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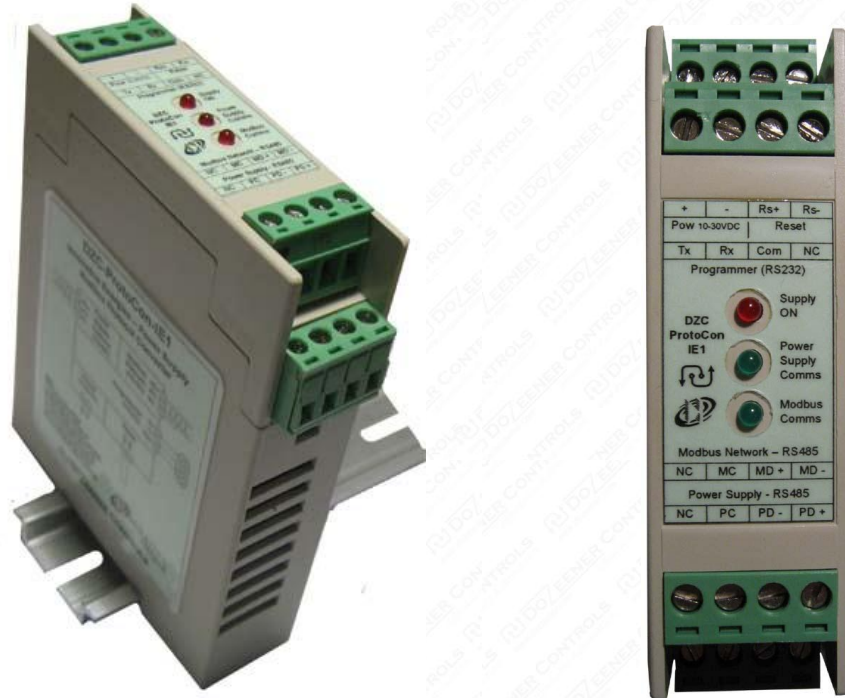
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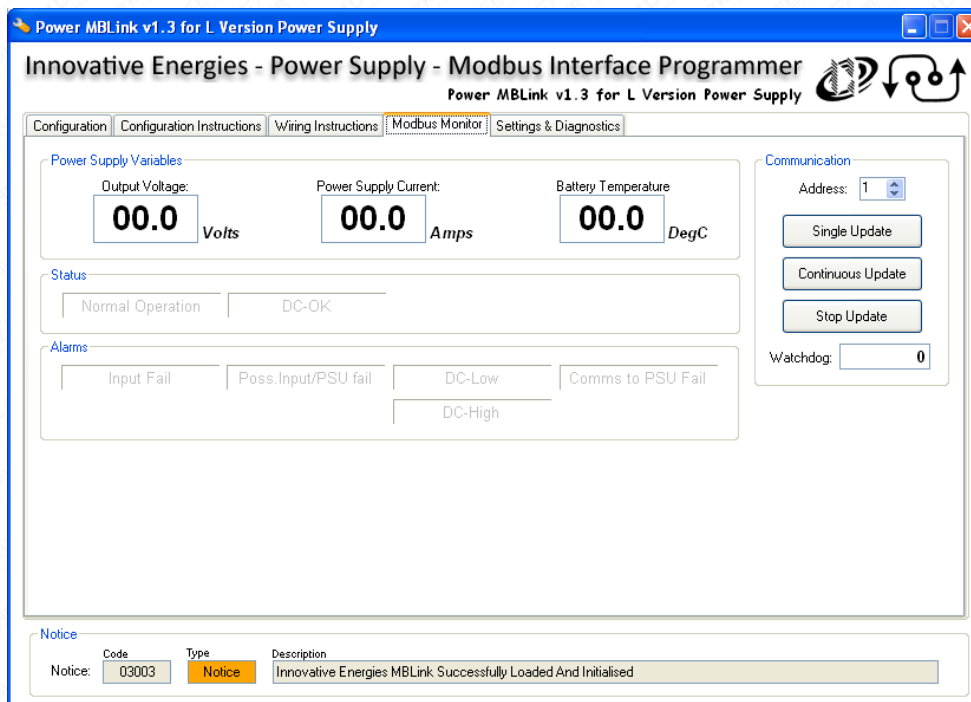
## INTRODUCTION



This product must be used with innovative energies power supplies with the serial interface.

The 'Power MBLink' software is used to configure the Modbus address and baud rate of the interface.

Also it is a useful tool to monitor real time the various Innovative Energies power supply parameters via the DZC-Protocon-IE1 Modbus port.



## SERIAL MODBUS RTU PROTOCOL

The DZC-Protocon-IE1 module is compatible with the following Modbus function codes:

- 01 – Read Coil Status
- 03 – Read Holding Registers
- 05 – Force Single Coil
- 06 – Preset Single Register
- 15 – Force Multiple Coils
- 16 – Preset Multiple Registers
- 22 – Mask Write 4X Register

