Control systems CMCA

FESTO

The control solution CMCA is suitable for Festo handling systems.

It is available in two versions:
- Mounting plate
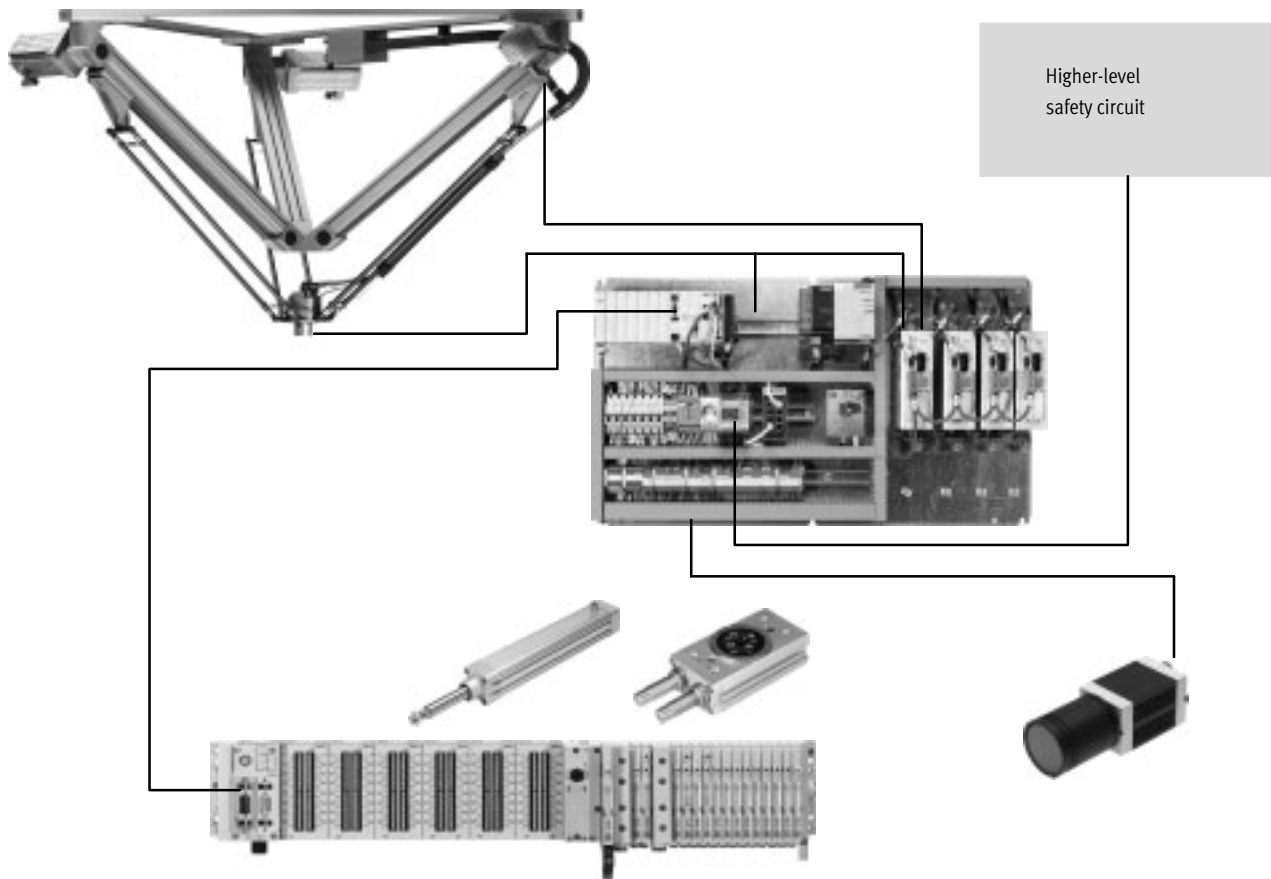- Mounting plate in a control cabinet housing

The control solution includes the multi-axis controller CMXR and the motor controller CMMP required for activation. There is also an integrated safety circuit, which together with the teach pendant CDSA represents the basic functionality.

The version with the control cabinet housing also features control elements and fans in the door.
The control solution CMCA is pre-programmed and already tested together with the relevant parallel kinematic system.

