



## Applications

- Power Grid
- Solar energy projects
- Wind energy projects
- Hydro energy projects
- Energy storage applications
- Factory resources supervision
- Energy sub-metering applications
- Substation automation projects



Technical  
documentation



Ordering

IOMod Meter is a stand-alone metering measurement module for voltages and currents based on sensors technology with communication support based on Modbus RTU, IEC 60870-5-101, and IEC 60870-5-103 protocols.

Designed to measure voltage and current values with high accuracy in real-time. IOMod Meter can be used for numerous applications like electrical distribution substations, photovoltaic and hydropower plants, and railway power supplies where the user needs them.

IOMod Meter calculates neutral current and voltage RMS values  $I_0$  and  $U_0$  as well as many other measurements like active, reactive, apparent power for every phase, power factors per phase, phase angles for currents and voltages, and harmonics.

## Features

- Analog inputs measurement in 16-bit resolution
- 3x low-power (LoPo) current measuring inputs (225 mV) or 3x1A/5A CT with the adapter
- 3x low-power (LoPo) voltage measuring inputs (3.25 V/ $\sqrt{3}$ ) or 3x100V/400V VT with the adapter
- Frequency acquisition (nominal frequency 45 to 65 Hz)
- Calculation of RMS values for currents, phase, and phase-to-phase voltages
- Calculation of:
  - Frequency;
  - Active, reactive, and apparent power;
  - Neutral voltage, neutral current;
  - Power factor;
  - Phase angle;
  - Harmonics calculation;
- Communication port: RS485
- Communication over Modbus RTU, IEC 60870-5-101, and IEC 60870-5-103 protocols



# IOMod Meter

meter module for LV and MV

Measurement values and functions	
Analog inputs	6x 16-bit resolution
Input types	Channel-independent
Current inputs	3
Current inputs measurement range	225 mV (IEC 60044-8) with external adapter 1A / 5A
Current input impedance	1 MΩ; < 170 pF
Accuracy	1%
Voltage inputs	3
Voltage inputs measurement range	3.25 V/√3 AC (IEC 60044-7) with external adapter 100VAC / 400VAC
Voltage input impedance	1 MΩ; < 170 pF
Accuracy	1%
Frequency measurement range	45..65 Hz
Overvoltage protection	±20V
Interface and communication	
RS485 interface	ANSI/TIA/EIA-485-A-1998
Communication protocols	– Modbus RTU Slave; – IEC 60870-5-101 Slave; – IEC 60870-5-103 Slave.
Baudrate	600 – 115200 baud
Parity	None, Even, Odd
Terminating resistors	120 Ohm (configurable)
USB interface	
Type	Mini USB
Use	Configuration/Firmware upgrade
Power supply	
Auxiliary power supply	9-33VDC (full range)
Power consumption	40mA @ 12VDC, 20mA @ 24 VDC
Insulation voltage	3 kV

Operating conditions	
Operating temperature	-40°C ... 85°C
Storage temperature	-40°C ... 85°C
Humidity	max. 95 % relative Feuchte bei 40° C
Protection class	IP20
Dimensions and installation instructions	
Case height x width x depth	119 x 17.5 x 101 mm
Installation type	DIN Rail mounting

Order Code	
<u>IOMOD-Meter</u> <u>v1</u>	3xCurrent 3xVoltage sensors module with IEC-101, IEC103, Modbus-RTU protocol support.