



# IOMOD Series Downloads

- [Firmware and tools](#)
- [Documentation](#)

# Firmware and tools

## IOMOD Firmware version 2 Downloads

 Only the Modbus RTU protocol is fully tested for this firmware version. IEC 60870-5-101 and IEC 60870-5-103 are still being tested and will be fully tested in future versions.

 When upgrading the firmware from version 1 to version 2, please refer to this page: [Upgrading IOMOD from firmware version 1 to firmware version 2](#)

IOMOD Utility -> [Download](#)

Firmware version 2 for IOMODs 8DI8DO, 8DI4RO, 16DI, 4RTD and 8AI -> [Download](#)

Firmware version 2 for IOMODs 4Cs4Vs, Meter and FPI -> [Download](#)

## IOMod series downloads

Here you can find our latest firmware versions.

IOMod series has 3 firmware types:

1. with communication over Modbus RTU protocol;
2. with communication over IEC 60870-5-103 protocol.
3. with communication over IEC 60870-5-101 protocol.

### IOMOD USB drivers for Windows

### **IOMOD FIRMWARE WITH IEC 60870-5-101 V1.0.6**

Firmware v1.0.6 -> [Download](#)

### **IOMOD FIRMWARE WITH IEC 60870-5-103 V1.8.7**

Firmware v1.8.7 -> [Download](#)

### **IOMOD FIRMWARE WITH MODBUS RTU V1.21.2**

Firmware v1.21.2 -> [Download](#)

### **IOMOD 4Cs4Vs, IOMOD Meter FIRMWARE WITH MODBUS RTU + IEC 60870-5-103 (Multiprotocol version)**

Firmware v1.3.5 -> [Download](#)

## Known issues

With firmware versions IEC 103 and modbus RTU, 8AI calibration saving is flawed. It doesn't save the values unless you change some other parameters. For example, after editing the calibration you need to change the link address for the configuration to be saved.

# Documentation

## General

IOMOD modules Step file -> Download

## IOMOD 8DI4RO

FIRMWARE VERSION 1

FIRMWARE VERSION 2





### IOMod 8DI4RO

Industrial 8 digital inputs and 4 relay outputs module



IOMod 8DI4RO is a stand-alone Modbus-RTU, IEC 60959-01, and IEC 60959-012 digital input and digital output controller. Designed to achieve a high technological look and compact fit on DIN rail (EN 60715), IOMod 8DI4RO is used for industrial applications where digital signaling is used and robust communication is essential.

IOMod 8DI4RO is also a "ideal solution for such applications as data acquisition, observation, control, process monitoring, testing, and on-line measurement.

When using IOMod 8DI4RO, IEC 1108 it is possible to monitor/control over Ethernet LANs or PLCs/RTUs/IOs. It is a powerful solution for monitoring, control, alarm management, and data acquisition on CloudIndustries.eu cloud platform.

#### Applications

- Power Grid
- Solar energy p...
- Wind energy p...
- Hydro energy p...
- Energy storage systems
- Factory resources supervision
- Substation automation solutions

#### Technical documentation

Ordering

#### Relay outputs

- Configurable input inversion and digital debounce filter
- Configurable SINK, Sourcing, and DCV support
- Configurable feedback for outputs with inputs
- Configurable pulse outputs and permanent outputs
- Input grouping
- Output grouping
- Feedback configurable time
- 4 Relay outputs
- Substantially isolated inputs and outputs
- Configurable over USB console
- Drag and Drop Firmware upgrade over USB mass storage
- Modbus, IEC 60959-01 and IEC 60959-012 communication over RS485
- Software selectable termination resistor on RS485
- LED indication for input/output and data transmission

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IOMod 8DI4RO

## IOMOD 8DI8DO

FIRMWARE VERSION 1

FIRMWARE VERSION 2



# User Manual

Elseta  
4/17/2019  
V1.1



# User Manual

Elseta 2020/04/16  
V1.0 version 1.0  
Firmware version 2.0



## IOMod 8DI8DO

Industrial 8 digital inputs and 8 digital outputs module



IOMod 8DI8DO is a stand-alone Modbus (RTU, IEC 60870-5-101, and IEC 60870-5-103) digital input and digital output controller, designed to be used in industrial applications where digital signaling is used and robust communication.