Additional features:
- Terminals for control cabinet lighting
- Plug socket in the control cabinet for a PC
- Terminals for a camera
- Terminals for 2 proximity sensors per axis

Higher-level safety circuit

Connection of the Festo compact vision system

- A 24 V terminal is provided for the power supply
- Communication takes place via the integrated network switch
- Lighting connection: 230 V, 2 A

Connection of kinematic systems or gantries

- Motors are connected directly to the motor controller CMMP-AS
- Terminals for two proximity sensors each are provided for axes 1 to 4

Connection of peripheral equipment or grippers

- It is recommended to only connect time-critical inputs/outputs to the peripheral modules
- Link all other inputs/outputs decentrally via CANopen

Additional emergency stop position

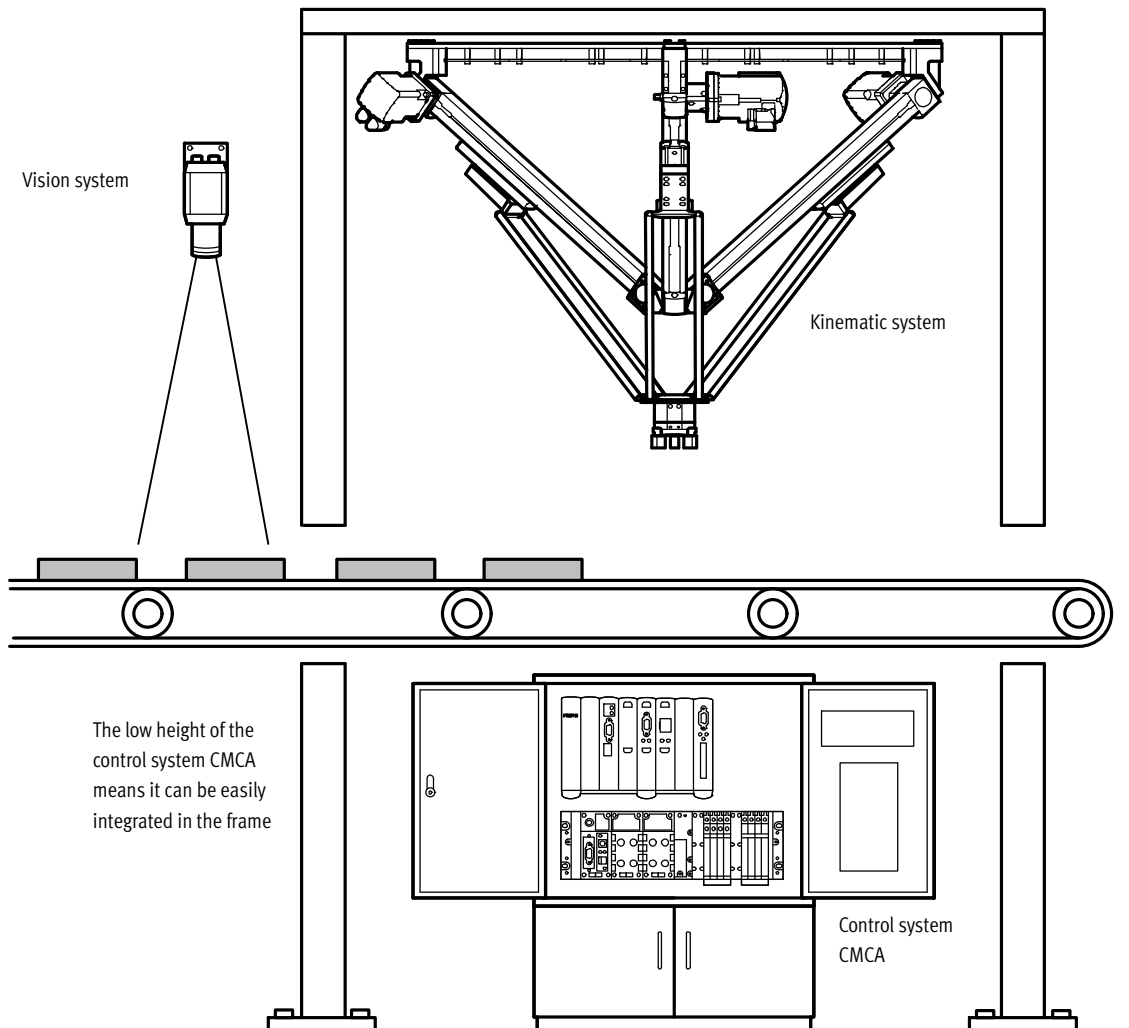- An additional emergency stop position can be connected directly at the control cabinet

