

DC Power Meter

DCPM 02



DCPM02SmartNET® is digital bidirectional metering system, designed for DC Power Measurements. It has possibility to work with different external current sensor as Shunts and Hall-Effect current sensors or DC CT. DCPM02 is compatible with SCADA.

Inputs

DCPM02 has two Voltage Inputs, One Hall Effect Sensor Input and Auxiliary Power Supply Input. All of it are protected against over loads.

Current sensors

Shunts – Up to 300 mV selectable by User. Max Amps selectable by User up to 32000A..
Hall-Effect Current Sensor – It is based on Allegro Hall Effect Linear Current Sensor IC with 3 kVRMS Voltage Isolation and a Low-Resistance Current Conductor.

DCPM02SmartNET® Configuration

Manually-by front panel buttons.
By Configuration Software.

External Monitoring Software.

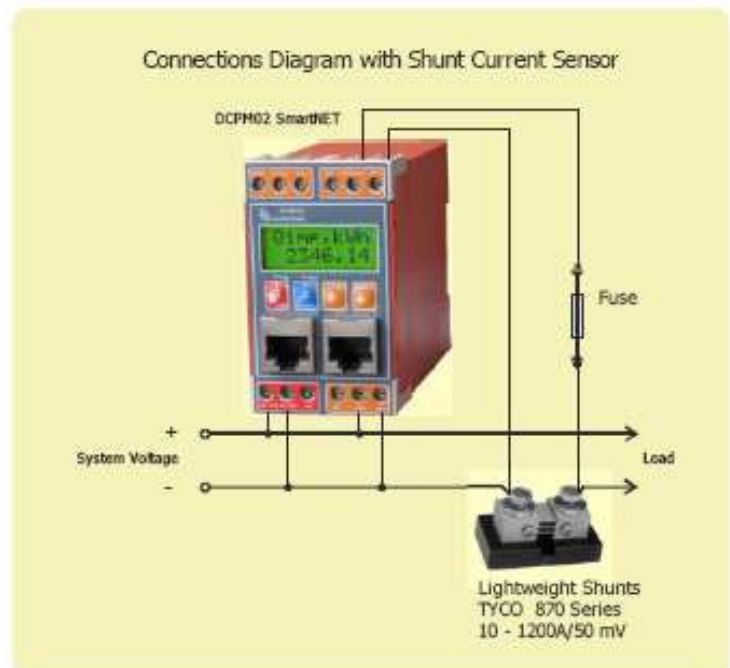
Any SCADA Software supported Modbus RTU Protocol.

Power Supply

DCPM 02 has Internal Pulse Power Supply 36-72 V AC/DC or 85-265 V AC/DC. Optional 12(24)V DC.

Communications

Data transfer used serial port RS232, RS485, RS422, located on the front panel by two RJ 45 connectors. Power Meter DCPM02 SmartNET® supports Modbus RTU protocol. Max speed of communications is 38 400, adjustable by Configuration Software. Max addresses are 254. Prohibited address for use is 255. Max length of communication line is 1200 m. It's possible to reach a longer distance by Sigmatron's repeater RPT485.



