Demand Response Enabling Device

Installation and Operation Manual (For UK)

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Please adhere to the actual products in case of any discrepancies in this user manual.

Please record the serial number of your inverter and quote this when you contact us.

Ver 1.3

Contents

1.1 Product Description

Demand Response Enabling Device is used for inverters which have no DRM intergrated.

For UK, the following inverters must be install with this DRM (logic interface) device on site to make sure the system fully complies with the G99 requirements.

- Solis-20K, Solis-25K, Solis-30K, Solis-33K, Solis-25K-HV, Solis-30K-HV, Solis-36K-HV, Solis-40K-HV, Solis-40K, Solis-50K, Solis-60K-4G, Solis-50K-HV, Solis-60K-HV, Solis-70K-HV-4G

The following models have integrated DRM port. Don't need the external DRM device:

- Solis-mini-(700-3600)-4G, Solis-1P(2.5-6)K-4G, Solis-3P(5-20)K-4G, Solis-RHI(3-5)K-48ES
- All Solis 5G model inverters

NOTE:

The DRM device is supplied with pre-made AC cable(1mm^2) and COM cable attached to the product and the installers don't need to do the wiring on site. Installation requirments - (1) 6 amp, 3-phase circuit breaker(2) 1 DRM per site. If multple inverers are connected, cat5e/cat6 cables are required for communication between inverters

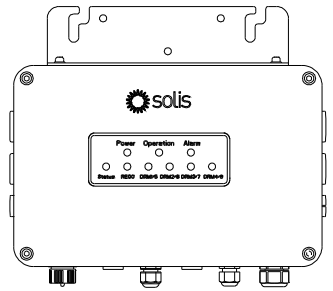

Figure 1.1 Front side view

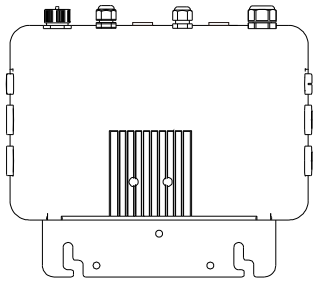

Figure 1.2 Back side view

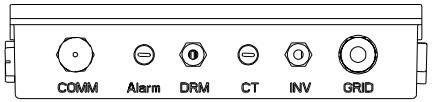

Figure 1.3 Bottom side view

1. Introduction

1.2 Packaging

When you receive the DRM, please ensure that all the parts listed below are included:

1

2

Figure 1.4 Parts

Part #	Description	Number
1	DRM Device	1
2	Manual	1

Table 1.1 Parts list

2. Overview

2.1 Front Panel Display

Figure 2.1 Front Panel Display

2.2 LED Status Indicator Lights

There are three LED status indicator lights at the top of the front panel of the device. Please see Table 2.1 for details.

And there are six LED status indicator lights at the bottom of the front panel of the device. Please see Table 2.2 for details

Light	Status	Description
POWER	ON	Logic interface power on
	OFF	Logic interface power off
OPERATION	ON(Twinkle)	Logic interface is sending the data to inverter
	OFF	Data sending completed
ALARM	Twinkle	Status is changing

Table 2.1 Status Indicator Lights

2.Safety Instructions

Light	Status	Description
Status	ON	The logic relay is short-circuit (Inverter is generating)
	OFF	The logic relay is open-circuit (Inverter stops generating)
REG0	ON	The logic relay is open-circuit (Inverter stops generating)
	OFF	The logic relay is short-circuit (Inverter is generating)
DRM1/5	ON	Reserved, Not Functional
DRM2/6	ON	Reserved, Not Functional
DRM3/7	ON	Reserved, Not Functional
DRM4/8	ON	Reserved, Not Functional

Table 2.2 Status Indicator Lights

3.1 Select a Location for the EPM

To select a location for the DRM, the following criteria should be considered:

- The temperature of the DRM could up to 75℃.
- The DRM is designed to work in extreme temperature range is from -25℃ to 60℃.
- The DRM should be kept minimum 300mm clearance from the other device.