Interface to higher-level safety circuit	
2 channels for safety door contacts	For indicating the status of the safety doors in manual mode
2 channels for external emergency stop	For triggering an emergency stop by means of a higher-level safety circuit
2 floating contacts for emergency stop	For indicating an emergency stop at a higher-level safety circuit
2 inputs for operating mode selection	The operating mode can be selected externally instead of using the integrated key actuator

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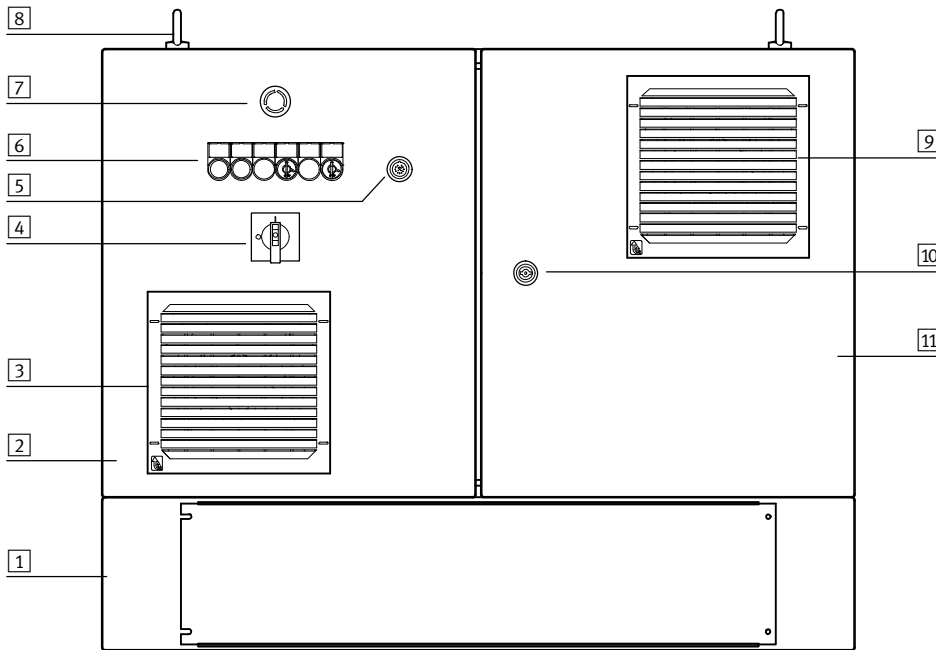
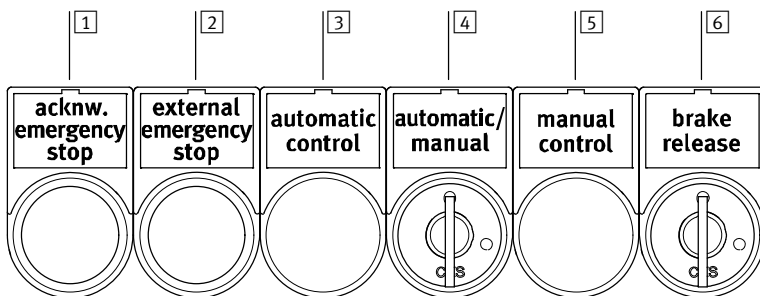Key features

Sample application

Vision system

Kinematic system

The low height of the
control system CMCA
means it can be easily
integrated in the frame

Control system
CMCA

Control systems CMCA

Key features

Control cabinet

1	Base (optional)
2	Left control cabinet door
3	Cover for control cabinet fan
4	Power switch
5	Connection for teach pendant CDSA
6	Control and signal elements
7	Emergency stop switch
8	Transport lugs
9	Cover for outlet filter
10	Lock for control cabinet doors
11	Right control cabinet door

