Ethernet Network Card

Quick Installation and Operation Manual

Revision A

1. Overview

1.1 Introduction

The Ethernet Network Card is used for monitoring and controlling purposes. The Ethernet Network Card supports industry standard Modbus RS485 communication and TCP/IP protocol. When provided with internet connection, it can send data to an online portal from where you can monitor up to 32 inverters connected to it. It can also be used to remotely update the inverter firmware.

1.2 Appearance and Main Item Description

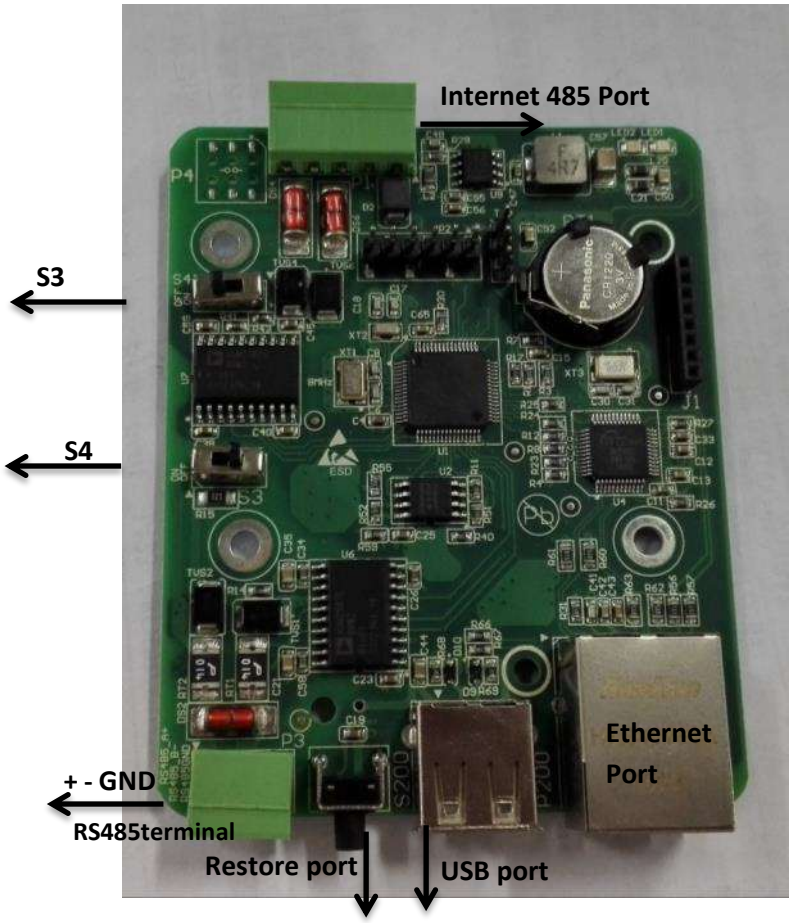


Figure 1-1 Ethernet Network Card

Table 2.12 – Overview of Ethernet card

Item	Configuration description and Function
USB port	Firmware upgrade via USB disk
RS485 3PIN	1.RS485+ 2. RS485- 3 .Ground For RS485 communication with the other inverter
Internal RS485 Port	For RS485 communication with the communication board of inverter
S3 Switch	Selector switch for setting the 120Ω terminal resistor of the Third part Data logger RS485 communication.
S4 Switch	Selector switch for setting the 120Ω terminal resistor of the RS485 communication between the inverters.
Restore button	Press the button over 5s, and the inverter will be restored to the factory setting.

2. Installation

The Ethernet Card and accessories are shipped in one package. Before installation, please check that the following items are included in the packages.

No.	Item	Qty	Note
1	5 pin connector	1	
2	3 pin connector	1	
3	Installation manual	1	

2.1 Installation Method:

Before installing, please note the following:

- The Ethernet Card must be installed in the 50-60kW wiring box.
- It should be installed either on the first or last inverter of the daisy chain

Below is the installation procedure for the Ethernet Network Card. Please read carefully and install the product following the step-by-step instructions.

