Quick Installation Guide

RPI M6A
RPI M8A
RPI M10A

Europe Australia New Zealand

This manual applies for solar inverters models:

- **RPI M6A**
- **RPI M8A**
- **RPI M10A**

with firmware version: DSP: 1.32 / RED: 1.13 / COMM: 1.15

If you experience deviations between the descriptions in this quick installation guide and the information on the inverter display, please check www.solar-inverter.com for a quick installation guide that matches the firmware version on the inverter. The standard manual can also be downloaded from www.solar-inverter.com.

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

The technical instructions and illustrations in this manual are to be treated as confidential and no part of this manual may be reproduced without prior written permission from Delta Energy Systems. Maintenance technicians and end users may not release the information contained in this manual, and may not use it for purposes not directly associated with the proper use of the solar power inverter.

All information and specifications can be modified without prior notice.

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 60 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 60 seconds until the capacitors have discharged.

DANGER

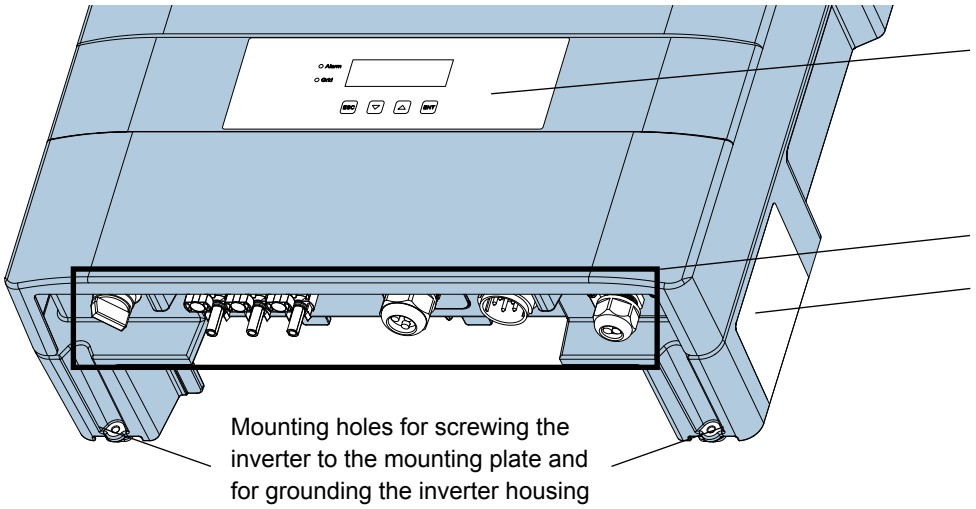
Risk of death or serious injury from electrocution

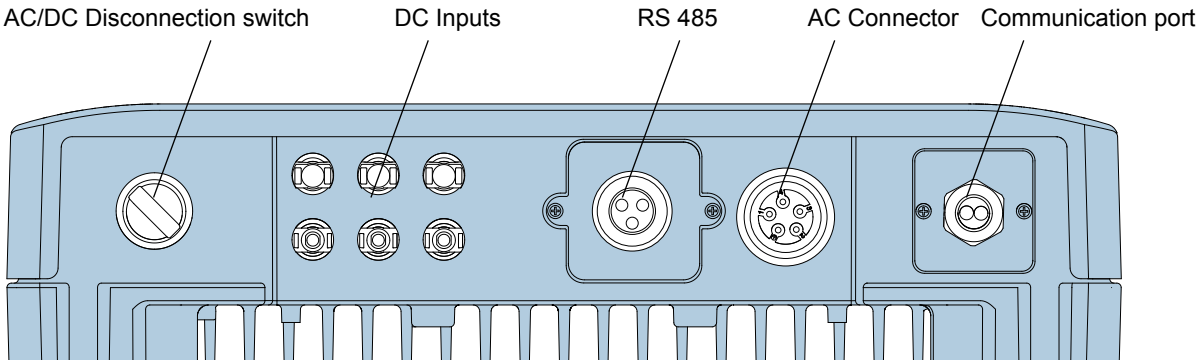
Potentially fatal voltage may be applied to the DC connections of the solar inverter. When light is falling on solar modules, they immediately start producing energy. They do so, even when the sun is not shining.

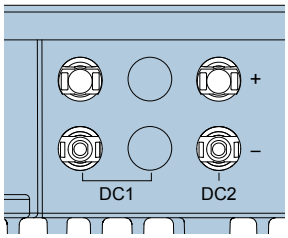
- ► Never disconnect the solar modules when the solar inverter is powered.
- ► First switch off the grid connection so that the solar inverter cannot feed energy into the grid.
- ► Turn the AC/DC isolating switch to position **OFF**.
- ► Make sure the DC connections cannot be accidentally touched.

- 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 commissioning 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 60950) 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.

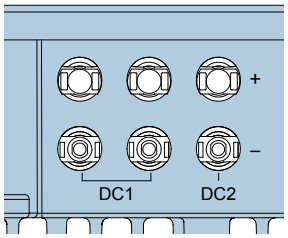
2 Components of the inverter



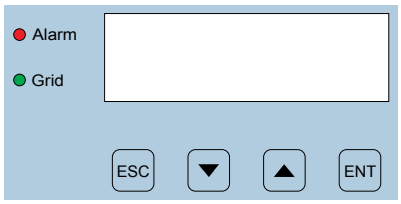




DC Inputs RPI M6A and M8A

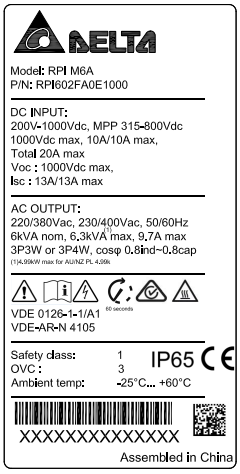


DC Inputs RPI M10A

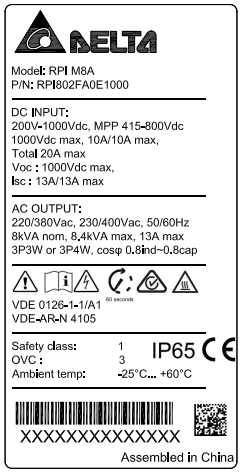


Label	Designation	Usage
LEDs		
GRID	Grid	Green; lights up when the solar inverter feeds into the grid
ALARM	Alarm	Red; Indicates an error, fault, or warning
Buttons		
ESC	Escape	Exit current menu. Cancel value setting.
▼	Move down	Move downwards in menu. Set value (decrease).
▲	Move up	Move upwards in menu. Set a value (increase).
ENT	Enter	Select menu item. Open configurable value for editing. Finish editing (adopt set value).

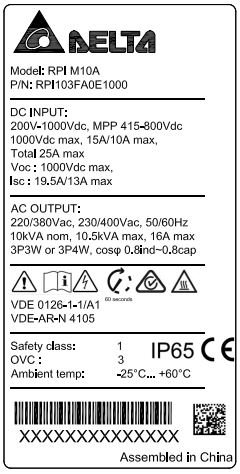
3 Information on the type label



Type label M6A



Type label M8A



Type label M10A

Risk of death by electrocution

Potentially fatal voltage is present when the solar inverter is in operation that remains for 60 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.

