



Quick Installation Guide

RPI M6A
RPI M8A
RPI M10A



United Kingdom



Europe



This quick installation guide applies for the following inverter models:

- RPI M6A (Delta part number RPI602FA0E1000)
- RPI M8A (Delta part number RPI802FA0E1000)
- RPI M10A (Delta part number RPI103FA0E1000)

with firmware versions:
DSP: 1.32 / RED: 1.13 / COMM: 1.15 or higher

The Delta part number can be found on the type plate of the inverter. The firmware versions are listed on the display in the **Inverter Info.** menu.

If you notice discrepancies between the descriptions in this manual and the information on the inverter display, go to www.solar-inverter.com and download the version of the manual that matches the model number and the firmware version of your inverter.
On the website, you will also find the installation and operation manual with detailed information about the inverter.

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The information in this manual is to be treated as confidential and no part of this manual may be reproduced without prior written permission from Delta Energy Systems. The information in this manual may not be used for any purpose not directly connected to use of the inverter.
All information and specifications can be modified without prior notice.

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Basic safety instructions

DANGER



Electric shock

Potentially fatal voltages are present at the inverter during operation. When the inverter is disconnected from all power sources, this voltage remains in the inverter for up to 60 seconds.

Therefore, always carry out the following steps before working on the inverter:

1. Turn the AC/DC disconnect to the **OFF** position.
2. Disconnect the inverter from all AC and DC voltage sources and make sure that none of the connections can be accidentally restored.
3. Wait at least 60 seconds until the internal capacitors have discharged.

- To comply with the IEC 62109-5.3.3 safety requirements and avoid injury or material damage, the inverter must be installed and operated in accordance with the safety and operating instructions set out in this manual. Delta Energy Systems is not responsible for damage resulting from failure to follow the safety and operating instructions set out in this manual.
- The inverter may only be installed and commissioned by installers who have been trained and certified for the installation and operation of grid-based solar inverters.
- All repair work on the inverter must be carried out by Delta Energy Systems. Otherwise, the warranty will be void.
- Warning instructions and warning symbols attached to the inverter by Delta Energy Systems must not be removed.
- The inverter has a high leakage current value. The grounding cable **must** be connected before commencing operation.
- Do not disconnect any cables while the inverter is under load due to risk of a fault arc.
- To prevent damage due to lightning strikes, follow the provisions that apply in your country.
- The surface of the inverter can get very hot during operation. Wear safety gloves when you touch the inverter (apart from at the display).
- Only equipment in accordance with SELV (EN 60950) may be connected to the RS485 interfaces.
- All connections must be sufficiently insulated in order to ensure the IP65 degree of protection. Unused connections must be closed using cover caps.

DANGER



Electric shock

Potentially fatal voltages are present at the inverter DC connections. When light falls on the solar modules, they immediately start to generate electricity. This also happens when light does not fall directly on the solar modules.

- ▶ Never disconnect the inverter from the solar modules when it is under load.
- ▶ Turn the AC/DC disconnect to the **OFF** position.
- ▶ Disconnect the connection to the grid so that the inverter cannot supply energy to the grid.
- ▶ Disconnect the inverter from all AC and DC voltage sources. Ensure that none of the connections can be restored accidentally.
- ▶ Ensure that the DC cables cannot be touched accidentally.

ATTENTION



Damage through an incorrectly dimensioned solar system.

An solar system of the wrong size may cause damage to the inverter.

- ▶ Always pay attention to the technical specifications of the inverter (input voltage range, maximum current and maximum input power) when calculating the number of solar modules.

ATTENTION



Overheating of the DC connections.

Exceeding the maximum current can cause overheating of the DC connections and result in a fire.

- ▶ Always take into account the maximum current of the DC connections when planning the installation.

Scope of supply

Part	Quantity	Figure / Description	Part	Quantity	Figure / Description
Inverter	1		AC plug	1	Amphenol C16-3 
Mounting plate	1		M4 mounting screws	2	For fastening the inverter to the mounting plate and for grounding the inverter housing. With washer, spring washer and toothed lock washer . 
DC plug	4	Multi-contact MC4 for DC+ for 4/6 mm² (32.0017P0001-UR) 	Quick installation guide and basic safety instructions	1	 Installations- und Betriebshandbuch EN 1500A EN 1500A EN 1500A 
	4	Multi-contact MC4 for DC– for 4/6 mm² (32.0016P0001-UR) 			



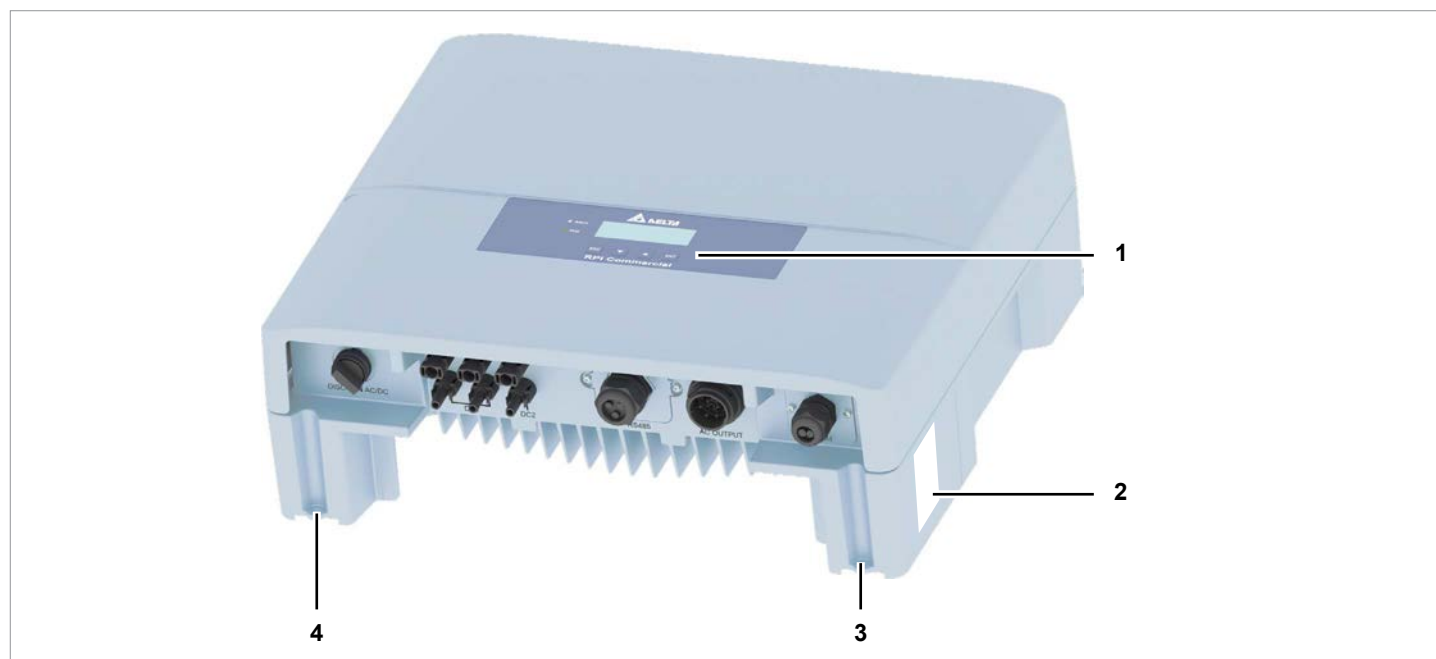
Check the delivery for completeness and all components for damage before starting installation work.

Do not use any damaged components.



Keep the packaging.