2.1.1 Installing the Ethernet Network Card

Figure 2-1 Communication card and location for Ethernet Network card

The Ethernet Network Card will be installed in the first or last inverter of the daisy chain.

1. Obtain the Ethernet Network Card that was shipped to you.

2. Remove the screws from the Communication Card and Install the included standoffs in the 3 locations shown.

3. Install the Ethernet Network Card, taking care to line up the black connector in the upper left corner on the pins of the Communication Card. Ensure the pins are seated in the connector. Install the 3 screws and torque to 7 in-lbs using #2 Phillips bit.

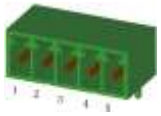
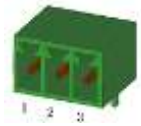
Figure 2-2 Standoffs installation

Figure 2-3 Ethernet Network card installed

The Ethernet Network Card supports industry standard Modbus RS485 communication and TCP/IP protocol.

Below is a brief description of the board:

Figure 2-4: Ethernet Card

Item	Picture	Configuration description
① RS485 port (5pin connector)		1 -----12V+ 2 -----12VGND 3 -----RS485+ 4 -----RS485- 5 -----COM
②RS485 port (3pin connector) Pass through function		1 -----RS485+ 2 -----RS485- 3 -----COM
③ Reset buttom		Restore the Ethernet Card to the factory setting
④USB port S200		Firmware upgrade via USB disk

⑤Ethernet Port（transfer data to 2 different IP address）		Set IP address in the webserver

2.2 Network Connection:

When the inverters are monitored via the Ethernet Network Card, a unique RS485 address for each inverter can be set up through the LCD interface. Up to 32 inverters can be connected together in the communication network. The daisy-chain topology recommended for the network connection is shown in Figure 2-4. Other communication topologies, such as the star network, are not recommended.

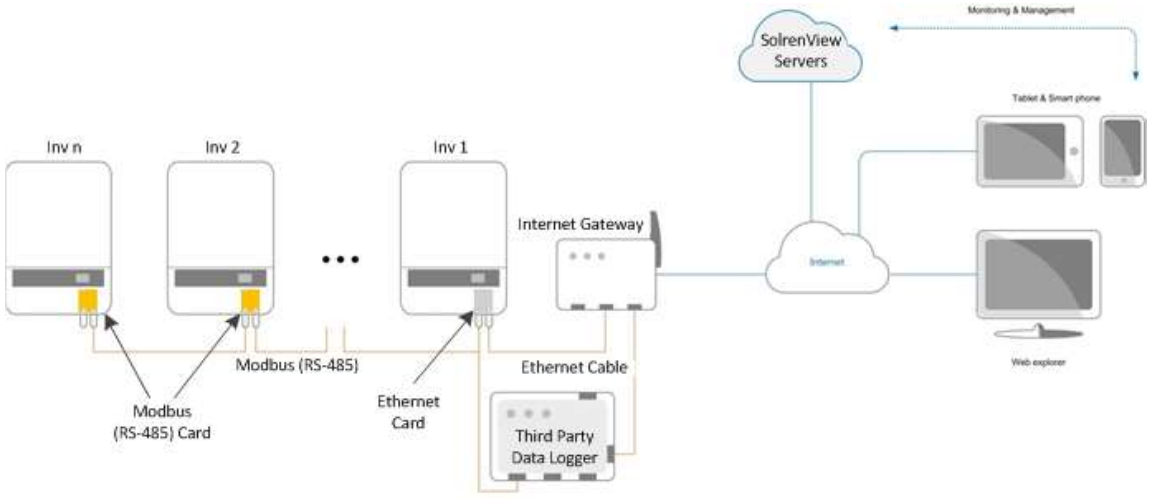


Figure 2-1: Network topology

3. Configuration

3.1 Preparing Ethernet Network Card

1. Connect a laptop to the Ethernet Network Card by CAT5 cable, as shown below

Figure 3-1: Connecting to the card

2. Start the inverter and press and hold the restore factory setting button for 8 seconds. Release it after the running indicator has stopped flashing.

