Power / Energy meter - Single phase AC/DC RS485 MODBUS

S9XM300A1000VM
Part No. 2800220

- THD available on the Current measurement
- 0,5 % Accuracy
- RS485 Modbus integrated
- Bidirectional Energy metering
- Din rail mountable
- Fully configurable by free interface software
- Bootloader for updating firmware
- Available Measure register: MSW first, LSW first or hundreds

Technical data

Function
Single-phase Power meter able to measure RMS AC or DC Current and Voltage.

1. Mechanical design
PBT plastic housing, IP rating IP20
DIN-rail mountable with DIN-rail clips (included) for horizontal/vertical mounting, screw predisposition for horizontal/vertical mounting

Mounting position:	any
Dimensions:	89,1 x 99,25 x 28,5mm (without connectors) Ø33mm (current transformer)
Terminals:	- 1,5mm² 4-pole connector (3,5mm pitch) - 1,5mm² 2-pole connector (3,5mm pitch)
DIP-switch:	2 poles (Baudrate and Address) for connection with the configuration software
Weight:	370g

2. Indicators

Yellow LED ON:	indication of supply voltage
Yellow LED flashing:	indication of communication via RS485

3. Power Supply

Input:	9...30 V DC; terminals Pow(+), GND(-) Protection against polarity reversal and overtemperature
Power consumption:	< 1,3 W

4. RS485 Modbus RTU

Baudrate:	1200 ... 115200 Baud (Standard: 9600); terminals GND, A+, B-

5. Measuring circuit

Measurements available:	Irms, Vrms, Watt, Var, Va, Vpk, Ipk, Frequency, Cosφ, Energy bidirectional, THD, MIN and MAX of each measure
Type of Measure:	RMS or DC
Sampling rate:	11k samples per second
Crest factor:	1,8 (current measurement)
Working frequency:	1 ... 400Hz or DC
Imput impedance:	1MΩ ±1%
Range:	
Current:	up to 300A AC/DC
Voltage:	up to 800V AC / 1000V DC

6. Accuracy (@25°C up to 200Hz)

Current sensors:	
Voltage, Current, Active Power:	< 0,5% f.s.
Frequency:	+/- 0,1 Hz
Energy:	+/- 1% of reading
Vpeak, I peak:	+/- 5% f.s.
Range 500mV < V < 10V:	Maximum error 0,5%
Temperature coefficient:	<100ppm/°C
Band Width:	> 800Hz

7. General specifications

Temperature coefficient:	< 200 ppm/°C
Operation temperature:	-15 to +65°C
Storage temperature:	-40 to +85°C
Humidity:	10 to 90% (not condensing)
Altitude:	Up to 2000m above sea level
Overvoltage category:	Cat III up to 600V; Cat II up to 1000V
Isolation:	3kV on bare wire for Current measure 4kV for Voltage measure (reinforced insulation to power supply and serial output)
Standards:	EN61000-6-4/2006 + A1 2011; EN64000-6-2/2005; EN61010-1/2010
Certifications:	CE, UL recognized component
Configuration:	With software or via RS485 Modbus. Comunication to free interface program for: - configuration of all the available parameters; - possibility of firmware upgrade (if available).

DIP-switch:

DIP 1	DIP 2	
0	0	All settings from Eeprom
1	0	Address 1, Baudrate 9600
1	1	Address 1, Baudrate 38400

