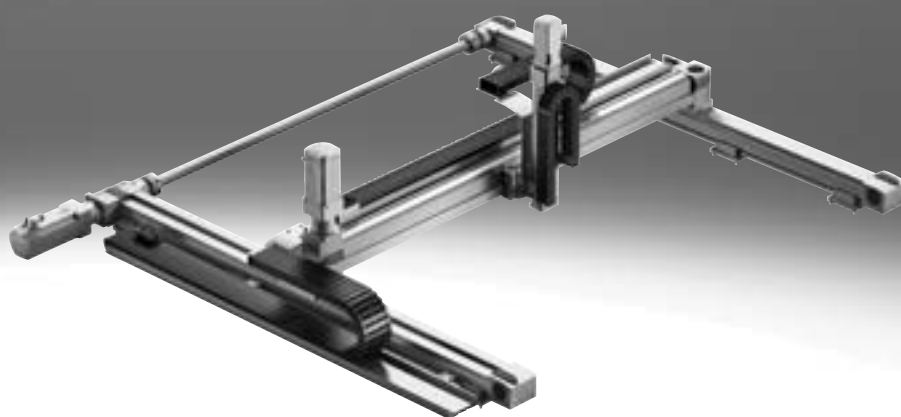# 3-dimensional gantries

FESTO

Key features

The 3-dimensional gantry facilitates movement in 3D space.
Depending on the requirements, the gantry is either composed of several axis modules (YXCR) or using the planar surface gantries EXCM or EXCH (YXMR). All of these are tried-and-tested components from Festo.

- Can be used universally for handling light to heavy workpieces or high payloads
- Especially suitable for very long strokes
- High mechanical rigidity and sturdy design

- Pneumatic and electric components – freely combinable
- As an electrical solution – freely positionable/any intermediate positions

Range of application:
- For any movements in 3D space
- Very high requirements for precision and/or very heavy workpieces combined with long strokes
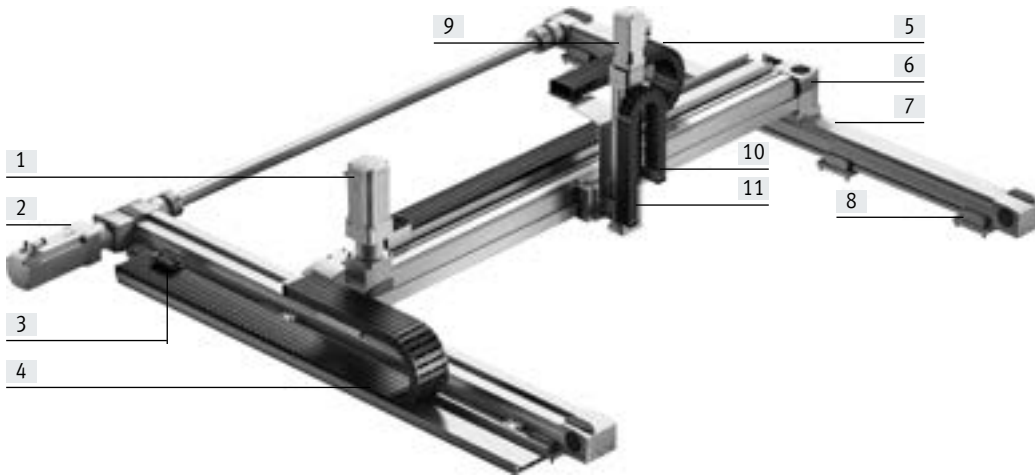
[1]   Servo motor for the Y-module
[2]   Servo motor for the X-module
[3]   Multi-pin plug distributor which collectively transfers all electrical signals such as for end-position sensing
[4]   Energy chain for the X-module
[5]   Energy chain for the Y-module
[6]   Y-axis
[7]   X-axis
[8]   Profile mounting/adjusting kit
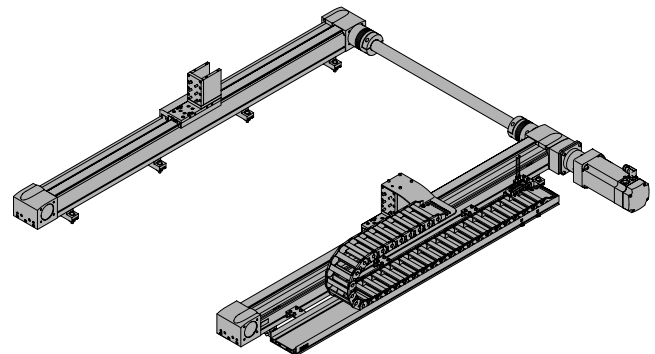[9]   Servo motor for the Z-module
[10] Energy chain for the Z-module
[11] Z-axis

Design:

The X-module EHMX comprises two parallel toothed belt axes which are connected by a connecting shaft and they are powered by a servo motor.
Adapters are mounted on the slides of the X-axes to connect the Y-module.
The position of the motor and energy chain can be selected using the configurator.
The following components are located on the motor side:
- Energy chain
- Multi-pin plug distributor for proximity sensor (if a sensor package has been selected)

Sample image:

Key features

Description of the modules
Y-module

Design:

The Y-module EHMY comprises a linear axis which is powered by a servo motor. Adapters are installed on the slides of the Y-axis to connect the Z-module.
The position of the motor and energy chain is dependent on the position of the motor on the X-module.
The following components are located on the motor side:

• Energy chain
• Multi-pin plug distributor for proximity sensor (if a sensor package has been selected)

Sample image:
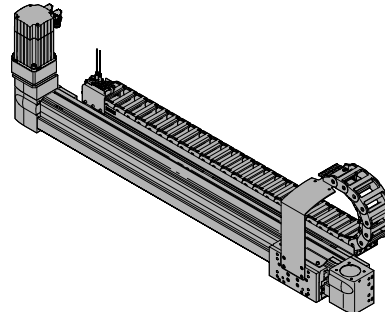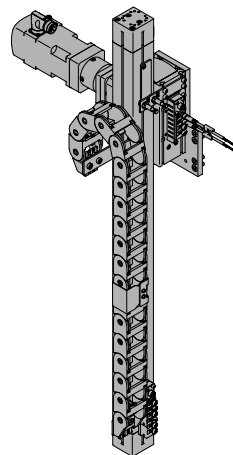
Z-module

Design:

The Z-module EHMZ comprises an electric drive, the DHMZ comprises a pneumatic drive. In both variants, an energy chain is attached as a cable guide.
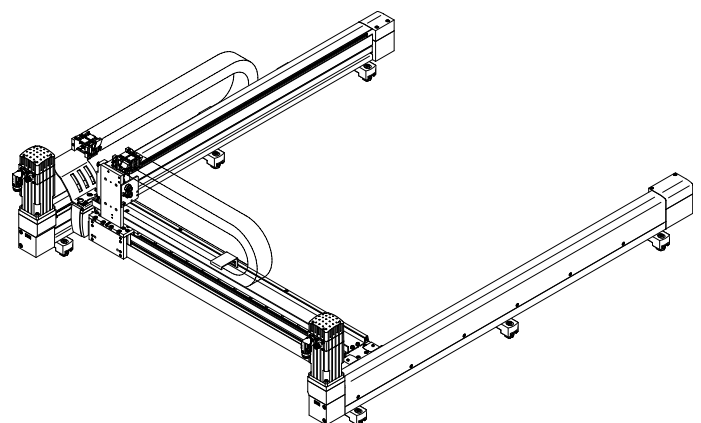The Z-module can be selected using the configurator, depending on the application.

Sample image:

XY-module (EXCM, EXCH)

Design:

A slide is moved in a 2-dimensional space (X-axis/Y-axis) via a toothed belt. The system is powered by two fixed motors that are coupled to the toothed belt. The belt is guided via pulleys so that the slide can move to any position in a working space when the motors are actuated.
When using attachment components, additional processes can be carried out by independent Z-axes.

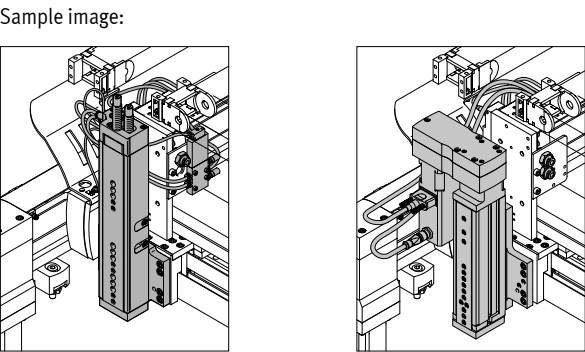Sample image:

Key features

Description of the modules
Z-module (EXCM, EXCH)

Design:

The Z-module comprises either an electric drive (EHMZ) or a pneumatic drive (DHMZ).
The Z-module can be selected using the configurator, depending on the application.

Sample image:

Dispatch options

Fully assembled:

The 3-dimensional gantry is fully assembled. All cables and tubing are installed and connected. The system is already set up on delivery, but must be adapted to the particular mounting surface during installation.
Note flatness ➜ table below.

Partially assembled:

The 3-dimensional gantry is delivered partially assembled. This means that all three axis modules (X-/Y-/Z-axis) are assembled, each with the optional motors. The partially assembled system must be completed by the customer. Help can be found in the assembly instructions provided.
Optional accessories (➜ page 11) are enclosed.
Note flatness ➜ table below.

