

# Motion Controllers

V3.0, 4-Quadrant PWM  
with RS232, CANopen or EtherCAT interface

## MC 5010 S

Values at 22°C		MC 5010 S	
Power supply electronic	$U_P$	12 ... 50	V DC
Power supply motor	$U_{mot}$	0 ... 50	V DC
PWM switching frequency	$f_{PWM}$	100	kHz
Efficiency electronic	$\eta$	97	%
Max. continuous output current	$I_{cont}$	10	A
Max. peak output current <sup>1)</sup>	$I_{max}$	30	A
Standby current for electronic (at $U_P=24V$ )	$I_{el}$	RS / CO: 0,06 ET: 0,07	A
Operating temperature range		-40 ... +85	°C
Housing material		aluminium, powder-coated	
Mass		RS / CO: 230 ET: 270	g

<sup>1)</sup> S2 mode for max. 3s

Interfaces	MC 5010 S RS	MC 5010 S CO	MC 5010 S ET
Configuration from Motion Manager 6.0	RS232 / USB	CANopen / USB	RS232 / USB
Fieldbus	RS232	CANopen	EtherCAT

### Basic features

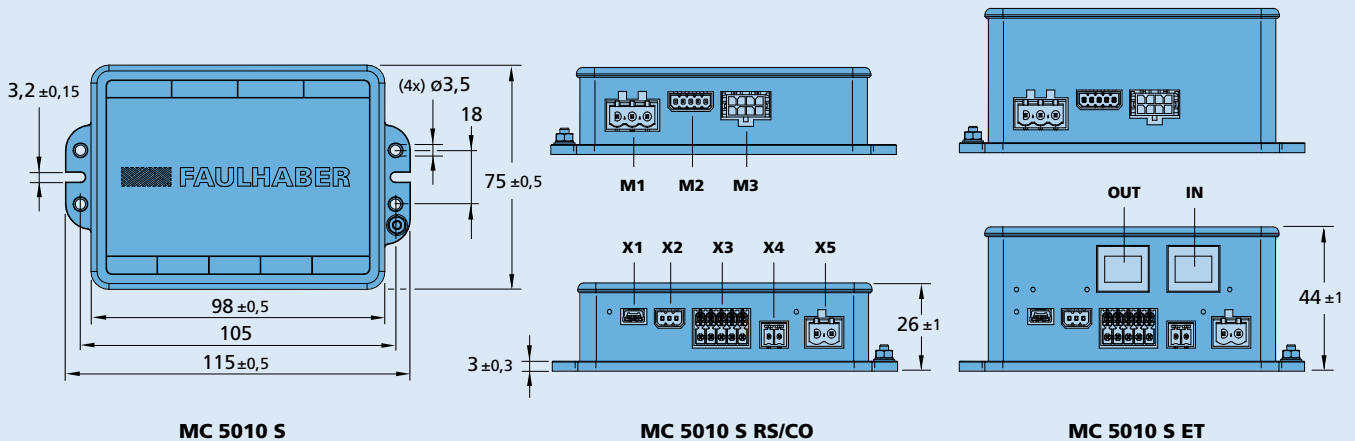
- Control of brushless, DC- and linear motors
- Supported sensor systems: absolute encoders (AES or SSI), incremental encoders (optical or magnetic), Hall sensors (digital or analog), tachometers
- Positioning resolution when using analog Hall sensors as position encoder: 4096 increments per revolution
- 3 digital inputs, 2 digital outputs, 2 analog inputs, flexible configuration
- Setpoint specification via fieldbus, quadrature signal, pulse and direction or analog inputs
- Optional stand-alone operation via application programs in all interface versions

### Range of functions

Operating modes	PP, PV, PT, CSP, CSV, CST and homing acc. to IEC 61800-7-201 or IEC 61800-7-301 as well as position-, speed- and torque control via analog setpoint or voltage controller
Speed range for brushless motors with number of pole pairs 1	0 min <sup>-1</sup> ... 30 000 min <sup>-1</sup> with sinusoidal commutation
Application programs	Max. 8 application programs (BASIC), one of which is an autostart function
Additional functions	Touch-probe input, connection of a second incremental encoder, control of a holding brake
Indicator	LEDs for displaying the operating state Trace as recorder (scope function) or logger
Motor types	DC, BL- and linear motors

### Dimensional drawing

Scale reduced



### Options and connection information

Example product designation: **MC 5010 S RS**

Option	Type	Description	Connection			
			Name	Function	Input/Output	Description
6419	Encoder combination	Integrated terminating resistor for combination with absolute encoder AES-4096L	<b>X1</b>	Configuration interface		USB
			<b>X2</b>	Fieldbus		RS: RS232 CO: CANOpen
			<b>X3</b>	Input/Output	DigIn1, DigIn2, DigIn3 DigOut1, DigOut2 AnIn1, AnIn2 U <sub>out</sub> / GND	TTL or PLC level max. 0,7A cont. current ± 10V against AGND 5V
			<b>X4</b>	Electronic power supply		
			<b>X5</b>	Motor power supply		
			<b>M1</b>	Motor phases	A, B, C	
			<b>M2</b>	Hall sensors	A, B, C U <sub>out</sub> / GND	digital or analog 5V
			<b>M3</b>	Encoder	A, $\bar{A}$ , B, $\bar{B}$ , I, $\bar{I}$ EN, $\bar{EN}$ , CLOCK, $\bar{CLOCK}$ , DATA, $\bar{DATA}$ U <sub>out</sub> / GND	max. 5MHz AES or SSI 5V
			<b>IN</b>	Fieldbus		EtherCAT IN
			<b>OUT</b>	Fieldbus		EtherCAT OUT
			<b>Note:</b> For details on the connection assignment, see device manual for the MC 5010.			

### Product combination

DC-Motors	Brushless DC-Motors	Cables / Accessories
3242 ... CR 3257 ... CR 3272 ... CR 3863 ... CR 3890 ... CR	2264 ... BP4 3242 ... BX4 3268 ... BX4 3274 ... BP4 3564 ... B 4490 ... B 4490 ... BS	<p>An extensive range of accessories is available for the products of the MC 5010 and MC 5005 controller series.</p> <p>Included here are connection cables for controller and motor supply, sensors and interfaces, connector sets for motor- and supply side as well as mechanical components for optional top hat rail mounting.</p> <p>To view our large range of accessory parts, please refer to the „Accessories“ chapter.</p>