

Motion Controller

V2.5, 4-Quadrant PWM
with RS232 or CAN interface

For combination with:
Linear DC-Servomotors
with analog Hall sensors

Series MCLM 3002

		MCLM 3002 P	MCLM 3002 F	MCLM 3002 S	
Power supply	U_B	5 ... 30	5 ... 30	5 ... 30	V DC
PWM switching frequency	f_{PWM}	78,12	78,12	78,12	kHz
Efficiency	η	95	95	95	%
Max. continuous output current ¹⁾	I_{dauer}	2	2	2	A
Max. peak output current	I_{max}	3	3	3	A
Total standby current	I_{el}	0,04	0,04	0,04	A
Speed range ²⁾		2 ... 10 000	2 ... 10 000	2 ... 10 000	mm/s
Scanning rate	N	200	200	200	μ s
Encoder resolution with linear Hall Sensors ³⁾		3 000	3 000	3 000	inc./ τ_m
Resolution with external encoder		$\leq 65\,535$	$\leq 65\,535$	$\leq 65\,535$	inc./mm
Input/output (partially free configurable)		3	3	3	
Program memory: ⁴⁾					
– memory size		3,3	3,3	3,3	kWord
– Number of instructions		ca. 1 000	ca. 1 000	ca. 1 000	instructions
Operating temperature range		- 25 ... + 85	- 25 ... + 85	- 25 ... + 85	°C
Weight		7	13	16	g

¹⁾ at 22°C ambient temperature

²⁾ Speed in the range 1 ... 5 mm/s may have fluctuations due to the motor type, load characteristics and controller parameters

³⁾ τ_m is the magnetic pitch of the linear motor

⁴⁾ Only for version with serial interface

Connection information

Connection communication:					
Interface			RS232	CAN	
Communication profile			FAULHABER - ASCII	CANopen	
Max. transfer speed rate RS232			115 200		baud
Max. transfer speed rate CAN				1	Mbit/s
Connection 3 "AGND":					
– analog ground			analog GND		
– digital input	external encoder		channel B		
	R_{in}		10		k Ω
	f		≤ 400		kHz
Connection 4 "Fault":					
– digital input		R_{in}	100		k Ω
– digital output (open collector)		U	$\leq U_B$		V
		I	≤ 30		mA
		clear	switched to GND		
		set	high-impedance		
	fault output	no error	switched to GND		
		error	high-impedance		
	signal output	f	≤ 2		kHz
		resolution	1...255		inc./ τ_m
Connection 5 "AnIn":					
– analog input	set position value	U_{in}	± 10		V
– digital input	external encoder		channel A		
	step frequency input	f	≤ 400		kHz
		f	≤ 400		kHz
		R_{in}	5		k Ω
Connection 6 "UB":					
		U_B	5 ... 30		V DC
Connection 7 "GND":					
			ground		
Connection 8 "3. In":					
– digital input		R_{in}	22		k Ω
– electronic supply voltage		U_{EL}	5 ... 30		V DC

Connection information

Connection 9-11 „Sensor A, B, C“:			
Hall sensor input	Sensor A		Hall Sensor A
	Sensor B		Hall Sensor B
	Sensor C		Hall Sensor C
		U_{In}	≤ 5
			V
Connection 12 “Ucc”:			
Output voltage for external use ¹⁾		U_{Out}	5
Load current		I_{Out}	≤ 60
			V
			mA
Connection 13 “SGND”:			
Signal GND			Signal masse
Connection 14-16 „Motor A, B, C“:			
Motor connection	Motor A		Phase A
	Motor B		Phase B
	Motor C		Phase C
		U_{Out}	0 ... U_B
		f_{PWM}	78,12
			V DC
			kHz

¹⁾ E.g. Hall Sensors

The signal level (PLC or TTL) of the digital inputs can be set over the interface (see operating instruction manual).
Standard (PLC): Low 0...4,5V / High 12,5V... U_B , TTL: Low 0...0,5V / High 2,5V... U_B

