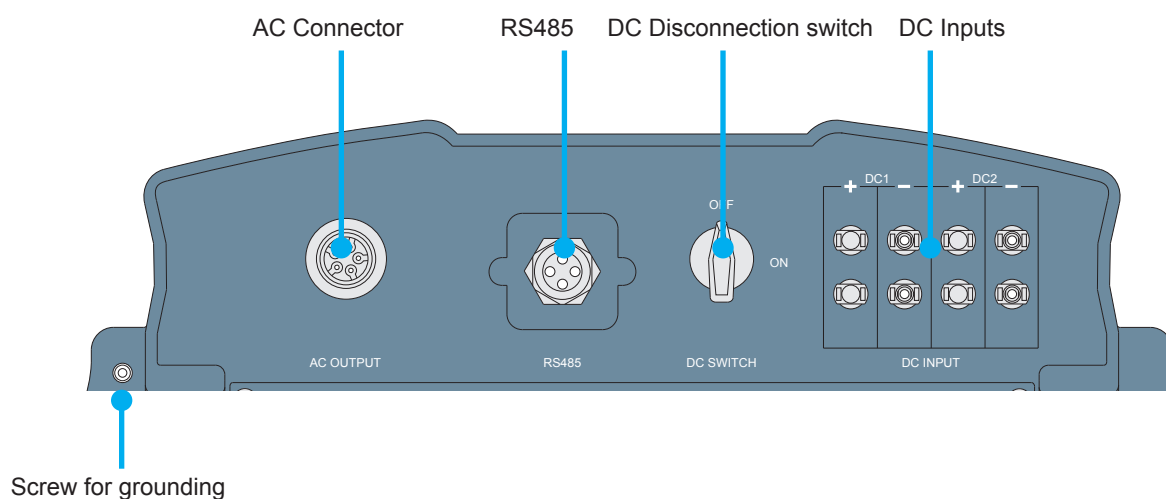
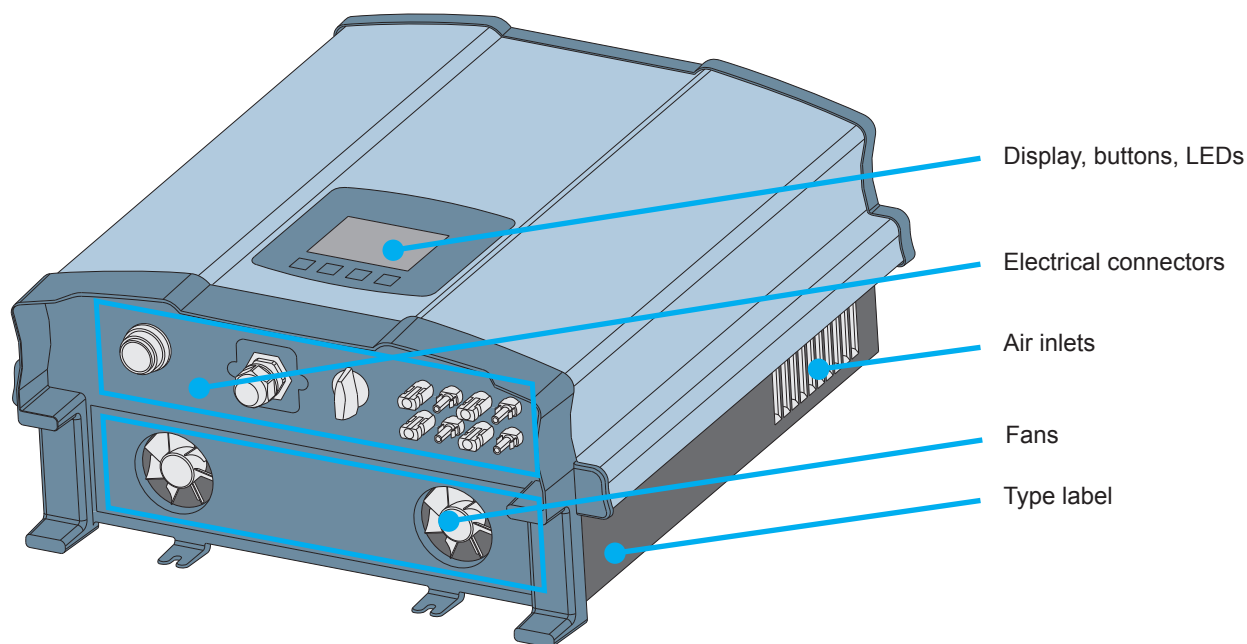
Risk of death or serious injury from electrocution

Potentially fatal voltage may be applied to the DC connections of the solar inverter. When light is falling on solar modules, they immediately start producing energy. They do so, even when the sun is not shining.

- ▶ Never disconnect the solar modules when the solar inverter is powered.
- ▶ First switch off the grid connection so that the solar inverter cannot feed energy into the grid.
- ▶ Turn the DC disconnecting switch to position **OFF**.
- ▶ Make sure the DC connections cannot be accidentally touched.

- The solar inverter can be safely and normally operated if installed and used in accordance with this manual (see IEC 62109-5.3.3). Delta Energy Systems is not responsible for damage incurred by failure to observe the installation and operating instructions in this manual. For this reason, be sure to observe and follow all instructions!
- Installation and commissioning may only be performed by qualified electricians using the installation and commissioning instructions found in this manual.
- The solar inverter must be disconnected from power and the solar modules before any work on it can be performed.
- The solar inverter has a high leakage current value. The ground wire **must** be connected before commissioning.
- Do not remove any warning signs that the manufacturer has installed on the solar inverter.
- Improper handling of the solar inverter may result in physical injury and damage to property. For this reason, observe and follow all general safety instructions and warnings.
- The solar inverter contains no components that must be maintained or repaired by the operator or installer. All repairs must be performed by Delta Energy Systems. Opening the cover will void the warranty.
- Do not disconnect any cables when the solar inverter is powered due to risk of a fault arc.
- To prevent lightning strikes, follow the relevant regulations applicable in your country.
- The surface of the solar inverter can become very hot during operation. Use safety gloves when working on the solar inverter.
- The solar inverter is very heavy. The solar inverter must be lifted and carried by at least two people.
- Only devices in compliance with SELV (EN 69050) may be connected to the RS485 and USB interfaces.
- All connections must be sufficiently insulated in order to comply with the IP65 protection rating. Unused connections must be closed by placing cover caps on the solar inverter.

2 Components of the inverter

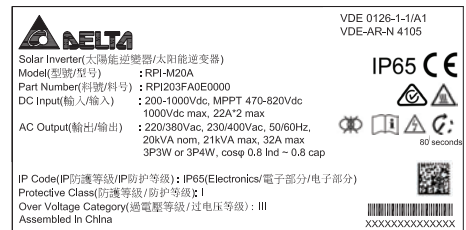


Label	Designation	Usage
LED		Multi-color LED to display the general operating status of the inverter
Buttons		
ESC	Escape	Exit current menu. Cancel value setting.
▼	Move down	Move downwards in menu. Set value (decrease).
▲	Move up	Move upwards in menu. Set a value (increase).
ENT	Enter	Select menu item. Open configurable value for editing. Finish editing (adopt set value).

3 Information on the type label



Type label RPI-M15A



Type label RPI-M20A



Risk of death by electrocution

Potentially fatal voltage is present when the solar inverter is in operation that remains for 80 seconds after being disconnected from power.

Never open the solar inverter. The solar inverter contains no components that must be maintained or repaired by the operator or installer. Opening the cover will void the warranty.



Read the manual delivered with the inverter before working with the solar inverter and follow the instructions contained in the manual.



Risk of injury from hot surfaces.

When in operation, the housing of the solar inverter can become very hot.