Control and signal elements

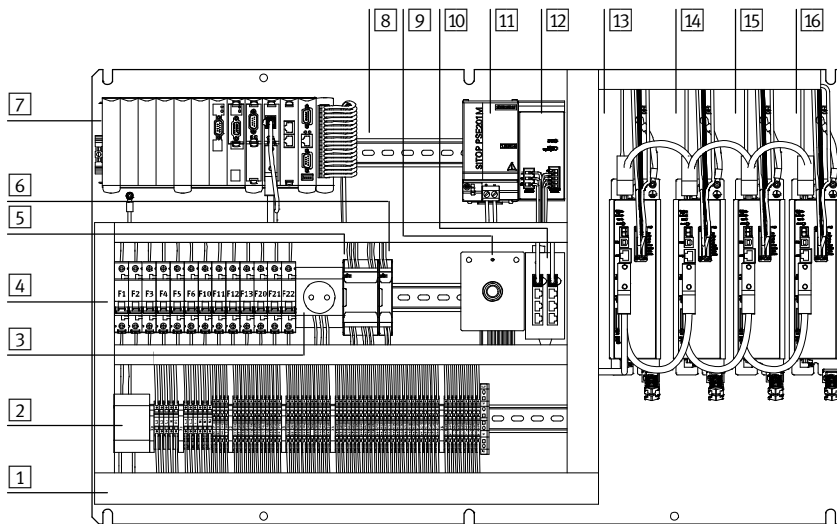| 1 | acknw. emergency stop |
2	external emergency stop
3	automatic control
4	automatic/ manual
5	manual control
6	brake release

- Note

The labels for marking the control elements in German are also included with the control cabinet.

1 "acknw. emergency stop" illuminated push-button:
confirms that the emergency stop circuit is unlocked

2 "external emergency stop" indicator light:
external emergency stop circuit triggered

3 "automatic control" indicator light:
automatic mode active

4 "automatic/manual" key actuator:
switches between automatic and manual mode

5 "manual control" indicator light: manual mode active

6 "brake release" key actuator: releases the motor brakes (only possible in manual mode and in combination with enabling button on the teach pendant)

Control systems CMCA

Key features

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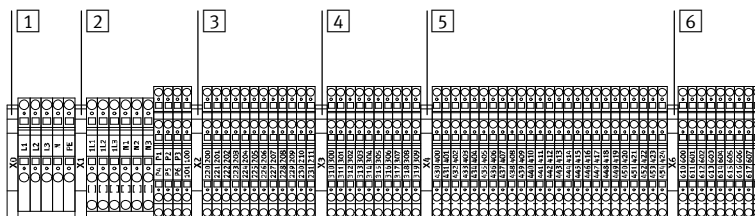## Mounting plate (the actual control system may differ from the one shown, depending on the equipment)

1. Terminal strips X0 … X6
2. Monitoring module for mains failure detection (only for characteristic S2)
3. Protective contact socket type F for PC (230 V AC, max. 10 A)
4. Fuses F1 … F22
5. Safety circuit control system
6. Extension for safety circuit control system
7. Multi-axis control system
8. Additional peripheral modules possible
9. Connection for CDSA (on the left door on the control cabinet version)
10. Ethernet switch
11. Buffer module 24 V DC (only for characteristic S2)
12. 24 V DC power supply unit
13. Motor controller for axis 1
14. Motor controller for axis 2
15. Motor controller for axis 3 (option)
16. Motor controller for axis 4 (option)

-ᗜ- Note

Up to 6 other peripheral modules can be connected to the multi-axis controller CMXR (➜ Internet: CMXR) These can be connected to the internal power supply. If the additional power requirement exceeds the value of 1.5 A, these peripheral modules must be supplied with 24 V externally. The plug connectors on the additional cards must be used as terminals.
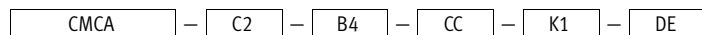
Overview of interfaces

1. X0: Supply upstream of power switch
2. X1: Supply downstream of power switch
3. X2: 24 V DC control circuit
4. X3: Emergency stop
5. X4: External emergency stop
6. X6: Control and signal elements

Control systems CMCA

Type codes

CMCA	—	C2	—	B4	—	CC	—	K1	—	DE

Type	
CMCA	Control cabinet

Multi-axis controller	
C1	Multi-axis controller CMXR-C1
C2	Multi-axis controller CMXR-C2, with integrated PLC

Motor controller	
B1	2x CMMP-AS-C5-3A, without electric front unit
B2	2x CMMP-AS-C5-3A, 1x CMMP-AS-C2-3A, for front unit (1 electric axis)
B3	2x CMMP-AS-C5-3A, 2x CMMP-AS-C2-3A, for front unit (2 electric axes)
B4	3x CMMP-AS-C5-3A, without electric front unit
B5	3x CMMP-AS-C5-3A, 1x CMMP-AS-C2-3A, for front unit (1 electric axis)
B6	2x CMMP-AS-C5-11A-P3, without electric front unit
B7	2x CMMP-AS-C5-11A-P3, 1x CMMP-AS-C2-3A, for front unit (1 electric axis)
B8	2x CMMP-AS-C5-11A-P3, 2x CMMP-AS-, for front unit (2 electric axes)

