

# Multi-axis controllers CMXR



# Multi-axis controllers CMXR

Key features



## At a glance

### Powerful – reducing cycle times with optimum motion

Reducing cycle times is a requirement of all customers. There are limits, however, to what is possible based on, for example, the mechanical system, the travel distances or the maximum forces acting on a workpiece.

The challenge is to be quick and at the same time protect the mechanical system. The multi-axis controller CMXR offers the following features:

- Motion path smoothing
- Ramp shapes for acceleration
- Constant path speed

### Economical – reducing costs with easy configuration

Reducing costs is always an important issue. The Festo Configuration Tool (FCT) in combination with the programming language Festo Teach Language (FTL) makes configuration quick and easy and significantly shortens configuration times.

This enables the full focus to be on developing the application, since the basic motion programs are contained in the CMXR. The FTL programming tool utilises these basic programs. The FTL programs can therefore be used immediately.

### Reliable – easy handling of tools in three dimensions

The flange is not the end of a kinematic system. Mounted on the flange are the tools, which can, for example, comprise pneumatic drives such as the semi-rotary drive DRQD. Tools oriented other than vertically are a challenge for a controller. The CMXR enables the end position of the tool, for example a vacuum suction cup, to be defined three-dimensionally and

transfers this point to the programmed path. This feature also makes it easy to move the three-dimensionally positioned tool in the direction of the tool's path simply by pressing a button on the teach pendant CDSA. The teach-in of positions on parts slides, for example, is thus very easy and efficient.

### Reliable – easy integration with finished interfaces

The CMXR system offers fully defined interfaces for actuation via an external controller. This can be done with a simple method using digital signals or via a Profibus. These interfaces enable programs to be selected, started or stopped, for example. The Profibus variant also offers the option of reading or writing variables from the CMXR controller.

This transfer of variables enables movements to be influenced or even coupled with a process running on the external controller. To minimise the complexity when using an external PLC, modules for the PLC systems Siemens Simatic S7 and systems based on CoDeSys V2.3 are supplied for actuation via Profibus.

### Flexible – from simple to complex kinematic systems

#### Cartesian system



#### Tripod



The multi-axis controller CMXR is the heart of a complete kinematic system solution. It combines a mechanical system, electrical drive technology and control technology into a complete motion control package with integrated and harmonised interfaces for all system components involved.

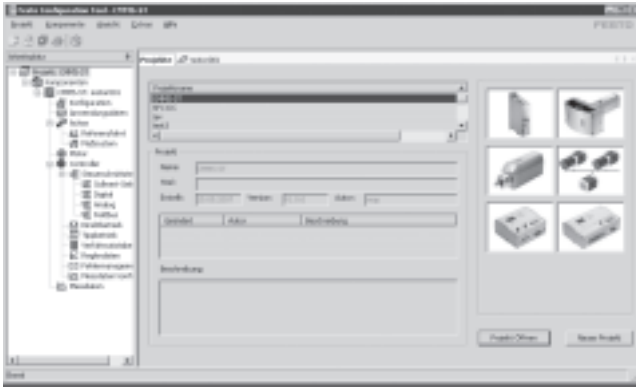
The multi-axis controller enables simple axis movements, from point to point to complex path control. It is able to control simple and complex kinematic systems with up to 6 degrees of freedom in three dimensions. These include, among others, linear and three-dimensional gantries (Cartesian systems) as well as tripod kinematic systems.

# Multi-axis controllers CMXR

Key features

## At a glance

Convenient – quick and easy configuration

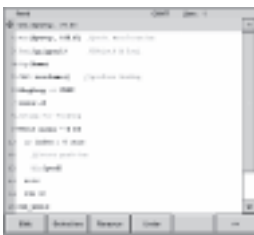


The main requirements for product configuration software are speed, reliability and user-friendliness. The multi-axis controller CMXR, like other products from Festo, is configured via the Festo Configuration Tool (FCT). Electrical variables (e.g. inputs and

outputs) as well as mechanical variables (e.g. choice of the kinematic system) are defined in the configuration. The sophisticated user guidance system guarantees quick and easy configuration of the complex multi-axis system.

## Transparent – programming in plain text with FTL

Via teach pendant CDSA



Via Festo Configuration Tool (FCT)



The motion programs are programmed using the text-based macro programming tool of the Festo Teach Language (FTL). This powerful programming tool contains macros, for example for movements, dynamic settings up to I/O processing of peripheral devices

such as grippers, for example, and has been specially developed for the CMXR. Programming can be done online via the teach pendant CDSA or offline via the FTL programming editor. The FTL editor is integrated in the Festo Configuration Tool (FCT).

## Convenient – easy programming via teach-in



When creating a motion program, the motion sequence is very often known but not the precise position to be approached, for example of a gripper or a tray. These can only be determined directly during commissioning by means of accurate approaching. The CMXR in combination with the teach pendant CDSA offers dialogue-based software for this purpose, thus enabling quick and easy teach-in of the necessary positions.

