

MicNano

Micro to Nano

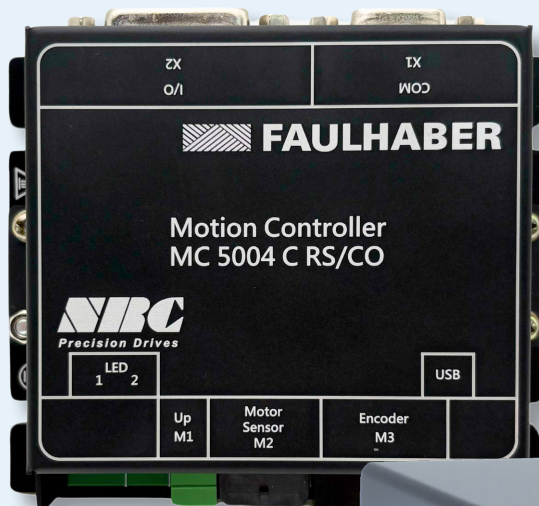
Controllers

運動控制器系列

- 電壓：~ 50 VDC
 - 最大連續輸出電流：4 A
 - 通訊介面：RS 232 / RS 422
Pulse / IO / USB
CANopen
EtherCAT
-

Piezo LEGS® Controller 控制器系列
奈米級解析值，開迴路及閉迴路精密定位

Motion Controllers 運動控制器系列
最緊湊體積下充分發揮無鐵心馬達，無刷馬達，線性馬達特性
支援增量型編碼器，Analog 霍爾感應器或 AES 絕對型編碼器

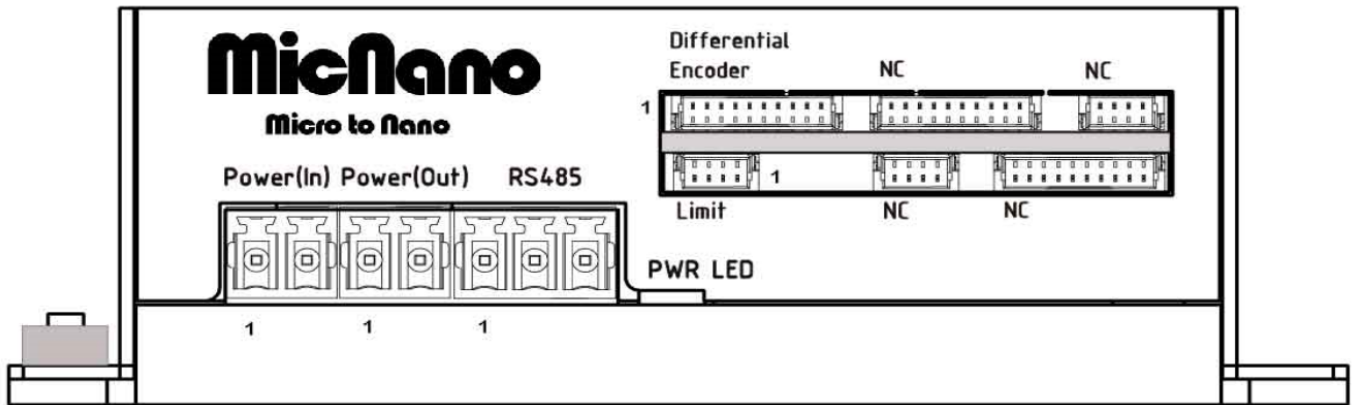


Controllers

Piezo LEGS® Controller PMD401	106 - 108
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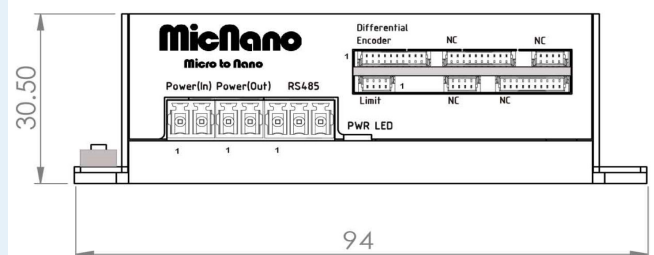
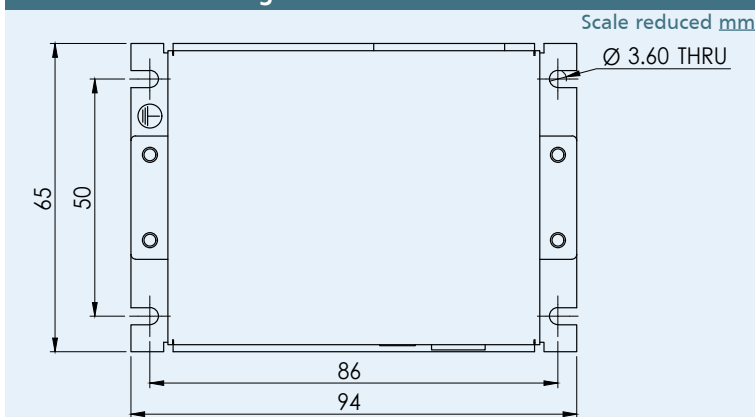
- Nanometer resolution
- Close loop control
- Open loop mode
- Small form factor

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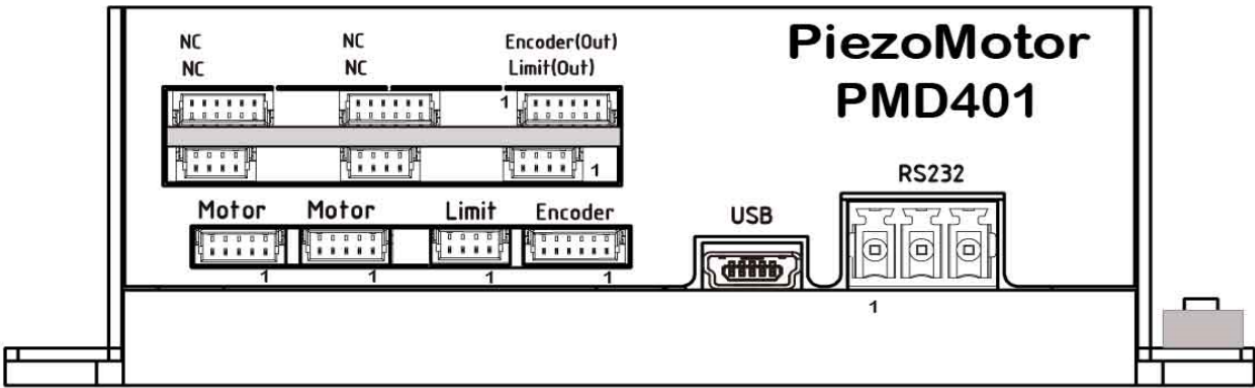


Connector	Pin	Function	I/O	Note
Power (in)	1	+VCC(24VDC)	In	Recommended mating connector
	2	GND	Power GND	DINKLE EC350V-02P
Power (out)	1	+VCC(24VDC)	In	The two power connectors are connected in parallel
	2	GND	Power GND	Recommended mating connector
RS485	1	DATA+	In/Out	DINKLE EC350V-03P
	2	DATA-	In/Out	
	3	GND	In	
Differential encoder	1	B-	In	Recommended mating connector
	2	GND	GND	JST 10SR-3S
	3	NC		
	4	B+	In	
	5	I-	In	
	6	NC		
	7	A-	In	
	8	I+	In	
	9	A+	In	
	10	5V Out	Out	
Limit	1	GND	GND	Recommended mating connector
	2	5V Out	Out	JST 04SR-3S
	3	Limit Reverse	In	
	4	Limit Forward	In	

Dimensional drawing



Piezo LEGS® Controller PMD401



Connector	Pin	Function	I/O	Note
RS232	1	TxD	Out	Recommended mating connector DINKLE EC350V-03P
	2	RxD	In	
	3	GND	GND	
Mini-USB				Any standard mini-USB plug
Encoder	1	I+	In	Recommended mating connector JST 06SR-3S
	2	GND	GND	
	3	5V Out	Out	
	4	B+	In	
	5	A+	In	
	6	NC		
Limit	1	GND	GND	Recommended mating connector JST 04SR-3S
	2	5V Out	Out	
	3	Limit Reverse	In	
	4	Limit Forward	In	
Motor	1	GND	GND	The two motor connectors are connected in parallel. Recommended mating connector JST 05SR-3S
	2	Motor Phase 4	Out	
	3	Motor Phase 3	Out	
	4	Motor Phase 2	Out	
	5	Motor Phase 1	Out	
Encoder (Out)	1	I+	Out	Recommended mating connector JST 06SR-3S
	2	GND	GND	
	3	5V Out	Out	
	4	B+	Out	
	5	A+	Out	
	6	NC		
Limit (Out)	1	GND	GND	Recommended mating connector JST 04SR-3S
	2	5V Out	Out	
	3	Limit Reverse	Out	
	4	Limit Forward	Out	