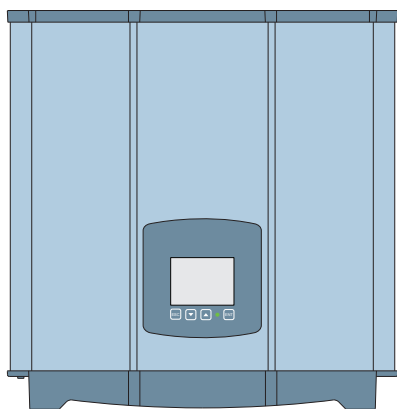


This inverter has no transformer.

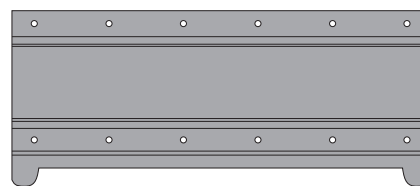


Regulatory Compliance Mark (RCM mark): The inverter is compliant with the Australian Electrical Safety and EMC standards. Applies only to Australia and New Zealand.

4 Scope of Delivery



1 x Inverter



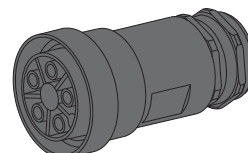
1 x Mounting plate



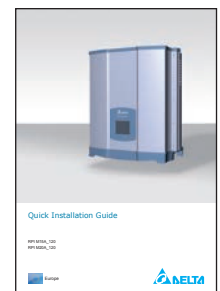
4 x MC4 plugs for DC+



4 x MC4 plugs for DC-



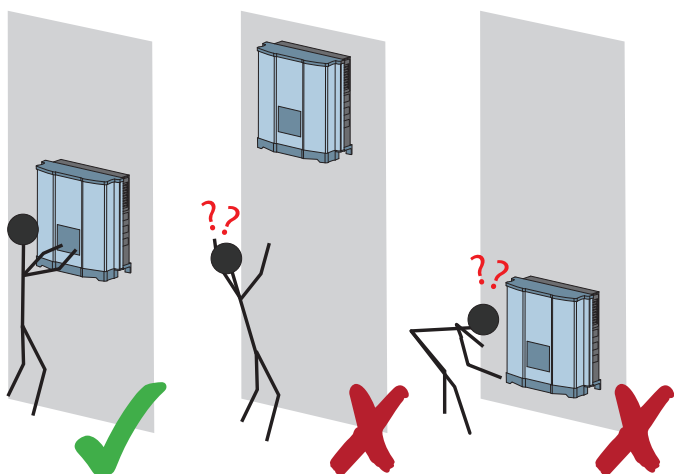
1 x AC plug Amphenol C16-3



Quick Installation Guide and General Safety Instructions

5 Planning the installation

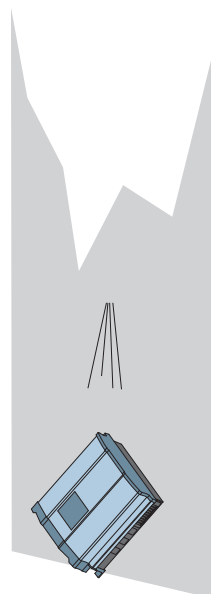
Where to mount the inverter



- Mount the solar inverter so that the LEDs and display can be easily seen and that the buttons can be operated. Make sure the reading angle and installation height are sufficient.



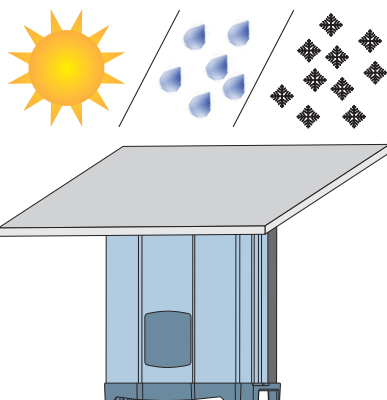
- The solar inverter is very heavy. The solar inverter must be lifted and carried by at least two people.



- Always use the mounting plate supplied with the solar inverter.
- Check that the wall is capable of bearing the heavy load of the device.
- Use dowels and screws that are suitable for the wall material and the heavy weight.
- Mount the solar inverter on a vibration-free wall to avoid disruptive vibrations.
- Possible noise emissions can be disruptive when the device is used in living areas or in buildings with animals. Therefore, choose your installation location carefully.

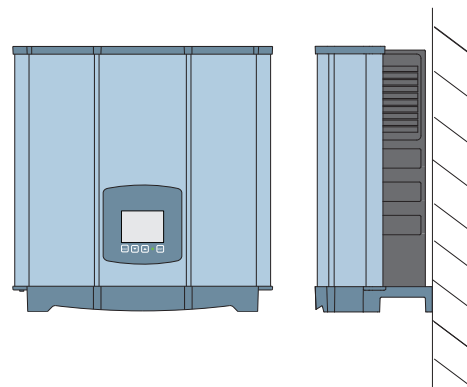
Outdoor installations

- The solar inverter has protection degree IP65 and can be installed indoors or in protected outdoor areas (that means outdoor but protected by a roof against direct sun, rain or snow).

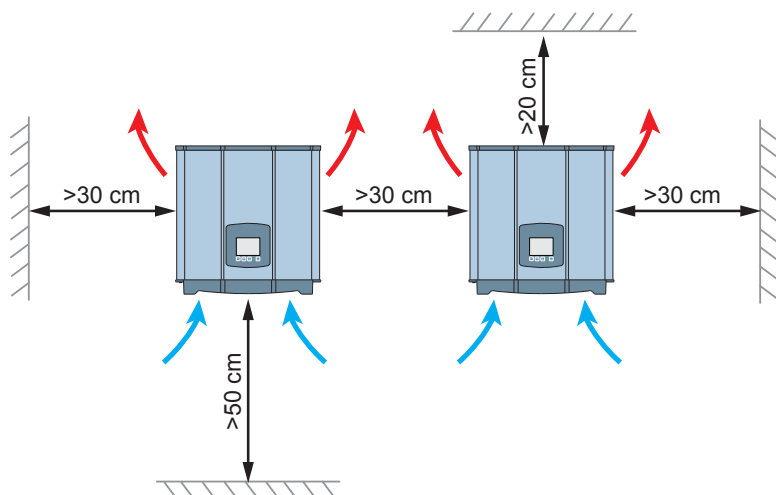


Mounting orientation

- Mount the solar inverter vertically.



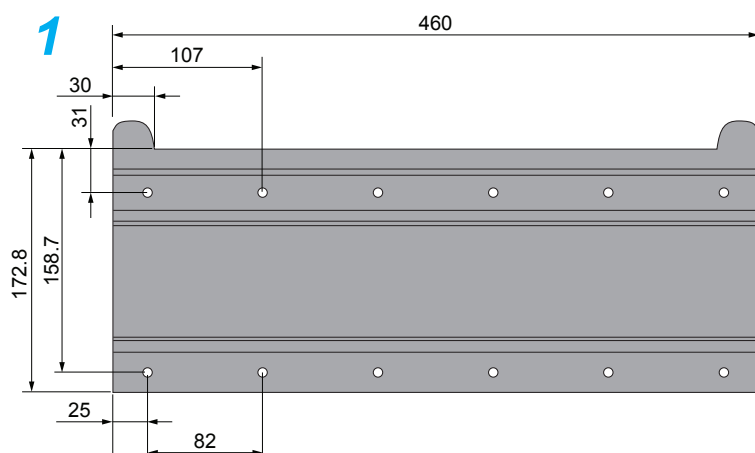
Ambient temperature and air circulation



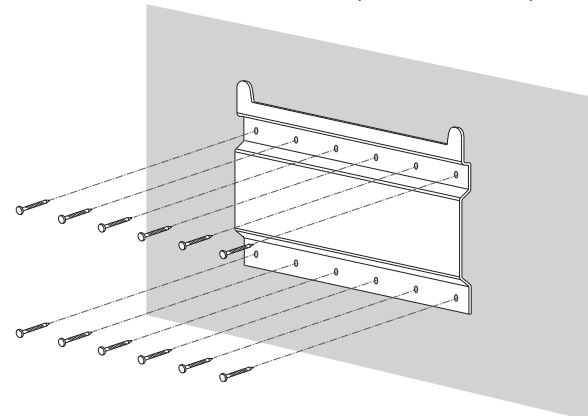
- Ensure adequate air circulation. Hot air must be able to dissipate upward. Keep enough space around each inverter.
- Do not install inverters directly above one another. Otherwise, the upper inverter is warmed up by the lower one.
- Consider the **operating temperature range** (see section "Technical data").