## Flexible – mobile operation and monitoring with CDSA

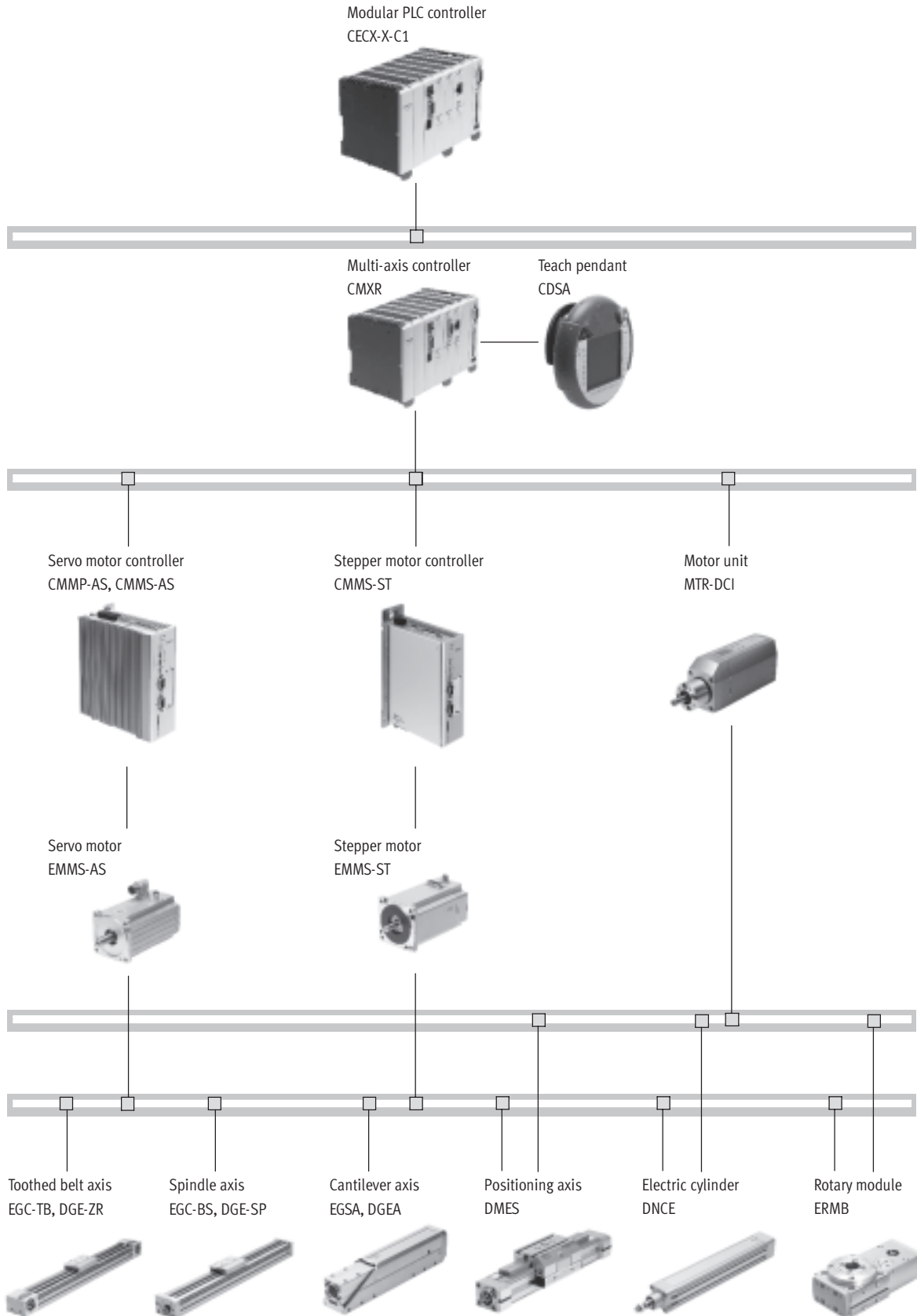


The teach pendant CDSA features an emergency stop switch as well as a 3-stage enabling key. Both devices are designed with two channels and are prepared for integration in the customer's safety circuits. The purpose of the enabling key is to approve the drive power during set-up. In addition to the hardware and ergonomic handle, the CDSA also features a colour touch screen as an alternative to the keypad for starting actions.

