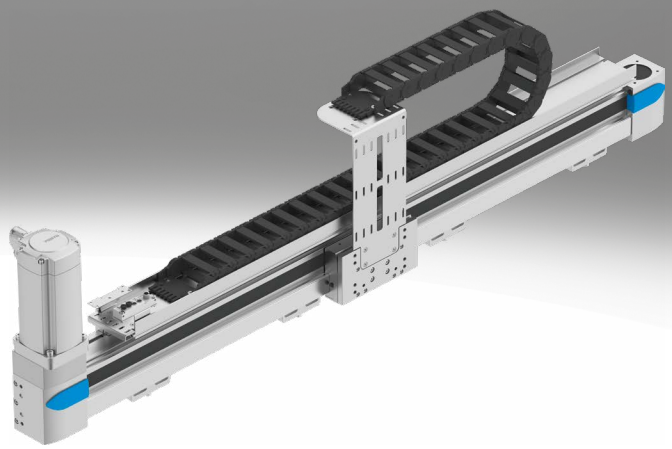
Single-axis systems

FESTO

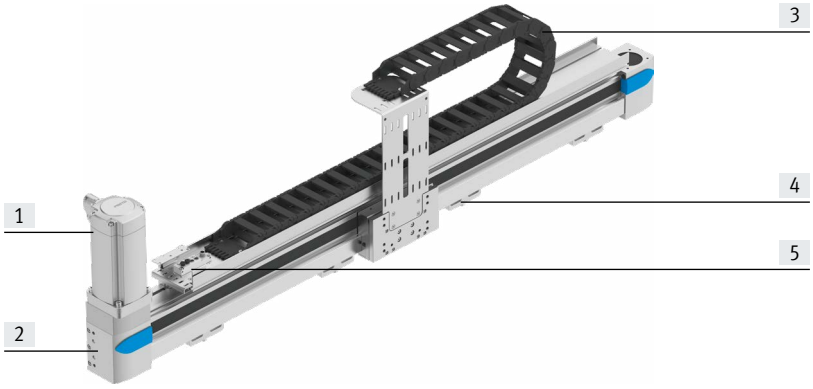


Key features

At a glance

A single-axis system (YXCS) is an axis module (EHM...) for any single-axis movement.

- Ideal for long gantry strokes and heavy loads
- High mechanical rigidity and sturdy design
- Use of tried-and-tested drives/axes from Festo



[1] Servo motor for the Y-module
[2] Y-axis
[3] Energy chain for the Y-module
[4] Profile mounting/adjusting kit
[5] Electrical signals (such as for end-position sensing) are transferred collectively via the multi-pin plug distributor

Description of the modules

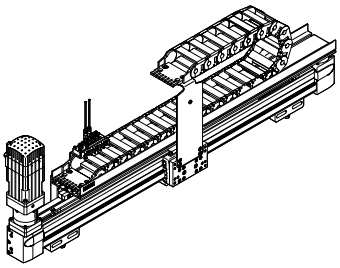
Single-axis system

Setup:

The Y-module EHMY consists of a linear axis which is powered by a servo motor.
The following components are located on the motor side:

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

Sample image:



Dispatch options
Fully assembled:

The single-axis system is fully assembled. All cables are installed and connected.

System overview[1)]

Size	YXCS
Max. working stroke	3000 mm
Max. payload	Dependent on the selected dynamic response
Mounting position	Horizontal

1) Drive package depends on the configuration selected.

Key features

Configurator: Handling Guide Online (HGO)