NOTE

MC 3001 S RS/CO

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

MC 3001 S RS/CO

Values at 22°C		MC 3001 S RS/CO	DC/BL/LM
Power supply	U_P	6 ... 30	V DC
PWM switching frequency	f_{PWM}	100	kHz
Efficiency electronic	η	95	%
Max. continuous output current	I_{cont}	1.4	A
Max. peak output current ¹⁾	I_{max}	5	A
Standby current for electronic (@ $U_P=24V$)	I_{el}	0.04	A
Operating temperature range		-40 ... +85	°C
Mass		45	g

¹⁾ $I_{cont}=2.1A$ @ $U_{mot}=12V$, $I_{cont}=1.3A$ @ $U_{mot}=24V$

²⁾ S2 mode for max. 2s

Interfaces	MC 3001 S RS/CO
Configuration from Motion Manager 6.7	RS232 / CANopen / USB
Fieldbus	RS232 / CANopen

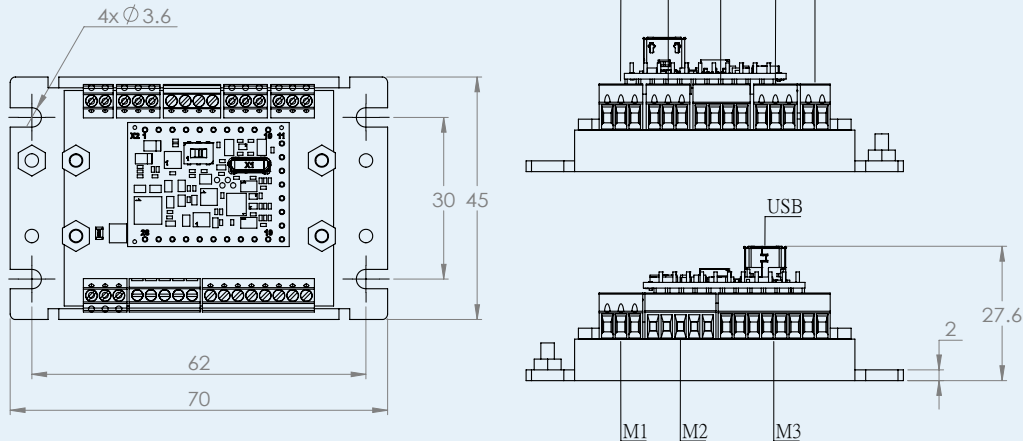
Basic features

- Control of brushless, DC- and linear motors
- Supported sensor systems: absolute encoders, 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 ⁻¹ ... 30 000 min ⁻¹ with sinusoidal commutation (optionally to 60 000 min ⁻¹ with block 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 (version STD)

Scale reduced mm

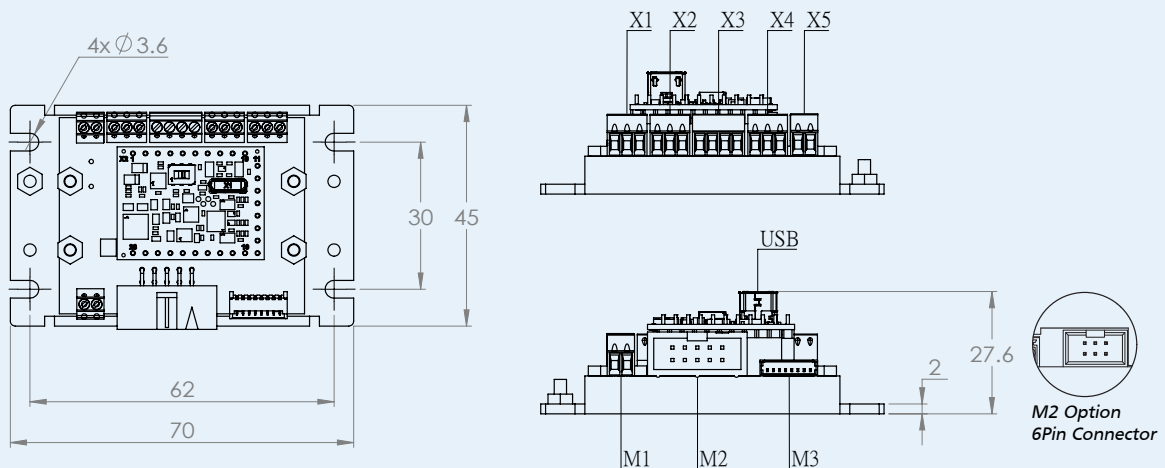


Connection information

Designation	Function
M1(Motor)	Connection of the motor phases
M2(Sensor)	Connection of the Hall sensors
M3(Encoder)	Connection of an incremental encoder with or without line driver Alternatively an absolute encoder can be connected with or without line driver
USB	Connection of the USB communication
X1(COM)	Interface connection RS-232 / CANopen
X2(Analog IN)	Analog inputs for external circuits
X3(Digital IN)	Digital inputs for external circuits
X4(Digital OUT)	Digital outputs for external circuits
X5(U _P)	Power supply

Dimensional drawing (version A1 - DC Brushed Servomotor)

Scale reduced mm

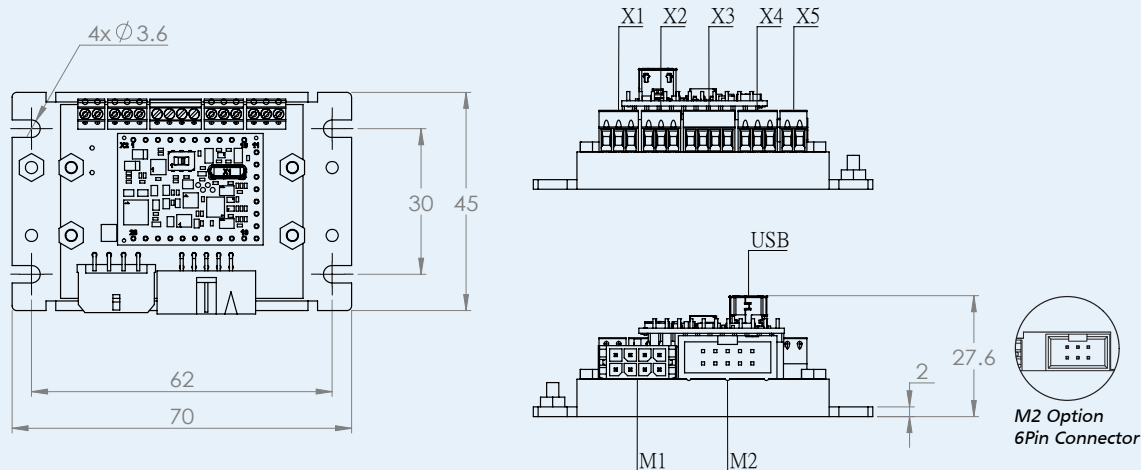


Connection information

Designation	Function
M1(Motor)	Connection of the motor phases
M2(Encoder)	Connection of an encoder IE2/IEH2/IE3/IE3-L/IEH3/IEH3-L/HEM3
M3(Encoder)	Connection of an encoder IEP3
USB	Connection of the USB communication
X1(COM)	Interface connection RS-232 / CANopen
X2(Analog IN)	Analog inputs for external circuits
X3(Digital IN)	Digital inputs for external circuits
X4(Digital OUT)	Digital outputs for external circuits
X5(U _P)	Power supply

Dimensional drawing (version B1 - DC Brushless Servomotor) (Linear DC Servmotor-01)

Scale reduced mm

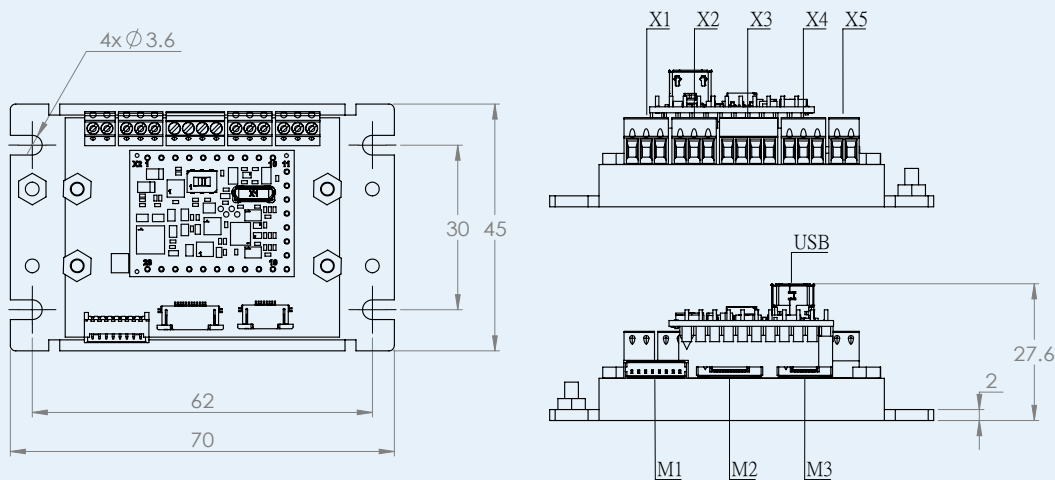


Connection information

Designation	Function
M1(Motor+Sensor)	Connection of the motor phases and Hall sensors 1218/1226/3692/K1155/K1855/LM-01
M2(Motor+Sensor+Encoder)	Connection of an encoder IE3/IE3-L/IEF3/IEF3-L/IER3/IER3-L/IER3/IER3-L/AES-4096L
USB	Connection of the USB communication
X1(COM)	Interface connection RS-232 / CANopen
X2(Analog IN)	Analog inputs for external circuits
X3(Digital IN)	Digital inputs for external circuits
X4(Digital OUT)	Digital outputs for external circuits
X5(U _P)	Power supply

