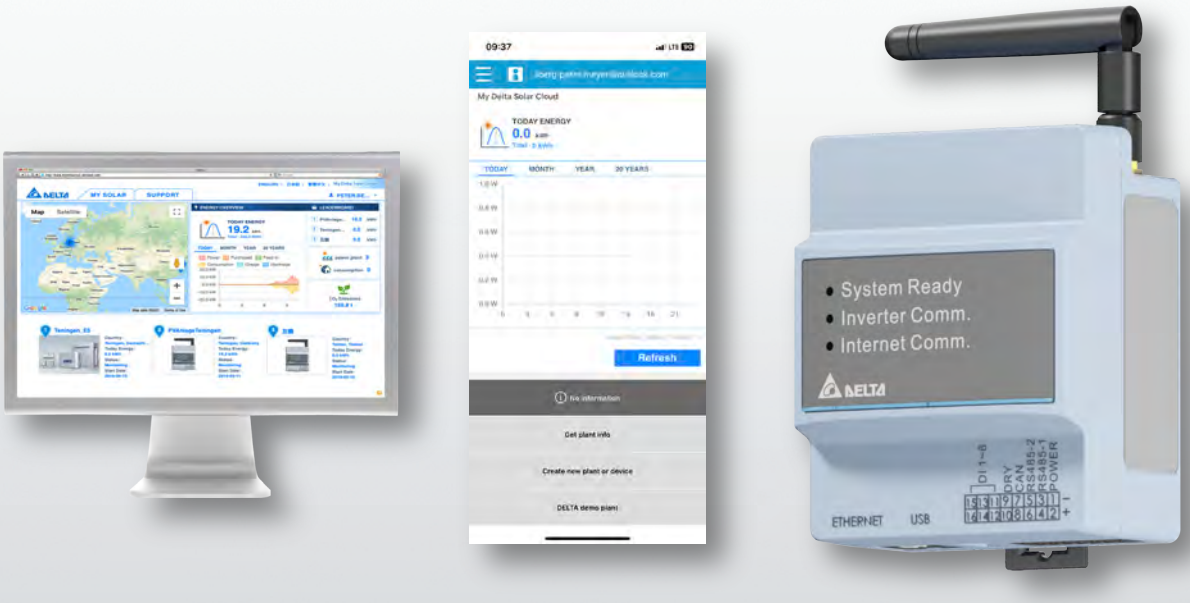


MyDeltaSolar Cloud

SOLIVIA

Setting up MyDeltaSolar Cloud PV plant monitoring for SOLIVIA inverters

Installation and commissioning. Registration in the MyDeltaSolar Cloud.

Europe

Legal statements

This manual applies to existing PV plants that have been monitored with SOLIVIA Monitoring up to the print date and in which **at least** one of the following inverters is installed:

- SOLIVIA inverters using the SOLIVIA protocol on RS485
- Delta RPI inverters using the SOLIVIA protocol on RS485

In order to be able to carry out the instructions described in this manual, the following hardware and software are also required:

- DC1 data collector
- Current version of the SoliviaSolar app for iOS or Android
- Current version of the DeltaSolar app for iOS or Android

This manual describes:

- How to install the DC1 data collector.
- How to commission the DC1.
- How to set up the communication between the DC1 and the inverters
- How to register the PV plant in the MyDeltaSolar Cloud
- How to set the access permissions

Delta manuals undergo continuous revision in order to provide complete information regarding the installation and operation of its inverters. You should therefore **always** consult solarsolutions.delta-emea.com before starting installation work to check whether a newer version of the Quick Installation and Commissioning Guide or the Installation and Operation Manual is available.

Delta Electronics (Germany) GmbH

Tscheulinstrasse 21

79331 Teningen

Germany

Authorized representative for this product in the EU:

Hereby, Delta Electronics (Netherlands) B.V.

Zandsteen 15

2132 MZ Hoofddorp

Netherlands

EU Declaration of Conformity

Hereby, Delta Electronics (Netherlands) B.V. declares that this device is in compliance with the Radio Equipment Directive 2014/53/EU.

The full text of the EU Declaration of Conformity is available at the following internet address: solarsolutions.delta-emea.com.

Information about the versions of this manual

Version	Date	Comments
1.0	2024-10-18	First edition
2.0	2024-10-28	More information added to section “4.2 RS485 connection”, page 10.

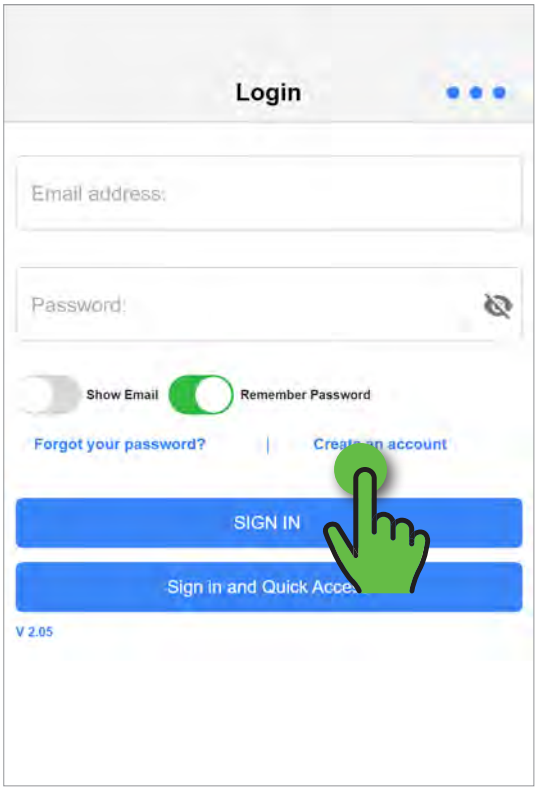
Table of Contents

1. Creating an Account in the MyDeltaSolar Cloud

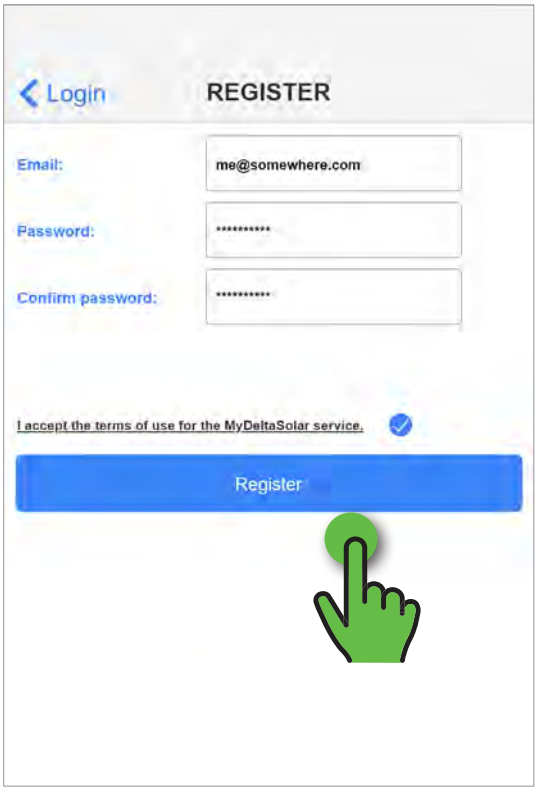
To use the MyDeltaSolar Cloud, you must have an account. If you don't have one, please register before commissioning the DC1 data collector. Both the end user/PV plant operator and the installer need to register separately for full access to the inverter and plant data. This is described in the chapter "7. Editing the List of Authorized Users (DeltaSolar App)", page 35.

The account can be set up using the SoliviaSolar app or the DeltaSolar app.

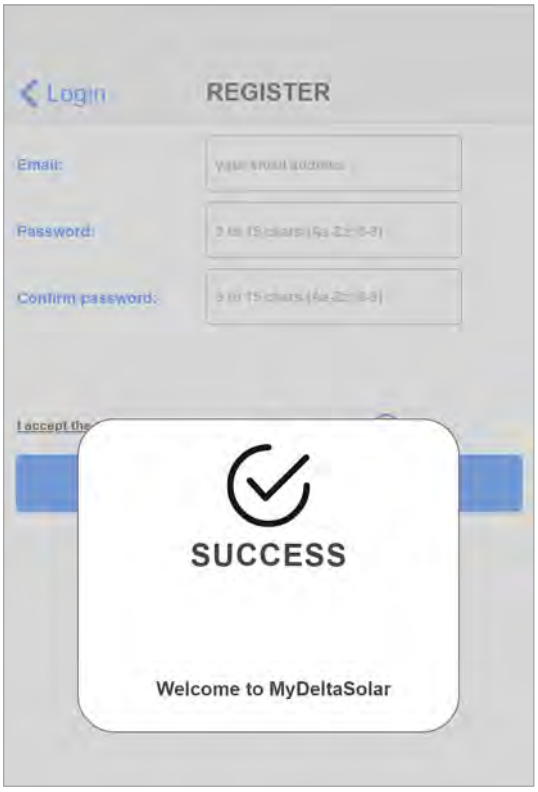
1 Tap on **Create an account**.



2 Enter your email address and password. Read and accept the Terms of Use. Then tap **Register**.

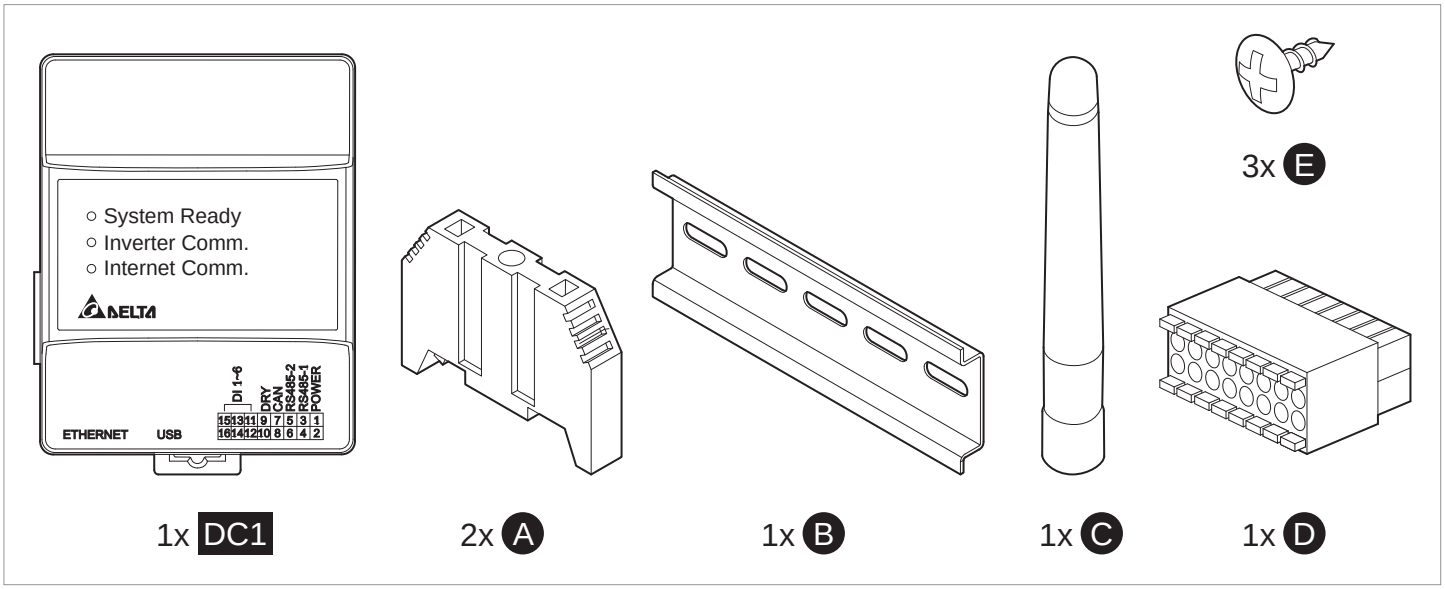


3 This message is displayed when the registration is successfully completed.



2. Components of the DC1 Data Collector

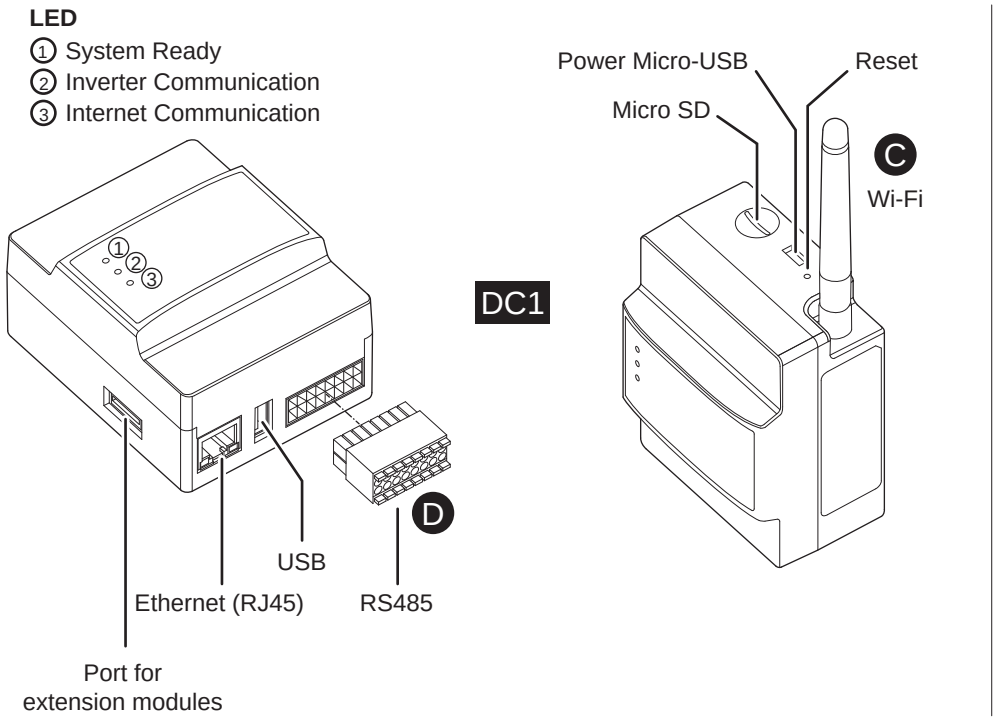
2.1 Package



DC1	DC1 data collector	1x
A	Bracket for mounting the DC1 on the DIN rail	2x
B	DIN rail	1x
C	Wi-Fi antenna	1x
D	Multi-contact connector	1x
E	Screw for mounting the DC1 on the wall	3x

Abb. 2.1: DC1 data collector package

2.2 Connections



DC1	DC1 data collector
C	Wi-Fi antenna
D	RS485 connector
Pin assignment on the multi-contact connector (D)	
DI 1–6	Digital inputs 1 to 6, e.g. for ripple control receivers and dynamic power limitation
DRY	Dry contacts, e.g. for connecting an external alarm unit, maximum 24 V_{DC}/0.3 A
CAN	Not used
RS485-2	RS485 for connecting to third-party monitoring systems
RS485-1	RS485 for connecting inverters
Power	For connecting an external 12-VDC power supply, e.g. from a Delta inverter

Abb. 2.2: Connections on the DC1 data collector

3. Mounting the DC1 Data Collector

The DC1 can also be installed in a meter cabinet.

