

## OVERVIEW

**Input:**

- Innovative Energies ASCII code from power supply
- 4 optional digital inputs (clean contacts required)

**Outputs:**

- Modbus RTU via RS485 & RS232
- MODBUS TCP and HTTP via ethernet (LAN)
- 2 optional digital outputs (TTL switched)

**+PROTOCONMB-OE** for *No-Break™* DC UPS eg. SR100i - SR750i and Standard DC supply SR100L-SR750L

The converter is supplied with 'Power MBLink' software which used to configure the system.

## SPECIFICATIONS

### ELECTRICAL

- Power supply: 9 - 35VDC, 2.5W
- Digital Inputs: Volt Free Contact inputs with no isolation (Maximum of 4 Inputs)
- Digital Outputs: Relay Outputs max 2A at 30VDC (Maximum of 2 Outputs)

### COMMUNICATIONS

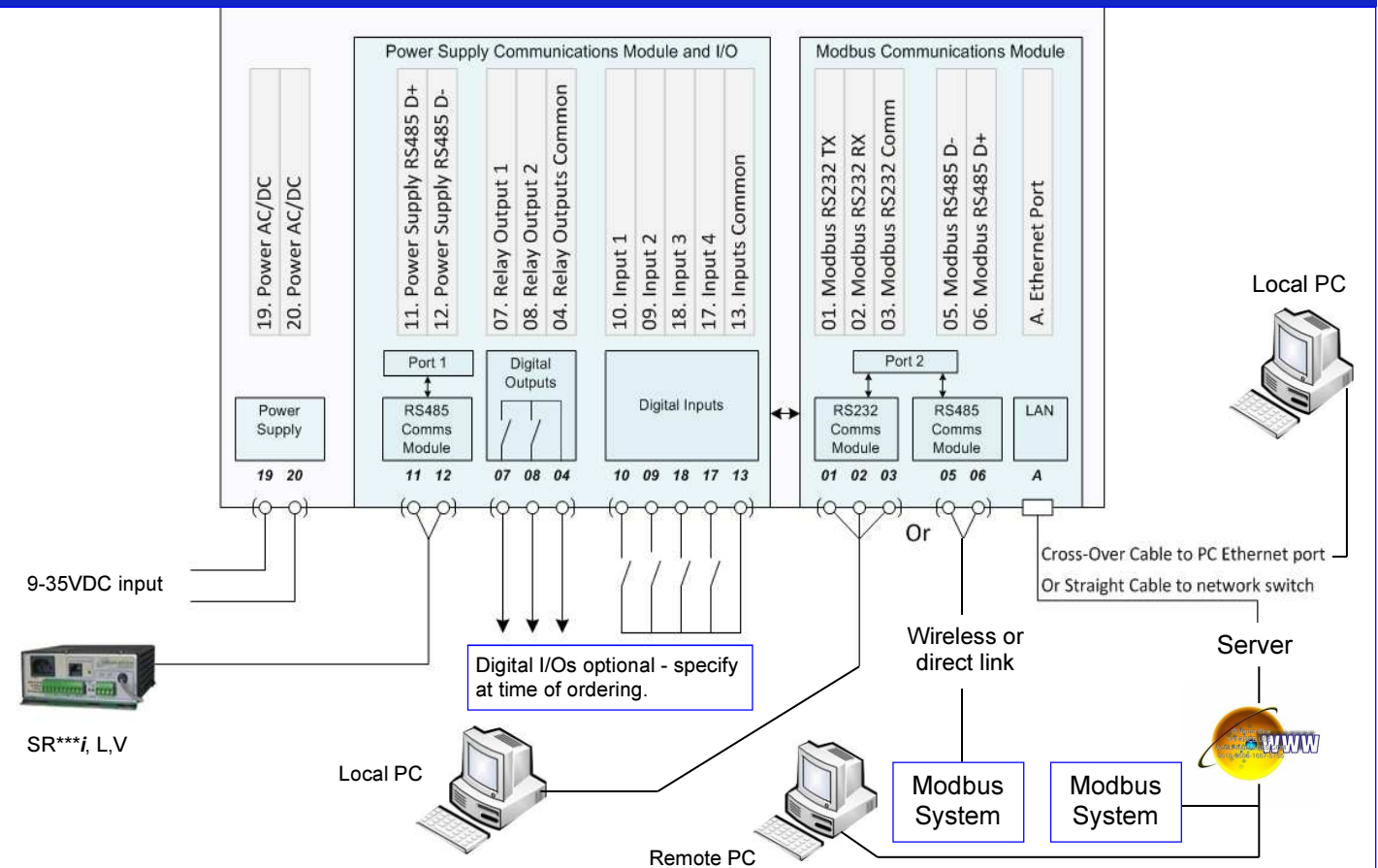
- Ethernet Port Speed: 10Mbps Half Duplex, IPv4
- Power Supply Communication Port: RS485 with no isolation
- Modbus Serial Communication Port: RS485 with no isolation, RS232 with no isolation or flow control.