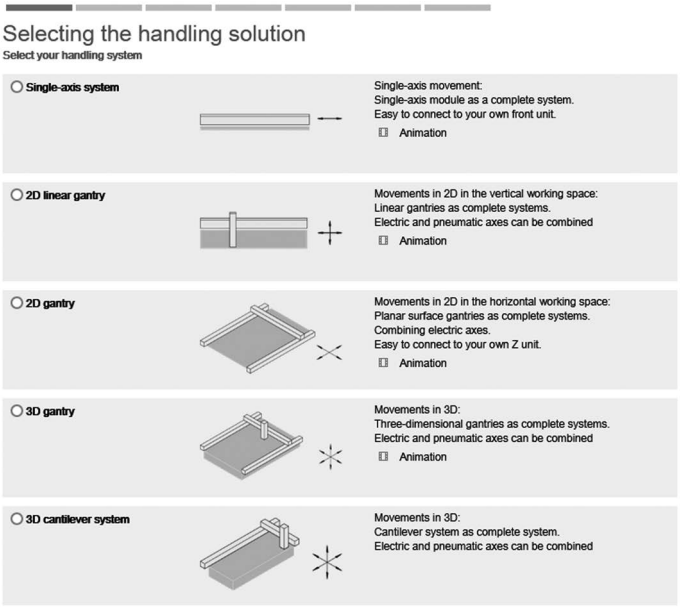
Selecting a handling system

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
- Three-dimensional gantry
- 3D cantilever system

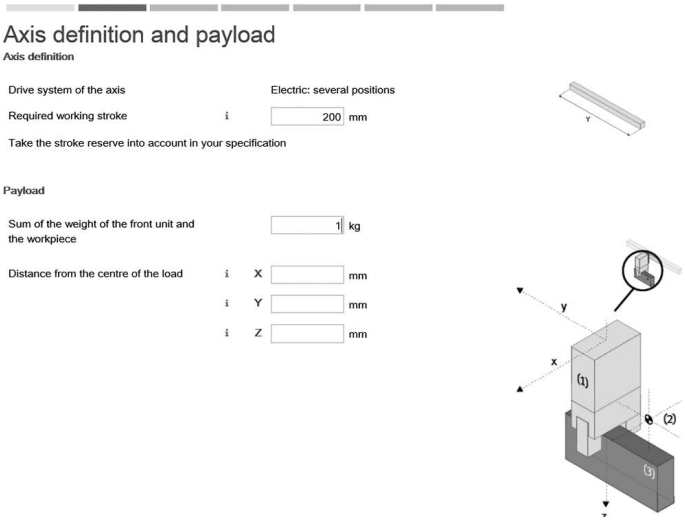
Advantages:

- Automatic selection of all relevant components
- Automatic design and calculation of the workload
- Quote created automatically
- CAD model available immediately
- Configuration-specific parameters for servo drives available immediately
- Complete Eplan project can be ordered according to the individual configuration
- Fully automated processing
- You can order fully or partially assembled systems 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



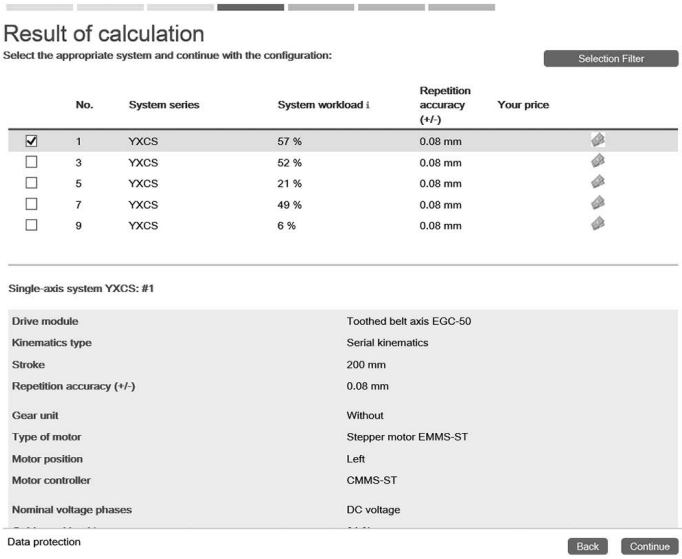
Key features

Result of calculation

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

The following are available immediately:

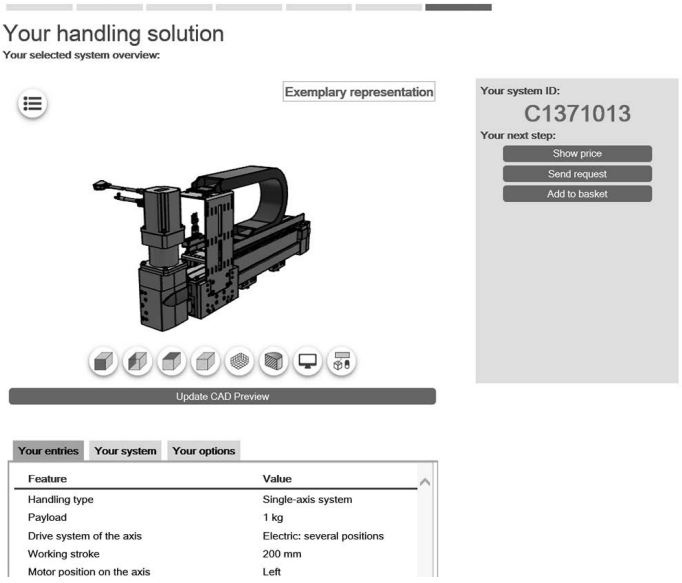
- CAD model
- Datasheet of the selected system
- Price information



System overview

You will be given an overview of the complete 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.