System overview[1]

Size	YXCR-1		YXCR-2	YXCR-3	YXCR-4
Max. working stroke	X: 1900 mm		X: 3000 mm	X: 3000 mm	X: 3000 mm
	Y: 1900 mm		Y: 2000 mm	Y: 2000 mm	Y: 2000 mm
	Z: 50 mm		Z: 800 mm	Z: 800 mm	Z: 800 mm
Max. payload	Dependent on the selected dynamic response				
Required flatness of the mounting surface	≤ 0.1 mm/m				
Mounting position	Horizontal				

Size	YXMR-1	YXMR-2	YXMR-3
Max. working stroke	X: 700 mm	X: 2000 mm	X: 2500 mm
	Y: 510 mm	Y: 1000 mm	Y: 1500 mm
	Z: 100 mm (electric)	Z: 200 mm (electric)	Z: 200 mm
	150 mm (pneumatic)	150 mm (pneumatic)	
Max. payload	Dependent on the selected dynamic response		
Required flatness of the mounting surface	≤ 0.1 mm/m		
Mounting position	Horizontal		

1) Drive package depends on configuration selected.

Key features

Configurator: Handling Guide Online (HGO)
Selecting a handling system

Planning complex handling systems takes a lot of time. You can use the configurator "Handling Guide Online" (HGO) to design a customised handling system for your application in just a few steps.
You can choose from the following systems:

- Single-axis system
- 2D linear gantry
- 2D planar surface gantry
- 3-dimensional gantry

Advantages:

- Automatic selection of all relevant components
- Automatic design and calculation of workload
- Quote created automatically
- CAD model available immediately
- Fully automated processing
- Fully assembled or unassembled systems can be ordered through the Online Shop
- Lots of possible options

Entering the application data

- Payload
- Drive system of the axis
- Distance from the centre of the load
- Working stroke
- Reference cycle

Key features

Configurator: Handling Guide Online (HGO)
Result of calculation

You will be offered a selection of systems calculated based on the application data you entered.

The following are available immediately:
- CAD model
- Data sheet of the selected system
- Price information

System overview

You will be given an overview of the whole system.
You will also have the following options:

- Request price
- Send request
- Add to basket

Key features

Standard components within the handling system

The handling system comprises a number of tried-and-tested standard components from Festo. Different components are used depending on the configuration. The single axes installed will be displayed in the configurator HGO on the "Result of calculation" page.

Drives/axes

X-axis

Toothed belt axis EGC-TB-KF

- Electric
- Rigid, closed profile
- Recirculating ball bearing guide for high loads and torques
- High dynamic response and minimum vibration

Y-axis

Toothed belt axis EGC-TB-KF

- Electric
- Rigid, closed profile
- Recirculating ball bearing guide for high loads and torques
- High dynamic response and minimum vibration

Toothed belt axis EGC-HD-TB

- Electric
- Flat drive unit with rigid, closed profile
- Duo guide rail
- For maximum loads and torques, high feed forces and speeds and long service life

Z-axis

Mini slide DGSL

- Pneumatic
- Flat design
- High load capacity
- High dynamic response
- Easy adjustment of end positions

Mini slide EGSL

- Electric
- Compact design
- High load capacity
- High dynamic response
- Easy adjustment of end positions

Spindle axis EGC-BS-KF

- Electric
- Rigid, closed profile
- Recirculating ball bearing guide for high loads and torques
- High dynamic response and minimum vibration
- Various spindle pitches

Key features

Drives/axes
Z-axis

Mini slide EGSC

- Electric
- Compact design
- High load capacity
- Precision guide and ball screw drive
- Easy adjustment of end positions

Possible axis combinations[1]

Size	X-module	Y-module	Z-module

YXCR-1	• Toothed belt axis
	  EGC-50-TB-KF
		• Toothed belt axis
		  EGC-50-TB-KF
			• Mini slide
			  pneumatic: DGSL-6
			  electric: EGSL-35

YXCR-2	• Toothed belt axis
	  EGC-80-TB-KF
		• Toothed belt axis
		  EGC-80-TB-KF
		• Toothed belt axis with heavy-duty guide
		  EGC-HD-125-TB
			• Mini slide
			  pneumatic: DGSL-12/16
			  electric: EGSL-45/55
			• Cantilever axis
			  DGEA-18
			• Spindle axis
			  EGC-70-BS-KF

YXCR-3	• Toothed belt axis
	  EGC-120-TB-KF
		• Toothed belt axis
		  EGC-120-TB-KF
		• Toothed belt axis with heavy-duty guide
		  EGC-HD-160-TB
			• Mini slide
			  pneumatic: DGSL-20/25
			  electric: EGSL-75
			• Cantilever axis
			  DGEA-25/40
			• Spindle axis
			  EGC-80-BS-KF

