

Motor Controllers CMMP-AS, for Servo Motors

FESTO



Motor Controllers CMMP-AS, for Servo Motors

Key features

Comparison of motor controllers				
Motor controller		CMMP-AS	CMMS-AS	CMMS-ST
For motor type		Servo motor	Servo motor	Stepper motor
Torque at standstill	[Nm]	25	4.7	9.3
Peak torque	[Nm]	48	9.2	9.3
Speed	[rpm]	6,000	6,000	2,000
Position sets		255	63	63
Measuring system		Incremental/absolute	Incremental/absolute	Incremental
Extended I/O interface		Flexibly configurable	4 working modes	4 working modes
Notification of remaining distance		Separate for all positions	1 for n	1 for n
Torque reduction		Separate for all positions	No	No
Set linking		With branching	Linear	Linear
Safe stop		To EN 954-1 Cat3	To EN 954-1 Cat3	–

Performance characteristics

Compactness	Motion control
<ul style="list-style-type: none"> • Small dimensions • Can be connected directly to each other in series • Full integration of all components for controller and power section, including RS232 and CANopen interface • Integrated brake chopper 	<ul style="list-style-type: none"> • Digital absolute shaft encoder in single-turn and multi-turn versions • Can be operated as a torque, speed or position controller • Integrated positioning controller • Time-optimised (trapezoidal) or jerk-free (S-shaped) positioning
<ul style="list-style-type: none"> • Integrated EMC filters • Automatic actuation for a holding brake integrated in the motor • Adheres to the current CE and EN standards without additional external measures (motor cable length of up to 25 m) 	<ul style="list-style-type: none"> • Absolute and relative movements • Point-to-point positioning with and without approximate positioning • Position synchronisation • Electronic gear unit • 255 position sets • Wide range of homing methods

Fieldbus interfaces

Integrated:



Optional:



Input/output

- Freely programmable I/Os
- High-resolution 16-bit analogue input
- Jog/teach mode
- Simple linking to a higher-level controller via I/O or fieldbus
- Synchronous operation
- Master/slave mode

Integrated sequence control

- Automatic sequence of position sets without a higher-level controller
- Linear and cyclic position sequences
- Adjustable delay times
- Branches and wait positions
- Overlapping restart possible during the movement

Integrated safety functions

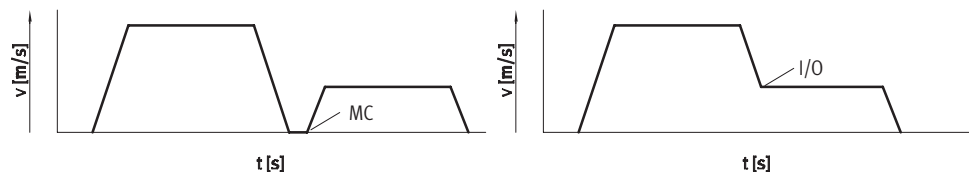
- Integrated “safe stop” as per EN 954-1 Cat3 in the basic unit
- Protection against unexpected start-up
- Two-channel disconnection of the output stage
- Less external circuitry
- Shorter response times in the event of an error
- Faster restart, intermediate circuit remains charged

Interpolating multi-axis movement

- With a suitable controller, the CMMP-AS can perform path movements with interpolation via CANopen or Sercos. The controller specifies setpoint position values in a fixed time pattern to this end. In between, the servo positioning controller independently interpolates the data values between two data points.