IOMod 8DI8DO is an ideal solution for data acquisition, control, process monitoring, and remote measurement. Controlled over Modbus or IEC protocols, it can be connected in parallel with other modules in SCADA systems.

When used with a PLC or a microcontroller, it enables monitoring and control over a wide range of industrial processes, remote monitoring, alarm management, and logging on CloudIndustries.eu platform.

### Applications

- Power Grid
- Solar energy production
- Wind energy production
- Hydro energy production
- Energy storage applications
- Factory resources supervision
- Substation automation protection

### Technical documentation

Ordering

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IOMod 8DI8DO

IOMod 16DI

FIRMWARE VERSION 1

FIRMWARE VERSION 2



ELSETA  
IOMOD 16DI  
User manual

# User Manual

Revizija  
01/10/2017  
V1.1



ELSETA  
IOMod 16DI  
User manual

# User Manual

Revizija: 2020/06/10  
Firmware version: 3.1  
Firmware version: 2.0



## IOMod 16DI Industrial 16 digital input module



IOMod 16DI is a stand-alone Modbus (RTU), IEC 60870-5 and IEC 60870-5-01 digital input and digital output controller. Designed to achieve a high technological look and compact fit on DIN rail (EN 60715), IOMod 16DI is used for industrial applications where digital signaling is used and robust communication is essential.

IOMod 16DI is an ideal solution for such applications as data acquisition, alarm control, process monitoring, testing, and measurement. It is controlled over Modbus RTU or IEC 60870-5-01 protocol, and can be used in parallel with other Modbus, IEC 60870-5-01 or IEC 60870-5-01 equipment in a multi-drop bus system as in any SCADA system.

When connected with WCC Lite gateway it is possible to control the I/O signals over Ethernet LAN or GPRS networks. It is a powerful remote monitoring and control, alarm management, and data logging of I/O's on various cloud platform.

### Applications

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



Technical documentation



Ordering

### Features

- 16 digital inputs
- Configurable active input signal polarity or input inversion
- Configurable SPV, DIN
- Pulse count and ON time count
- Galvanically isolated inputs
- Configuration over USB console
- Drag and Drop Firmware upgrade over USB mass storage
- Modbus, IEC 60870-5-01 or IEC 60870-5-01 communication over RS485
- Software selectable termination resistor on RS485
- LED indication for input and data transmission
- Easy connection with WCC Lite gateway and CloudIndustries.eu platform

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IOMod 16DI

IOMOD 8AI

FIRMWARE VERSION 1

FIRMWARE VERSION 2



ELSETA  
IOMOD 8AI  
User manual

User  
Manual

Elseta  
08/2022  
V1.3



ELSETA  
IOMod 8AI  
User manual

User  
Manual

Elseta 08/2022  
V1.3  
Firmware version 2.0



**IOMod 8AI**  
Industrial 8 analog inputs module

IOMod 8AI is a standalone Modbus RTU, IEC60730-5-103 and IEC60730-5-105 8 analog input device, designed for applications requiring high accuracy in real-time voltage or current measurements. IOMod 8AI can be used for numerous applications where user needs to log voltage or current changes. IOMod 8AI can be used to measure temperature, pressure, water level or weight with corresponding sensors (e.g. 4-20mA). IOMod 8AI input measurement resolution, scaling and data casting can be configured by user.

IOMod 8AI is an industrial grade device for data acquisition, control, protection and remote measurement. Controlled over Modbus protocols, it can be connected to other equipment in SCADA system.

With WCC Lite gateway, it enables monitoring of current values over Ethernet LAN's or CAN/LIN networks, facilitating remote alarm management, and data logging on industrial systems.

**Applications**

- Power Grid
- Solar energy production
- Wind energy production
- Hydro energy production
- Energy storage applications
- Factory resource supervision
- Substation automation projects

**Features**

- Data measurement in 16-bit resolution
- Fully configurable data scaling and casting
- Selectable input sensitivity
- Configuration over USB console
- On-the-fly firmware upgrade over USB mass storage
- Modbus RTU, IEC 60730-5-103 and IEC 60730-5-105 communication over RS485
- Software selectable 1000 termination resistor for RS485
- LED indication for data transmission
- Easy connection with WCC Lite gateway and CloudIndustries.io platform.