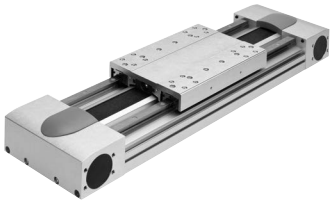
Drives/axes

Y-axis

Toothed belt axis EGC-TB-KF

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

Toothed belt axis EGC-HD-TB



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

Possible axis combinations[1)]	
YXCS	• Toothed belt axis EGC-50-TB-KF • Toothed belt axis EGC-80-TB-KF • Toothed belt axis EGC-120-TB-KF • Toothed belt axis EGC-185-TB-KF • Toothed belt axis with heavy-duty guide EGC-HD-125-TB • Toothed belt axis with heavy-duty guide EGC-HD-160-TB • Toothed belt axis with heavy-duty guide EGC-HD-220-TB

1) Drive package depends on the configuration selected.

Key features

Standard components within the handling system

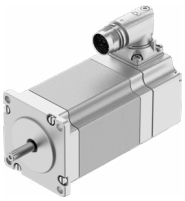
The handling system comprises a number of tried-and-tested standard components from Festo. Different components are used depending on the configuration. You can alter the scope and design of the drive package in the configurator HGO on the "System configuration" page.

Motors and controllers

Servo motors EMMT-AS

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

Stepper motors EMMT-ST



- Two-phase hybrid technology
- Digital absolute displacement encoder in single-turn or multi-turn version
- Simple connection technology (OCP: one cable plug) – hybrid cable: motor cable and connecting cable for supply and encoder in one
- Plug can be rotated 310°
- With optional brake

Stepper motors EMMB-ST

- Two-phase hybrid technology
- Digital absolute displacement encoder in single-turn or multi-turn version
- Simple connection technology (OCP: one cable plug) – hybrid cable: motor cable and connecting cable for supply and encoder in one
- Can be positioned facing to the front or back
- With optional brake

Gear unit EMGA

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

Servo drive CMMT-AS, for servo motor

- Universal servo drive
- For synchronous servo motors
- Integrated EMC filters
- Integrated brake chopper
- Integrated braking resistor
- Position controller
- Speed controller
- Force controller
- Range of control functions

Options:

- Safety function: safe torque off (STO)/category 4, Performance Level e
- Safe stop 1 (SS1)
- Safe brake control (SBC) up to SIL3/ category 3, Performance Level e

- Bus protocols
  - EtherCAT®
  - PROFINET RT/IRT
  - EtherNet/IP
  - Modbus TCP

Servo drive CMMT-ST, for stepper motor

- Servo drive for operating stepper motors and brushless direct current motors
- Options for point-to-point and interpolating motion and for precise positioning
- Primary voltage from
  24 ... 48 V DC
- Position controller
- Speed controller
- Force controller
- Range of control functions

Options:

- Safety function: safe torque off (STO)/category 3, Performance Level e
- Safe stop 1 time controlled (SS1-t)

- Bus protocols
  - EtherCAT®
  - PROFINET RT/IRT
  - EtherNet/IP
  - Modbus TCP

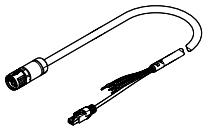
Ordering data – Accessories

Module/motor combinations

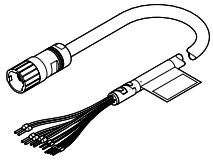
We recommend that the single-axis system is operated with the proposed motors from Festo. These precisely match the mechanical system. When using third-party motors, it is essential that the technical limits are observed.