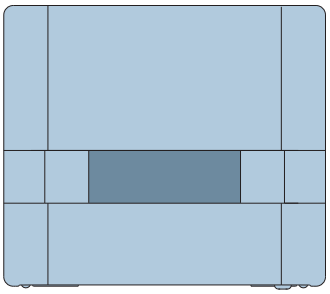
Risk of injury from hot surfaces.

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

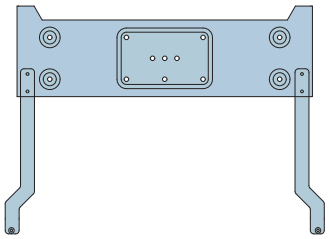
The housing of the inverter must be grounded if this is required by local regulations.

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



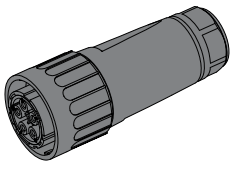
Inverter



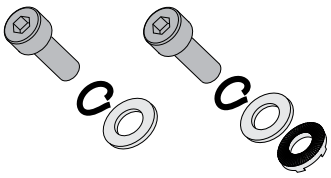
Mounting plate

2 x MC4 plugs for DC+ (M10A: 3 x)

Quick Installation Guide and General Safety Instructions



AC Plug Amphenol C16-3

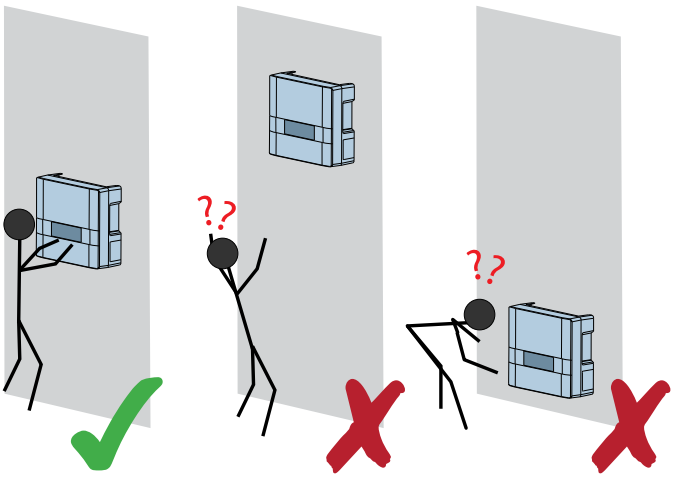


2 mounting screws to fasten the inverter to the mounting plate

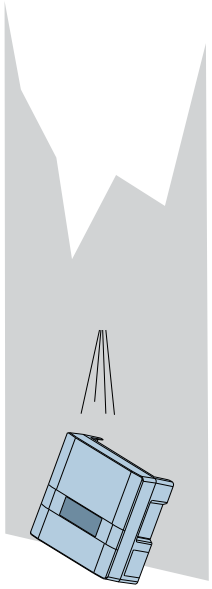
2 x MC4 plugs for DC– (M10A: 3 x)

5 Planning the installation

Where to mount the inverter



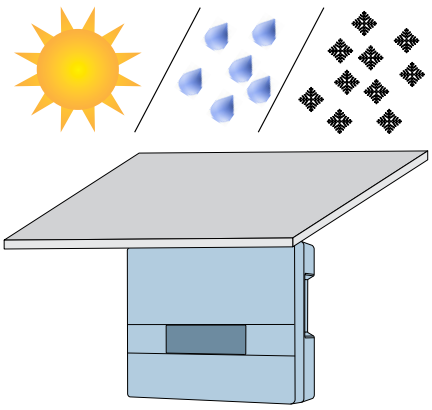
► Mount the solar inverter so that the LEDs and display can be easily seen and that the buttons can be operated. Make sure the reading angle and installation height are sufficient.



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

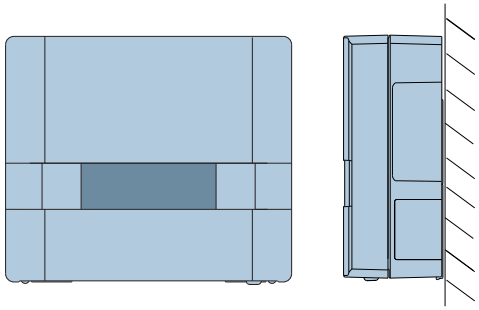
Outdoor installations

► 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).

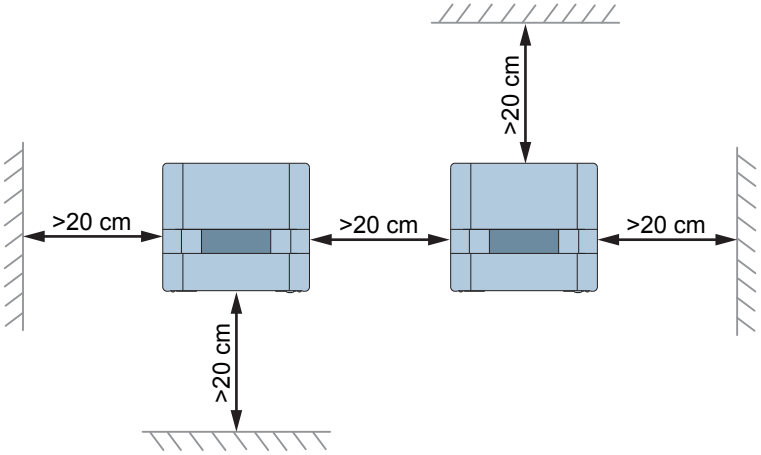


Mounting orientation

► Mount the solar inverter vertically.



Ambient temperature and air circulation

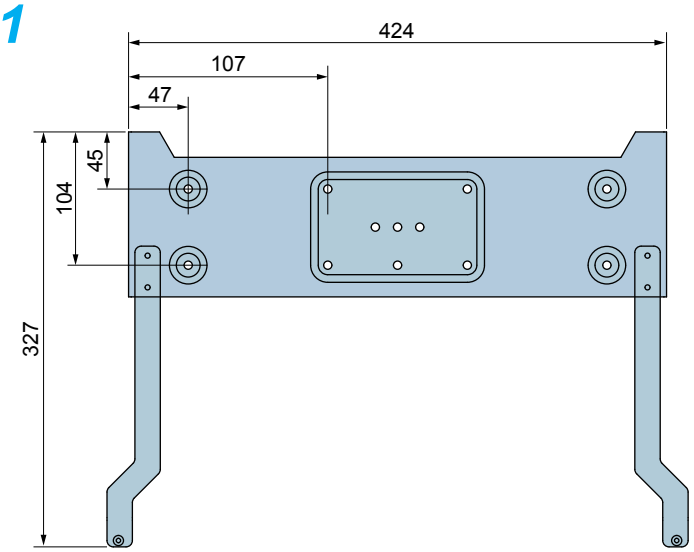


► Ensure adequate air circulation. Hot air must be able to dissipate upward. Keep sufficient space around each inverter.
► Do not install inverters directly above one another. Otherwise, the upper inverter is warmed up by the lower one.
► Consider the **operating temperature range** (see "Technical data", p. 18).