[Technical documentation](#)

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IOMod 8AI

IOMOD 4Cs4Vs

FIRMWARE VERSION 1

FIRMWARE VERSION 2



ELSETA  
IOMOD 4Cs4Vs  
User manual

# User Manual

Elseta  
2023/10/05  
V1.2.2



ELSETA  
IOMod 4Cs4Vs  
User manual

# User Manual

Elseta 2023/04/29  
v1b version 1.1  
FW version 2.0



## 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 60870-5-103, and IEC 60870-5-203 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, renewable energy sources, photovoltaic and hydroelectric plants, and railway power supplies where the user needs a reliable and accurate measurement of voltage and current values in and out of the system. IOMod 4Cs4Vs calculates several current and voltage values in and out of the system, such as active, reactive, and complex power, as well as power factor per phase, phase angle, and currents and voltages, and harmonics.

### Applications

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



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- High-precision measurement in sub-10% resolution
- High-precision power (kW) current measuring inputs (3x3 V)
- 4x low-power (LAP) voltage measuring inputs (3x25 V)
- Frequency acquisition (nominal frequency up to 60 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 ports: RS485, IEC 60870-5-103, and IEC 60870-5-203 protocols.

IOMOD Meter

FIRMWARE VERSION 1

FIRMWARE VERSION 2



ELSETA  
IOMOD Meter  
User manual

User  
Manual

Elseta  
2020/01/05  
V1.0.0



ELSETA  
IOMod Meter  
User manual

User  
Manual

Elseta 2020/04/29  
v1.0 version 1.0  
Firmware version 2.0



## IOMod Meter

meter module for LV and MV



### Applications

- Power Grid
- Solar energy p...
- Wind energy p...
- Hydro energy p...
- Energy storage applic...
- Factory resource supervision
- Energy sub-metering applications
- Substation automation projects



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Documentation



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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 60376-5-101, and IEC 60376-5-103 protocols.

Designed to measure voltage and current values with high accuracy in real-time, IOMod Meter can be used for numerous applications: electrical distribution substations, photovoltaic power plants, and voltage power supplies.

IOMod Meter can measure current and voltage RMS values and calculate many other measurements like active power for every phase, power factor, and energy for currents and voltages.

- Inputs measurement in 16-bit resolution
  - 3x power (L/N) current measuring inputs (3x5 A) or 3x5kVA CT with the adapter
  - 3x low power (L/N) voltage measuring inputs (3x25 V) or 3x100V potential VT with the adapter
- Frequency acquisition (nominal frequency up to 60 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 ports: RS485, and IEC 60376-5-103 protocols

IOMOD FPI

FIRMWARE VERSION 1

FIRMWARE VERSION 2





ELSETA  
IOMod FPI  
User manual

# User Manual

Elseta  
2024/10/31



ELSETA  
IOMod FPI  
User manual

# User Manual

Elseta 2024/10/31  
FPI version 1.0  
FPI version 1.0



## IOMOD FPI Fault passage indicator



### Applications

- Power Grid
- Solar energy projects
- Wind energy projects
- Hybrid energy projects
- Smart RMU applications
- Factory resources supervision
- Energy sub-metering applications
- Substation automatic projects



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documentation



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### Features

- Directional fault detection for all network types
- Earth fault detection
- 50/60Hz instantaneous overcurrent detection
- 50/60Hz Phase directional overcurrent detection
- 60% Neutral directional overcurrent detection
- 20/30/40/50/60/70/80/90/100% Over voltage detection (both VT or LVT)
- 50/60Hz Over voltage detection (both VT or LVT)
- 50/60Hz Inrush blocking for selected protections
- 1 setting groups
- Measurements of RMS values for currents, phase, and phase-to-phase voltages
- Additional measurements of frequency, active, reactive, and apparent power, neutral voltage, neutral current, power factors, phase angle, harmonic distortion and more.

LVDT: low power VDT (SEC 6.1.1.1) or voltage sensors.