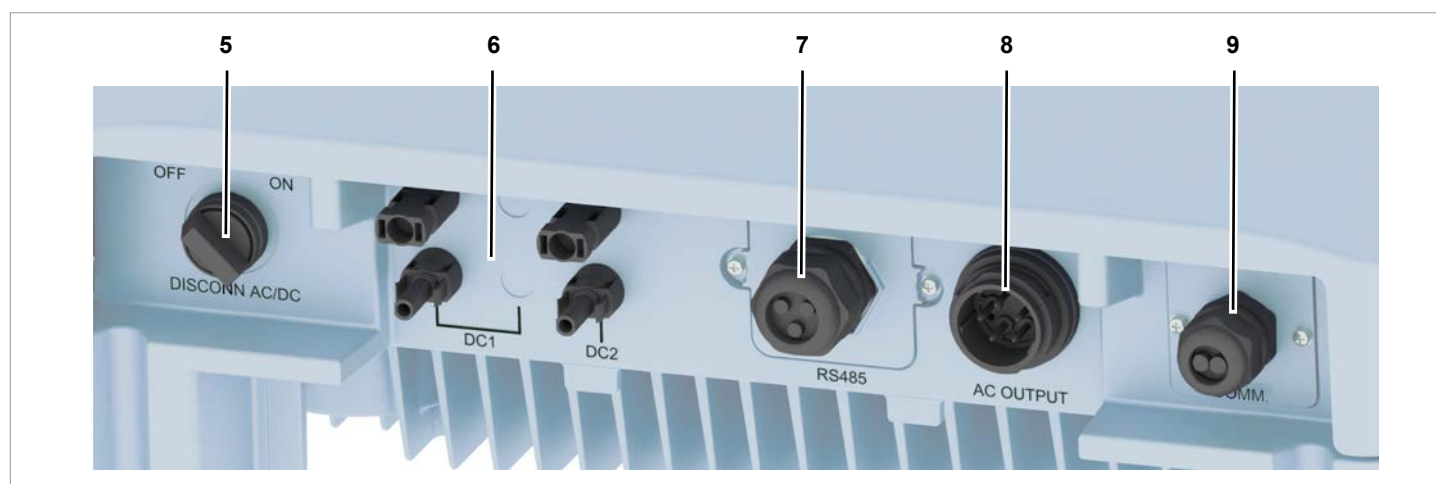
Components of the inverter



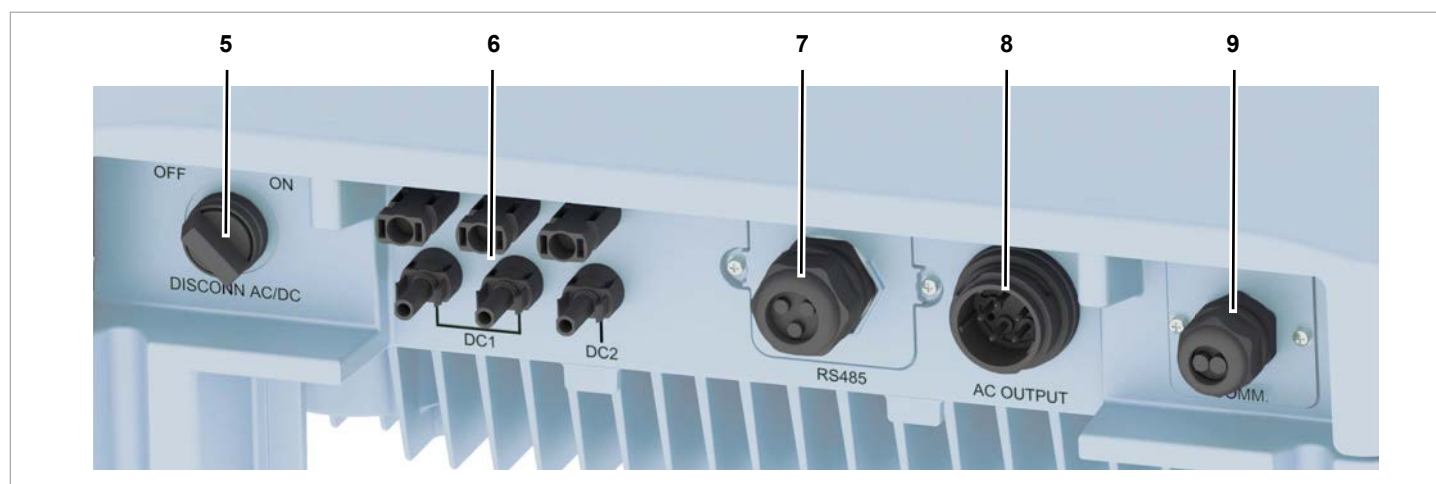
- 1 Display, buttons, and LEDs
- 2 Type plate

- 3 Mounting hole and grounding connection
- 4 Mounting hole

M6A and M8A electrical connections



M10A electrical connections



- 5 AC/DC disconnect
- 6 DC inputs

- 7 RS485 connection
- 8 AC connection

- 9 Communication connection

Components of the inverter

Display, buttons, and LEDs



GRID	Grid	Green LED; lights up when the inverter is supplying power to the grid.
ALARM	Alarm	Red LED; displays a warning, an error or a fault.

	Escape	Exit the current menu. Cancel the setting for a parameter. Changes are not adopted.
	Down	Move downwards in the menu. Reduce the value of a configurable parameter.
	Up	Move upwards in the menu. Increase the value of a configurable parameter.
	Enter	Select menu item. Open a configurable parameter for editing. Cancel the setting for a parameter. Changes are adopted.

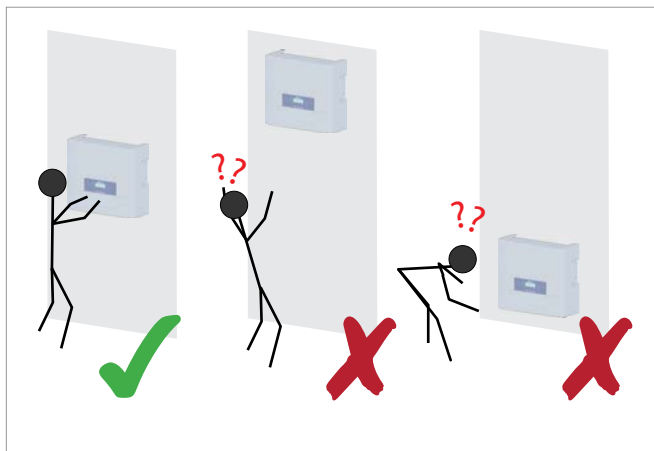
Information on the type plate

	Danger to life through electric shock Potentially fatal voltage exists within the inverter during operation. This voltage persists even 60 seconds after disconnection of the all the voltage sources.
	Before working on the inverter, read the supplied manual and follow the instructions contained therein.
	This inverter does not contain a transformer.
	The housing of the inverter must be grounded if this is required by local regulations.
	The inverter satisfies the Australian standard for electrical safety and the EMC standard. Applies only to Australia and New Zealand.
	WEEE mark The inverter must not be disposed of as standard household waste, but in accordance with the applicable electronic waste disposal regulations of your country or region.

Planning the installation

Installation location of the inverter

- ▶ Attach the inverter so that the information on the display can be read and the buttons can be operated without any problems.

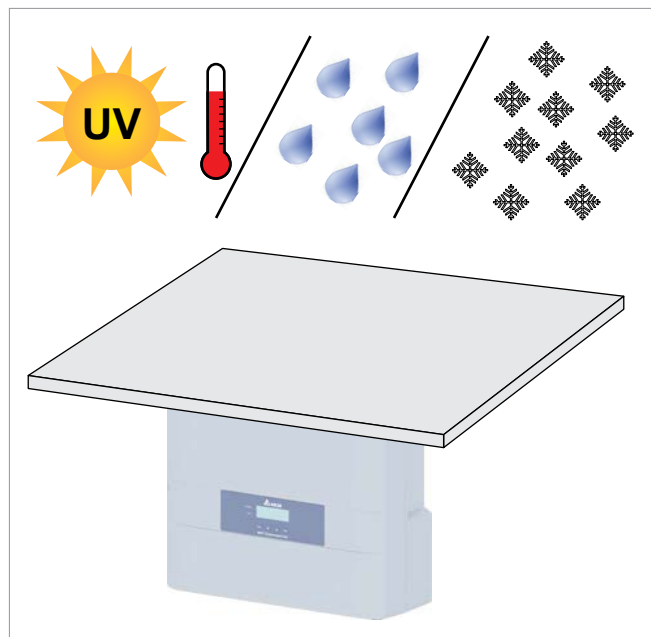


- ▶ The inverter is heavy. The wall and mounting system must be able to bear the heavy weight of the inverter.
- ▶ Always use the mounting plate supplied with the inverter.
- ▶ Use mounting materials (dowels, screws etc.) that are suitable for the wall or the mounting system, as well as the heavy weight of the inverter.
- ▶ Mount the inverter on a vibration-free wall to avoid malfunctions.
- ▶ When using the inverter in residential areas or in buildings with animals, possible noise emissions can be disturbing. Therefore, choose the place of installation carefully.
- ▶ Mount the inverter on a fireproof wall.
- ▶ Mount the inverter vertically.



Outdoor installations

- ▶ The inverter has a protection degree of IP65 and can be installed indoors and outdoors. Nevertheless the inverter should be protected by a roof against direct UV radiation, solar radiation, rain and snow.
- For example, the power of the inverter will be reduced if it is too heavily heated by solar radiation. This is normal operating behavior for the inverter and is necessary to protect the internal electronics.

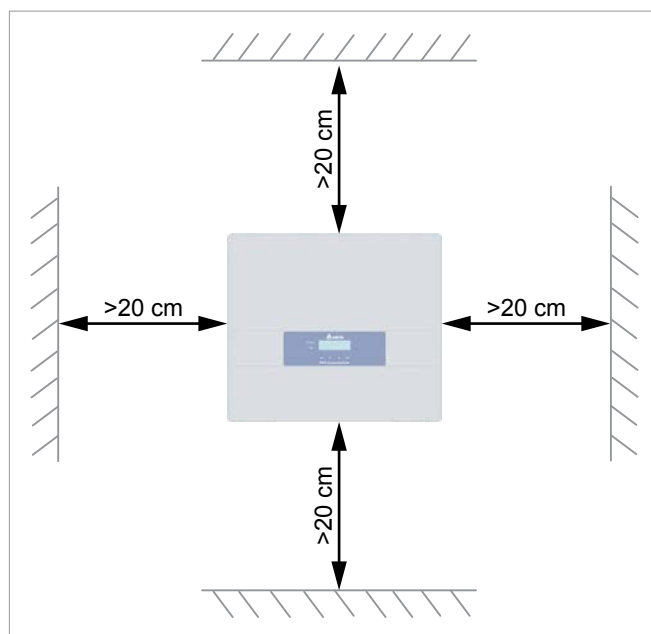


- ▶ Ensure sufficient air circulation. Hot air must be able to dissipate upwards.
- ▶ Leave enough space around each inverter.
- ▶ Do not install inverters above one another so that they do not heat each other.
- ▶ Note the *Operating temperature range without derating* and the *Operating temperature range*.