Dimensional drawing (version B2 - DC Brushless Servomotor) (Linear DC Servmotor-01)

Scale reduced mm

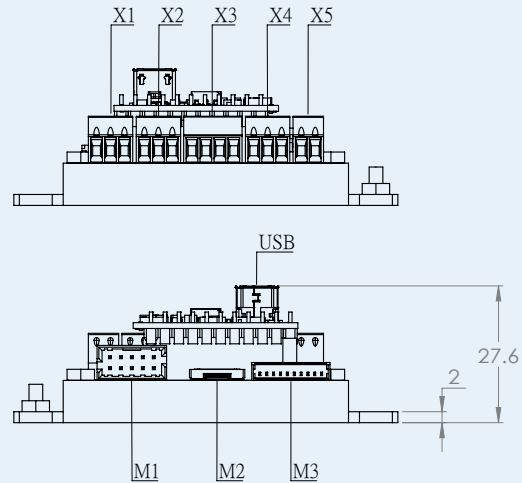
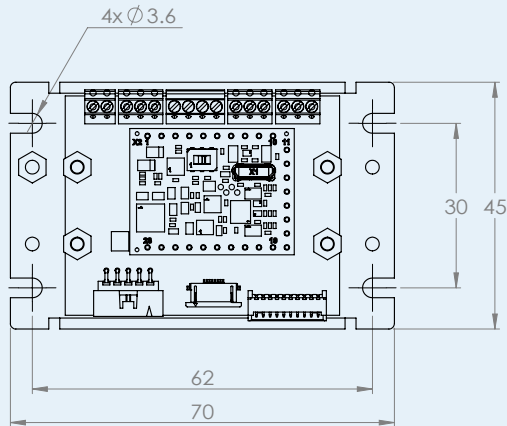


Connection information

Designation	Function
M1(Motor+Sensor)	Connection of the motor phases and Hall sensors 1218/1226/K1855
M2(Motor+Sensor+Encoder)	Connection of the motor phases , the Hall sensors and the encoder IEM3
M3(Motor+AESM)	Connection of the motor phases and the encorder AESM
USB	Connection of the USB communication
X1(COM)	Interface connection RS-232 / CANopen
X2(Analog IN)	Analog inputs for external circuits
X3(Digital IN)	Digital inputs for external circuits
X4(Digital OUT)	Digital outputs for external circuits
X5(U _P)	Power supply

Dimensional drawing (version C - Linear DC Servomotor-11C)

Scale reduced mm



Connection information

Designation	Function
M1(Motor+Sensor)	Connection of the motor phases and Hall sensors LM-11C
M2(Motor+Sensor)	Connection of the motor phases and Hall sensors LM0830-01
M3(Encoder)	Connection of an incremental encoder with or without line driver(second encoder)
USB	Connection of the USB communication
X1(COM)	Interface connection RS-232 / CANopen
X2(Analog IN)	Analog inputs for external circuits
X3(Digital IN)	Digital inputs for external circuits
X4(Digital OUT)	Digital outputs for external circuits
X5(U _P)	Power supply

MC 3001 C RS/CO AEMT

V3.0, 4-Quadrant PWM
with RS232 or CANopen interface
for multi-turn encoder AEMT-12/16 L

MC 3001 C RS/CO AEMT

Values at 22°C		MC 3001 S RS/CO	DC/BL/LM
Power supply	U_P	6 ... 30	V DC
PWM switching frequency	f_{PWM}	100	kHz
Efficiency electronic	η	95	%
Max. continuous output current	I_{cont}	1.4	A
Max. peak output current ¹⁾	I_{max}	5	A
Standby current for electronic (@ $U_P = 24V$)	I_{el}	0.04	A
Operating temperature range		-40 ... +85	°C
Mass		90	g

¹⁾ $I_{cont} = 2.1A$ @ $U_{mot} = 12V$, $I_{cont} = 1.3A$ @ $U_{mot} = 24V$

²⁾ S2 mode for max. 2s

Interfaces	MC 3001 S RS/CO
Configuration from Motion Manager 6.7	RS232 / CANopen / USB
Fieldbus	RS232 / CANopen

Basic features

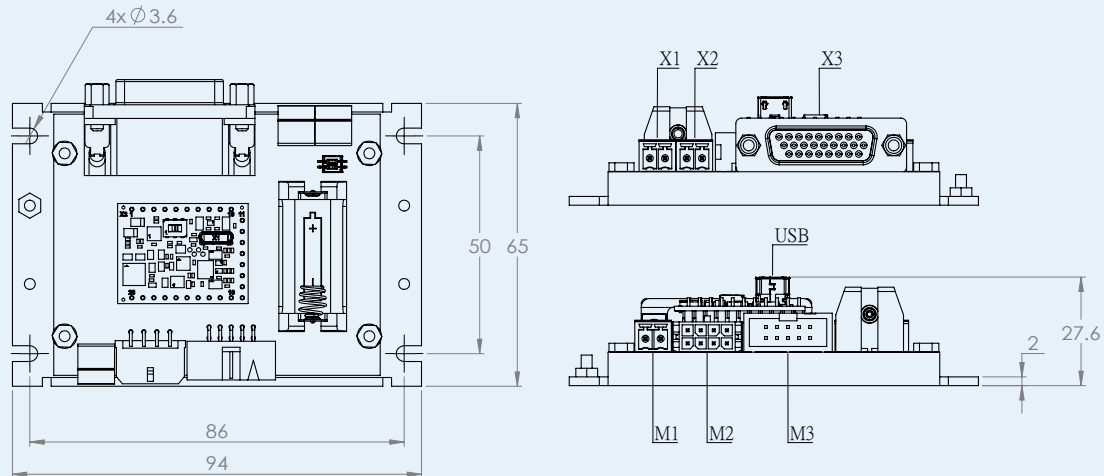
- Control of brushless motors
- Supported sensor systems: Multi-turn absolute encoders, Hall sensors (digital)
- 3 digital inputs, 2 digital outputs, 2 analog inputs, flexible configuration
- Setpoint specification via fieldbus, quadrature signal, pulse and direction or analog inputs
- Optional stand-alone operation via application programs in all interface versions
- If the power supply fails or is switched off, the AEMT-12/16L multi-turn encoder automatically switches to a battery mode with greatly reduced energy consumption.
- In combination with a suitable backup battery board ensures that the multi-turn functionality of the encoder is temporarily maintained.
- In addition to the buffer function, the board also contains a preset connection for resetting the revolution counter when commissioning or during maintenance work.
- For details on the functionality, see the technical manual of the AEMT-12/16 .
- NOTE: The battery is included in the delivery contents of the board. Recommended battery types: SL-350, ER 14259, LS 14250.

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 ⁻¹ ... 30 000 min ⁻¹ with sinusoidal commutation (optionally to 60 000 min ⁻¹ with block 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	Brushless motors

Dimensional drawing (version B - DC Brushless Servomotor)

Scale reduced mm

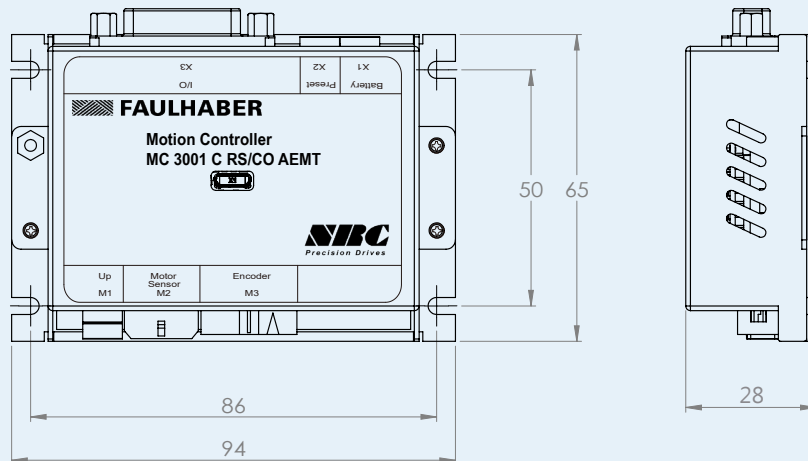


Connection information

Designation	Function
M1(U _p)	Power supply
M2(Motor+Sensor)	Connection of the motor phases and the Hall sensors
M3(Encoder)	Connection of an encoder AEMT-12/16 L
USB	Connection of the USB communication
X1(Battery)	Connection of battery
X2(Preset)	Preset input for external circuits
X3(I/O)	Inputs or outputs for external circuits