Travel program

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

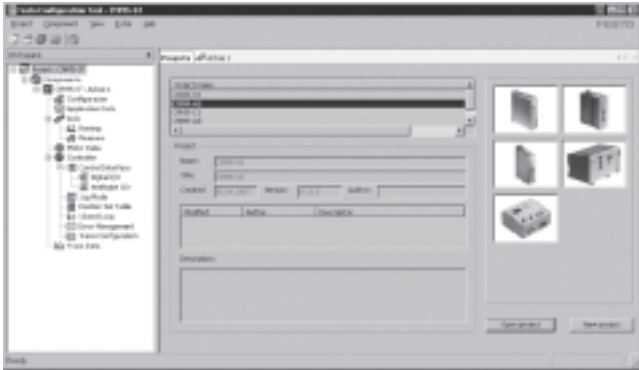


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Key features

FCT software – Festo Configuration Tool

Software platform for electric drives from Festo



- All 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

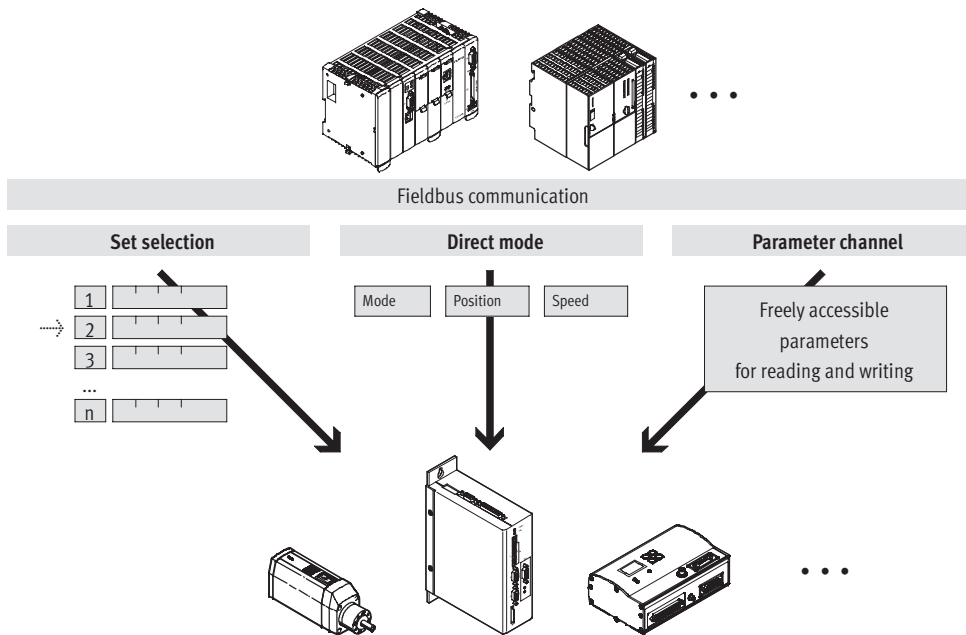
Optimised data profile

Festo has developed an optimised data profile, the “Festo Handling and Positioning Profile (FHPP)”, that is tailored to 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.

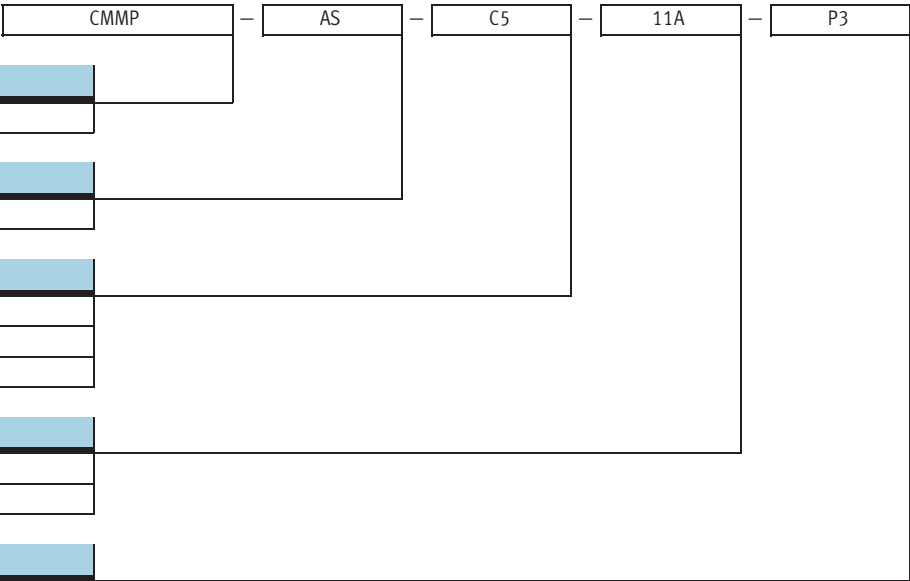
The following are defined, among others:

- Operating modes
- I/O data structure
- Parameter objects
- Sequence control



Motor Controllers CMMP-AS, for Servo Motors

Type codes



Type	
CMMP	Motor controller, premium

Motor type	
AS	Servo motor, AC synchronous

Motor current	
C2	Nominal current: 2.5 A
C5	Nominal current: 5 A
C10	Nominal current: 10 A

Nominal voltage	
3A	Voltage: 1x 100 ... 230 V AC
11A	Voltage: 3x 230 ... 480 V AC

Phases	
P3	Three-phase

Motor Controllers CMMP-AS, for Servo Motors

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Technical data

Fieldbus interfaces

CANopen



PROFIBUS

DeviceNet

SERCOS interface



General technical data				
CMMP-AS-	C2-3A	C5-3A	C5-11A-P3	C10-11A-P3
Type of mounting	Screwed to a mounting plate			
Output frequency [Hz]	0 ... 1,000			
Display	7-segment display			
Parameterisation interface	RS232 (9,600 ... 115,000 bits/s)			
Encoder interface input	As speed/position specification for the slave drive in synchronous mode			
	Encoder signal setpoint speed			
	EnDat V2.2			
	RS422			
Encoder interface output	Actual value feedback via encoder signals in speed control mode			
	Setpoint specification for downstream slave drive			
	Resolution 16 384 ppr			
Brake resistor, integrated [Ω]	165	110	68	
Pulse power of braking resistor [kVA]	1.1	1.6	8.5	
Operating range of analogue outputs [V]	±10			
Operating range of analogue inputs [V]	±10			
Number of analogue outputs	2			
Number of analogue inputs	3			
Resolution of analogue outputs	9-bit			
Characteristics of logic inputs	Freely configurable			
Characteristics of analogue outputs	Short circuit-proof			
Characteristics of analogue inputs	Differential inputs			
	Configurable for speed			
	Configurable for current			
Characteristics of digital logic outputs	Freely configurable in some cases			
Mains filter	Integrated			
Max. length of motor cable without external mains filter [m]	25			
Product weight [g]	2,000	2,100	3,700	

Technical data – Fieldbus interface				
Interfaces	I/O	CANopen	Profibus DP	DeviceNet
Operating range of logic inputs [V]	8 ... 30	–		
Number of digital logic inputs	10	–		
Number of digital logic outputs	5	–		
Process coupling	For 255 position sets	–		
Communication profile	–	DS301, FHPP	DP-V0 / FHPP	FHPP
	–	DS301, DSP402	Step7 functional modules	
Max. fieldbus transmission rate [Mbit/s]	–	1	12	0.5

Motor Controllers CMMP-AS, for Servo Motors

Technical data

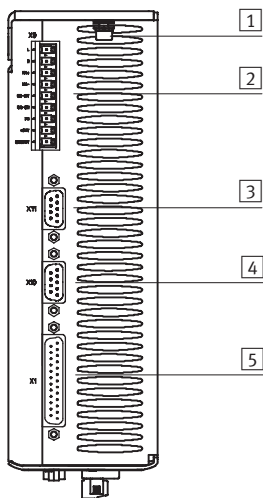
Electrical data					
CMMP-AS-		C2-3A	C5-3A	C5-11A-P3	C10-11A-P3
General					
Nominal voltage phases		1		3	
Nominal current	[A]	2.5	5	5	10
Peak current	[A]	5	10	15	20
Max. peak current duration	[s]	5		3	
Max. intermediate circuit voltage	[V DC]	380		560	
Mains frequency	[Hz]	50 ... 60			
Load supply					
Input voltage range	[V AC]	100 ... 230		3x 230 ... 480	
Max. nominal input current	[A]	3	6	5.5	11
Rated output	[VA]	500	1,000	3,000	6,000
Peak output	[VA]	1,000	2,000	6,000	12,000
Logic supply					
Nominal voltage	[V DC]	24 ±20%			
Nominal current	[A]	0.55/2.55 ¹⁾	0.65/2.65 ¹⁾	1/3 ¹⁾	
Max. current of digital logic outputs	[mA]	100			