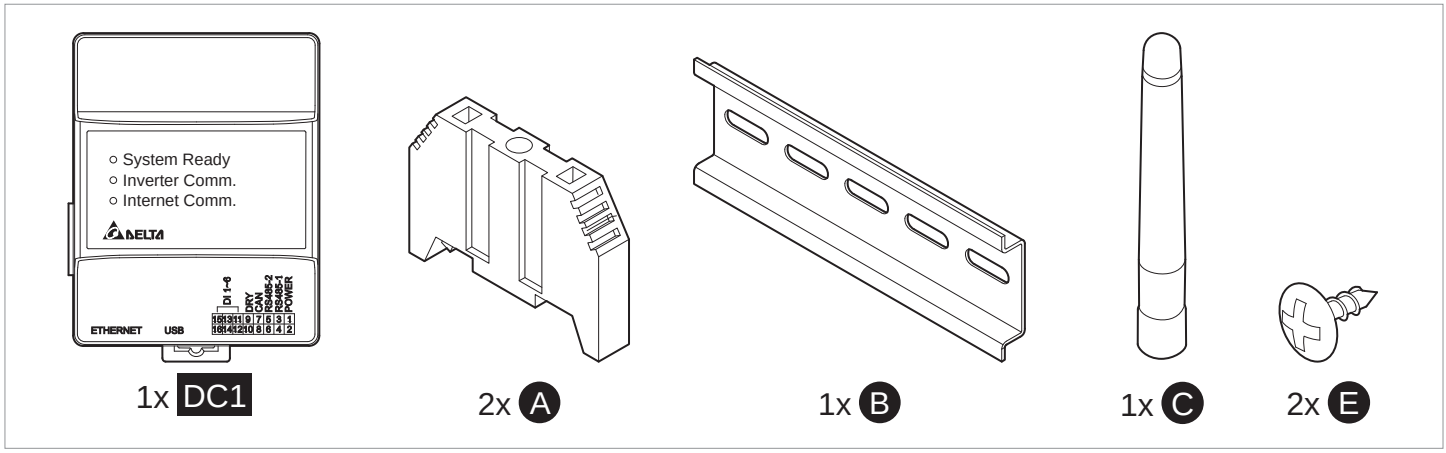


Fig. 3.1: DC1 parts needed for mounting

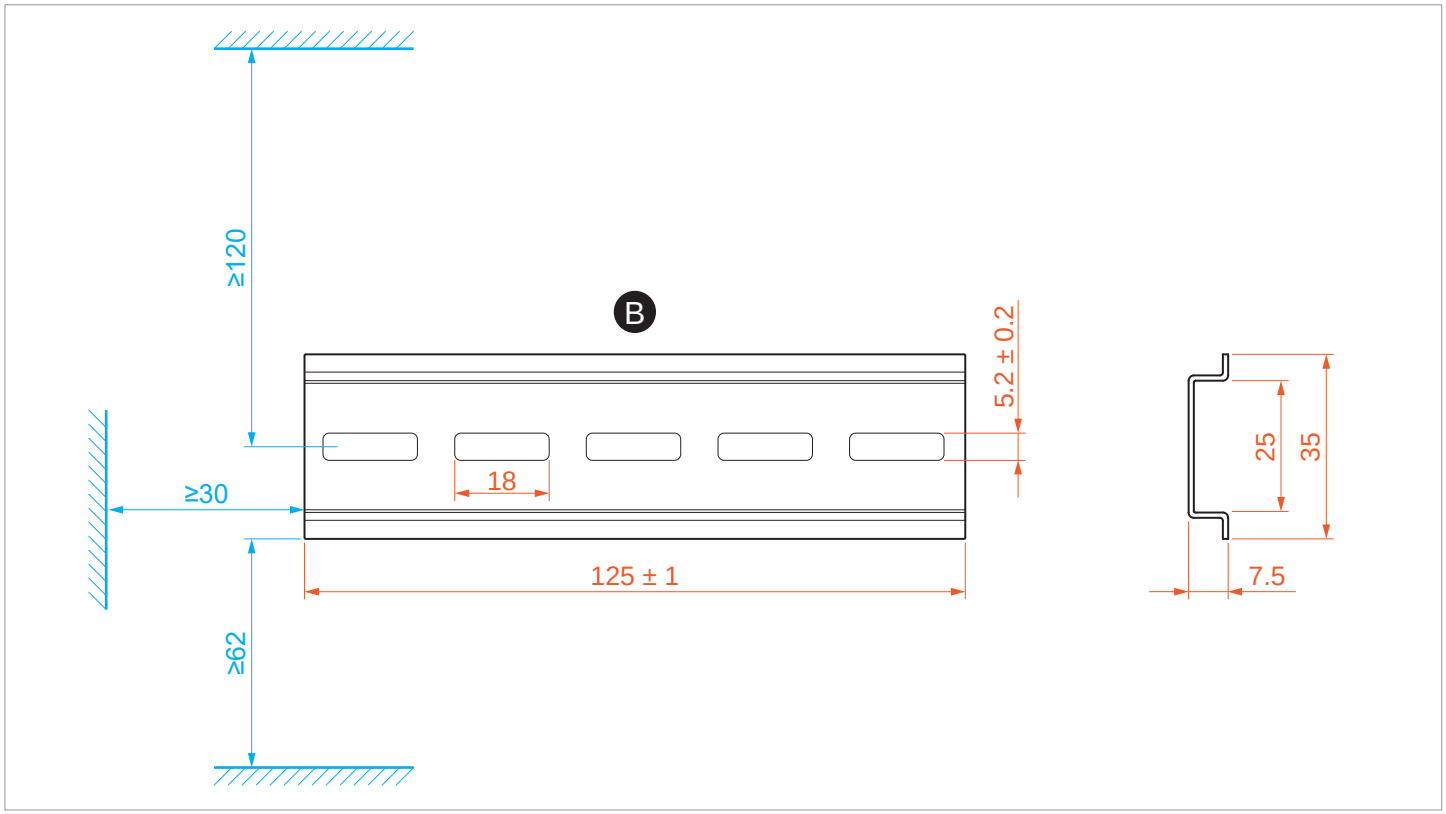


Fig. 3.2: Dimensions and Mounting distances DIN rail (in mm)

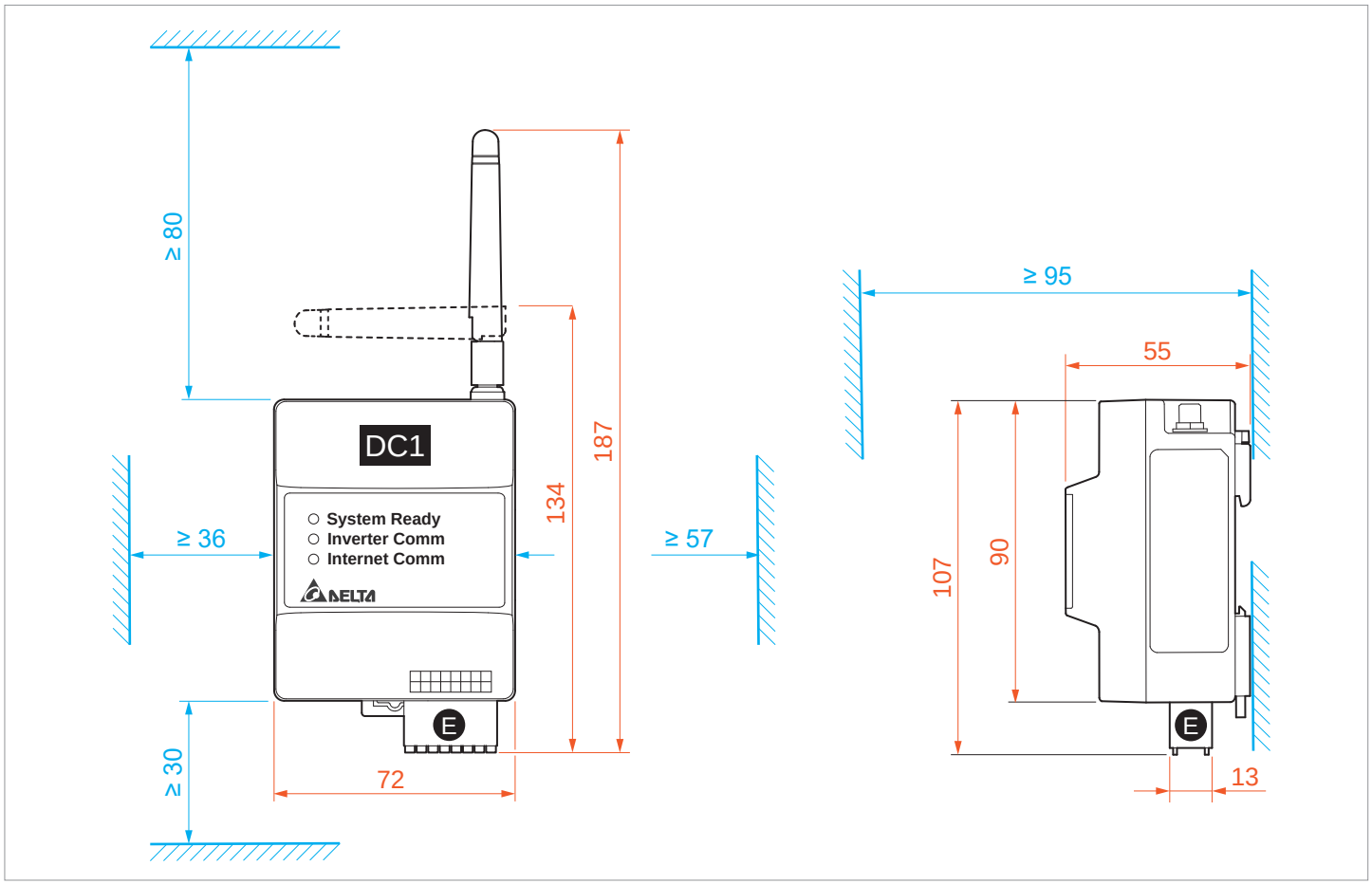


Fig. 3.3: Dimensions and Mounting distances DC1 data collector (in mm)

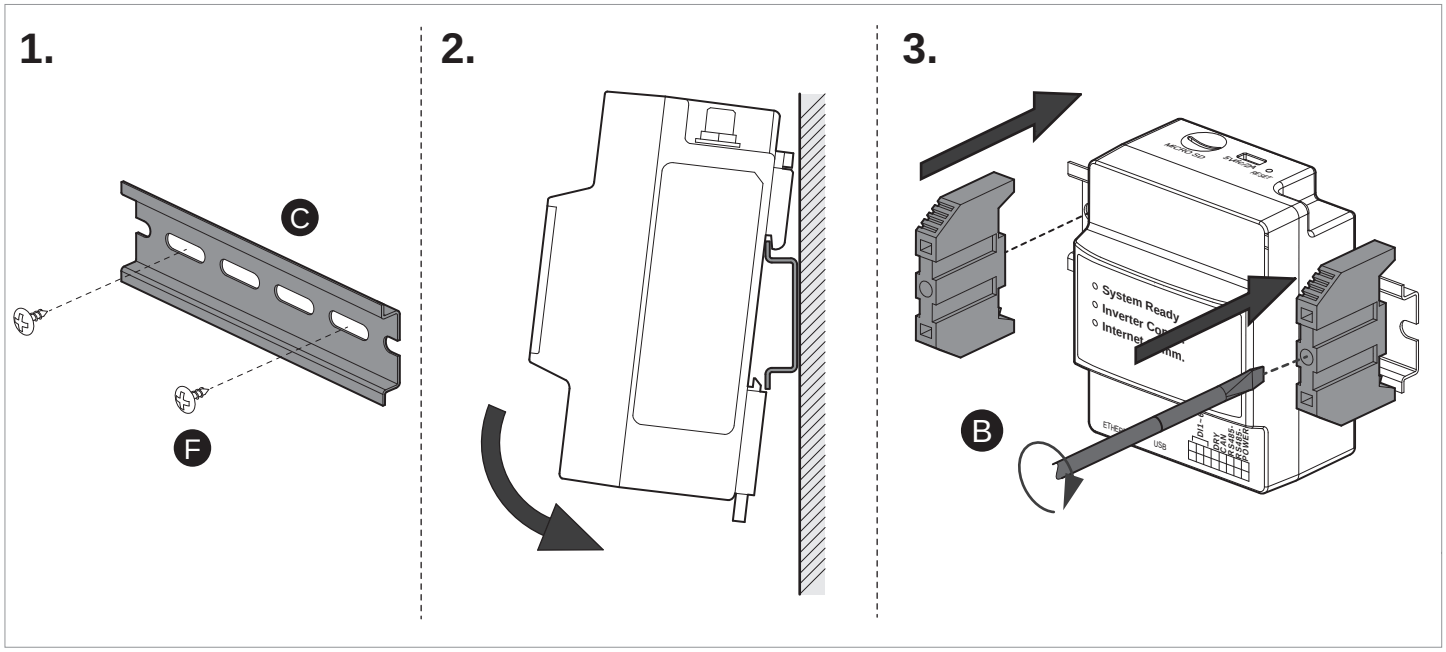


Fig. 3.4: Mounting the DC1 data collector on the supplied DIN rail

4. Connecting the DC1 Data Collector

4.1 Power Supply

The DC1 data collector does not have an integrated power supply.

Supply voltage	
• via multi-contact connector	9 to 25 V_{DC}/5 W
• via micro USB	5 V_{DC}/5 W

4.1.1 Using the SOLIVIA Gateway M1 G2 Power Supply Unit

You can use the SOLIVIA Gateway M1 G2 power supply unit since both devices have a micro USB port. This is the simplest way.

4.1.2 Micro USB Power Supply Unit

Power supply via Micro USB: 5 V_{DC}/5 W

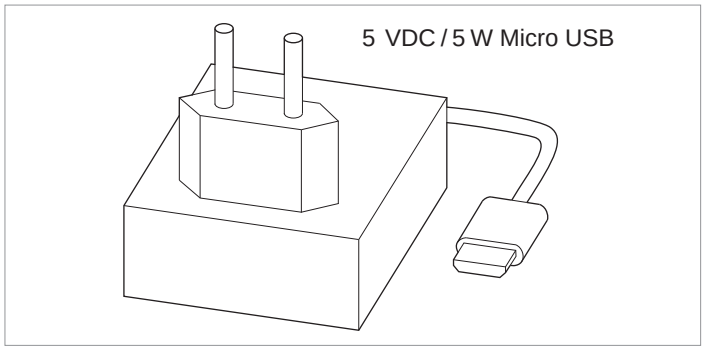


Fig. 4.1: Power supply via micro USB power supply unit

4.1.3 Multi-contact Connector

Some inverters have an integrated 12-VDC power supply unit that can power the DC1. To do this, refer to the instructions for the inverter.

Power supply via multi-contact connector: 9 to 25 V_{DC}/5 W

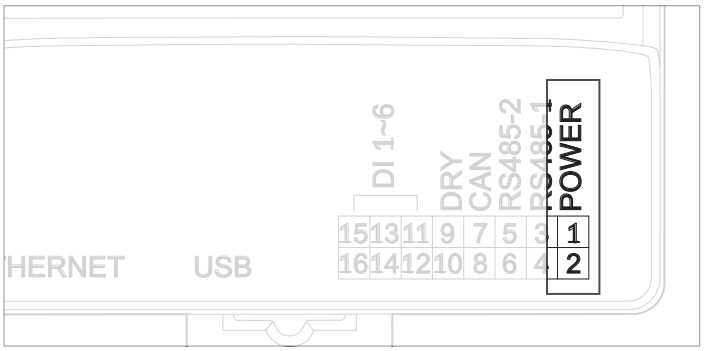


Fig. 4.2: Connecting a power supply

Cable specification

CAT5/CAT6; ∅ 7 to 10 mm; 0.25 to 1.5 mm²; twisted, shielded

Cable assembly

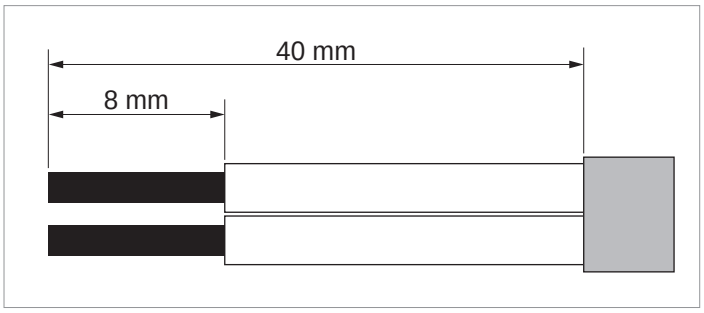


Fig. 4.3: Cable assembly for the multi-contact connector

4.2 RS485 connection

4.2.1 Introduction

Since you have previously used SOLIVIA Monitoring, an RS485 cable is already installed in your PV plant.