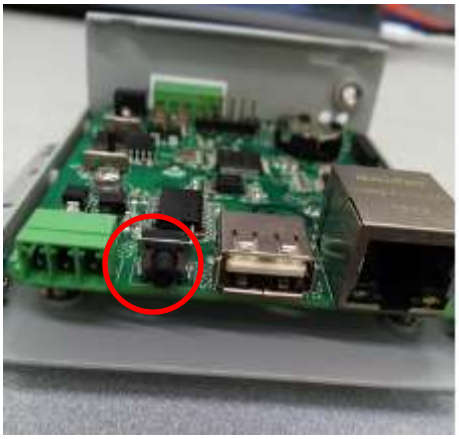


Figure 3-2: Resetting the card

3. Set the laptop IP address by following below steps:

- Go to Control Panel and select Network and Sharing Center. Click on Local Area Connection

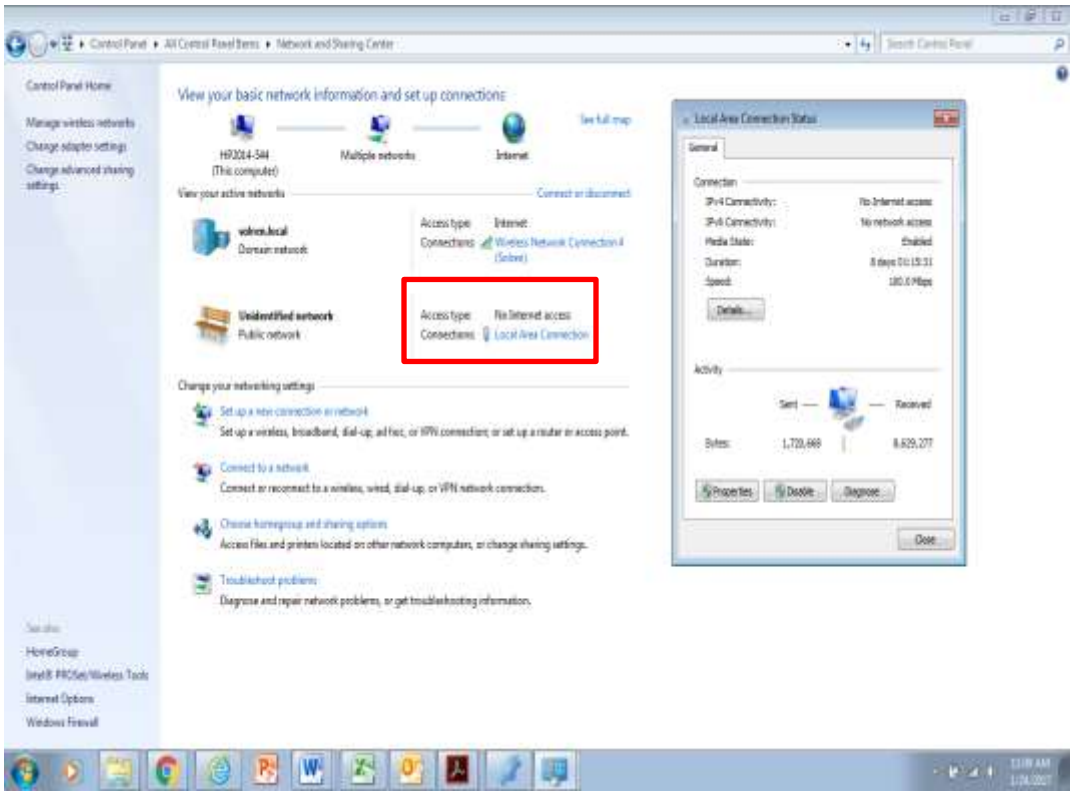


Figure 3-3: Opening the local network

- Click on properties in the pop up window and following window will appear

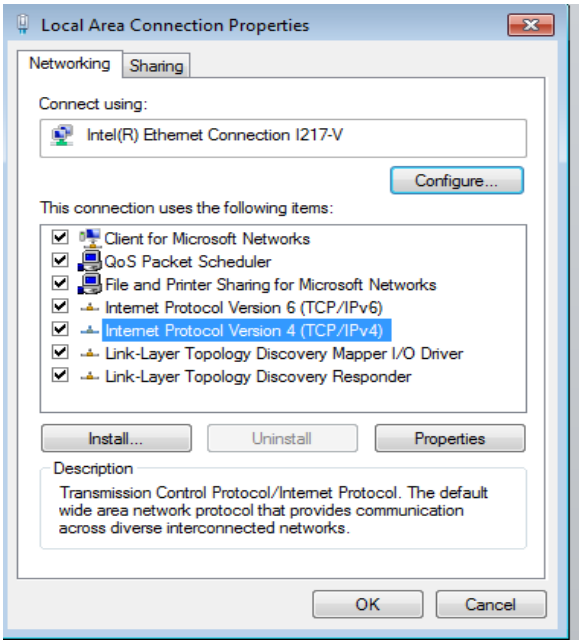


Figure 3-4: Selecting TCP/IPv4