1) Max. current with brake

Operating and environmental conditions	
Digital logic outputs	Electrically separated
Logic inputs	Electrically separated
Protection class	IP20
Ambient temperature	[°C] 0 ... +50
Storage temperature	[°C] -25 ... +70
Relative humidity	[%] 0 ... 90 (non-condensing)
CE mark (see declaration of conformity)	To EU Low Voltage Directive
Safe stop	To EN 954-1 KAT3

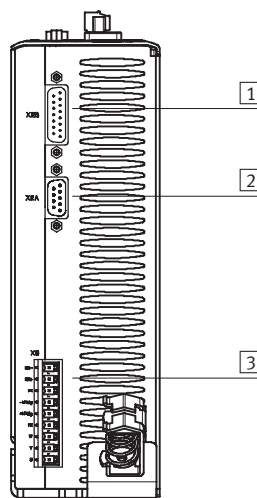
View of motor controller

From above



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

From below



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

Motor Controllers CMMP-AS, for Servo Motors

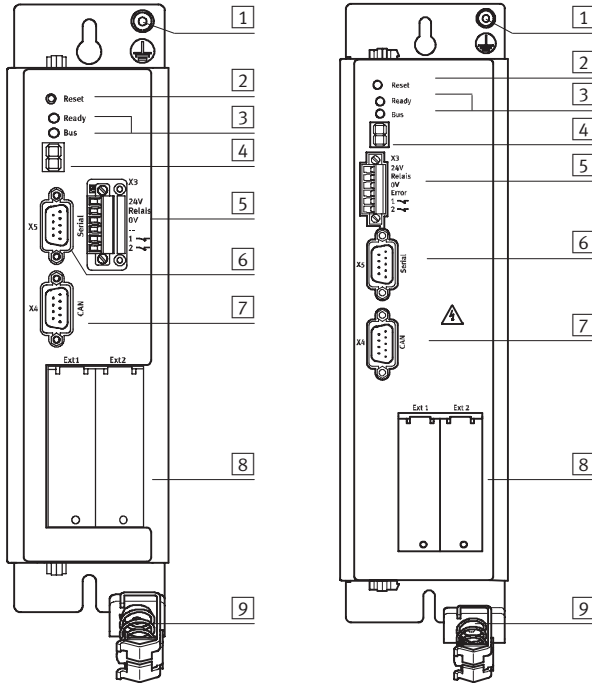
Technical data

View of motor controller

From the front

CMMP-AS-...-3A

CMMP-AS-...-11A-P3

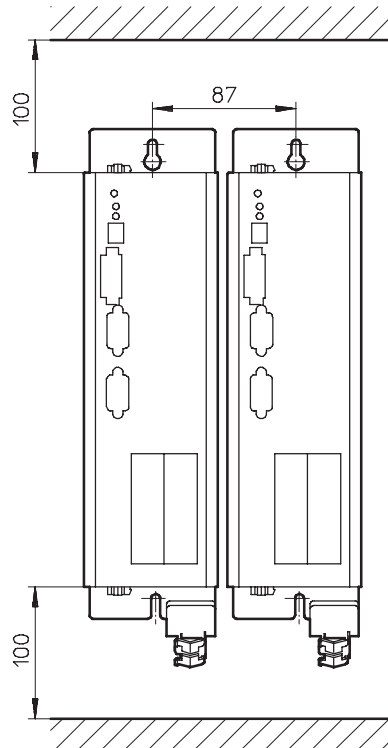
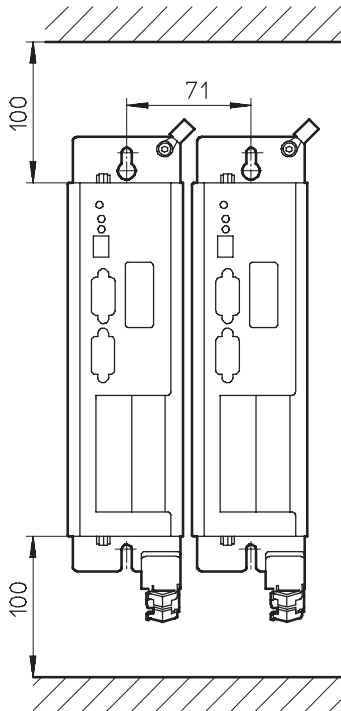


- 1 Earthing
- 2 Reset button
- 3 Ready/bus LED
- 4 Status display
- 5 Control connection for relay driver supply
- 6 Interface: RS232/RS485
- 7 Interface: CAN bus
- 8 Technology module slot
- 9 Screened connection

Installation clearance for motor controller

CMMP-AS-...-3A

CMMP-AS-...-11A-P3

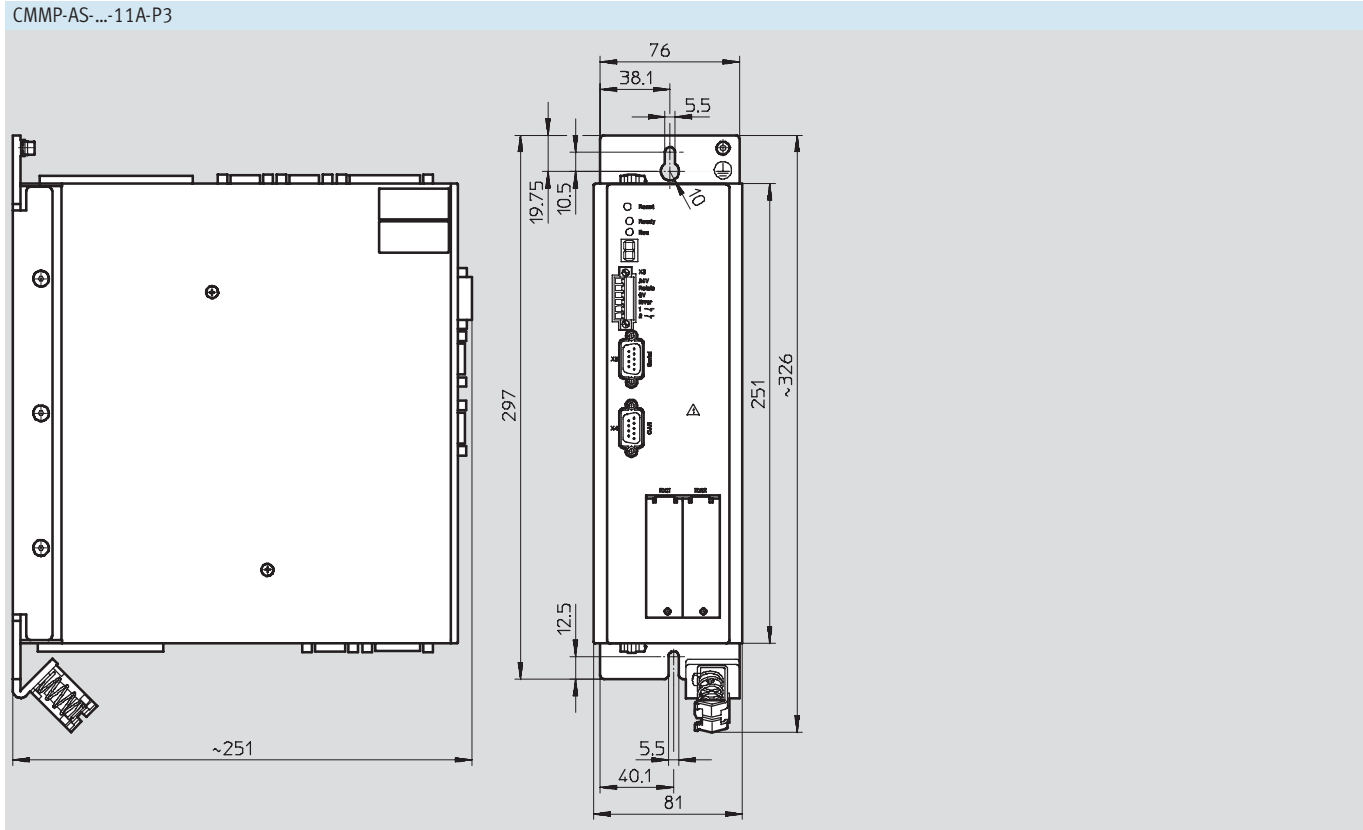
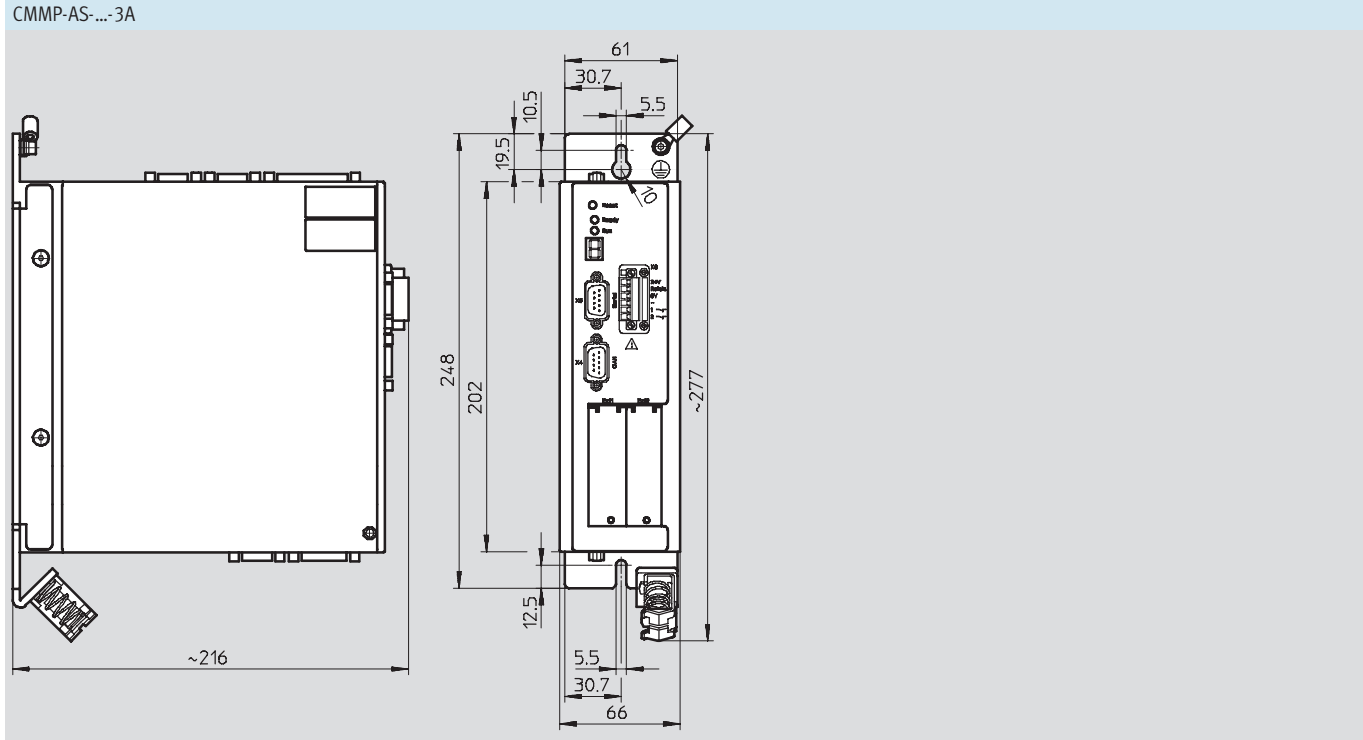


Motor Controllers CMMP-AS, for Servo Motors

Technical data



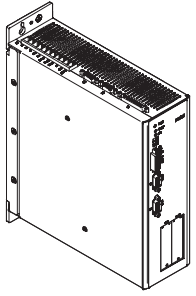
Dimensions Download CAD Data → www.festo.com/us/cad



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Technical data

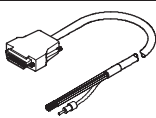
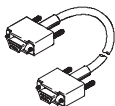
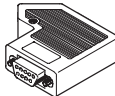
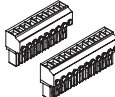
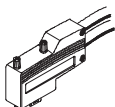



Ordering data		Part No.	Type
	The plug range NEKM (➔ 10) and the operating package (➔ 11) are included in the scope of delivery.	550041	CMMP-AS-C2-3A
		550042	CMMP-AS-C5-3A
		551023	CMMP-AS-C5-11A-P3
		551024	CMMP-AS-C10-11A-P3

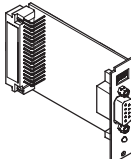
Motor Controllers CMMP-AS, for Servo Motors

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	552254	NEBC-S1G25-K-2.5N-LE26
	Programming cable	1.5	160786	PS1-ZK11-NULLMODEM-1,5M
	Encoder plug	–	552274	NECC-S-S1G9-C2M
	Plug range for CMMP-AS-...-3A	–	552255	NEKM-C-2 ¹⁾
	Plug range for CMMP-AS-...-11A-P3	–	552256	NEKM-C-3 ¹⁾
	Plug for Profibus interface	–	533780	FBS-SUB-9-WS-PB-K
	Plug for DeviceNet interface	–	525635	FBSD-KL-2X5POL


1) Comprising plug for power supply and plug for motor connection. The plug range is included in the scope of delivery

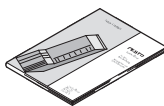
Ordering data – Plug-in cards			
	Brief description	Part No.	Type
	For Profibus interface	547450	CAMC-PB
	For DeviceNet interface	547451	CAMC-DN
	For Sercos interface	552258	CAMC-SC

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Accessories



Ordering data – Software and documentation			
	Brief description	Part No.	Type
	Operating package contains: – CD-ROM – with user documentation for CMMP-AS, in de, en, es, fr, it, sv – with FCT (Festo Configuration Tool) configuration software, in de, en – Brief description This package is included in the scope of delivery	558329	P.BP-CMMP-AS

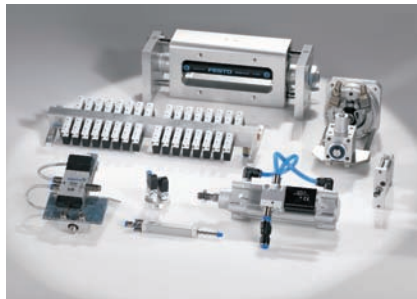
Ordering data – Documentation ¹⁾					
	Language	Part No.	Type	Part No.	Type
			for motor controller CMMP-AS-...-3A		for motor controller CMMP-AS-...-11A-P3
	EN	557326	P.BE-CMMP-AS-3A-HW-EN	557332	P.BE-CMMP-AS-11A-HW-EN
	ES	557327	P.BE-CMMP-AS-3A-HW-ES	557333	P.BE-CMMP-AS-11A-HW-ES
	FR	557328	P.BE-CMMP-AS-3A-HW-FR	557334	P.BE-CMMP-AS-11A-HW-FR
			Festo Handling and Positioning Profile (FHPP) for the motor controller family CMM...		
	EN	555696	P.BE-CMM-FHPP-SW-EN		
	ES	555697	P.BE-CMM-FHPP-SW-ES		
	FR	555698	P.BE-CMM-FHPP-SW-FR		
			for Profibus interface		for DeviceNet interface
	EN	557338	P.BE-CMMP-FHPP-PB-SW-EN	557350	P.BE-CMMP-FHPP-DN-SW-EN
	ES	557339	P.BE-CMMP-FHPP-PB-SW-ES	557351	P.BE-CMMP-FHPP-DN-SW-ES
	FR	557340	P.BE-CMMP-FHPP-PB-SW-FR	557352	P.BE-CMMP-FHPP-DN-SW-FR
			for CANopen interface		for Sercos interface
	EN	557344	P.BE-CMMP-CO-SW-EN	557362	P.BE-CMMP-SC-SW-EN
	ES	557345	P.BE-CMMP-CO-SW-ES	557363	P.BE-CMMP-SC-SW-ES
FR	557346	P.BE-CMMP-CO-SW-FR	557364	P.BE-CMMP-SC-SW-FR	

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

Product Range and Company Overview

A Complete Suite of Automation Services

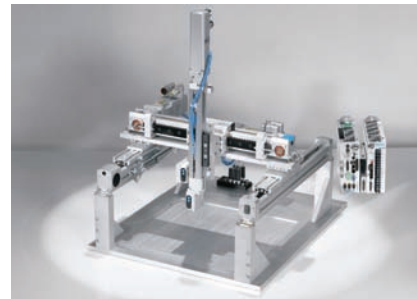
Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



Custom Automation Components
Complete custom engineered solutions



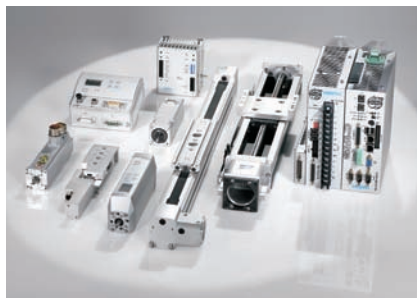
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Comprehensive engineering support
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Complete Systems
Shipment, stocking and storage services

The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



Electromechanical
Electromechanical actuators, motors,
controllers & drives



Pneumatics
Pneumatic linear and rotary actuators,
valves, and air supply



PLCs and I/O Devices
PLC's, operator interfaces, sensors
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Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 11,500 employees in 56 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

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Festo Corporation is committed to provide Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

All Festo locations within the United States are registered to ISO 9001.



Festo North America

United States

Customer Resource Center

502 Earth City Expy., Suite 125
Earth City, MO 63045

For ordering assistance, or to find
your nearest Festo Distributor,

Call: 1.800.99.FESTO

Fax: 1.800.96.FESTO

Email: customer.service@us.festo.com

For technical support,

Call: 1.866.GO.FESTO

Fax: 1.800.96.FESTO

Email: product.support@us.festo.com

Headquarters

Festo Corporation
395 Moreland Road
P.O. Box 18023
Hauppauge, NY 11788
www.festo.com/us

Sales Offices

Appleton

N. 922 Tower View Drive, Suite N
Greenville, WI 54942

Boston

120 Presidential Way, Suite 330
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Chicago

1441 East Business Center Drive
Mt. Prospect, IL 60056

Dallas

1825 Lakeway Drive, Suite 600
Lewisville, TX 75057

Detroit - Automotive Engineering Center

2601 Cambridge Court, Suite 320
Auburn Hills, MI 48326

New York

395 Moreland Road
Hauppauge, NY 11788

Silicon Valley

2800 Collier Canyon Road
Livermore, CA 94550

Design and Manufacturing Operations



East: 395 Moreland Road, Hauppauge, NY 11788



Central: 1441 East Business Center Drive, Mt. Prospect, IL 60056



West: 2800 Collier Canyon Road, Livermore, CA 94550

Mexico

Headquarters

Festo Pneumatic, S.A.
Av. Ceylán 3, Col. Tequesquahuac
54020 Tlalnepantla, Edo. de México
Call: 011 52 [55] 53 21 66 00
Fax: 011 52 [55] 53 21 66 65
Email: festo.mexico@mx.festo.com
www.festo.com/mx



Canada

Headquarters

Festo Inc.
5300 Explorer Drive
Mississauga, Ontario L4W 5G4
Call: 1.905.624.9000
Fax: 1.905.624.9001
Email: info.ca@ca.festo.com
www.festo.com/ca



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