# Multi-axis controllers CMXR

Key features

Everything from a single source – perfectly co-ordinated

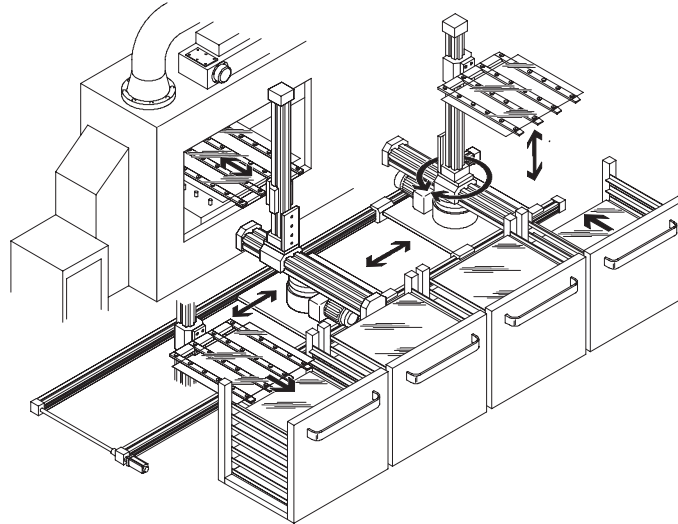


# Multi-axis controllers CMXR

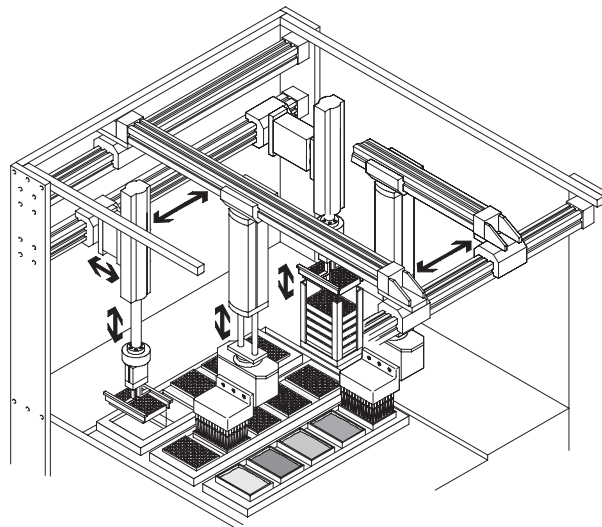
Key features

## Application examples

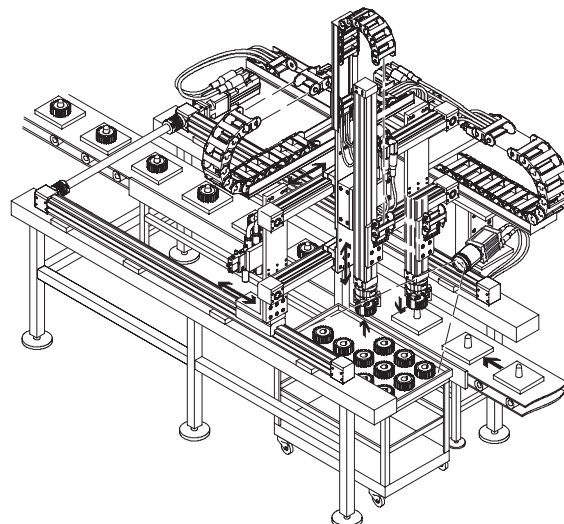
Removing and palletising workpieces



Handling and picking carrier trays

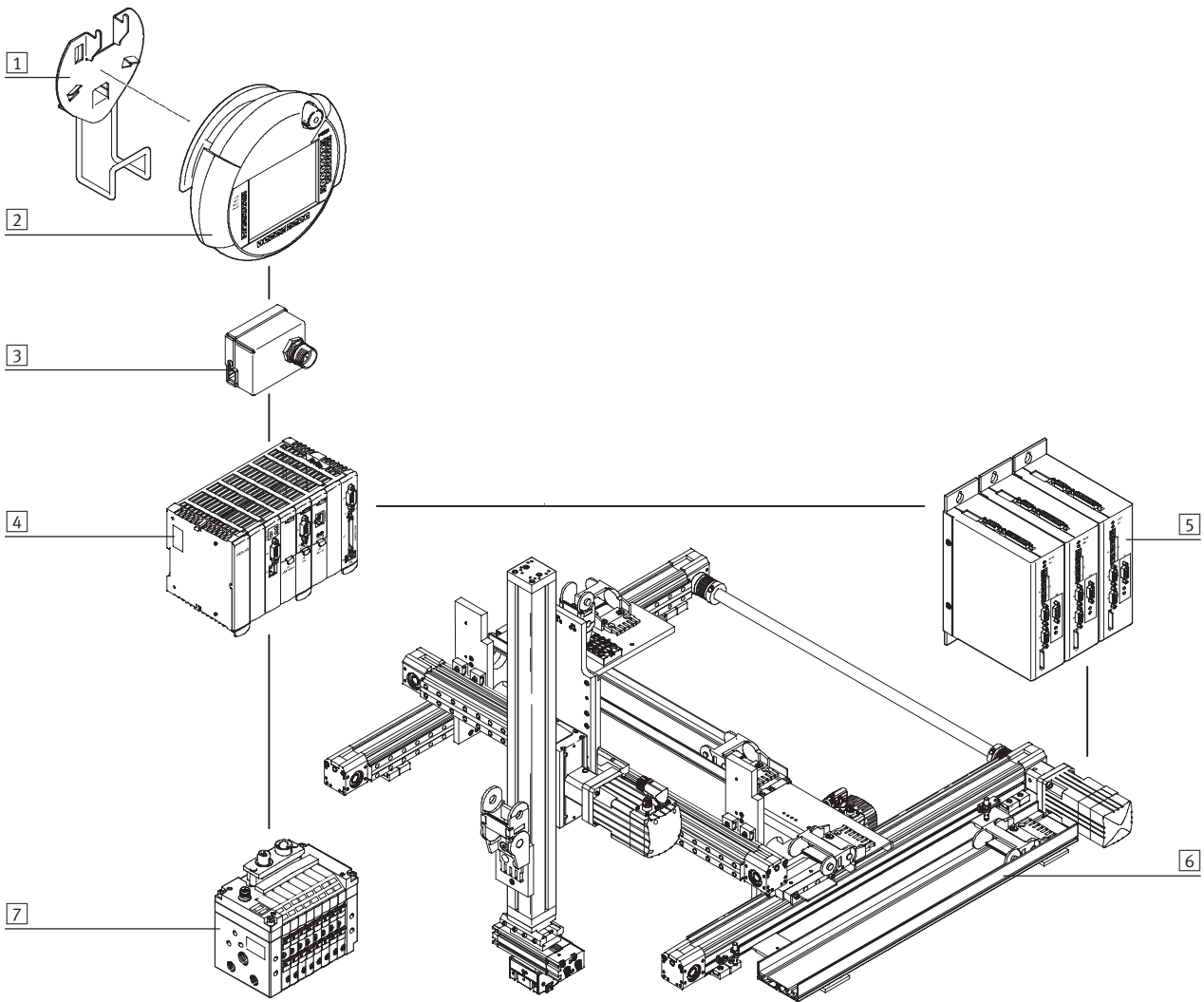


Feeding workpieces with simultaneous quality inspection via a vision system



# Multi-axis controllers CMXR

Peripherals overview



## Multi-axis controllers CMXR

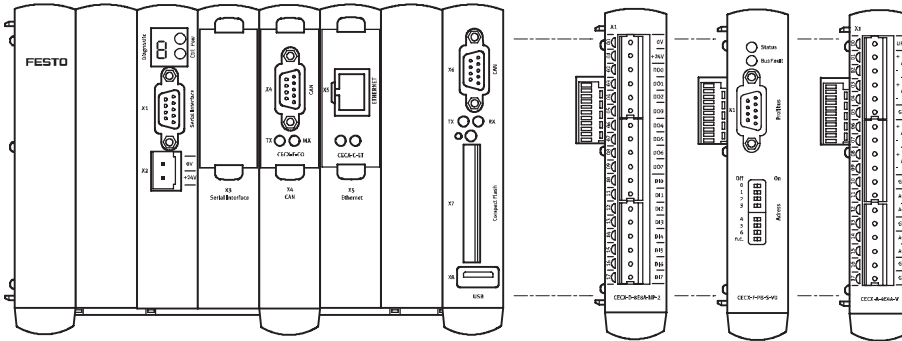
Peripherals overview

Accessories		
Type	Brief description	→ Page/Internet
1 Retainer CAFM	Wall fixture for the teach pendant CDSA with cable suspension	22
2 Teach pendant CDSA	For operating, monitoring and programming the multi-axis controller CMXR-C1	20
3 Interface housing CAMI	Adapter for connecting the teach pendant CDSA outside a control cabinet with the controller CMXR inside a control cabinet	23
4 Multi-axis controller CMXR	Enables simple axis movements, from point to point to complex path control	9
5 Motor controller CMM...	For controlling stepper or servo motors from Festo via a CAN interface	cmm
6 Three-dimensional gantry	Wide range of kinematic systems within the multi-axis modular system from Festo	three-dimensional gantry
7 Valve terminal	The multi-axis controller enables the connection of peripheral devices, for example valve terminals, via a CAN interface	valve terminal
- Cables and plugs	Connecting cables and plugs for connecting the individual devices	23