3.2 Installation

DRM is designed to mount on the wall.
According to the figure 3.1, select the mounting height of the DRM and mark the mounting holes. For brick walls, the position of the holes should be suitable for the expansion bolts.

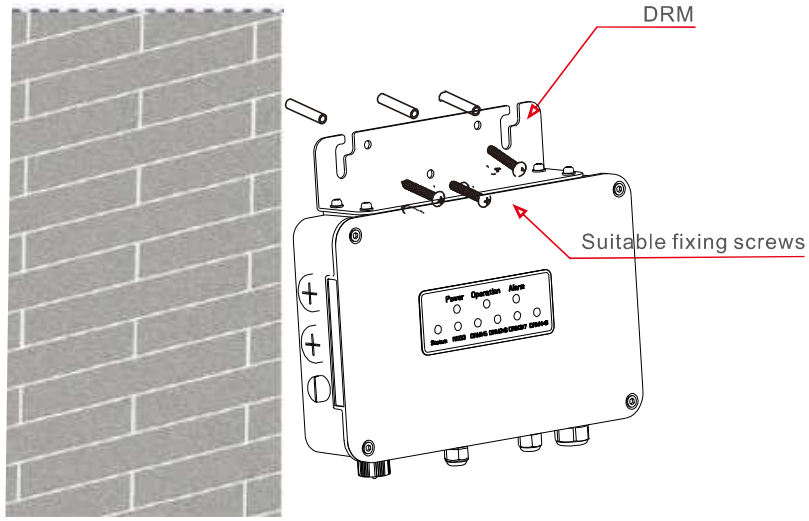

Figure 3.1 Inverter wall mounting

3.3 Electrical Connections

System connection diagram is as follows(see Figure 3.2):
The meaning of the symbols located at bottom of the DRM is listed in Table 3.1.

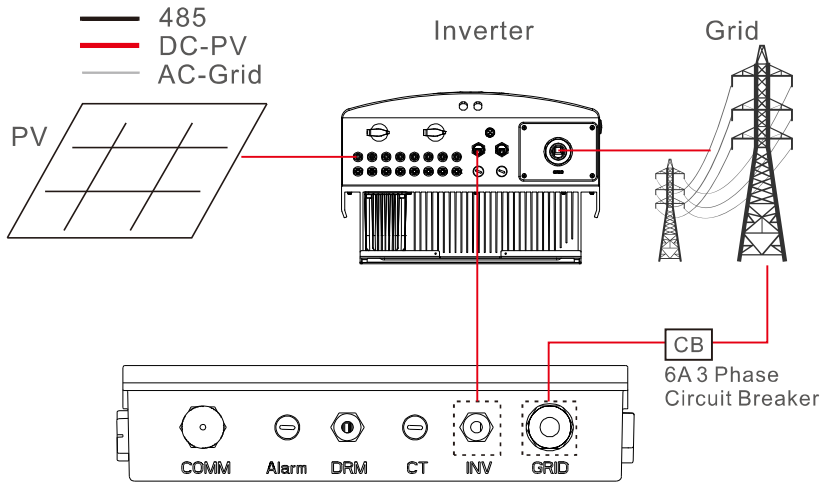

Figure 3.2 System diagram

COMM	Reserved
Alarm	Reserved
DRM	Connected to user DRM
CT	Reserved
INV	Communicate with inverter
GRID	Connected to grid AC power