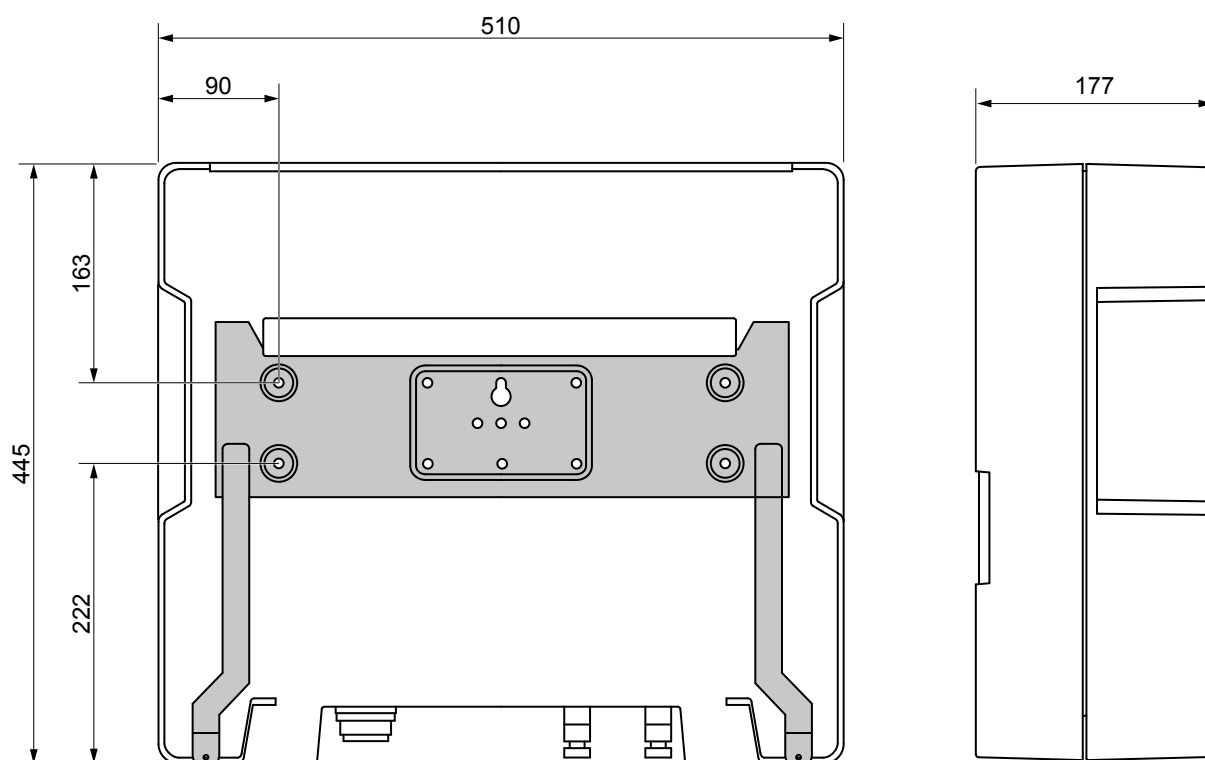
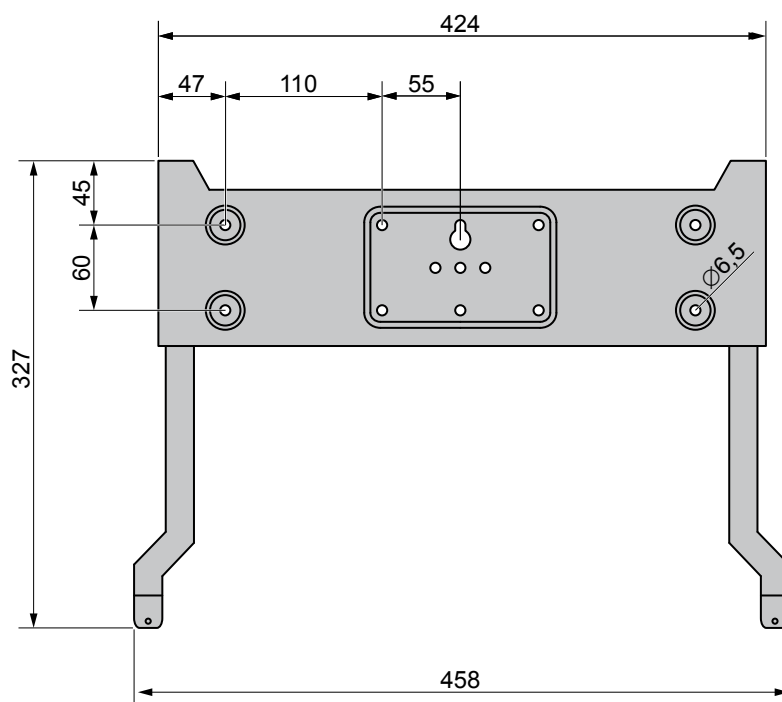
When the *Operating temperature range without derating* is exceeded the inverter reduces the AC power fed into the mains.

When the *Operating temperature range* is exceeded the inverter stops feeding AC power into the grid.

This is normal operating behavior for the inverter and is necessary to protect the internal electronics.



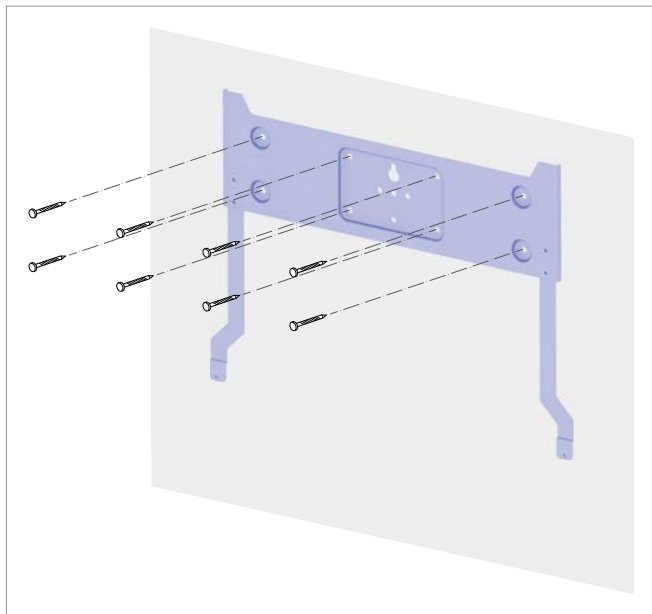
Dimensions



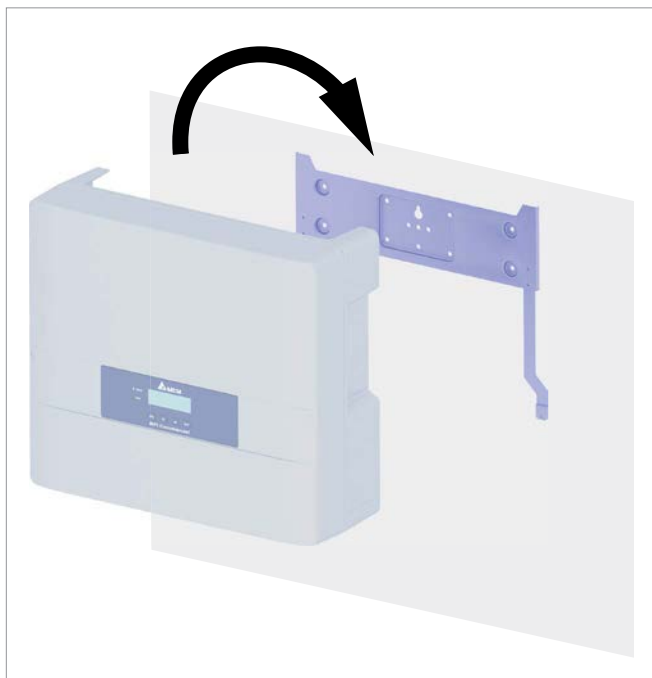
Mounting the inverter

Mounting the inverter on the wall or the mounting system

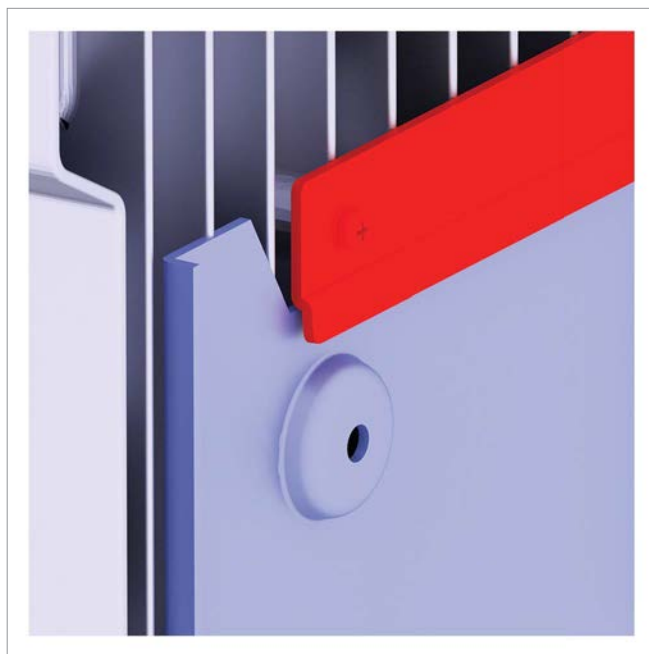
1. Attach the mounting plate to the wall / the mounting system with 8 M6 screws.