The RS485 connection on the SOLIVIA Gateway G1 M2 is made using an RJ45 connector.

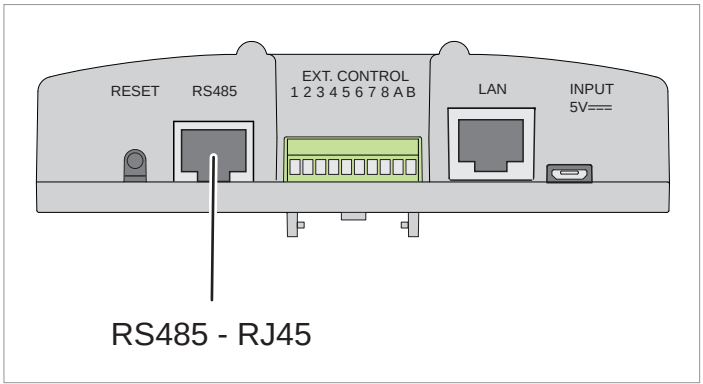


Fig. 4.4: RJ45 socket for RS485 cable on the SOLIVIA Gateway M1 G2

On the DC1 data collector, the connection is made using individual wires to a multi-contact connector.

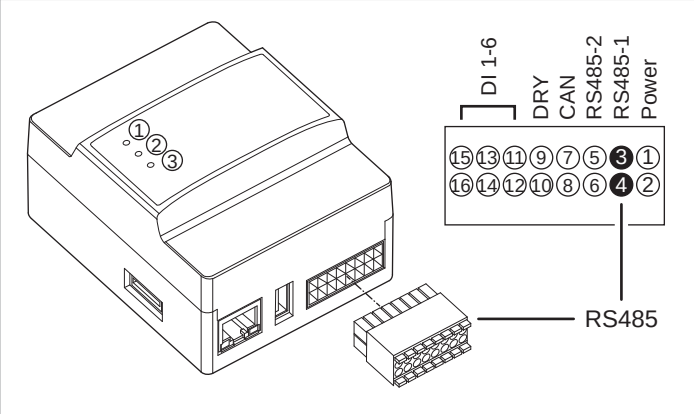


Fig. 4.5: RS485 connection on the DC1

You must therefore reassemble the existing RS485 cable with RJ45 connector.

NOTICE

Remove the communication cable from all inverters before reassembling the communication cable. This prevents potential damage to the communication connection of the inverters.

DANGER

Risk of electric shock when working on the inverter

Some inverters have to be opened during installation, for example to access the communication card.

During operation, the inverter carries a potentially lethal voltage.

- ► All electrical work on the inverter must be carried out only by electricians who are trained and authorized to work on grid-connected solar inverters.
- ► Always follow the operating and safety instructions in the manual supplied with the inverter.

4.2.2 Inverters with RJ45 Connection

4.2.2.1 Pin Assignment on the RJ45 Connector

For information on the pin assignment of the RS485 connection, refer to the manual of your inverter.

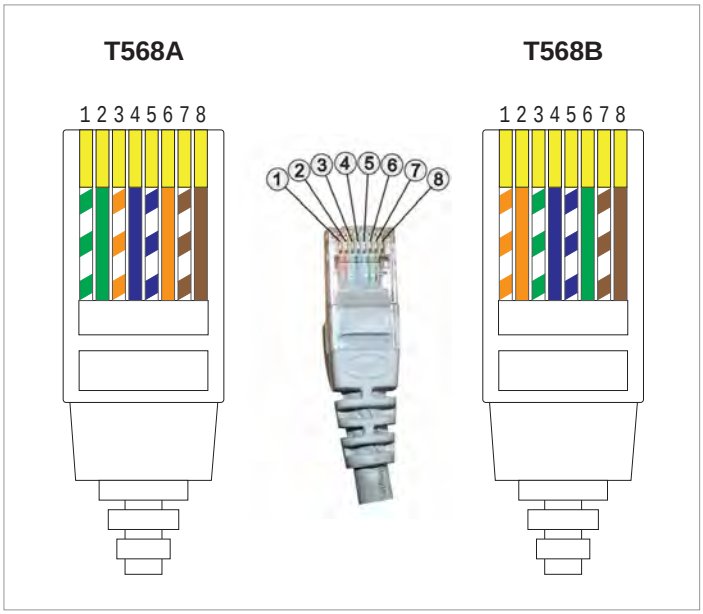


Fig. 4.6: Assignment of the pins on the RJ45 socket of the inverter

Pin	Color coding		Assignment of inverter	
	T568A	T568B	SOLIVIA G3	SOLIVIA G4
1	White-green	White-orange	Reserved	Reserved
2	Green	Orange	Reserved	Reserved
3	White-orange	White-green	Reserved	Reserved
4	Blue	Blue	GND (RS485)	GND (RS485)
5	White-blue	White-blue	Reserved	Reserved
6	Orange	Green	RX_B (RS485, DATA–)	Reserved
7	White-brown	White-brown	TX_A (RS485, DATA+)	TX_A (RS485, DATA+)
8	Brown	Brown	Reserved	RX_B (RS485; DATA–)

Tab. 4.1.: Pin assignment of the RS485 connection for the SOLIVIA G3 and G4 inverters

Conductors of a similar color are twisted in pairs, see image.

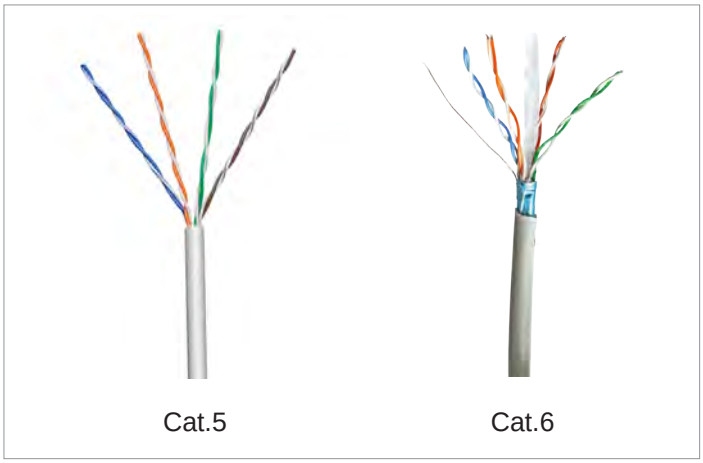


Fig. 4.7: Conductors twisted in pairs for CAT5 and CAT6 cables

On the SOLIVIA Gateway M1 G2, the RS485 data wires are connected to **Pin 7** (**DATA+ / TX_A**) and **Pin 6** + **Pin 8** (**DATA– / RX_B**).

The SOLIVIA G4 inverters have the **DATA– / RX_B** connection on **Pin 8**, whereas SOLIVIA G3 inverters have the **DATA– / RX_B** connection on **Pin 6**.

To avoid problems, connect wires 6 and 8 both to **Pin 3** (**RS485-1 – B**) on the DC1 data collector (see Fig. 4.8, p. 13).

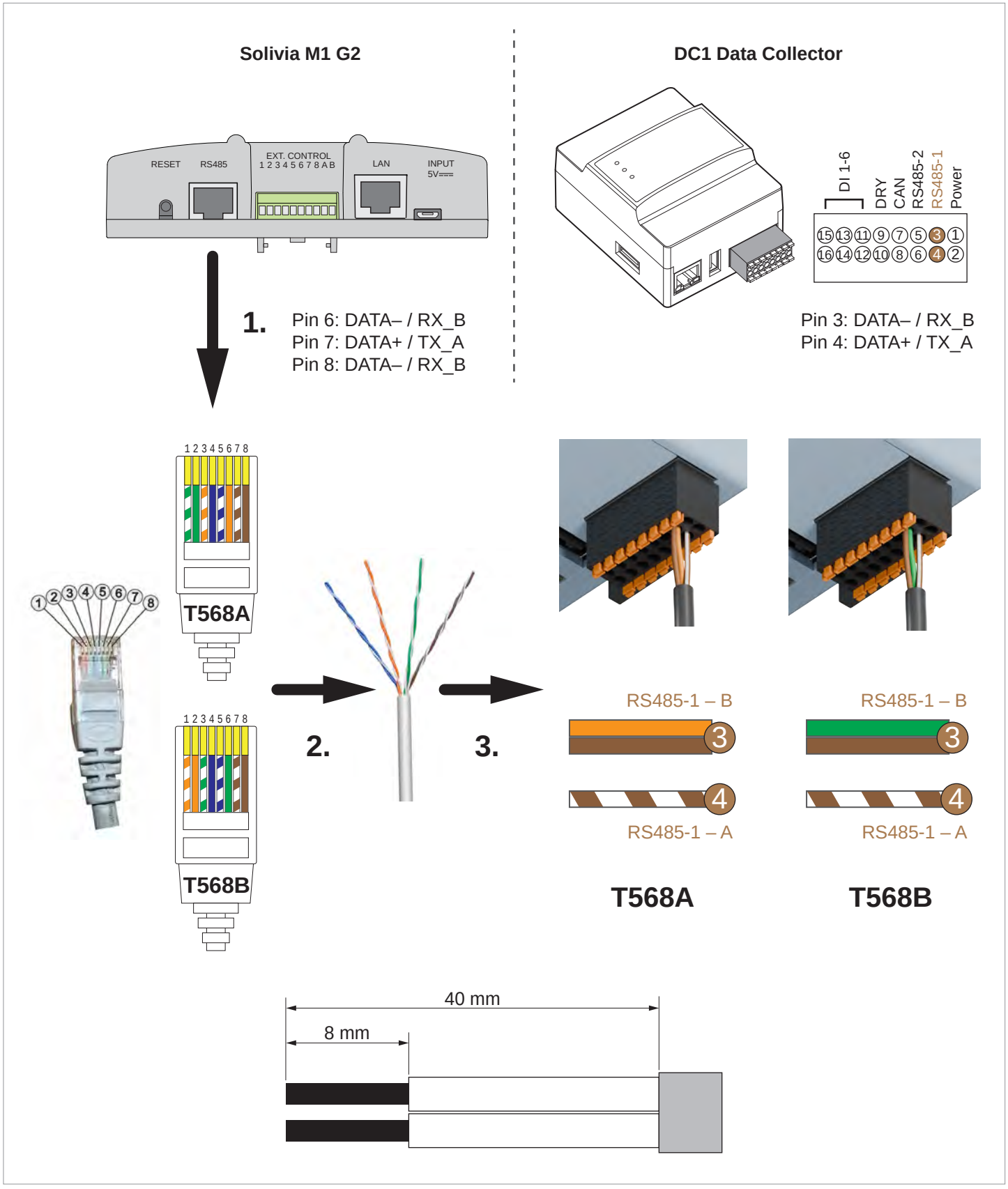


Fig. 4.8: Reassembly of the RS485 cable for connection to the DC1 data collector

4.2.3 Setting of the RS485 Termination Resistors with the Connection of Multiple Inverters

► The DC1 has no integrated RS485 termination resistor.

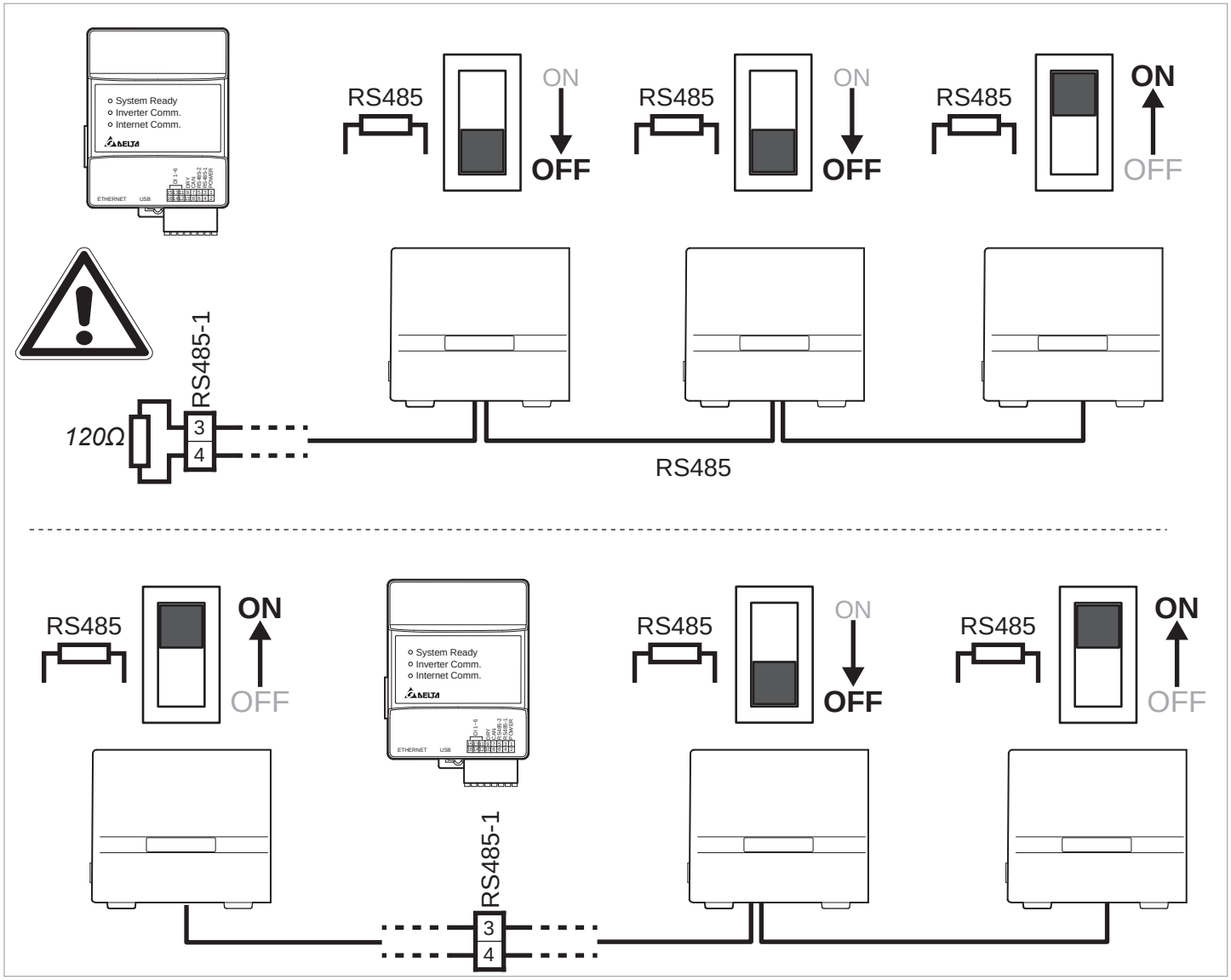


Fig. 4.9: Setting of RS485 termination resistors depending on the position of the DC1 in the RS485 bus

4.3 Connection to an Internet Router

► The DC1 can connect to the Internet Router **either** via Wi-Fi **or** via Ethernet. The two connection options **can‘t be used in parallel**.

