



- Servo Lite thanks to encoder option
- Travel program through linking of positioning records
- CANopen fieldbus interface integrated, others available as an option

Motor controllers CMMS-ST, for stepper motors

Key features



Hardware

- Positioning controller with setpoint specifications for positions, rotational speed and torque
- “Servo Lite operation” (closed loop) thanks to encoder option, in other words no step losses, current following errors are corrected
- No additional controller (PLC) required for positioning tasks. All necessary functions are integrated
- Integrated braking resistor
- Interfaces:
 - Integrated:
 - Analogue
 - I/O interface
 - CW/CCW
 - Pulse/direction signals
 - A/B signals (encoder)
 - CANopen
 - Optional:
 - Profibus DP
 - DeviceNet

CANopen

PROFIBUS

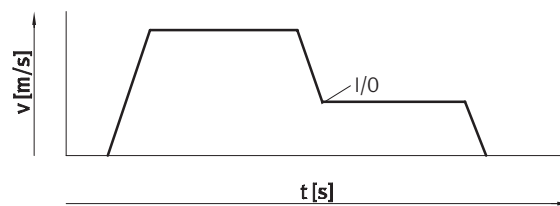
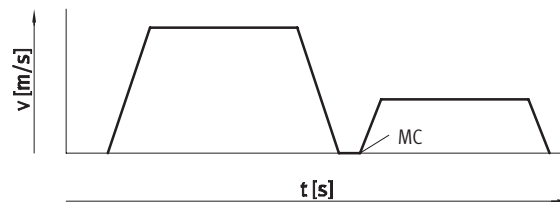
DeviceNet

Software/firmware

- Adjustable current reduction via software
- CANopen protocol as per DS301 with application profile DSP402, including “interpolated position mode” or
- The FHPP positioning profile from Festo
- The motors are sinusoidally actuated across the entire rotational speed range, with a cycle rate of 50 kHz. This guarantees resonance-free, quiet running
- 63 positioning records, selectable via I/O signals or fieldbus
- Analogue speed specification with 12-bit resolution
- One of the digital inputs is set up as a high-speed input, response time < 100 μ s

Travel program

- Linking of any positioning records into a travel program
- Further switching conditions for the travel program possible via digital inputs, for example
 - MC – motion complete
 - I/O – digital inputs

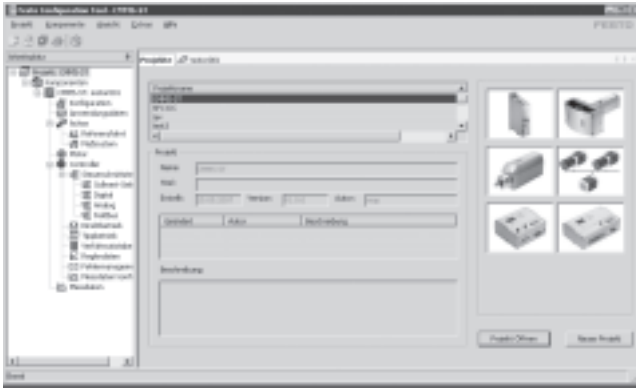


Motor controllers CMMS-ST, for stepper motors

Key features

FCT software – Festo Configuration Tool

Software platform for electric drives from Festo



- All the drives in a system can be managed and archived in a common project
- Project and data management for all supported device types
- Simple to use thanks to graphically supported parameter entry
- Universal mode of operation for all drives
- Working offline at your desk or online at the machine

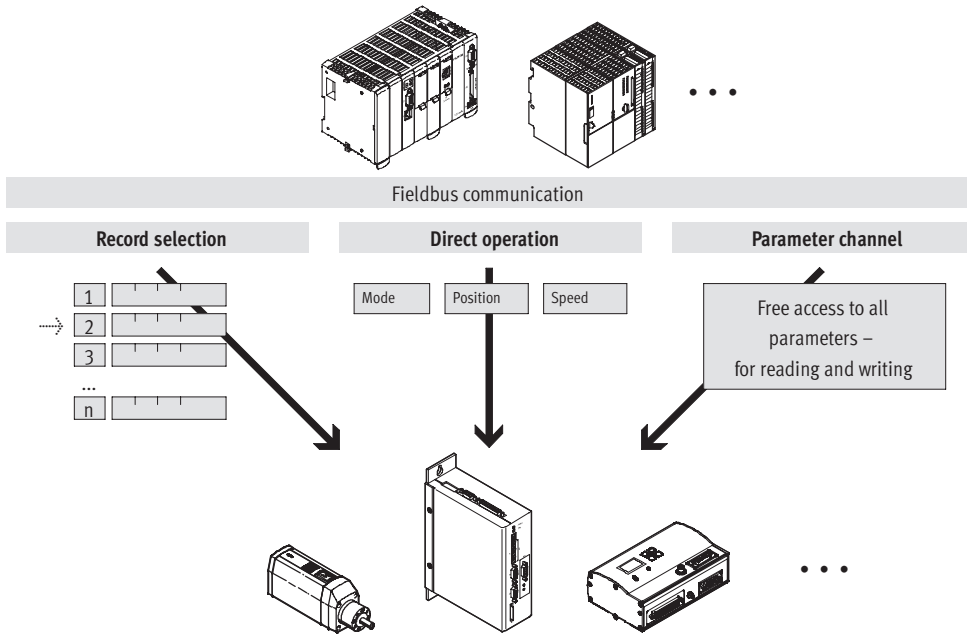
FHPP – Festo Handling and Positioning Profile

Optimised data profile

Festo has developed an optimised data profile, the “Festo Handling and Positioning Profile (FHPP)”, that is tailored to the target applications for handling and positioning tasks.

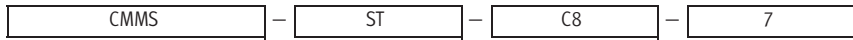
The FHPP data profile permits the activation of Festo motor controllers, using a fieldbus interface, via standardised control and status bytes.

- The following are defined, among others:
- Operating modes
 - I/O data structure
 - Parameter objects
 - Sequence control



Motor controllers CMMS-ST, for stepper motors

Type codes



| Type | |
|------|----------------------------|
| CMMS | Motor controller, standard |

| Motor type | |
|------------|---------------|
| ST | Stepper motor |

| Motor current | |
|---------------|----------------------|
| C8 | Nominal current, 8 A |

| Nominal voltage | |
|-----------------|------------------|
| 7 | Voltage, 48 V DC |

Motor controllers CMMS-ST, for stepper motors

Technical data

Fieldbus interfaces



| General technical data | | | | |
|---|----------------------------------|---------------|--------------------------|-----------|
| Interfaces | I/O | CANopen | Profibus DP | DeviceNet |
| Operating mode | PWM MOSFET power amplifier | | | |
| Motor actuation | Sinusoidal current impressing | | | |
| Cycle rate [kHz] | Constant 50 | | | |
| Rotary position generator | Encoder | | | |
| Display | 7-segment display | | | |
| Parameterisation interface | RS232 (9,600 ... 115,000 bits/s) | | | |
| Encoder interface | RS422 | | | |
| Communication profile | - | DS301, FHPP | DP-V0 / FHPP | FHPP |
| | - | DS301, DSP402 | Step7 functional modules | |
| Braking resistor [Ω] | 17 | | | |
| | Integrated | | | |
| Impedance of setpoint input [k Ω] | 20 | | | |
| Pulse power of braking resistor [kVA] | 0.5 | | | |
| Working range of monitor outputs [V] | ± 10 | | | |
| Working range of setpoint inputs [V] | ± 10 | | | |
| Number of analogue monitor outputs | 1 | | | |
| Number of analogue setpoint inputs | 1 | | | |
| Mains filter | Integrated | | | |
| Product weight [g] | 2,000 | | | |

| Electrical data | | |
|--|--------------|--|
| General | | |
| Nominal current setting | Via software | |
| Max. peak current duration [s] | 2 | |
| Max. intermediate circuit voltage [V DC] | 75 | |
| Load supply | | |
| Nominal voltage [V DC] | 24 ... 75 | |
| Nominal current [A] | 8 | |
| Peak current [A] | 12 | |
| Logic supply | | |
| Nominal voltage [V DC] | 24 \pm 20 | |
| Nominal current [A] | 0.3 | |
| Max. current of digital logic outputs [mA] | 100 | |

Motor controllers CMMS-ST, for stepper motors

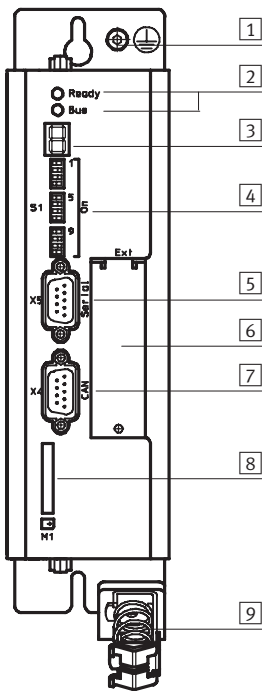
Technical data



| Operating and environmental conditions | |
|---|-------------------------------------|
| Digital logic outputs | Not electrically isolated |
| Logic inputs | Electrically isolated |
| Protection class | IP20 |
| Protective function | I ² t monitoring |
| | Current monitoring |
| | Voltage failure detection |
| | Current following error monitoring |
| | Temperature monitoring |
| Ambient temperature [°C] | 0 ... +50 |
| CE mark (see declaration of conformity) | In accordance with EU EMC directive |
| Relative air humidity [%] | 0 ... 90 (non-condensing) |

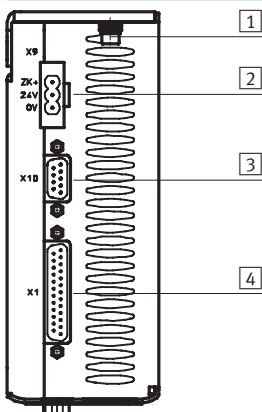
View of motor controller

From the front



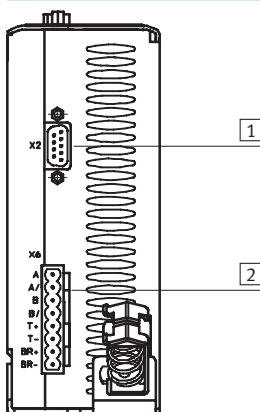
- 1 Earthing
- 2 Ready/Bus – LED
- 3 Status display
- 4 Fieldbus settings and boot loader
- 5 Interface: RS232/RS485
- 6 Technology module (optional)
- 7 Interface: CAN bus
- 8 SD memory card
- 9 Screened connection

From above



- 1 Earthing screw
- 2 Power supply
- 3 Increment generator output
- 4 I/O interface

From underneath



- 1 Increment generator input
- 2 Motor connection

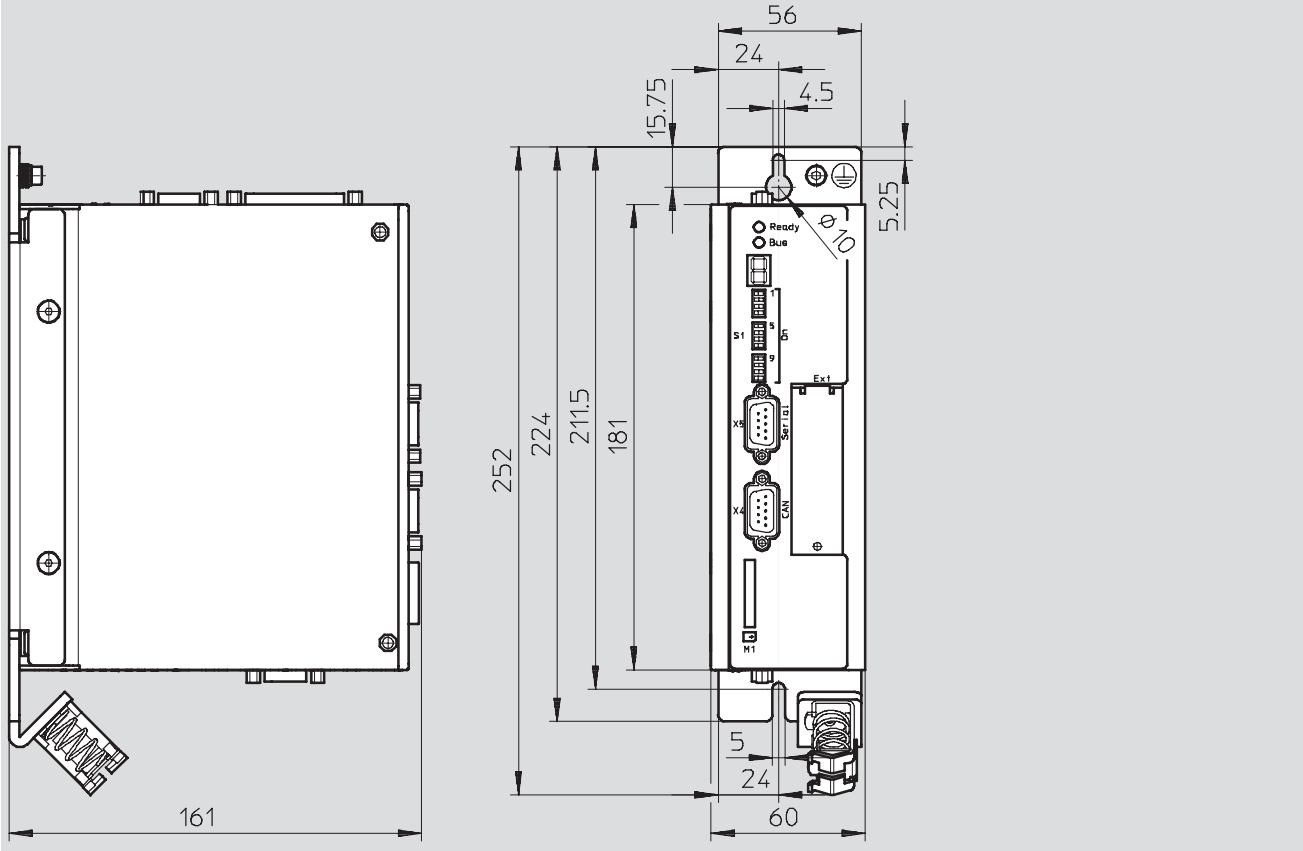
Motor controllers CMMS-ST, for stepper motors

Technical data



Dimensions

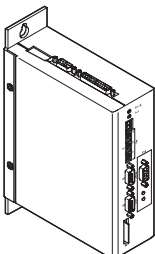
Download CAD data → www.festo.com/en/engineering



Electrical positioning systems
Motors and controllers

2.2

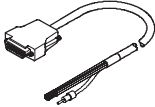
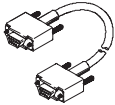
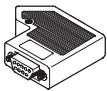
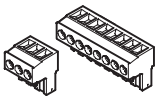
Ordering data

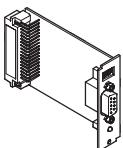
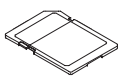
| | Brief description | Part No. | Type |
|---|--|----------|--------------|
|  | The plug range NEKM (→ 82) and the operator package (→ 83) are included in the scope of delivery for the motor controller. | 547 454 | CMMS-ST-C8-7 |

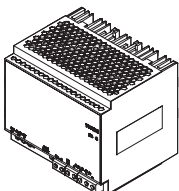
Motor controllers CMMS-ST, for stepper motors


Accessories



| Ordering data – Cables and plugs | | | | | |
|---|---|------------------|----------|-------------------------|--|
| | Brief description | Cable length [m] | Part No. | Type | |
|  | Control cable, for I/O interface to any controller | 2.5 | 552 254 | NEBC-S1G25-K-2.5N-LE26 | |
|  | Programming cable | 1.5 | 160 786 | PS1-ZK11-NULLMODEM-1,5M | |
|  | Encoder plug | – | 552 274 | NECC-S-S1G9-C2M | |
|  | Plug types, comprising plug for power supply and plug for motor connection The plug range is included in the scope of delivery | – | 547 452 | NEKM-C-1 | |

| Ordering data – Plug-in cards | | | | | |
|---|---|----------|----------|--|--|
| | Brief description | Part No. | Type | | |
|  | Interface, for Profibus interface | 547 450 | CAMC-PB | | |
| | Interface, for DeviceNet interface | 547 451 | CAMC-DN | | |
|  | Memory card, for data backup and firmware downloads | 547 453 | CAMC-M-S | | |

| Ordering data – Power supply units | | | | | | |
|---|-----------------------------------|----------------------------|-------------------------------|----------------------------|------------------------|------------------------|
| | Brief description | Input voltage range [V AC] | Nominal output voltage [V DC] | Nominal output current [A] | Part No. | Type |
|  | Power supply for motor controller | 100 ... 240 | 24 | 5 | 547 867 | SVG-1/230VAC-24VDC-5A |
| | | | | 10 | 547 868 | SVG-1/230VAC-24VDC-10A |
| | | | 48 | 5 | 542 403 | SVG-1/230VAC-48VDC-5A |
| | | 10 | | 542 404 | SVG-1/230VAC-48VDC-10A | |
| | | 400 ... 500 | 20 | 542 405 | SVG-3/400VAC-48VDC-20A | |


 - Note

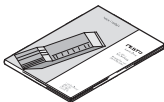
If a common power supply unit is used to supply the power section and the control section, the voltage tolerances for the supply to the control section cannot be adhered to at high braking energies. This can result in the destruction of the control section. Always use separate power supply units to supply the power section and the control section.

Motor controllers CMMS-ST, for stepper motors

Accessories

FESTO

| Ordering data – Software and documentation | | | |
|---|---|----------|-------------|
| | Brief description | Part No. | Type |
|  | Operator package contains: – CD-ROM – with user documentation for CMMS-ST, in the languages de, en, es, fr, it, sv – with configuration software FCT (Festo Configuration Tool), in the languages de, en – Brief description This package is included in the scope of delivery | 558 330 | PBP-CMMS-ST |

| Ordering data – Documentation ¹⁾ | | | | | | |
|---|----------|-------------------------|-------------------------|---|-------------------------|--|
| | Language | Part No. | Type | Part No. | Type | |
| | | For motor controller | | Festo Handling and Positioning Profile (FHPP) for the motor controller family CMM... | | |
|  | DE | 554 339 | P.BE-CMMS-ST-HW-DE | 555 695 | P.BE-CMM-FHPP-SW-DE | |
| | EN | 554 340 | P.BE-CMMS-ST-HW-EN | 555 696 | P.BE-CMM-FHPP-SW-EN | |
| | ES | 554 341 | P.BE-CMMS-ST-HW-ES | 555 697 | P.BE-CMM-FHPP-SW-ES | |
| | FR | 554 342 | P.BE-CMMS-ST-HW-FR | 555 698 | P.BE-CMM-FHPP-SW-FR | |
| | IT | 554 343 | P.BE-CMMS-ST-HW-IT | 555 699 | P.BE-CMM-FHPP-SW-IT | |
| | SV | 554 344 | P.BE-CMMS-ST-HW-SV | 555 700 | P.BE-CMM-FHPP-SW-SV | |
| | | | For CANopen interface | | For Profibus interface | |
| | DE | 554 351 | P.BE-CMMS-CO-SW-DE | 554 345 | P.BE-CMMS-FHPP-PB-SW-DE | |
| | EN | 554 352 | P.BE-CMMS-CO-SW-EN | 554 346 | P.BE-CMMS-FHPP-PB-SW-EN | |
| | ES | 554 353 | P.BE-CMMS-CO-SW-ES | 554 347 | P.BE-CMMS-FHPP-PB-SW-ES | |
| | FR | 554 354 | P.BE-CMMS-CO-SW-FR | 554 348 | P.BE-CMMS-FHPP-PB-SW-FR | |
| | IT | 554 355 | P.BE-CMMS-CO-SW-IT | 554 349 | P.BE-CMMS-FHPP-PB-SW-IT | |
| | SV | 554 356 | P.BE-CMMS-CO-SW-SV | 554 350 | P.BE-CMMS-FHPP-PB-SW-SV | |
| | | | For DeviceNet interface | | | |
| DE | 554 357 | P.BE-CMMS-FHPP-DN-SW-DE | | | | |
| EN | 554 358 | P.BE-CMMS-FHPP-DN-SW-EN | | | | |
| ES | 554 359 | P.BE-CMMS-FHPP-DN-SW-ES | | | | |
| FR | 554 360 | P.BE-CMMS-FHPP-DN-SW-FR | | | | |
| IT | 554 361 | P.BE-CMMS-FHPP-DN-SW-IT | | | | |
| SV | 554 362 | P.BE-CMMS-FHPP-DN-SW-SV | | | | |

1) User documentation in paper form is not included in the scope of delivery

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