2. Mount the inverter on the mounting plate.

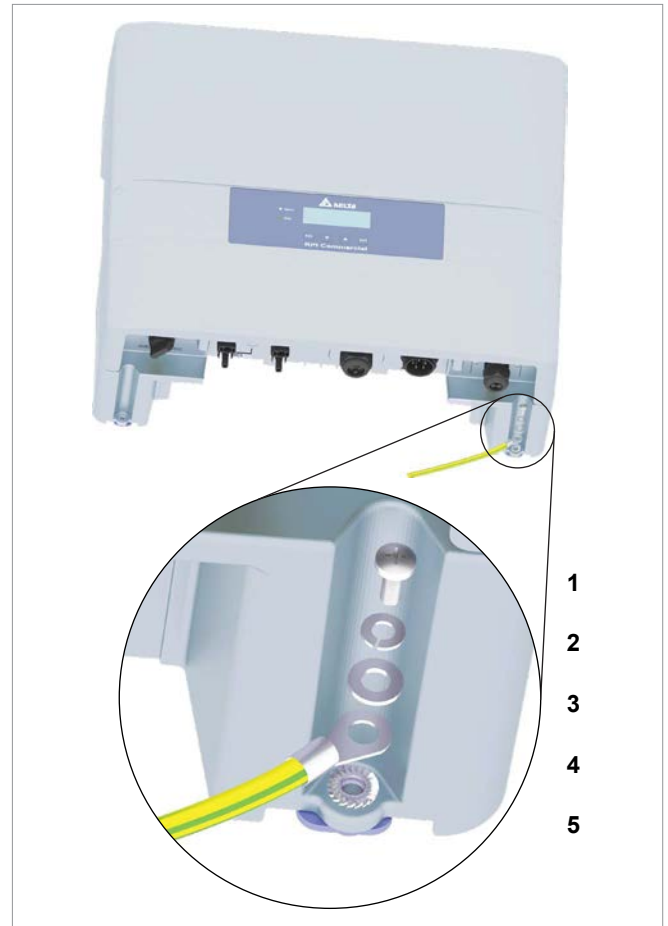


3. Check that the inverter hangs correctly on the mounting plate.



Mounting the inverter

4. Screw the inverter to the mounting plate using 1 M4 mounting screw, spring washer and washer. The mounting screws are included in the scope of delivery.



6. Perform a continuity check of the grounding connection. If there is no sufficient conductive connection, scratch away the paint from the inverter housing under the toothed lock washer to achieve a better electrical contact.

Grounding the inverter housing

WARNING



High current



- ▶ Always observe the local regulations relating to grounding cable requirements.
- ▶ To increase the safety of the system, always ground the inverter housing even when this is not required by the local regulations.
- ▶ Always ground the inverter housing before connecting the inverter to the mains and solar modules.
- ▶ The cable cross-section must be at least 6 mm².

5. Attach the grounding cable to the right-hand side and screw the inverter to the mounting plate.

- 1 Lock washer
- 2 Grounding cable with cable lug
- 3 Washer
- 4 Spring washer
- 5 M4 screw

Attaching warning notices to the inverter

- ▶ Attach all necessary warning notices to the inverter. Always follow the local regulations.

 WARNING Dual supply	 <div style="background-color: red; color: white; padding: 5px; text-align: center;"> Do not work on this equipment until it is located from both mains and on site generation supplies. </div>
Isolate on-site Generation Unit(s) at _____ Isolate mains supply at _____ Warning - Only persons authorized by DNO may remove the main cut out fuse	



Warning
 Two voltage sources
 - Distribution network
 - PV modules



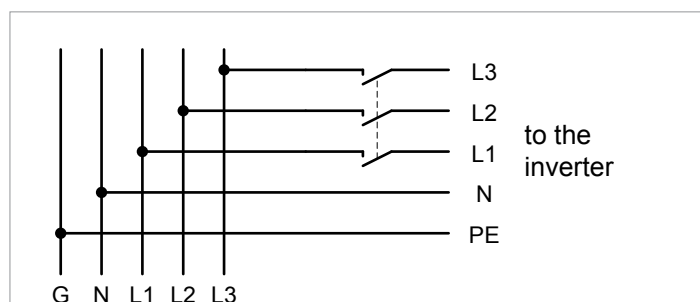
Prior to any work, disconnect both sources

Connecting the mains (AC)

- ▶ Always follow the specific regulations of your country or region.
- ▶ Always follow the specific regulations of your energy provider.
- ▶ Install all stipulated safety and protective devices (such as automatic circuit breakers and/or surge arresters).
- ▶ Protect the inverter with a suitable upstream circuit breaker:

Model Upstream line protection

RPI M6A	16 A
RPI M8A	16 A
RPI M10A	20 A



Residual current circuit breaker

Due to its design, the inverter cannot supply the grid with DC residual current. This means that the inverter meets the requirements of DIN VDE 0100-712.

Possible error events were assessed by Delta in accordance with the current installation standards. The assessments showed that no hazards arise from operating the inverter in combination with an upstream, type A residual current circuit breaker (FI circuit breaker, RCD). There is no need to use a type B residual current circuit breaker.

Minimum tripping current of the type A residual current circuit breaker	≥100 mA
-------------------------------------------------------------------------	---------



The required tripping current of the residual current circuit breaker depends first and foremost on the quality of the solar modules, the size of the PV system, and the ambient conditions (e.g. humidity). The tripping current must not, however, be less than the specified minimum tripping current.

Integrated residual current monitoring unit

The integrated, universal current-sensitive residual current monitoring unit (RCMU) is certified in accordance with VDE 0126 1-1/ A1:2012-02 §6.6.2.

Permissible grounding systems

Grounding system	TN-S	TN-C	TN-C-S	TT	IT
Allowed	Yes	Yes	Yes	Yes	No

Requirements for the grid voltage

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

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

Cable requirements

The AC plug provided with the inverter has the following technical characteristics:

Plug type	Amphenol C16-3
Nominal current	≤25 A
Minimum / maximum cable diameter	11 / 20 mm
Minimum / maximum wire cross-section	5 / 8 mm ²
Recommended tightening torque for clamping screws	≥0.7 Nm

The AC plug can only be used with a flexible copper cable.

Consider the following factors when calculating the cable diameter:

- Cable material
- Temperature conditions
- Cable length
- Installation type
- Voltage drop
- Loss of power in the cable

- ▶ Always follow the installation regulations for AC cables applicable in your country.
- ▶ France: Follow the installation regulations of UTE 15-712-1. This standard contains the requirements for minimum cable diameters and for avoiding overheating due to high currents.
- ▶ Germany: Follow the installation regulations of VDE 0100-712. This standard contains the requirements for minimum cable diameters and for avoiding overheating due to high currents.
- ▶ Australia/New Zealand: Follow the installation regulations of AS/NZS 5033:2005. This standard contains the requirements for minimum cable diameters and for avoiding overheating due to high currents.

Using external grid and system protection

The German standard VDE-AR-N 4105, Section 6.1, requires external grid and system protection with a coupling switch for PV system larger than 30 kVA.

Alternatively, VDE-AR-N 4105, Section 6.4.1, allows the use of an inverter with an internal coupling switch when this switch disconnects the inverter from the grid in less than 100 ms.

This inverter satisfies the requirements of VDE-AR-N 4105, Section 6.4.1 when the following firmware is installed: DSP ≥ 1.30 / RED ≥ 1.20 / COMM ≥ 1.10. External grid and system protection is not necessary in this case.

Connecting the mains (AC)

ATTENTION



Incorrectly wired AC plug.

Incorrect wiring can destroy the inverter.

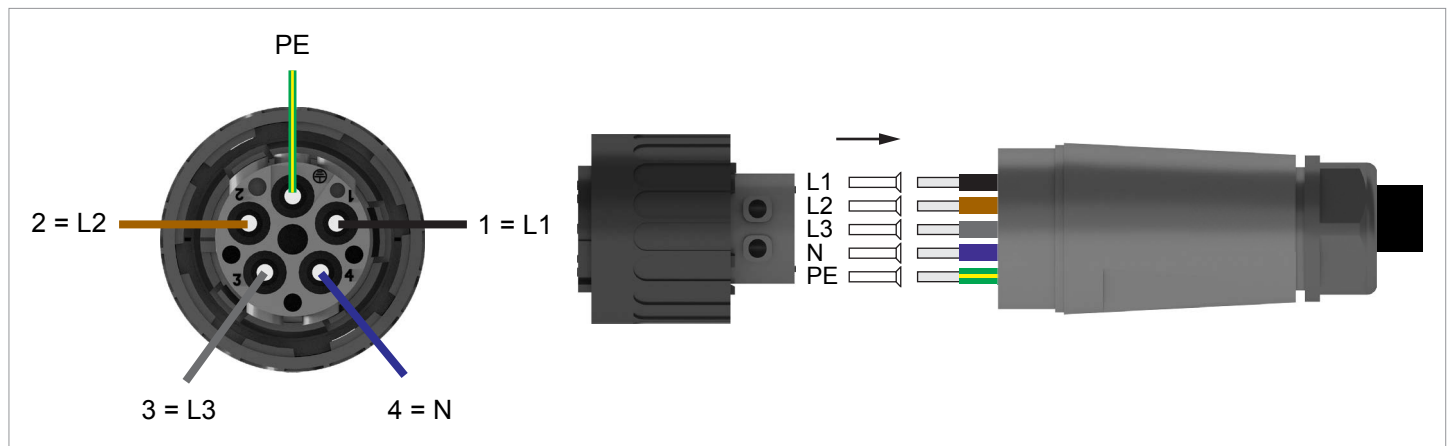
- Pay attention to the correct phase assignments when connecting the AC cable to the AC plug.