Options

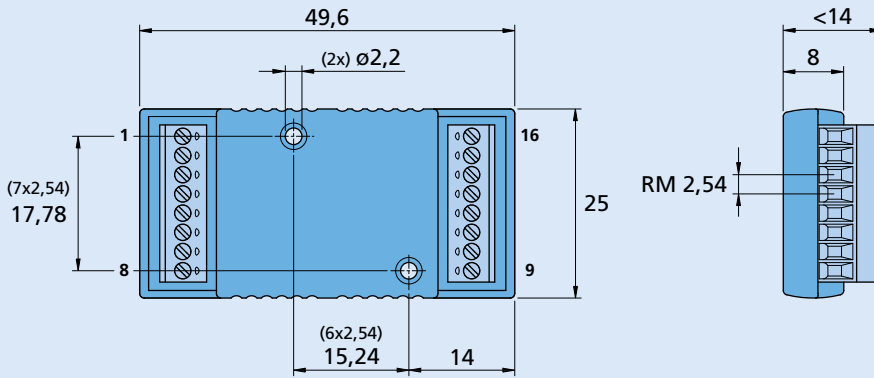
- Separate power supply (Option no.: 3085)

Full product description

- Example:
MCLM 3002 S RS (RS232)
MCLM 3002 F CF (CANopen with FAULHABER CAN)
MCLM 3002 P CO (CANopen CiA)

Accessories

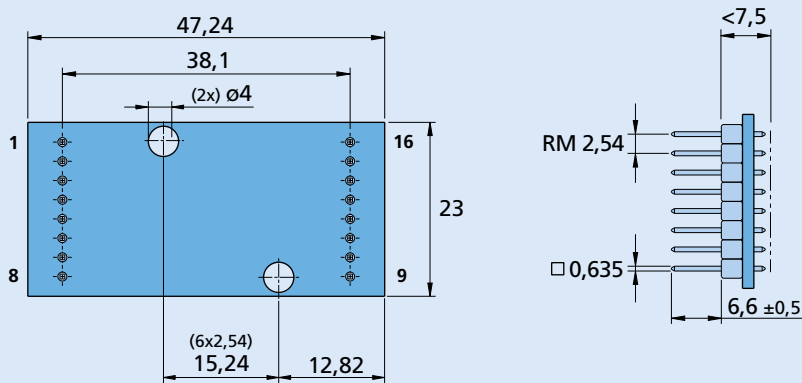
		Motor Type	Part No.
Programming adapter	RS232/CAN	BL	6501.00121

Dimensional drawing and connection information MCLM 3002 S

MCLM 3002 S
Supply connection

No.	Function
1	TxD / CAN_H
2	RxD / CAN_L
3	AGND
4	Fault
5	AnIn
6	U _s
7	GND
8	3. In

Motor connection

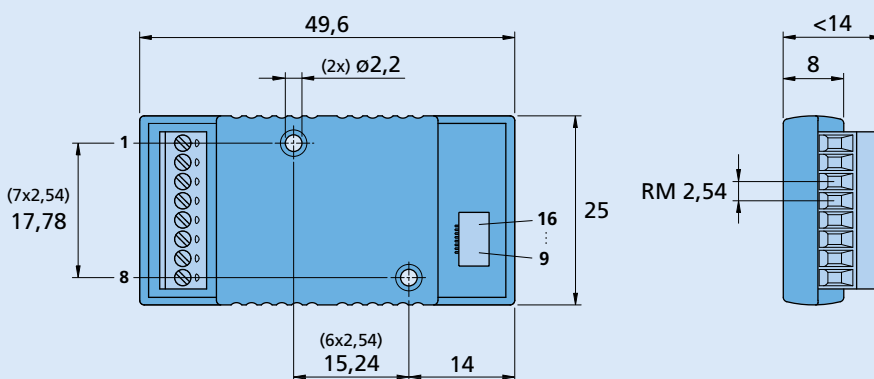
No.	Function
9	Sensor A
10	Sensor B
11	Sensor C
12	U _{cc}
13	SGND
14	Motor A
15	Motor B
16	Motor C

Dimensional drawing and connection information MCLM 3002 P

MCLM 3002 P
Supply connection

No.	Function
1	TxD / CAN_H
2	RxD / CAN_L
3	AGND
4	Fault
5	AnIn
6	U _s
7	GND
8	3. In

Motor connection

No.	Function
9	Sensor A
10	Sensor B
11	Sensor C
12	U _{cc}
13	SGND
14	Motor A
15	Motor B
16	Motor C

Dimensional drawing and connection information MCLM 3002 F

MCLM 3002 F
Connector Information
LIF-Connector 8-pole

Supply connection

No.	Function
1	TxD / CAN_H
2	RxD / CAN_L
3	AGND
4	Fault
5	AnIn
6	U _s
7	GND
8	3. In

Motor connection

No.	Function
9	Sensor A
10	Sensor B
11	Sensor C
12	U _{cc}
13	SGND
14	Motor A
15	Motor B
16	Motor C