IEEE 802.11b: 1 to 11 Mbps / IEEE 802.11g: 6 to 54 Mbps / IEEE 802.11n: 6.5 to 150 Mbps
OFDM (BPSK), QPSK, 16-QAM, 64-QAM; 802.11b (CCK / DSSS); 20 MHz / 40 MHz

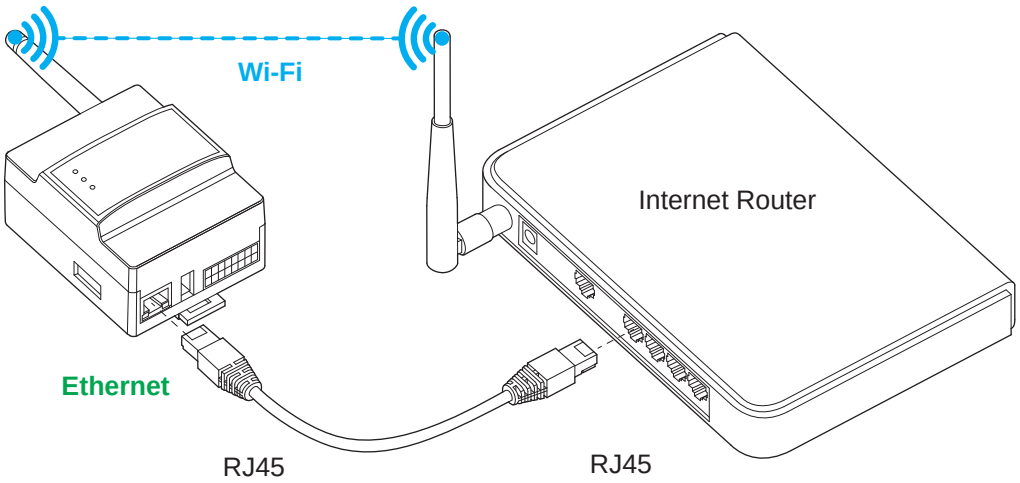


Fig. 4.10: Connection to an Internet router

Wi-Fi	
Network standards	IEEE 802.11b / 802.11g / 802.11n
Data rates	IEEE 802.11b: 1 to 11 Mbps / IEEE 802.11g: 6 to 54 Mbps / IEEE 802.11n: 6.5 to 150 Mbps
Modulation	OFDM (BPSK), QPSK, 16-QAM, 64-QAM; 802.11b (CCK / DSSS)
Bandwidth	20 MHz / 40 MHz
EMC and safety	EN 300 328, LP0002, Part 15C, Telec T66; EN 61010-1, CE compliance
Immunity (EMS)	EN 301 489-1/-17, EN 55024, EN 55032, FCC Part 15B

Tab. 4.2.: Wi-Fi specification

4.4 Connecting a Ripple Control Receiver

The ripple control receiver is connected to the DC1, which then controls the inverters. Even if the inverter itself has digital inputs, there is no need to connect a cable to the inverter.

You can use the existing cables from the SOLIVIA Gateway M1 G2, but you must observe the pin assignment of the DC1.

The digital inputs must be activated during commissioning, see “5.7 Activating Digital Inputs”, page 29.

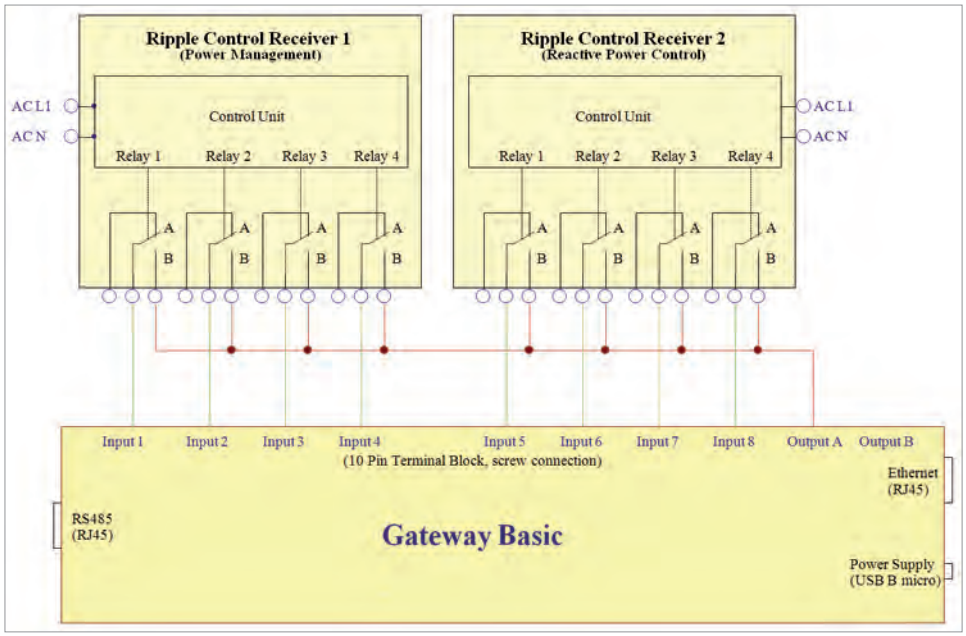


Fig. 4.11: Digital inputs on the SOLIVIA Gateway M1 G2

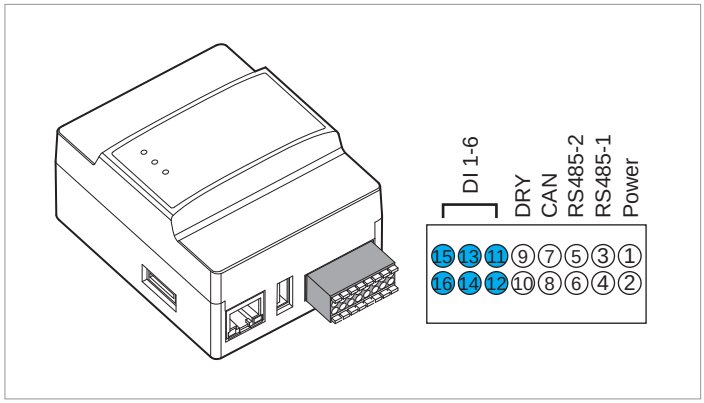


Fig. 4.12: Digital inputs on the DC1

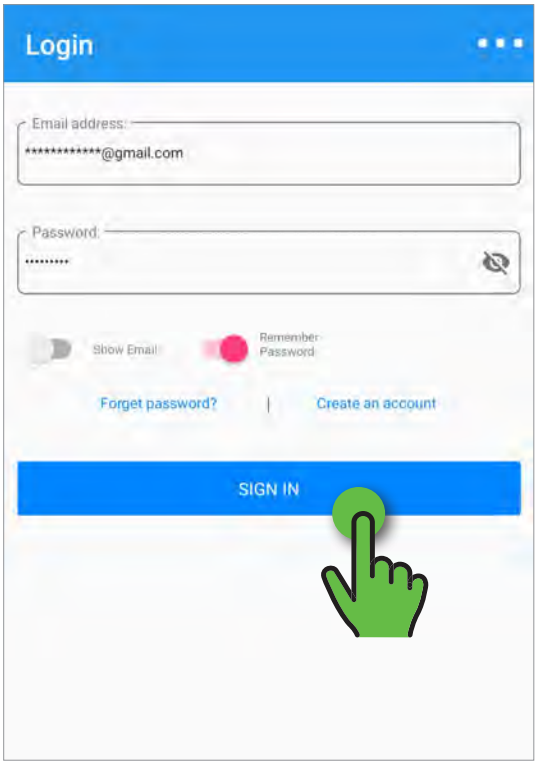
Short circuit	Power limit	
	Standard	Australia
16 + 15	–	Emergency Power Off (EPO)
16 + 14	0%	100%
16 + 13	30%	75%
16 + 12	60%	50%
16 + 11	100%	0%
15 + 14	–	-100%
15 + 13	–	-75%
15 + 12	–	-50%
15 + 11	–	0%

Tab. 4.3.: Setting the power limit on the DC1

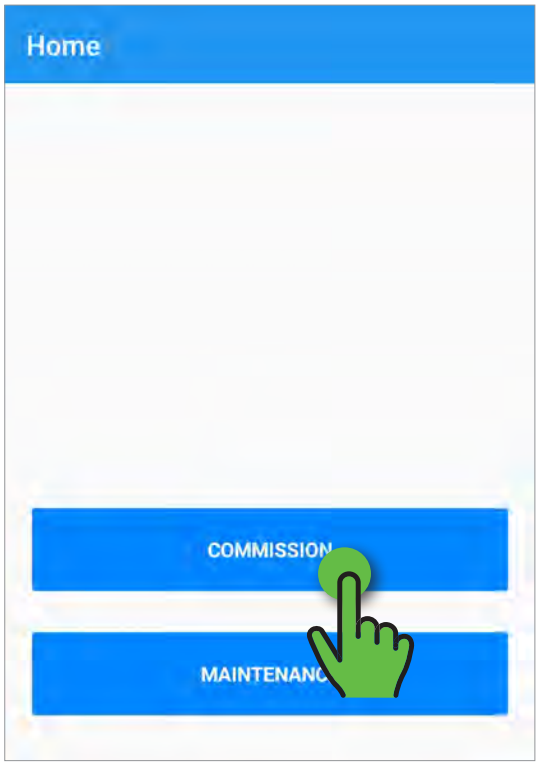
5. Commissioning the DC1 (SoliviaSolar App)

5.1 Connecting the SoliviaSolar App to the DC1 (Android)

1 Login to your account.



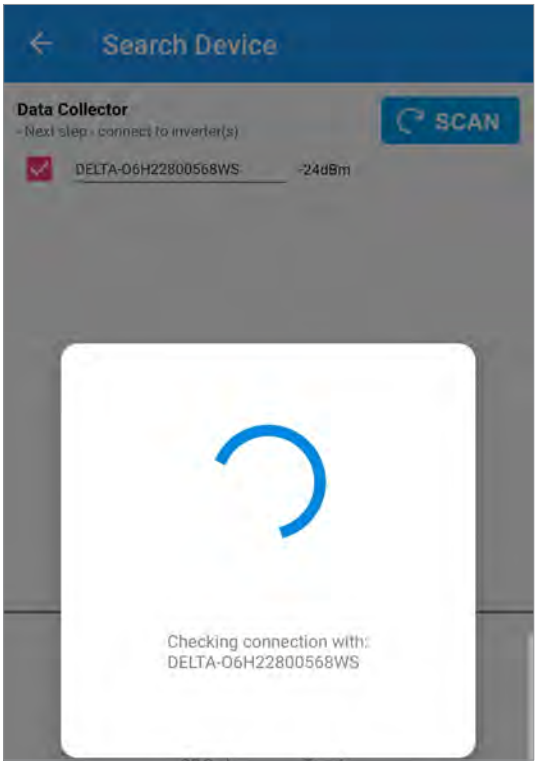
2 To connect to the DC1 and start commissioning, tap **Commissioning**.



3 If the DC1 does not appear automatically (the name begins with "DELTA-"), tap Scan.

4 Select the DC1.

5 The app is connecting to the DC1...



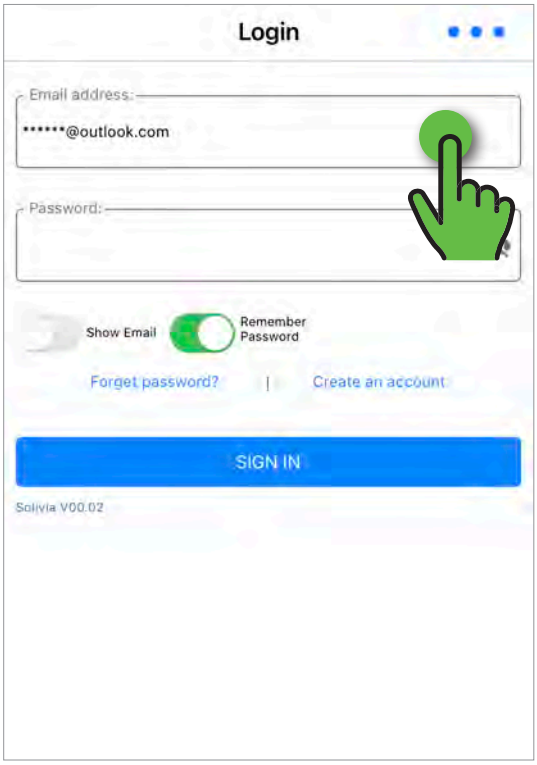
6 When connected to the DC1, tap **SET**.

7 Proceed with “5.3 Setting Up Communication between the DC1 and the Inverters”, page 21.

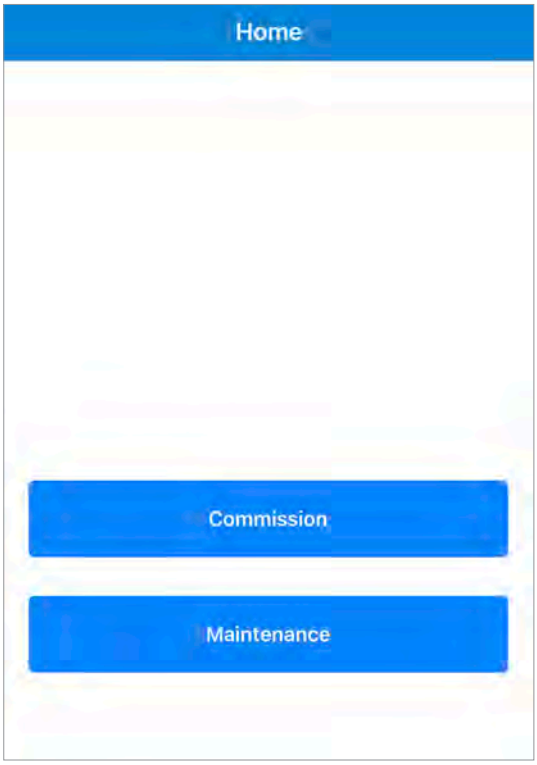
If necessary, the firmware of the DC1 and the inverters is automatically updated.

5.2 Connecting the SoliviaSolar App to the DC1 (iOS)

1 Login to your account.

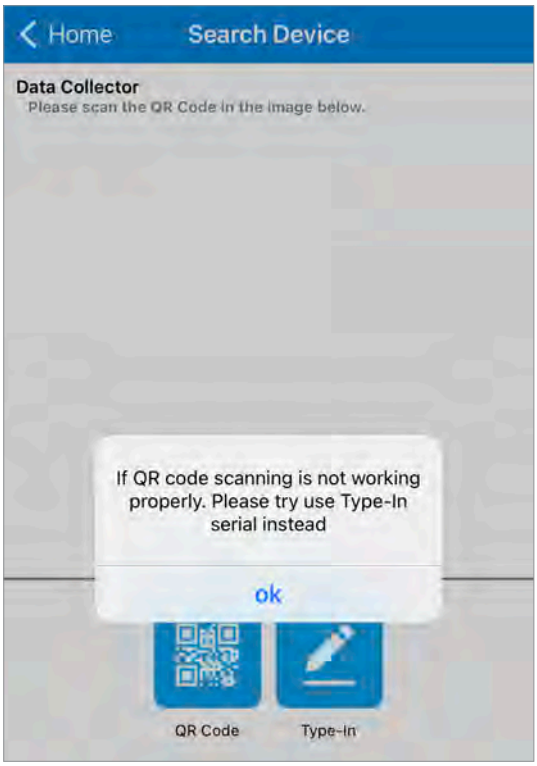


2 To start commissioning the DC1, in the **Home** screen, tap **Commission**.



3 To establish the connection to the DC1, tap **QR Code**.

4 Note: When scanning the QR code does not work, try entering the serial number which is on the type label. Tap **OK**.

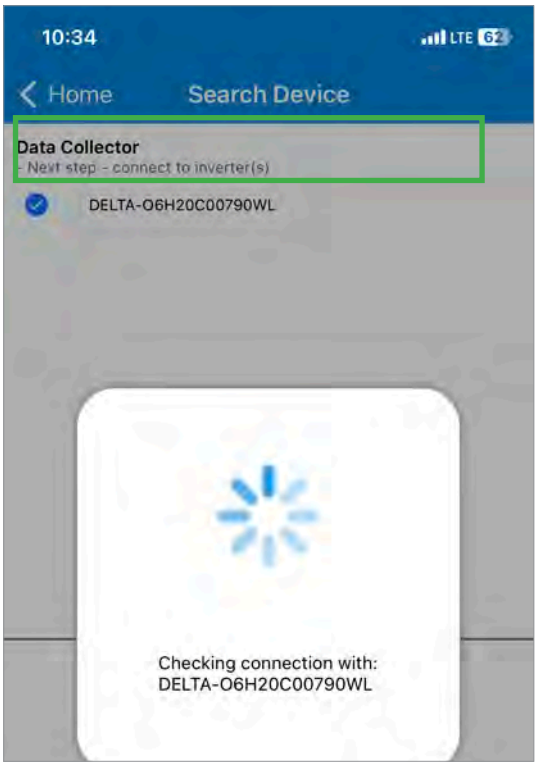


5 Scan the QR code on the front of your DC1 data collector.

6 The DC1 is shown at the top and selected. To connect the SoliviaSolar app to the DC1, tap **SET**.

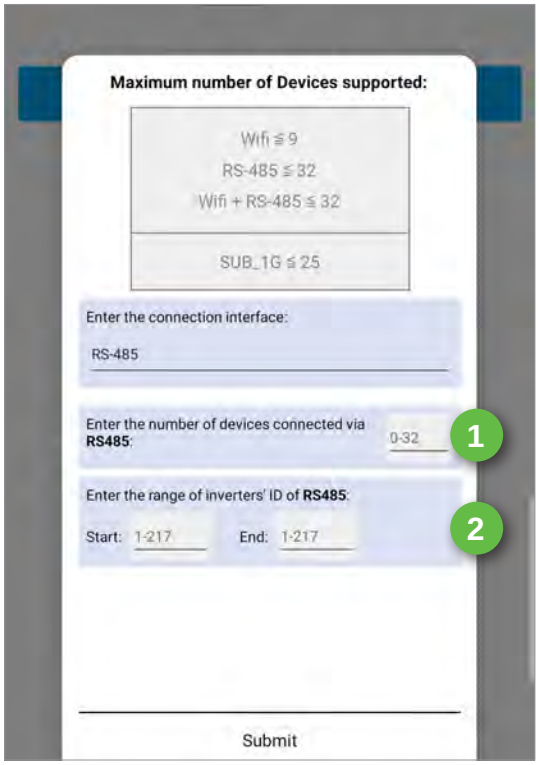
7 To allow the SoliviaSolar app to connect to the DC1, tap **Join**.