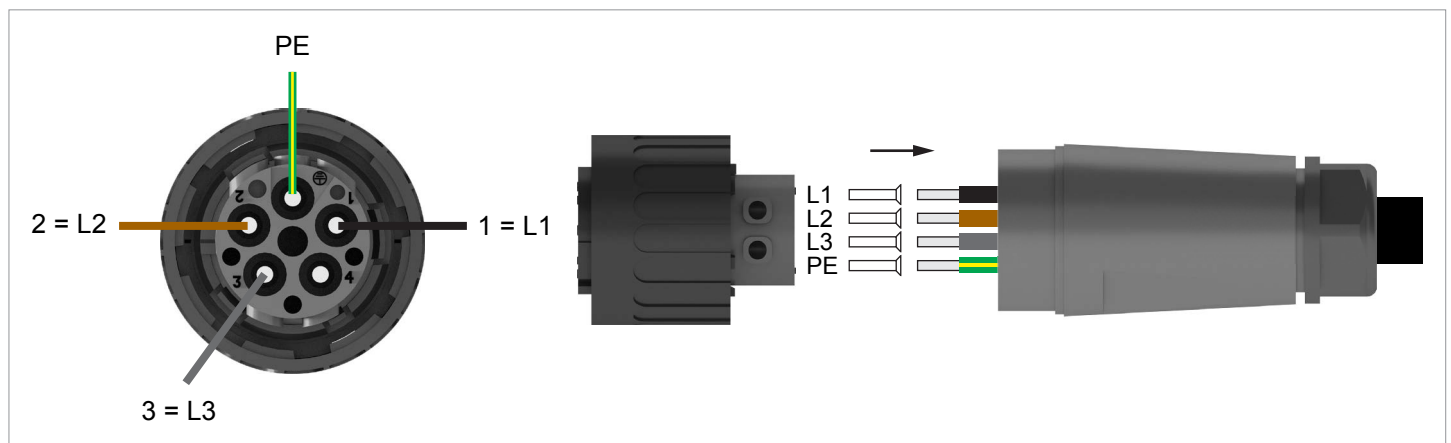
The inverter can be connected to 3-phase grids without neutral conductors (3P3W, 3 phases + PE) and 3-phase grids with neutral conductors (3P4W, 3 phases + N + PE).

- If the inverter is connected to a grid without a neutral conductor, the AC connection type must be changed using the display to 3P3W after commissioning, see [“AC connection type”](#), page 23.

Connecting to a 3-phase grid with a neutral conductor (3P4W)



Connecting to a 3-phase grid without a neutral conductor (3P3W)

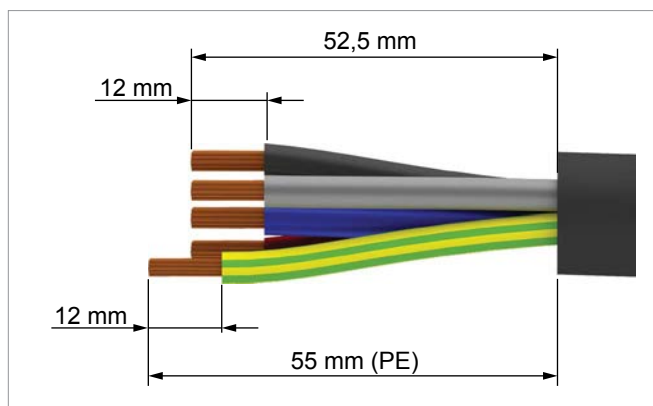


Connecting the mains (AC)

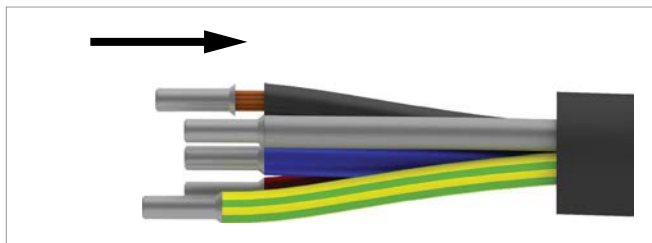
1. Turn the AC/DC disconnecter to the **OFF** position.



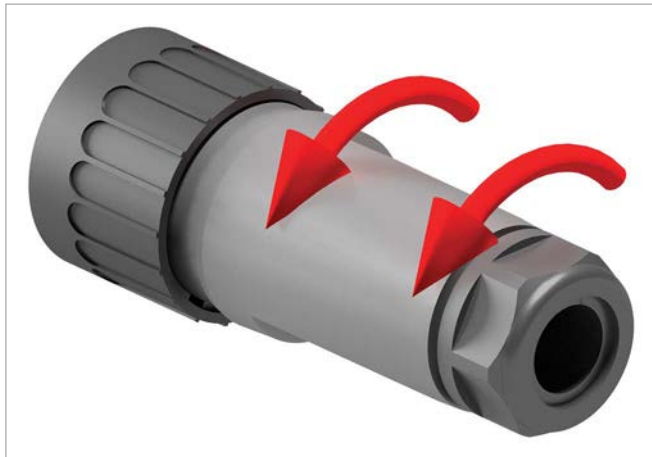
2. Remove the insulation from the cable and wires. Do not twist the wire ends because this reduces the contact surface area with the wire end sleeves.



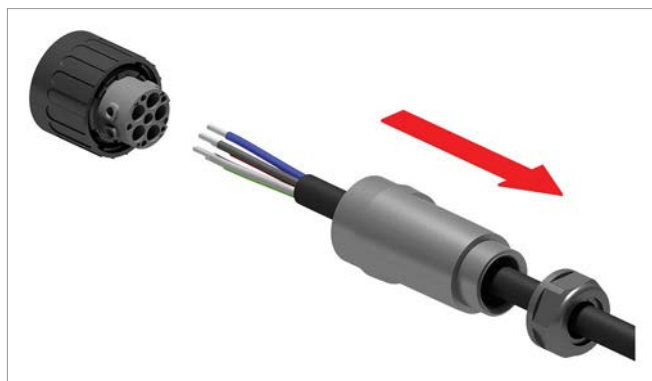
3. Fit and crimp the wire end sleeves to the ends of the wires.



4. Unscrew the nut and housing from the AC plug.

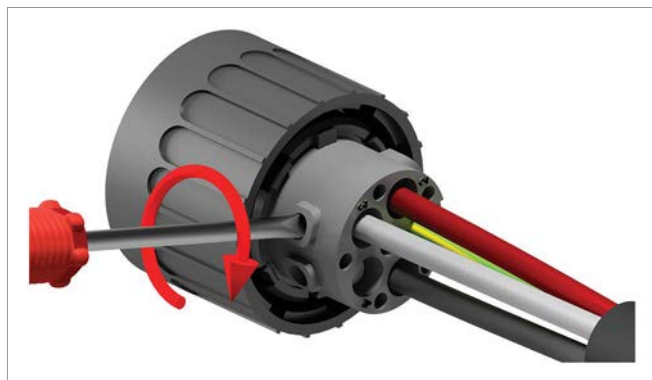
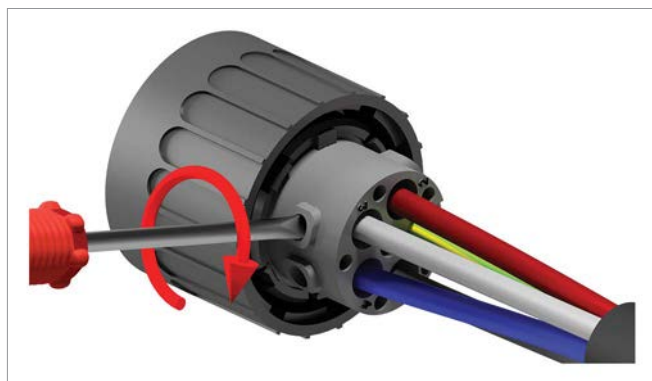


5. Pull the cable through the nut and housing.



6. Insert the wires of the AC cable into the correct pin inserts and tighten with a screwdriver.

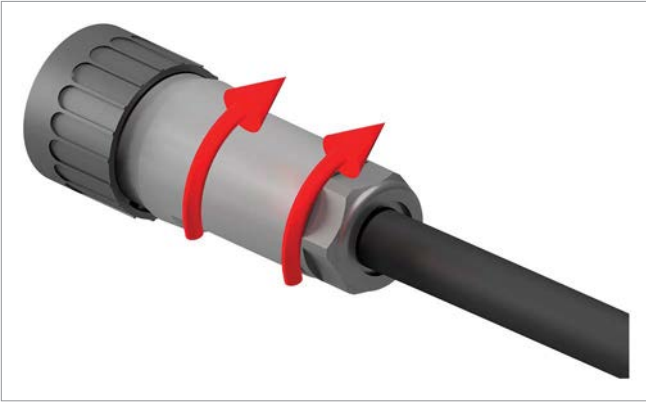
The first figure shows the wiring for a 3-phase grid with a neutral conductor (3P4W), the second figure shows the wiring for a 3-phase grid without a neutral conductor (3P3W).



7. Fit the housing and nut and screw the nut tight.



Connecting the mains (AC)



8. Plug the AC plug into the AC connection on the inverter and tighten.



9. Fasten the AC cable with a strain relief element.
10. If the inverter is connected to a grid without a neutral conductor, the AC connection type must be changed using the display to 3P3W **after** commissioning, see [“AC connection type”](#), page 23.

Connecting the solar modules (DC)

DANGER



Electric shock

Potentially fatal voltages are present at the inverter DC connections. When light falls on the solar modules, they immediately start to generate electricity. This also happens when light does not shine directly on the solar modules.

- ▶ Never disconnect the inverter from the solar modules when it is under load.
- ▶ Turn the AC/DC disconnecter to the **OFF** position.
- ▶ Disconnect the connection to the grid so that the inverter cannot supply energy to the grid.
- ▶ Disconnect the inverter from all AC and DC voltage sources. Ensure that none of the connections can be restored accidentally.
- ▶ Ensure that the DC cables cannot be touched accidentally.

ATTENTION



Ingress of moisture.

Moisture can enter via open DC connections.

- ▶ To ensure protection degree IP65, close unused DC connections with the rubber plugs attached to the DC connections.

Polarity of the DC voltage

- ▶ Check the polarity of the DC voltage of the DC strings before connecting the solar modules.



Tools



The protective caps lock the DC plug so that it can only be disconnected from DC connections using the mounting tool.

- ▶ Observe the local regulations with regards to the protective caps.
France: The protective caps must be used.