# Multi-axis controllers CMXR

Peripherals overview and type codes

## Controller CMXR-C1 with peripheral modules



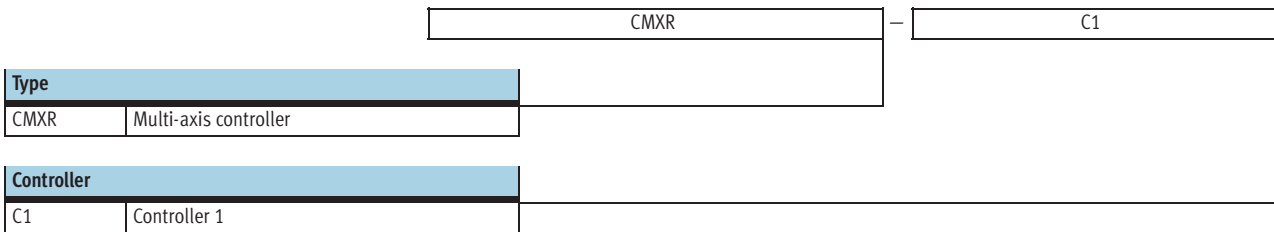
Peripheral modules		
Type	Brief description	→ Page/Internet
Input/output module, digital CECX-D-8E8A-NP-2	<ul style="list-style-type: none"> <li>• 8 digital inputs</li> <li>• 8 digital outputs</li> </ul>	12
Input module, digital CECX-D-16E	<ul style="list-style-type: none"> <li>• 16 digital inputs</li> </ul>	14
Output module, digital CECX-D-14A-2	<ul style="list-style-type: none"> <li>• 14 digital outputs</li> </ul>	15
Input/output module, analogue CECX-A-4E4A-V	<ul style="list-style-type: none"> <li>• 4 analogue voltage inputs</li> <li>• 4 analogue voltage outputs</li> </ul>	16
Input/output module, analogue CECX-A-4E4A-A	<ul style="list-style-type: none"> <li>• 4 analogue current inputs</li> <li>• 4 analogue current outputs</li> </ul>	16
Encoder interface CECX-C-2G2	<ul style="list-style-type: none"> <li>• 2 encoder interfaces</li> </ul>	18
Fieldbus interface CECX-F-PB-S-V0	<ul style="list-style-type: none"> <li>• Profibus slave DP-V0</li> </ul>	19

Note

- Plugs are not included in the scope of delivery for the peripheral modules (plugs → 23)
- Max. 1 Profibus slave module can be used
- Max. 8 peripheral modules can be used

Additional product information  
→ [www.festo.com](http://www.festo.com)

## Type codes





## Multi-axis controllers CMXR

Technical data

Controller  
CMXR-C1



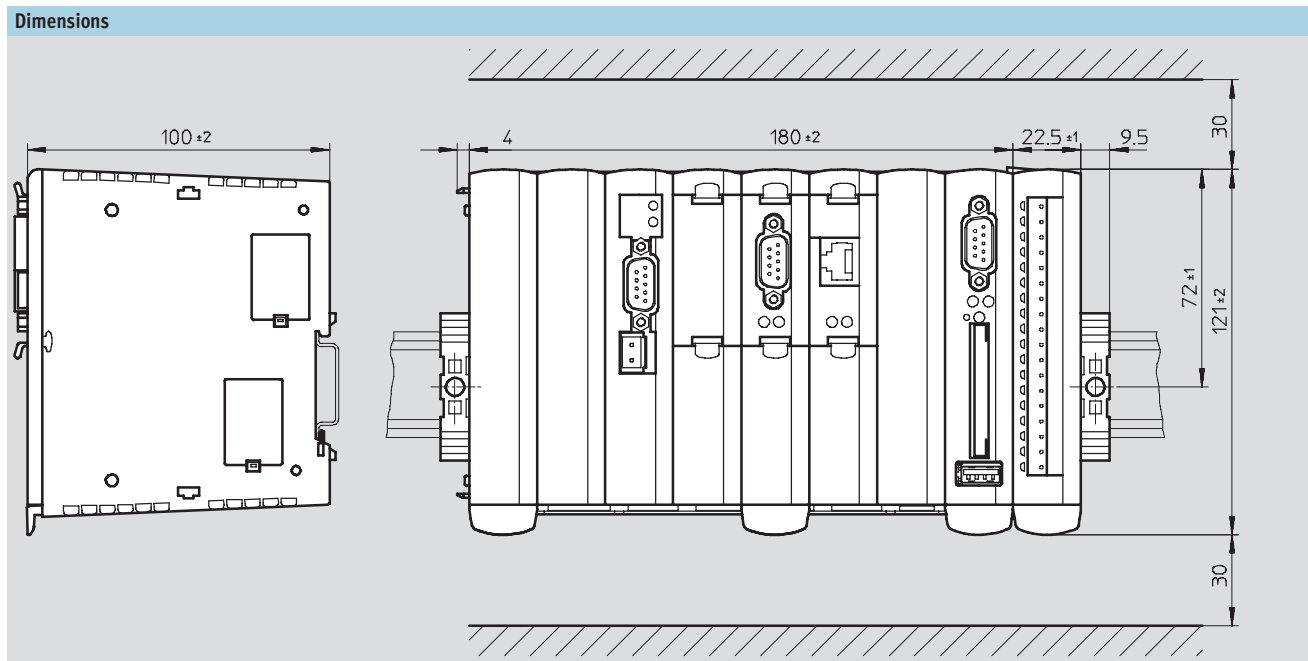
General technical data		
Operating voltage range	[V DC]	19.2 ... 30
Nominal operating voltage	[V DC]	24
Power consumption at 24 V	[W]	14
Max. power consumption	[W]	69
Max. protection	[A]	10
Type of mounting		On H-rail (TS 35x7.5)
Controller operating mode		Manual
Operating elements		CTRL button
Status display		7-segment display LED green = power
Supported kinematic systems		2-axis gantries
		3-axis gantries
		Any interpolation
		Tripod
Total number of axes		6
Breakdown of the axes		3 basic axes
		3 auxiliary axes
		1 manual axis
CPU data		64 MB DRAM
		400 MHz processor
Memory card		Compact Flash ≥ 128 MB
Control methods		I/O standalone
		I/O (16I/16O)
		I/O + Profibus DP
		Profibus DP
Program organisation		Via FTL programs
Configuration support		FCT (Festo Configuration Tool)
Command set		Mathematical functions
Max. number of commands		Approx. 1,500
Programming software		FCT (Festo Configuration Tool)
		CDSA-D1-VX
Programming language		FTL (Festo Teach Language)
		Text-based macro language
USB interface		USB 1.1
Protection class		III
Product weight	[g]	580
Materials		
Note on materials		Contains PWIS (paint-wetting impairment substances)
		RoHS-compliant