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

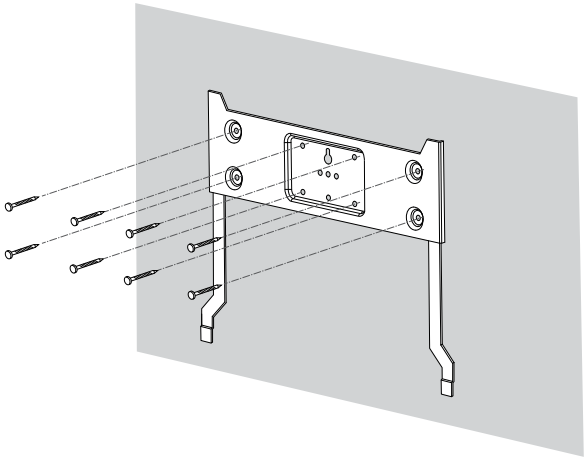
6 Mounting the inverter

1



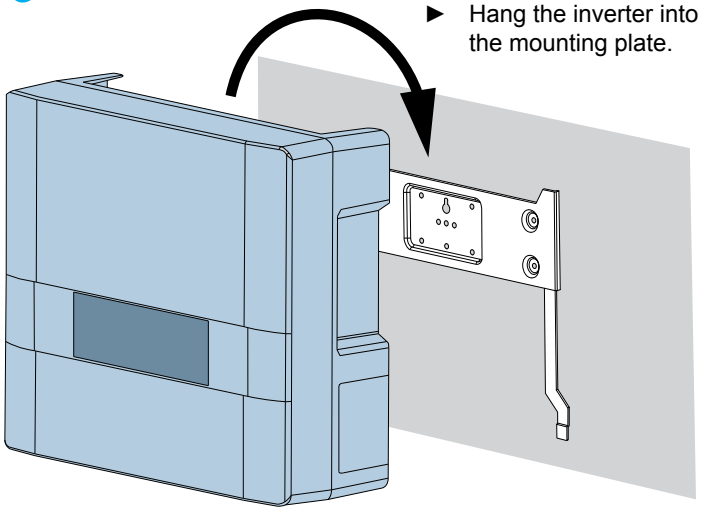
2

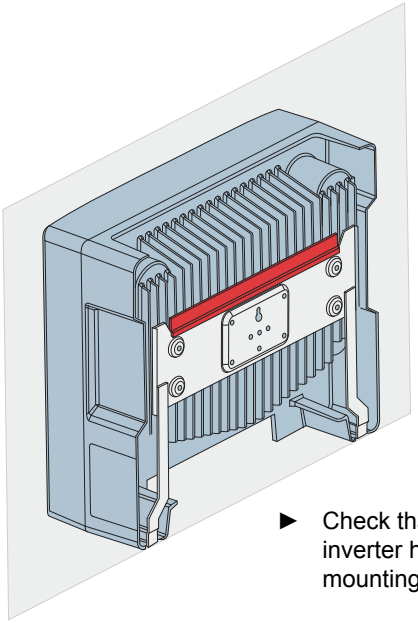
► Fasten the mounting plate with 8 M6 screws to the wall.



3

► Hang the inverter into the mounting plate.



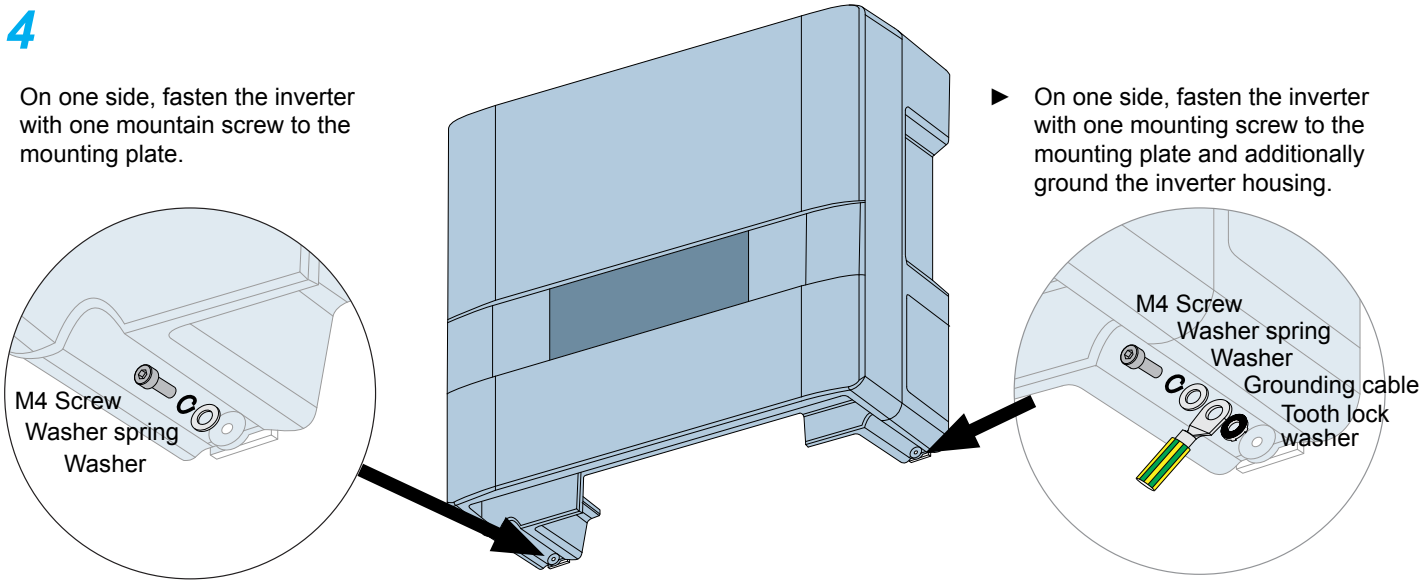


► Check that the rail of the inverter hangs correctly in the mounting plate.

4

► On one side, fasten the inverter with one mountain screw to the mounting plate.

► On one side, fasten the inverter with one mounting screw to the mounting plate and additionally ground the inverter housing.



Perform a continuity check for the grounding connection. If the test fails, scratch the paint off the inverter housing below the tooth lock washer to get a better electrical connection.

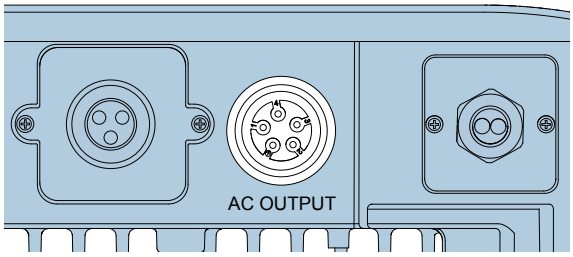
7 Connecting to the grid (AC)

DANGER

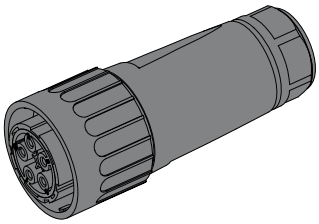
Risk of death or serious injury from electrocution

► Set the **AC/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. 14.