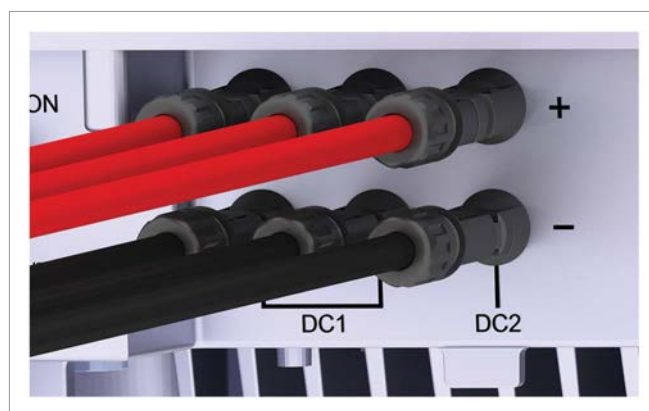
Mounting tool for disconnecting the DC plug and the protective caps from the DC connections. Available from Multi-Contact.

Connecting the DC cables

1. Turn the AC/DC disconnecter to the **OFF** position.



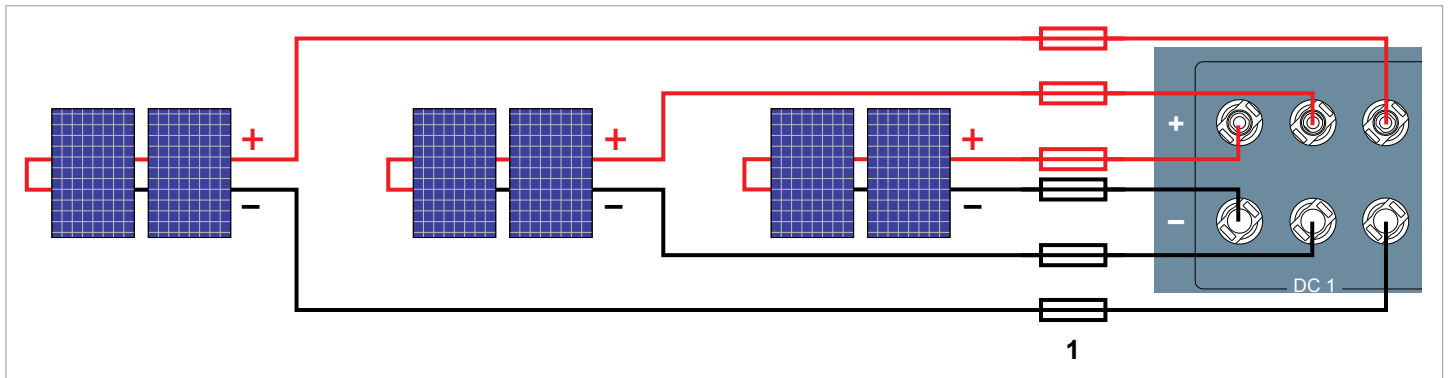
2. Remove the sealing caps from the DC connections and **store in a safe place**. Do **not** remove the sealing caps from the unused DC connections.
3. Plug the DC plugs with the DC cables into the DC connections on the inverter.
→ The installation should look like the following illustration.



Connecting the solar modules (DC)

Protective devices

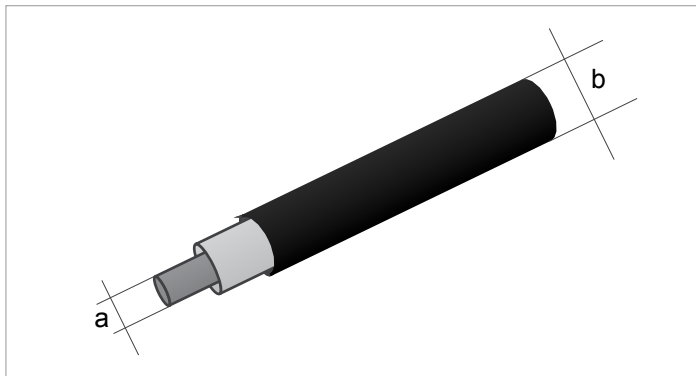
When selecting the necessary protective devices (e.g. fuses) take into account the **Maximum reverse current** of the solar modules.



DC plugs and DC cables

The DC plugs for all DC connections are supplied with the inverter.

If you want to order more or need a different size, see the information in the following table.



DC connections on the inverter		DC plugs for DC cables		
		a mm ²	b mm	Multi-contact
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) Included in the scope of delivery of the M6A / M8A

2) Included in the scope of delivery of the M10A

Connecting a data logger via RS485

The inverter can be connected to a data logger via RS485, e.g. for monitoring the PV system or changing the inverter settings. Multiple inverters can be connected in series to a data logger. Observe the following instructions for ensuring a stable data connection.

Connecting a single inverter to a data logger

- Switch on the RS485 termination resistor.

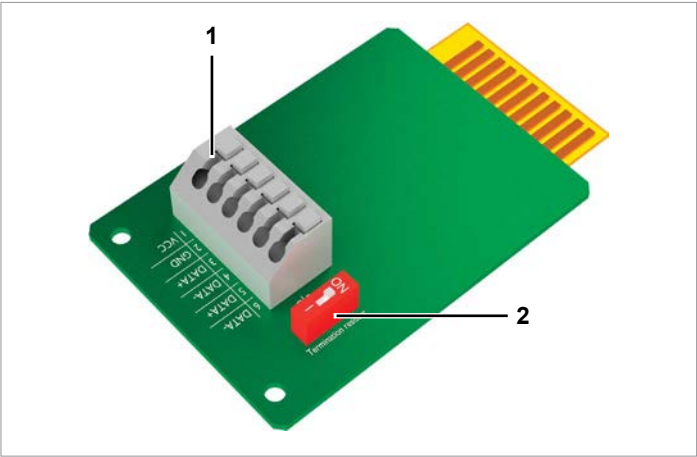
Connecting multiple inverters to a data logger

- Switch on the RS485 termination resistor at the last inverter in the chain.
- If the data logger does not have an integrated RS485 termination resistor then also switch on the RS485 termination resistor at the first inverter in the chain.
- Switch off the RS485 termination resistor at all other inverters in the chain.
- Set a different ID at each inverter so that the data logger can identify the individual inverters.
- Set the same RS485 Baud rate at all inverters.

Cable and wiring requirements

- Shielded twisted-pair cable with solid conductors.
 - Cable diameter: 5 mm
 - Wire cross-section: 0.25 ... 1.5 mm²
- Lay the cable with a suitable clearance to the AC and DC cables to prevent interference in the data connection.

Components of the RS485 card

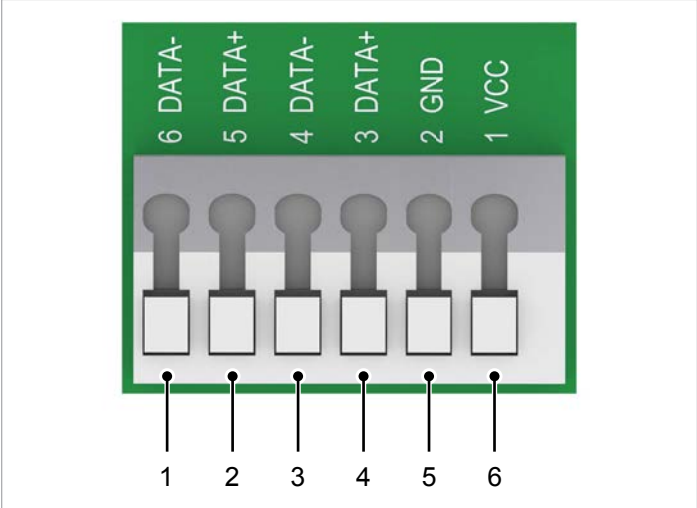


- 1 RS485 (terminal block)
- 2 DIP switch for the RS485 termination resistor

DIP switch for the RS485 termination resistor



Terminal assignments of the RS485 terminal block



- 1 VCC (+12 V; 0.5 A)
- 2 GND
- 3 DATA+ (RS485)
- 4 DATA- (RS485)
- 5 DATA+ (RS485)
- 6 DATA- (RS485)

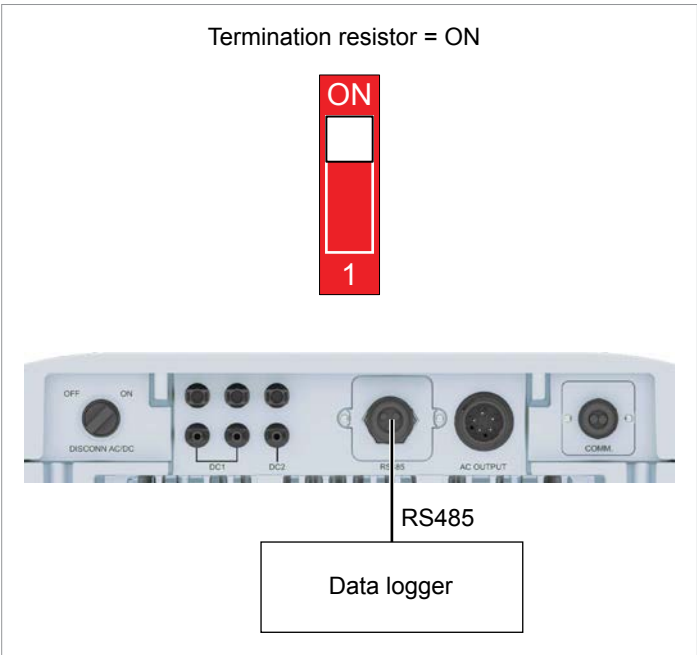
Terminal pairs 3/4 or 5/6 can be used. The second terminal pair is only required when connecting several inverters via RS485.