- Double click on Internet Protocol Version 4 and the fill out the following information

IP address: 10.122.1.x （ x from 0-255 ， except 25 ）

Subnet mask: 255.255.255.0

Gateway: 10.122.1.254

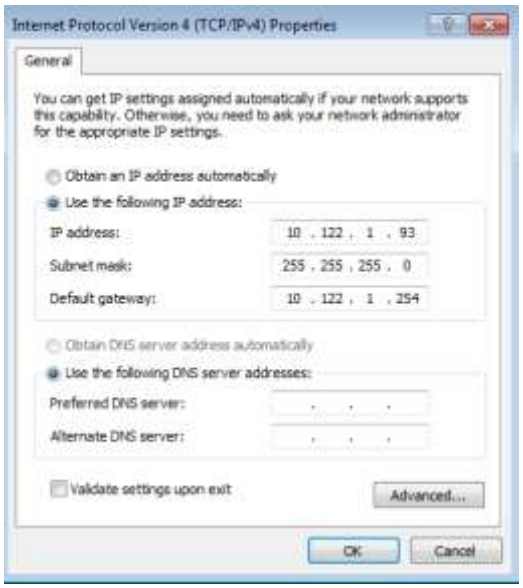


Figure 3-5: Applying the IP settings

- Select OK.

4. Open a web browser (i.e. Internet Explorer, Chrome) and enter the IP address: 10.122.1.25 in the address bar. Next, enter both the username and password as “admin”, as shown in Figure 3-1