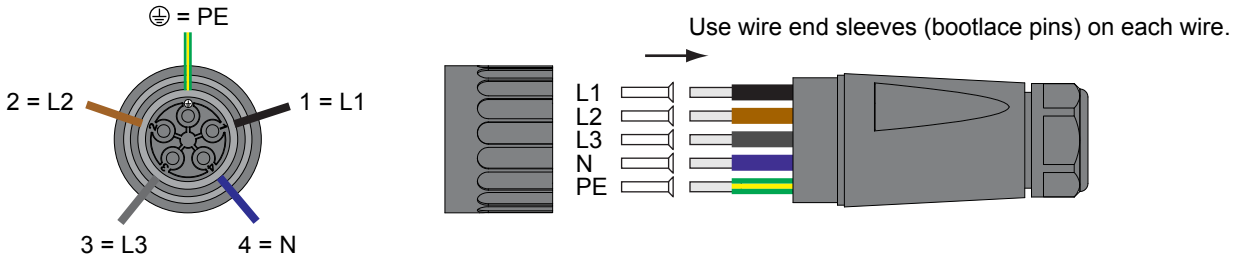


Position of the AC connector on the inverter



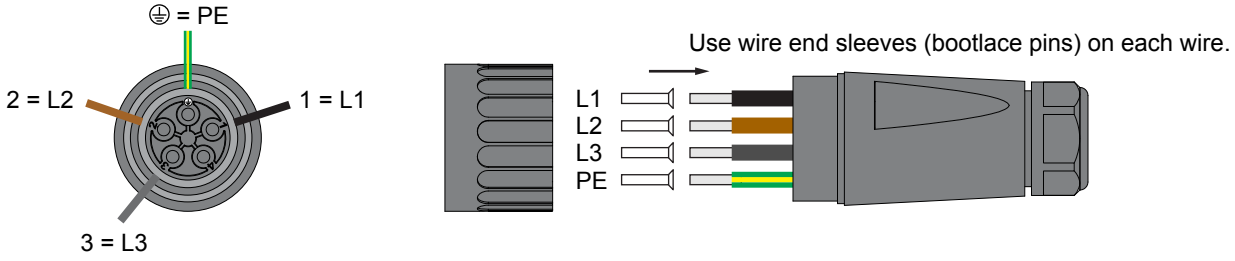
The AC Plug Amphenol C16-3 is included in the delivery box.

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



Wiring AC plug for 4-wire systems

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



Wiring AC plug for 3-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%

7 Connecting to the grid (continued)

Important information regarding safety

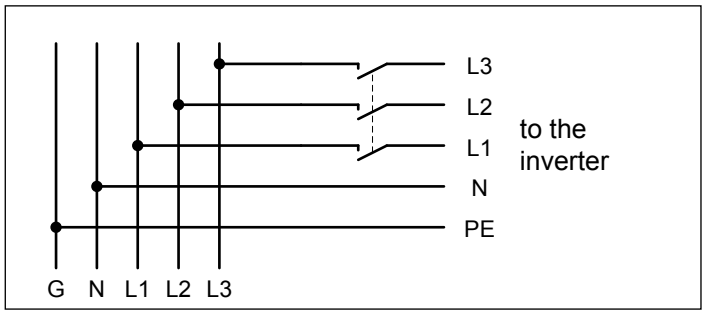
Always adhere to the specific regulations applicable in your country or region.

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 safety and protection devices that are required 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 M6A	16 A
RPI M8A	16 A
RPI M10A	20 A



The inverter is not capable of feeding in DC residual currents due to its design. They fulfill 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.

		M6A	M8A	M10A
Minimum tripping current of the RCD	mA	100	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

Connect properly sized wires to the correct poles (see table)

AC connector	Amphenol C16-3
Current rating	≤ 25 A
Min. / max. cable diameter	11 ... 20 mm
Min. / Max. wire diameter	5 ... 8 mm^2
Recommended torque for terminal screws	≥ 0.7 Nm

Read and follow the instructions delivered with the AC plug.

The AC plug delivered with the inverter can be used with flexible or rigid copper cable.

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!

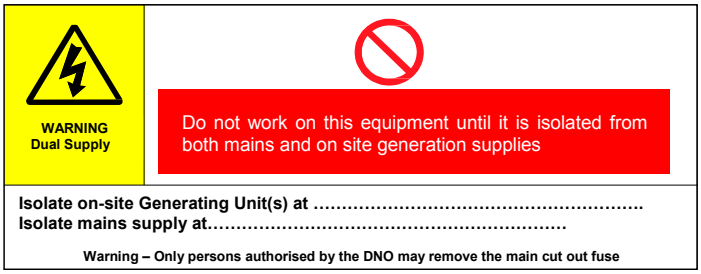
Australia/New Zealand: Always follow the system installation requirements defined by AS/NZS 5033:2005 regarding minimum cable sections and protections against overheating due to high currents!

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

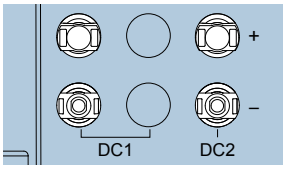
8 Connecting to the solar modules (DC)

DANGER

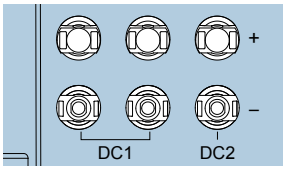
Risk of death or serious injury from electrocution

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.

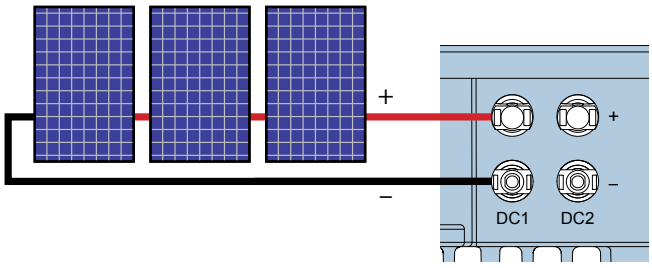
- ► Turn the AC/DC isolating switch to position **OFF**.
- ► Never disconnect the solar modules when the solar inverter is powered.
- ► First switch off the grid connection so that the solar inverter cannot feed energy into the grid.
- ► Make sure the DC connections cannot be accidentally touched.

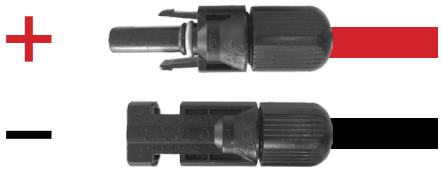


DC Inputs RPI M6A and M8A

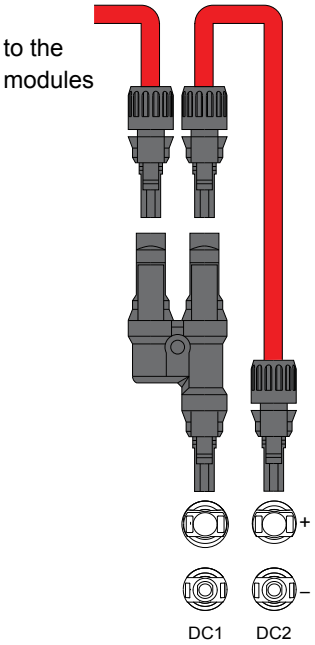


DC Inputs RPI M10A





If you want to use both DC inputs together on one MPP tracker, you need Y-connectors on the DC+ inputs.



