



**EtherCAT®**

Item	Item-No.
ECS200	00018548-00
ECS200 CC	00019206-00

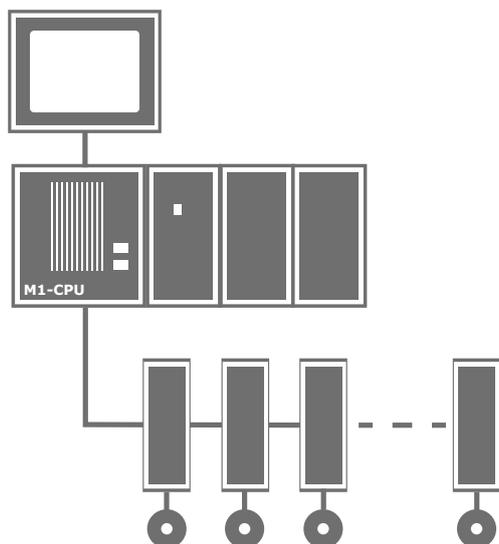
## ECS200 EtherCAT®-Slave-Modul

The EtherCAT® bus system is ideally suited for controlling servo-electric drives by an M1 controller. The Bachmann SolutionCenter contains convenient tools for the configuration, commissioning and diagnosis of the network. In combination with the Drive Middleware, the project planning of applications with drives of different manufacturers is also very easy.

The ECS200 allows connecting a M1 controller system as slave device to an external EtherCAT® network. The goal is to use the M1 to control an autonomous intelligent subsystem within a complex system or machine. The application programs (PLC, C/ C++) have full access to the incoming and outgoing cyclic process data via the MIO and SVI interfaces and via the process image. The slave state and the connection state can be recognized by the user programs. Thus, emergency situations like network problems or failures of the external EtherCAT® Master can be handled individually in dedicated emergency routines. The application programs at the slave station can be accurately synchronized to the external EtherCAT® bus for closed-loop control operations. The execution cycle of the user programs can be maintained also in emergency situations. Distributed Clocks are supported.

Amount and size of the incoming and outgoing cyclic data are configured on the slave station, and then a dedicated ESI file is generated to configure the master system. The PDO mapping can be defined statically or can be created by the EC Master dynamically. As EtherCAT® slave, the M1 is a module device with a static object dictionary that does not need to be further configured by the master. Diagnostic is supported by several LED indications on the module, by log messages and by a monitor in the Bachmann SolutionCenter.

### SOLUTIONCENTER



**EtherCAT®**

Possible topology: EtherCAT

- 2 EtherCAT® Ports IN, OUT
- Max. 700 Bytes cyclic data for Rx und Tx each
- Bus interval 125 µs to 10 ms
- Distributed Clock
- User programs can be synchronised to EtherCAT®
- Connection- and network state visible for user programs
- Behavior in case of network problems configurable
- LED for display of slave state
- Error-LEDs for In- and Out-Port
- Galvanic isolation from the system
- Condensation-proof ColdClimate design on request

ECS200		
EtherCAT® data		
EtherCAT® device type	Module device	
Object dictionary	Statical (depends on configuration of the slave station)	
PDO Mapping	Statical or dynamical	
Distributed Clock	Available	
EtherCAT® data types	BOOL, BIT, USINT, SINT, UINT, INT, UDINT, DINT, REAL, ULINT, LINT, LREAL	
Number of cyclic data	Max. 700 Byte respectively in Tx and Rx	
Cycle time	≥ 125 µs, depend on CPU and data volume, max. 10 ms	
Interface to user program		
Access of cyclic data	Process image, UFB channel view, SVI view	
Slave Status	Readable, settable through functional interface	
Connection quality to network	View as module and channel state of UFB, request by user software	
Time-base synchronization	Adapted to synchronization by user software of EC network	
Behaviour in the event of network break	Further completion of the user software by intervall possible	
Mailbox data	On request	
Diagnostic		
LED Run	Run (permanent light for operational, blinking codes for other slave state)	
LEDs Parity Error 1, 2	Failure in the physical receive layer of in or out ports	
LEDs EtherCAT® Ports	Standard LED's for activity (green) and data rate (orange)	
Monitor in SolutionCenter	Value view of state information	
Logbook entries	Information host via debug level selectable	
Configuration		
SolutionCenter	Setting of object directories via UFB channel configurator	
System requirements		
M-Base	V3.80 or higher	
Processor module	Recommended MX207 or higher	
Electrical data		
Number EtherCAT® Ports	2 (In/out)	
Supply	Internal via bus rail BS2xx	
Current consumption	Internal 270 mA	
Galvanic isolation from the system	500 V	
Approvals / Certificates		
General	CE, cULus (only ECS200), CCC	
Ambient conditions		
	Standard	ColdClimate (❄)
Operating temperature	-30 to +60 °C	
Rel. humidity operation	5 to 95 % without condensation	5 to 95 % with condensation
Storage temperature	-40 to +85 °C	
Rel. humidity storage	5 to 95 % without condensation	5 to 95 % with condensation
Pollution degree	2 (without condensation; according to IEC 60664-1)	2 (according to IEC 60664-1)

Order Codes		
Item	Item No.	Description
ECS200	00018548-00	EtherCAT® slave module; 2x Eth100 (In/Out); operation only with CPU module
ECS200 CC	00019206-00	Like ECS200; ColdClimate (❄)