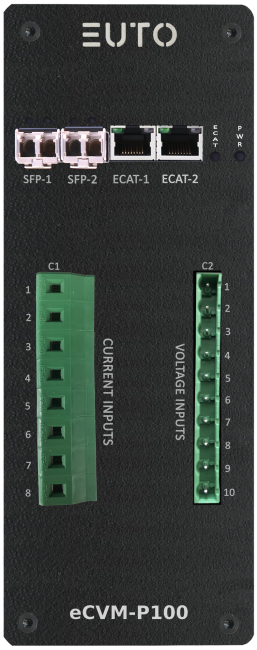
eCVM-P100
Technical Information



Current and Voltage Measurement Unit over EtherCAT bus

Modular Design

There are 4 slots on the main board to integrate 2 different types of measurement boards:

- **Current measurement board**
  Consisting 4 isolated current inputs
- **Voltage measurement board**
  Consisting 5 isolated voltage inputs

Different board combinations might be available on request with analog/digital I/O boards from eXIO-M100.

LED Indications

- **Power**
  Power on/off state shown on the front side of the device.
- **EtherCAT**
  State of EtherCAT protocol is shown on the front side of the device.
- **Communication Ports**
  Each RJ45 and SFP ports have link and activity LED indications.

Internal Wide-Range Power Input

24-265V AC/DC inputs are accepted in single hardware configuration.

Management

All configuration is done directly from EtherCAT master over the communication bus without physically access.

Media Support

2 ports 10/100BaseTx **copper** ethernet supported for regular applications.

2 ports 10/100BaseFx **fiber optic** interface via SFP module connection supported for long distance communication or the environments with high EMI noise.

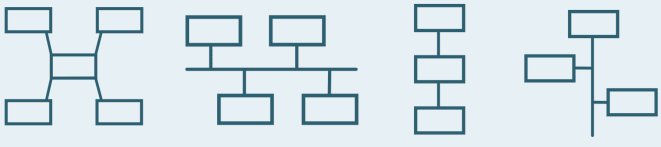
EtherCAT

2 ports EtherCAT Slave connection for data exchange.

All voltage and current channels are measured and processed by dedicated real-time processors. Data to monitor and control are directly drived by the CPU which is only dedicated to EtherCAT slave controller ASIC, which allows very high speed data exchange with the main controller units such as eRTU-X101.

Thanks to EtherCAT protocol, I/Os can be accessed from the master unit in microseconds, even when hundreds of devices are connected on the bus.

Network topologies



Wide range of network topologies can be supported according to the requirements of the application.

Compatibility

eCVM-P100 can be used fully compatible with other products from EtherCAT bus familiy:

- *eRTU-X100 / eRTU-X101*
- *eXIO-M100*
- *eXIO-D100*

EUTO Energy
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eCVM-P100
Specifications

Hardware Specifications

Processor	*:ARM M7 500MHz processor 16MB RAM, 16MB Flash EtherCAT slave controller ASIC*
Power	***: 24-265 V AC/DC 2 kVrms isolation power consumption <10 W***
Compliance	*:IEC 61850-3 IEC 60255-27*
Mechanical	***:(WxDxH) 88x141x210 mm DIN Rail mounting IP30 enclosure***
Environmental	*:Operating temperature -25 ºC to +70 ºC*

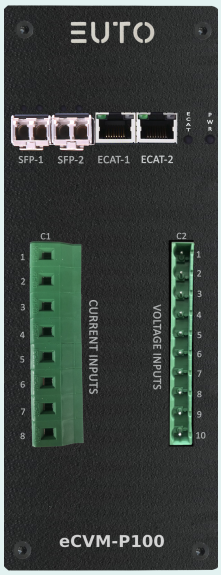
Interfaces

10/100BaseTx **2**
EtherCAT Slave

10/100BaseFx **2**
Fiber optic, SFP Module Ethercat Slave

Current Inputs **1**
8-pin Terminal (10 mm)

Voltage Inputs **1**
10-pin Terminal (7.62 mm)



Options

There are 2 ports drived by the controller.

Each port can be selected as copper or fiber optic independently.

(4) Current input board
(5) Voltage input board

There are 4 slots to choose to integrate current and voltage input boards.

There might be different combination limited by board size limits. Some combinations:
- 1 Voltage Input, 1 Current Input
- 2 Voltage Input boards
- 2 Current Input boards

Additionally, further combinations can be made with analog/digital I/O boards from eXIO-M100 device. Those combinations are evaluated on request.

Current Inputs

Measuring Range	*:0.01-40 x In (In: rated current might be 1 A or 5 A)*
Accuracy	***:0.5% (at rated current)***
Number of lines	*:4 lines (3 phase + 1 notr)*
Isolation	***:4.5 kVrms Current Transformer***
Connection	*:Each current measuring line has separate 2 (input and return) connections.*
Connector	***:8 pins terminal, pin distance 10 mm, not pluggable***
Burden	*:at 1 A <0.02 VA, at 5 A <0.3 VA*

Voltage Inputs

Measuring Range	*:0-270 V*
Accuracy	***:0.5% (at rated voltage)***
Number of lines	*:5 lines*
Isolation	***:4 kVrms Voltage Transformer***
Connection	*:Each voltage measuring line has separate 2 (input and return) connections.*
Connector	***:10 pins terminal, pin distance 7.62 mm, pluggable***
Burden	*:<0.05 VA*

Networking & Security & Synchronization

Protocol	*:EtherCAT slave eXIO-D100 I/Os are polled continuously every milliseconds*
Synchronization	***:Thanks to EtherCAT protocol, the delay between main controller unit and eCVM-P100 device is very low.***
FSoE	*:Safety over EtherCAT*

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