

Motor controllers CMMP-AS, for servo motors



Motor controllers CMMP-AS, for servo motors

Key features

Comparison of motor controllers				
Motor controller for motor type	CMMD-AS Servo motor	CMMS-AS Servo motor	CMMP-AS Servo motor	CMMS-ST Stepper motor
Positioning records	2 x 63	63	255	63
Measuring system	Incremental/absolute		Analogue/incremental/absolute	Incremental
Extended I/O interface	4 working modes		Flexibly configurable	4 working modes
Notification of remaining distance	1 for n		Separately for all positions	1 for n
Torque reduction	No		Separately for all positions	No
Record linking	Linear		With branching	Linear
STO/SS1	To EN 61800-5-2		To EN 61800-5-2	To EN 61800-5-2

Features

Compactness

- Small dimensions
- Full integration of all components for the controller and power section, including USB interface, Ethernet and CANopen interface
- Integrated brake chopper
- Integrated EMC filters

- Automatic actuation for a holding brake
- Complies with the current CE and EN standards without additional external measures (motor cable length of up to 25 m)

Motion control

- Evaluation of digital absolute encoder (EnDat/HIPERFACE) in single-turn or multi-turn versions
- Can be operated as a torque, speed or position controller
- Integrated position controller
- 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
- 255 positioning records
- Wide range of homing methods

Fieldbus interfaces













Input/output

- Freely programmable I/Os
- High-resolution 16-bit analogue input
- Jog/teach mode
- Simple connection to a higher-order controller via I/O or fieldbus
- Synchronous operation
- Master/slave mode
- Additional I/Os with the plug-in card CAMC-D-8E8A → 17

Integrated sequence control

- Automatic sequence of positioning records without a higher-order controller
- Linear and cyclical position sequences
- Adjustable delay times
- Branches and wait positions
- Overlapping restart possible during the movement

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Features

Integrated safety functions

- The motor controller CMMP-AS supports the "Safe Torque Off (STO)" safety function and, by providing a reliable time delay, also supports "Safe Stop 1 (SS1)" with protection against unexpected start-up in accordance with EN 61800-5-2
- Protection against unexpected start-up

- Two-channel disconnection of the output stage
- Less external circuitry
- Shorter response times in the event of an error
- Faster restart, intermediate circuit remains charged

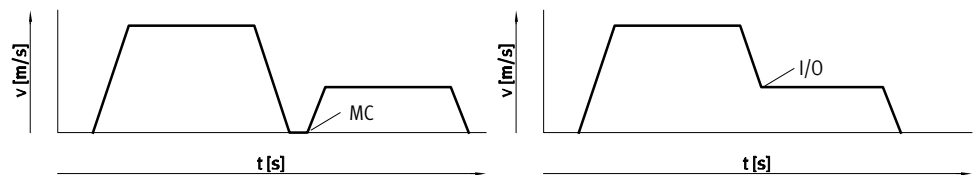
Interpolating multi-axis movement

- With a suitable controller, the CMMP-AS can perform path movements with interpolation via CANopen or EtherCAT. The controller specifies position setpoint values in

a fixed time pattern to this end. In between, the servo position controller independently interpolates the data values between two data points.

Travel program

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



Library for EPLAN

→ www.festo.com/eplan



EPLAN macros for fast and reliable planning of electrical projects in combination with motor controllers,

motors and cables. This enables a high level of planning reliability, standardisation of

documentation, no need to create symbols, graphics and master data.

Cam disc functionality

The "electronic cam disc" application type creates optimised motion profiles that generate less vibration and acceleration force at the machine. In addition, the motion of the motor is always synchronous in position with a master axis, which enables easy definition of overlapping, time-optimised motion sequences.

To be able to use the cam disc function, you will need the Festo Configuration Tool (FCT) and also the curve editor → 19.

Key features:

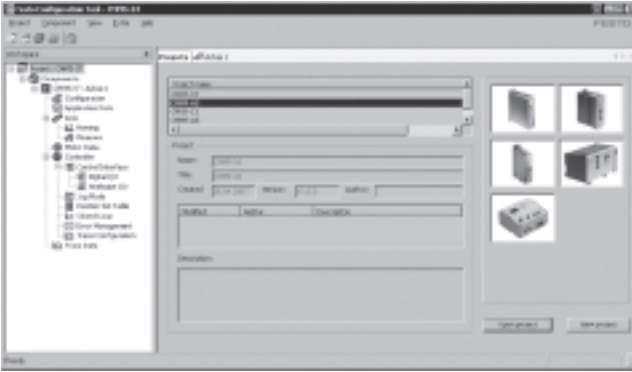
- High flexibility of the system. The mechanism does not need to be modified if the requirements for the curve shapes change.
- User-friendly motion plan editor. All limits for position, speed and acceleration are immediately displayed in the editor.
- Up to 16 cam discs with a total of up to 2,048 data points can be managed. The data points can be randomly distributed along the cam discs.
- There are four digital trip cams coupled with each cam disc.
- Each cam disc can be offset by a certain amount from the master axis.