Table 3.1 The meaning of the symbols located at bottom of the DRM

The detail connection diagram of DRM PCB is shown in Figure 3.3

3. Installation

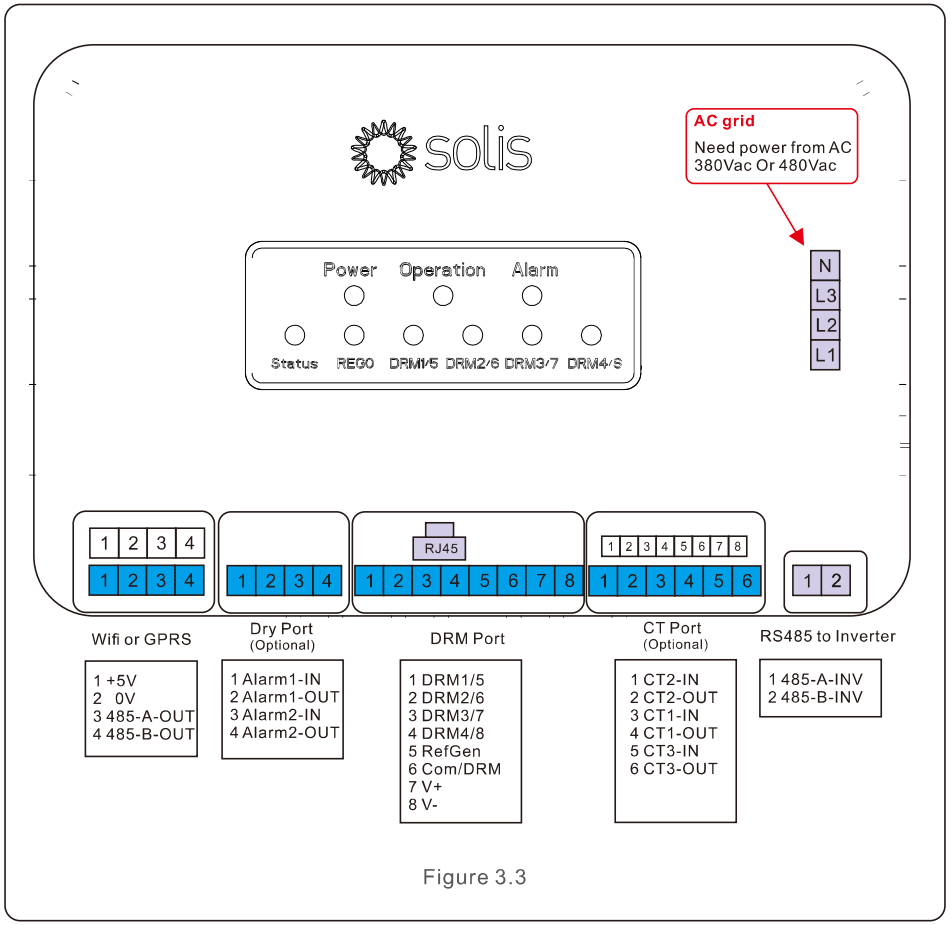

Figure 3.3

3.4 Instruction of Logic Interface Installation

1. Description of Solis Logic Interface

To comply with UK G98 and G99 standards, Solis provides an external device named "Logic Interface", which will response logic commands that are sent from the grid operators in order to start or stop the inverter.