Option

Scale reduced mm



MC 3001 C PDIO

V3.0, 4-Quadrant PWM

with connection of a pulse/direction signal at digital input

MC 3001 C PD IO

Values at 22°C		MC 3001 C PD IO	DC/BL/LM
Power supply	U_P	6 ... 30	V DC
PWM switching frequency	f_{PWM}	100	kHz
Efficiency electronic	η	95	%
Max. continuous output current	I_{cont}	1.4	A
Max. peak output current ¹⁾	I_{max}	5	A
Standby current for electronic (@ $U_P = 24V$)	I_{el}	0.06	A
Operating temperature range		-40 ... +85	°C
Mass		75	g

¹⁾ S2 mode for max. 1s

Interfaces	MC 3001 C PD IO
Configuration from Motion Manager 6.7	USB

Basic features

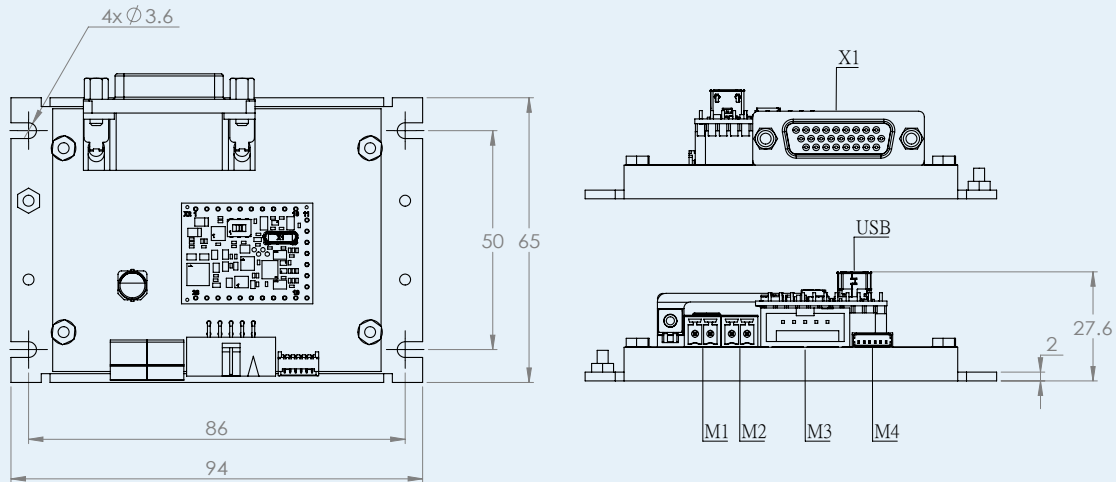
- Control of brushless, DC- and linear motors
- Supported sensor systems: incremental encoders (optical or magnetic), Hall sensors (digital or analog)
- Positioning resolution when using analog Hall sensors as position encoder: 4096 increments per revolution
- Pulse/direction input, 1 digital inputs, 2 digital outputs, 2 analog inputs, flexible configuration
- Setpoint specification via USB, quadrature signal, pulse and direction or analog inputs
- Optional stand-alone operation via application programs in all interface versions

Range of functions

Pulse Input frequency	Up to 500 KHz
Operating modes	PP, PV 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 ⁻¹ ... 30 000 min ⁻¹ with sinusoidal commutation (optionally to 60 000 min ⁻¹ with block 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
Motor types	DC, BL motors and linear motors

Dimensional drawing (version A - DC Brushed Servomotor)

Scale reduced mm

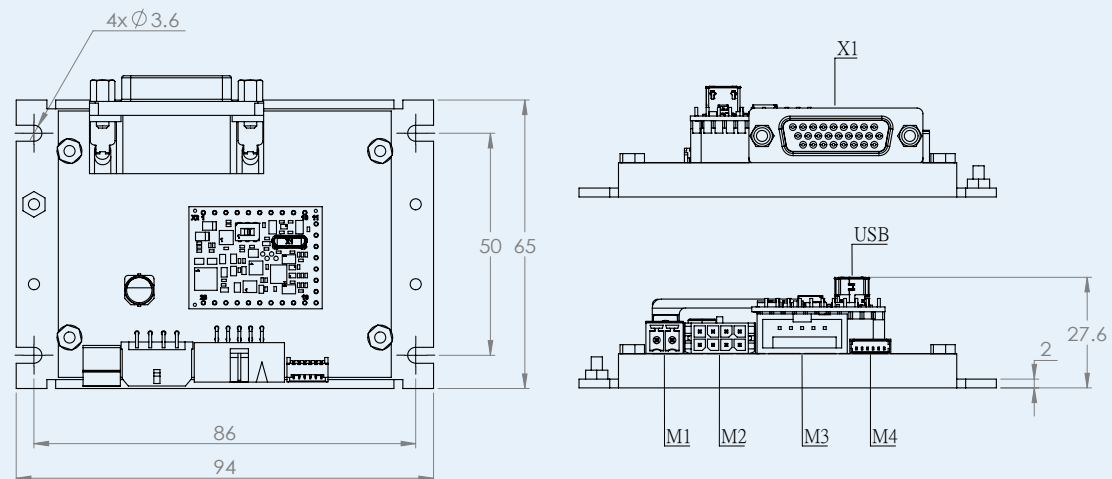


Connection information

Designation	Function
M1(U _p)	Power supply
M2(Motor)	Connection of the motor phases
M3/(M4 Optional)(Encoder)	Connection of an encoder IE2/IEH2/IEH3-L/IE3/IE3-L
USB	Connection of the USB communication
X1(I/O)	Inputs or outputs for external circuits

Dimensional drawing (version B - DC Brushless Servomotor) (Linear DC Servomotor-01)

Scale reduced mm



Connection information

Designation	Function
M1(U _p)	Power supply
M2(Motor+Sensor)	Connection of the motor phases and the Hall sensors (3692/K1155/LM-01)
M3/(M4 Optional)(Encoder)	Connection of an encoder IE3/IE3-L/IEF3/IEF3-L/IER3/IER3-L/IER3/IER3-L
USB	Connection of the USB communication
X1(I/O)	Inputs or outputs for external circuits

MC 3001 C4 RS/CO

V3.0, 4-Quadrant PWM
with RS422 or RS232 or CANopen interface

MC 3001 C4 RS/CO

Values at 22°C		MC 3001 C4 RS/CO	DC/BL/LM
Power supply	U_P	6 ... 30	V DC
PWM switching frequency	f_{PWM}	100	kHz
Efficiency electronic	η	95	%
Max. continuous output current	I_{cont}	1.4	A
Max. peak output current ¹⁾	I_{max}	5	A
Standby current for electronic (@ $U_P=24V$)	I_{el}	0.04	A
Operating temperature range		-40 ... +85	°C
Mass		75	g

¹⁾ $I_{cont}=2.1A$ @ $U_{mot}=12V$, $I_{cont}=1.3A$ @ $U_{mot}=24V$

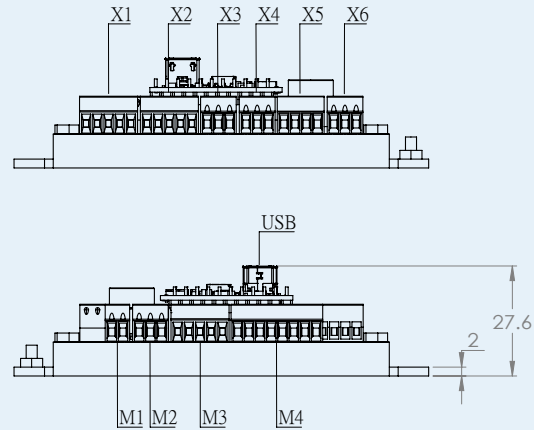
²⁾ S2 mode for max. 2s

Interfaces	MC 3001 C4 RS/CO
Configuration from Motion Manager 6.7	RS232 / CANopen / USB
Fieldbus	RS422 / RS232 / CANopen

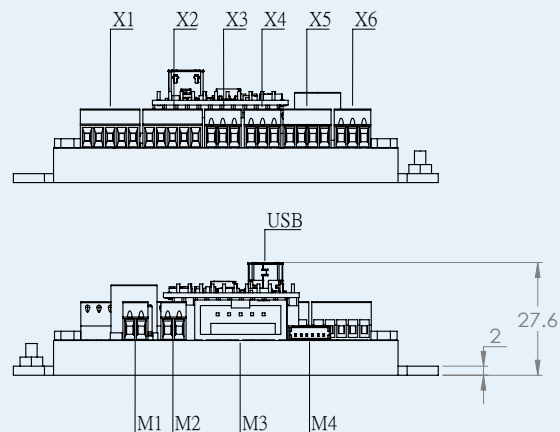
Basic features

- Control of brushless, DC- and linear motors
- Supported sensor systems: absolute encoders, 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 ⁻¹ ... 30 000 min ⁻¹ with sinusoidal commutation (optionally to 60 000 min ⁻¹ with block 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

