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EN

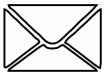
1. SAFETY AND WARNINGS

1.1 Safety Instructions

HM-1000D, produced by Suzhou Hypontech Co,. Ltd., is designed, tested and manufactured strictly aligned with relative safety regulation. As an electric device, installation and maintenance shall follow instructions stated in this document. Incorrect operation may cause physical or financial damage to the operator or third parties.

1. Prevent adolescents to approach HM-1000D.
2. Do not open the lid. Touching or replacing the electronic components without authorization may damage the product and physical damage to personnel. Hypontech will not assume responsibility and warranty under such circumstances.
3. Static electricity may damage electronic components. Appropriate measures should be taken to prevent static electricity.

1.2 Symbols in the document

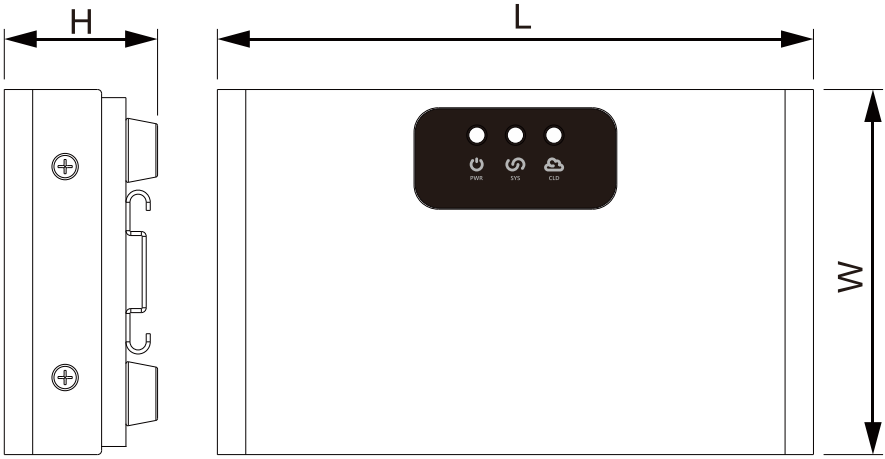
	May cause mild or medium damage		Do not dispose as normal waste
	This side up		Avoid Damp and Moisture
	Recyclable		Caution
	Fragile		Note

2. General Introduction

2.1 Product Introduction

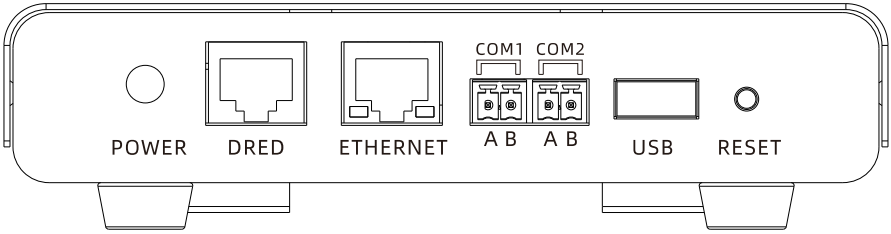
HM-1000D is a PV system monitoring device. Together with ethernet, HM-1000D can collect data from inverters, smart meters and other dataloggers, therefore, to actively control power output, data configuration and firmware update remotely via HiPortal.

2.2Appearance and Interface Introduction



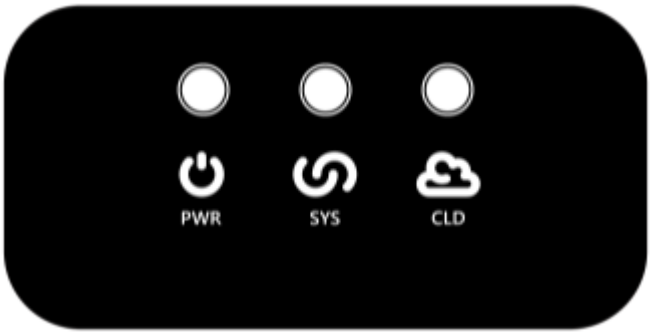
Width	90 mm
Height	38 mm
Length	146 mm

Interface



1	Power Adapter
2	Input for DRED
3	Port for connecting ethernet cable
4	RS485 COM1: for connecting Inverter
5	RS485 COM2: for connecting Smart Meter
6	Port for USB connection
7	Reset Button