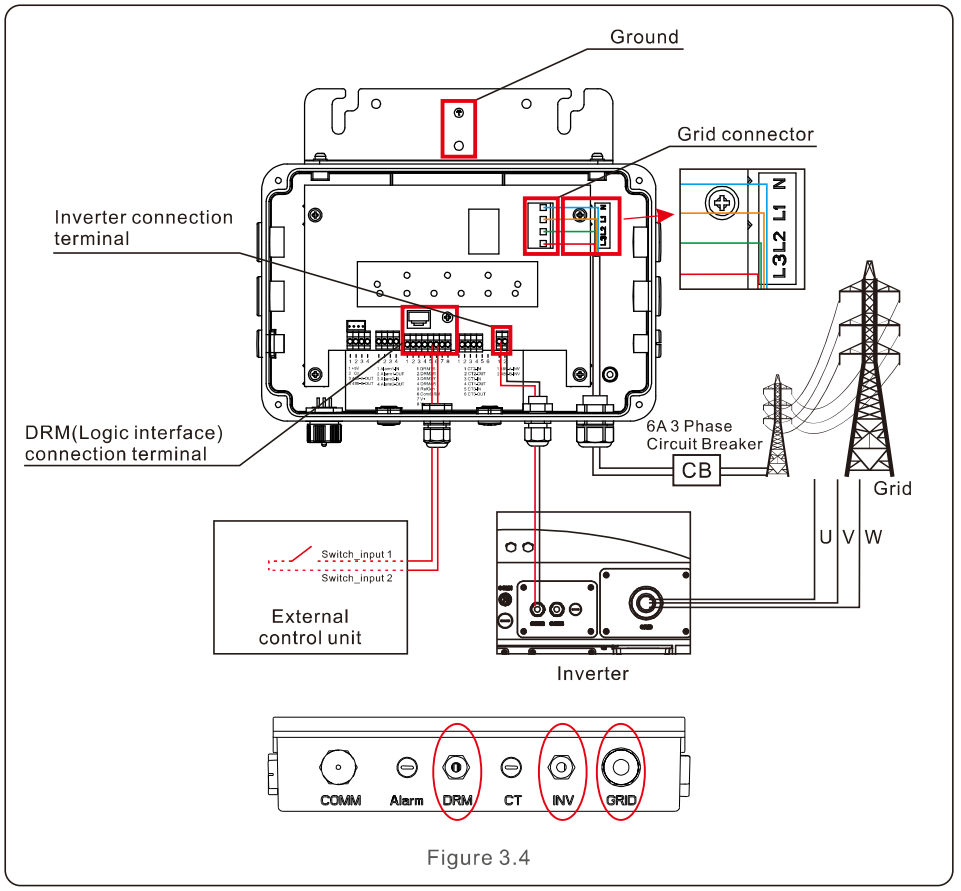

Figure 3.4

NOTE:
COMM port and Alarm port, CT port are reserved, no wirings are required.

DRM port is used to receive the logic command
There are two ways to connect the DRM port:
The pin 5 (RefGen) and pin 6 (Com/DRM) in the DRM terminal block are used to connect the external control unit.

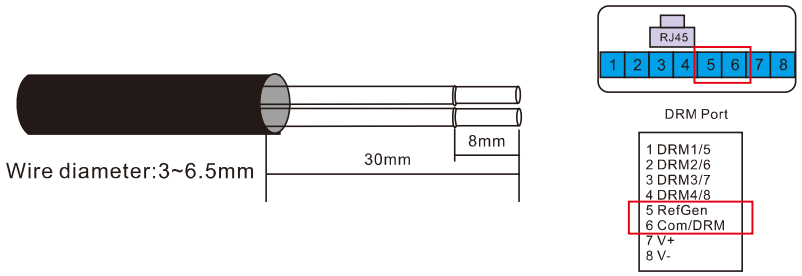

Figure 3.5

When the RJ45 terminal is connected with Solis logic interface, the 5th and 6th cable of RJ45 terminal should be connected with external control unit.

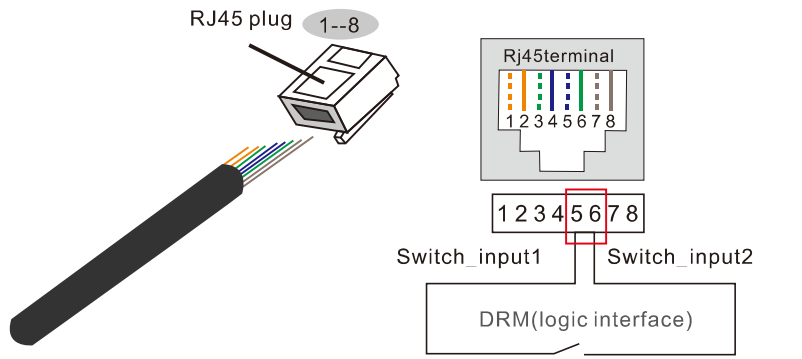

Figure 3.6

INV port on the logic interface is used to connect with the “COM” port of the inverter.
3-6.5mm cable can be used to connect.
For communication connection, please refer to inverter manual.

