
Innovative Energies
Power Supply Modbus Interface Programmer
'Power MBLink v1.2'
And
DZC-Protocon-IE1 Module

User Manual

Revision 1 (Released 13-Apr-2008)



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Introduction

This software must be used with the product – Innovative Energies Power Supply Modbus Interface, part number DZC-Protocon-IE1.

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:

03 – Read Holding Registers

06 – Preset Single Register

16 – Preset Multiple Registers

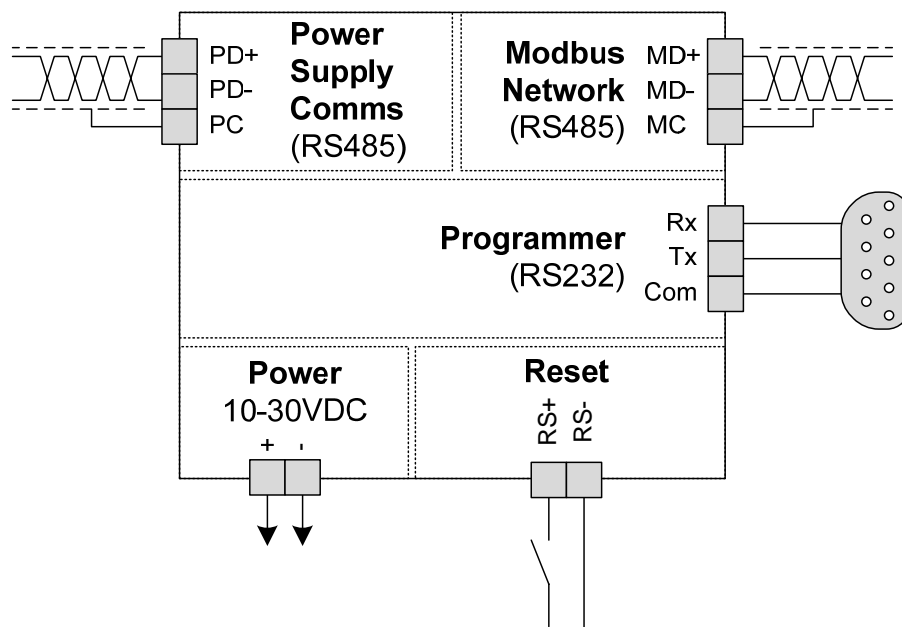
22 – Mask Write 4X Register

A maximum of 30 register can be polled at one time using function 03

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

Modbus ASCII Mode is not supported.

Wiring Diagram



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.

Modbus Register Set

Modbus Register Set				
From Address	To Address	Description		
40001	40010	General Monitoring		
40011	40030	Monitoring and Control for Power Supply 1		
40031	40050	Monitoring and Control for Power Supply 2 (Future)		
40051	40070	Monitoring and Control for Power Supply 3 (Future)		
40071	40090	Monitoring and Control for Power Supply 4 (Future)		
Reference	Modbus Address	Description	Type	Read/Write
		General		
Watchdog	40001	Watchdog	Register	R
Unused	40002	Unused	Register	R
Unused	40003	Unused	Register	R
Unused	40004	Unused	Register	R
Unused	40005	Unused	Register	R
Unused	40006	Unused	Register	R
Unused	40007	Unused	Register	R
Unused	40008	Unused	Register	R
Unused	40009	Unused	Register	R
Unused	40010	Unused	Register	R
		Power Supply 1		
CC	40011:1	Charge Cycle (Normal Operation)	Bit	R
OL	40011:2	Overload	Bit	R
MF	40011:3	Mains Failure	Bit	R
BCT	40011:4	Battery Condition Test	Bit	R
BP	40011:5	Battery Present	Bit	R
BM	40011:6	Battery Missing	Bit	R
BL	40011:7	Battery Low	Bit	R
BB	40011:8	Battery Bad	Bit	R
M?	40011:9	Power Supply or Mains Failed (Brown Out)	Bit	R
B?	40011:10	Possibly Battery Missing	Bit	R
SD	40011:11	System Down	Bit	R
BO	40011:12	Battery OK during mains/psu fail	Bit	R
Bcond	40011:13	Battery Condition Test Enabled	Bit	R
Ret	40011:14	Retry Battery Test on Fail	Bit	R
TempSign	40011:15	Temperature Sign (1 = Negative, 0 = Positive)	Bit	R
BatSign	40011:16	Battery Current Sign (1 = Out, = 0 In)	Bit	R
BCT Start	40012:1	Battery Condition Test Started	Bit	R
BCT Stop	40012:2	Battery Condition Test Stopped	Bit	R
BCT Enable	40012:3	Battery Condition Test Enabled	Bit	R
BCT Disable	40012:4	Battery Condition Test Disabled	Bit	R
CommsF	40012:5	Communications Failure to Power Supply	Bit	R
Spare	40012:6	Spare	Bit	R
Spare	40012:7	Spare	Bit	R
Spare	40012:8	Spare	Bit	R
b?	40012:9	Possibly Battery Missing (Battery Bad)	Bit	R
bM	40012:10	Battery Missing (Battery Bad)	Bit	R

Reference	Modbus Address	Description	Type	Read/Write
bO	40012:11	Battery OK during mains/psu fail (Battery Bad)	Bit	R
bL	40012:12	Battery Low (Battery Bad)	Bit	R
bP	40012:13	Battery Present (Battery Bad)	Bit	R
Spare	40012:14	Spare	Bit	R
Spare	40012:15	Spare	Bit	R
Spare	40012:16	Spare	Bit	R
BCT Start	40013:1	Start Battery Condition Test	Bit	R/W
BCT Stop	40013:2	Stop Battery Condition Test	Bit	R/W
BCT Enable	40013:3	Enable Battery Condition Test	Bit	R/W
BCT Disable	40013:4	Disable Battery Condition Test	Bit	R/W
Spare	40013:5	Spare	Bit	R
Spare	40013:6	Spare	Bit	R
Spare	40013:7	Spare	Bit	R
Spare	40013:8	Spare	Bit	R
Spare	40013:9	Spare	Bit	R
Spare	40013:10	Spare	Bit	R
Spare	40013:11	Spare	Bit	R
Spare	40013:12	Spare	Bit	R
Spare	40013:13	Spare	Bit	R
Spare	40013:14	Spare	Bit	R
Spare	40013:15	Spare	Bit	R
Spare	40013:16	Spare	Bit	R
Vout	40014	Output Voltage	Register	R
Ibat	40015	Battery Current	Register	R
Ipsu	40016	Power Supply Current	Register	R
Temp	40017	Temperature	Register	R
BatDetect	40018	Time in minutes between battery detect tests (in mins)	Register	R
Vpres	40019	Minimum voltage to detect battery presence (in Volts)	Register	R
Vshutd	40020	Shutdown Voltage (in Volts)	Register	R
Vbatl	40021	Battery low alarm voltage level (in Volts)	Register	R
Vdisco	40022	Battery disconnect voltage (in Volts)	Register	R
Bccl	40023	Battery charge current limit (in %)	Register	R
BCTim	40024	Length of battery condition test (in mins)	Register	R
CC Mins	40025	Time interval between BCTs (in mins)	Register	R
CC Hrs	40026	Time interval between BCTs (in hours)	Register	R
CC Days	40027	Time interval between BCTs (in days)	Register	R
MfiBCT	40028	Mains fail check interval during BCT (in mins)	Register	R
NU	40029	Spare	Register	R
NU	40030	Spare	Register	R

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