2.3 LED Indicator



The LEDs indicate of the product:

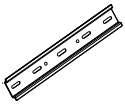
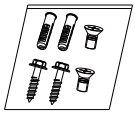
- "PWR" > Power Status
- "SYS" > System Operation Status
- "CLD" > Cloud Server Connection Status

LED Indicator	Status	Explanation
PWR	Glowing red light	Device operation normal
	Flashing red light	Unstable power supply
	OFF	No power supply
SYS	Glowing green light	System operation normal
	Flashing green light	System booting or resetting
	OFF	System not operating
CLD	Glowing yellow light	Cloud server connected
	Flashing yellow light	Internet connected, no connection to cloud
	OFF	Internet not connected

3. Installation

3.1 Packing List

Upon receiving the product, carefully inspect for damage on carton and package completeness. For any visible damage or missing parts on the inverter or any other accessories included in packing list, please contact your dealer.

					
HM-1000D	Power Adapter	RS485 Terminal	DIN Rail	Mounting Accessories	User Manual
1	1	2	1	1	1

3.2 Installing the product

3.2.1 Positioning

1 Protection level of HM-1000D is IP20, it MUST be mounted indoor.

2 Weight and dimension of HM-1000D must be considered to choose installation method and position.

3 Well air ventilation, no direct sun light.

4 Ensure ambiance temperature is in range of -10°C ~ 60°C.

There are 3 options for mounting the product:

- On desktop
- Mounting on wall with countersunk screws
- Mounting on DIN rail

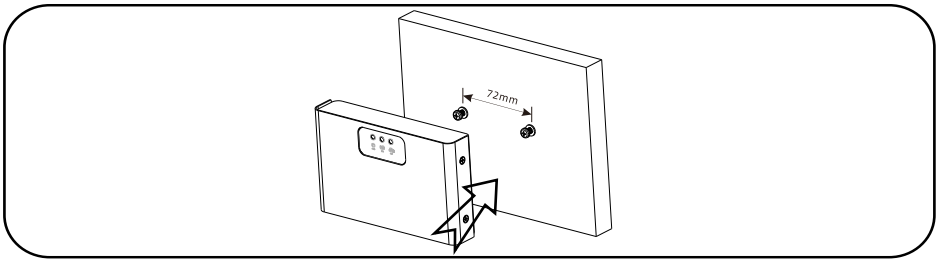
Placing on table

- Remove the packaging
- Put HM-1000D on a horizontal surface.

> ⚠ Please make sure to place HM-1000D on a horizontal surface to avoid slipping down. Keep distance between HM-1000D and other cables to avoid signal interference.

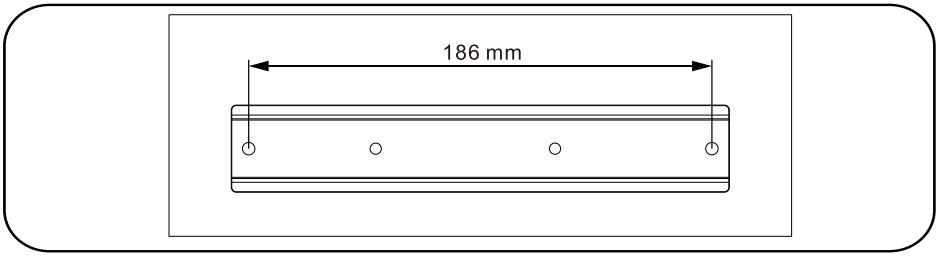
Mounting on wall:

- Mark 2 drill holes on the wall and align them horizontally. Distance between the center of marks should be 72mm. Drill the holes using a 6mm bit to 30mm depth.
- Insert the expansion bolts into the drill holes. Insert the ST4.2 screws into the expansion bolts. Leave the screw heads protruded from the wall surface for 4mm.
- Align the mounting holes on the product to the protruded screws. Hang the product onto the mounting screws. Ensure the product is stably attached.

