

## Motor controllers CMMB-AS, for servo motors

**FESTO**



## Key features

### Features

- Extremely small dimensions
- Complete integration of all components for controller and power unit, including RS232 and pulse direction interface
- Control of a holding brake
- Compliance with the latest CE, EN and UL standards
- Digital single-turn absolute encoder
- Can be operated as a torque, rotational speed or position controller
- Integrated positioning control
- Time-optimised (trapezoidal) or jerk-free (S-shaped) positioning
- Absolute and relative movements
- Point-to-point positioning with and without motion path smoothing
- Position synchronisation
- Electronic gear unit
- 32 position sets
- 8 acceleration profiles
- Wide range of homing methods

### Input/output

- Freely programmable I/Os
- Simple coupling to a higher-level controller via an I/O interface
- Synchronous operation
- Master/slave mode

### Integrated sequence control

- Automatic sequence of position sets without a higher-level controller
- Linear and cyclical position sequences
- Adjustable delay times

### Motion program

- Linking of any number of position sets into a motion program
- Step enabling conditions for the motion program possible via digital inputs, for example
  - MC – motion complete
  - I/O – digital inputs

Type codes

|      |                  |  |
|------|------------------|--|
| 001  | Series           |  |
| CMMB | Motor controller |  |
| 002  | Motor type       |  |
| AS   | AC synchronous   |  |

|     |                   |  |
|-----|-------------------|--|
| 003 | Performance class |  |
| 01  | 100 W             |  |
| 02  | 200 W             |  |
| 04  | 400 W             |  |
| 07  | 750 W             |  |

## Data sheet



| General technical data             |      | 01                                                                         | 02  | 04  | 07  |
|------------------------------------|------|----------------------------------------------------------------------------|-----|-----|-----|
| CMMB-AS-                           |      |                                                                            |     |     |     |
| Type of mounting                   |      | Screwed onto connection plate                                              |     |     |     |
| Display                            |      | Seven-segment display                                                      |     |     |     |
| Parameterisation interface         |      | RS232 (up to 38400 bits/s)                                                 |     |     |     |
| Encoder interface input            |      | Nikon A format                                                             |     |     |     |
| Encoder interface output           |      | Actual value feedback via encoder signals in rotational speed control mode |     |     |     |
|                                    |      | Setpoint specification for downstream slave drive                          |     |     |     |
|                                    |      | Resolution 65536 ppr                                                       |     |     |     |
| Braking resistor, integrated       | [Ω]  | 100                                                                        |     |     |     |
| Braking resistor, external         | [Ω]  | 75                                                                         |     |     |     |
| Impedance of setpoint input        | [kΩ] | 350                                                                        |     |     |     |
| Number of analogue inputs          |      | 2                                                                          |     |     |     |
| Operating range of analogue inputs | [V]  | ±10                                                                        |     |     |     |
| Characteristics of analogue inputs |      | Differential inputs                                                        |     |     |     |
|                                    |      | Configurable for rotational speed / current                                |     |     |     |
| Product weight                     | [g]  | 740                                                                        | 740 | 760 | 760 |

| Technical data – I/O interface           |                                   |
|------------------------------------------|-----------------------------------|
| Number of digital logic outputs          | 5                                 |
| Characteristics of digital logic outputs | Freely configurable in some cases |
| Number of digital logic inputs           | 7                                 |
| Operating range of logic inputs          | [V] 12.5 ... 30                   |
| Characteristics of logic inputs          | Freely configurable               |
| Process interfacing                      | Pulse/direction                   |
|                                          | For 32 position sets              |

## Data sheet

| Electrical data                            |                     |                  |      |      |      |
|--------------------------------------------|---------------------|------------------|------|------|------|
| CMMB-AS-                                   |                     | 01               | 02   | 04   | 07   |
| Output connection data                     |                     |                  |      |      |      |
| Output voltage range                       | [V AC]              | 3x 0 ... 240     |      |      |      |
| Nominal current                            | [A <sub>eff</sub> ] | 1.5              | 3    | 4.5  | 7    |
| Peak current at max. peak current duration | [A <sub>eff</sub> ] | 7                | 7    | 15   | 15   |
|                                            | [s]                 | 5                |      |      |      |
| Max. DC link voltage                       | [V DC]              | 300              |      |      |      |
| Output frequency                           | [Hz]                | 0 ... 400        |      |      |      |
| Load supply                                |                     |                  |      |      |      |
| Nominal voltage phases                     |                     | 1                |      |      |      |
| Input voltage range                        | [V AC]              | 200 ... 240 ±10% |      |      |      |
| Max. nominal input current                 | [A]                 | 1.5              | 3    | 4.5  | 7    |
| Nominal power                              | [VA]                | 100              | 200  | 400  | 750  |
| Peak power                                 | [VA]                | 2100             | 2100 | 4500 | 4500 |
| Mains frequency                            | [Hz]                | 50 ... 60        |      |      |      |
| Logic supply                               |                     |                  |      |      |      |
| Nominal voltage                            | [V DC]              | 24 ±10%          |      |      |      |
| Nominal current <sup>1)</sup>              | [A]                 | 0.5              |      |      |      |
| Max. current of digital logic outputs      | [mA]                | 100              |      |      |      |

1) Without brake

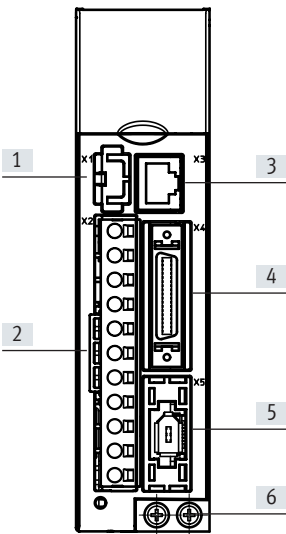
|                                               |                                              |
|-----------------------------------------------|----------------------------------------------|
| <b>Operating and environmental conditions</b> |                                              |
| Digital logic outputs                         | Galvanically isolated                        |
| Logic inputs                                  | Galvanically isolated                        |
| Degree of protection                          | IP20                                         |
| Ambient temperature                           | [°C] 0 ... 40                                |
| Storage temperature                           | [°C] -10 ... +70                             |
| Relative humidity                             | [%] 5 ... 95                                 |
| Pollution degree                              | 2                                            |
| CE marking (see declaration of conformity)    | To EU EMC Directive <sup>1)</sup>            |
|                                               | To EU Low Voltage Directive                  |
|                                               | To EU Machinery Directive                    |
| Certification                                 | c UL us Listed (OL)                          |
| Note on materials                             | Contains paint-wetting impairment substances |
|                                               | RoHS-compliant                               |

1) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

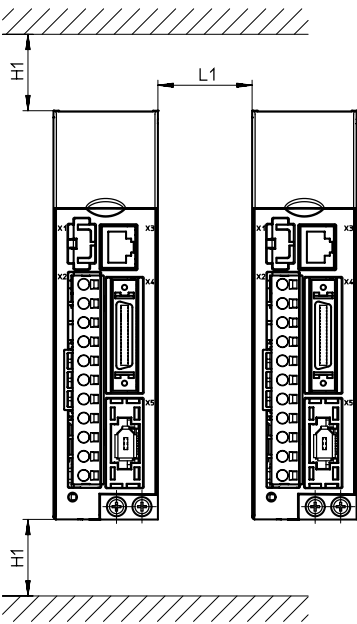
Data sheet

View of motor controller



- [1] Reserved connection
- [2] X2 power supply/motor connection
- [3] X3 interface RS232
- [4] Multi-functional connection:
  - Digital inputs/outputs
  - Analogue inputs
  - Encoder output
  - Pulse/direction input
- [5] X5 encoder input
- [6] PE connection

Installation clearance for motor controller

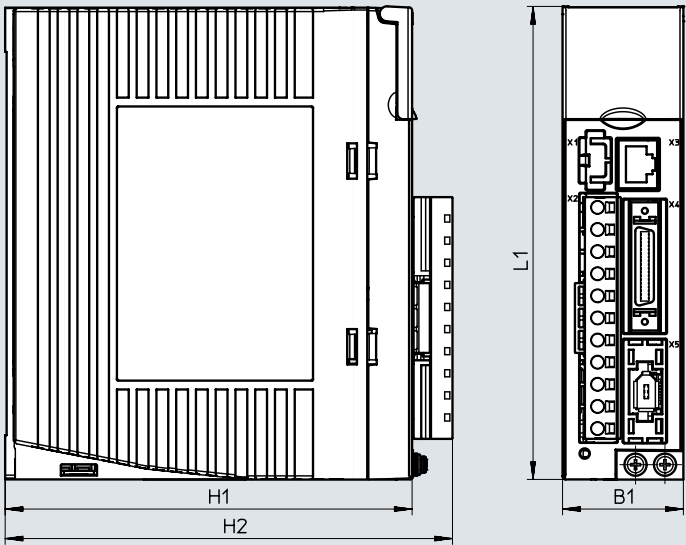


| H1 | L1 |
|----|----|
| 50 | 10 |

Data sheet

Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

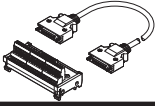
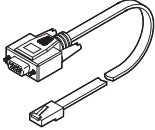
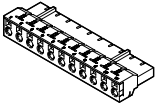


| Type       | B1 | H1  | H2  | L1    |
|------------|----|-----|-----|-------|
| CMMB-AS-01 | 41 | 138 | 152 | 160.5 |
| CMMB-AS-02 |    |     |     |       |
| CMMB-AS-04 |    |     |     |       |
| CMMB-AS-07 |    |     |     |       |

Ordering data

|  | Description                                                                                           | Part no. | Type       |
|--|-------------------------------------------------------------------------------------------------------|----------|------------|
|  | The plug assortment NEKM-C-11 (→ page 8) is included in the scope of delivery of the motor controller | 5105641  | CMMB-AS-01 |
|  |                                                                                                       | 5105642  | CMMB-AS-02 |
|  |                                                                                                       | 5105643  | CMMB-AS-04 |
|  |                                                                                                       | 5105644  | CMMB-AS-07 |
|  |                                                                                                       |          |            |

## Accessories

| Ordering data – Connection options from I/O interface to the controller           |                                                                                                                                                                                                                                                    |                     |          |                             |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|-----------------------------|
|                                                                                   | Description                                                                                                                                                                                                                                        | Cable length<br>[m] | Part no. | Type                        |
| Manifold block with connecting cable                                              |                                                                                                                                                                                                                                                    |                     |          |                             |
|   | <ul style="list-style-type: none"><li>• For I/O interface to any controller</li><li>• The terminal block ensures simple and clear wiring. The connection to the motor controller is established through the control cable NEBC-S2G36-...</li></ul> | 0.5                 | 5105646  | NEBC-S2G36-K-0.5-N-C2W36-S7 |
|                                                                                   |                                                                                                                                                                                                                                                    |                     |          |                             |
| Ordering data – Cable                                                             |                                                                                                                                                                                                                                                    |                     |          |                             |
|                                                                                   |                                                                                                                                                                                                                                                    | Cable length<br>[m] | Part no. | Type                        |
| Programming cable                                                                 |                                                                                                                                                                                                                                                    |                     |          |                             |
|   | –                                                                                                                                                                                                                                                  | 1.5                 | 5105645  | NEBC-S1G9-K-1.5-N-R3G8      |
|                                                                                   |                                                                                                                                                                                                                                                    |                     |          |                             |
| Ordering data – Assortment of plugs                                               |                                                                                                                                                                                                                                                    |                     |          |                             |
|                                                                                   | Description                                                                                                                                                                                                                                        |                     | Part no. | Type                        |
|  | <ul style="list-style-type: none"><li>• Comprising a plug for power supply and motor connection</li><li>• The assortment of plugs is included in the scope of delivery of the motor controller</li></ul>                                           |                     | 5105647  | NEKM-C-11                   |
|                                                                                   |                                                                                                                                                                                                                                                    |                     |          |                             |

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**1 Festo Inc.**  
5300 Explorer Drive  
Mississauga, ON L4W 5G4  
Canada

**Festo Customer Interaction Center**  
Tel: 1 877 463 3786  
Fax: 1 877 393 3786  
Email: customer.service.ca@festo.com



**2 Festo Pneumatic**  
Av. Ceylán 3,  
Col. Tequesquináhuac  
54020 Tlalnepantla,  
Estado de México

**Multinational Contact Center**  
01 800 337 8669  
ventas.mexico@festo.com



**3 Festo Corporation**  
1377 Motor Parkway  
Suite 310  
Islandia, NY 11749

**Festo Customer Interaction Center**  
1 800 993 3786  
1 800 963 3786  
customer.service.us@festo.com



**4 Regional Service Center**  
7777 Columbia Road  
Mason, OH 45040

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