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IOMOD FPI

IOMOD HT



Datasheet -> Download

IOMOD 4RTD

FIRMWARE VERSION 1



FIRMWARE VERSION 2





# IOMod 4RTD

Industrial & temperature sensors module



IOMod 4RTD is a standalone Modbus RTU, IEC 60870-5-103, and IEC60870-5-104 temperature sensor device, designed for accurate indoor temperature measurement across a wide range, with high accuracy and repeatability even after frequent heating and cooling cycles. Equipped with 4 temperature measuring channels, to enable temperature reading with default configuration.

IOMOD 4RTD is ideal for heating, ventilation, and process monitoring applications over a broad temperature spectrum (from -100 to 100°C) in applications in industries like plastic and microelectronics.

Compatible with IEC 60870-5-103, or IEC60870-5-104, it can integrate seamlessly into SCADA.

With a Modbus RTU gateway, it enables remote control of temperature readings over 485 or PLC/Modbus/OPNS networks, alarm management and data logging on industrial automation platforms.

## Applications

- Power Grid
- Solar energy p
- Wind energy p
- Hydro energy p
- Energy storage applic
- Factory resources supervision
- Substation automation projects

## Technical documentation

Ordering

## Features

- Temperature measurement of 0.1°C accuracy for all operating conditions
- Temperature sensing range from -100 to 100°C using platinum RTD sensors
- Modbus, IEC60870-5-103, IEC60870-5-104 communication over RS485 physical layer
- Selectable RTU or Modbus temperature RTD sensor and connection type (2, 3 or 4 wires) for each channel
- Configuration over USB console
- Drag and Drop Firmware upgrade over USB mass storage
- LED indications for power, USB connection, sensor and temperature fault conditions for all channels
- Easy connection with Modbus RTU gateway and CloudIndustries automation platform

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IOMod 4RTD

## IOMod T



ELSETA  
IOMOD T  
User manual



Datasheet -> Download

## CLMod



# CLMod

RS485 to current loop converter



CLMod is an RS485 to 20 mA current loop converter. This converter was developed to read multiple meters of data over a 20mA current loop interface with long distance lines up to 2km. CLMod with 6 current loop interfaces is capable of reading data up to 30 meters (5 meters per single current loop). CLMod is protocol agnostic you can use any type of serial protocol.

## Applications

- Power Grid
- Solar energy p
- Wind energy p
- Hydro energy p
- Energy storage applic
- Factory resources supervision
- Energy sub-metering applications

## Technical documentation

Ordering

## Features

- 6 independent 20mA current loop interfaces
- Galvanic (kV/mv) isolation
- LED indication of data transmission on every current loop interface
- Supports 5 meters per current loop (50 meters total)
- Read rates: 1200 to 9600
- Automatic open-loop detection and disconnection
- Fail indication for each current loop
- Integrated current loop protection
- Compatible with Elseta Electronics meters
- RS485 interface for RTU/Datalogger
- Operating temperature: -40°C to 80°C
- Dimension 100x50x25mm

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CLMod

## Voltage Sensor Amplifier



The Voltage Sensor Amplifier is designed to allow a single voltage sensor (per phase) to interface with multiple IOMOD Meter and IOMOD PM devices, eliminating the need for amplitude and phase correction.

Enhance your engineering applications with our advanced three-channel Voltage Sensor Amplifier. Engineered for high precision, it provides a stable impedance load to maintain the accuracy of all sensors. With a gain factor of 1, it ensures signals are transmitted without distortion. Facilitate the simultaneous use of multiple metering devices to a single sensor, eliminating the need for complex factor calculations and tuning. Optimise your measurements with this robust and accurate solution.

This device is ideal for applications such as substation monitoring, calibration checks at the meter, power measurement, data logging, safety analysis. It's compatible with FTI, CTI, PTs, Multifunction Protection Relays, Winding and RTD applications.

#### Applications

- Power Grid
- Solar energy projects
- Wind energy projects
- Hydro energy projects
- Smart EMS applications
- Energy resource supervision
- Energy sub-metering applications
- Substation automation projects

#### Features

- Very simple installation
- Not affect amplitude and phase correction
- Isolated power circuit
- Wide operating range



Technical documentation



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