8 The SoliviaSolar app is connecting to the DC1. Proceed with "5.3 Setting Up Communication between the DC1 and the Inverters", page 21.

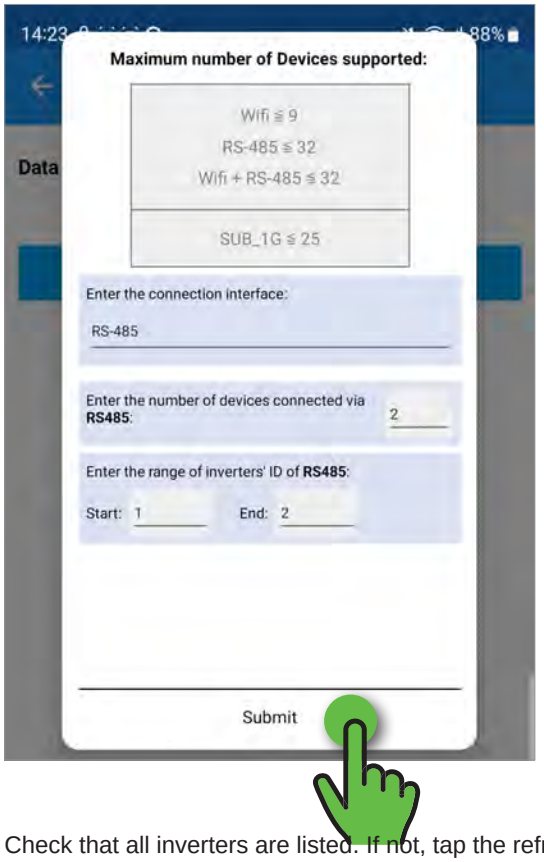


5.3 Setting Up Communication between the DC1 and the Inverters

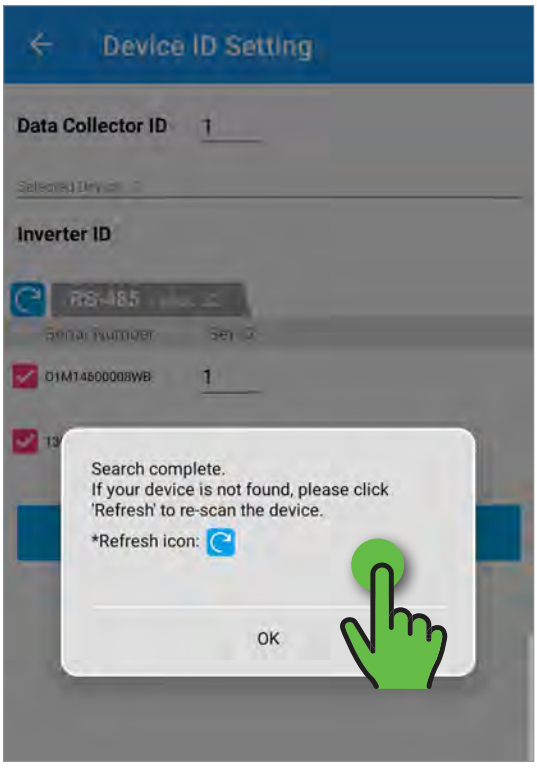
1 Enter the number of inverters ❶ and the range of inverter IDs used ❷ on the RS485 bus.



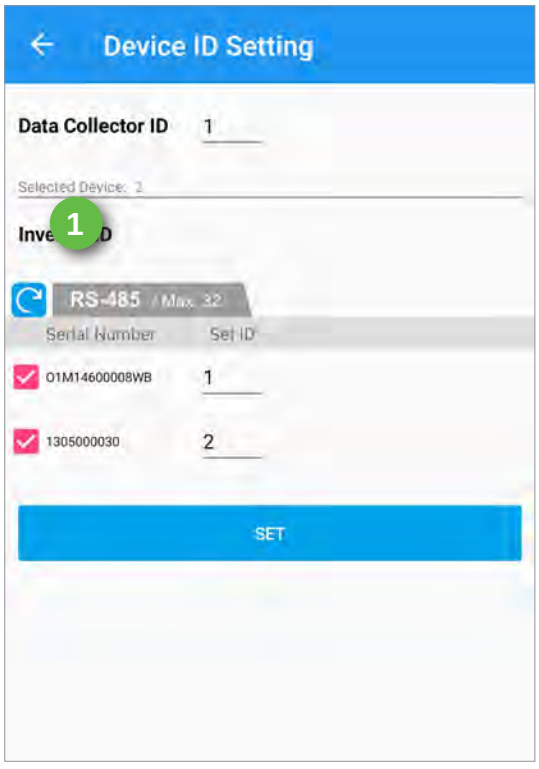
2 Tap **Submit**.



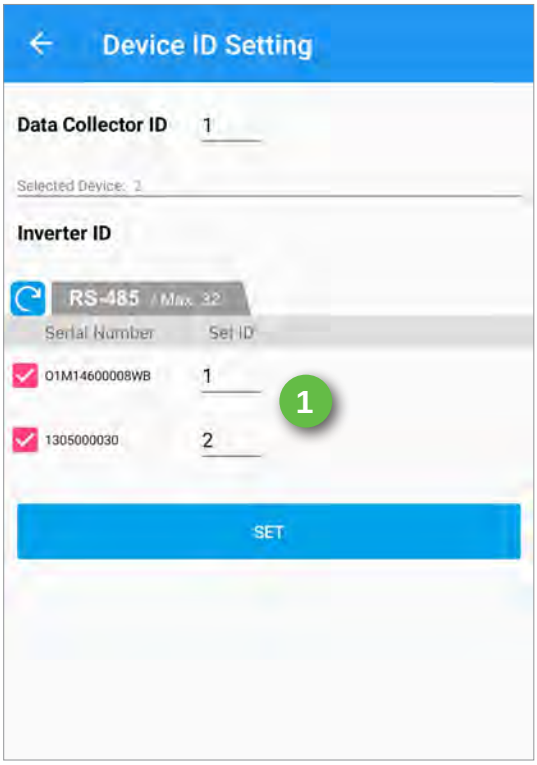
3 When the search is completed, tap **OK** to close the message.



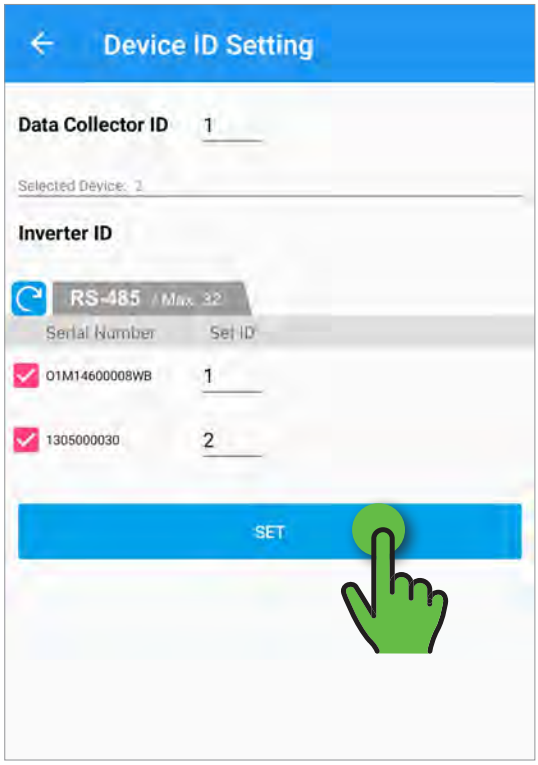
4 Check that all inverters are listed. If not, tap the refresh icon ❶ to start a new search.



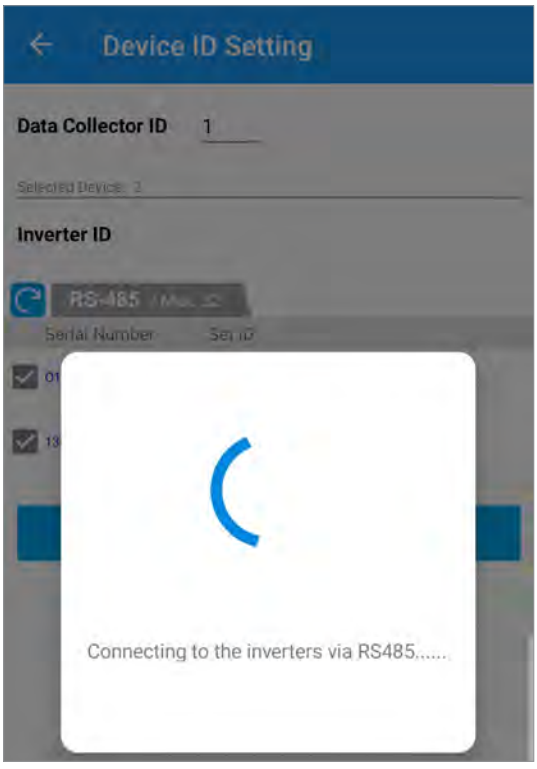
5 Check the inverter IDs (1). Each inverter must have a unique ID. If necessary, correct the ID.



6 When all inverters are listed and with their correct ID, tap **SET** to save the settings.



7 The DC1 is connecting to the inverters...



8 The app automatically takes you to the next step: “5.4 Connecting the DC1 to the Internet Router via Ethernet”, page 23.

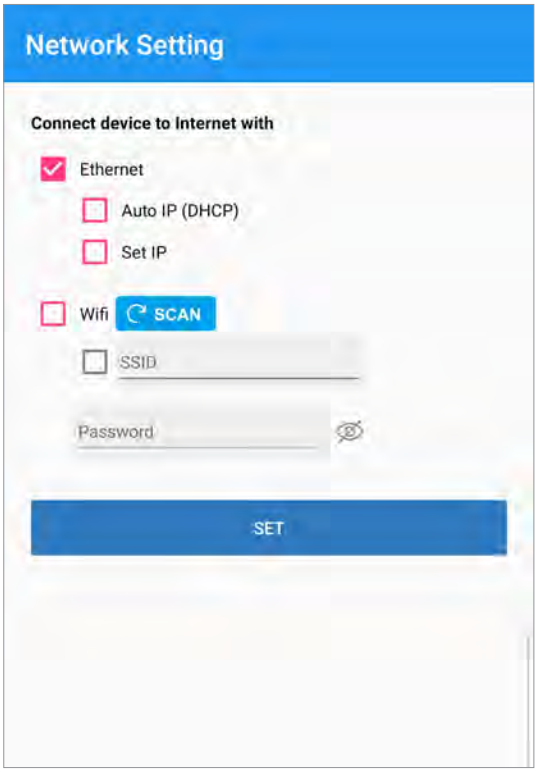
5.4 Connecting the DC1 to the Internet Router via Ethernet

1 This section describes how to connect the DC1 to the Internet router via Ethernet using the SoliviaSolar app.

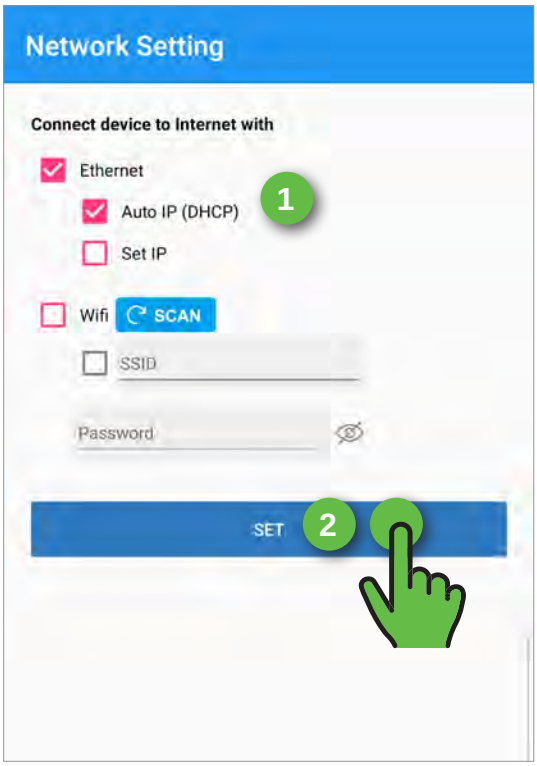
To do so, the DC1 must be connected to the Internet router via a network cable with RJ45 connectors.

To connect using Wi-Fi, see “5.5 Connecting the DC1 to the Internet Router via Wi-Fi”, page 25.

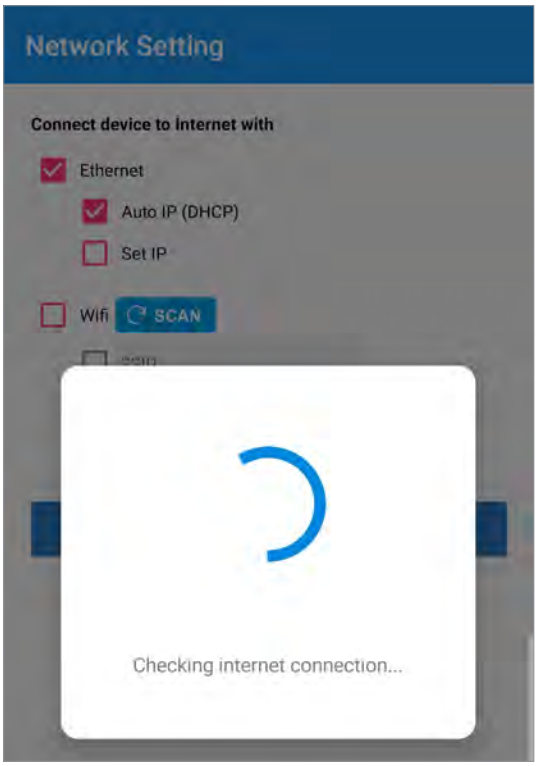
2 If the network settings do not open automatically, tap **Menu** > **Network Setting**.



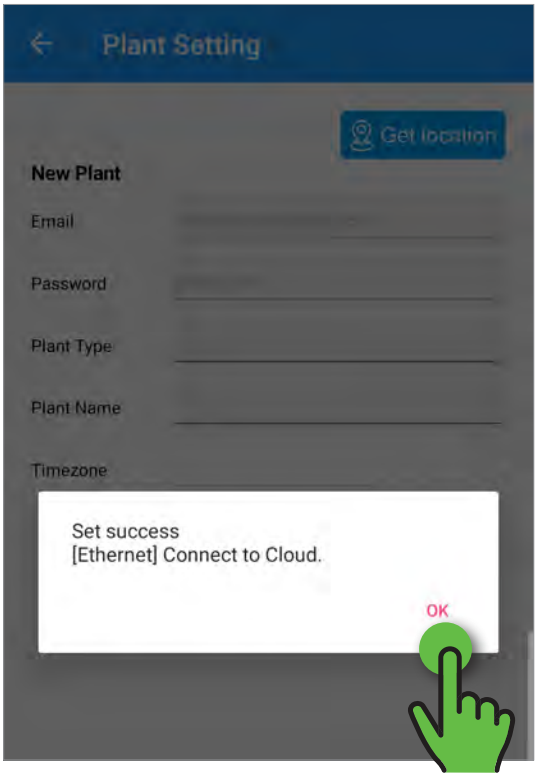
3 Select **Ethernet** > **Auto IP** 1. Then tap **SET** 2.