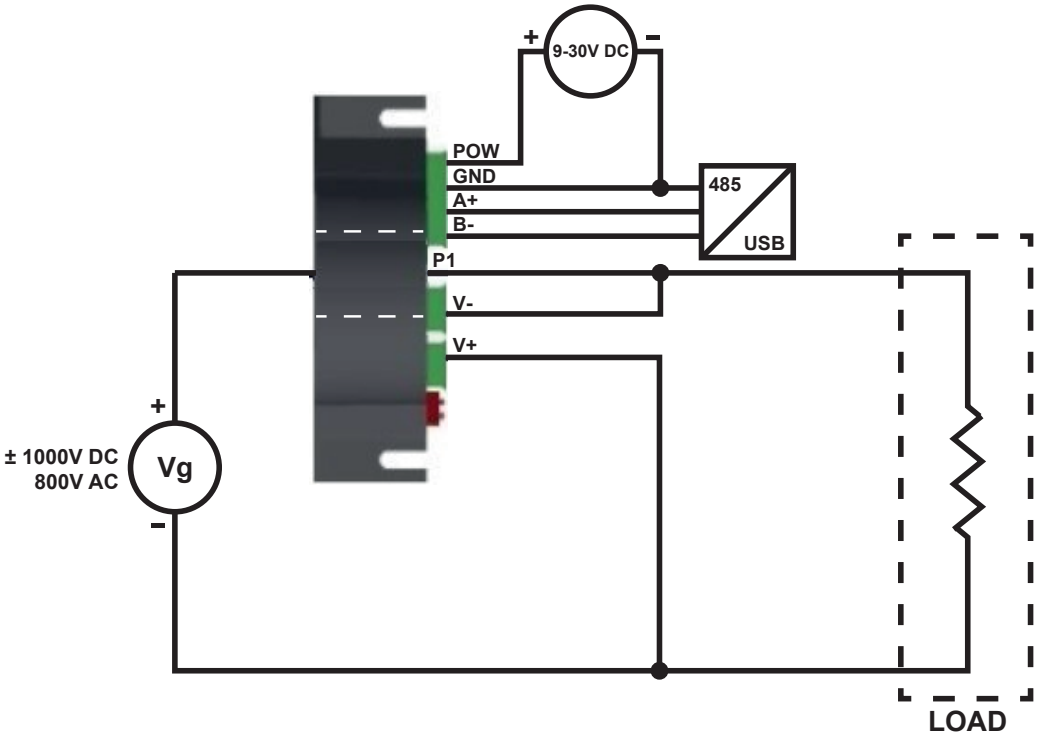
Remarks:
- Modbus connection: A+ and B- as per Modbus RTU standard
- Modbus Register reference: with reference to the logical address, for example 40010, corresponds to physical address n°9 as per Modbus RTU standard
- Modbus functions supported: 3 (read multiple registers, max 100), 6 (write single), 16 (write multiple)
- **Any changes made by dip-switch requires to reset via power supply or sending reset command**

Energy storage data on flash memory:	4,5 years minimum, 45 years typical
Minimum Current measurement (cut off):	250mA
Minimum Power measurement (cut off):	1 W
Measurement refresh:	every 50 cycles or 1 second (the faster), programmable with software

Configuration software

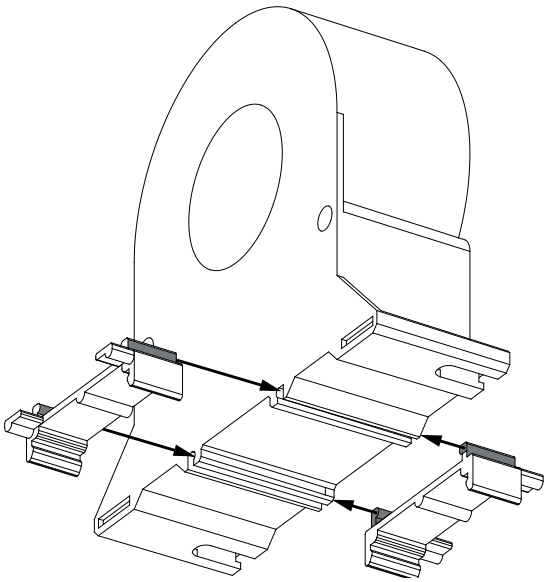
The free interface software is downloadable from our website www.tele-online.com/products/sensact
To communicate with the module you have to connect via USB port directly on your PC using the serial converter S-USB485; part No. 498513.
You can configure the module via RS485 using the register map downloadable at www.tele-online.com/products/sensact

Connections

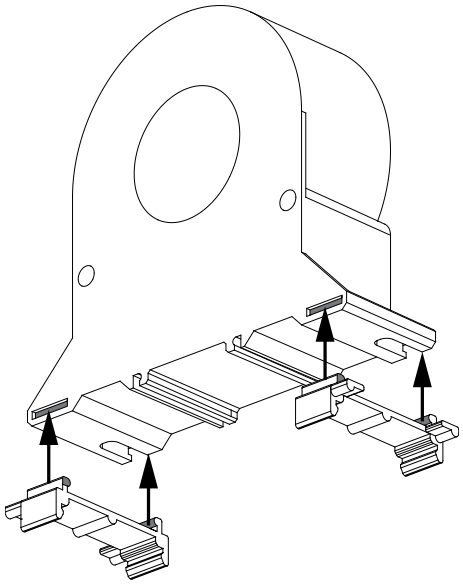


Positioning clips for DIN-rail

For vertical DIN-rail mounting



For horizontal DIN-rail mounting



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