Data format

Baud rate	9600, 19200, 38400; standard: 19200
Data bits	8
Stop bit	1
Parity	Not applicable

The Baud rate can be set on the inverter display after commissioning, see [“Baud rate for RS485”, page 23](#).

Connecting a single inverter to a data logger



Connecting a data logger via RS485

Connecting a Delta SOLIVIA Gateway M1 G2

Requirements include a CAT5 cable with RJ45 plugs on one side and an open end on the other side.

Inverter

SOLIVIA Gateway M1 G2



DATA+	Terminal 3 or 5	Pin 7
DATA-	Terminal 4 or 6	Pin 6 or 8



DATA+	Terminal 3 or 5	D+
DATA-	Terminal 4 or 6	D-

Connecting a PC via RS485

The inverter can be configured using the Delta Service Software.

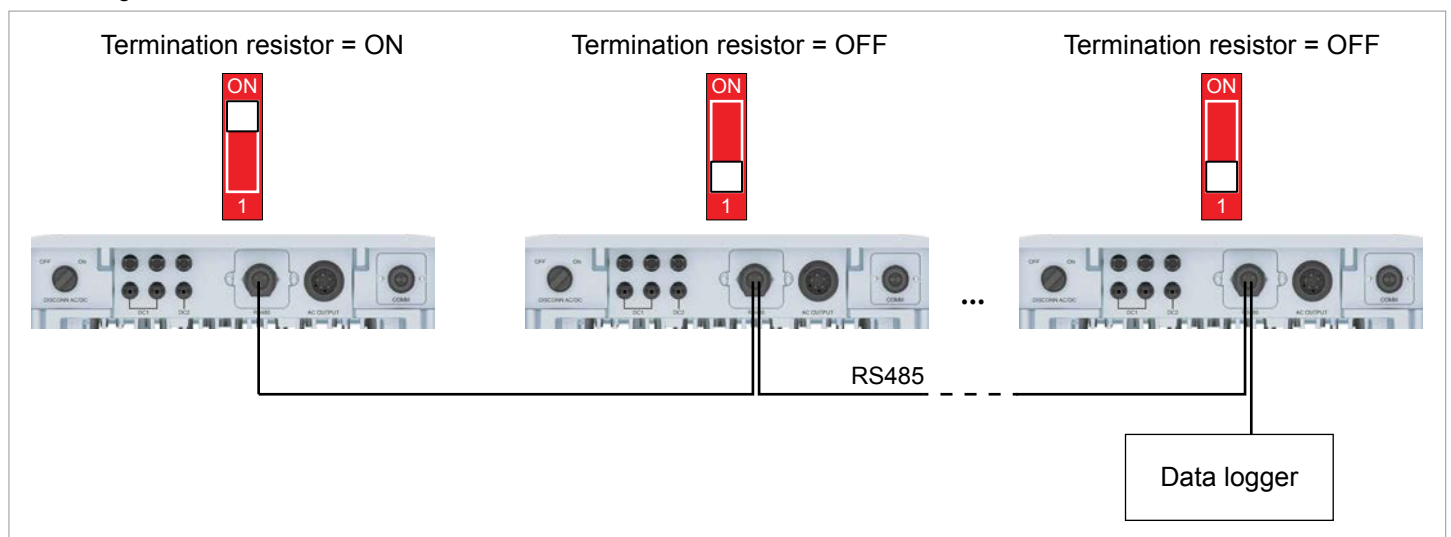
- Connect the PC to the inverter via a USB/RS485 adapter.

Inverter

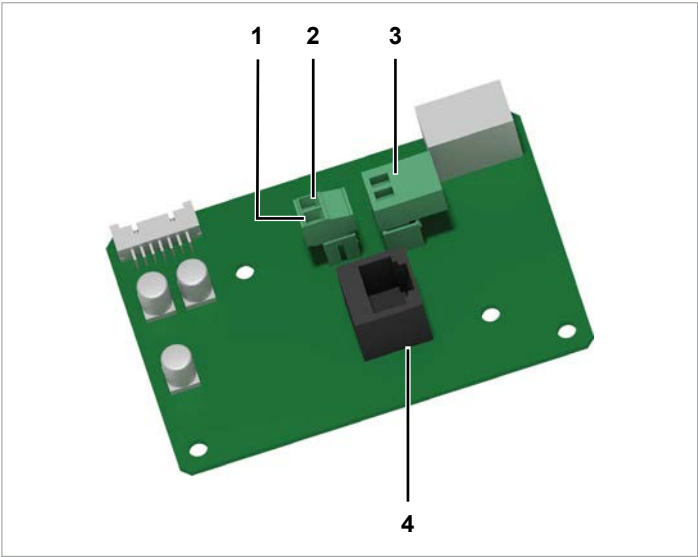
USB/RS485 adapter

Connecting multiple inverters to a data logger

- If the data logger does not have an integrated RS485 termination resistor, switch on the RS485 termination resistor on the first inverter.
- Set a different inverter ID at each inverter during commissioning of the inverters.



Connecting the digital inputs, dry contacts and external power-off (optional)



Dry contacts

Both contacts are closed when the inverter feeds electricity into the grid.

- Carefully pull out the plug for the dry contacts using long-nose pliers.



After commissioning, an event can be assigned to the dry contacts on the display of the inverter.

Event	Description
Disabled	The functions for the dry contacts are switched off.
On Grid	Inverter is connected to the mains grid.
Fan failure	The fans are defective.
Insulation	Insulation test failed.
Alarm	An error, failure or warning message is present.
Error	An error message is present.
Fault	A failure message is present.
Warning	A warning message is present.

The default setting is **Disabled**.

- 1 12 V_{DC} power supply - GND (plug with screw terminals)
- 2 12 V_{DC} power supply - VCC (plug with screw terminals)
- 3 Dry contacts (plug with screw terminals)
- 4 Digital inputs and external power-off (EPO) (RJ45)

Cable and wiring requirements

- Shielded twisted-pair cable with solid conductors (CAT 5 or CAT 6).
 - Cable diameter: 5 mm
 - Wire cross-section: 0.25 ... 1.5 mm²
- Lay the cable with a suitable clearance to the AC and DC cables to prevent interference in the data connection.

Digital inputs and external power-off (EPO)

To control the active power, an external ripple control receiver can be connected to the digital inputs.

Pin	Short circuit	Assigned action
V1	-	-
K0	V1 + K0	External power-off (EPO)
K1	V1 + K1	Max. active power 0%
K2	V1 + K2	Max. active power 30%
K3	V1 + K3	Max. active power 60 %
K4	V1 + K4	Max. active power 100%
K5	V1 + K5	Reserved
K6	V1 + K6	Reserved

After commissioning, the relays can be defined as make-contact or break-contact for the external shutdown on the display.

Commissioning – basic settings



The inverter must be supplied with AC voltage (grid) or DC voltage (solar modules) in order to be able to perform commissioning.



1. Turn the AC/DC disconnecter to the **ON** position.

```

Select language
►English
Deutsch
Français
    
```

2. Use the ▼ and ▲ buttons to select the **English** language and then press the ENT button.

```

►UK G59-3 230
FRA-Is 50HZ
FRA-Is 60HZ
FRANCE MV
    
```

3. Use the ▼ and ▲ buttons to select your country or grid type and then press the ENT button.

Country	Available grids	Description
United Kingdom	UK G59-3 230	according to UK G59-3 230 V

```

Are you sure to
set country:
    UK G59-3 230
    ►Yes / No
    
```

4. Check that the correct country or mains type is selected.

If the correct country is selected, use the ▼ and ▲ buttons to select the **Yes** entry and then press the ENT button.

To change the selection, press the ESC button.

→ The inverter starts a self-test lasting approx. 2 minutes. The remaining time is shown on the display.

NOTICE

If multiple inverters are connected to the PV system then a different inverter ID must be set for each inverter. For example, the inverter ID is used by monitoring systems to uniquely identify each inverter.

```

Setting ID:
ID=001
    
```

5. Use the ▼ and ▲ buttons to set the individual digits and then press the ENT button.

```

Are you sure to set
ID: 1
    ►Yes / No
    
```

6. Check that the correct inverter ID is set.

If the correct inverter ID is selected, use the ▼ and ▲ buttons to select the **Yes** entry and then press the ENT button.

Press the ESC button to change the selection

- ✓ The basic settings are now complete. The standard menu is displayed.

```

12.Jun 2016 15:32
Status:      On Grid
Power:       0W
E-Today:     0kWh
    
```

Commissioning – further settings (optional)

Date and time

```
12.Jun 2016 15:32
Status:      On Grid
Power:       0W
E-Today:     0kWh
```

```
►General Settings
Install Settings
Active/Reactive Pwr
FRT
```

```
Language
►Date & Time
Baud rate
```

```
12.Jun 2016 14:55
```

1. If the default information is displayed, press the **ESC** button to open the main menu.
Otherwise, press the **ESC** button repeatedly until the main menu is displayed.
2. Use the **▼** and **▲** buttons to select the **General Settings** entry and then press the **ENT** button.
3. Press the **▼** and **▲** buttons to select the entry **Date and Time** and press the **ENT** button.
4. Use the **▼** and **▲** buttons to configure the value and then press the **ENT** button.
Repeat the procedure for the other settings.