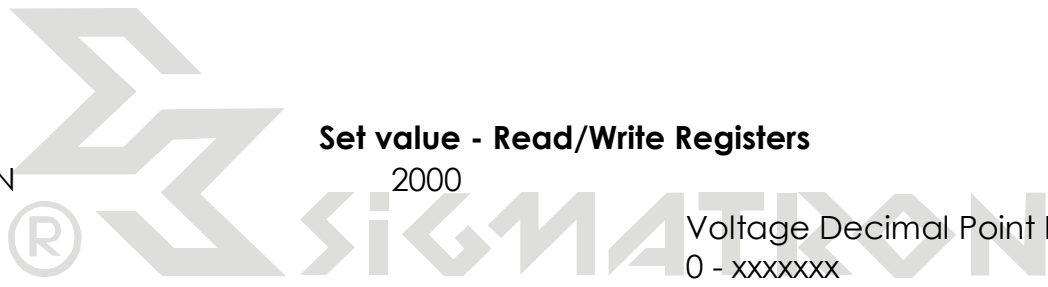
Input values - Read Only Registers

BEGIN	1000		Voltage value	Decimal point position defined by Register U_LINE_DP
U_LINE	1000	float		
			Current value	>=0 - Export, < 0 - Import,
I_LINE	1002	float		Decimal point position defined by Register I_LINE_DP
			Power value	>=0 Export, < 0 Import, Decimal point position defined by Register P_LINE_DP, Dimension by Register P_LINE_DIM
P_LINE	1004	float		
			Voltage averidge value	Decimal point position defined by Register U_LINE_DP
U_AVER	1006	float		
			Current averidge value	>=0 Export, < 0 Import,
I_AVER	1008	float		Decimal point position defined by Register I_LINE_DP
			Power averidge value Import	Decimal point position defined by Register P_LINE_DP, Dimension by Register P_LINE_DIM
P_AVER_IMP	1010	float		
			Power averidge value Export	Decimal point position defined by Register P_LINE_DP, Dimension by Register P_LINE_DIM
P_AVER_EXP	1012	float		

Q_IMPORT		Energy Import	Decimal point position defined by Register Q_DP, Dimension by Register Q_DIM
	1014	double	

Q_EXPORT		Energy Export	Decimal point position defined by Register Q_DP, Dimension by Register Q_DIM
	1018	double	

K_EFF_AV	1022	float	Efficiency averidge	Format	x.xxxx
K_EFF_TOT	1024	float	Efficiency Total	Format	x.xxxx





Set value - Read/Write Registers

BEGIN		2000		Voltage Decimal Point Position
				0 - xxxxxxx
U_LINE_DP		2000	integer	1 - xxxxxx.x
				Current Decimal Point Position
				0 - xxxxxxx
I_LINE_DP		2001	integer	1 - xxxxxx.x
				Power Decimal Point Position
				0 - xxxxxxx
P_LINE_DP		2002	integer	1 - xxxxxx.x
				2 - xxxxx.xx
				Energy Decimal Point Position
				0 - xxxxxxx
Q_DP		2003	integer	1 - xxxxxx.x
				2 - xxxxx.xx
				Power Dimension
P_LINE_DIM		2004	integer	0 - W, 1- kW, 2 - MW
				Energy Dimension
Q_DIM		2005	integer	0 - Wh, 1- kWh, 2 - MWh
				0 - 4800, 1- 9600, 2 - 14400,
				3 - 19200, 4 - 28800, 5 - 38400,
MODBUS_BAUD_RATE		2006	int	6 - 57600
				1 - 254
MODBUS_ADDR		2007	int	Service Address - 255
SH_HALL		2008	int	0 - Shunt, 1 - Hall

2. Parameter Editing

- First Display Line Name and Dimension
- Second Display Line Value of the Parameter.

To set Number press . Value must be not more than ± 32768 . To change position of the cursor press button .

To go out of the choice press . To safe choice press .



No	Display line 1	Display line 2	Description
1	DP U	xxxxx xxxx.x	Voltage - Decimal point
2	PD I	xxxxx xxxx.x	Current - Decimal point
3	DP P	xxxxx xxxx.x xxx.xx	Power - Decimal point
4	DP Q	xxxxx xxxx.x xxx.xx	Energy - Decimal point
5	P dim	W kW MW	Power - Dimension.
6	Q dim	Wh kWh MWh	Energy - Dimension
7	Clr All!		Average and Totalize Registers clearing

3. For System Parameter Editing press  and . Use table below to add or editing System parameters

	Display line 1	Display line 2	Description
1	Year	xxxx	Year
2	Month	xx	Month
3	Day	xx	Day
4	HH:MM	xxxx	Hour:Minute
5	Address	xxx	Nod Address
6	Baud	4800 9600 14400	Boud Rate