### PROTOCOLS

- Modbus RTU Functions 1, 3, 5, 6, 15, 16
- Modbus TCP Functions 1, 3, 5, 6, 15, 16
- Internet Protocol: HTTP
- Internet Protocol: ARP/ICMPv4/TCP



## WIRING DIAGRAM



## COMMUNICATION SETTINGS

The 'Comm Settings' Section is used for the following functions:

- Choosing the PC communication port and comms parameters
- Setting device Modbus address to be configured
- Displaying specifications of the device connected to the serial port
- Displaying Ethernet interface IP details and MAC address
- Setting Ethernet interface IP details

The screenshot displays the 'Power EtherMblink v1.0' software interface. The main window is titled 'Power EtherMblink v1.0' and contains several tabs: 'Comm. Settings', 'Power Supply Monitor', 'Configuration Data', 'Modbus Monitor', 'Modbus Monitor Control', and 'Device Information'. The 'Comm. Settings' tab is active, showing 'PC Serial Port Communication Settings' with fields for Port (7), Baud Rate (9600), Parity (None), Data Bits (8), and Stop Bits (1). There are buttons for 'List Ports', 'Open Port', and 'Close Port'. Below this is the 'Modbus Address of Current Connection' section with a 'Modbus Address' field set to 1. The 'New Device Serial Communication Settings' section includes fields for Address (1), Baud Rate (9600), Parity (None), Data Bits (8), and Stop Bits (1), with a 'Send New Comm Settings' button. The 'Device Details' section shows fields for Type (120), Hardware Rev (v1.0), Firmware Rev (v1.0), Released (18-4-10), and Serial Number (10-00120-00000001). There is a 'Get Specs' button and a small image of the device. The 'TCP/IP Settings' section includes fields for IP Address (192.168.8.60), Gateway (192.168.8.255), Subnet Mask (255.255.255.0), and MAC Address (0 29 48 0 0 1), with buttons for 'Send New IP Settings' and 'Get Current IP Settings'. The interface also features a logo for 'Innovative Energies Ethernet Power Mblink' on the left, a 'DOZEENER CONTROLS' logo, and the 'innovative energies' logo at the bottom. A status bar at the bottom shows a notice: 'Code: 03013, Type: Notice, Description: Updating of Information From Device With Address 1 Ended.'

# Protocol Converter - MODBUS via RS232/RS485/ LAN

# +PROTOCONMB-X-OE

## POWER SUPPLY MONITOR FOR +PROTOCONMB-OE (Single Battery Output DC UPS)

**Power EtherMblink v1.0**

Comm. Settings | Power Supply Monitor | Configuration Data | Modbus Monitor | Modbus Monitor Control | Device Information

**Power Supply Variables**

|                                   |                                   |  |                                       |
|-----------------------------------|-----------------------------------|--|---------------------------------------|
| Output Voltage: <b>13.3</b> Volts | Battery Current: <b>18.7</b> Amps | Power Supply Current: <b>07.9</b> Amps | Battery Temperature: <b>14.0</b> DegC |
|-----------------------------------|-----------------------------------|--|---------------------------------------|

**Status**

|                      |                 |                       |                     |
|----------------------|-----------------|-----------------------|---------------------|
| Normal Operation     | Battery Present | Battery OK (Pwr Fail) | Battery Charging    |
| Batt. Condition Test | BCT Enabled     | Retry BCT on Fail     | Battery Discharging |
| Batt in Good Cond.   |                 | BCT Enable.Ack        | BCT Disable.Ack     |
|                      |                 | BCT Start.Ack         | BCT Stop.Ack        |