YXCR-4	• Toothed belt axis
	  EGC-185-TB-KF
		• Toothed belt axis
		  EGC-185-TB-KF
		• Toothed belt axis with heavy-duty guide
		  EGC-HD-220-TB
			• Cantilever axis
			  DGEA-40
			• Spindle axis
			  EGC-120-BS-KF

YXMR-1	• Planar surface gantry
	  EXCM-30
		• Planar surface gantry
		  EXCM-30
			• Mini slide
			  pneumatic: DGSL-8/10/12
			  electric: EGSC-25/32

YXMR-2	• Planar surface gantry
	  EXCM-40, EXCH-40
		• Planar surface gantry
		  EXCM-40, EXCH-40
			• Mini slide
			  pneumatic: DGSL-16
			  electric: EGSL-45

YXMR-3	• Planar surface gantry
	  EXCH-60
		• Planar surface gantry
		  EXCH-60
			• Mini slide
			  pneumatic: DGSL-20
			  electric: EGSL-55

1) Drive package depends on configuration selected.

Key features

The handling system comprises a number of tried-and-tested standard components from Festo. Different components are used depending on the configuration. You can alter the scope and design of the drive package in the configurator HGO on the "System configuration" page.

Motors and controllers

Servo motors EMMS-AS
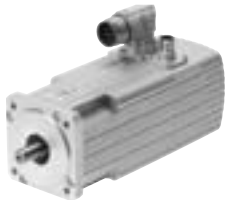
- Dynamic, brushless, permanently excited servo motor
- Digital absolute displacement encoder in single-turn or multi-turn version
- With optional brake

Servo motors EMME-AS

- Dynamic, brushless, permanently excited servo motor
- Digital absolute displacement encoder in single-turn or multi-turn version
- With optional brake

Stepper motors EMMS-ST

- 2-phase hybrid technology
- Step angle 1.8°
- With optional brake

Gear unit EMGA

- Low-backlash planetary gear
- Gear ratio
  i = 3 and 5
- Life-time lubrication

Motor controller CMMP-AS for servo motor

- Complete integration of all components for controller and power section, including USB interface
- Integrated brake chopper
- Integrated EMC filters
- Automatic activation for a brake

Options:
- Safety function: safe torque off (STO)/category 4, Performance Level e
- Additional digital inputs and outputs

- Bus protocols
  – CANopen
  – DeviceNet
 – EtherCAT
  – EtherNet/IP
  – PROFIBUS DP
  – PROFINET

Key features

Standard components within the handling system

The handling system comprises a number of tried-and-tested standard components from Festo. Different components are used depending on the configuration. You can alter the scope and design of the drive package in the configurator HGO on the "System configuration" page.

Motor controller CMMS-ST for stepper motor

- Complete integration of all components for controller and power section, including RS232 interface
- Integrated brake chopper
- Integrated EMC filters
- Automatic activation for a brake

Options:
- Safety function: safe torque off (STO)/category 3, Performance Level d

- Bus protocols
  – CANopen
  – DeviceNet
  – PROFIBUS DP

Motor controller CMMO-ST for stepper motor

- Separate load and logic supply
- Monitoring of freely defined positions and torque ranges
- Backup file enables seamless device replacement

- Encoder option (closed loop), in other words no step losses, following errors are corrected

Options:
- Safety function: safe torque off (STO)/category 3, Performance Level e

- Easy activation via:
  – I/O interface
  – IO-Link or I-Port
  – Modbus TCP

Controller CMXH-ST2, for stepper motor

- The controller controls two stepper motors in servo mode which drive an H-shaped recirculating toothed belt. The toothed belt moves a slide whose position is calculated by the controller using the encoder signals from the motors

Options:
- Safety function: safe torque off (STO)/category 3, Performance Level e

- Bus protocols
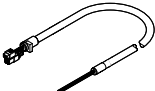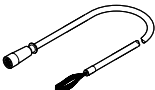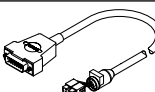 – I/O interface
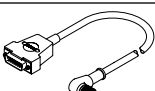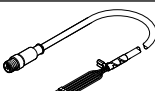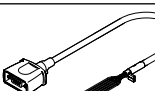 – CAN interface
  – Ethernet TCP/IP

Ordering data – Accessories

Module/motor combinations

We recommend that the 3-dimensional gantry is operated with the proposed motors from Festo. These precisely match the mechanical system. When using third-party motors, it is essential that the technical limits are observed.
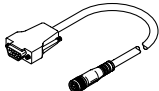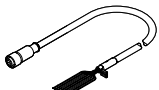
Module	Motor		
	Servo motor	Servo motor	Stepper motor
X-module			
EHMX-EGC-50-TB-KF	–	EMME-AS-40-M-LV-...	EMMS-ST-42-S-...
EHMX-EGC-80-TB-KF	EMMS-AS-70-M-LS-...	EMME-AS-60-M-LS-...	EMMS-ST-57-S-...
EHMX-EGC-120-TB-KF	EMMS-AS-100-M-HS-...	EMME-AS-80-S-LS-...	–
EHMX-EGC-185-TB-KF	EMMS-AS-140-L-HS-...	–	–
Y-module			
EHMY-...-EGC-50-TB-KF	–	EMME-AS-40-S-LV-...	EMMS-ST-57-M-...
EHMY-...-EGC-80-TB-KF	EMMS-AS-55-S-LS-...	EMME-AS-60-M-LS-...	EMMS-ST-57-S-...
EHMY-...-EGC-120-TB-KF	EMMS-AS-100-S-HS-...	EMME-AS-80-S-LS-...	EMMS-ST-87-S-...
EHMY-...-EGC-125-TB-HD	EMMS-AS-70-S-LS-...	EMME-AS-60-M-LS-...	EMMS-ST-57-S-...
EHMY-...-EGC-160-TB-HD	EMMS-AS-100-S-HS-...	EMME-AS-80-S-LS-...	EMMS-ST-87-S-...
EHMY-...-EGC-185-TB-KF	EMMS-AS-100-M-HS-...	EMME-AS-100-M-HS-...	–
	EMMS-AS-140-S-HS-...		
EHMY-...-EGC-220-TB-HD	EMMS-AS-100-M-HS-...	EMME-AS-100-M-HS-...	–
	EMMS-AS-140-S-HS-...		
Z-module			
EHMZ-DGEA-18-TB-KF	EMMS-AS-55-S-LS-...	EMME-AS-60-M-LS-...	EMMS-ST-57-S-...
EHMZ-DGEA-25-TB-KF	EMMS-AS-70-S-LS-...	EMME-AS-60-M-LS-...	EMMS-ST-57-S-...
EHMZ-DGEA-40-TB-KF	EMMS-AS-100-S-HS-...	EMME-AS-80-M-LS-...	–
EHMZ-EGC-70-BS-KF	EMMS-AS-55-S-LS-...	EMME-AS-60-M-LS-...	EMMS-ST-57-S-...
EHMZ-EGC-80-BS-KF	EMMS-AS-70-S-LS-...	EMME-AS-60-M-LS-...	EMMS-ST-57-S-...
EHMZ-EGC-120-BS-KF	EMMS-AS-100-S-HS-...	EMME-AS-80-S-LS-...	–
EHMZ-EGSL-35-BS-KF	–	EMME-AS-40-S-LV-...	EMMS-ST-28-L-...
EHMZ-EGSL-45-BS-KF	EMMS-AS-40-M-LS-...	EMME-AS-40-S-LV-...	EMMS-ST-57-S-...
EHMZ-EGSL-55-BS-KF	EMMS-AS-55-S-LS-...	EMME-AS-60-M-LS-...	EMMS-ST-57-S-...
EHMZ-EGSL-75-BS-KF	EMMS-AS-70-M-LS-...	EMME-AS-80-S-LS-...	EMMS-ST-87-S-...
XY-module (EXCM, EXCH)			
EXCM-30	–	–	EMMS-ST-42-S-...
EXCM-40	–	–	EMMS-ST-57-M-...
EXCH-40	EMMS-AS-70-M-LS-...	–	–
EXCH-40	EMMS-AS-100-S-HS-...	–	–
EXCH-60	EMMS-AS-100-M-HS-...	–	–
EXCH-60	EMMS-AS-140-S-HV-...	–	–
Z-module (EXCM, EXCH)			
EHMZ-EGSC-BS-KF-25-...-V1	–	–	EMMS-ST-28-L-...
EHMZ-EGSC-BS-KF-32-...-V1	–	–	EMMS-ST-42-S-...
EHMZ-EGSL-45-BS-KF	EMMS-AS-40-M-LS-...	–	–
EHMZ-EGSL-55-BS-KF	EMMS-AS-55-S-LS-...	–	–