DC cable specification

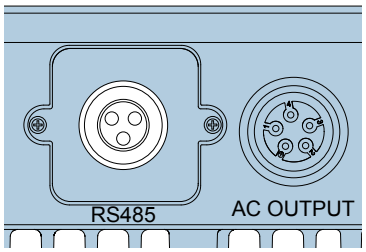
DC connectors on the inverter		Plugs for DC cable			
		a	b	MultiContact	
		mm²	mm		
DC–			1,5/2,5	3-6	32.0010P0001-UR [1]
				5,5-9	32.0012P0001-UR
			4/6	3–6	32.0014P0001-UR
				5,5-9	32.0016P0001-UR [2]
DC+			1,5/2,5	3-6	32.0011P0001-UR [1]
				5,5-9	32.0013P0001-UR
			4/6	3-6	32.0015P0001-UR
				5,5-9	32.0017P0001-UR [2]

[1] Delivered with M6A/M8A [2] Delivered with M10A

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 DC terminals on the inverter. Otherwise you might destroy the DC connectors.

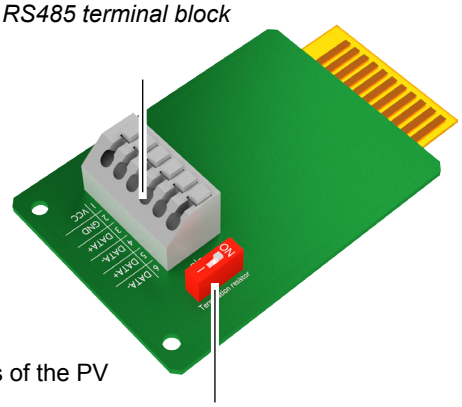
- ► Check the polarity of the DC voltage before you connect the solar modules.
- ► To ensure protection degree IP65, cap all unused connectors with the caps delivered with the inverter.

9 Connecting to a datalogger via RS485

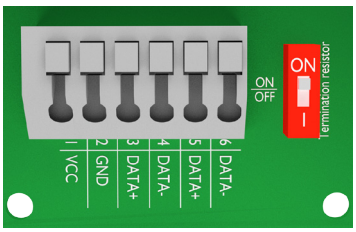


RS485 port

RS485 terminal block



Switch for termination resistor



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

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

For connecting RS485, terminals 3/4 or 5/6 are used. It does not matter which pair of terminals you use. The second pair you only need when you connect multiple inverters via RS485.

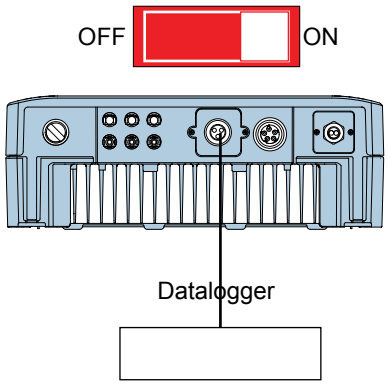
If you want to use SOLIVIA Monitor, the Internet based monitoring system from Delta, you additionally need a SOLIVIA M1 G2 Gateway.

Default baud rate is 19200 which can be changed on the display (see "Setting the baud rate for RS485", p. 13).

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

Connecting a single inverter to a datalogger

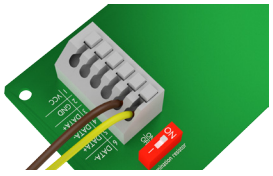
Termination resistor = ON

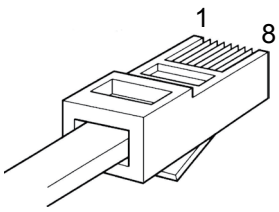


Connecting to a Delta SOLIVIA Gateway M1 G2

On the inverter you connect individual wires, on the gateway you have to use a RJ45 plug.

Connect the pins according to following table:

Inverter	SOLIVIA Gateway M1 G2
	
DATA+ (Pin 3 or 5)	TX_A (Pin 7)
DATA– (Pin 4 or 6)	RX_B (Pin 8)

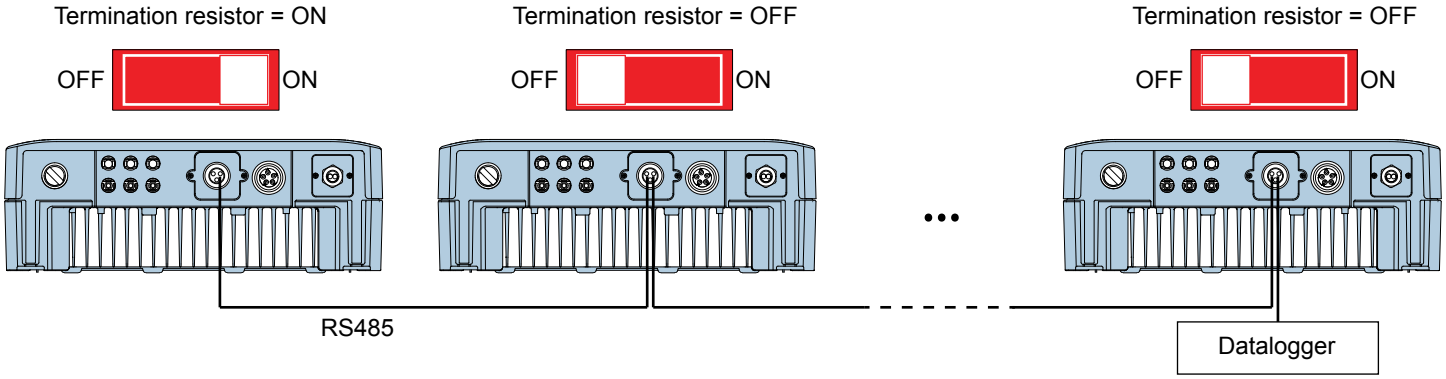


Pin	Assignment
1	Reserved
2	Reserved
3	Reserved
4	GND
5	Reserved
6	RX_B
7	TX_A
8	RX_B

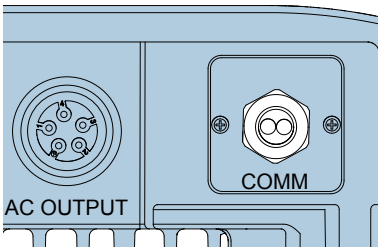
Connecting multiple inverters to a datalogger

► If you connect multiple inverters via RS485, set a different Inverter ID for each inverter (see "Setting the inverter ID", p. 14).

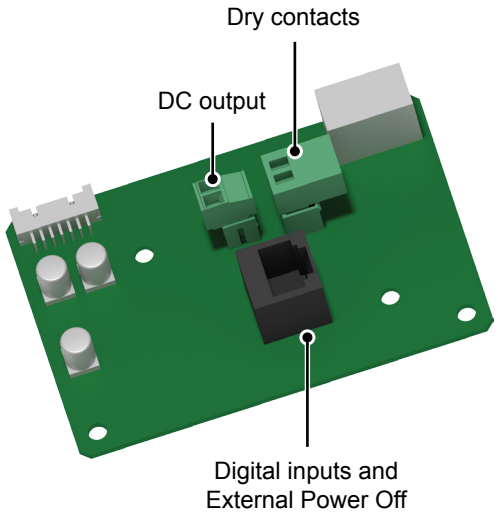
If your datalogger has no integrated termination resistor, switch on the termination resistor on the first inverter in the RS485 line.