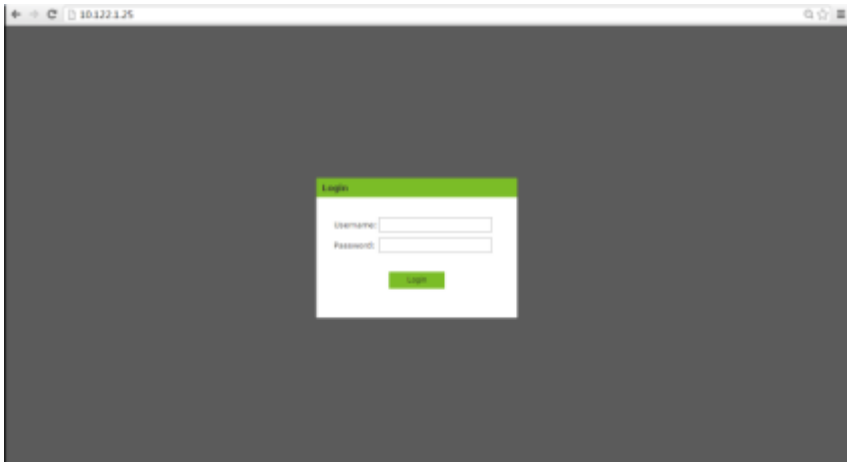


Figure 3-6: Accessing the card

5. Once you have logged in, the main page is displayed and shows all the inverters connected to the Ethernet Network Card, as shown in Figure 3-2

Figure 3-7: Portal view

6. Click the "Configure" button and enter the configuration page, as shown in Figure 3-3

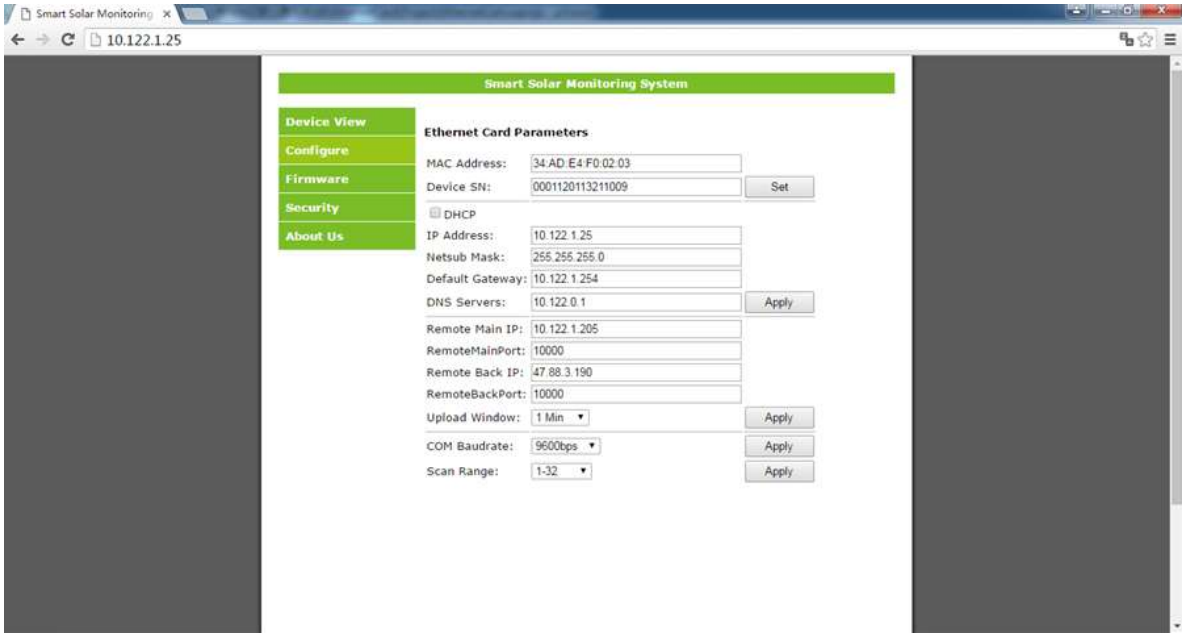


Figure 3-8: Setting up the IP address

7. The mac address and Device S/N are the factory setting; please do not modify these. The IP address, subnet mask and gateway are set to connect to the local router. Remote Domain IP and Remote Port are set to the webserver address and the US server domain IP is 47.88.3.190, the port number is 10000. These values should autofill. Please contact Yaskawa Solectria Technical Support if they do not or if you have any further questions (978-683-9700 x2).
8. Please fill out the following information and send it in an email to monitoring@solectria.com :
   Site Name:
   Country:
   State:
   Street Address:
   Time Zone:
   Ethernet Card Serial Number: