

NEW

Motion Controller

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

For combination with:
Brushless DC-Servomotors
with absolute encoder

Series MCBL 3002 AES

| | | MCBL 3002 P AES | MCBL 3002 F AES | MCBL 3002 S AES | |
|--|--------------------|-----------------|-----------------|-----------------|--------------|
| 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 | | 5 ... 30 000 | 5 ... 30 000 | 5 ... 30 000 | rpm |
| Scanning rate | N | 100 | 100 | 100 | μs |
| Encoder resolution with AES encoder | | ≤ 4 096 | ≤ 4 096 | ≤ 4 096 | inc./rev. |
| Resolution with external encoder | | ≤ 65 535 | ≤ 65 535 | ≤ 65 535 | inc./rev. |
| Input/output (partially free configurable) | | 3 | 3 | 3 | |
| Program memory: ²⁾ | | | | | |
| – 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⁾ 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 | | kΩ |
| | f | | ≤ 400 | | kHz |
| Connection 4 "Fault": | | | | | |
| – digital input | R _{In} | | 100 | | kΩ |
| – digital output (open collector) | U | | ≤ 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...32 | | inc./rev. |
| Connection 5 "AnIn": | | | | | |
| – analog input | set speed value | U _{In} | ± 10 | | V |
| – digital input | PWM set speed value | f | 100 ... 2 000 | | Hz |
| | external encoder | T | 50% ± 0 rpm | | |
| | | | channel A | | |
| | step frequency input | f | ≤ 400 | | kHz |
| | | f | ≤ 400 | | kHz |
| | | R _{In} | 5 | | kΩ |
| Connection 6 "U_B": | | | | | |
| | U _B | | 5 ... 30 | | V DC |
| Connection 7 "GND": | | | | | |
| | | | ground | | |
| Connection 8 "3. In": | | | | | |
| – digital input | R _{In} | | 22 | | kΩ |
| – electronic supply voltage | U _{EL} | | 5 ... 30 | | V DC |

| Connection information | | | | |
|--|---|------------------|----------------------|------|
| Connection 9-11 „DATA, CS, CLK“: | | | | |
| | DATA | U _{In} | ≤ 5 | V |
| | \overline{CS} | U _{Out} | 0 ... 5 | V |
| | CLK | U _{Out} | 0 ... 5 | |
| Connection 12 “U_{CC}”: | | | | |
| | Output voltage for external use ¹⁾ | U _{Out} | 5 | V |
| | 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 | |
| | | U _{Out} | 0 ... U _B | V DC |
| | PWM switching frequency | f _{PWM} | 78,12 | kHz |

¹⁾ E.g. encoder

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

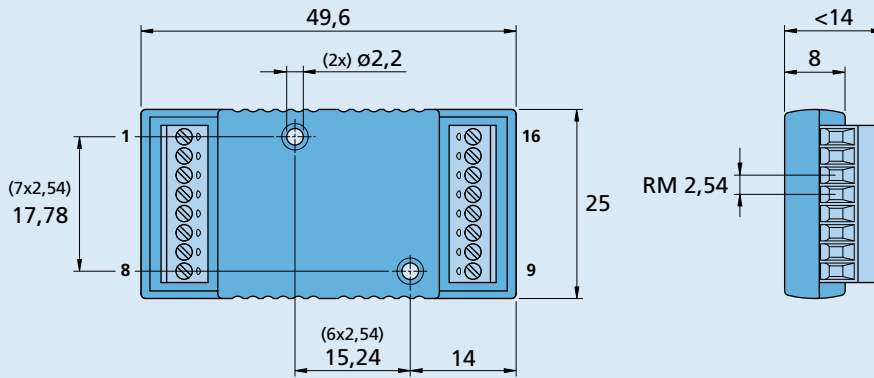
- Separate power supply (Option no.: 3085)

Full product description

- Example:
MCBL 3002 S AES RS (RS232)
MCBL 3002 F AES CF (CANopen with Faulhaber CAN)
MCBL 3002 P AES RS (RS232)

Accessories

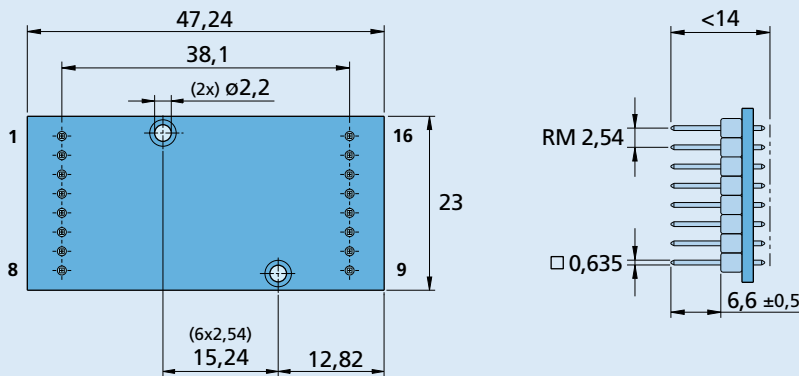
| Accessories | Motor Type | Part No. for MCBL 3002 S AES, F AES |
|---------------------|-----------------|-------------------------------------|
| Programming adapter | RS232/CAN BL | 6501.00121 |

Dimensional drawing and connection information MCBL 3002 S AES

MCBL 3002 S AES
Supply connection

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

Motor connection

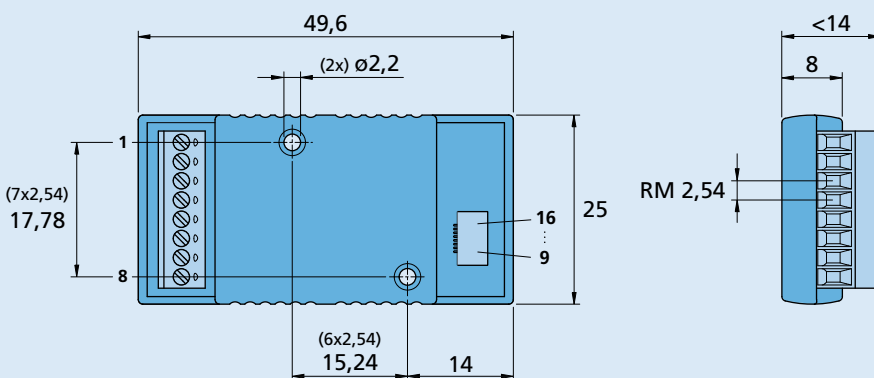
| No. | Function |
|-----|-----------------|
| 9 | Sensor A / DATA |
| 10 | Sensor B / CS |
| 11 | Sensor C / CLK |
| 12 | U _{CC} |
| 13 | SGND |
| 14 | Motor A |
| 15 | Motor B |
| 16 | Motor C |

Dimensional drawing and connection information MCBL 3002 P AES

MCBL 3002 P AES
Supply connection

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

Motor connection

| No. | Function |
|-----|-----------------|
| 9 | Sensor A / DATA |
| 10 | Sensor B / CS |
| 11 | Sensor C / CLK |
| 12 | U _{CC} |
| 13 | SGND |
| 14 | Motor A |
| 15 | Motor B |
| 16 | Motor C |

Dimensional drawing and connection information MCBL 3002 F AES

MCBL 3002 F AES
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 _B |
| 7 | GND |
| 8 | 3. In |

Motor connection

| No. | Function |
|-----|-----------------|
| 9 | Sensor A / DATA |
| 10 | Sensor B / CS |
| 11 | Sensor C / CLK |
| 12 | U _{CC} |
| 13 | SGND |
| 14 | Motor A |
| 15 | Motor B |
| 16 | Motor C |