

IOMod 4Cs4Vs

4xCurrent 4xVoltage sensors module



IOMod 4Cs4Vs is a stand-alone analog inputs measurement module for voltages and currents based on sensor 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 4Cs4Vs can be used for numerous applications like electrical distribution substations, gas distribution substations, photovoltaic and hydropower plants, and railway power supplies where the user needs them. IOMod 4Cs4Vs 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
- 4x low-power (LoPo) current measuring inputs (225 mV)
- 4x low-power (LoPo) voltage measuring inputs (3.25 V/ $\sqrt{3}$)
- 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.

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 4Cs4Vs

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Measurement values and functions

Analog inputs 8x 16-bit resolution

Input types Channel-independent

Current inputs 4

Current inputs measurement range 225 mV (IEC 61869-10)

Current input impedance 1 MΩ; < 170 pF

Accuracy 1%

Voltage inputs 4

Voltage inputs measurement range 3.25 V/√3 AC (IEC 61869-11)

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

IOMOD-4CS4VS 4xCurrent 4xVoltage sensors module with IEC-101, IEC103, Modbus protocol support.