10 Connecting digital inputs, EPO and dry contacts (optional)



Communication port



Dry contacts

► Use flat nose pliers to carefully pull out the connector for the dry contacts.

On the display (see “Setting dry contacts”, p. 17), the dry contacts can be connected to one of the following events:

Event	Description
Disable	The functionality for dry contacts is switched off.
On Grid	The inverter has connected to the grid.
Fan Fail	No action. The inverter has no fans.
Insulation	Insulation test failed.
Alarm	An error, fault, or warning message occurred.
Error	An error message occurred.
Fault	A fault message occured.
Warning	A warning message occured.

Default setting is “On Grid”. When the inverter feeds into the grid, the dry contacts are closed.

Digital inputs and EPO (External Power Off)

The digital inputs can be used to connect an external ripple control receiver for controlling the active power.

Pin	Designation	Short	Assigned action
1	K1	VCC + K1	Set maximum active power to 0%
2	K2	VCC + K2	Set maximum active power to 30%
3	K3	VCC + K3	Set maximum active power to 60%
4	K4	VCC + K4	Set maximum active power to 100%
5	K5	VCC + K5	Reserved
6	K6	VCC + K6	Reserved
7	EPO	VCC + EPO	External Power Off
8	VCC	-	-

The relay for EPO can be set on the display to “normally open” or “normally closed” (see “Setting EPO (External Power Off)”, p. 17).

DC output

DC voltage	12 V
DC current	0.5 A

11 Commissioning - basic settings

To execute commissioning, the inverter needs to be powered by AC (the grid).

After powering up the inverter for the first time, the *Select language* dialog is shown.

```
Select language
►English
Deutsch
Français
```

1. Use the buttons ▼ and ▲ to select language ***English***.

To confirm your selection, press the button ENT.

```
CHINA MV
CZECH
►ENGLAND
FRA-Is 50HZ
```

2. Use the buttons ▼ and ▲ to select your country or grid type.

To confirm your selection, press the button ENT.

► The following table is only relevant for Australia and New Zealand.

Country	Available grids	Description
Australia/ New Zealand	AU/NZ	Standard grid for M6A, M8A and M10A
	AU/NZ PL4K99	For M6A: Limits the power output to 4.99 kW.

```
Are you sure to
set country:
     ENGLAND
    ►YES / NO
```

3. If the selected country is correct, use the buttons ▼ and ▲ to select the entry ***YES***.

To confirm your selection, press the button ENT.

If you want to change your selection, press the button ESC.

→ The inverter starts a self-test which takes approximately 2 minutes. A countdown shows the remaining time on the display.

```
 10.Sep 2014 15:32
Status:      On Grid
Power:           0W
E-Today:         0kWh
```

☑ The basic setup is finished. The standard menu is shown.

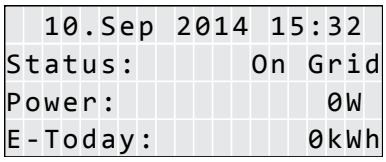
► Check the next chapter of this quick installation guide whether you need to adjust addtional settings.

12 Commissioning - further settings

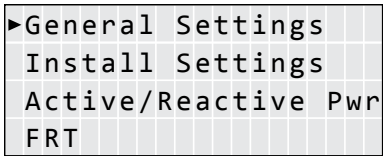
The settings described in this section may not be relevant for your installation.

► Check each setting whether it is needed for you.

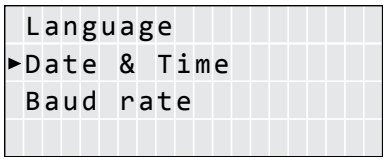
Setting date and time



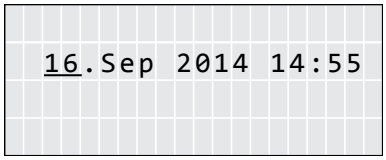
1. When the default information is displayed, press any button to open the main menu.
   Otherwise, repeatedly press the button ESC until the main menu is displayed.



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



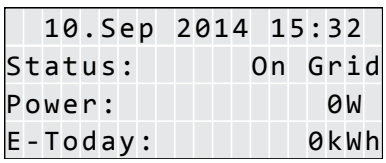
3. Use the buttons ▼ and ▲ to select ***Date & Time***.
   To confirm your selection, press the button ENT.



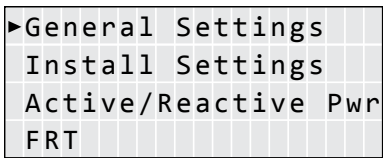
4. Use the buttons ▼ and ▲ to change a value. The currently set value is underlined.
   To confirm your setting, press the button ENT.
   The selection moves to the next value which you can set now. To move back to previous value, press the button ESC.

Setting the baud rate for RS485

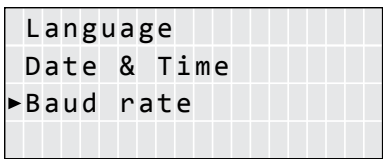
For a description of the RS485 connection, see “Connecting to a datalogger via RS485”, p. 10.



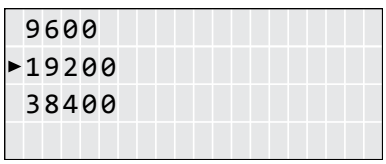
1. When the default information is displayed, press any button to open the main menu.
   Otherwise, repeatedly press the button ESC until the main menu is displayed.



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



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

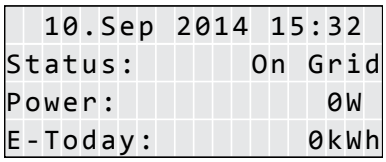


4. Use the buttons ▼ and ▲ to select a value.
   To confirm your setting, press the button ENT.

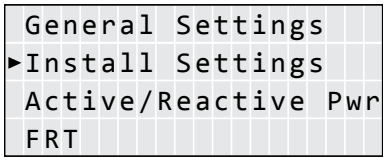
12 Commissioning - further settings (continued)

Setting the inverter ID

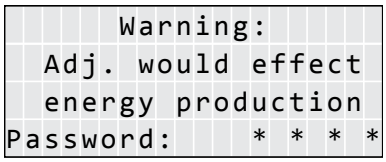
If your PV plant contains multiple inverters, for each of the inverters a different inverter ID has to be set. The inverter ID is needed to identify each inverter. For a description of the RS485 connection, see "Connecting to a datalogger via RS485", p. 10.



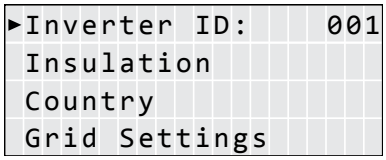
1. When the default information is displayed, press any button to open the main menu.
   Otherwise, repeatedly press the button ESC until the main menu is displayed.



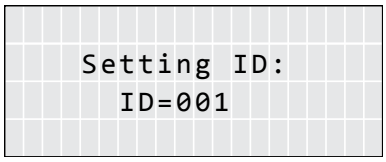
2. Use the buttons ▼ and ▲ to select ***Install Settings***.
   To confirm your selection, press the button ENT.



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



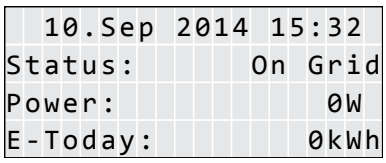
4. Use the buttons ▼ and ▲ to select ***Inverter ID***.
   To confirm your selection, press the button ENT.