A maximum of 80 coils can be polled at one time using function 1

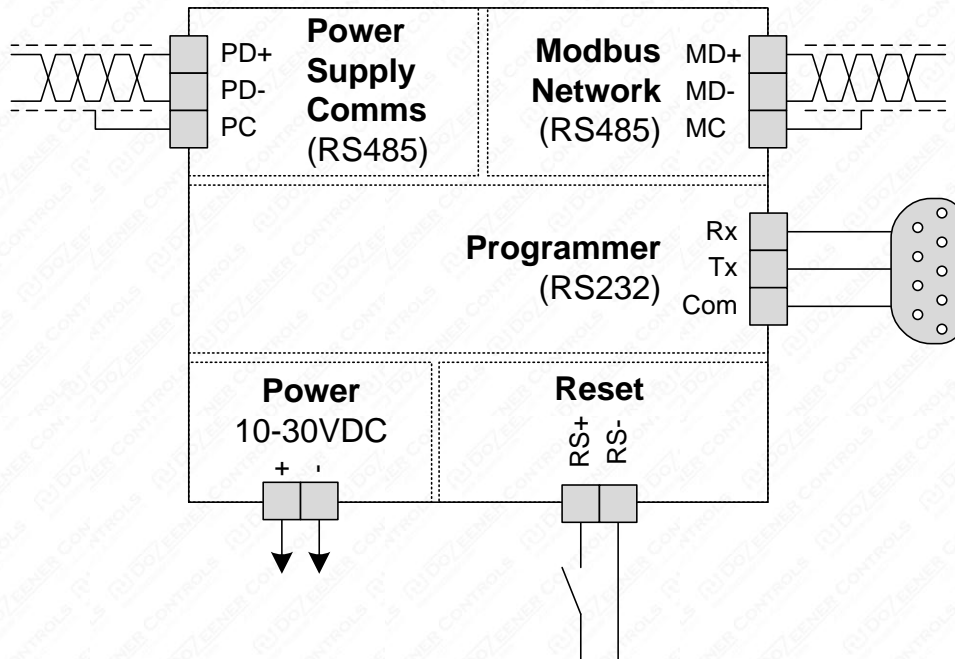
A maximum of 32 register can be polled at one time using function 03

A maximum of 5 register can be preset at one time using function 06

A maximum of 32 coils can be preset at one time using function 15

Modbus ASCII Mode is not supported.

## WIRING DIAGRAM



## COMMUNICATION SETTINGS

The communication parameters of the protocol converter can be changed via the software "Power MBLink"

The following Baud Rate Settings are possible:

- 9600
- 14400
- 19200
- 38400
- 5600
- 57600
- 115200

The Modbus slave device also can be changed via the software

Parity can be changed to None, Odd, Even, Space and Mark only to models released after November 2009.

The Data Bits and Stop Bits cannot be changed and are set as 8 and 1 respectively.

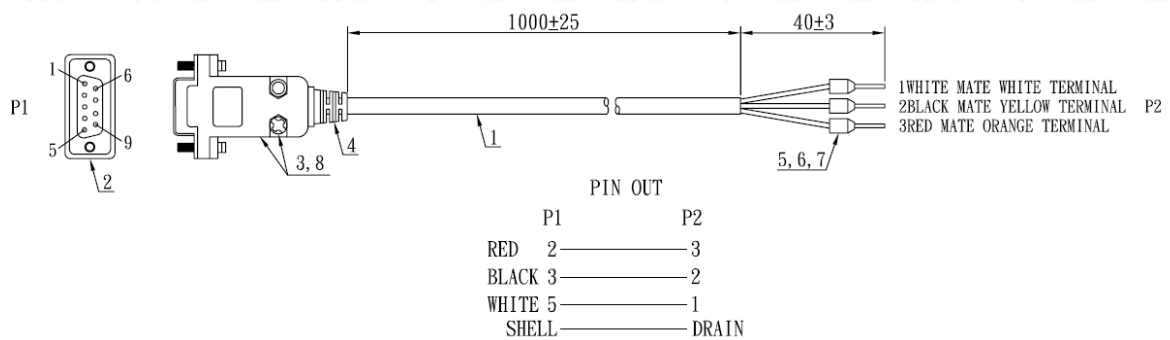
## RESETTING TO DEFAULT COMMUNICATION PARAMETERS

To reset to the default communication settings of

- Modbus address 1
- Baud rate 9600
- No parity
- 8 data bits and
- 1 stop bit

The reset connections RS+ and RS- must be shorted while powering up the device, then removed after approximately 5 seconds.

## PROGRAMMING CABLE



### Connections to protocol Converter

- White – Common
- Black – RX
- Red – TX



## MODBUS REGISTER SET (MODBUS FUNCTIONS 3, 6, 15 & 22)

### GENERAL

Reference	Modbus Address	Description	Type	Read/Write
Watchdog	40001	Watchdog	Register	R

### DIGITAL MONITORING

Reference	Modbus Address	Description	Type	Read/Write
BP	40011:5	DC - OK	Bit	R
BM	40011:6	DC - LOW	Bit	R
BL	40011:7	DC - HIGH	Bit	R

### ANALOGUE PARAMETERS

Reference	Modbus Address	Description	Type	Read/Write
Vout	40014	Output Voltage (Scaled 1:10; 245 = 24.5 Volts)	Register	R
Ipsu	40016	Power Supply Current (Scaled 1:10; 123 = 12.3 Amps)	Register	R
Temp	40017	Temperature (in DegC)	Register	R

### ANALOGUE SETTINGS

Reference	Modbus Address	Description	Type	Read/Write
DCLow	40019	DC Low alarm level (Scaled 1:10 in Volts)	Register	R
DCHigh	40021	DC High alarm level (Scaled 1:10 in Volts)	Register	R

## MODBUS COIL (BIT) SET (MODBUS FUNCTIONS 1, 5 & 15)

Reference	Modbus Address	Description	Type	Read/Write
BP	00005	DC - OK	Bit	R
BM	00006	DC - LOW	Bit	R
BL	00007	DC - HIGH	Bit	R

## REVISION HISTORY

Revision Number	Date Revised	Revised By	Description
1	9-Apr-12	RM	Initial Revision (Based on DZC-PCON-0030001-EM-03)