Inverter ID



If multiple inverters are connected to the PV system then a different inverter ID must set for each inverter. For example, the inverter ID is used by monitoring systems to uniquely identify each inverter.

```
12.Jun 2016 15:32
Status:      On Grid
Power:       0W
E-Today:     0kWh
```

```
General Settings
►Install Settings
Active/Reactive Pwr
FRT
```

```
Warning:
Adj. would effect
energy production
Password: * * * *
```

```
►Inverter ID: 001
Insulation
Country
Grid Settings
```

```
►Setting ID:
ID=001
```

1. If the default information is displayed, press the **ESC** button to open the main menu.
Otherwise, press the **ESC** button repeatedly until the main menu is displayed.
2. Use the **▼** and **▲** buttons to select the **Install Settings** entry and then press the **ENT** button.
3. This function is protected with password 5555.
Use the **▼** and **▲** buttons to set the individual numerals.
Press the **ENT** button to confirm a numeral.
4. Use the buttons **▼** and **▲** to select the entry **Inverter ID** and press the **ENT** button.
5. Use the **▼** and **▲** buttons to configure the value and then press the **ENT** button.

Commissioning – further settings (optional)

Baud rate for RS485

12.Jun 2016 15:32
Status: On Grid
Power: 0W
E-Today: 0kWh

►General Settings
Install Settings
Active/Reactive Pwr
FRT

Language
Date & Time
►Baud rate

9600
►19200
38400

1. If the default information is displayed, press the **ESC** button to open the main menu.
Otherwise, press the **ESC** button repeatedly until the main menu is displayed.
2. Use the **▼** and **▲** buttons to select the **General Settings** entry and then press the **ENT** button.
3. Use the buttons **▼** and **▲** to select the entry **Baud Rate** and press the **ENT** button.
4. Use the **▼** and **▲** buttons to select a value and then press the **ENT** button.

AC connection type



By default, the AC connection type is set to 3P4W (3 phases + N + PE). You only need to change this setting if you are using an AC system with 3 phases + PE (3P3W).

12.Jun 2016 15:32
Status: On Grid
Power: 0W
E-Today: 0kWh

General Settings
►Install Settings
Active/Reactive Pwr
FRT

Warning:
Adj. would effect
energy production
Password: * * * *

►AC Connection: 3P4W
Anti-islanding: ON
Max. Power: 88000W
Return to Factory

►AC Connection: 3P3W
Anti-islanding: ON
Max. Power: 88000W
Return to Factory

1. If the default information is displayed, press the **ESC** button to open the main menu.
Otherwise, press the **ESC** button repeatedly until the main menu is displayed.
2. Use the **▼** and **▲** buttons to select the **Install Settings** entry and then press the **ENT** button.
3. This function is protected with password 5555.
Use the **▼** and **▲** buttons to set the individual numerals.
Press the **ENT** button to confirm a numeral.
4. Use the buttons **▼** and **▲** to select the entry **AC connection** and press the **ENT** button.
5. Use the **▼** and **▲** buttons to select the **3P3W** entry and then press the **ENT** button.

Commissioning – further settings (optional)

External power-off (EPO)

```
12.Jun 2016 15:32
Status:      On Grid
Power:       0W
E-Today:    0kWh
```

```
General Settings
►Install Settings
Active/Reactive Pwr
FRT
```

```
Warning:
Adj. would effect
energy production
Password:    * * * *
```

```
DC Injection
Dry Contact
RCMU:        ON
►EPO:        Normal Close
```

1. If the default information is displayed, press the **ESC** button to open the main menu.
Otherwise, press the **ESC** button repeatedly until the main menu is displayed.
2. Use the **▼** and **▲** buttons to select the **Install Settings** entry and then press the **ENT** button.
3. This function is protected with password 5555.
Use the **▼** and **▲** buttons to set the individual numerals.
Press the **ENT** button to confirm a numeral.
4. Use the buttons **▼** and **▲** to select the entry **EPO** and press the **ENT** button.
5. Use the **▼** and **▲** buttons to select an option and then press the **ENT** button.

Available options

Nrm. open (normally open): The relay operates as a normally open device.

Nrm. closed (normally closed): The relay operates as a normally closed device.

Active power limitation



Change this setting only after consultation with Delta customer service.



To change this setting, you need a special password that you receive from Delta customer service. You can find the contact information on the back of this document.

```
12.Jun 2016 15:32
Status:      On Grid
Power:       0W
E-Today:    0kWh
```

```
General Settings
►Install Settings
Active/Reactive Pwr
FRT
```

```
Warning:
Adj. would effect
energy production
Password:    * * * *
```

```
AC Connection: 3P3W
Anti-islanding: ON
►Max. Power: 10000W
Return to Factory
```

1. If the default information is displayed, press the **ESC** button to open the main menu.
Otherwise, press the **ESC** button repeatedly until the main menu is displayed.
2. Use the **▼** and **▲** buttons to select the **Install Settings** entry and then press the **ENT** button.
3. Enter the password provided by Delta customer service.
Use the **▼** and **▲** buttons to set the individual numerals.
Press the **ENT** button to confirm a numeral.
4. Use the **▼** and **▲** buttons to select the **Max. Power** entry and then press the **ENT** button.
5. Use the **▼** and **▲** buttons to configure a value and then press the **ENT** button.

Commissioning – further settings (optional)

Dry contacts

12.Jun 2016 15:32
Status: On Grid
Power: 0W
E-Today: 0kWh

General Settings
►Install Settings
Active/Reactive Pwr
FRT

Warning:
Adj. would effect
energy production
Password: * * * *

DC Injection
►Dry Cont. Disable
RCMU: ON
EPO: Normal Close

►Disable
On Grid
Fan Fail
Insulation

1. If the default information is displayed, press the **ESC** button to open the main menu.
Otherwise, press the **ESC** button repeatedly until the main menu is displayed.
2. Use the **▼** and **▲** buttons to select the **Install Settings** entry and then press the **ENT** button.
3. This function is protected with password 5555.
Use the **▼** and **▲** buttons to set the individual numerals.
Press the **ENT** button to confirm a numeral.
4. Use the buttons **▼** and **▲** to select the **Dry Cont.** entry and press the **ENT** button.
5. Use the **▼** and **▲** buttons to select an option and then press the **ENT** button.
See “Connecting the digital inputs, dry contacts and external power-off (optional)”, page 20 for the available options.

Technical data

Input (DC)	RPI M6A	RPI M8A	RPI M10A
Recommended maximum PV power ¹⁾	7500 W _p	10000 W _p	12500 W _p
Maximum output	6600 W	8800 W	11000 W
Input voltage range	200 ... 1000 V _{DC}		
Maximum input voltage	1000 V _{DC}		
Nominal voltage	600 V _{DC}		
Cut-in voltage	>250 V _{DC}		
Cut-in power	40 W		
MPP operating voltage range	200 ... 1000 V _{DC}		
MPP operating voltage range at 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 power, total (DC1/DC2)	20 A (10 A / 10 A)	20 A (10 A / 10 A)	25 A (15 A / 10 A)
Maximum short circuit power upon fault	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 tracker		
Maximum asymmetry	60%/40%		
Number of DC inputs, total (DC1/DC2)	2 (1/1)	2 (1/1)	3 (2/1)
Electrical isolation	No		
Overvoltage category ²⁾	II		

Output (AC)	RPI M6A	RPI M8A	RPI M10A
Maximum apparent power ³⁾	6300 VA	8400 VA	10500 VA
Rated apparent power	6000 VA ⁴⁾	8000 VA	10000 VA
Voltage range ⁵⁾	230 ± 20% / 400 V _{AC} ± 20%, 3 phases + protective ground conductor(PE) or 3 phases + N + protective ground conductor (PE)		
Nominal current	8.7 A	11.6 A	14.5 A
Maximum current	9.7 A	13 A	16 A
Switch-on current	31 A / 100 µs		
Nominal frequency	50 / 60 Hz		
Frequency range ⁵⁾	50 ± 5 Hz / 60 ± 5 Hz		
Power factor configuration area	0.8 cap ... 0.8 ind		
Total harmonic distortion (THD)	< 3% at rated apparent power		
DC injection	< 0.5% at rated current		
Power loss in night mode	< 2 W		
Overvoltage category ²⁾	III		

Technical data

Mechanical details	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 connection type	Amphenol C16-3		
DC connection type	Multi-Contact MC4		
Communication interfaces	2 x RS485, 1 x dry contact, 1 x EPO (E-Power off), 6 x digital inputs		

General specifications	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		
Max. geographical operating height	2,000 m above sea level		

Standards and guidelines	RPI M6A	RPI M8A	RPI M10A
Protection degree	IP65		
Safety class	I		
Pollution degree	II		
Overload behavior	Current limiting, power limiting		
Safety	IEC 62109-1/-2, CE-compliance		
EMC	EN 61000-6-2, EN 61000-6-3		
Fault-free operation	IEC 61000-4-2/-3/-4/-5/-6/-8		
Harmonic distortion	EN 61000-3-2		EN 61000-3-12
Fluctuations and fibrillations	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 operating with symmetric DC inputs (50% / 50%)

²⁾ IEC 60664-1, IEC 62109-1

³⁾ The maximum AC apparent power specifies the maximum power that an inverter is able to supply. This maximum apparent power is not necessarily achieved.

⁴⁾ Limited to 4.99 kVA, when grid type AU/NZ PL 4.99k is selected.

⁵⁾ AC voltage and frequency range are programmed using the corresponding country specifications.

Customer Service - Europe

Austria	service.oesterreich@solar-inverter.com	0800 291 512 (toll free)
Belgium	support.belgium@solar-inverter.com	0800 711 35 (toll free)
Bulgaria	support.bulgaria@solar-inverter.com	+421 42 4661 333
Czech Republic	podpora.czechia@solar-inverter.com	800 143 047 (toll free)
Denmark	support.danmark@solar-inverter.com	8025 0986 (toll free)
France	support.france@solar-inverter.com	0800 919 816 (toll free)
Germany	service.deutschland@solar-inverter.com	0800 800 9323 (toll free)
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