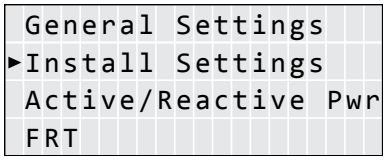
5. Use the buttons ▼ and ▲ to change the value.
   To confirm your setting, press the button ENT.

Setting the AC connection type

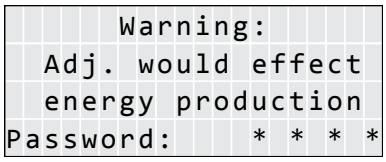
Per default, the AC connection type is set to 3P4W (3 phases + N + PE). Only if you use an AC connection with 3 phases + PE (3P3W), you need to change this setting. For a description of the AC connection, see "Connecting to the grid (AC)", p. 7.



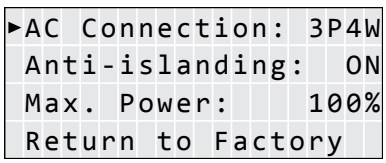
1. When the default information is displayed, press any button to open the main menu.
   Otherwise, repeatedly press the button ESC until the main menu is displayed.



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



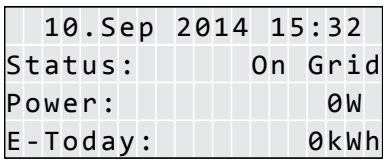
3. The menu is protected by password 5555. Use the buttons ▼ and ▲ to set each digit.
   To confirm a digit, press the button ENT.



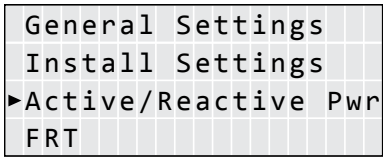
4. Use the buttons ▼ and ▲ to select ***AC Connection*** and press the button ENT.
   Use the buttons ▼ and ▲ to select ***3P3W*** and press the button ENT to confirm.

Setting a power limitation

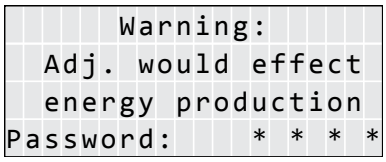
Because a power limitation reduces your yield, you should set a power limitation only when requested by country regulations, authorities or your grid operator.
This setting is protected by a special password. To get the password, please call the Delta Support hotline in your country. You can find the telephone number on the last page of this quick installation guide.



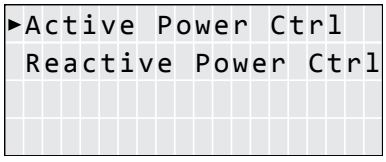
1. When the default information is displayed, press any button to open the main menu.
   Otherwise, repeatedly press the button ESC until the main menu is displayed.



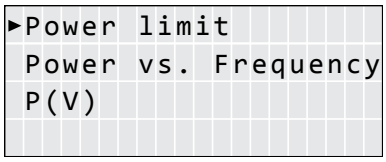
2. Use the buttons ▼ and ▲ to select ***Active/Reactive Pwr***.
   To confirm your selection, press the button ENT.



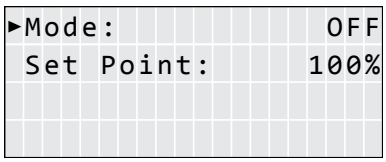
3. Type in the password you received from Delta Support. Use the buttons ▼ and ▲ to set each digit.
   To confirm a digit, press the button ENT.



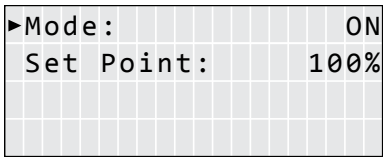
4. Use the buttons ▼ and ▲ to select ***Active Power Ctrl***.
   To confirm your selection, press the button ENT.



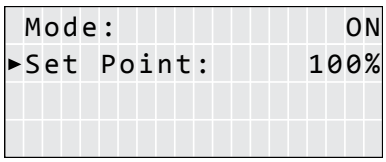
5. Use the buttons ▼ and ▲ to select ***Power limit***.
   To confirm your selection, press the button ENT.



6. Use the buttons ▼ and ▲ to select ***Mode***.
   To change the value, press the button ENT.



7. Use the buttons ▼ and ▲ to change the value to ***ON***. This will switch on the function “Power limit”.
   To confirm your selection, press the button ENT.

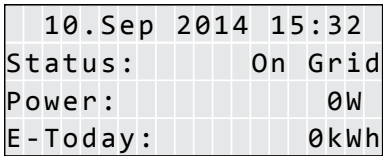


8. Use the buttons ▼ and ▲ to select ***Set Point***.
   To change the value, press the button ENT.
   Use the buttons ▼ and ▲ to change the value.
   To confirm the value, press the button ENT.

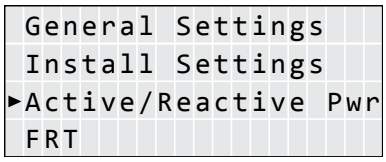
12 Commissioning - further settings (continued)

Setting a constant power factor

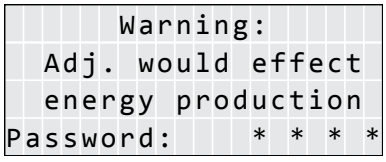
A constant power factor should be set only when requested by country regulations, authorities or your grid operator.
This setting is protected by a special password. To get the password, please call the Delta Support hotline in your country. You can find the telephone number on the last page of this quick installation guide.



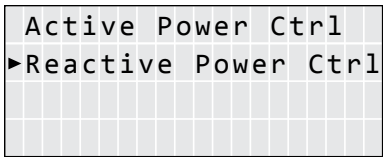
1. When the default information is displayed, press any button to open the main menu.
   Otherwise, repeatedly press the button ESC until the main menu is displayed.



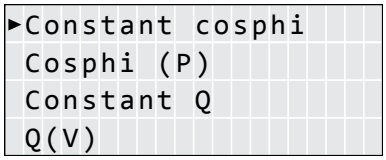
2. Use the buttons ▼ and ▲ to select ***Active/Reactive Pwr***.
   To confirm your selection, press the button ENT.



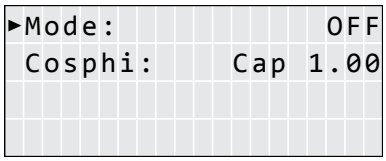
3. Type in the password you received from Delta Support. Use the buttons ▼ and ▲ to set each digit.
   To confirm a digit, press the button ENT.



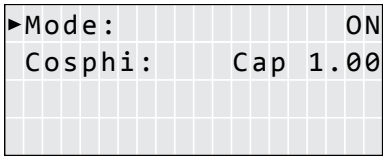
4. Use the buttons ▼ and ▲ to select ***Reactive Power Ctrl***.
   To confirm your selection, press the button ENT.



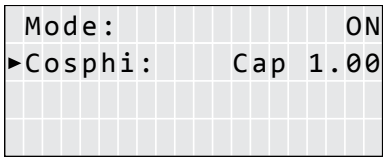
5. Use the buttons ▼ and ▲ to select ***Constant cosphi***.
   To confirm your selection, press the button ENT.