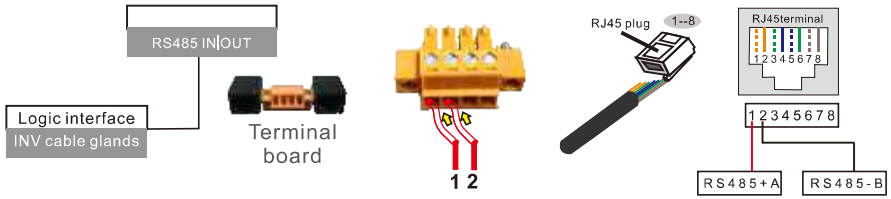

Figure 3.7

The “GRID” port (1-1.5mm^2) is used to connect with local three phase grid .
N line can be connected or not.
The location of the installation ground wire (2.5mm^2) is as shown below.

NOTE:
6 Amps fuses between DRM and the AC grid are required to protect the DRM device from overcurrent issue.

3. Installation

2. Switch on Solis logic interface

NOTE:
Please make sure the grid standard is selected as G98/G99.

DRM ON/OFF Setting Path:
Advanced Settings -> Password:0010 ->STD.Mode Settings
->Initial Settings ->DRM ON/OFF

NOTE:
Please set this setting on the inverter.

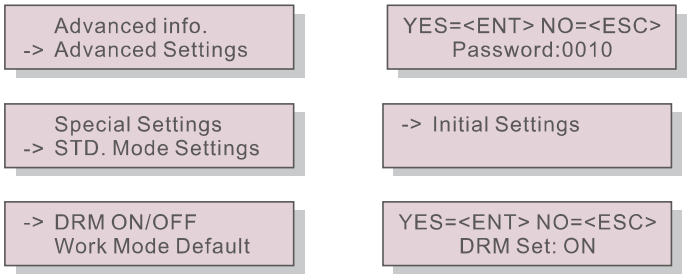

Figure 3.8

3. Operation Instruction

After the correct installation with the DRM ON/OFF is switched ON, the logic relay between pin5 and pin6 is closed, the "Power" and "Status" will be constantly ON.
When the logic relay is opened, the "Power" is ON, "Status" is OFF, "Alarm" flashes one time, "Reg0" is ON. Meanwhile, the "Operation" flashes for about 10s and then OFF.
The inverter will go into "Waiting" status and stop generating in 5 seconds.

NOTE:
According to the control logic defined in G98/G99, when logic interface is required to be activated on site, the pin5 and pin6 of the DRM box must be short connected to ensure the normal operation of the inverters.

4. Specifications

4.1 Technical Specifications

Model Number	Solis-DRM-1G
Power supply	200Vac-480Vac
Logic signal Input	12V
Nominal Frequency	50/60Hz
Power Consumption	<3W
Ambient Temperature Range	-25~60℃
Ingress Protection	IP65
Dimensions (W*H*D)	262*240*60mm
Weight	1.7kg

5. System Application

The following sections illustrate the system application with Solis accessories including DRM, EPM-5G-PLUS.