4 The DC1 is connecting to the router.



5 Tap **OK** to close the success message.



6 The app automatically takes you to the next step: “5.6 Registering the PV Plant in the MyDeltaSolar Cloud”, page 27.

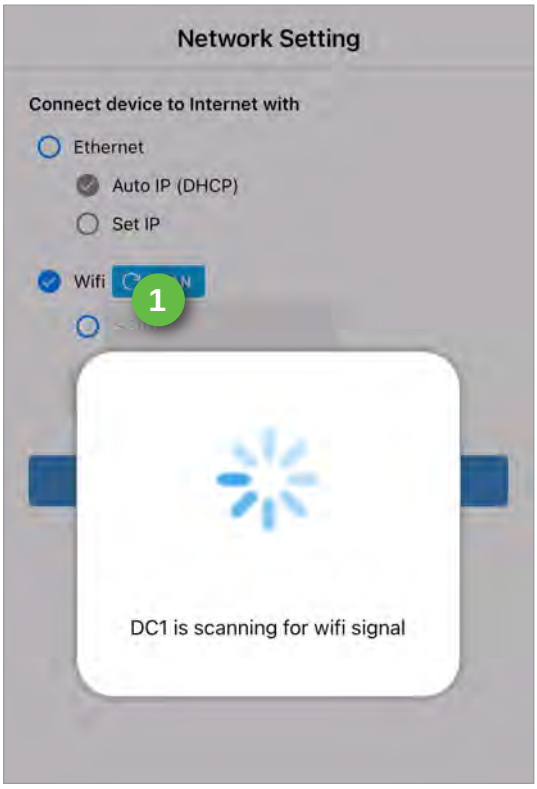
5.5 Connecting the DC1 to the Internet Router via Wi-Fi

1 This section describes how to connect the DC1 to the Internet router via Wi-Fi using the SoliviaSolar app.

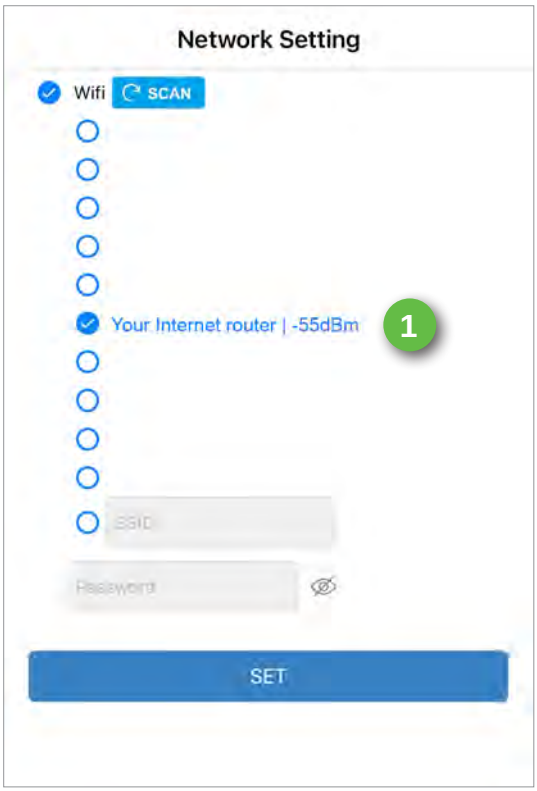
To do so, you need the password of the Internet router.

For a connection via Ethernet, see “5.5 Connecting the DC1 to the Internet Router via Wi-Fi”, page 25.

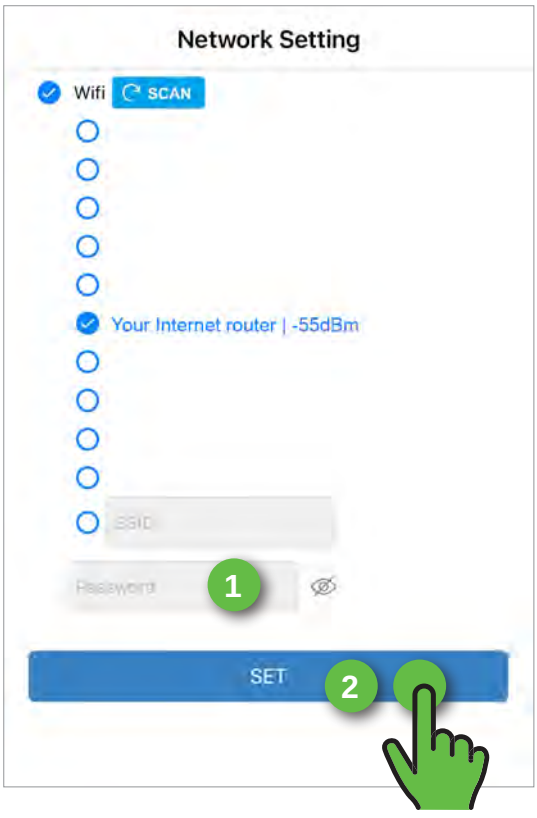
2 Select **Wi-Fi** 1 and the search for nearby Wi-Fi devices starts automatically.



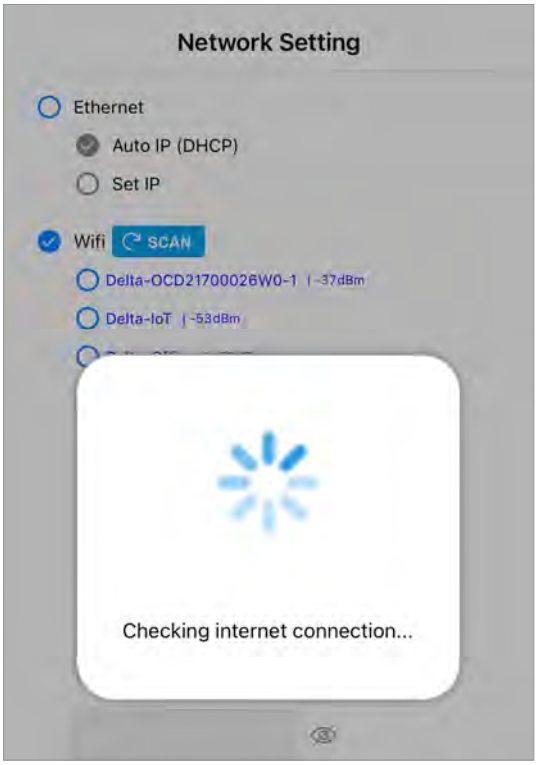
3 Select your Internet router 1. The signal strength must be at least -60 dBm or better (e.g. -50 dBm).



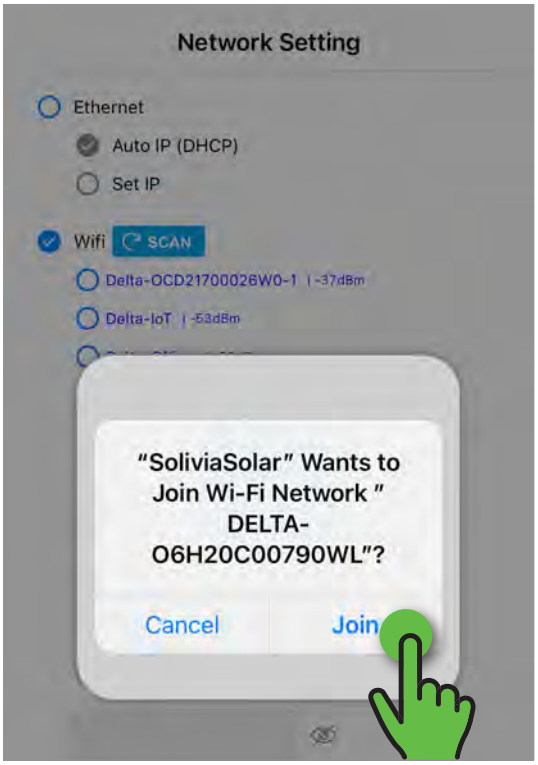
4 Enter the Wi-Fi password of the Internet router 1 and tap **SET** 2.



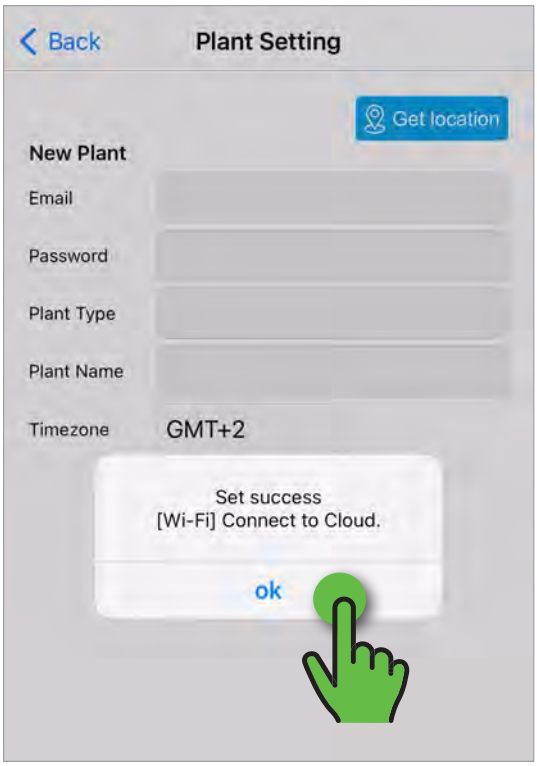
5 The SoliviaSolar app establishes the connection to the Internet router.



6 Your smartphone's operating system will ask permission to allow a Wi-Fi connection to the Internet router.



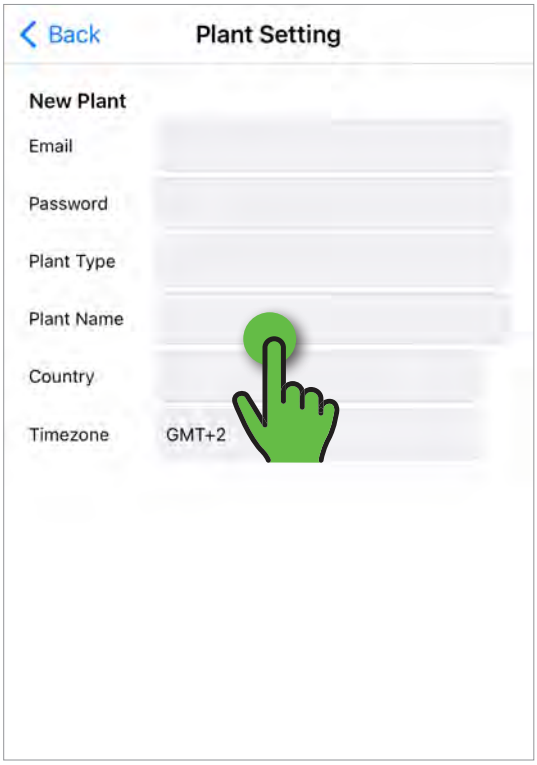
7 Tap **OK** to close the success message.



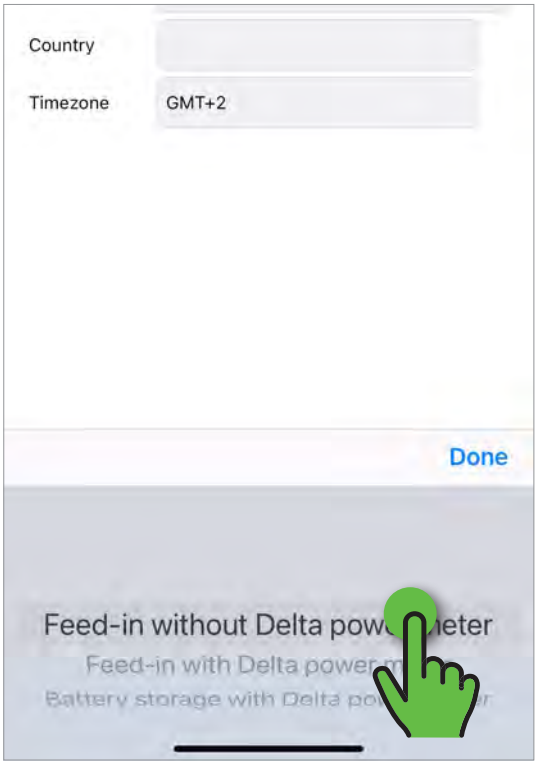
8 The app automatically takes you to the next step: "5.6 Registering the PV Plant in the MyDeltaSolar Cloud", page 27.

5.6 Registering the PV Plant in the MyDeltaSolar Cloud

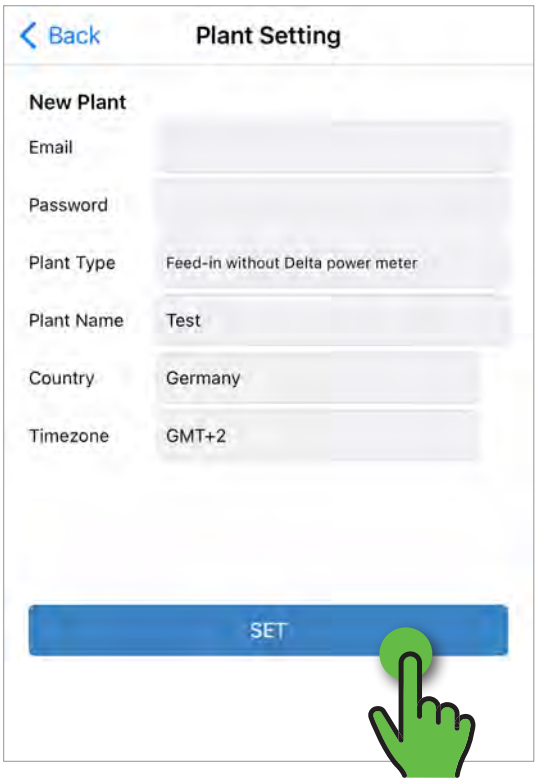
1 Fill in all information about your PV plant. Tap **Plant Type** and ...



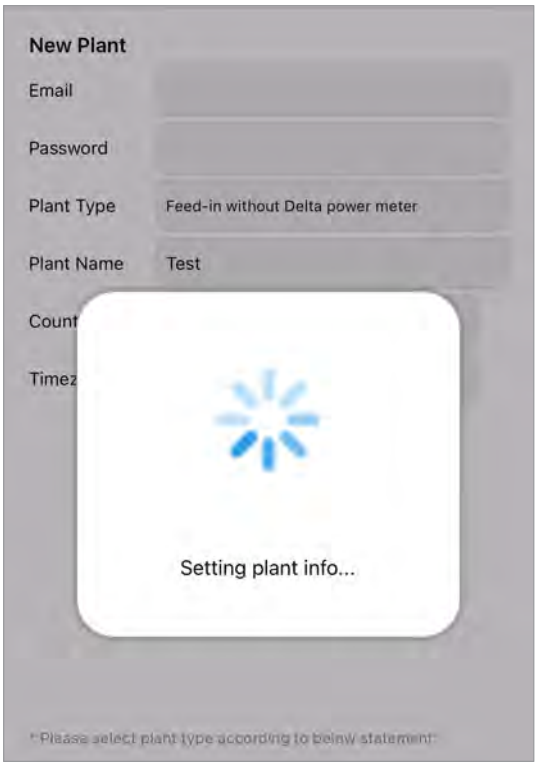
2 ... select **Feed-in without Delta power meter** .