# Multi-axis controllers CMXR

Technical data

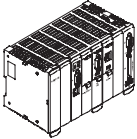
Technical data – Interfaces		
Ethernet		
Connector plug		RJ45 socket, 8-pin
Transmission speed	[Mbps]	10/100
Supported protocols		TCP/IP
Fieldbus interface		
Type		CAN bus
Number		2x CANopen masters
Connection technology		Sub-D plug, 9-pin
Max. fieldbus transmission rate	[Mbps]	1
		Can be set via software
Electrical isolation		No

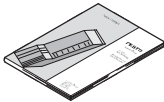
Operating and environmental conditions		
Ambient temperature	[°C]	5 ... 55
Storage temperature	[°C]	-40 ... +70
Resistance to shock		EN 60068-2-27 EA 15 g, 11 ms (half-sine)
Resistance to vibration		EN 60068-2-6-FC 5 ... 9 Hz 3.5 mm 9 ... 150 Hz 1g
Relative air humidity	[%]	10 ... 95
Protection class		IP20
CE mark (see declaration of conformity)		To EU EMC Directive
Certification		cULus Listed (OL) C-Tick



# Multi-axis controllers CMXR

Technical data

Ordering data		
Controller	Part No.	Type
	552095	CMXR-C1

Ordering data – Documentation <sup>1)</sup>						
	Language	Part No.		Type	Part No.	Type
		System manual		Programming manual		
	DE	560309	GDCP-CMXR-SY-DE		560315	GDCP-CMXR-SW-DE
	EN	560310	GDCP-CMXR-SY-EN		560316	GDCP-CMXR-SW-EN
	ES	560311	GDCP-CMXR-SY-ES		560317	GDCP-CMXR-SW-ES
	FR	560312	GDCP-CMXR-SY-FR		560318	GDCP-CMXR-SW-FR
	IT	560313	GDCP-CMXR-SY-IT		560319	GDCP-CMXR-SW-IT
	SV	560314	GDCP-CMXR-SY-SV		560320	GDCP-CMXR-SW-SV
	Hardware manual		Control interface manual			
	DE	560321	GDCP-CMXR-HW-DE		560327	GDCP-CMXR-F-DE
	EN	560322	GDCP-CMXR-HW-EN		560328	GDCP-CMXR-F-EN
	ES	560323	GDCP-CMXR-HW-ES		560329	GDCP-CMXR-F-ES
	FR	560324	GDCP-CMXR-HW-FR		560330	GDCP-CMXR-F-FR
	IT	560325	GDCP-CMXR-HW-IT		560331	GDCP-CMXR-F-IT
	SV	560326	GDCP-CMXR-HW-SV		560332	GDCP-CMXR-F-SV

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

# Multi-axis controllers CMXR

Technical data

Input/output module,  
digital  
CECX-D-8E8A-NP-2



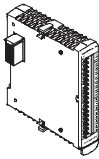
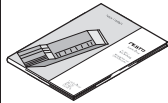
General technical data		
Operating voltage range	[V DC]	19.2 ... 30
Nominal operating voltage	[V DC]	24
Electrical connection technology for I/O		Socket strip, grid 5.08 mm
Power consumption at 5 V	[W]	0.4
Power consumption at 24 V	[W]	1.9
Protection class		III
Product weight	[g]	135
Materials		
Note on materials		Contains PWIS (paint-wetting impairment substances) RoHS-compliant

Technical data		
Digital inputs		
Number		8
Fast clock pulse inputs		2, interruptible, response time 50 µs
Input voltage	[V DC]	24
Nominal value for FALSE	[V DC]	≤ 5
Nominal value for TRUE	[V DC]	≥ 15
Input signal delay	[ms]	20, 100, adjustable
	[kHz]	12 with interrupt input
Electrical isolation		Yes, via optocoupler
Status display		Green LED
Switching logic		NPN (negative switching)
Digital outputs		
Number		8
Contact		Transistor
Output voltage	[V DC]	24
Output current	[A]	2 with 50% concurrence
Short circuit proof		Yes
Electrical isolation		Yes, via optocoupler
Status display		Orange LED
Switching logic		PNP (positive switching)

## Multi-axis controllers CMXR

Technical data

Operating and environmental conditions		
Ambient temperature	[°C]	5 ... 55
Storage temperature	[°C]	-40 ... +70
Resistance to shock		EN 60068-2-27 EA
		15 g, 11 ms (half-sine)
Resistance to vibration		EN 60068-2-6-FC
		5 ... 9 Hz 3.5 mm
		9 ... 150 Hz 1g
Relative air humidity	[%]	10 ... 95
Protection class		IP20
Certification		cULus Listed (OL)

Ordering data			Documentation <sup>1)</sup>			
Input/output module, digital		Part No.	Type	Language	Part No.	Type
	552099	CECX-D-8E8A-NP-2		DE	560585	GDCC-CECX-D-8E8A-NP-DE
				EN	560586	GDCC-CECX-D-8E8A-NP-EN
				ES	560587	GDCC-CECX-D-8E8A-NP-ES
				FR	560588	GDCC-CECX-D-8E8A-NP-FR
				IT	560589	GDCC-CECX-D-8E8A-NP-IT
				SV	560590	GDCC-CECX-D-8E8A-NP-SV

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# Multi-axis controllers CMXR

Technical data

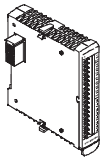
Input module,  
digital  
CECX-D-16E



General technical data	
Electrical connection technology for I/O	Socket strip, grid 5.08 mm
Power consumption at the system bus [W]	0.4
Protection class	III
Product weight [g]	130
<b>Materials</b>	
Note on materials	Contains PWIS (paint-wetting impairment substances) RoHS-compliant

Technical data	
<b>Digital inputs</b>	
Number	16
Fast clock pulse inputs	2, interruptible, response time 100 µs
Input voltage [V DC]	24
Nominal value for FALSE [V DC]	≤ 5
Nominal value for TRUE [V DC]	≥ 15
Input signal delay [ms]	20, 200, adjustable Additionally 0.2 ms with interrupt inputs
Electrical isolation	Yes, via optocoupler
Status display [V DC]	LED

Operating and environmental conditions	
Ambient temperature [°C]	5 ... 55
Storage temperature [°C]	-40 ... +70
Resistance to shock	EN 60068-2-27 EA 15 g, 11 ms (half-sine)
Resistance to vibration	EN 60068-2-6-FC 5 ... 9 Hz 3.5 mm 9 ... 150 Hz 1g
Relative air humidity [%]	10 ... 95
Protection class	IP20
Certification	cULus Listed (OL)

Ordering data		Documentation <sup>1)</sup>			
Input module, digital	Part No. Type	Language	Part No.	Type	
	552096 CECX-D-16E	DE	560573	GDCC-CECX-D-16E-DE	
		EN	560574	GDCC-CECX-D-16E-EN	
		ES	560575	GDCC-CECX-D-16E-ES	
		FR	560576	GDCC-CECX-D-16E-FR	
		IT	560577	GDCC-CECX-D-16E-IT	
		SV	560578	GDCC-CECX-D-16E-SV	

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Technical data

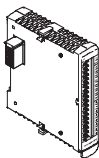
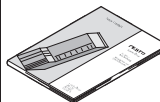
Output module,  
digital  
CECX-D-14A-2



General technical data		
Operating voltage range	[V DC]	19.2 ... 30
Nominal operating voltage	[V DC]	24
Electrical connection technology for I/O		Socket strip, grid 5.08 mm
Power consumption at the system bus	[W]	0.4
Protection class		III
Product weight	[g]	135
Materials		
Note on materials		Contains PWIS (paint-wetting impairment substances)
		RoHS-compliant

Technical data		
Digital outputs		
Number		14
Contact		Transistor
Output voltage	[V DC]	24
Output current	[A]	2 with 50% concurrence per group
Short circuit proof		Yes
Electrical isolation		Yes, via optocoupler
Electrical isolation in groups		Yes, in 2 groups
Status display	[V DC]	LED

Operating and environmental conditions		
Ambient temperature	[°C]	5 ... 55
Storage temperature	[°C]	-40 ... +70
Resistance to shock		EN 60068-2-27 EA
		15 g, 11 ms (half-sine)
Resistance to vibration		EN 60068-2-6-FC
		5 ... 9 Hz 3.5 mm
		9 ... 150 Hz 1g
Relative air humidity	[%]	10 ... 95
Protection class		IP20
Certification		cULus Listed (OL)

Ordering data			Documentation <sup>1)</sup>			
Output module, digital 	Part No.	Type		Language	Part No.	Type
	552097	CECX-D-14A-2		DE	560579	GDCC-CECX-D-14A-DE
				EN	560580	GDCC-CECX-D-14A-EN
				ES	560581	GDCC-CECX-D-14A-ES
				FR	560582	GDCC-CECX-D-14A-FR
				IT	560583	GDCC-CECX-D-14A-IT
				SV	560584	GDCC-CECX-D-14A-SV

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# Multi-axis controllers CMXR

Technical data

Input/output module,  
analogue  
CECX-A-4E4A



General technical data		
	CECX-A-4E4A-V	CECX-A-4E4A-A
Variant	Voltage inputs/outputs	Current inputs/outputs
Electrical connection technology for I/O	Socket strip, grid 5.08 mm	
Power consumption at 5 V [W]	0.3	0.3
Power consumption at 24 V [W]	3.3	3.6
Protection class	III	
Product weight [g]	135	
Materials		
Note on materials	Contains PWIS (paint-wetting impairment substances) RoHS-compliant	

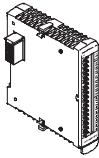
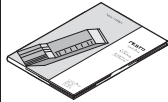
Technical data		
	CECX-A-4E4A-V	CECX-A-4E4A-A
Analogue inputs		
Number	4	4
Resolution [bit]	14	14
Signal range [V]	0 ... 10 Vref	–
	±10	–
	[mA]	0 ... 20
		4 ... 20
Value of the least significant bit (LSB) [mV]	1.3	–
	[µA]	1.35
Supply voltage for actuators [V DC]	10 ±2.5 % (max. 20 mA)	–
Input resistance [Ω]	10x10 <sup>6</sup>	< 200
Absolute accuracy at 25 °C [%]	±0.01	±0.01
Sampling repeat time [ms]	1	1
Electrical isolation	No	No
Analogue outputs		
Number	4	4
Resolution [bit]	12	12
Max. load resistance [Ω]	≥ 1 000	≤ 600
Signal range [V]	±10	–
	[mA]	0 ... 20
Value of the least significant bit (LSB) [mV]	5.32	–
	[µA]	5.39
Conversion time [ms]	1	1
Absolute accuracy at 25 °C [%]	±0.15	±0.15



## Multi-axis controllers CMXR

Technical data

Operating and environmental conditions		
Ambient temperature	[°C]	5 ... 55
Storage temperature	[°C]	-40 ... +70
Resistance to shock		EN 60068-2-27 EA
		15 g, 11 ms (half-sine)
Resistance to vibration		EN 60068-2-6-FC
		5 ... 9 Hz 3.5 mm
		9 ... 150 Hz 1g
Relative air humidity	[%]	10 ... 95
Protection class		IP20
Certification		cULus Listed (OL)

