

ECAT ADMM 4 EtherCAT MiniModule

- ▶ Very precise and extremely compact measurement module with EtherCAT interface
- ▶ 4 voltage differential inputs, fully electrically isolated
- ▶ 10 kHz measurement data rate per channel
- ▶ Measurement range from 10 mV to 60V, adjustable per channel
- ▶ High-precision differential sensor excitation, adjustable per channel
- ▶ Extremely precise module synchronisation, with EtherCAT distributed clocks mechanism
- ▶ Waterproof, rugged housing: IP67
- ▶ Operating temperature: -40 °C to +85 °C
- ▶ LED status indicator per channel
- ▶ Perfect for use in test stands



The **ECAT ADMM 4** is the first module of the new CSM EtherCAT series.

It allows to measure up to **10 kHz** per channel with the high bandwidth of Ethernet and the full support of EtherCAT **time synchronisation** mechanism.

The ECAT ADMM 4 module provides wide and very precise differential input voltage ranges from +/-10 mV up to +/-60 V in configurable steps.

Communication via EtherCAT

For communication with an EtherCAT Master software a high level **EtherCAT Slave Controller** is used. ECAT ADMM supports the following operation modes:

- ▶ **Free running.** In this mode measurement data is updated in the configured data rate. ECAT ADMM is not synchronized to the EtherCAT Master.
- ▶ **Synchronisation with Sync Manager 3 (SM3).** The measurement data acquisition is synchronised to the SM3 Events. This allows a very precise synchronisation.
- ▶ **Synchronisation with Distributed Clocks (DC).** All measurement modules are working with the same time base. This time base is synchronised between these modules down to a few nanoseconds.

Operation modes and other EtherCAT functionality is specified in a XML file enclosed.

Configuration via CoE

The module functionality (measurement ranges, filters, sensor excitation,...) is configured via **CANopen over EtherCAT (CoE)** protocol, using an EtherCAT Master software, e.g. TwinCAT from Beckhoff.

Module information is available in an EDS file, or directly from the module using the SDO Info service.

Communication profile: **DS 301 V4.02**

- ▷ EtherCAT Slave Device
- ▷ 4 transmit PDOs (one per channel)

Device profile: **DS 404 V1.2**

- ▷ Measurement ranges and filter settings
- ▷ Sensor excitation settings

In case CoE is not available, ECAT ADMM4 can also be configured via an additional CAN interface, using standard CSM Config Tool. All configuration data is stored in the module.

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Specifications ECAT ADMM 4

Technical Data	ECAT ADMM 4
Inputs	4 analog inputs
Measurement ranges	± 10 , ± 20 , ± 50 , ± 100 , ± 500 mV, ± 1 , ± 2 , ± 5 , ± 10 , ± 20 , ± 60 V
Internal resolution	16 bit
Internal sampling rate per channel	10 kHz
Measurement data rates per channel	1, 2, 5, 10, 50, 100, 500 Hz and 1, 2, 5, 10 kHz
Input protection	± 100 V permanent, additional ESD protection
SW Input filter	selectable 6 th order Butterworth, range 0,1 Hz to 2 kHz
HW Input filter	Low-pass filter 3 rd order, approx. 2 kHz
Sensor excitation	± 5 V, ± 8 V, ± 10 V, ± 12 V, ± 15 V DC typ. ± 30 mA, max. ± 120 mA per ch. ¹⁾ , selectable and adjustable per channel ²⁾
Galvanic Isolation	
Channel / Channel	500 V DC
EtherCAT / Channel	500 V DC
EtherCAT / Power Supply	500 V DC
EtherCAT Interface	Ethernet 100Base-TX, 100 MBit/s EtherCAT Slave Controller
Configuration	via EtherCAT Master using CANopen over EtherCAT (CoE) all settings and configuration data stored in module
LED Power/Status	LED: Power (green) / Link/Activity IN (green) / Link/Activity OUT (green)
LED per input channel	sensor excitation (green) / short-circuit (red)
Power supply	approx. 5.5 V to 50 V DC
Power consumption (without sensor excitation)	typ. 2.5 W
Dimensions (W x H x D) Weight	approx. 200 x 35 x 50 mm approx. 500 g
Operating temperature	-40 °C to +85 °C
Protection	IP67
Storage temperature	-55 °C to +90 °C
Relative Humidity	5 % to 95 %
Connectors EtherCAT / Voltage	LEMO 1B 8-pole
Connectors signal inputs	LEMO 1B 6-pole
Housing	silver anodized
Conformity	CE

1) Distributive sensor excitation, see Application Note

2) In case of full load (7,2 W) a power supply > 8 V is required, see Application Note

Shipping Content: ECAT ADMM 4 device, Device Description Files (XML+EDS), documentation, Calibration certificate according to DIN EN ISO/IEC 17025

Accessories: Hybrid cable for EtherCAT and power supply, connection cable EtherCAT, adapter cable EtherCAT, mechanical mountings

We recommend a calibration interval of 1 year. For further technical information and references please contact our technical sales.

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