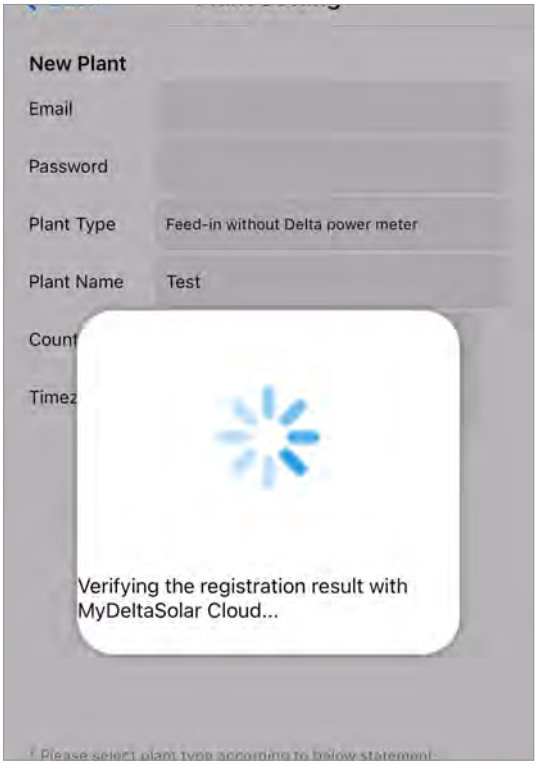
3 When you have entered all information about your PV plant, tap **SET**.



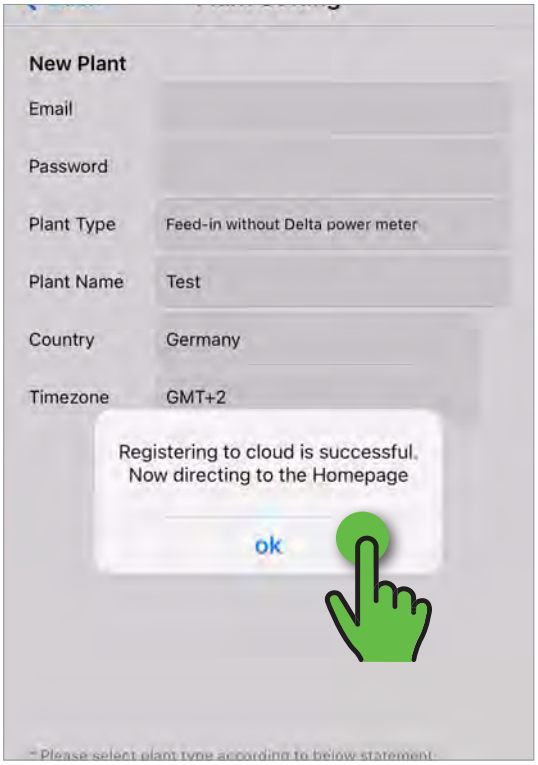
4 The data from the PV plant is transferred to the MyDeltaSolar Cloud.



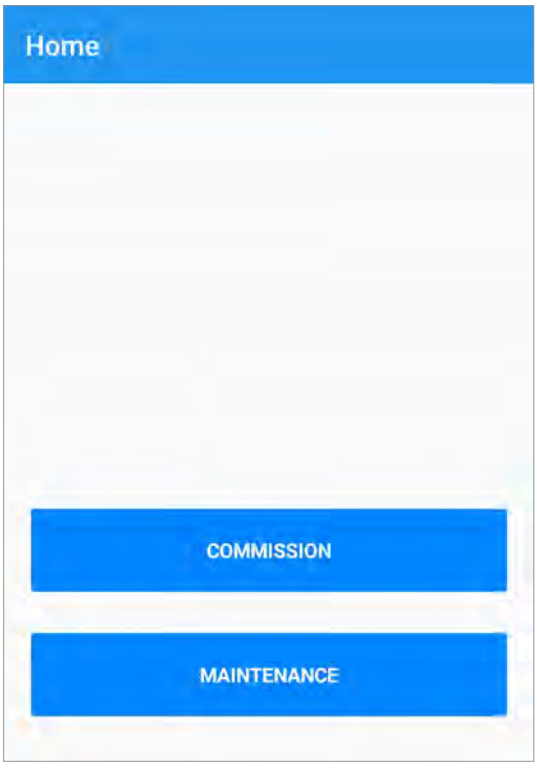
5 Once you have successfully registered your PV plant in the MyDeltaSolar Cloud, you will receive a confirmation notification.



6 Once you have successfully registered your PV plant in the MyDeltaSolar Cloud, you will receive a confirmation notification.



7 You will be automatically redirected to the start page. Moving your PV plant to the MyDeltaSolar Cloud is completed.



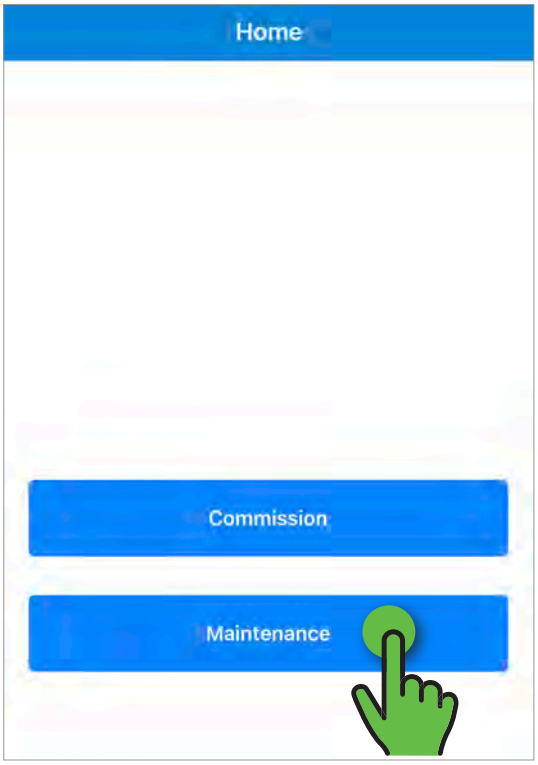
8 The user who has commissioned and registered the PV plant in the MyDeltaSolar Cloud with their login is automatically defined as **manager** of the PV plant with restricted access rights to the plant information. At this moment, this is the only user who can access plant information!

To test access to the PV plant information and modify permissions, follow the instructions in “7. Editing the List of Authorized Users (DeltaSolar App)”, page 35.

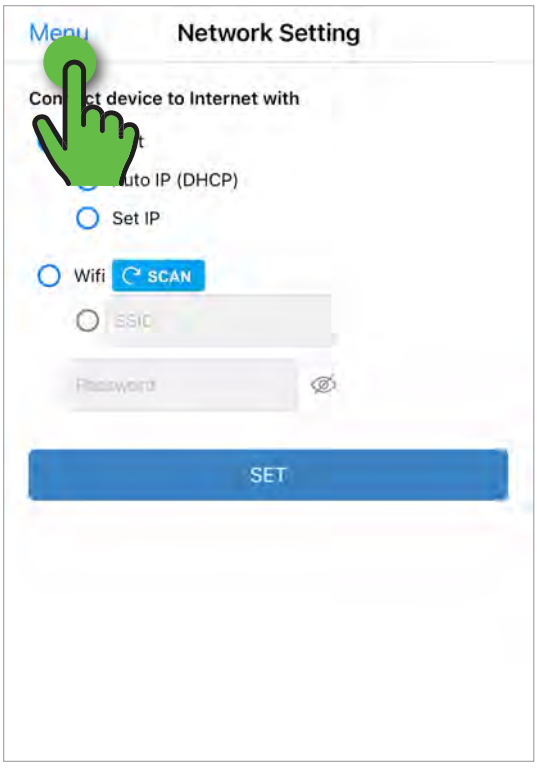
5.7 Activating Digital Inputs

The digital inputs are deactivated at the factory. For example, if you have connected a ripple control receiver (see “4.4 Connecting a Ripple Control Receiver”, page 16), you must activate the digital inputs using the SoliviaSolar app.

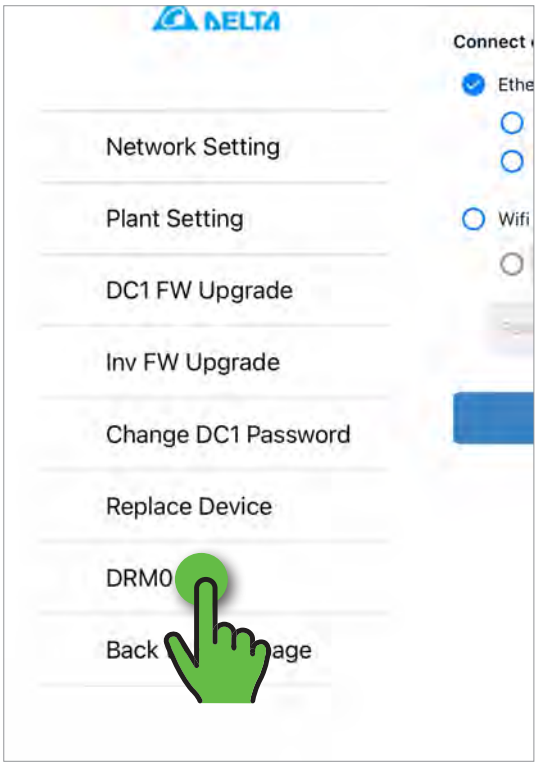
1 On the Home screen, tap **Maintenance** and ...



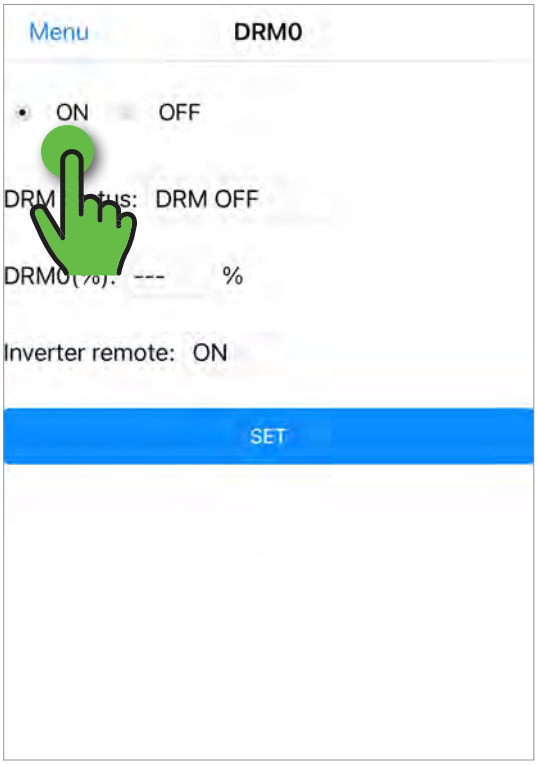
2 Tap **Menu**.



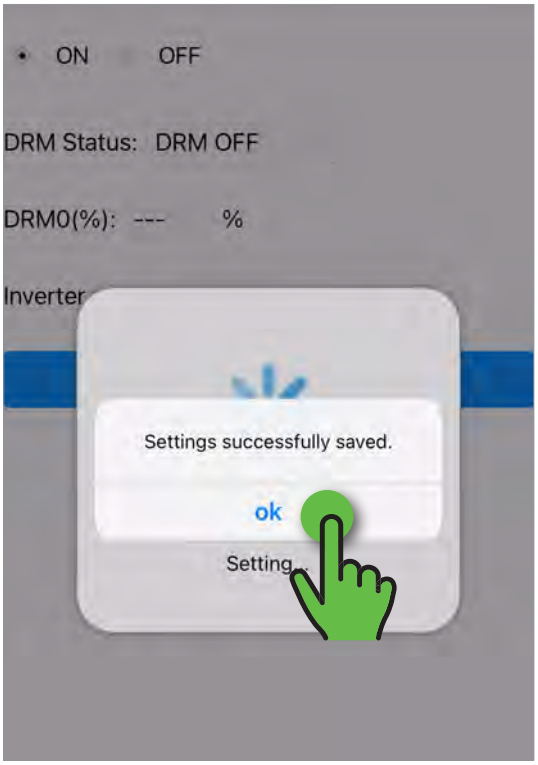
3 Tap **DRM0**.



4 Activate the digital inputs by tapping **ON**.



5 Acknowledge the message. The digital inputs are activated.



6. Checking Access to the New PV Plant (DeltaSolar App)

6.1 Introduction

The steps described in this chapter must be performed with the same account that was used to commission and register in the cloud!

After you have successfully registered the PV plant in the MyDeltaSolar Cloud, you should use the DeltaSolar app to test whether you have access to the PV plant. This does **NOT** work with the SoliviaSolar app!

The user who performs the PV plant commissioning and registration in the MyDeltaSolar Cloud is automatically set as **manager** of the PV plant. This is the only user who can access plant information at this time! When you access the PV plant for the first time via the DeltaSolar app, you have the option to change this.

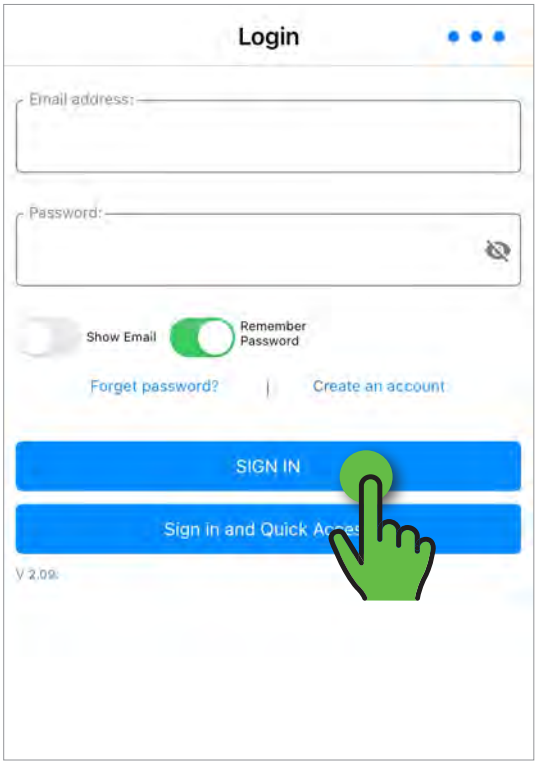
To do so, follow the instructions in this chapter.

The following table shows the roles with their respective access rights.

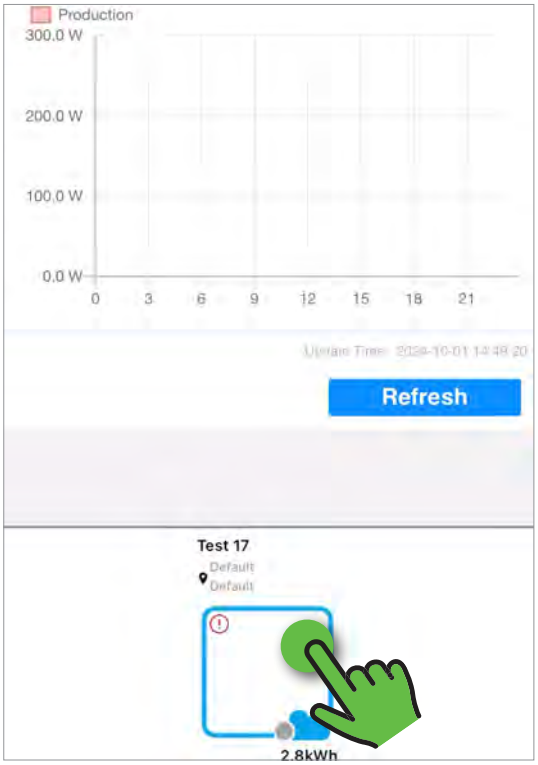
	Owner	Manager	Viewer
View plant information	Yes	Yes	Yes
View share list (see list of authorized users)	Yes	Yes	Yes
Plant setting (change PV plant settings)	Yes	Yes	No
Change device password	Yes	No	No
Edit share list (edit list of authorized users)	Yes	No	No

6.2 Setting the Owner

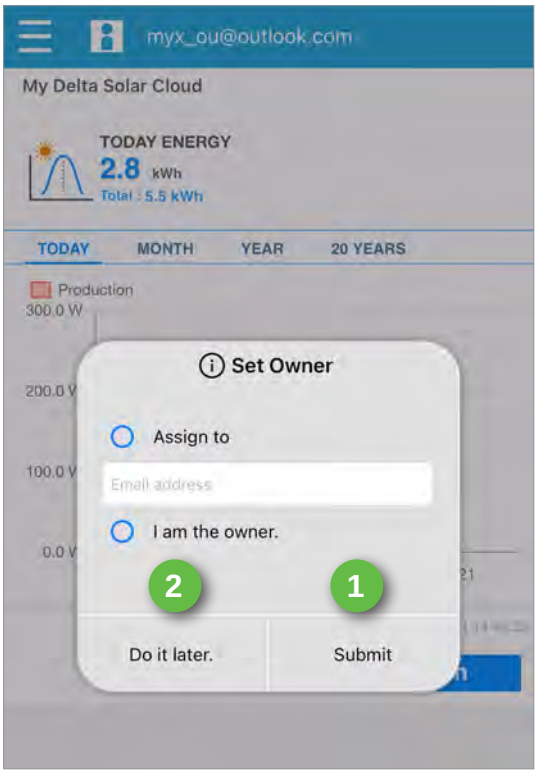
1 Open the DeltaSolar app and log in.