**Alarms**

|                    |                     |                          |                   |
|--------------------|---------------------|--------------------------|-------------------|
| Mains Failure      | Possible M/PSU Fail | <b>Batt in Bad Cond.</b> | Comms to PSU Fail |
| Overload           | System Down         | Battery Missing          | Battery Low       |
| Poss. Batt Missing |                     |                          |                   |

**Inputs**

|         |         |         |         |
|---------|---------|---------|---------|
| Input 1 | Input 2 | Input 3 | Input 4 |
|---------|---------|---------|---------|

**Outputs**

|          |          |
|----------|----------|
| Output 1 | Output 2 |
|----------|----------|

**Communications**

IP Address: 0.0.0.0  
Address: 1 (Set To Serial)

Single Update  
Continuous Update  
Stop Update

Watchdog: 2188

**Battery Condition Test**

Start BCT  
Stop BCT  
BCT Enable  
BCT Disable

**Digital Outputs Control**

Enable Output 1  
Disable Output 1  
Enable Output 2  
Disable Output 2

Code Type Description  
Notice: 03013 Notice Updating of Information From Device With Address 1 Ended.

## POWER SUPPLY MONITOR FOR +PROTOCONMB-V-OE (Dual battery string DC UPS)

**Power EtherMblink2 v1.0**

Comm. Settings | Power Supply Monitor | Configuration Data | Modbus Monitor | Modbus Monitor Control | Device Information

**Power Supply Variables**

|                                   |                                   |  |                                       |
|-----------------------------------|-----------------------------------|--|---------------------------------------|
| Output Voltage: <b>12.7</b> Volts | Battery Current: <b>00.9</b> Amps | Power Supply Current: <b>01.9</b> Amps | Battery Temperature: <b>21.0</b> DegC |
|-----------------------------------|-----------------------------------|--|---------------------------------------|

**System Status**

|                  |                     |                      |          |             |
|------------------|---------------------|----------------------|----------|-------------|
| Normal Operation | Possible Mains Fail | <b>Mains Failure</b> | Overload | System Down |
|------------------|---------------------|----------------------|----------|-------------|

**Battery String 1 Status**

|         |          |             |         |     |         |
|---------|----------|-------------|---------|-----|---------|
| Present | Charging | Discharging | Resting | Low | Missing |
|---------|----------|-------------|---------|-----|---------|

**Battery String 2 Status**

|         |          |             |         |     |         |
|---------|----------|-------------|---------|-----|---------|
| Present | Charging | Discharging | Resting | Low | Missing |
|---------|----------|-------------|---------|-----|---------|

**BCT Status**

|             |              |                 |                 |
|-------------|--------------|-----------------|-----------------|
| BCT Enabled | BCT Disabled | Bat. 1 Next BCT | Bat. 2 Next BCT |
|-------------|--------------|-----------------|-----------------|

**Battery String 1 Condition**

|                |         |               |
|----------------|---------|---------------|
| Good Condition | Testing | Bad Condition |
|----------------|---------|---------------|

**Battery String 2 Condition**

|                |         |               |
|----------------|---------|---------------|
| Good Condition | Testing | Bad Condition |
|----------------|---------|---------------|

**Inputs**

|         |         |         |         |
|---------|---------|---------|---------|
| Input 1 | Input 2 | Input 3 | Input 4 |
|---------|---------|---------|---------|

**Comm. Converter to PC**

|          |              |
|----------|--------------|
| Comms OK | Comms Failed |
|----------|--------------|

**Comm. PSU to Converter**

|          |              |
|----------|--------------|
| Comms OK | Comms Failed |
|----------|--------------|

**Communications**

MB Address: 1 IP Address: 0.0.0.0 (Set To Serial)

Watchdog: 7412

Single Update  
Continuous Update  
Stop Update

**Control**

Toggle Reset.Ack  
Clear Bad Bct.Ack  
BCT Start.Ack  
BCT Stop.Ack  
BCT Enable.Ack  
BCT Disable.Ack  
Toggle Bat.Ack

Reset Temperature Log  
Clear Bad Battery  
Start BCT  
Stop BCT  
BCT Enable  
BCT Disable  
Toggle BCT Bat.