Control system	
C	Mounting plate
CC	Control cabinet without base
CS	Control cabinet with base

Safety technology	
S1	Integrated safety switching device
S2	Integrated safety switching device with power failure detection

Document language	
DE	German
EN	English
ES	Spanish
FR	French
IT	Italian
RU	Russian
ZH	Chinese

Control systems CMCA

General technical data		
Mains voltage	[V AC]	230/400
Mains frequency	[Hz]	50 ... 60
Fuse protection on mains side	[A]	Max. 20 (slow-blowing)
Nominal operating voltage phases		3-phase
Electrical connection		Spring-loaded terminal
Product weight		
CMCA-...-C	[kg]	43
CMCA-...-C[1]	[kg]	87
CMCA-...-CC	[kg]	81
CMCA-...-CC[1]	[kg]	127
CMCA-...-CS	[kg]	91
CMCA-...-CS[1]	[kg]	144

[1] With packing case and accessories

Operating and environmental conditions			
Type		CMCA-...-C	CMCA-...-CC/-CS
Ambient temperature	[°C]	+5 ... +40	
Storage temperature	[°C]	−20 ... +60	
Degree of protection		IP20	IP54
CE marking (see declaration of conformity)		–	To EU EMC Directive[1]
		–	To EU Low Voltage Directive
Relative air humidity	[%]	10 ... 95 (non-condensing)	
Certification		RCM Mark	
Note on materials		Contains PWIS (paint-wetting impairment substances)	
		RoHS-compliant	

[1] For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ 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.

Safety characteristics	
Safety function to EN 61800-5-2	Safe stop 1 (SS1)
Performance Level (PL) to EN ISO 13849-1	Safe stop 1 (SS1)/category 4, Performance Level e
CE marking (see declaration of conformity)	To EU EMC Directive[1]
	To EU Low Voltage Directive

[1] For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ 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.
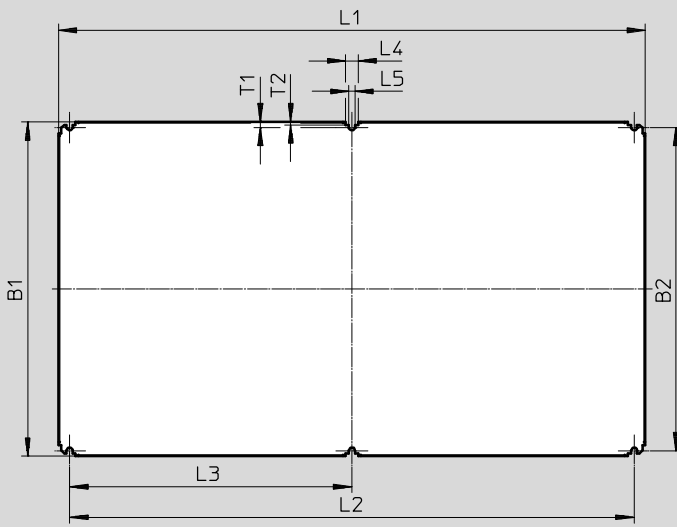
Control systems CMCA

Technical data

Dimensions
Download CAD data ➔ **www.festo.com**
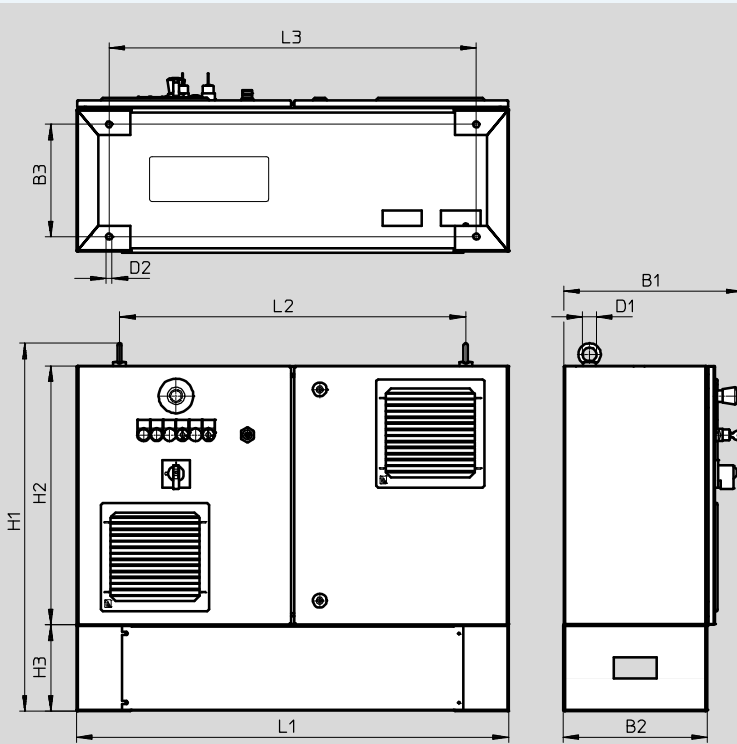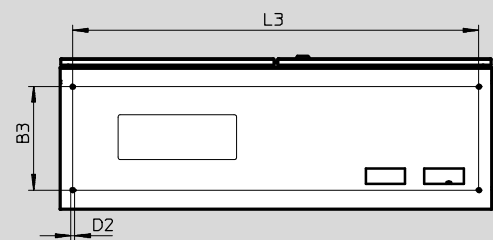
CMCA-...-C – Mounting plate

-▮- Note

The mounting plate must be fastened to a vertical and sufficiently stable surface at the 6 mounting points.

Type	B1	B2	L1	L2	L3	L4	L5	T1	T2
CMCA-...-C	548	518	962	925	462.5	20	10	15	4

CMCA-...-CC/-CS – Control cabinet

Base not shown

-▮- Note

Prerequisites for mounting:
- In a vertical position on a wall bracket with sufficient load-bearing capacity
- In a vertical position on horizontal cross braces in a frame with sufficient load-bearing capacity
- With a free space below the control cabinet of at least 200 mm for the cable throughfeed

Type	B1	B2	B3	D1 ⌀	D2 ⌀	H1	H2	H3	L1	L2	L3
With base	412	334	260	32	14	852	600	200	1000	801	850
Without base	412	–	239	32	9	652	600	–	1000	801	940

Control systems CMCA

Ordering data – Modular products

Ordering table		Condi-tions	Code	Entry code
M Module no.	**576335**			
Type	Control cabinet		**CMCA**	CMCA
Multi-axis controller	Multi-axis controller CMXR-C1		**-C1**	
	Multi-axis controller CMXR-C2, with integrated PLC		**-C2**	
Motor controller	2x CMMP-AS-C5-3A, without electric front unit		**-B1**	
	2x CMMP-AS-C5-3A, 1x CMMP-AS-C2-3A, for front unit (1 electric axis)		**-B2**	
	2x CMMP-AS-C5-3A, 2x CMMP-AS-C2-3A, for front unit (2 electric axes)		**-B3**	
	3x CMMP-AS-C5-3A, without electric front unit		**-B4**	
	3x CMMP-AS-C5-3A, 1x CMMP-AS-C2-3A, for front unit (1 electric axis)		**-B5**	
	2x CMMP-AS-C5-11A, without electric front unit		**-B6**	
	2x CMMP-AS-C5-11A, 1x CMMP-AS-C2-3A, for front unit (1 electric axis)		**-B7**	
	2x CMMP-AS-C5-11A, 2x CMMP-AS-C2-3A, for front unit (2 electric axes)		**-B8**	
Control system	Mounting plate		**-C**	
	Control cabinet without base		**-CC**	
	Control cabinet with base		**-CS**	
Safety technology	Integrated safety switching device		**-S1**	
	Integrated safety switching device with power failure detection		**-S2**	
Document language	German		**-DE**	
	English		**-EN**	
	Spanish		**-ES**	
	French		**-FR**	
	Italian		**-IT**	
	Russian		**-RU**	
	Chinese		**-ZH**	

1	**K1**	Not with motor controller variant B1, B2, B3, B6, B7, B8
2	**K2**	Not with motor controller variant B4, B5
3	**K3**	Not with motor controller variant B3, B4, B5, B6, B7, B8

Transfer order code

	CMCA	–		–		–		–		–