		19200 28800 38400 57600	
7	Sh/Hall	Shunt Hall	Type of sensor
8	I Shunt	xxxxx	Max Current of the shunt (Up to 32000A)
9	U Shunt	xxx	Max Voltage of the Shunt, mV (Δo 300 mV)

3. Calibrating

For calibrating press  and . Use table below to proceed calibrating

	Display line 1	Display line 2	Description
	Umax, V	xxxx	Max Voltage
	Cal 0 V	Code	0 V Calibrating
	Cal Umax	Code	Max Voltage Calibrating
	Cal 0	code	Currency Input Calibrating 0 mV
	Cal 75	Code	Next Step Calibrating 75 mV
	Cal 150	Code	Next Step Calibrating 150 mV
	Cal 300	Code	Next Step Calibrating 300 mV
	Cal - 75	Code	Next Step Calibrating -75 mV
	Cal - 150	Code	Next Step Calibrating -150 mV
	Cal - 300	Code	Next Step Calibrating -300 mV

TECHNICAL SPECIFICATIONS

INPUTS

- Voltage input – 0-300 V DC
- Current Input – 0-300 mV
- Current Input – Hall-Effect current sensor.
- Current Input – 0 -(5)10 V or custom order

MEASUREMENTS

- Voltage - V
- Current - A
- DC Power Export – W, KW, MW
- DC Power Import – W, KW, MW
- Voltage Average
- Current Average
- DC Power Average
- Efficiency Average %
- Efficiency Total %
- Total Power Export – Wh, KWh, MWh
- Total Power Import – Wh, KWh, MWh
- Real Time Clock – dd,mm,yyyy, hh,mm

ACCURACY

- Voltage – 0.1%
- Current – 0.1%
- Power (Shunt) – 0.25 (0.5)%
- Power (Hall Effect Sensor) – 1%

DISPLAY

- 2 x 8 monochromatic LCD display
- LED for Manual configuration mode
- LED for Data Transfer.
- Controlled Back Light.

OPERATORS INTERFACE

- Process Data screen:
- Configuration Data screen

CONTROL

- 4 buttons on the front panel

COMMUNICATION

Serial Modbus RTU

- Slave
- RS-232/485/422

- Communication speed Up to 57 600

EXTERNAL CONFIG SOFTWARE

- Automatic Auto Scan mode
- Configuration tools
- Print options for configurations
- Safe options for configurations
- Device Measurement Monitoring
- Device Calibrating Tool

CONNECTIONS

Input/Output Terminals

- Terminal block 2.5 mm²

Communication Ports

- Equal Serial pair RG45
- Serial A: RJ 45 connector RS232/485/422.
- Serial B: RJ 45 connector RS232/485/422

POWER REQUIREMENTS

Power Supply

- 16 -32 V AC/DC
- 36 -72 V AC/DC
- 85 -265 V AC/DC - optionally

MECHANICAL

Mounting

- DIN Rail Mounting
- Absolute Size Dimension 45 x 78 x 104.

Weight

- 0.4 kg

ENVIRONMENT

Operating Temperature Range:

- DCPM02 -20 to +60OC
- Shunt -20 to +60OC
- Hall Effect Sensor -40 to +85(150)OC

Humidity:

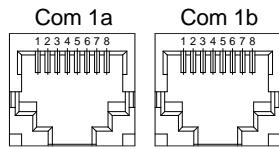
- 0 - 90% RH without condense

Customer support:

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SERIAL PORTS RS232/485/422

DCPM 02 - Serial ports



RS 232/422/485

- 1 COM
- 2 RxD_232
- 3 TxD_232
- 4 RTS_232
- 5 RxD_422+
- 6 RxD_422
- 7 TxD_422+/485+
- 8 TxD_422/485-