Ordering data – Accessories

Designation	Description	Cable length	Part no.	Type
For servo motor				
Motor cable[1]				
	• For servo motor EMMS-AS-40-M-LS-…/ EMMS-AS-55-S-LS-…	5 m	**550306**	**NEBM-T1G8-E-5-Q7N-LE8**
		10 m	**550307**	**NEBM-T1G8-E-10-Q7N-LE8**
		15 m	**550308**	**NEBM-T1G8-E-15-Q7N-LE8**
Motor cable[1]				
	• For servo motor EMMS-AS-70-S-LS-…/ EMMS-AS-70-M-LS-…/EMMS-AS-100-S-HS-…/ EMMS-AS-100-M-HS-…/EMMS-AS-140-S-HS-…/ EMMS-AS-140-L-HS-…	5 m	**550310**	**NEBM-M23G8-E-5-Q9N-LE8**
		10 m	**550311**	**NEBM-M23G8-E-10-Q9N-LE8**
		15 m	**550312**	**NEBM-M23G8-E-15-Q9N-LE8**
Encoder cable[1]				
	• For servo motor EMMS-AS-40-M-LS-…/ EMMS-AS-55-S-LS-…	5 m	**550314**	**NEBM-T1G8-E-5-N-S1G15**
		10 m	**550315**	**NEBM-T1G8-E-10-N-S1G15**
		15 m	**550316**	**NEBM-T1G8-E-15-N-S1G15**
Encoder cable[1]				
	• For servo motor EMMS-AS-70-S-LS-…/ EMMS-AS-70-M-LS-…/EMMS-AS-100-S-HS-…/ EMMS-AS-100-M-HS-…/EMMS-AS-140-S-HS-…/ EMMS-AS-140-L-HS-…	5 m	**550318**	**NEBM-M12W8-E-5-N-S1G15**
		10 m	**550319**	**NEBM-M12W8-E-10-N-S1G15**
		15 m	**550320**	**NEBM-M12W8-E-15-N-S1G15**
For stepper motor				
Motor cable[1]				
	• For stepper motor EMMS-ST-28-L-…	1.5 m	**1449600**	**NEBM-SM12G8-E-1.5-Q5-LE6**
		2.5 m	**1449601**	**NEBM-SM12G8-E-2.5-Q5-LE6**
		5 m	**1449602**	**NEBM-SM12G8-E-5-Q5-LE6**
		7 m	**1449603**	**NEBM-SM12G8-E-7-Q5-LE6**
		10 m	**1449604**	**NEBM-SM12G8-E-10-Q5-LE6**
Motor cable[1]				
	• For stepper motor EMMS-ST-42-S-…/EMMS-ST-57-M-…	2.5 m	**1450369**	**NEBM-S1G9-E-2.5-Q5-LE6**
		5 m	**1450370**	**NEBM-S1G9-E-5-Q5-LE6**

1)   Cables especially suitable for the motor controller and motor.
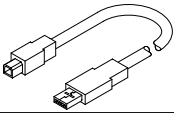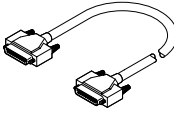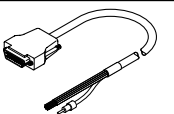   Degree of protection to IP65 (in assembled state)

Ordering data – Accessories

Designation	Description	Cable length	Part no.	Type
For stepper motor				
Encoder cable[1]				
	• For stepper motor EMMS-ST-28-L-.../EMMS-ST-42-S-.../ EMMS-ST-57-M-... and motor controller CMMS-ST	5 m	**550748**	**NEBM-M12G8-E-5-S1G9**
		10 m	**550749**	**NEBM-M12G8-E-10-S1G9**
		15 m	**550750**	**NEBM-M12G8-E-15-S1G9**
Encoder cable[1]				
	• For stepper motor EMMS-ST-28-L-... and motor controller CMMO-ST	2.5 m	**1451587**	**NEBM-M12G8-E-2.5-LE8**
		5 m	**1451588**	**NEBM-M12G8-E-5-LE8**

1) Cables especially suitable for the motor controller and motor.
   Degree of protection to IP65 (in assembled state)
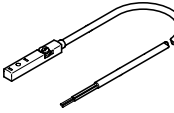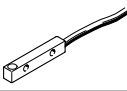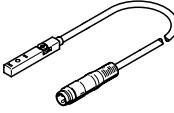
Possible cable and tube lengths

• Cables and tubing are selected so that the minimum length available from the energy chain output is the connection length specified when ordering.
• Cables and tubing are only available in fixed lengths as stated in the table below. This can mean that the cable plugs of the different cables do not end at the same point.

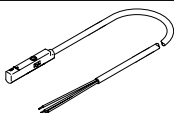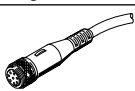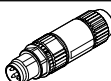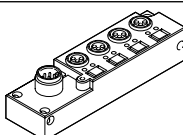| Length	1 m	2 m	5 m	7 m	10 m
Motor cable	–	■	■	■	■
Encoder cable	–	■	■	■	■
Multi-pin plug connecting cable	–	■	■	■	■
Tubing (for DHMZ only)	■	■	■	–	–
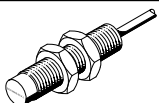
Ordering data – Accessories
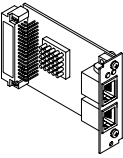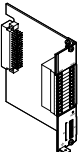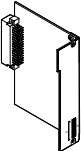
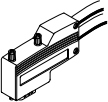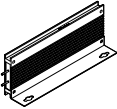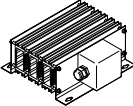**Standard components within the handling system**

The handling system comprises a number of tried-and-tested standard compo-
nents from Festo. Different components are used depending on the configuration.
You can alter the scope and design of the accessories in the configurator HGO on
the "System configuration" page.

