

NEW

Motion Controller

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

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

Series MCLM 3003

| | | MCLM 3003 P | |
|---|-------------|-----------------|----------------|
| Power supply | U_B | 12 ... 30 | V DC |
| PWM switching frequency | f_{PWM} | 78,12 | kHz |
| Efficiency | η | 95 | % |
| Max. continuous output current ¹⁾ | I_{dauer} | 3 | A |
| Max. peak output current | I_{max} | 10 | A |
| Total standby current | I_{el} | 0,06 | A |
| Speed range ²⁾ | | 2 ... 10 000 | mm/s |
| Scanning rate | N | 200 | μ s |
| Encoder resolution with linear Hall Sensors ³⁾ | | $\leq 3\ 000$ | inc./ τ_m |
| Resolution with external encoder | | $\leq 65\ 535$ | inc./mm |
| Input/output (partially free configurable) | | 3 | |
| Program memory: ⁴⁾ | | | |
| – memory size | | 3,3 | kWord |
| – Number of instructions | | approx. 1 000 | instructions |
| Operating temperature range | | - 40 ... + 85 | °C |
| Housing material | | without housing | |
| Weight | | 18 | 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: | | RS232 | CAN | |
|--------------------------------------|------------|------------------------|---------|----------------|
| Interface | | Faulhaber - ASCII | CANopen | |
| Communication profile | | 115 200 | 1 | baud |
| Max. transfer speed rate RS232 | | | | Mbit/s |
| Max. transfer speed rate CAN | | | | |
| Connection 3 "AGND": | | | | |
| – analog ground | | analog GND channel B | | |
| – digital input external encoder | 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} | "AGND" as GND ± 10 | | V |
| – digital input external encoder | | channel A | | |
| | f | ≤ 400 | | kHz |
| step frequency input | f | ≤ 400 | | kHz |
| | R_{in} | 5 | | k Ω |
| Connection 6 "U_B": | | | | |
| | U_B | 12 ... 30 | | V DC |
| Connection 7 "GND": | | | | |
| | | ground | | |
| Connection 8 "3. In": | | | | |
| – digital input | R_{in} | 22 | | k Ω |
| – electronic supply voltage | U_{EL} | 12 ... 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 | V DC |
| Load current | I_{out} | ≤ 60 | mA |

Connection 13 “SGND”:

| | | | |
|------------|--|---------------|--|
| Signal GND | | Signal ground | |
|------------|--|---------------|--|

Connection 14-16 „Motor A, B, C“:

| | | | |
|-------------------------|-----------|-------------|-----|
| Motor connection | Motor A | Phase A | |
| | Motor B | Phase B | |
| | Motor C | Phase C | |
| PWM switching frequency | U_{out} | 0 ... U_B | V |
| | f_{PWM} | 78,12 | 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...7V / High 12,5V... U_B , TTL: Low 0...0,5V / High 3,5V... U_B

Options

- Separate power supply (Option no.: 3085)


Full product description

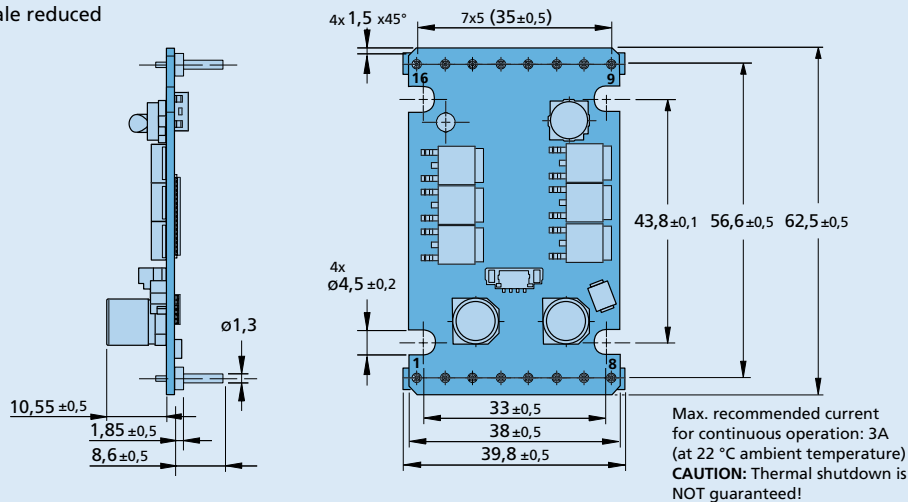
- Example:

MCLM 3003 P RS (RS232)

MCLM 3003 P CF (CANopen with Faulhaber CAN)

Dimensional drawing and connection information MCLM 3003 P

 Scale reduced



Connection

| Pin | Function |
|-----|-------------|
| 1 | TxD / CAN_H |
| 2 | RxD / CAN_L |
| 3 | AGND |
| 4 | Fault |
| 5 | AnIn |
| 6 | U_B |
| 7 | GND |
| 8 | 3. In |
| 9 | Sensor A |
| 10 | Sensor B |
| 11 | Sensor C |
| 12 | U_{cc} |
| 13 | SGND |
| 14 | Motor A |
| 15 | Motor B |
| 16 | Motor C |