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FCT software – Festo Configuration Tool

Software platform for electric drives from Festo



- All drives in a system can be managed and saved 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

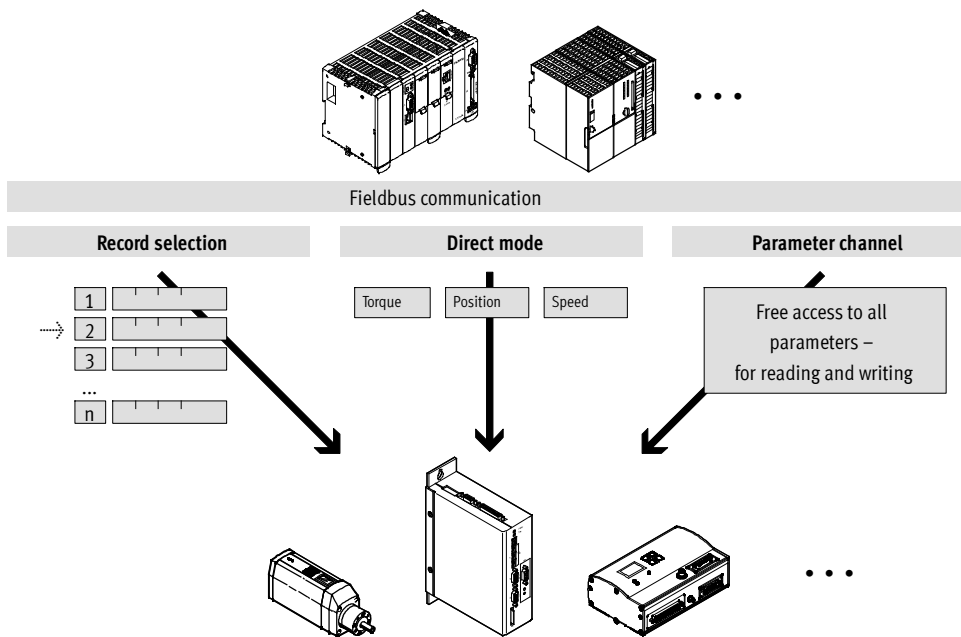
Optimised data profile

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

The FHPP data profile permits the actuation 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



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Product range overview and Type codes

Type	CMMP-AS-...-M0	CMMP-AS-...-M3	CMMP-AS-C20-11A-P3
Fieldbus interface			
Integrated in the controller			
CANopen	■	■	■
Optional via plug-in card			
PROFIBUS DP	-	■	■
DeviceNet	-	■	■
EtherCAT	-	■	■
EtherNet/IP	-	■	-
PROFINET RT	-	■	-
Safety functions			
Integrated in the controller			
	■	-	■
Optional via plug-in card			
	-	■	-

Type codes

		CMMP	AS	C5	11A	P3	M3
Type							
CMMP	Motor controller, premium						
Motor technology							
AS	AC synchronous						
Nominal current							
C2	2.5 A						
C5	5 A						
C10	10 A						
C20	20 A						
Input voltage							
3A	100 ... 230 V AC						
11A	3x 230 ... 480 V AC						
Number of phases							
-	1-phase						
P3	3-phase						
Number of slots							
M0	Without slot						
-	With 2 slots						
M3	With 3 slots						

Motor controllers CMMP-AS, for servo motors

Technical data

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Fieldbus interfaces

CANopen

PROFIBUS DP

DeviceNet

EtherCAT

PROFIBUS

EtherNet/IP

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General technical data					
CMMP-AS-	C2-3A-...	C5-3A-...	C5-11A-P3-...	C10-11A-P3-...	C20-11A-P3
Type of mounting	Screwed onto mounting plate				
Display	7-segment display				
Parameterisation interface	-				RS232
	USB, Ethernet				-
Active PFC	Yes		-		
DIP switches	Firmware download/fieldbus settings ¹⁾ /CAN terminating resistor				-
SD card slot	Memory card → 18				-
Encoder interface input	Resolver				
	Incremental encoder with analogue or digital tracking signals				
	Absolute encoder with EnDat V2.1 serial/V2.2				
	Absolute encoder with HIPERFACE				
	Additional input for synchronous/cam disc operation				
Encoder interface output	Actual value feedback via encoder signals in speed control mode				
	Setpoint specification for downstream slave drive				
	Resolution up to 16,384 ppr				
Braking resistor, integrated	[Ω]	60	68	47	
Pulse power of braking resistor	[kVA]	2.8	8.5	12	
Braking resistor, external	[Ω]	≥ 50	≥ 40	30 ≤ R ≤ 100	
Impedance of setpoint input	[kΩ]	20			
Number of analogue outputs	2				
Operating range of analogue outputs	[V]	±10			
Resolution of analogue outputs	9 bits				
Characteristics of analogue outputs	Short circuit proof				
Number of analogue inputs	3				
Operating range of analogue inputs	[V]	±10			
Characteristics of analogue inputs	1x differential, resolution 16 bits				
	2x single-ended, resolution 10 bits				
	Configurable for speed setpoint value/torque setpoint value/position setpoint value				
Mains filter	Integrated				
Max. motor cable length	[m]	25 (without external mains filter)			
Product weight	[g]	2,100	2,200	3,800	8,000

1) Not in combination with CMMP-AS-...-M0

Function blocks for PLC programming							
Programming software	Controller manufacturer	Interfaces					
		CANopen	PROFIBUS DP	DeviceNet	EtherCAT	EtherNet/IP	PROFINET RT
CoDeSys	Festo	■	■	■	■	■	■
TwinCAT	Beckhoff	■	■	■	■	■	■
	Other manufacturers	■	■	■	■	■	■
RSLogix5000	Rockwell Automation	-	-	■	-	■	-
Step 7/TIA Portal	Siemens	-	■	-	-	-	■

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Technical data – Fieldbus interface								
Interfaces	I/O	CANopen	PROFIBUS DP	DeviceNet	EtherCAT	EtherNet/IP	PROFINET RT	
Number of digital logic outputs	5							
Characteristics of digital logic outputs	Freely configurable							
Number of digital logic inputs	10							
Operating range of logic inputs [V]	8 ... 30							
Characteristics of logic inputs	Freely configurable							
Process coupling	16 positioning records	–						
	255 positioning records ¹⁾	250 positioning records						
Communication profile	–	DS301, FHPP+ DS301, DSP402	DP-V0/FHPP+	FHPP+	DS301, FHPP+ CoE: DS301, DSP402	FHPP+	FHPP+	
Max. fieldbus transmission rate [Mbps]	–	1	12	0.5	100	100	100	
Interface								
CMMP-AS-...-M0	Integrated	■	■	–	–	–	–	–
CMMP-AS-...-M3	Integrated	■	■	–	–	–	–	–
	Optional ²⁾	–	–	■	■	■	■	■
CMMP-AS-C20-11A-P3	Integrated	■	■	–	–	–	–	–
	Optional ²⁾	–	–	■	■	■	–	–

1) With additional I/O plug-in card CAMC-D8E8A → 17

2) Plug-in cards for fieldbus interface → 18

Electrical data						
CMMP-AS-	C2-3A-...	C5-3A-...	C5-11A-P3-...	C10-11A-P3-...	C20-11A-P3	
Output data						
Output voltage range [V AC]	3x 0 ... 270			3x 0 ... 360		
Nominal current [A _{eff}]	2.5	5	5	10	20	
Peak current at [A _{eff}]	5	10	10	20	41.5	
Max. peak current duration [s]	5		3		2	
Peak current at [A _{eff}]	10	20	20	40	–	
Max. peak current duration [s]	0.5		0.5		–	
Max. intermediate circuit voltage [V DC]	320/380 ¹⁾			560		
Output frequency [Hz]	0 ... 1,000					
Load supply						
Nominal voltage phases	1			3		
Input voltage range [V AC]	100 ... 230 ±10%			3x 230 ... 480 ±10%		
Max. nominal input current [A]	3	6	5.5	11	20	
Rated output [VA]	500	1,000	3,000	6,000	12,000	
Peak output [VA]	1,000	2,000	6,000	12,000	25,000	
Mains frequency [Hz]	50 ... 60					
Logic supply						
Nominal voltage [V DC]	24 ±20%					
Nominal current [A]	0.55/2.05 ²⁾	0.65/2.15 ²⁾	1/3.5 ²⁾			
Max. current of digital logic outputs [mA]	100					

1) Without PFC/with PFC

2) Max. current with brake and I/Os


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Technical data

Safety characteristics		
CMMP-AS-	C2/C5/C10-...-M0	C20-11A-P3
Conforms to standard	EN ISO 13849-1	
Safety function	Safe Torque Off (STO)	
Performance Level (PL)	Safe Torque Off (STO)/Category 4, Performance Level e	Safe Torque Off (STO)/Category 3, Performance Level d
Safety integrity level (SIL)	SIL 3/SILCL 3	SIL 2
Certificate issuing authority	TÜV Rheinland	DGUV MFS 10027
Proof test interval	20a	-
Diagnostic coverage [%]	97.07	-
Safe Failure Fraction (SFF) [%]	99.17	-
Hardware fault tolerance	1	-
CE marking (see declaration of conformity)	To EU EMC Directive ¹⁾	
	To EU Machinery Directive	

- 1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com → Support → User documentation.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Technical data – Connection to the integrated safety module with CMMP-AS-...-M0		
General		
Connection cross section [mm ²]	0.25 ... 0.5	
Electrical connection	Screw terminal	
	Straight plug	
Protection against short circuit	No	
Fuse protection	No	
Digital inputs		
Number	2 (STO-A/STO-B)	
Nominal voltage [V DC]	24	
Voltage range [V]	19.2 ... 28.8	
Nominal current at 40 °C [mA]	20	
Max. nominal current [mA]	30	
Starting current [mA]	450	
Debounce time [ms]	0.3	
Properties	Galvanically isolated	
Digital outputs		
Number	8	
Nominal voltage [V DC]	24	
Max. current [mA]	200	
Design	Potential-free signal contact	
Switching logic	Contact closes at STO	

 **Note**
Safety functions for motor controller
CMMP-AS-...-M3 optionally via the
plug-in card CAMC-G-S1 → 16

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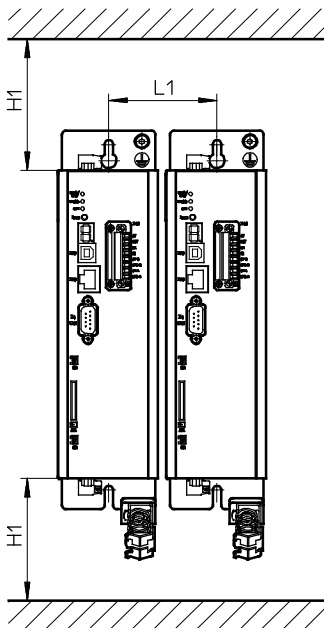
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Technical data

Operating and environmental conditions		C2-3A-...	C5-3A-...	C5-11A-P3-...	C10-11A-P3-...	C20-11A-P3
Digital logic outputs		Galvanically isolated				
Logic inputs		Galvanically isolated				
Protection class		IP20				
Protective function		I ² t monitoring				
		Intermediate circuit over/undervoltage				
		Short circuit in output stage				
		Standstill monitoring				
		Temperature monitoring				
Ambient temperature	[°C]	0 ... +40				
Storage temperature	[°C]	-25 ... +70				
Relative air humidity	[%]	0 ... 90 (non-condensing)				
CE marking (see declaration of conformity)		To EU Low Voltage Directive				
		To EU EMC Directive ¹⁾				
		To EU Machinery Directive				
Certification		UL listed (OL)				-
		C-Tick				
Note on materials		Contains PWIS (paint-wetting impairment substances)				
		RoHS-compliant				

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If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Installation clearance for motor controller



Type	H1 ¹⁾	L1
CMMP-AS-C2-3A-...	100	71
CMMP-AS-C5-3A-...	100	85
CMMP-AS-C5-11A-P3-...	100	95
CMMP-AS-C10-11A-P3-...	100	95
CMMP-AS-C20-11A-P3	100	95

- 1) An installation clearance of 150 mm underneath the motor controller is recommended for optimum wiring of the motor or encoder cable

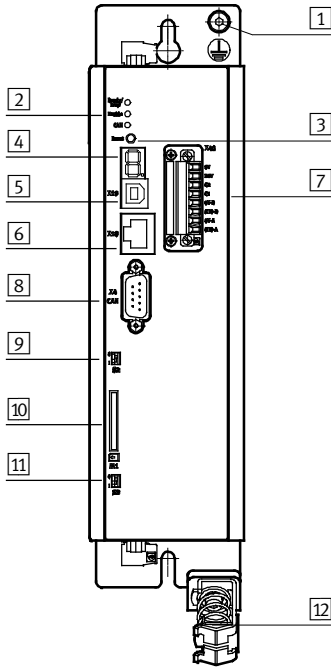
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Technical data

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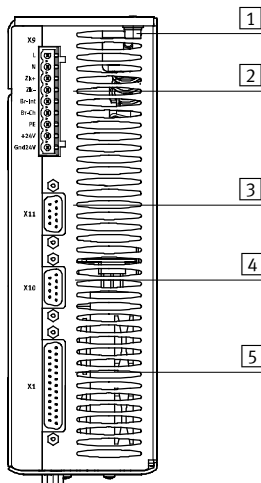
View of motor controller

CMMP-AS-...-M0



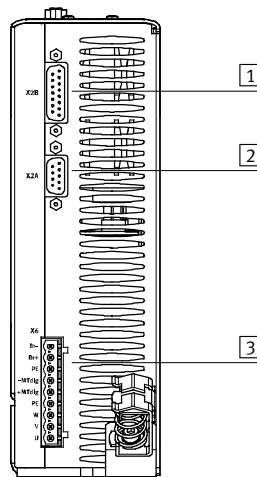
- 1 PE connection
- 2 LEDs
- 3 Reset button
- 4 7-segment display
- 5 USB interface
- 6 Ethernet interface
- 7 Digital I/O interface for controlling the STO function
- 8 CANopen interface
- 9 Activation of CANopen terminating resistor
- 10 SD/MMC card slot
- 11 Activation of firmware download
- 12 Screened connection

From above



- 1 PE connection
- 2 Power supply
- 3 Incremental encoder interface (output)
- 4 Incremental encoder interface (input)
- 5 I/O interface

From underneath



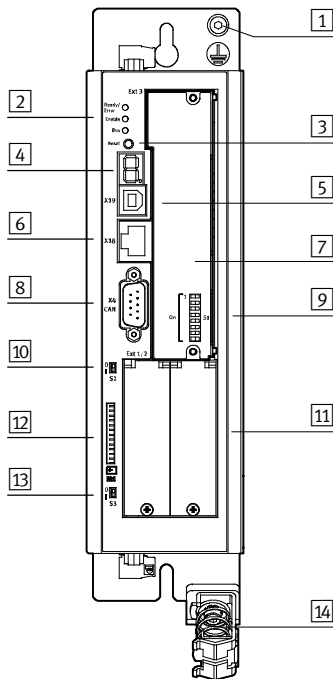
- 1 Encoder connection
- 2 Resolver connection
- 3 Motor connection

Motor controllers CMMP-AS, for servo motors

Technical data

View of motor controller

CMMP-AS-...-M3



- 1 PE connection
- 2 LEDs
- 3 Reset button
- 4 7-segment display
- 5 USB interface
- 6 Ethernet interface
- 7 Slot for switch or safety module
- 8 CANopen interface
- 9 Fieldbus settings
- 10 Activation of CANopen terminating resistor
- 11 Slots for extension modules
- 12 SD/MMC card slot
- 13 Activation of firmware download
- 14 Screened connection

 Note

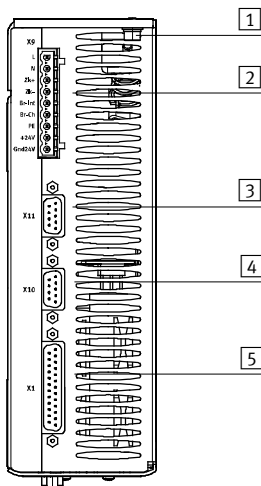
A plug-in card in slot 7 is mandatory for operation of the motor controller.

Possible plug-in cards:

CAMC-DS-M1 → 18

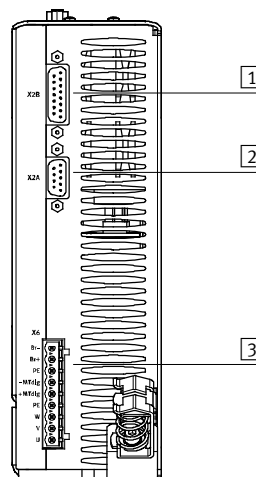
CAMC-G-S... → 16

From above



- 1 PE connection
- 2 Power supply
- 3 Incremental encoder interface (output)
- 4 Incremental encoder interface (input)
- 5 I/O interface

From underneath



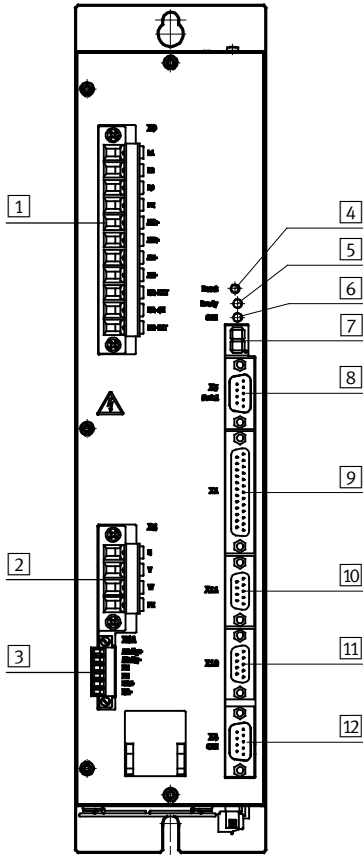
- 1 Encoder connection
- 2 Resolver connection
- 3 Motor connection

Motor controllers CMMP-AS, for servo motors

Technical data

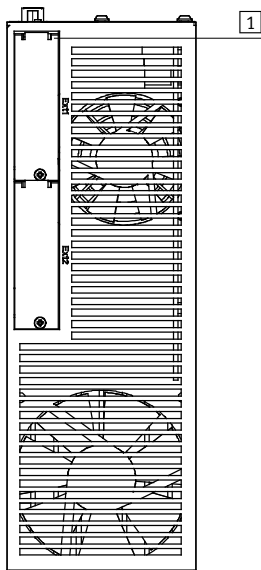
View of motor controller

CMMP-AS-C20-11A-P3



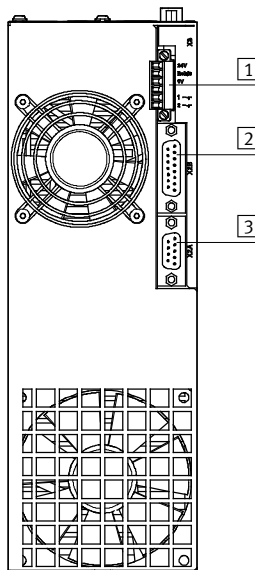
- 1 Power supply
- 2 Motor connection
- 3 Motor connection
- 4 Reset button
- 5 Ready/bus LED
- 6 Bus switched on
- 7 7-segment display
- 8 Interface: RS232
- 9 I/O interface
- 10 Incremental encoder interface (output)
- 11 Incremental encoder interface (input)
- 12 Interface: CAN bus

From above



- 1 Technology module slots

From underneath



- 1 Control connection for relay driver supply
- 2 Encoder connection
- 3 Resolver connection

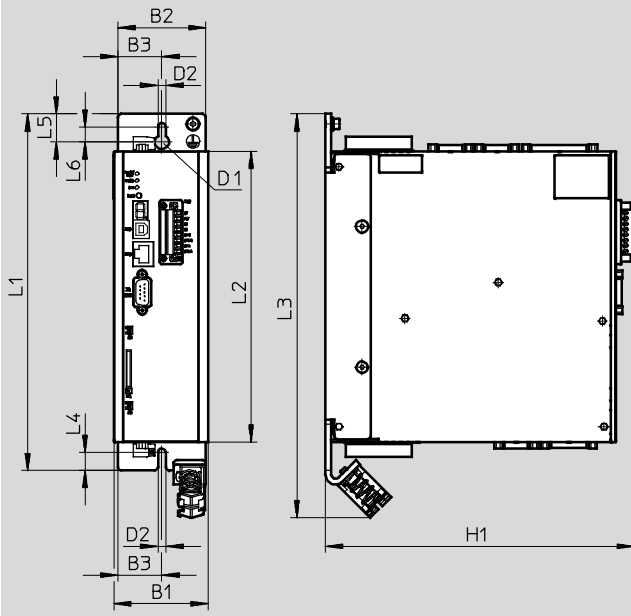
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Technical data

Dimensions

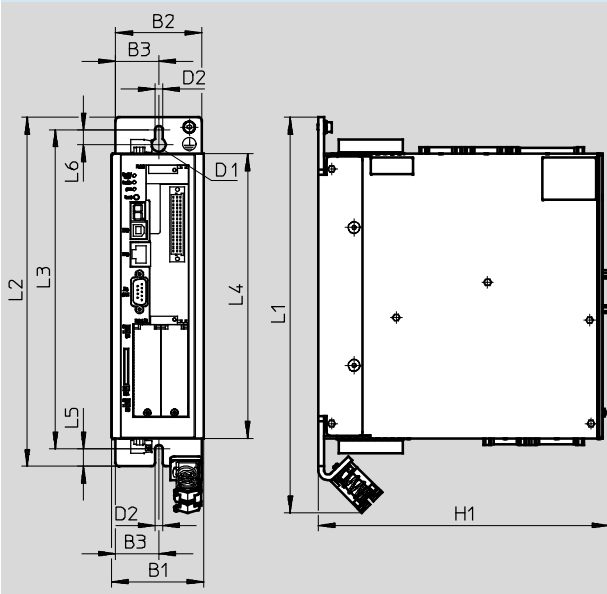
Download CAD data → www.festo.com

CMMP-AS-C2/C5-3A-M0, CMMP-AS-C5/C10-11A-P3-M0



Type	B1	B2	B3	D1 Ø	D2 Ø	H1	L1	L2	L3	L4	L5	L6
CMMP-AS-C2-3A-M0	66	61	30.7	10	5.5	215	248	202	281	12.5	19.5	10.5
CMMP-AS-C5-3A-M0												
CMMP-AS-C5-11A-P3-M0	79	75	37.5	10	5.5	255	297	252	330	12.5	19.8	10.5
CMMP-AS-C10-11A-P3-M0												

CMMP-AS-C2/C5-3A-M3, CMMP-AS-C5/C10-11A-P3-M3



Type	B1	B2	B3	D1 Ø	D2 Ø	H1	L1	L2	L3	L4	L5	L6
CMMP-AS-C2-3A-M3	66	61	30.7	10	5.5	207	281	248	227	202	12.5	10.5
CMMP-AS-C5-3A-M3												
CMMP-AS-C5-11A-P3-M3	79	75	37.5	10	5.5	247	330	297	276	252	12.5	10.5
CMMP-AS-C10-11A-P3-M3												

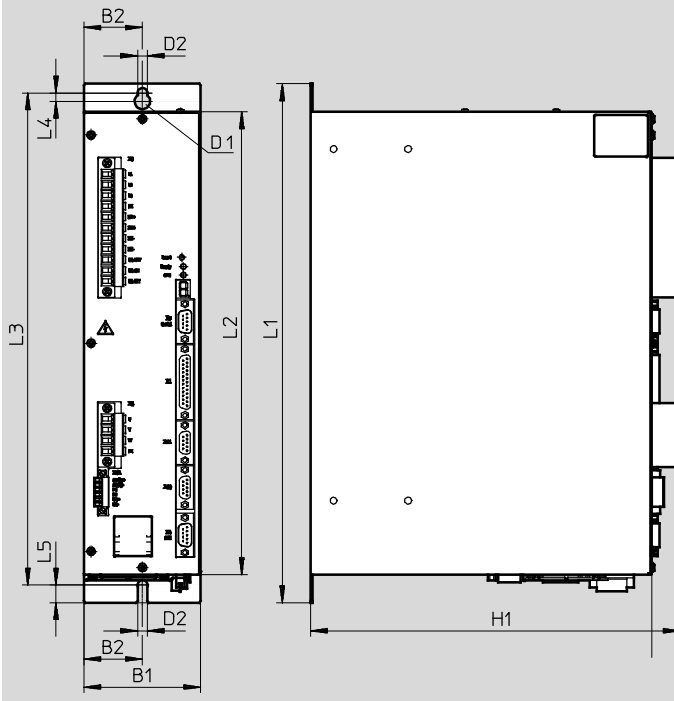
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Technical data

Dimensions

Download CAD data → www.festo.com

CMMP-AS-C20-11A-P3

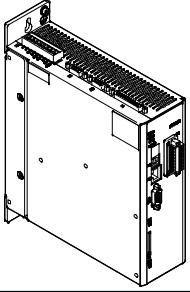
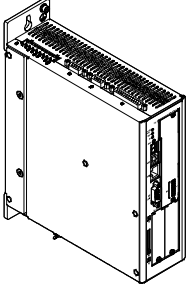
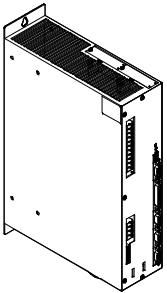


Type	B1	B2	D1 Ø	D2 Ø	H1	L1	L2	L3	L4	L5
CMMP-AS-C20-11A-P3	83	41.5	11	7	263	369	329	350	6	12.5

Motor controllers CMMP-AS, for servo motors

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Technical data

Ordering data			
	Brief description	Part No.	Type
CMMP-AS-...-M0 – Without slot			
	The plug assortment NEKM (→ 18) is included in the scope of delivery of the motor controller.	1622901	CMMP-AS-C2-3A-M0
		1622902	CMMP-AS-C5-3A-M0
		1622903	CMMP-AS-C5-11A-P3-M0
		1622904	CMMP-AS-C10-11A-P3-M0
CMMP-AS-...-M3 – With 3 slots			
	A plug-in card in slot <input type="checkbox"/> 7 is mandatory for operation. Possible plug-in cards: • CAMC-DS-M1 → 18 • CAMC-G-S1 → 16 The plug assortment NEKM (→ 18) is included in the scope of delivery of the motor controller.	1501325	CMMP-AS-C2-3A-M3
		1501326	CMMP-AS-C5-3A-M3
		1501327	CMMP-AS-C5-11A-P3-M3
		1501328	CMMP-AS-C10-11A-P3-M3
CMMP-AS-... – With 2 slots			
	The plug assortment NEKM (→ 18) is included in the scope of delivery of the motor controller.	1366842	CMMP-AS-C20-11A-P3

Motor controllers CMMP-AS, for servo motors

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Accessories

Safety module CAMC-G-S1

Only for motor controller:
CMMP-AS-...-M3

The safety module serves as an extension to achieve the safety function.

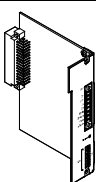
Safe Torque Off.



Safety characteristics	
Conforms to standard	EN ISO 13849-1
Safety function	Safe Torque Off (STO)
Performance Level (PL)	Safe Torque Off (STO)/Category 4, Performance Level e
Safety integrity level (SIL)	SIL 3/SILCL 3
Certificate issuing authority	TÜV 01/205/5165/11
Proof test interval	20a
Diagnostic coverage [%]	97.5
Safe Failure Fraction (SFF) [%]	99.2
Hardware fault tolerance	1
CE marking (see declaration of conformity)	To EU EMC Directive ¹⁾ To EU Machinery Directive

- 1) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com → Support → User documentation.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Technical data	
General	
Connection cross section [mm ²]	0.25 ... 0.5
Electrical connection	Screw terminal Straight plug
Display (LED)	Green: normal operation, yellow: STO
Protection against short circuit	No
Fuse protection	No
Digital inputs	
Number	2 (STO-A/STO-B)
Nominal voltage [V DC]	24
Voltage range [V]	19.2 ... 28.8
Nominal current at 40 °C [mA]	20
Max. nominal current [mA]	30
Starting current [mA]	450
Debounce time [ms]	0.3
Properties	Galvanically isolated
Digital outputs	
Number	8
Nominal voltage [V DC]	24
Max. current [mA]	200
Design	Potential-free signal contact
Switching logic	Contact closes at STO

Ordering data – Plug-in card			
	Brief description	Part No.	Type
	Safety module: <ul style="list-style-type: none"> • Operation of the motor controller absolutely requires that one of the plug-in cards CAMC-G-S1 or CAMC-DS-M1 be inserted in slot [7]. • The plugs are included in the scope of delivery. To reorder plug NEKM → 18 	1501330	CAMC-G-S1

Motor controllers CMMP-AS, for servo motors

FESTO

Accessories

Interface CAMC-D-8E8A

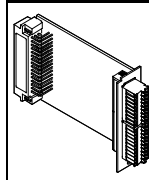
Only for motor controller:
CMMP-AS-...-M3

The interface is used to extend the digital I/Os.

Up to two interfaces are supported simultaneously.

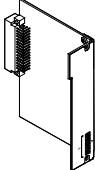


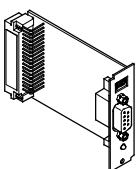
Technical data		
General		
Max. connection cross section	[mm ²]	0.5
Electrical connection		Screw terminal
		Straight plug
Digital inputs		
Number		8
Nominal voltage	[V DC]	24
Voltage range	[V]	-30 ... +30 (protected against reverse polarity and short circuit proof)
Nominal value for True	[V]	8
Nominal value for False	[V]	2
Input impedance	[kΩ]	4.7
Digital outputs		
Number		8
Nominal voltage	[V DC]	24
Voltage range	[V]	+18 ... +30 (protected against reverse polarity and short circuit proof, protection in the event of thermal overload)
Output current	[mA]	100
Short circuit, overcurrent protection	[mA]	500


Ordering data – Plug-in card			
	Brief description	Part No.	Type
	Interface: for additional I/Os (The plugs are included in the scope of delivery. To reorder plug NEKM → 18.)	567855	CAMC-D-8E8A

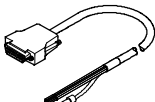
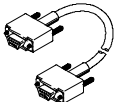
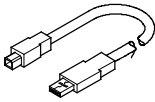
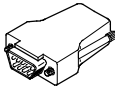
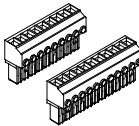
Motor controllers CMMP-AS, for servo motors

Accessories

Ordering data – Plug-in card			
	Brief description	Part No.	Type
	Switch module: • Operation of the motor controller CMMP-AS-...-M3 absolutely requires that one of the plug-in cards CAMC-G-S1 or CAMC-DS-M1 be inserted in slot 7 .	1501329	CAMC-DS-M1

Ordering data – Plug-in cards for fieldbus interface			
	Brief description	Part No.	Type
	For PROFIBUS DP	547450	CAMC-PB
	For PROFINET RT	1911916	CAMC-F-PN
	For DeviceNet	547451	CAMC-DN
	For EtherCAT	567856	CAMC-EC
	For EtherNet/IP	1911917	CAMC-F-EP

Ordering data – Memory card			
	Brief description	Part No.	Type
	Memory card, for data backup and firmware download	1436343	CAMC-M-S-F10-V1

Ordering data – Cables and plugs				
	Brief description	Cable length [m]	Part No.	Type
	Control cable, for I/O interface to any controller	2.5	552254	NEBC-S1G25-K-2.5N-LE26
	Programming cable for CMMP-AS-C20-11A-P3	1.5	160786	PS1-ZK11-NULLMODEM-1,5M
	Programming cable for CMMP-AS-...-M0, CMMP-AS-...-M3	1.8	1501332	NEBC-U1G-K-1.8-N-U2G
	Encoder plug, for incremental encoder interface	–	564264	NECC-A-S-S1G9-C2M
	Plug assortment for CMMP-AS-C2/-C5-3A-M0, CMMP-AS-C2/-C5-3A-M3	–	1659228	NEKM-C-7¹⁾
	Plug assortment for CMMP-AS-C5/-C10-11A-P3-M0, CMMP-AS-C5/-C10-11A-P3-M3	–	552256	NEKM-C-3¹⁾
	Plug assortment for CMMP-AS-C20-11A-P3	–	1425453	NEKM-C-6²⁾
	Plug assortment for interface CAMC-D-8E8A	–	569959	NEKM-C-5³⁾
	Plug assortment for safety module CAMC-G-S1 and motor controller CMMP-AS-...-M0	–	1660640	NEKM-C-8⁴⁾

1) Plugs are included in the scope of delivery of the motor controller CMMP-AS-...-M0, CMMP-AS-...-M3

2) Plugs are included in the scope of delivery of the motor controller CMMP-AS-C20-11A-P3

3) Plugs are included in the scope of delivery of the plug-in card CAMC-D-8E8A

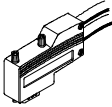

4) Plug is included in the scope of delivery of the plug-in card CAMC-G-S1

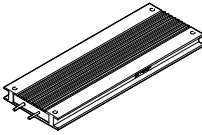
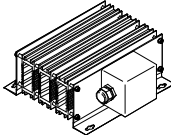
Plug is included in the scope of delivery of the motor controller CMMP-AS-...-M0


Motor controllers CMMP-AS, for servo motors


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Accessories

Ordering data – Cables and plugs				
	Brief description	Cable length [m]	Part No.	Type
	Plug for PROFIBUS interface	–	533780	FBS-SUB-9-WS-PB-K
	Plug for CANopen interface	–	533783	FBS-SUB-9-WS-CO-K
	Plug for DeviceNet interface	–	525635	FBSD-KL-2X5POL

Ordering data – Braking resistors					
	For type	Resistance value [Ω]	Rated output [W]	Part No.	Type
CACR-LE2-...					
	CMMP-AS-C2-3A-..., CMMP-AS-C5-3A-...	100	500	1336615	CACR-LE2-100-W500
CACR-KL2-...					
	CMMP-AS-C5-11A-P3-..., CMMP-AS-C10-11A-P3-...	67	1,800	1336617	CACR-KL2-67-W1800
	CMMP-AS-C20-11A-P3	33	3,600	1336619	CACR-KL2-33-W2400

Ordering data – Software and documentation		
	Brief description	→ Internet
	<p>The following manuals are available on the Festo website:</p> <ul style="list-style-type: none"> – Hardware: Assembly and installation for all variants – Functions: Instructions on commissioning with FCT + functional description – FHPP: Control and parameterisation of the motor controller via the FHPP profile – DS402: Control and parameterisation of the motor controller via the device profile CiA 402 (DS402) – CAM editor: Cam disc functionality (CAM) of the motor controller – Safety module: Functional safety engineering for the motor controller with the safety function STO 	www.festo.com/net/SupportPortal

Ordering data – Software and documentation for curve editor			
	Brief description	Part No.	Type
	<p>Software package contains:</p> <ul style="list-style-type: none"> – CD-ROM – with user documentation in de, en, es, fr, it, sv, ru, zh – with additional functions for the cam disc functionality <p>The software package is not included in the scope of delivery</p>	570903	GSPF-CAM-MC-ML