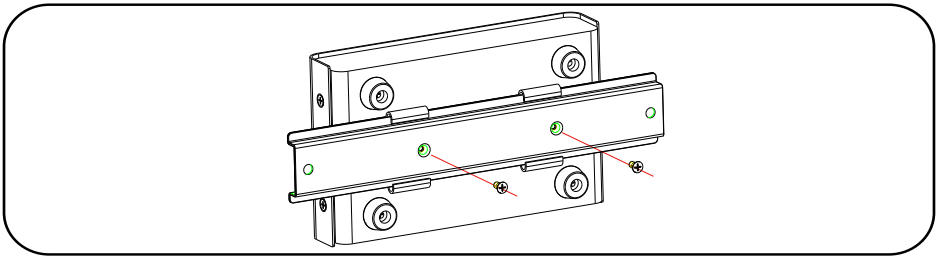


Mounting on DIN Rail

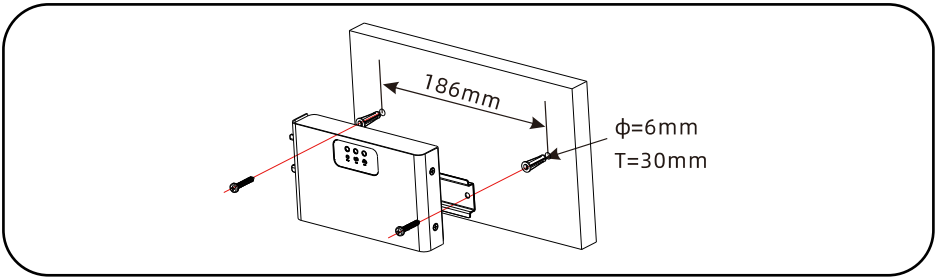
- Mark 2 drill holes using the DIN rail as a template. Distance between the center of marks should be 186mm. Drill the holes using a 6mm bit to 30mm depth.
- Insert the expansion bolts into the drill holes.



- Install the guide rail onto the HM-1000D with M3*6 countersunk head screws

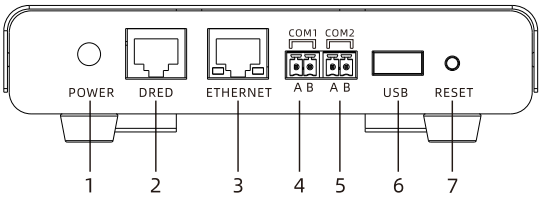


- Fix the DIN rail on the mounting surface with ST4.2 screws.
- Ensure the product is stably attached.



4. CONNECTING THE PRODUCT

4.1 Connection Area



1	Power Adapter
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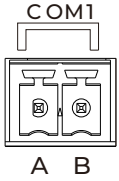
4.2 Connect to Inverter

4.2.1 To single Inverter

The connection port COM1 are used for RS485 cable connections.



Port	Mark	Description
COM1	A	RS485A
	B	RS485B

The cable length and quality may affect the quality of communication between connected Rs485 devices.

Refer to the following cable requirements:

- Maximum cable length: 1000m
- Communication shielding: yes

- Cable type: twisted pair conductors
- UV-resistance for Cable section installed outdoor: recommended

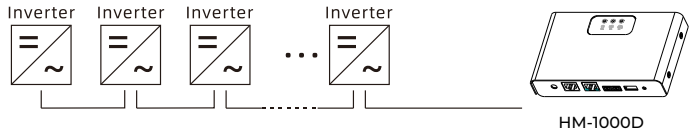
Procedure:

1. Strip off 4-5mm of cable insulation.
2. Loosen the top screws of the RS485 terminal block to release sufficient room for the wire conductors.
3. Fully insert the stripped cable conductors into the terminal block to a stop.
4. Tighten the top screws to close the conductor entries.
5. Observe the polarity assignment of A and B.
6. Plug the RS485 terminal block into COM1 port on the product.

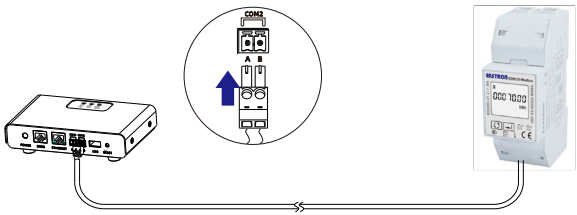
1.Please use standard RS485 shielded twisted pair conductors
2.Connect to COM1 of HM-1000D

4.2.2 Connect to more than one inverter

Multiple inverters can be connected in string. Inverters are inter-connected via COM1, and the last inverter in string connects to COM1 on HM-1000D. Please be advised to connect A to A and B to B. Maximum connection is up to 16 inverters.