Scale reduced mm

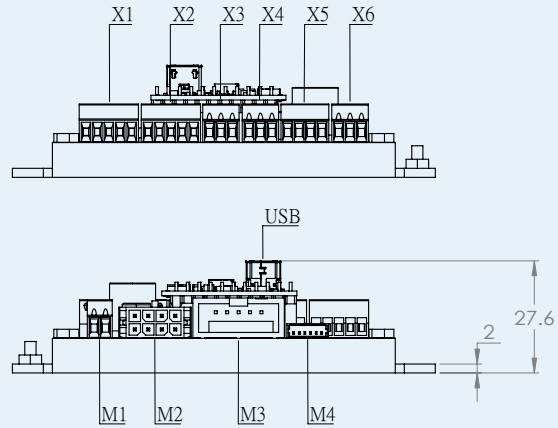
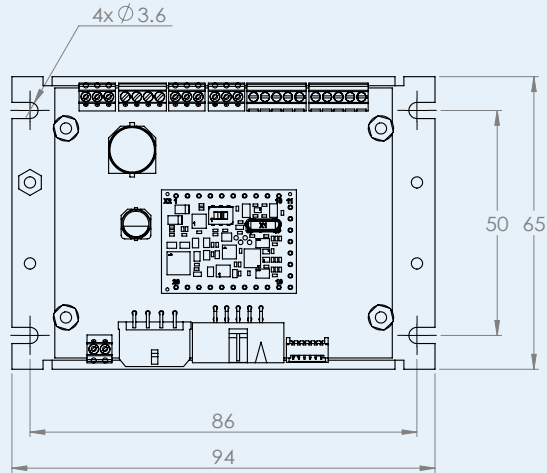
Designation	Function
M1(U _P)	Power supply
M2(Motor)	Connection of the motor phases
M3(Sensor)	Connection of the Hall sensors
M4(Encoder)	Connection of an incremental encoder with or without line driver Alternatively an absolute encoder can be connected with or without line driver
USB	Connection of the USB communication
X1/X2	Connection of the RS-422 communication
X3(COM)(Optional)	Interface connection RS-232 / CANopen
X4(Analog IN)	Analog inputs for external circuits
X5(Digital IN)	Digital inputs for external circuits
X6(Digital OUT)	Digital outputs for external circuits

Scale reduced mm

Designation	Function
M1(U _P)	Power supply
M2(Motor)	Connection of the motor phases
M3/(M4 Optional)(Encoder)	Connection of an encoder IE2/IEH2/IEH3-L/IE3/IE3-L
USB	Connection of the USB communication
X1/X2	Connection of the RS-422 communication
X3(COM)(Optional)	Interface connection RS-232 / CANopen
X4(Analog IN)	Analog inputs for external circuits
X5(Digital IN)	Digital inputs for external circuits
X6(Digital OUT)	Digital outputs for external circuits

Dimensional drawing (version B1 - DC Brushless Servomotor) (Linear DC Servmotor-01)

Scale reduced mm

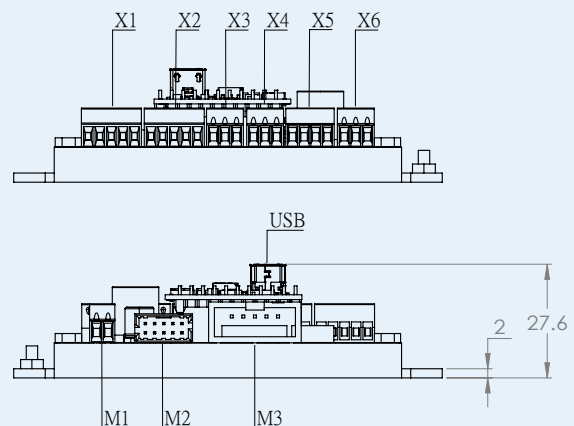
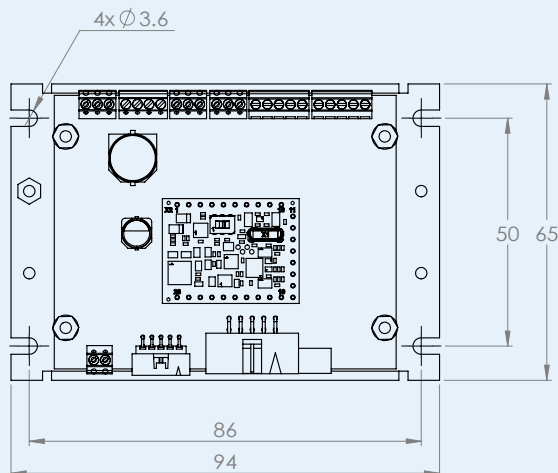


Connection information

Designation	Function
M1(U _P)	Power supply
M2(Motor+Sensor)	Connection of the motor phases and the Hall sensors (3692/K1155/LM-01)
M3/(M4 Optional)(Encoder)	Connection of an encoder IE3/IE3-L/IEF3/IEF3-L/IER3/IER3-L/AES-4096L
USB	Connection of the USB communication
X1/X2	Connection of the RS-422 communication
X3(COM)(Optional)	Interface connection RS-232 / CANopen
X4(Analog IN)	Analog inputs for external circuits
X5(Digital IN)	Digital inputs for external circuits
X6(Digital OUT)	Digital outputs for external circuits

Dimensional drawing (version B2 - DC Brushless Servomotor) (Linear DC Servmotor-01)

Scale reduced mm



Connection information

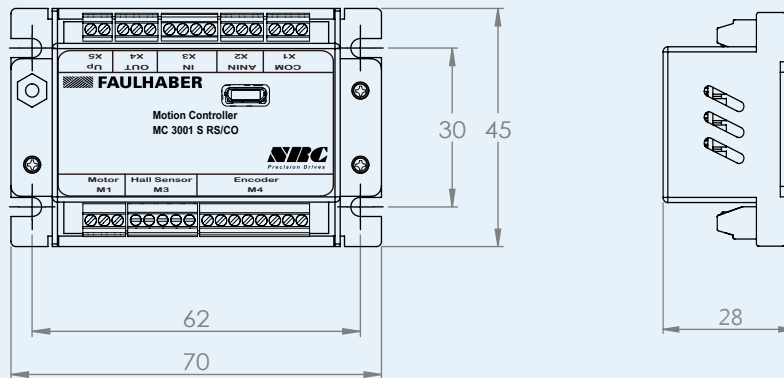
Designation	Function
M1(U _P)	Power supply
M2(Motor+Sensor)	Connection of the motor phases and Hall sensors LM-11C
M3(Encoder)	Connection of an incremental encoder with or without line driver (second encoder)
USB	Connection of the USB communication
X1/X2	Connection of the RS-422 communication
X3(COM)(Optional)	Interface connection RS-232 / CANopen
X4(Analog IN)	Analog inputs for external circuits
X5(Digital IN)	Digital inputs for external circuits
X6(Digital OUT)	Digital outputs for external circuits

