



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.

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

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.



IOMod 4Cs4Vs

4xCurrent 4xVoltage sensors module

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