Data Sheet

zub
member of maxon motor group

MasterMACS
High Performance Motion Control Modules

for the control of intelligent drives and synchronization of axes

Typical fields of use are applications where many axes must be synchronized perfectly and in high speed. For this purpose the high-performance **MasterMACS** offers ideal conditions with its fast control cycles (positioning control cycle from 100 µs).

The maximum number of axes depends on the complexity and required update rate of the drives. Example: 32 axes with high complexity and jerk limitation still allow an update rate of 3 kHz.

Interfaces

EtherCAT (master and slave) and Ethernet, CANopen (master or slave), USB, RS232, RS485.

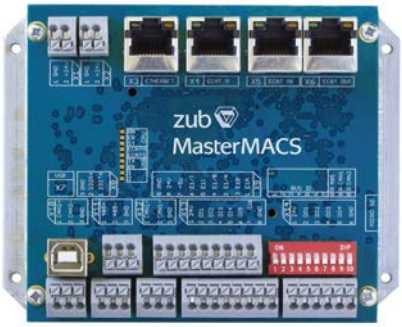
Application Areas

The **MasterMACS** can be used in numerous applications, but it was developed for the path control (for example robots with multiple axes) – but is also suitable for all applications with many axes and high precision as in print finishing (feeder), for metering machines as well as packaging, filling and labelling machines.

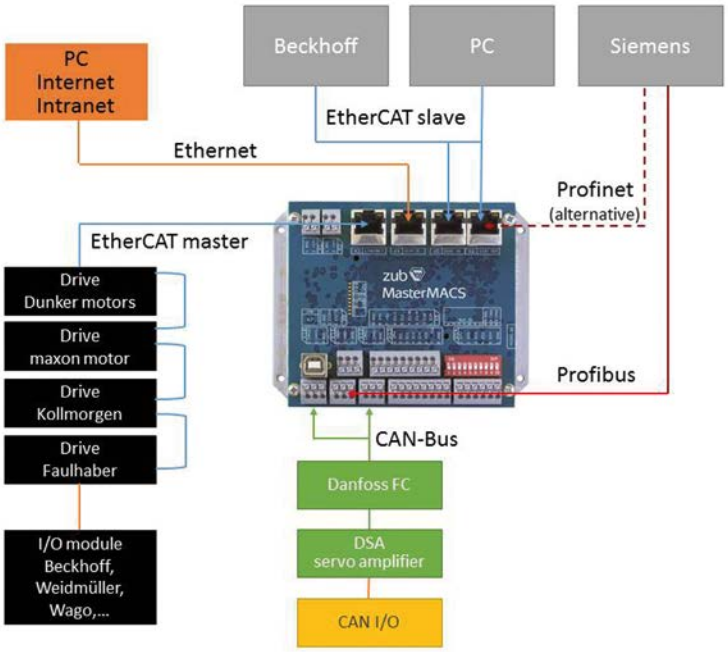
zub Standards

- **Positioning:** Absolute & relative, configurable homing, programmable velocity profiles.
- **Synchronization:** Velocity synchronization, position/angle synchronization including correction depending on slave / master marker.
- **Path Control:** Any number of axes can be used under path control.
- **Free Programming** by the extensive automation software APOSS®-win and license free Motion Control Library.
- **Interactive graphic editors** like CAM-, Array- and Path-Editor.
- **Debugging & Optimization:** Smart-Oscilloscope and integrated graphic CAM-Editor.
- **State-Machine Support:** APOSS supports the automatic execution of hierarchic State Machines.

Variant MasterMACS DIN housing



Variant MasterMACS compact housing



You can control all drives which have a CANopen or an EtherCAT-Interface (CoE).

MasterMACS

Electrical Data			
Supply voltage, Current consumption	24 V DC ±25 %	200 mA	current consumption without I/O-load
CPU & Memory			
Microprocessor	Cortex A8 AM3359	800 MHz	
Workspace & program memory	512 Mbyte DDR3 RAM	512 Mbyte Flash	firmware, application, and data
Micro SD memory card	up to 1 Gbyte		e.g. for SW update, backup, or data recording
Control Characteristic			
Axis control: number	Number depends on the requirements (complexity and necessary update rate)		
Axis control: type	PID mit Feed-forward		
Positioning control cycle	10 kHz	from 100 µs cycle time	configurable
Drives			
You can control all drives which have a CANopen or an EtherCAT interface (CoE). Additional IO is realized by external EtherCAT or CANopen modules which allow a very good price performance ratio: e.g. frequency controller with or without CAN from Danfoss, Lenze, and other servo motors for brushed and brushless motors.			
Motion-Control Functionality combined with free Programmability			
Velocity and position control with linear, S-profile or jerk limited ramps Velocity and position / angle synchronization with or without master / slave marker correction, CAM profile synchronization			
Encoder Connection			
Encoder 1 (Input)	Inkremental encoder	5 V, max.5 MHz	differential
Input & Outputs			
Digital I/O	6/4, bus, and via EtherCAT or CAN terminals, e.g. from Weidmüller, Beckhoff, Wago, …		
Analog I/O	via EtherCAT or CAN terminals, e.g. from Weidmüller, Beckhoff, Wago, …		
Interfaces			
Ethernet	Ethernet TCP/IP	max. 100 Mbaud	Data exchange & visualization
EtherCAT® - Slave		max. 100 Mbaud	CoE
EtherCAT® - Master		max. 100 Mbaud	
2 x CAN	CANopen	max. 1 Mbaud	
USB, RS232, RS485			
PowerLink, Profibus, ProfiNet	On request for OEM products (min. 500 pcs.)		
Displays / LEDs			
Status / USB / EtherCAT	3 / 2 / 3		
Powerdown Save			
User-defined data can be saved automatically at power-down (e.g. in case of mains failure).			
Mechanical Data			
Type of housing, mounting			
Variant DIN housing	Aluminum rail housing with top hat rail mounting Dimensions: 108 x 108 x 67 mm Width x height x depth till the top edge of the Ethernet plug Weight: 0.5 kg		
Variant compact housing	Sheet housing for rear panel mounting Dimensions: 125 (108) x 98 x 42 mm Total width (only construction) x height x depth till the top edge of the Ethernet plug Weight: 0.3 kg		
Connector type	Tension spring clamp on a pluggable connector board		
OEM versions with customized housings or connector types on request!			
Temperature Range			
Operation / Storage	0…+40° C / -20…+85° C; 20…80 % humidity; not condensing		
Variants and Part Number			
MasterMACS DIN housing	001563		
MasterMACS Compact housing	001565		

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