MC 3001 OPTIONAL

Optional cover for MC 3001

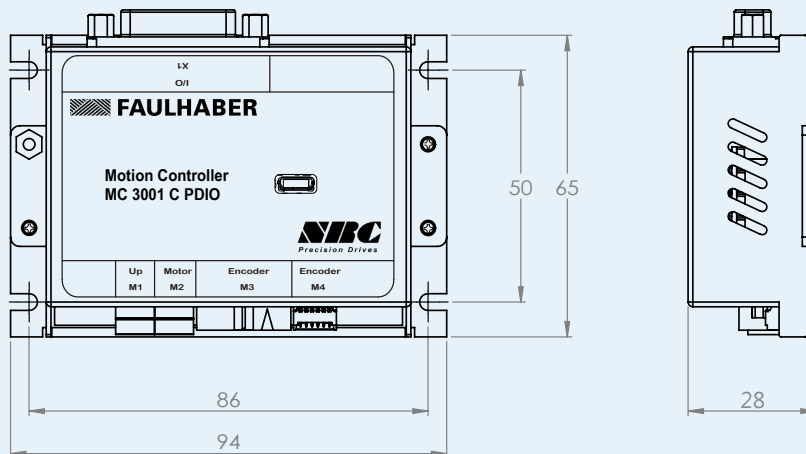
Optional cover

Scale reduced mm



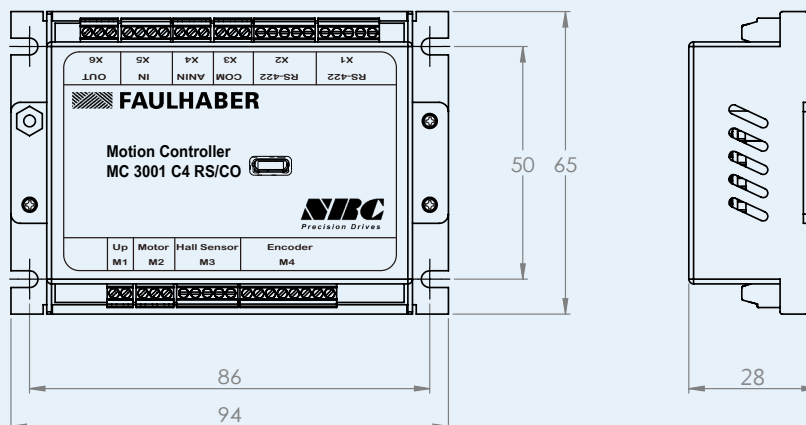
Optional cover

Scale reduced mm



Optional cover

Scale reduced mm



MC 5004 C RS/CO

V3.0, 4-Quadrant PWM
with EtherCAT interface

MC 5004 C RS/CO

Values at 22°C		MC 5004 C RS/CO	DC/BL/LM
Power supply	U_P	12 ... 50	V DC
PWM switching frequency	f_{PWM}	100	kHz
Efficiency electronic	η	95	%
Max. continuous output current	I_{cont}	4	A
Max. peak output current ¹⁾	I_{max}	12	A
Standby current for electronic (@ $U_P = 24V$)	I_{el}	0.06	A
Operating temperature range		-40 ... +85	°C
Mass		155	g

¹⁾ S2 mode for max. 1s

Interfaces	MC 5004 C RS/CO
Configuration from Motion Manager 6.7	RS232 / USB
Fieldbus	RS232 / CANopen

Basic features

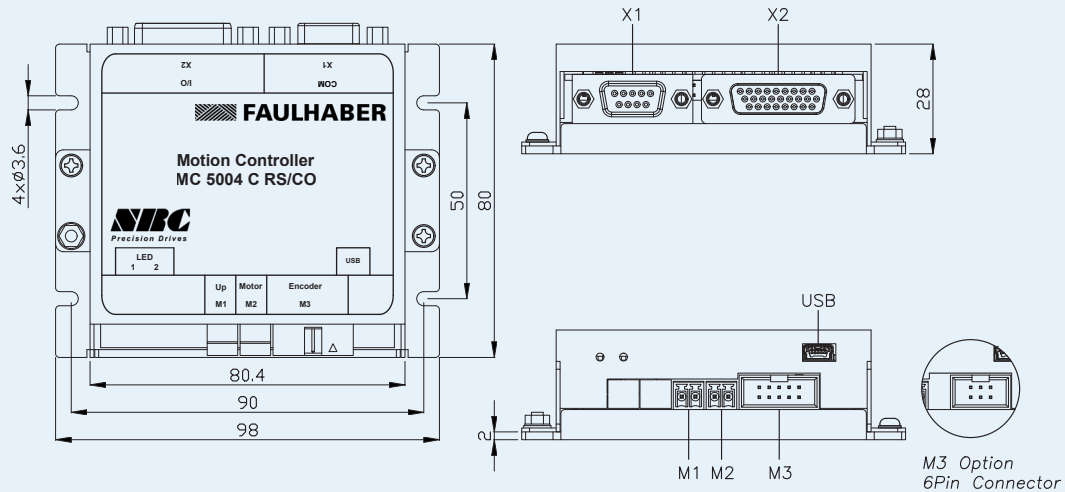
- Control of brushless, DC- and linear motors
- Supported sensor systems: absolute encoders (AES or SSI), incremental encoders (optical or magnetic), Hall sensors (digital or analog), tachometers
- Positioning resolution when using analog Hall sensors as position encoder: 4096 increments per revolution
- 8 digital inputs, 3 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 ⁻¹ ... 30 000 min ⁻¹ with sinusoidal commutation (optionally to 60 000 min ⁻¹ with block 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 (version A - DC Brushed Servomotor)

Scale reduced mm

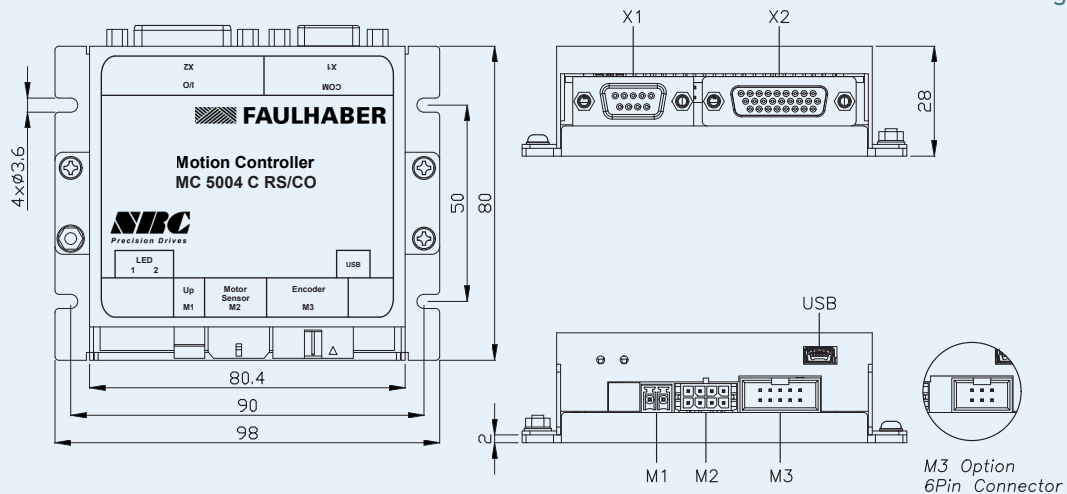


Connection information

Designation	Function
M1(U _P)	Power supply
M2(Motor)	Connection of the motor phases
M3(Encoder)	Connection of an incremental encoder with or without line driver
USB	Connection of the USB communication
X1(COM)	Interface connection RS-232, CANopen
X2(I/O)	Inputs or outputs for external circuits

Dimensional drawing (version B - DC Brushless Servomotor) (Linear DC Servomotor-01)

Scale reduced mm



Connection information

Designation	Function
M1(U _P)	Power supply
M2(Motor+Sensor)	Connection of the motor phases and the Hall sensors
M3(Encoder)	Connection of an incremental encoder with or without line driver. Alternatively an absolute encoder can be connected with or without line driver
USB	Connection of the USB communication
X1(COM)	Interface connection RS-232, CANopen
X2(I/O)	Inputs or outputs for external circuits

MC 5004 C RS/CO AEMT

V3.0, 4-Quadrant PWM
with RS232, CANopen interface
for multi-turn encoder AEMT-12/16 L

MC 5004 C RS/CO AEMT

Values at 22°C		MC 5004 C RS/CO AEMT	BL
Power supply electronic	U_P	12 ... 50	V DC
PWM switching frequency	f_{PWM}	100	kHz
Efficiency electronic	η	95	%
Max. continuous output current	I_{cont}	4	A
Max. peak output current ¹⁾	I_{max}	12	A
Standby current for electronic (@ $U_P = 24V$)	I_{el}	0.06	A
Operating temperature range		-40 ... +85	°C
Mass		140	g

¹⁾S2 mode for max. 2s

Interfaces	MC 5004 C RS/CO AEMT
Configuration from Motion Manager 6.7	RS232 / USB
Fieldbus	RS232 / CANopen

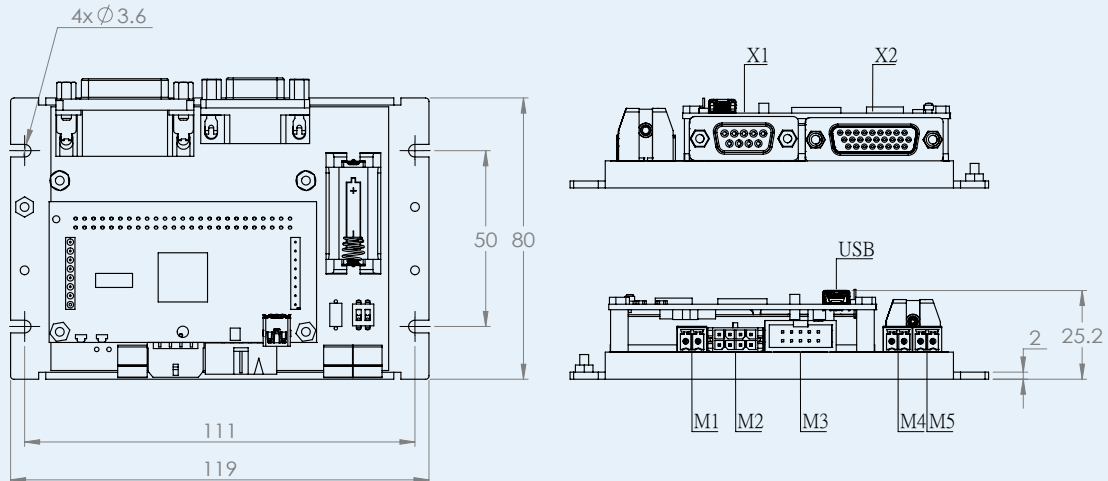
Basic features

- Control of brushless motors
- Supported sensor systems: Multi-turn absolute encoders, Hall sensors (digital)
- 8 digital inputs, 3 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
- If the power supply fails or is switched off, the AEMT-12/16L multi-turn encoder automatically switches to a battery mode with greatly reduced energy consumption.
- In combination with a suitable backup battery board ensures that the multi-turn functionality of the encoder is temporarily maintained.
- In addition to the buffer function, the board also contains a preset connection for resetting the revolution counter when commissioning or during maintenance work.
- For details on the functionality, see the technical manual of the AEMT-12/16 .
- NOTE: The battery is included in the delivery contents of the board. Recommended battery types: SL-350, ER 14259, LS 14250.