4.3 Connect to Smart Meter



1. Please use standard RS485 shielded twisted pair conductors
2. Only connect to COM2 on HM-1000D
3. Refer to 4.2.1 for further instruction

4.4 Connect to DRED

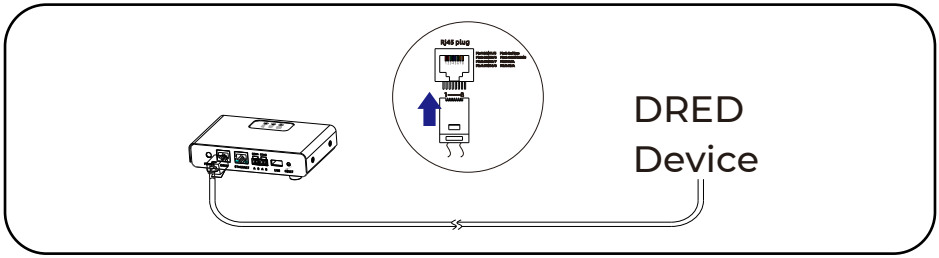
According to AS/NZS 4777.2 of Australian Safety Regulation, power utility company uses DRED to send power grid dispatching dry contact signals. The inverter shall detect and initiate a response to all supported demand response commands.

Pin definition:

Port	Description
REF1	RefGen
1	DRM1/5
2	DRM2/6
3	DRM3/7
4	DRM4/8
REF2	COM/DRM0

Procedure of Installing DRED on HM-1000D

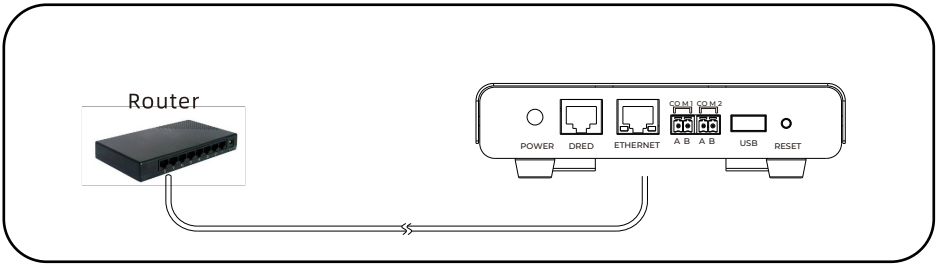
1. Prepare the RJ45 plug for DRED connection.
2. Insert the plug into the DRED socket on HM-1000D until the plug snaps into place.



4.5 Connect to Ethernet

1. Insert the RJ45 plug of the network cable into the Ethernet port until the plug snaps into place.

2. Connect the other end of the network cable to a network source, e.g. a router, access point device.



DHCP service MUST be supported by the router. DHCP MUST be activated.

5. Configuration

Please find further instructions from document HiPortal User Manual EN. This document can be found in www.hypontech.com/xiazai/.

6. Technical Parameter

MODEL	HM-1000D
ELECTRICAL PARAMETERS	
Input Voltage / V	DC 7.5 - 12
Input Current / mA	300
Max. Power Consumption / W	2.5
Power Supply Type	AC Adaptor
Number of connected interfaces	
Ethernet 10/100 Mbit/s	1
RS485	2
LED	3
COMMUNICATION	
RS485 Communication Range / m	1000
Ethernet Communication Range / m	100
HiPortal Compatibility	Yes
Features	
Max. Number of Inverters	16
Active Power Limit	Yes
Power Adjustment	Yes
Firmware Update	App/Web
GENERAL DATA	
Dimensions (W*H*D) / mm	146*90*38
Weight / g	410
Installation Method	On wall / Indoor
Operating Ambient Temperature / ℃	-10~ +60
Storage Ambient Temperature / ℃	-30 ~ +80
Relative Humidity	5% to 95%
Protection class	IP20

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