2 Tap your PV plant.



3 Each PV plant must have at least one **`owner`**. Therefore, this dialog appears automatically.



Option	Description
Assign to	Enter the email address of the owner. They will receive an email with further instructions.
I am the owner. (I am the owner.)	Select this option if you are the owner. This will change your role from manager to owner.

Select an option and tap **Submit** 1.

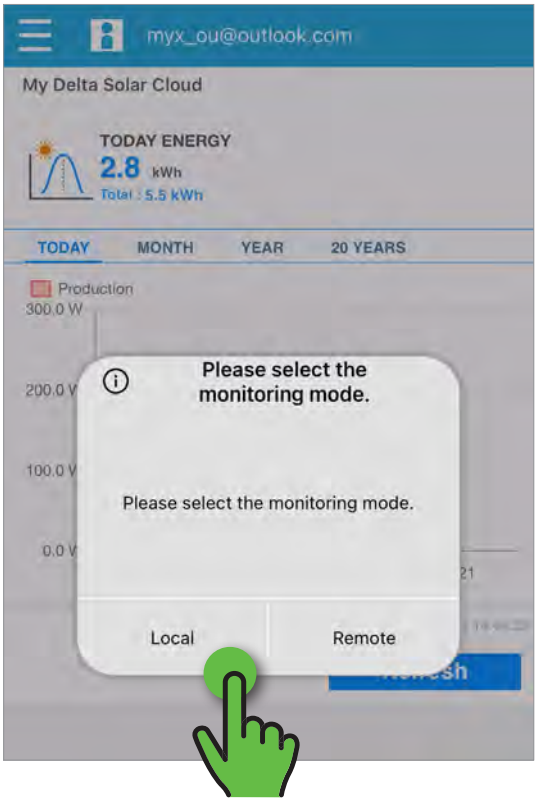
It may take a few minutes for the changes to be applied. Log out and log back in a few minutes later.

If you want to make the settings later, tap **Do it later** 2. This dialog then appears every time you open the DeltaSolar app until you specify an owner.

You can change these settings later: see 7. Editing the List of Authorized Users (DeltaSolar App), page 35.

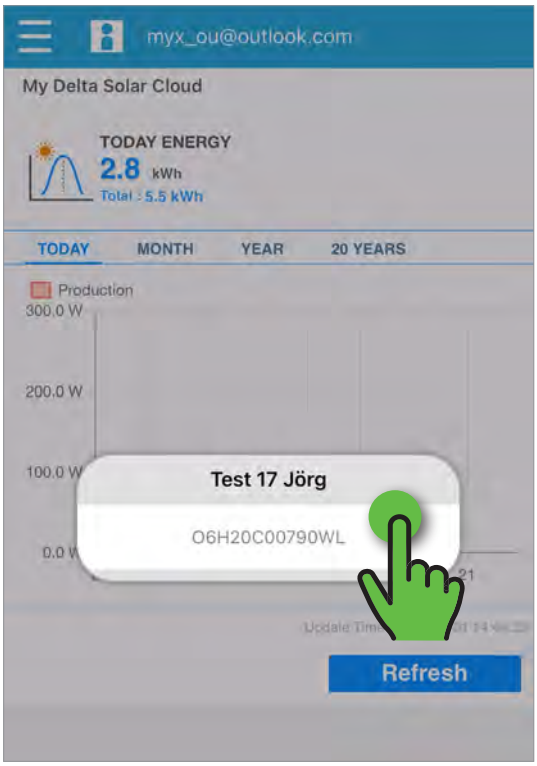
6.3 Testing the Monitoring of the PV Plant

4 Tap **Local**.

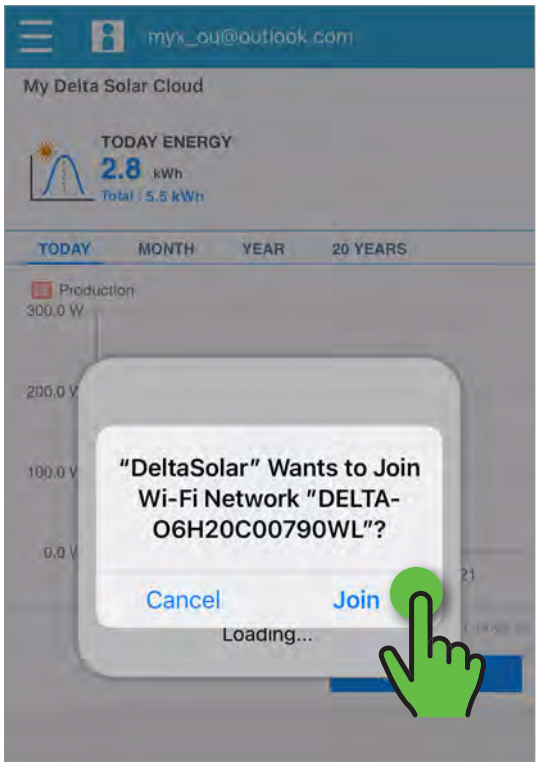


Option	Description
Local	The DeltaSolar app connects to the DC1 data collector via Wi-Fi. This only works when your smartphone is within range of the DC1.
Remote	The DeltaSolar app connects to the MyDeltaSolar Cloud via the Internet.

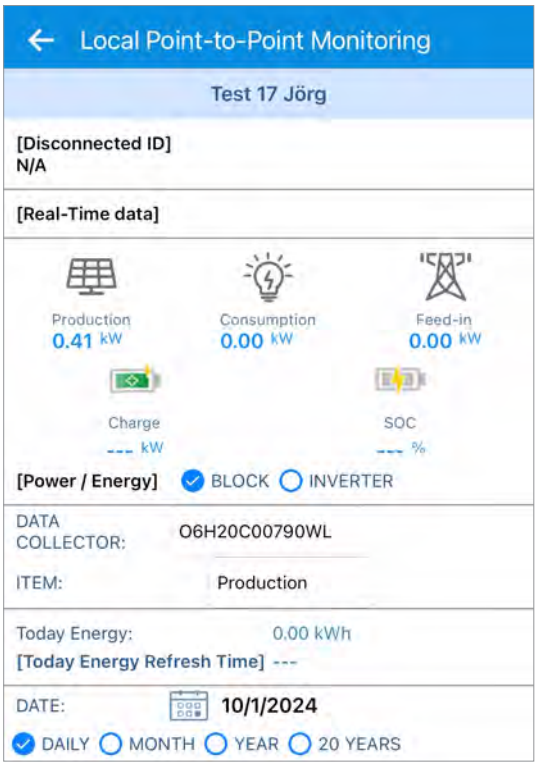
5 Select the DC1 data collector.



6 Confirm the Wi-Fi connection between the DeltaSolar app and the DC1.



7 You are now connected to the DC1 and have access to all the information that is accessible via the DC1.



7. Editing the List of Authorized Users (DeltaSolar App)

In order to be able to carry out the work steps described in this chapter, you must be entered as the owner (**Owner**) of the PV plant.

These settings can only be made using the DeltaSolar app.

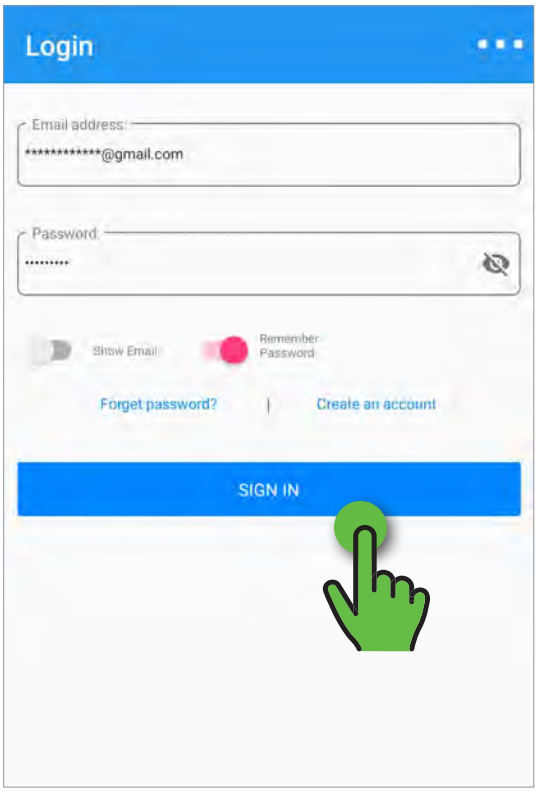
As owner, you can invite additional users at any time and give them different access permissions. These users will receive an invitation email.

The process varies depending on whether these users already have an account in the MyDeltaSolar Cloud.

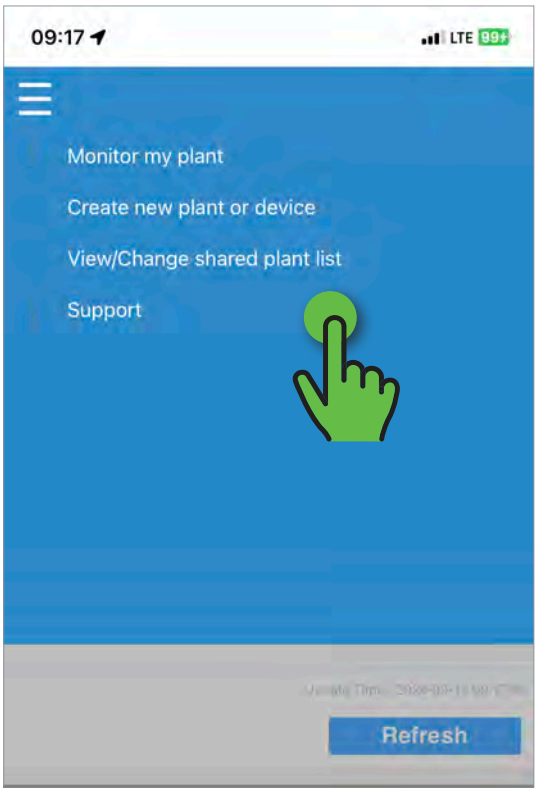
	Owner	Manager	Viewer
View plant information	Yes	Yes	Yes
View share list (see list of authorized users)	Yes	Yes	Yes
Plant setting (change PV plant settings)	Yes	Yes	No
Change device password	Yes	No	No
Edit share list (edit list of authorized users)	Yes	No	No

7 Editing the List of Authorized Users (DeltaSolar App)

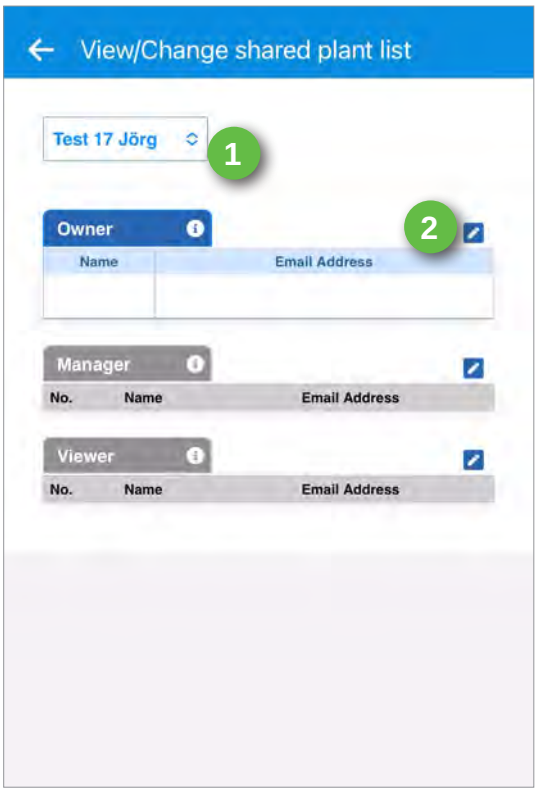
1 Log in to your account using the DeltaSolar app.



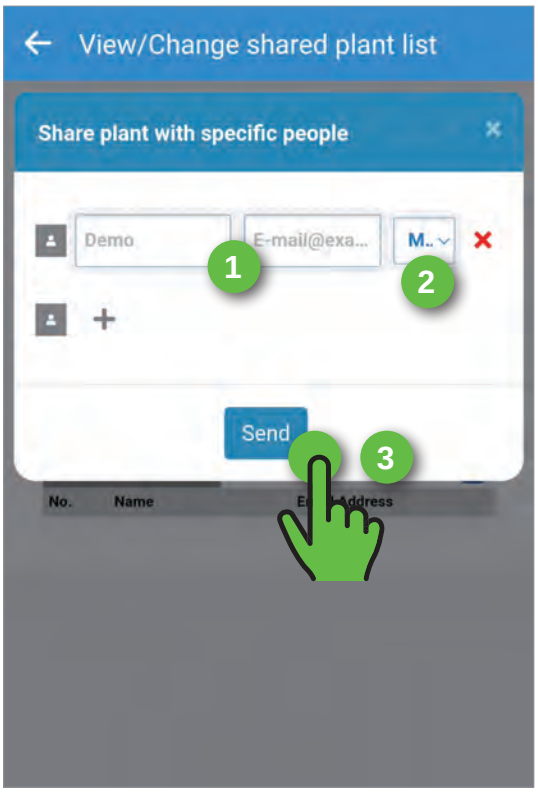
2 In the menu, tap **View/Change shared plant list**.



3 Select the PV plant ❶ and tap the pencil icon next to one of the tabs ❷.



4 Enter the name and email address of the user ❶. Assign a role to the user ❷. Then tap **Submit** ❸.



8. Technical Data

	DC1 data collector
Electrical and mechanical data	
Supply voltage via RS485 or	
via RS485 connector	9 to 25 V_{DC} / 5 W
via micro USB	5 V_{DC} / 5 W
Connections	Wi-Fi, Ethernet, 2x RS485, Micro-USB, USB A
Max. number of controllable inverters	RS485: 32; Wi-Fi: 9; mixed RS485 + Wi-Fi: 32
Operating temperature range	-25 to +60 °C
Degree of protection	IP20
Dimensions (W x H x D) with / without antenna	72 x 106 x 55 mm / 72 x 186 x 55 mm
Wi-Fi	
Network standards	IEEE 802.11b / 802.11g / 802.11n
Data rates	IEEE 802.11b: 1 to 11 Mbps / IEEE 802.11g: 6 to 54 Mbps / IEEE 802.11n: 6.5 to 150 Mbps
Modulation	OFDM (BPSK), QPSK, 16-QAM, 64-QAM; 802.11b (CCK / DSSS)
Bandwidth	20 MHz / 40 MHz
EMC and safety	EN 300 328, LP0002, Part 15C, Telec T66; EN 61010-1, CE compliance
Immunity (EMS)	EN 301 489-1/-17, EN 55024, EN 55032, FCC Part 15B

Delta Customer Service

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Italy	800 787 920 (toll free)
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Poland	+48 22 335 26 00
Portugal	+49 7641 455 549
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Slovenia	+421 42 4661 333
Spain	900 958 300 (toll free)
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