Designation	Description		Cable length	Part no.	Type
Programming cable					
	• High-speed USB 2.0 connecting cable • For controller CMMP-AS		1.8 m	**1501332**	**NEBC-U1G4-K-1.8-N-U2G4**
	• For controller CMMS-ST		2 m	**160786**	**PS1-ZK11-NULLMODEM-2.0M**
Control cable (for I/O interface to any controller)					
	• For controller CMMP-AS, CMMS-ST		2.5 m	**552254**	**NEBC-S1G25-K-2.5-N-LE26**
	• For controller CMMO-ST		3.2 m	**8001373**	**NEBC-S1G25-K-3.2-N-LE25**
	• For controller CMXH-ST2		2.5 m	**2052917**	**NEBC-S1H15-E-2.5-N-LE15**
Proximity sensor (inductive) for sensing the position of the slide on the X-/Z-axis					
	Cable with open end				
	• For toothed belt axis EGC-TB • For spindle axis EGC-BS • For mini slide EGSL • For direct voltage Included if the "Festo sensor package" is selected: • 2 pieces	PNP, N/C contact	7.5 m	**551391**	**SIES-8M-PO-24V-K-7.5-OE**
		PNP, N/O contact	7.5 m	**551386**	**SIES-8M-PS-24V-K-7.5-OE**
		NPN, N/C contact	7.5 m	**551401**	**SIES-8M-NO-24V-K-7.5-OE**
		NPN, N/O contact	7.5 m	**551396**	**SIES-8M-NS-24V-K-7.5-OE**
Proximity sensor for sensing the position of the slide on the X-axis					
	• For EXCM-40, EXCH-40, EXCH-60	N/O contact	–	**150491**	**SIES-V3B-PS-S-L**
	• For EXCM-40, EXCH-40, EXCH-60	N/C contact	–	**174552**	**SIES-Q8B-PO-K-L**
Proximity sensor (inductive) for sensing the position of the slide on the Y-axis					
	Cable with plug				
	• For toothed belt axis EGC-TB, EGC-HD-TB • For direct voltage Included if the "Festo sensor package" is selected: • 2 pieces	PNP, N/C contact	0.3	**551392**	**SIES-8M-PO-24V-K-0.3-M8D**
		PNP, N/C contact	2.5	**551393**	**SIES-8M-PO-24V-K-2.5-M8D**
		PNP, N/O contact	0.3	**551387**	**SIES-8M-PS-24V-K-0.3-M8D**
		PNP, N/O contact	2.5	**551388**	**SIES-8M-PS-24V-K-2.5-M8D**
		NPN, N/C contact	0.3	**551402**	**SIES-8M-NO-24V-K-0.3-M8D**
		NPN, N/C contact	2.5	**551403**	**SIES-8M-NO-24V-K-2.5-M8D**
		NPN, N/O contact	0.3	**551397**	**SIES-8M-NS-24V-K-0.3-M8D**
		NPN, N/O contact	2.5	**551398**	**SIES-8M-NS-24V-K-2.5-M8D**

Ordering data – Accessories
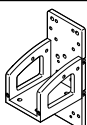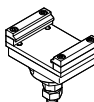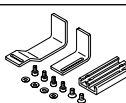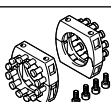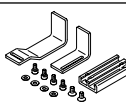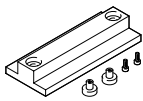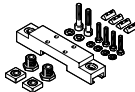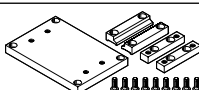
Designation	Description		Cable length	Part no.	Type
Proximity sensor (inductive) for sensing the position of the slide on the Z-axis					
	Cable with open end				
	• For cantilever axis DGEA	PNP, N/C contact	2.5 m	**150398**	**SIEN-M8NB-PO-K-L**
	• For direct voltage	PNP, N/O contact	2.5 m	**150394**	**SIEN-M8NB-PS-K-L**
	Included if the "Festo sensor package" is selected:	NPN, N/C contact	2.5 m	**150396**	**SIEN-M8NB-NO-K-L**
	• 2 pieces	NPN, N/O contact	2.5 m	**150392**	**SIEN-M8NB-NS-K-L**
Proximity sensor (magnetoresistive) for sensing the position of the slide on the Z-axis					
	Cable with open end				
	• For mini slide DGSL	PNP, N/O contact	2.5 m	**551373**	**SMT-10M-PS-24V-E-2.5-L-OE**
	• For direct voltage	NPN, N/O contact	2.5 m	**551377**	**SMT-10M-NS-24V-E-2.5-L-OE**
	Included if the "Festo sensor package" is selected:				
	• 2 pieces				

Designation	Description	Cable length	Part no.	Type
Plug socket with cable				
	• Connection between multi-pin plug distributor and control cabinet	5 m	**525618**	**SIM-M12-8GD-5-PU**
		10 m	**570008**	**SIM-M12-8GD-10-PU**
Plugs				
	• For connection to the multi-pin plug distributor	–	**562024**	**NECU-S-M8G3-HX**
Multi-pin plug distributor				
	• With the help of the multi-pin plug distributor, electrical signals such as for end-position sensing can be transferred collectively Options: – 4 individual connections – 6 individual connections	–	**574586**	**NEDU-L4R1-M8G3L-M12G8**
			574587	**NEDU-L6R1-M8G3L-M12G8**

Ordering data – Accessories

Designation	Description	Part no.	Type
Interface			
	For additional I/Os	**567855**	**CAMC-D-8E8A**
	For DeviceNet	**547451**	**CAMC-DN**
	For EtherCAT	**567856**	**CAMC-EC**
	For EtherNet/IP	**1911917**	**CAMC-F-EP**
	For PROFINET RT	**1911916**	**CAMC-F-PN**
	For PROFIBUS DP	**547450**	**CAMC-PB**
Safety module			
	• For safe torque off (STO)	**1501330**	**CAMC-G-S1**
Switch module			
	• If the safety module CAMC-G-S1 is not used, the switch module is absolutely essential for operating the motor controller CMMP-AS-...-M3	**1501329**	**CAMC-DS-M1**
Bus connection			
	• For DeviceNet interface	**525635**	**FBSD-KL-2X5POL**
Plugs			
	• For CANopen interface	**533783**	**FBS-SUB-9-WS-CO-K**
	• For PROFIBUS interface	**533780**	**FBS-SUB-9-WS-PB-K**

Designation	Description	Part no.	Type
Braking resistor			
	• For EXCH-40 • Essential in the case of a vertical mounting position	**2882342**	**CACR-LE2-50-W500**
	• For EXCH-60 • Essential in the case of a vertical mounting position	**2882343**	**CACR-KL2-40-W2000**

Ordering data – Accessories

Designation	Description		Part no.	Type
Mounting kit				
	• Mounting kit for the energy chain and a Z-axis, such as EGSL, DGSL	• EXCM-30	**4070088**	**EAHT-E9-FB-3D-30**
Adjusting kit				
	• Height-adjustable mounting kit	• EXCM-30	**4070088**	**EADC-E11-30**
Sensor mounting				
	• For homing in combination with third-party motors	• EXCM-30	**4070088**	**EAPR-E11-30**
Energy chain				
	• For routing the cables for the Z-axis	• EXCM-30	**8059999**	**EADH-U-3D-30**
			8060324	**EADH-U-3D-40**
Connector set				
	• Holder for mounting the energy chain	• EXCM-30	**8060325**	**EAHT-AE-3D-30**
			8060326	**EAHT-AE-3D-40**
Sensor mounting				
	• For mounting the proximity sensors SIES-Q8B, SIES-V3B on the X-axis	• EXCM-40, EXCH-40	**2536353**	**EAPR-E12-40**
		• EXCH-60	**2478805**	**EAPR-E12-60**
Adjusting tool				
	• For aligning and checking the flatness of the planar surface gantry		**3197697**	**EADT-W-E12**
Adjusting kit				
	• Used to mount the handling system on the supporting surface	• EHMY-...-EGC-50-TB-KF	**8047565**	**EADC-E15-50-E7**
	• Can be used to easily compensate for any unevenness in the supporting surface	• EHMY-...-EGC-80-TB-KF	**8047566**	**EADC-E15-80-E7**
		• EHMY-...-EGC-120-TB-KF	**8047567**	**EADC-E15-120-E7**
		• EHMY-...-EGC-185-TB-KF	**8047568**	**EADC-E15-185-E7**
Profile mounting				
	• Used to mount the handling system on the supporting surface		–	
	• It is not height-adjustable			

Programming aid

FCT software – Festo Configuration Tool

Software platform for electric drives from Festo (➔ www.festo.com/sp/fct)

- All drives in a system can be managed and saved in a common project
- Project and data management for all supported types of equipment
- Easy to use thanks to graphically supported parameter entry

- Universal mode of operation for all drives
- Work offline at your desk or online at the machine