6. Use the buttons ▼ and ▲ to select ***Mode***.
   To change the value, press the button ENT.



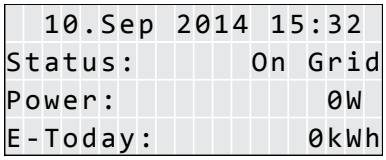
7. Use the buttons ▼ and ▲ to change the value to ***ON***. This will switch on the function “Power limit”.
   To confirm your selection, press the button ENT.



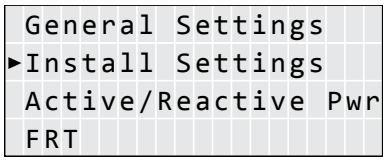
8. Use the buttons ▼ and ▲ to select ***Cosphi***.
   To change the value, press the button ENT.
   Use the buttons ▼ and ▲ to change the value.
   To confirm the value, press the button ENT.

Setting dry contacts

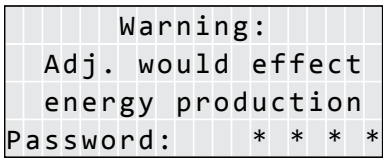
For a description of the dry contacts, see “Connecting digital inputs, EPO and dry contacts (optional)”, p. 11.



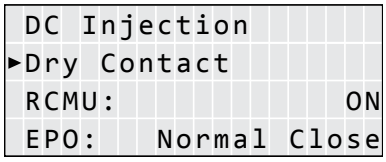
1. When the default information is displayed, press any button to open the main menu.
   Otherwise, repeatedly press the button ESC until the main menu is displayed.



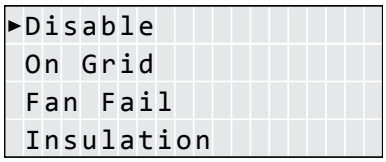
2. Use the buttons ▼ and ▲ to select ***Install Settings***.
   To confirm your selection, press the button ENT.



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



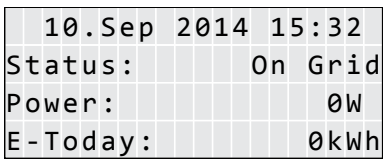
4. Use the buttons ▼ and ▲ to select ***Dry Contact***.
   To confirm your selection, press the button ENT.



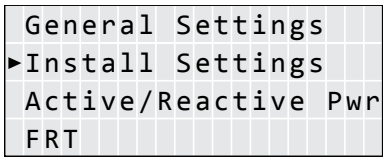
5. Use the buttons ▼ and ▲ to select an option.
   To confirm your selection, press the button ENT.

Setting EPO (External Power Off)

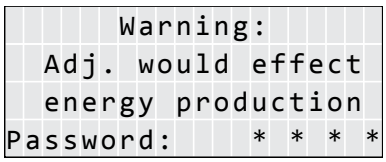
For a description of EPO (External Power Off), see “Connecting digital inputs, EPO and dry contacts (optional)”, p. 11.



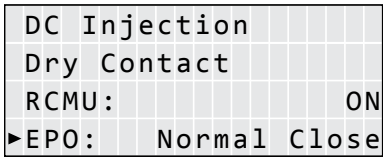
1. When the default information is displayed, press any button to open the main menu.
   Otherwise, repeatedly press the button ESC until the main menu is displayed.



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



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



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

13 Technical data

Input (DC)	RPI M6A	RPI M8A	RPI M10A
Maximum recommended PV power [1]	7500 W_P	10000 W_P	12500 W_P
Maximum power	6600 W	8800 W	11000 W
Input voltage range	200 ... 1000 V_{DC}		
Maximum input voltage	1000 V_{DC}		
Nominal voltage	600 V_{DC}		
Startup voltage	>250 V_{DC}		
Startup power	40 W		
MPP operating voltage range	200 ... 1000 V_{DC}		
MPP operating voltage range with full power			
Symmetrical load	315 ... 800 V_{DC}	415 ... 800 V_{DC}	415 ... 800 V_{DC}
Asymmetrical load (60/40%)	425 ... 800 V_{DC}	565 ... 800 V_{DC}	415 ... 800 V_{DC}
Maximum input current; total (DC1 / DC2)	20 A (10 A / 10 A)	20 A (10 A / 10 A)	25 A (15 A / 10 A)
Maximum short circuit current in case of a failure	13 A / 13 A	13 A / 13 A	19.5 A / 13 A
Number of MPP trackers	Parallel inputs: 1 MPP tracker; Separate inputs: 2 MPP trackers		
Maximum asymmetry	60/40%		
Number of DC inputs; total (DC1 / DC 2)	2 (1 / 1)	2 (1 / 1)	3 (2 / 1)
Galvanic isolation	No		
Overvoltage category [2]	II		

Output (AC)	RPI M6A	RPI M8A	RPI M10A
Maximum apparent power [3]	6300 VA	8400 VA	10500 VA
Nominal apparent power	6000 VA	8000 VA	10000 VA
Voltage range [4]	230 ± 20 % / 400 V_{AC} ± 20%; 3 phase + PE or 3 phase + N + PE		
Nominal current	8.7 A	11.6 A	14.5 A
Maximum current	9.7 A	13 A	16 A
Inrush current	31 A / 100 µs		
Nominal frequency	50 / 60 Hz		
Frequency range [4]	50 ± 5 Hz / 60 ± 5 Hz		
Power factor adjustable	0.8 cap ... 0.8 ind		
Total harmonic distortion	<3%		
DC current injection	<0.5% rated current		
Night-time loss	<2 W		
Overvoltage category [2]	III		

Mechanical Design	RPI M6A	RPI M8A	RPI M10A
Dimensions (W x H x D)	510 x 445 x 177 mm		
Weight	25 kg	25 kg	26 kg
Cooling	Natural convection		
AC Connector type	Amphenol C16-3		
DC Connector type	Multi-Contact MC4		
Communication interfaces	2 x RS485, 1 x Dry contacts, 1 x EPO (External Power Off), 6 x Digital inputs		

General Specification	RPI M6A	RPI M8A	RPI M10A
Delta model name	RPI M6A	RPI M8A	RPI M10A
Delta part number	RPI602FA0E1000	RPI802FA0E1000	RPI103FA0E1000
Maximum efficiency	98.3%	98.3%	98.3%
EU efficiency	97.6%	97.9%	98.0%
Operating temperature range	-25 ... +60 °C		
Operating temperature range without derating	-25 ... +40 °C		
Storage temperature range	-25 ... +60 °C		
Relative humidity	0 ... 100 %, non-condensing		
Maximum operating altitude	2000 m above sea level		

Standards and Directives	RPI M6A	RPI M8A	RPI M10A
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		EN 61000-3-12
Variations and flicker	EN 61000-3-3		EN 61000-3-11
Grid interfaces	For Europe: see www.solar-inverter.com For Australia/New Zealand: AS3100 / AS4777		

[1] When operated with balanced DC inputs (50/50 %)
[2] IEC 60664-1, IEC 62109-1
[3] The maximum AC apparent power indicates the power an inverter is able to deliver. This maximum apparent power may not necessarily be reached.
[4] AC voltage and frequency range will be programmed according to the individual country requirements.

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