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 ⁻¹ ... 30 000 min ⁻¹ with sinusoidal commutation (optionally to 60 000 min ⁻¹ with block 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	Brushless motors

Dimensional drawing (version B - DC Brushless Servomotor)

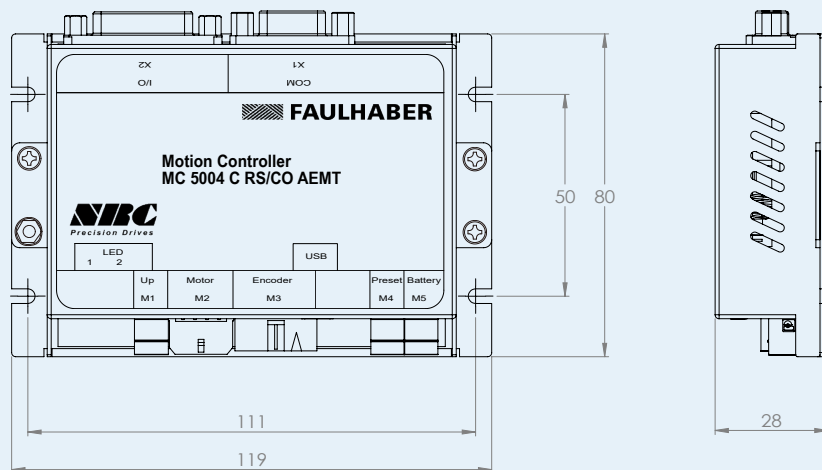
Scale reduced mm



Connection information

Designation	Function
M1(U _P)	Power supply
M2(Motor+Sensor)	Connection of the motor phases and the Hall sensors
M3(Encoder)	Connection of an encoder AEMT-12/16 L
M4(Preset)	Preset input for external circuits
M5(Battery)	Connection of battery
USB	Connection of the USB communication
X1(COM)	Interface connection RS-232, CANopen
X2(I/O)	Inputs or outputs for external circuits

Scale reduced mm



MC 5004 C PDIO

V3.0, 4-Quadrant PWM

with connection of a pulse/direction signal at digital input

MC 5004 C PD IO

Values at 22°C		MC 5004 C PD IO	DC/BL/LM
Power supply	U_P	12 ... 50	V DC
PWM switching frequency	f_{PWM}	100	kHz
Efficiency electronic	η	95	%
Max. continuous output current	I_{cont}	4	A
Max. peak output current ¹⁾	I_{max}	12	A
Standby current for electronic (@ $U_P = 24V$)	I_{el}	0.06	A
Operating temperature range		-40 ... +85	°C
Mass		155	g

¹⁾ S2 mode for max. 1s

Interfaces	MC 5004 C PD IO
Configuration from Motion Manager 6.7	USB

Basic features

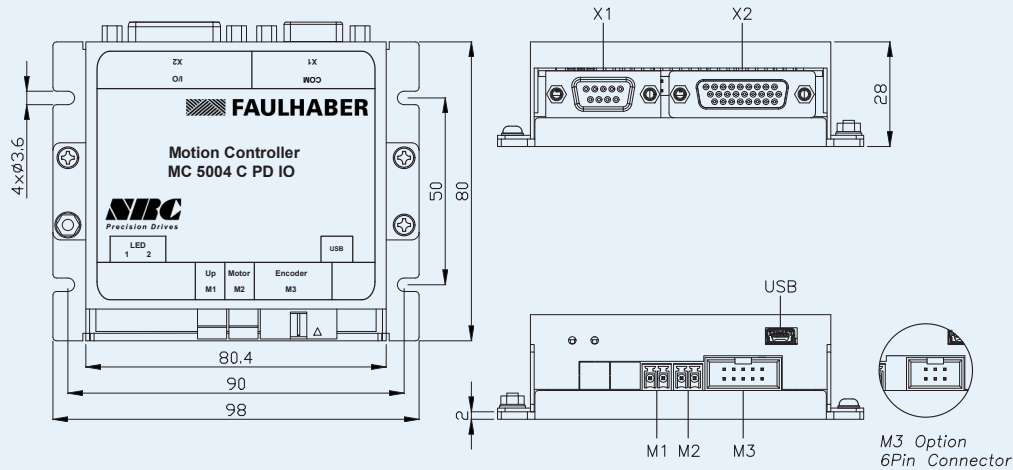
- Control of brushless, DC- and linear motors
- Supported sensor systems: incremental encoders (optical or magnetic), Hall sensors (digital or analog)
- Positioning resolution when using analog Hall sensors as position encoder: 4096 increments per revolution
- Pulse/direction input, 6 digital inputs, 3 digital outputs, 2 analog inputs, flexible configuration
- Setpoint specification via USB, quadrature signal, pulse and direction or analog inputs
- Optional stand-alone operation via application programs in all interface versions

Range of functions

Pulse Input frequency	Up to 500 KHz
Operating modes	PP, PV 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 ⁻¹ ... 30 000 min ⁻¹ with sinusoidal commutation (optionally to 60 000 min ⁻¹ with block 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
Motor types	DC, BL motors and linear motors

Dimensional drawing (version A - DC Brushed Servomotor)

Scale reduced mm

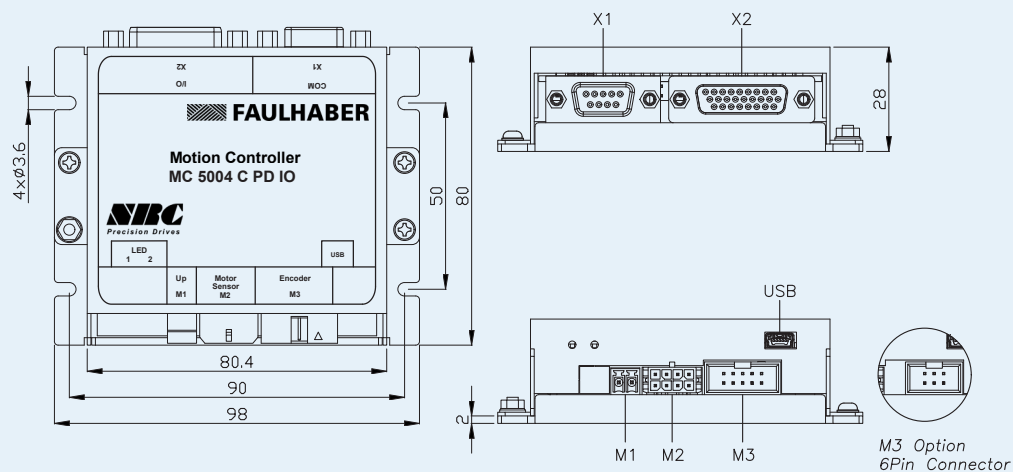


Connection information

Designation	Function
M1(U _p)	Power supply
M2(Motor)	Connection of the motor phases
M3(Encoder)	Connection of an incremental encoder with or without line driver
USB	Connection of the USB communication
X1(COM)	Encoder output
X2(I/O)	Inputs or outputs for external circuits

Dimensional drawing (version B - DC Brushless Servomotor) (Linear DC Servomotor-01)

Scale reduced mm



Connection information

Designation	Function
M1(U _p)	Power supply
M2(Motor+Sensor)	Connection of the motor phases and the Hall sensors
M3(Encoder)	Connection of an incremental encoder with or without line drive
USB	Connection of the USB communication
X1(COM)	Encoder output
X2(I/O)	Inputs or outputs for external circuits

MC 5004 C ET

V3.0, 4-Quadrant PWM
with EtherCAT interface

MC 5004 C ET

Values at 22°C		MC 5004 C ET	DC/BL/LM
Power supply electronic	U_P	12 ... 50	V DC
PWM switching frequency	f_{PWM}	100	kHz
Efficiency electronic	η	95	%
Max. continuous output current	I_{cont}	4	A
Max. peak output current ¹⁾	I_{max}	12	A
Standby current for electronic (@ $U_P = 24V$)	I_{el}	0.07	A
Operating temperature range		-40 ... +85	°C
Mass		200	g