5.1 Single Inverter + DRM + WiFi Stick/LAN Stick

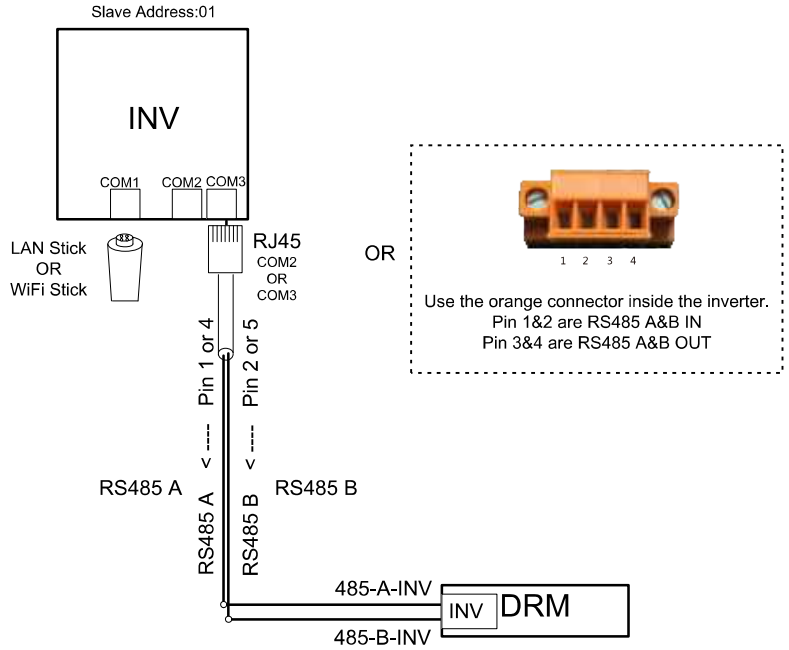

Figure 5.1

5.2 Multiple Inverter + DRM + WiFi Box

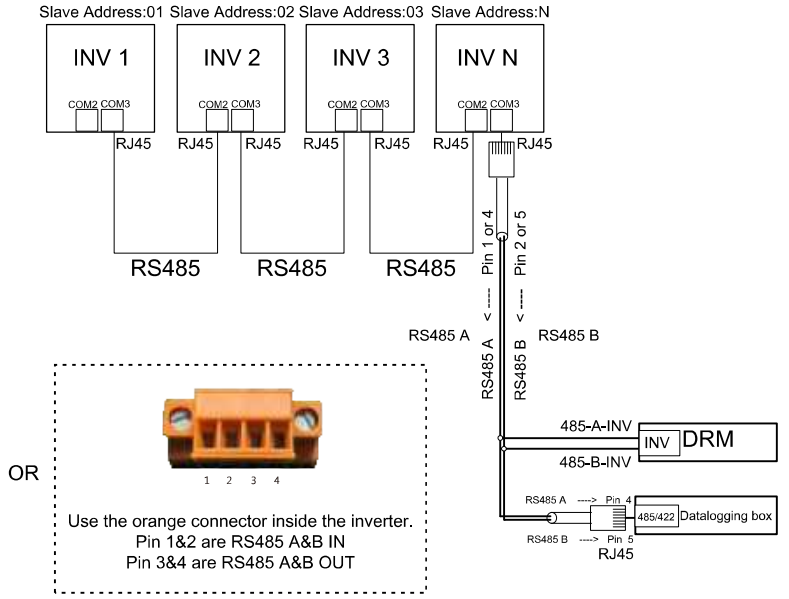

Figure 5.2

5. System Application

5.3 Multiple Inverter + DRM + EPM

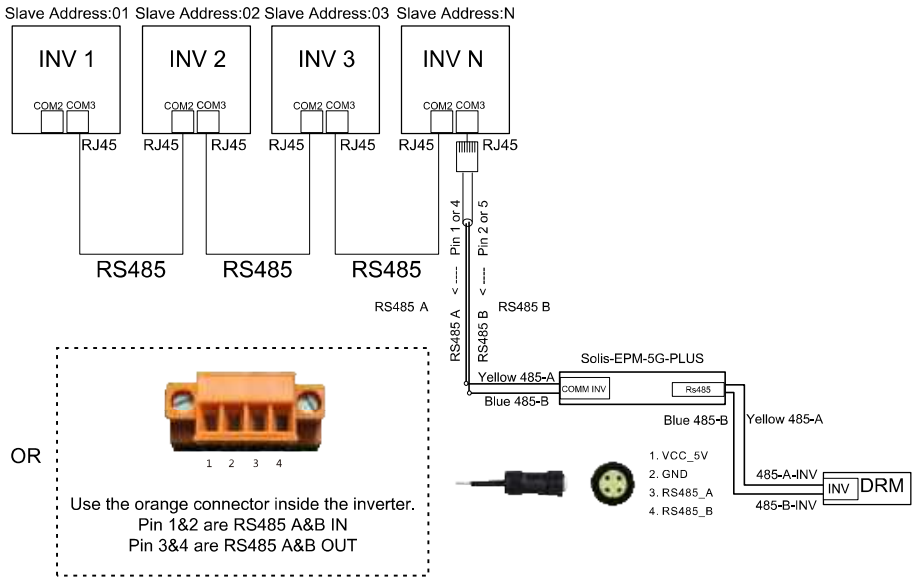

Figure 5.3

NOTE:
The DRM device must be connected to the “RS485" port on the EPM device. Otherwise, the control will fail.