Ordering data			Documentation <sup>1)</sup>			
Input/output module, analogue						
	Part No.	Type		Language	Part No.	Type
	Voltage inputs/outputs			Voltage inputs/outputs		
	552100	CECX-A-4E4A-V		DE	560591	GDCC-CECX-A-4E4A-V-DE
				EN	560592	GDCC-CECX-A-4E4A-V-EN
		ES	560593	GDCC-CECX-A-4E4A-V-ES		
		FR	560594	GDCC-CECX-A-4E4A-V-FR		
		IT	560595	GDCC-CECX-A-4E4A-V-IT		
		SV	560596	GDCC-CECX-A-4E4A-V-SV		
Current inputs/outputs		Current inputs/outputs				
552101	CECX-A-4E4A-A	DE	560597	GDCC-CECX-A-4E4A-A-DE		
		EN	560598	GDCC-CECX-A-4E4A-A-EN		
		ES	560599	GDCC-CECX-A-4E4A-A-ES		
		FR	560600	GDCC-CECX-A-4E4A-A-FR		
		IT	560601	GDCC-CECX-A-4E4A-A-IT		
		SV	560602	GDCC-CECX-A-4E4A-A-SV		

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# Multi-axis controllers CMXR

Technical data

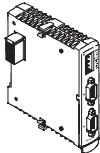
Encoder interface  
CECX-C-2G2



General technical data		
Operating voltage range	[V DC]	19.2 ... 30
Nominal operating voltage	[V DC]	24
Electrical connection technology for I/O		Socket strip, grid 5.08 mm
Power consumption at 5 V	[W]	0.6
Protection class		III
Product weight	[g]	135
Materials		
Note on materials		Contains PWIS (paint-wetting impairment substances)
		RoHS-compliant

Technical data – Interfaces		
Digital inputs		
Fast clock pulse inputs		2 (latch function) response time 20 µs NPN/PNP
Electrical isolation		No
Encoder inputs		
Number		2
Connection technology		Sub-D socket, 9-pin
Resolution	[bit]	Speed measurement: 32
	[bit]	Distance measurement: 24
Transmitter supply voltage	[V DC]	24
	[V DC]	5.05 ±4 % (100 mA/channel)
Max. input frequency	[kHz]	250
Signal range	[V]	5 differential (RS422)
	[V]	24 single-ended

Operating and environmental conditions		
Ambient temperature	[°C]	5 ... 55
Storage temperature	[°C]	-40 ... +70
Resistance to shock		EN 60068-2-27 EA
		15 g, 11 ms (half-sine)
Resistance to vibration		EN 60068-2-6-FC
		5 ... 9 Hz 3.5 mm
		9 ... 150 Hz 1g
Relative air humidity	[%]	10 ... 95
Protection class		IP20
Certification		cULus Listed (OL)

Ordering data		Documentation <sup>1)</sup>			
Encoder interface	Part No.	Type	Language	Part No.	Type
	552117	CECX-C-2G2	DE	560603	GDCC-CECX-C-2G2-DE
			EN	560604	GDCC-CECX-C-2G2-EN
			ES	560605	GDCC-CECX-C-2G2-ES
			FR	560606	GDCC-CECX-C-2G2-FR
			IT	560607	GDCC-CECX-C-2G2-IT
			SV	560608	GDCC-CECX-C-2G2-SV

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

# Multi-axis controllers CMXR

Technical data

**FESTO**

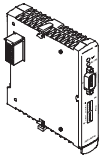
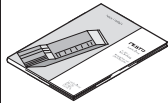
Fieldbus interface,  
Profibus slave DP-V0  
CECX-F-PB-S-V0



General technical data		
Power consumption at 5 V	[W]	1.4
Status displays		LED (status)
		LED red = bus fault
Protection class		III
Product weight	[g]	140
Materials		
Note on materials		Contains PWIS (paint-wetting impairment substances)
		RoHS-compliant

Technical data – Interface	
Fieldbus	
Type	Profibus slave DP-V0
Connection technology	Sub-D socket, 9-pin
Transmission rate	9.6 kbps ... 12 Mbps
Electrical isolation	Yes

Operating and environmental conditions		
Ambient temperature	[°C]	5 ... 55
Storage temperature	[°C]	-40 ... +70
Resistance to shock		EN 60068-2-27 EA
		15 g, 11 ms (half-sine)
Resistance to vibration		EN 60068-2-6-FC
		5 ... 9 Hz 3.5 mm
		9 ... 150 Hz 1g
Relative air humidity	[%]	10 ... 95
Protection class		IP20
Certification		cULus Listed (OL)

Ordering data			Documentation <sup>1)</sup>			
	Fieldbus interface, Profibus slave DP-V0			Language	Part No.	Type
	Part No.	Type		DE	560567	GDCC-CECX-F-PB-S-V0-DE
	552102	CECX-F-PB-S-V0		EN	560568	GDCC-CECX-F-PB-S-V0-EN
				ES	560569	GDCC-CECX-F-PB-S-V0-ES
				FR	560570	GDCC-CECX-F-PB-S-V0-FR
				IT	560571	GDCC-CECX-F-PB-S-V0-IT
				SV	560572	GDCC-CECX-F-PB-S-V0-SV

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

## Multi-axis controllers CMXR

Accessories

Teach pendant  
CDSA-D1-VX



General technical data		
Operating voltage range	[V DC]	19 ... 30
Nominal operating voltage	[V DC]	24
Current consumption <sup>1)</sup>	[A]	0.4
User memory	[MB]	256
Display		Colour TFT
Display size		6.5"
Display resolution		VGA, 640x480 pixels
Display properties		Touch screen
Number of function keys		31
Number of system LEDs		4
Operating elements		2 enabler keys Emergency stop
Area of application		Only with multi-axis controller CMXR-C1
Ethernet interface		2 interfaces RJ45, 10/100 Mbps
USB interface		Yes
Backup battery		Yes
Product weight	[g]	1,250
Materials		
Note on materials		Contains PWIS (paint-wetting impairment substances) RoHS-compliant