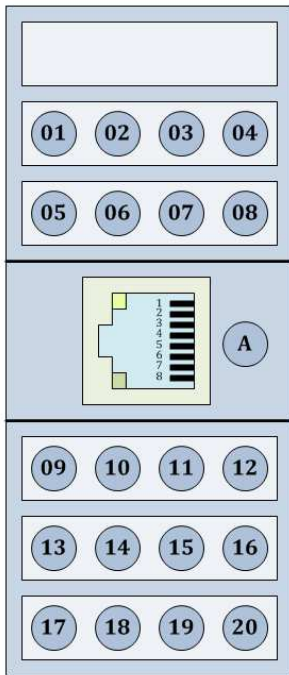
**Digital Outputs Control**

Output 1: Enable Output 1, Disable Output 1  
Output 2: Enable Output 2, Disable Output 2

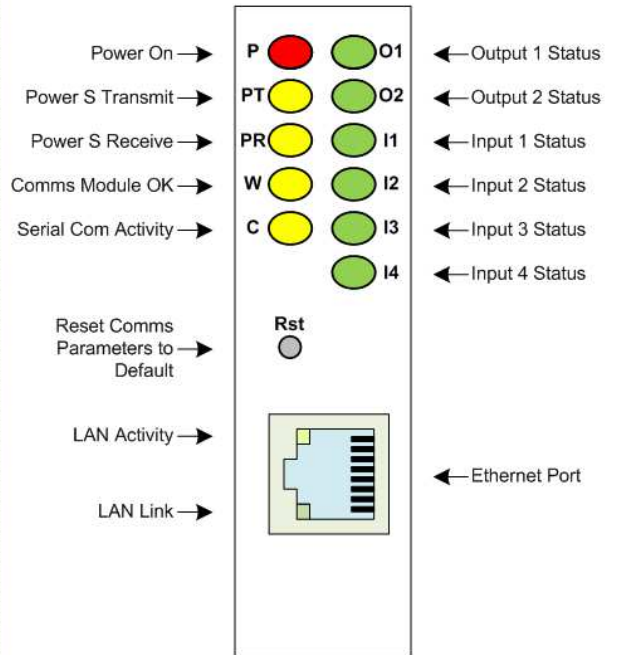
Code Type Description  
Notice: 03006 Notice Updating Information From Device With Address 1



## TERMINALS & FRONT PANEL LAYOUTS



|                               |
|-------------------------------|
| 01. Modbus RS232 TX           |
| 02. Modbus RS232 RX           |
| 03. Modbus RS232 Common       |
| 04. Relay Outputs Common      |
| 05. Modbus RS485 D-           |
| 06. Modbus RS485 D+           |
| 07. Relay Output 1 (Optional) |
| 08. Relay Output 2 (Optional) |
| A. Ethernet Port              |
| 09. Input 2 (Optional)        |
| 10. Input 1 (Optional)        |
| 11. Power Supply RS485 D+     |
| 12. Power Supply RS485 D-     |
| 13. Inputs Common             |
| 14. Unused                    |
| 15. Unused                    |
| 16. Unused                    |
| 17. Input 4 (Optional)        |
| 18. Input 3 (Optional)        |
| 19. Power AC/DC               |
| 20. Power AC/DC               |



## CONFIGURATION DATA

The screenshot shows the 'Configuration Data' tab of the 'Power EtherMblink v1.0' software. The interface is divided into several sections:

- Modbus Packets:** Successful Polls: 36, Failed Polls: 1. A 'Rest Counters' button is present.
- Battery Settings:** Battery disconnect V, Battery Charge I limit, Length of BCT, Time interval between BCTs, and Mains fail check interval during BCT.
- Power Supply Settings:**
  - BatDetect: 29 Minutes
  - VPres: 12.2 Volts
  - VShut: 11.5 Volts
  - VBatt: 11.0 Volts
  - VDisco: 10.0 Volts
  - BCCL: 100 %
  - BCTim: 5 Minutes
  - CCMins: 2 Minutes
  - CCHrs: 1 Hours
  - CCDays: 24 Days
  - MfiBCT: 2 Minutes
- Help/Info:** A tooltip box says: 'Hover mouse over Power Supply Settings to display a description below. Move mouse over power supply setting to display a description of the parameter'.
- Status Bar:** Code: 03013, Type: Notice, Description: Updating of Information From Device With Address 1 Ended.

**Note:** Power Supply Settings are pre-programmed by Innovative Energies to customer's requirements.