When the operating temperature range is exceeded, the solar inverter reduces the amount of power generated.

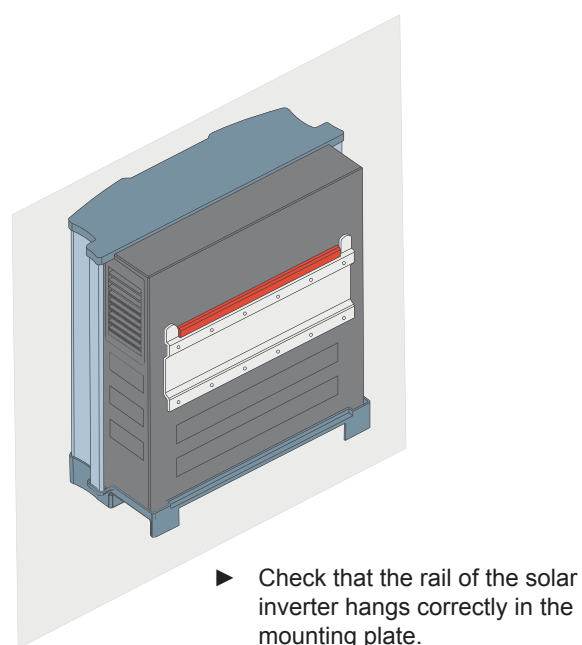
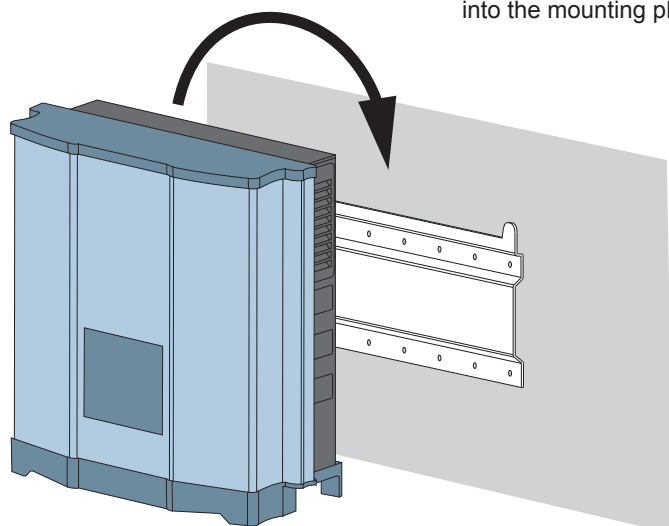
6 Mounting the inverter



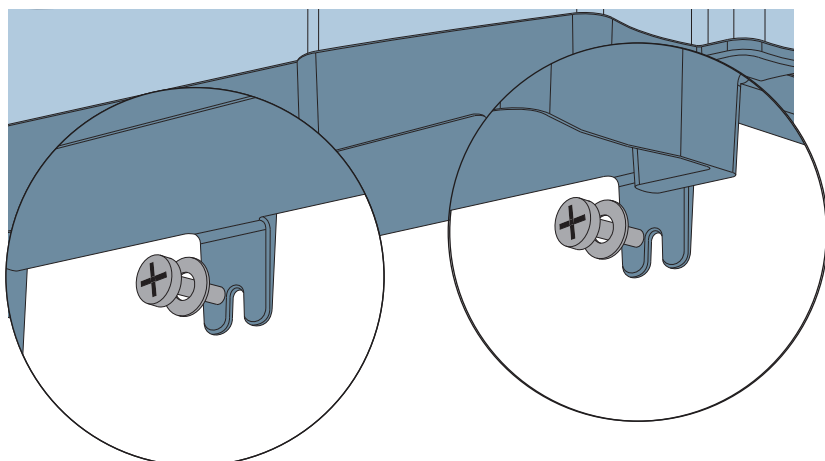
- 2**
- Fasten the mounting plate to the wall (max. 12 screws).



- 3**
- Hang the solar inverter into the mounting plate.

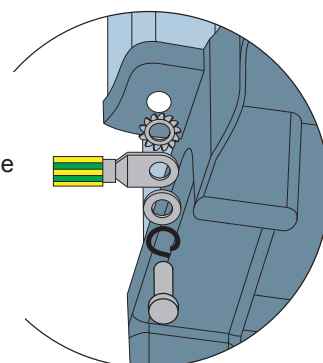


- 4**
- Secure the inverter to the wall with two M6 screws.

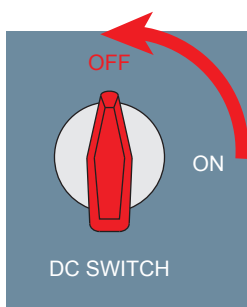


- 5**
- On the left side, ground the solar inverter housing.

Toothed ring
Grounding cable
Washer
Spring washer
M6 Screw



7 Connecting to the grid (AC)



! DANGER

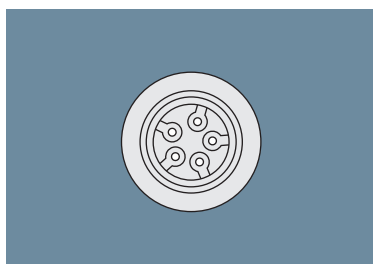


Risk of death or serious injury from electrocution

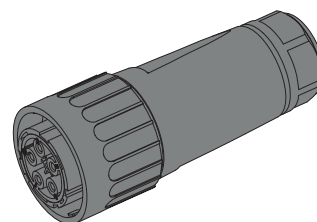
► Set the **DC disconnection switch** to position **OFF** before connecting or disconnecting the AC plug.



► For a description how to set the AC connection type on the display, see “Setting the AC connection type”, p. 20.

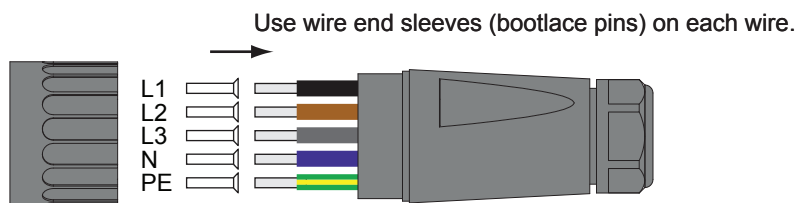
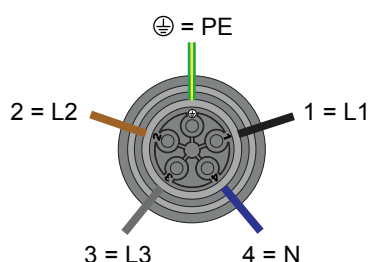


AC connector



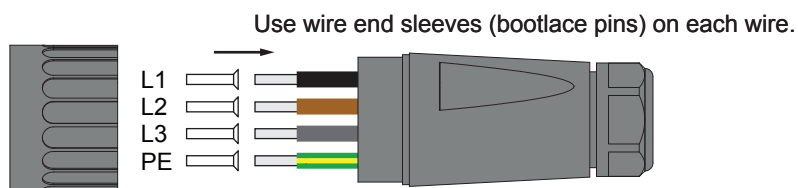
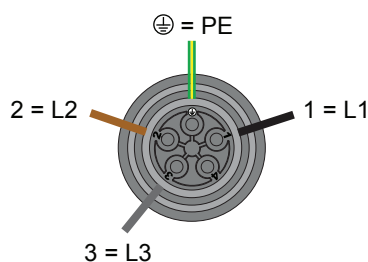
The AC Plug Amphenol C16-3 is included in the delivery box