1) At nominal operating voltage

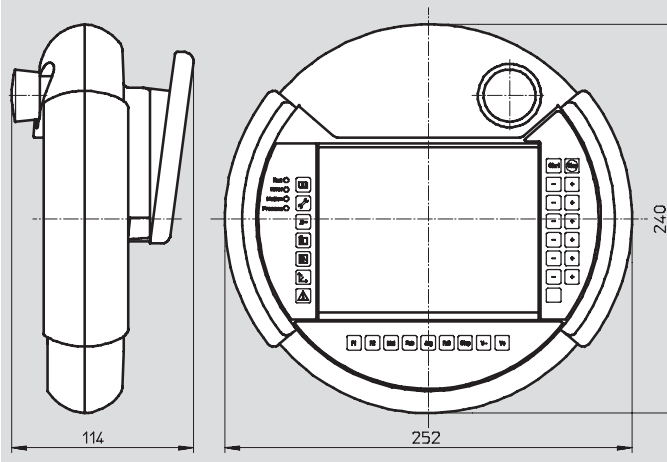
Operating and environmental conditions		
Ambient temperature	[°C]	0 ... +50
Storage temperature	[°C]	-20 ... +70
Relative air humidity	[%]	5 ... 95
Protection class		IP65
CE mark (see declaration of conformity)		To EU EMC Directive

# Multi-axis controllers CMXR

Accessories

**Dimensions**

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



**Ordering data**

	Part No.	Type
Teach pendant	552103	CDSA-D1-VX

**Ordering data – Documentation<sup>1)</sup>**

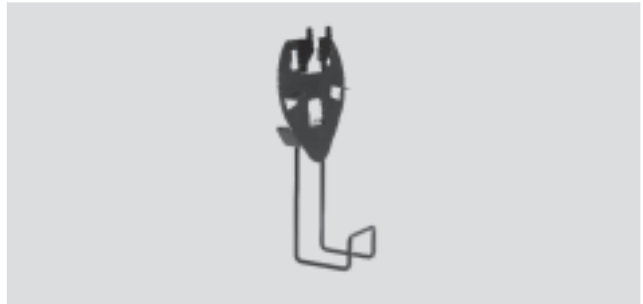
	Language	Part No. Type		Part No. Type	
		System manual		Software manual	
	DE	560333	GDCP-CDSA-SY-DE	560339	GDCP-CDSA-SW-DE
	EN	560334	GDCP-CDSA-SY-EN	560340	GDCP-CDSA-SW-EN
	ES	560335	GDCP-CDSA-SY-ES	560341	GDCP-CDSA-SW-ES
	FR	560336	GDCP-CDSA-SY-FR	560342	GDCP-CDSA-SW-FR
	IT	560337	GDCP-CDSA-SY-IT	560343	GDCP-CDSA-SW-IT
	SV	560338	GDCP-CDSA-SY-SV	560344	GDCP-CDSA-SW-SV

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

# Multi-axis controllers CMXR

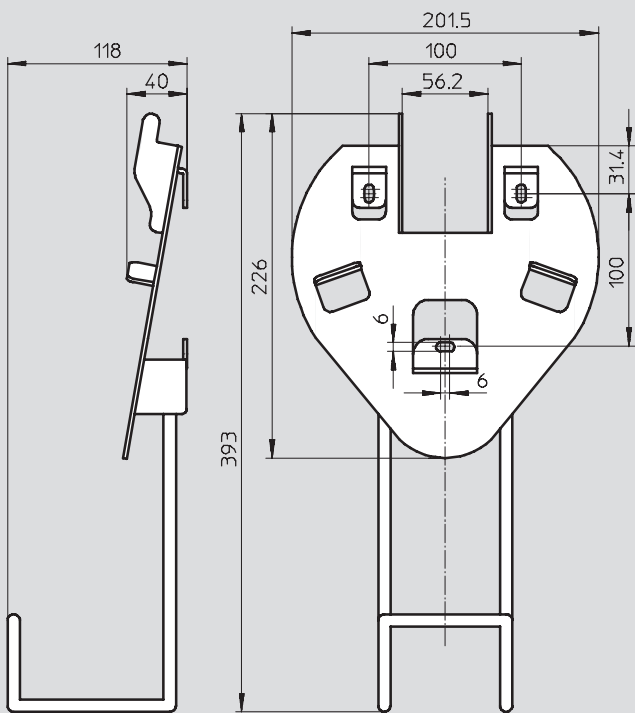
Accessories

**Retainer**  
CAFM-D1-W



**Dimensions**

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



**Ordering data**

	Part No.	Type
Retainer	552107	CAFM-D1-W

## Multi-axis controllers CMXR

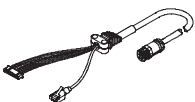
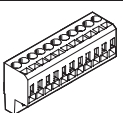
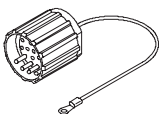
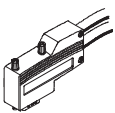
Accessories

Interface housing  
CAMI-C



General technical data		
Type of mounting	On control cabinet wall (M25)	
Mounting position	Any	
Electrical connection	Ethernet interface: RJ45	
	Coninver connector M25, 17-pin	
	Spring force connector, 11-pin	
Protection class	IP65 to IEC 60529	
Dimensions		
Length	[mm]	26
Width	[mm]	67.2
Height	[mm]	76.1
Materials		
Note on materials	Contains PWIS (paint-wetting impairment substances)	
	RoHS-compliant	

Ordering data		
	Part No.	Type
Interface housing	552116	CAMI-C

Ordering data – Cables and plugs				
	Brief description	Cable length [m]	Part No.	Type
	Connecting cable: between multi-axis controller CMXR and teach pendant CDSA via interface housing CAMI-C	5	552104	NESC-C-D1-5-C1
		10	552105	NESC-C-D1-10-C1
		15	552106	NESC-C-D1-15-C1
	Plug for interface housing CAMI-C, 11-pin	–	558328	NECC-L1G11-C1
	Plug for peripheral modules, 2-pin		553857	NECC-L1G2-C1
	Plug for peripheral modules, 4-pin		553858	NECC-L1G4-C1
	Plug for peripheral modules, 6-pin		553859	NECC-L1G6-C1
	Plug for peripheral modules, 8-pin		553860	NECC-L1G8-C1
	Plug for peripheral modules, 18-pin		553861	NECC-L1G18-C1
	Plug: is used to bridge the emergency stop circuit when the teach pendant is disconnected	–	555676	CAMF-B-M25-G4
	Plug: for Profibus interface; Sub-D, 9-pin, without terminating resistor	–	533780	FBS-SUB-9-WS-PB-K
	Plug: for CAN bus interface; Sub-D, 9-pin, without terminating resistor	–	533783	FBS-SUB-9-WS-CO-K