¹⁾ S2 mode for max. 1s

Interfaces	MC 5004 C ET
Configuration from Motion Manager 6.7	RS232 / USB
Fieldbus	EtherCAT

Basic features

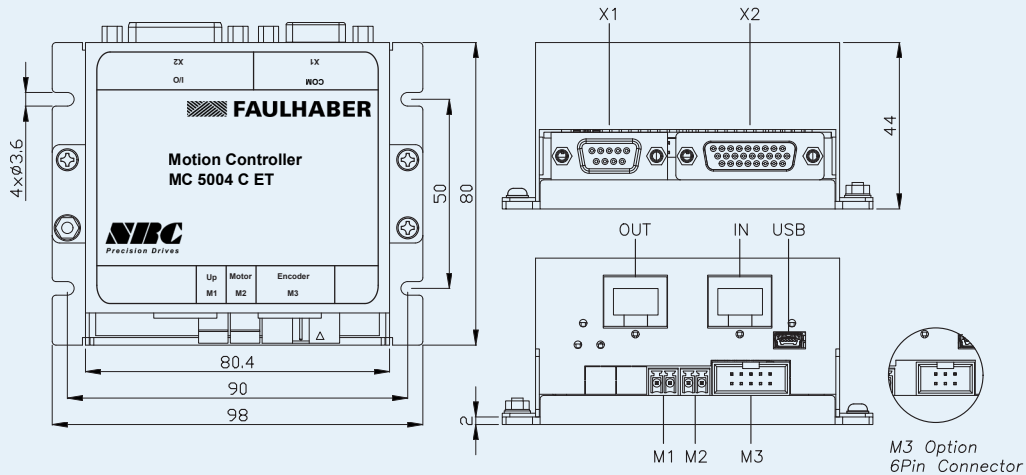
- Control of brushless, DC- and linear motors
- Supported sensor systems: absolute encoders (AES or SSI), incremental encoders (optical or magnetic), Hall sensors (digital or analog), tachometers
- Positioning resolution when using analog Hall sensors as position encoder: 4096 increments per revolution
- 8 digital inputs, 3 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 ⁻¹ ... 30 000 min ⁻¹ with sinusoidal commutation (optionally to 60 000 min ⁻¹ with block 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 (version A - DC Brushed Servomotor)

Scale reduced **mm**

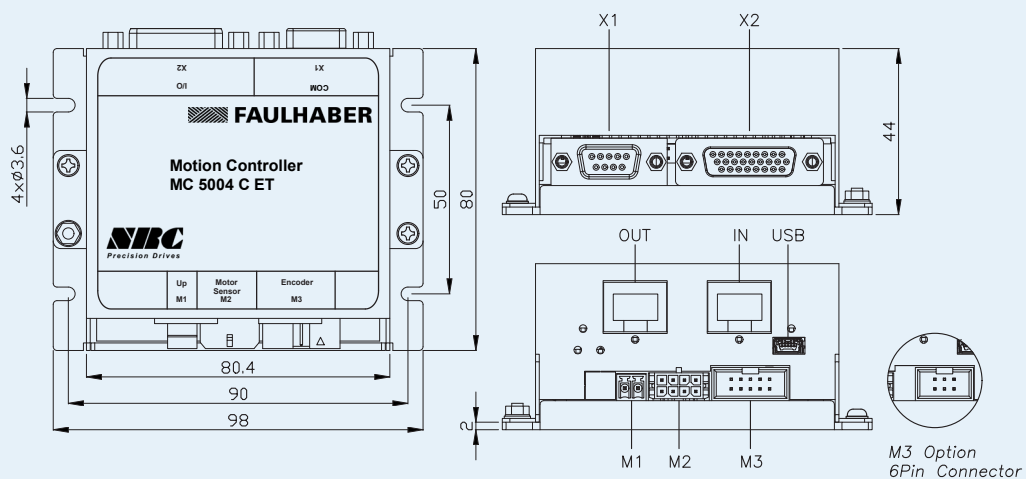


Connection information

Designation	Function
M1(U _P)	Power supply
M2(Motor)	Connection of the motor phases
M3(Encoder)	Connection of an incremental encoder with or without line driver
USB	Connection of the USB communication
X1(COM)	Interface connection RS-232
X2(I/O)	Inputs or outputs for external circuits
IN/OUT	Connection of EtherCAT communication

Dimensional drawing (version B - DC Brushless Servomotor) (version C - Linear DC Servomotor-01)

Scale reduced **mm**



Connection information

Designation	Function
M1(U _P)	Power supply
M2(Motor+Sensor)	Connection of the motor phases and the Hall sensors
M3(Encoder)	Connection of an incremental encoder with or without line driver
	Alternatively an absolute encoder can be connected with or without line driver
USB	Connection of the USB communication
X1(COM)	Interface connection RS-232
X2(I/O)	Inputs or outputs for external circuits
IN/OUT	Connection of EtherCAT communication

MC 5004 C ET AEMT

V3.0, 4-Quadrant PWM
with EtherCAT interface
for multi-turn encoder AEMT-12/16 L

MC 5004 C ET AEMT

Values at 22°C		MC 5004 C ET AEMT	BL
Power supply electronic	U_P	12 ... 50	V DC
PWM switching frequency	f_{PWM}	100	kHz
Efficiency electronic	η	95	%
Max. continuous output current	I_{cont}	4	A
Max. peak output current ¹⁾	I_{max}	12	A
Standby current for electronic (@ $U_P = 24V$)	I_{el}	0.07	A
Operating temperature range		-40 ... +85	°C
Mass		165	g

¹⁾S2 mode for max. 2s

Interfaces	MC 5004 C ET AEMT
Configuration from Motion Manager 6.7	RS232 / USB
Fieldbus	EtherCAT

Basic features

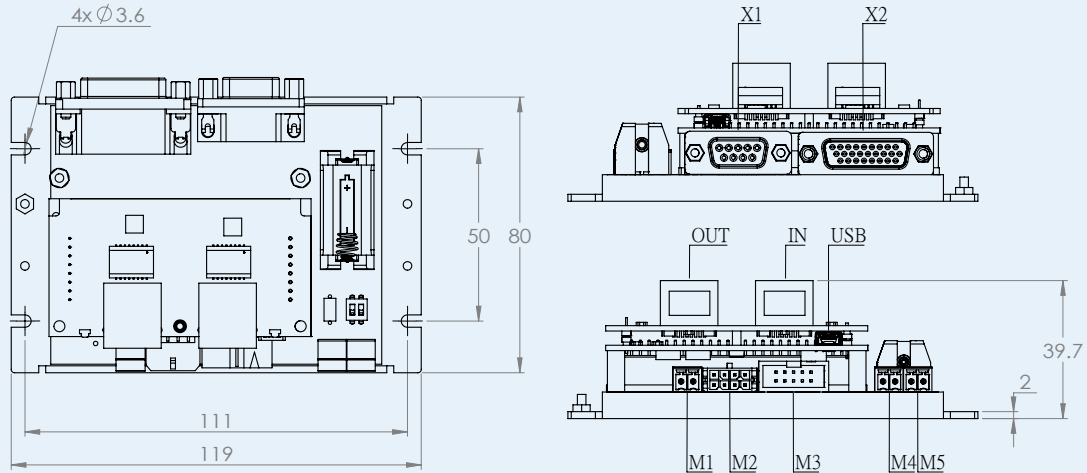
- Control of brushless motors
- Supported sensor systems: Multi-turn absolute encoders, Hall sensors (digital)
- 8 digital inputs, 3 digital outputs, 2 analog inputs, flexible configuration
- Setpoint specification via fieldbus, quadrature signal, pulse and direction or analog inputs
- Optional stand-alone operation via application programs in all interface versions
- If the power supply fails or is switched off, the AEMT-12/16L multi-turn encoder automatically switches to a battery mode with greatly reduced energy consumption.
- In combination with a suitable backup battery board ensures that the multi-turn functionality of the encoder is temporarily maintained.
- In addition to the buffer function, the board also contains a preset connection for resetting the revolution counter when commissioning or during maintenance work.
- For details on the functionality, see the technical manual of the AEMT-12/16 .
- NOTE: The battery is included in the delivery contents of the board. Recommended battery types: SL-350, ER 14259, LS 14250.

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 ⁻¹ ... 30 000 min ⁻¹ with sinusoidal commutation (optionally to 60 000 min ⁻¹ with block 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	Brushless motors

Dimensional drawing (version B - DC Brushless Servomotor)

Scale reduced mm



Connection information

Designation	Function
M1(U _P)	Power supply
M2(Motor+Sensor)	Connection of the motor phases and the Hall sensors
M3(Encoder)	Connection of an encoder AEMT-12/16 L
M4(Preset)	Preset input for external circuits
M5(Battery)	Connection of battery
USB	Connection of the USB communication
X1(COM)	Interface connection RS-232
X2(I/O)	Inputs or outputs for external circuits
IN/OUT	Connection of EtherCAT communication

Scale reduced mm