Wiring for 3P4W grid systems: 3 phases with 4 wires (L1, L2, L3, N) + PE



Wiring AC plug for 5-wire systems

Wiring for 3P3W grid systems: 3 phases with 3 wires (L1, L2, L3) + PE



Wiring AC plug for 4-wire systems

Permitted earthing systems

Earthing System	TN-S	TN-C	TN-C-S	TT	IT
Permitted	Yes	Yes	Yes	Yes	No



TT is not recommended. The voltage of N has to be very close to PE (difference < 20 V_{rms})

AC grid voltage requirements

3P3W		3P4W	
L1-L2	400 V _{AC} ± 20%	L1-N	230 V _{AC} ± 20%
L1-L3	400 V _{AC} ± 20%	L2-N	230 V _{AC} ± 20%
L2-L3	400 V _{AC} ± 20%	L3-N	230 V _{AC} ± 20%

Important information regarding safety

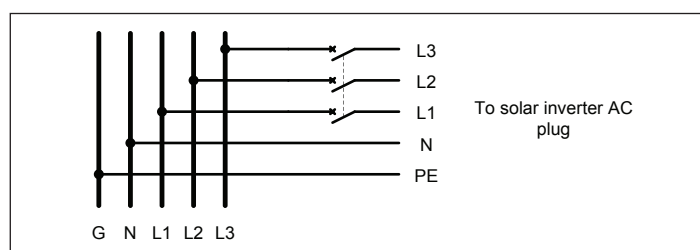
Always adhere to the specific regulations applicable in your country or region.

Always adhere to the specific regulations defined by your grid operator.

For the safety of the user and for the security of your installation, install required safety and protection devices that are applicable for your installation environment (example: automatic circuit breaker and/or overcurrent protection equipment).

Use the proper upstream circuit breaker to protect the inverter:

Model	Upstream Circuit Breaker
RPI-M15A	30 A
RPI-M20A	40 A



The inverter is not capable of feeding in DC residual currents due to its design. It fulfills this requirement in accordance with DIN VDE 0100-712.

The possibilities of faults were examined by Delta without taking the integrated RCMU (residual-current monitoring unit) into account. When examining these faults in terms of the current valid installation standards, no danger in combination with a type A upstream residual-current device (RCD) can occur. Therefore faults that would otherwise require the use of a type B residual-current device due to the inverter can be excluded.

The integrated all-pole sensitive RCMU provides additional safety. RCD Type A can be used for this inverter, according to the following table.

	M15A	M20A
Minimum tripping current of the RCD	mA 100	100

NOTE



The value of the tripping current mainly depends on the quality of the solar modules, the size of the PV array and environmental conditions (e.g. humidity).

AC cable requirements

Use properly sized wires to connect to the correct poles (see table)

AC connector	Amphenol C16-3
Current rating	40 A
Min. / max. cable diameter	11 ... 20 mm
Min. / max. wire diameter	6 mm ²
Recommended torque for terminal screws	0.7 Nm

The AC plug delivered with the inverter can be used with flexible copper cables.

Read and follow the instructions delivered with the AC plug.

When calculating the cross section of the cable, consider:

- material used
- thermal conditions
- cable length
- type of installation
- AC voltage drop
- power losses in cable

Always follow the system installation requirements defined for your country!

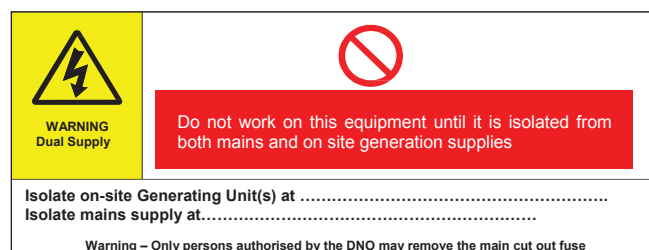
Australia/New Zealand: Always follow the system installation requirements defined by AS/NZS 5033:2005 regarding minimum cable sections and protections against overheating due to high currents!

Grounding the inverter

The inverter must be grounded via the AC connector's PE conductor. To do this, connect the PE conductor to the designated terminal of the AC plug.

Markings on the inverter

In some countries, the following labels have to be applied on the front of each micro inverter. Please check applicable national and local standards and regulations.

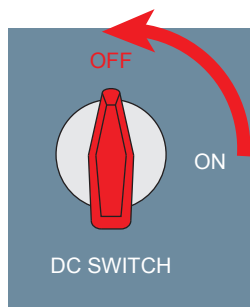


Warning
Two sources of voltage present
- distribution network
- photovoltaic panels



Isolate both sources before carrying out any work

8 Connecting to the solar modules (DC)



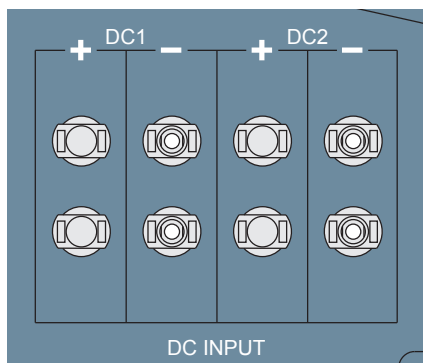
DANGER



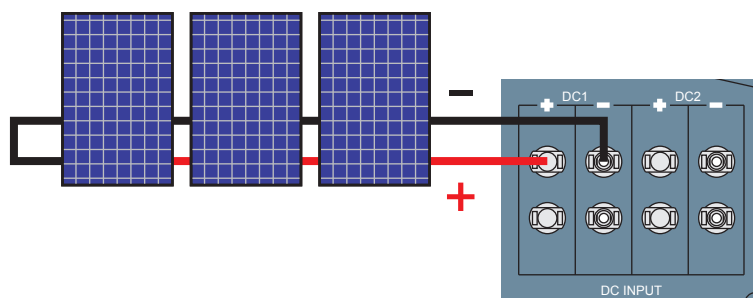
Risk of death or serious injury from electrocution

Potentially fatal voltage may be applied to the DC connections of the solar inverter. When light is falling on solar modules, they immediately start producing energy. They do so, even when the sun is not shining.

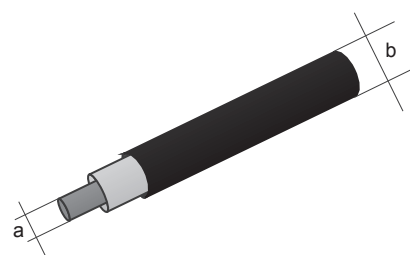
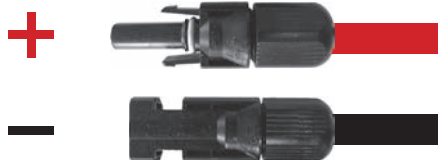
- ▶ Never disconnect the solar modules when the solar inverter is powered.
- ▶ First switch off the grid connection so that the solar inverter cannot feed energy into the grid.
- ▶ Turn the DC Disconnection switch to position **OFF**.
- ▶ Make sure the DC connections cannot be accidentally touched.



DC Inputs



DC cable specification



DC connectors on the inverter

Plugs for DC cable

		a mm ²	b mm	Multi-Contact
DC-		1.5/2.5	3-6	32.0010P0001-UR
			5.5-9	32.0012P0001-UR
DC+		4/6	3-6	32.0014P0001-UR
			5.5-9	32.0016P0001-UR
		1.5/2.5	3-6	32.0011P0001-UR
			5.5-9	32.0013P0001-UR
		4/6	3-6	32.0015P0001-UR
			5.5-9	32.0017P0001-UR



It is recommended to use a special open-end spanner for the MC4 DC connectors if you need to disconnect MC4 DC connectors from the inverter. Otherwise you might destroy the DC connectors.

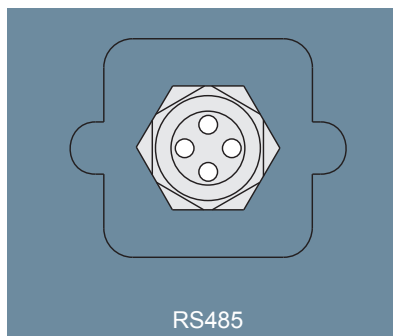


France: Safety caps are needed for each DC input that is connected to a string of solar modules.

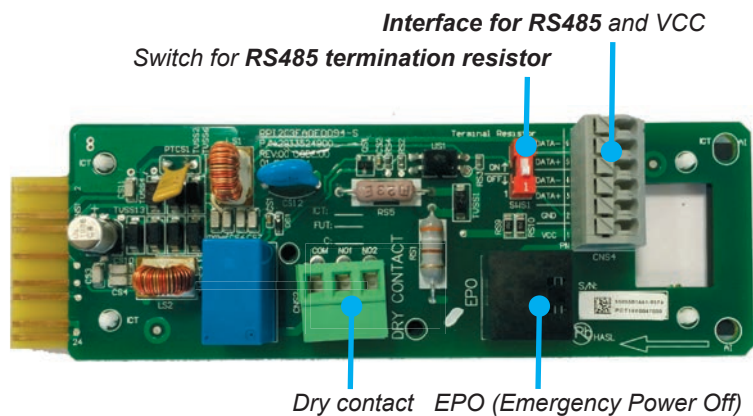


- ▶ Check the polarity of the DC voltage before you connect the solar modules.
- ▶ To ensure protection degree IP65, cap all unused connectors with the caps delivered with the inverter.

9 Connecting to a datalogger via RS485 (optional)



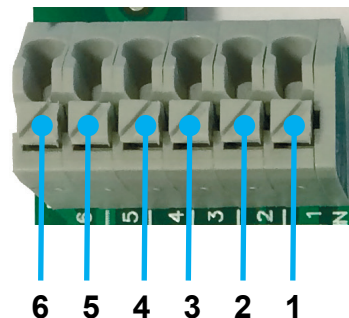
Communication port



The RS485 connector is used to connect the inverters of the PV plant to a monitoring system.

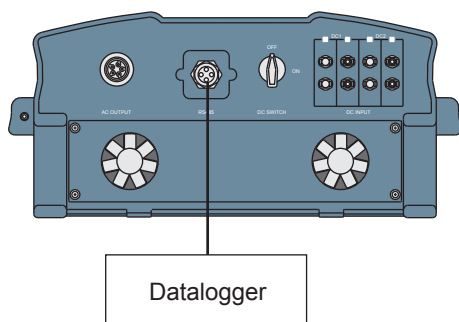
If you want to use SOLIVIA Monitor, the Internet based monitoring from Delta, you will also need a SOLIVIA M1 G2 Gateway.

Default baud rate is 19200 which can be changed on the inverter (see "Setting the baud rate for RS485", p. 16).



Connecting a single inverter to a datalogger

Termination resistor = ON



Pin	Designation
1	VCC (+12 V)
2	GND
3	DATA+
4	DATA-
5	DATA+
6	DATA-

Data format

Baud rate	9600, 19200, 38400
Data bits	8
Stop bit	1
Parity	N/A

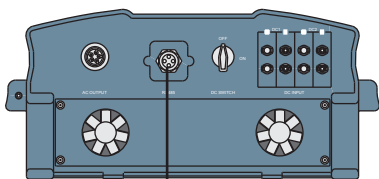
Connecting multiple inverters to a datalogger



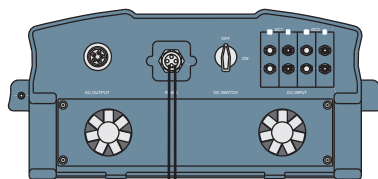
- If you connect multiple inverters via RS485, set a different inverter ID for each inverter (see "Setting the inverter ID", p. 17).

If your datalogger has no integrated termination resistor, switch on the termination resistor on the first inverter in the RS485 line.

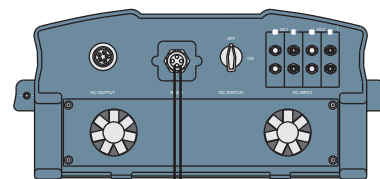
Termination resistor = ON



Termination resistor = OFF



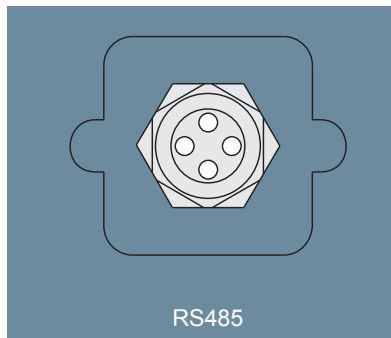
Termination resistor = OFF



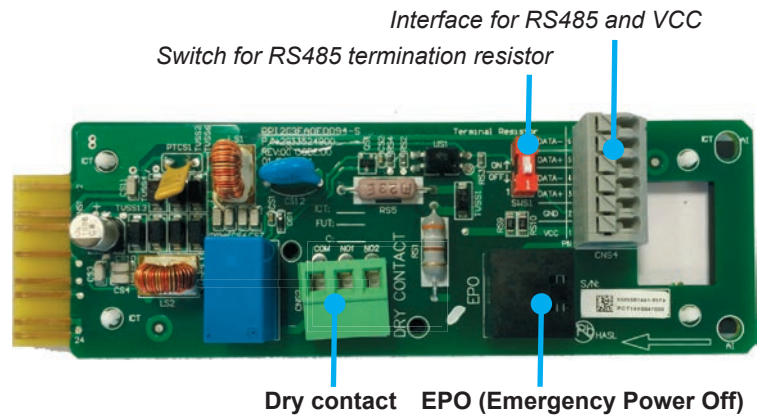
RS485

Datalogger

10 Connecting EPO and dry contact (optional)



Communication port

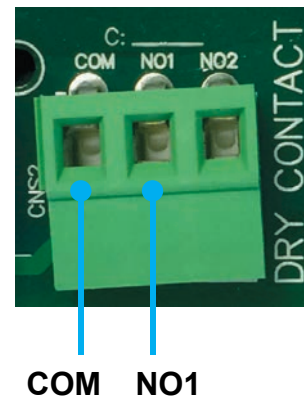


EPO (Emergency Power Off)

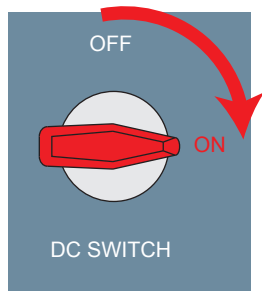
The EPO interface is a RJ45 connector. To use EPO, short pin1 and pin2.

Dry contacts

When the fans fail, COM and NO1 will be closed.



11 Commissioning - basic settings



To execute commissioning, the inverter needs to be powered either by AC (the grid) or DC (the solar modules).

Select country - 2/5	21. Jun 2013 09:30
China(Std) China(Wide) Czech England France LV FR LV VFR2013 FR LV VFR2014	

1. Use the buttons  and  to select your country or grid.

To confirm your selection, press the button .

Confirm country	21. Jun 2013 09:30
Are you sure to set country: England	
No	Yes

2. To apply your selection, press the button .

Select language	21. Jun 2013 09:30
English Deutsch Français Italiano Español Nederlands	

3. Use the buttons  and  to select the language for the display.

To confirm your selection, press the button .

Menu	21. Jun 2013 09:30
E-Today Power Meter Statistics Logs Actual Data Inverter information Settings	

- ☒ The basic setup is finished. The main menu is shown.



► Check the next chapter of this quick installation guide whether you need to adjust additional settings.

11 Commissioning - further settings (optional)

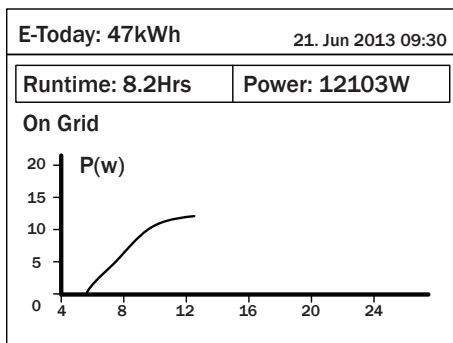


The settings described in this section may not be relevant for your installation.

► Check each setting whether it is needed for you.

Setting date and time

1. When the default information is displayed, press the button **ESC** to open the main menu. Otherwise, repeatedly press the button **ESC** until the main menu is displayed.



2. Use the buttons **▼** and **▲** to select **Settings**.
To confirm your selection, press the button **ENT**.

Menu		21. Jun 2013 09:30
E-Today		
Power Meter		
Energy Log		
Event Log		
Operation Data		
Inverter Information		
Settings		

3. Use the buttons **▼** and **▲** to select **Personal Settings**.
To confirm your selection, press the button **ENT**.

Settings		21. Jun 2013 09:30
Personal Settings		
Coefficients Settings		
Install Settings		
Active/Reactive Power Control		
FRT		

4. Use the buttons **▼** and **▲** to select **Date**.
To confirm your selection, press the button **ENT**.

Personal Settings		21. Jun 2013 09:30
Language	[English]	
Date	02 / 12 / 2013	(DD/MM/YYYY)
Time	08 : 53	
Screen Saver	[5 min]	
Brightness	[3]	
Contrast	[2]	

5. The day is now highlighted. Use the buttons **▼** and **▲** to change the value.

To confirm your setting, press the button **ENT**.

Personal Settings		21. Jun 2013 09:30
Language	[English]	
Date	02 / 12 / 2013	(DD/MM/YYYY)
Time	08 : 53	
Screen Saver	[5 min]	
Brightness	[3]	
Contrast	[2]	

6. Repeat step 5 to set month and year.

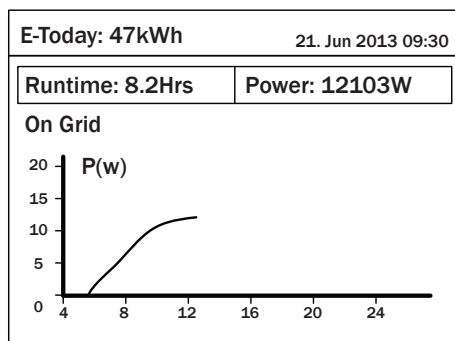
7. Use the buttons **▼** and **▲** to select **Time**.
To confirm your selection, press the button **ENT**.

Personal Settings		21. Jun 2013 09:30
Language	[English]	
Date	02 / 12 / 2013	(DD/MM/YYYY)
Time	08 : 53	
Screen Saver	[5 min]	
Brightness	[3]	
Contrast	[2]	

8. Repeat step 5 to set hours and minutes.

Setting the display language

- When the default information is displayed, press the button **ESC** to open the main menu. Otherwise, repeatedly press the button **ESC** until the main menu is displayed.



- Use the buttons **▼** and **▲** to select **Settings**.
To confirm your selection, press the button **ENT**.

Menu	21. Jun 2013 09:30
E-Today	
Power Meter	
Energy Log	
Event Log	
Operation Data	
Inverter Information	
Settings	

- Use the buttons **▼** and **▲** to select **Personal Settings**.
To confirm your selection, press the button **ENT**.

Settings	21. Jun 2013 09:30
Personal Settings	
Coefficients Settings	
Install Settings	
Active/Reactive Power Control	
FRT	

- Use the buttons **▼** and **▲** to select **Language**.
To confirm your selection, press the button **ENT**.

Personal Settings	21. Jun 2013 09:30
Language	[English]
Date	02 / 12 / 2013 (DD/MM/YYYY)
Time	08 : 53
Screen Saver	[5 min]
Brightness	[3]
Contrast	[2]

- The language is now highlighted. Use the buttons **▼** and **▲** to select another language.

Personal Settings	21. Jun 2013 09:30
Language	[Français]
Date	02 / 12 / 2013 (DD/MM/YYYY)
Time	08 : 53
Screen Saver	[5 min]
Brightness	[3]
Contrast	[2]

- To confirm your selection, press the button **ENT**.
→ The new language is now used.

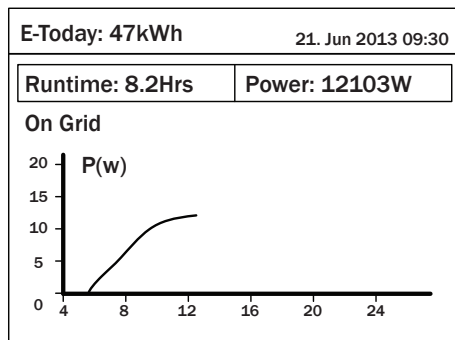
Param. personnels	21. Jun 2013 09:30
Langue	[Français]
Date	02 / 12 / 2013 (JJ/MM/AAAA)
Heure	08 : 53
Ecran Veille	[5 min]
Luminosité	[3]
Contraste	[2]

Setting the baud rate for RS485



For a description of the RS485 connection, see “Connecting to a datalogger via RS485 (optional)”, p. 11.

- When the default information is displayed, press the button **ESC** to open the main menu. Otherwise, repeatedly press the button **ESC** until the main menu is displayed.



- Use the buttons **▼** and **▲** to select **Settings**.
To confirm your selection, press the button **ENT**.

Menu	21. Jun 2013 09:30
E-Today	
Power Meter	
Energy Log	
Event Log	
Operation Data	
Inverter Information	
Settings	

- Use the buttons **▼** and **▲** to select **Coefficients Settings**.

To confirm your selection, press the button **ENT**.

Settings	21. Jun 2013 09:30
General Settings	
Coefficients Settings	
Install Settings	
Active/Reactive Power Control	
FRT	

- Use the buttons **▼** and **▲** to select **Baud rate**.
To confirm your selection, press the button **ENT**.

Coefficients Settings	21. Jun 2013 09:30
CO2 Saved kg/kWh	[0.00]
Earning Value/kWh	[0.00]
Currency	[€]
Baud rate	[19200]

- The value is now highlighted. Use the buttons **▼** and **▲** to change the value.

To confirm your setting, press the button **ENT**.

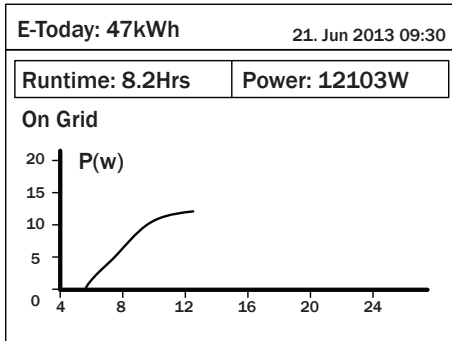
Coefficients Settings	21. Jun 2013 09:30
CO2 Saved kg/kWh	[0.00]
Earning Value/kWh	[0.00]
Currency	[€]
Baud rate	[9600]

Setting the inverter ID



If your PV plant contains multiple inverters, a different inverter ID has to be set for each of the inverters. The inverter ID is needed to identify each inverter. For a description of the RS485 connection, see “Connecting to a datalogger via RS485 (optional)”, p. 11.

- When the default information is displayed, press the button **ESC** to open the main menu. Otherwise, repeatedly press the button **ESC** until the main menu is displayed.



- Use the buttons **▼** and **▲** to select **Settings**. To confirm your selection, press the button **ENT**.

Menu	21. Jun 2013 09:30
E-Today	
Power Meter	
Energy Log	
Event Log	
Operation Data	
Inverter Information	
Settings	

- Use the buttons **▼** and **▲** to select **Install Settings**. To confirm your selection, press the button **ENT**.

Settings	21. Jun 2013 09:30
Personal Settings	
Coefficient Settings	
Install Settings	
Active/Reactive Power Control	
FRT	

- The menu is protected by password 5555. Use the buttons **▼** and **▲** to set each digit. To confirm a digit, press the button **ENT**.

Password	21. Jun 2013 09:30
<div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin: 0 5px;">3</div> <div style="border: 1px solid black; padding: 2px 5px; margin: 0 5px;">3</div> <div style="border: 1px solid black; padding: 2px 5px; margin: 0 5px;">3</div> <div style="border: 1px solid black; padding: 2px 5px; margin: 0 5px;">3</div> <div style="border: 1px solid black; padding: 2px 5px; margin: 0 5px;">ENT</div> </div>	

- Use the buttons **▼** and **▲** to select **Inverter-ID**. To confirm your selection, press the button **ENT**.

Install Settings	21. Jun 2013 09:30
Inverter ID	[001]
Insulation	
RCMU	[ON]
Country	
Grid Settings	[Yes / No]
Country	England
Grid Settings	

- The ID is now highlighted. Use the buttons **▼** and **▲** to change the value. To confirm your setting, press the button **ENT**.

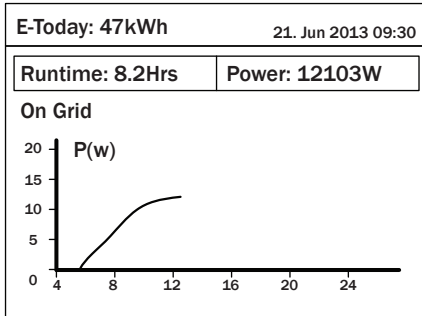
Install Settings	21. Jun 2013 09:30
Inverter ID	[002]
Insulation	
RCMU	[ON]
Country	
Grid Settings	[Yes / No]
Country	England
Grid Settings	

Setting a constant cos phi (cos φ)

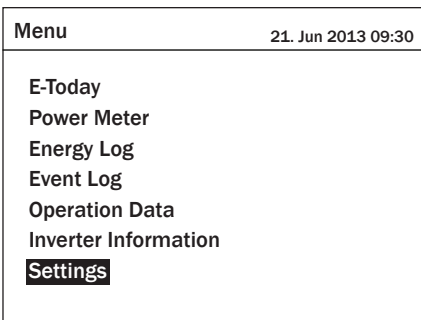


You should set a constant power factor only when requested by country regulations, authorities or your grid operator.

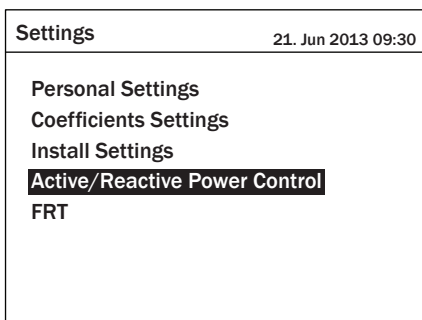
- When the default information is displayed, press the button **ESC** to open the main menu. Otherwise, repeatedly press the button **ESC** until the main menu is displayed.



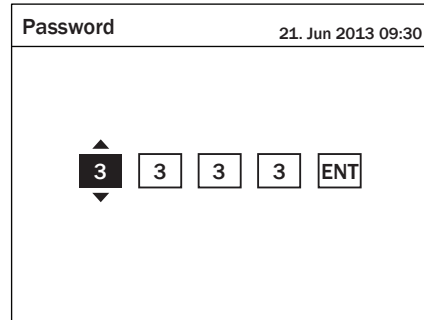
- Use the buttons **▼** and **▲** to select **Settings**. To confirm your selection, press the button **ENT**.



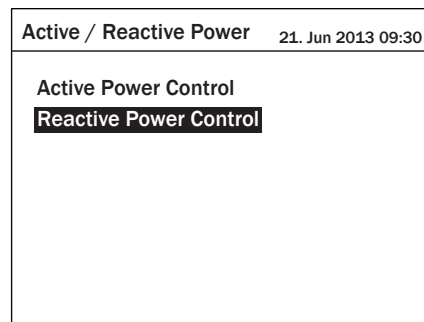
- Use the buttons **▼** and **▲** to select **Active/Reactive Power Control**. To confirm your selection, press the button **ENT**.



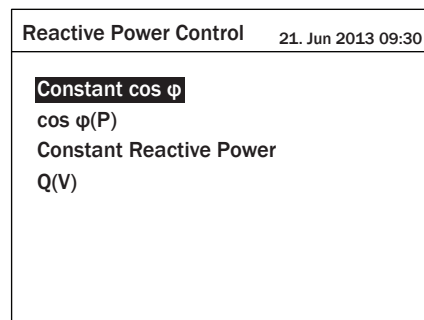
- The menu is protected by password 5555. Use the buttons **▼** and **▲** to set each digit. To confirm a digit, press the button **ENT**.



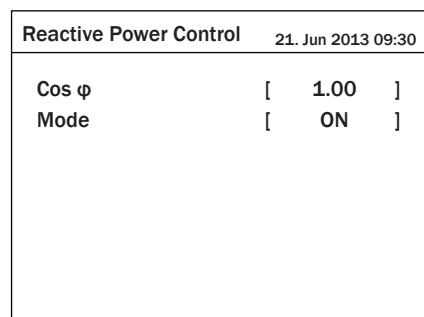
- Use the buttons **▼** and **▲** to select **Reactive Power Control**. To confirm your selection, press the button **ENT**.



- Use the buttons **▼** and **▲** to select **Constant cos φ**. To confirm your selection, press the button **ENT**.



- Use the buttons **▼** and **▲** to select an entry and press the button **ENT**.



- Use the buttons **▼** and **▲** to change the value, then press the button **ENT**.

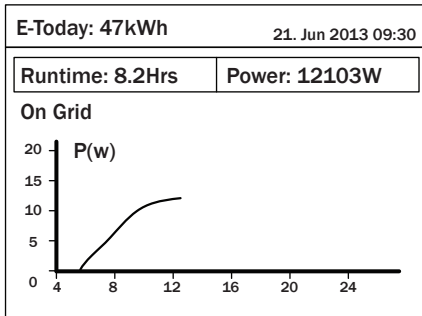
To activate the function, set **Mode** to **ON**.

Setting a power limitation

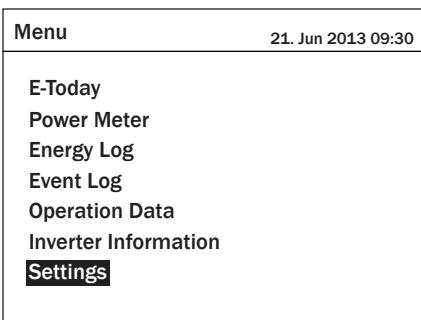


You should set a power limitation only when requested by country regulations, authorities or your grid operator.

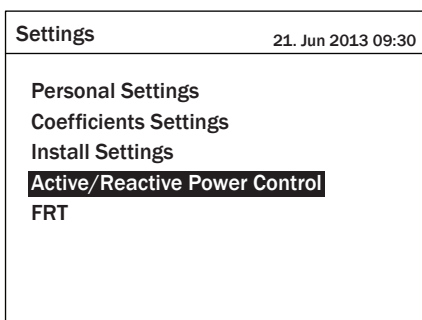
- When the default information is displayed, press the button **ESC** to open the main menu. Otherwise, repeatedly press the button **ESC** until the main menu is displayed.



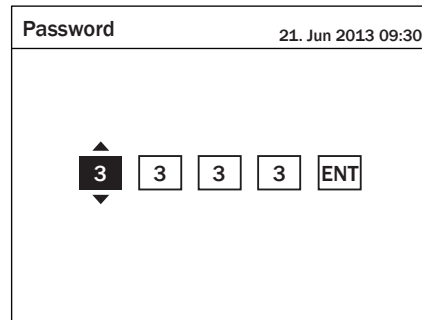
- Use the buttons **▼** and **▲** to select **Settings**. To confirm your selection, press the button **ENT**.



