Data Sheet CODESYS EtherCAT Master SL

Configurator, protocol stack and diagnostics for EtherCAT, fully integrated in the IEC 61131-3 development system

Product description

Integrated EtherCAT master support in the IEC 61131-3 development system

EtherCAT is a powerful real-time Ethernet fieldbus system with an open protocol. With its short cycle times, low jitter values and different network topologies, the system is standard in many industrial automation application today.

The EtherCAT master integration in the IEC 61131-3 development system CODESYS comprises

- an integrated configurator for the master and the connected slaves
- a portable protocol stack in form of a CODESYS library
- a runtime system component for direct access to the Ethernet interface
- diagnostics functionality in the Development System and possibility to monitor the process through the IEC 61131-3 application
- optional support of EtherCAT gateway modules to other fieldbus systems such as IO-Link, Profibus or the like
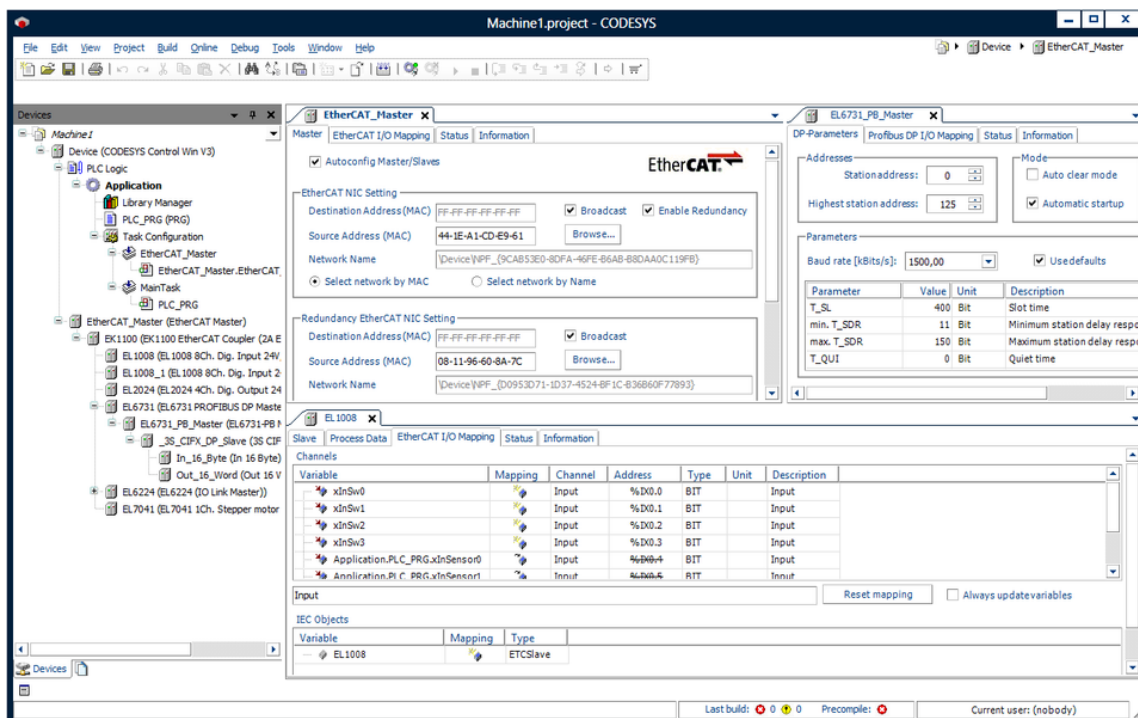
Advantages of the seamless integration:

One tool with an integrated infrastructure for PLC programming and fieldbus coniguration:

- Simple configuration
- Fewer sources of error
- Fast engineering

A device description and configurator for the EtherCAT Master are available for integration in a CODESYS project according to physical configuration.

Architecture:

Typical structure in the CODESYS device tree

Supported functionality:

- Distributed Clocks
- Different bus topologies (line, star, ring)
- Hot-Connect
- Bus diagnostics: in the configurator and by the PLC application
- Network scan: Recogize and insert connected slaves
- EtherCAT redundancy: for systems with two physical Ethernet interfaces
- Supported layer 7 protocols:
    - CoE (CANopen / CAN application layer over EtherCAT) / SDO Communication
    - EoE (Ethernet over EtherCAT)
    - SoE (Servodrive over EtherCAT)
    - FSoE (Safety over EtherCAT or Fail Safe over EtherCAT)
    - FoE (File over EtherCAT)
    - VoE (Vendor over EtherCAT)
- Support for MDP (modular device profile) slaves
- Several function blocks for use in application

Functionality Configurator:

- Semi-automatic configuration of the master or configuration in the expert mode
    - ⇒ comprehensive configuration options

- Configuration of the slaves with EtherCAT XML files (ESI)

⇒ Flexible configuration of the process image and of the device-specific parameters

• Support of third party EtherCAT stacks

⇒ Export of EtherCAT XML files possible (ENI)

• Configuration of sync units
• Configuration of PDOs (process data)
• Configuration of startup parameters for CoE and SoE
• Configuration of EoE slaves
• Online view of CoE objects and support for SDOinfo upload
• Online view for diagnosis history
• Online view for firmware download and EEprom read and write functionality

Supported Network Cards:

• Systems with Linux:

  Via RAW sockets: all network cards

• Systems with Windows and CODESYS Control Win:

  With PCAP interface (wincap): all network cards

• Systems with Windows and CODESYS Control RTE (Real-time SoftPLC)

  • Realtek 8139 (CmpRTL81x9Mpd)
    Realtek RTL8139 and compatible Ethernet-Controller, as well 8100/8110

  • Realtek 8169 (CmpRTL8169Mpd)
    Realtek 8169/810, RTL8111B / RTL8111D

  • Intel EtherExpressPro1000 (CmpEt1000Drv)
    Intel 82541, 82547, 82567,82571, 82573, 82574, 82583V, i210, i217-LM etc.

  • Intel EtherExpress PRO/100 (CmpEt100Drv)
    Intel 82551, 82557, 82559, 82559, 82558, 82557, 82550

• Other system platforms:
    Adaptation of the runtime system component required

General information

Supplier:

CODESYS GmbH
Memminger Strasse 151
87439 Kempten
Germany

Support:

Technical support is not included with this product. To receive technical support, please purchase a CODESYS Support Ticket.

https://support.codesys.com

Item:

CODESYS EtherCAT Master SL

Item number:

2303000018

Sales/Source of supply:

CODESYS Store
https://store.codesys.com

Included in delivery:

  • License key

System requirements and restrictions

Programming System	CODESYS Development System V3.5.17.0 or higher
Runtime System	CODESYS Control V3.5.4.0 or higher
Supported Platforms/ Devices	Note: Use the project "Device Reader" to find out the supported features of your device. "Device Reader" is available for free in the CODESYS Store.
Additional Requirements	SysEthernet
Restrictions	-
Licensing	

DEVICE

Single device license: The license can be used on the target device/PLC on which the CODESYS runtime system is installed.

Licenses are activated on a software-based license container (soft container), which is permanently connected to the controller. Alternatively, the license can be stored on a CODESYS Key (USB dongle). By replugging the CODESYS Key, the license can be used on any other controller.

Required Accessories	Optional: CODESYS Key

Note: Technical specifications are subject to change. Errors and omissions excepted. The content of the current online version of this document applies.

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