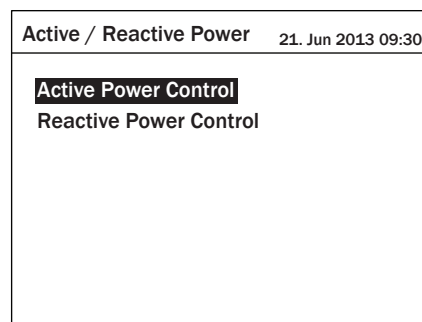
- Use the buttons **▼** and **▲** to select **Active/Reactive Power Control**. To confirm your selection, press the button **ENT**.



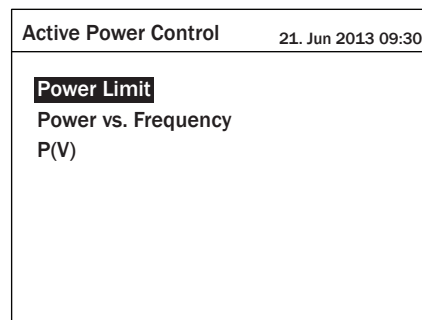
- The menu is protected by password 5555. Use the buttons **▼** and **▲** to set each digit. To confirm a digit, press the button **ENT**.



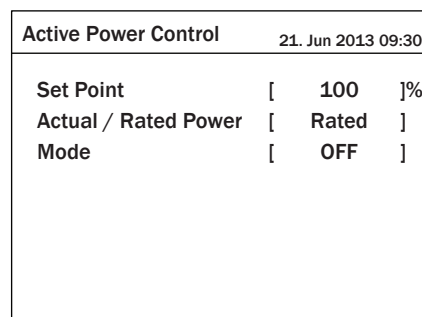
- Use the buttons **▼** and **▲** to select **Active Power Control**. To confirm your selection, press the button **ENT**.



- Use the buttons **▼** and **▲** to select **Power limit**. To confirm your setting, press the button **ENT**.



- Use the buttons **▼** and **▲** to select an entry and press the button **ENT**.



- Use the buttons **▼** and **▲** to change the value, then press the button **ENT**.

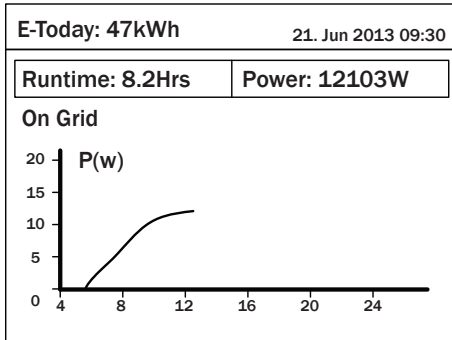
To activate the function, set **Mode** to **ON**.

Setting the AC connection type



Per default, the AC connection type is set to 3P4W (3 phases + N + PE). Only if you use an AC connection with 3 phases + PE (3P3W), you need to change this setting. For a description of the AC connection, see “Connecting to the grid (AC)”, p. 8.

1. When the default information is displayed, press the button **ESC** to open the main menu. Otherwise, repeatedly press the button **ESC** until the main menu is displayed.



2. Use the buttons **▼** and **▲** to select **Settings**. To confirm your selection, press the button **ENT**.

Menu		21. Jun 2013 09:30
E-Today		
Power Meter		
Energy Log		
Event Log		
Operation Data		
Inverter Information		
Settings		

3. Use the buttons **▼** and **▲** to select **Install Settings**. To confirm your selection, press the button **ENT**.

Settings		21. Jun 2013 09:30
Personal Settings		
Coefficient Settings		
Install Settings		
Active/Reactive Power Control		
FRT		

4. Use the buttons **▼** and **▲** to select **AC Connection**. To change the settings, press the button **ENT**.

Install Settings		21. Jun 2013 09:30
Reconnection Time	[60] S	
RCMU	[10] %/m	
AC Connection	[3P4W]	
Grid err. Lock	[OFF]	

5. Use the buttons **▼** and **▲** to select **3P3W**. To confirm your setting, press the button **ENT**.

Install Settings		21. Jun 2013 09:30
Reconnection Time	[60] S	
RCMU	[10] %/m	
AC Connection	[3P3W]	
Grid err. Lock	[OFF]	

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12 Technical data

Input (DC)	RPI-M15A	RPI-M20A
Maximum recommended PV power	19 kW _P	25 kW _P
Maximum input power total (per input)	16.5 kW (11.1 kW)	22 kW (14.8 kW)
Nominal power	15.6 kW	20.6 kW
Input voltage range	200 ... 1000 V _{DC}	
Maximum input voltage	1000 V _{DC}	
Nominal voltage	635 V _{DC}	
Startup voltage	250 V _{DC}	
Startup power	40 W	
MPP input voltage range with full power		
Symmetrical load	355 ... 820 V _{DC}	470 ... 820 V _{DC}
Asymmetrical load (67%)	475 ... 820 V _{DC}	635 ... 820 V _{DC}
Asymmetrical load (33%)	235 ... 820 V _{DC}	310 ... 820 V _{DC}
Maximum input current; total (DC1 / DC2)	44 A (22 A / 22 A)	44 A (22 A / 22 A)
Number of MPP trackers	Parallel inputs: 1 MPP tracker; Separate inputs: 2 MPP trackers	
Number of DC inputs; total (DC1 / DC 2)	4 (2 / 2)	
Galvanic isolation	No	
Overvoltage category ¹⁾	II	
Output (AC)	RPI-M15A	RPI-M20A
Maximum apparent power	15.75 kVA	21 kVA
Nominal apparent power	15 kVA ²⁾	20 kVA ²⁾
Nominal voltage ³⁾	230 ± 20 % / 400 V _{AC} ± 20%; 3 phase + PE or 3 phase + N + PE	
Nominal current	22 A	29 A
Maximum current	24 A	32 A
Inrush current	150 A / 100 µs	
Nominal frequency	50 / 60 Hz	
Frequency range ³⁾	45 ... 65 Hz	
Power factor adjustable	0.8 cap ... 0.8 ind	
Total harmonic distortion	<3%	
DC current injection	<0.5% rated current	
Night-time consumption	<2 W	
Overvoltage category ³⁾	III	

Mechanical Design	RPI-M15A	RPI-M20A
Dimensions (W x H x D)	612 x 625 x 278 mm	
Weight	43 kg	
Cooling	Fans	
AC Connector type	AC Plug Amphenol C16-3	
DC Connector type	Multi-Contact MC4	
Communication interfaces	2 x RS485, 1 x Dry contact, 1 x EPO	
General Specification	RPI-M15A	RPI-M20A
Delta model name	RPI-M15A	RPI-M20A
Delta part number	RPI153FA0E0000	RPI203FA0E0000
Maximum efficiency	98.3%	98.4%
EU efficiency	97.9%	98.1%
Operating temperature range	-25 ... +60 °C	
Operating temperature range without derating	-25 ... +40 °C	-25 ... +47 °C ⁴⁾
Storage temperature range	-25 ... +60 °C	
Relative humidity	0 ... 100 %, non-condensing	
Maximum operating altitude	2000 m above sea level	
Standards and Directives	RPI-M15A	RPI-M20A
Protection degree	IP65	
Safety class	I	
Pollution degree	II	
Overload behavior	Current limitation; power limitation	
Safety	IEC 62109-1 / -2, CE compliance	
EMC	EN 61000-6-2, EN 61000-6-3	
Immunity	IEC 61000-4-2 / -3 / -4 / -5 / -6 / -8	
Harmonics	EN 61000-3-2	
Variations and flicker	EN 61000-3-3	

¹⁾ IEC 60664-1, IEC 62109-1

²⁾ For cos phi = 1 (VA = W)

³⁾ AC voltage and frequency range will be programmed according to the individual country requirements.

⁴⁾ Derating starting at 47 °C with nominal DC voltage and AC output power of 21 kVA

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France	support.france@solar-inverter.com	0800 919 816 (call free)
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