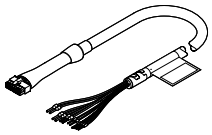
Module	Motor		
	Servo motor	Stepper motor	
Y-module			
EHMY-...-EGC-50-TB-KF	–	EMMT-ST-57-L-...	EMMB-ST-57-L-...
EHMY-...-EGC-80-TB-KF	EMMT-AS-60-S-LS-...	EMMT-ST-57-M-...	EMMB-ST-57-M-...
EHMY-...-EGC-120-TB-KF	EMMT-AS-80-L-LS-...	EMMT-ST-87-S-...	EMMB-ST-87-S-...
	EMMT-AS-80-L-HS-...	–	–
EHMY-...-EGC-125-TB-HD	EMMT-AS-60-L-LS-...	EMMT-ST-57-M-...	EMMB-ST-57-M-...
EHMY-...-EGC-160-TB-HD	EMMT-AS-80-M-LS-...	EMMT-ST-87-S-...	EMMB-ST-87-S-...
	EMMT-AS-80-L-HS-...	–	–
EHMY-...-EGC-185-TB-KF	EMMT-AS-100-L-HS-...	–	–
	EMMT-AS-100-H-HS-...	–	–
	EMMT-AS-150-M-HV-R3...	–	–
EHMY-...-EGC-220-TB-HD	EMMT-AS-100-L-HS-...	–	–
	EMMT-AS-100-H-HS-...	–	–
	EMMT-AS-150-M-HV-R3...	–	–

Ordering data

	Description	Cable length [m]	Part no.	Type
For servo motor EMMT-AS				
Motor cable				
	• For EMMT-AS-60/80-...-R2... with CMMT-AS	2.5	**5251374**	**NEBM-M23G15-EH-2.5-Q7N-R3LEG14**
		5	**5251375**	**NEBM-M23G15-EH-5-Q7N-R3LEG14**
		7.5	**5251376**	**NEBM-M23G15-EH-7.5-Q7N-R3LEG14**
		10	**5251377**	**NEBM-M23G15-EH-10-Q7N-R3LEG14**
		15	**5251378**	**NEBM-M23G15-EH-15-Q7N-R3LEG14**
		20	**5251379**	**NEBM-M23G15-EH-20-Q7N-R3LEG14**
	• For EMMT-AS-100-...-R2... with CMMT-AS	2.5	**5251381**	**NEBM-M23G15-EH-2.5-Q9N-R3LEG14**
		5	**5251382**	**NEBM-M23G15-EH-5-Q9N-R3LEG14**
		7.5	**5251383**	**NEBM-M23G15-EH-7.5-Q9N-R3LEG14**
		10	**5251384**	**NEBM-M23G15-EH-10-Q9N-R3LEG14**
		15	**5251385**	**NEBM-M23G15-EH-15-Q9N-R3LEG14**
		20	**5251386**	**NEBM-M23G15-EH-20-Q9N-R3LEG14**
	• For EMMT-AS-150-...-R3... with CMMT-AS	2.5	**5251395**	**NEBM-M40G15-EH-2.5-Q11N-R3LEG14**
		5	**5251396**	**NEBM-M40G15-EH-5-Q11N-R3LEG14**
		7.5	**5251397**	**NEBM-M40G15-EH-7.5-Q11N-R3LEG14**
		10	**5251398**	**NEBM-M40G15-EH-10-Q11N-R3LEG14**
		15	**5251399**	**NEBM-M40G15-EH-15-Q11N-R3LEG14**
		20	**5251400**	**NEBM-M40G15-EH-20-Q11N-R3LEG14**

Ordering data – Accessories

Designation	Description	Cable length [m]	Part no.	Type
For stepper motor EMMT-ST				
Motor cable				
	• For EMMT-ST-57-... with CMMT-ST	2.5	**8181670**	**NEBM-M17G12-EH-2.5-Q6N-LE12**
		5	**8181668**	**NEBM-M17G12-EH-5-Q6N-LE12**
		7	**8195460**	**NEBM-M17G12-EH-7.5-Q7N-LE12**
		10	**8195461**	**NEBM-M17G12-EH-10-Q7N-LE12**
		15	**8214683**	**NEBM-M17G12-EH-15-Q9N-LE12**
	• For EMMT-ST-87-... with CMMT-ST	2.5	**8195458**	**NEBM-M17G12-EH-2.5-Q7N-LE12**
		5	**8195459**	**NEBM-M17G12-EH-5-Q7N-LE12**
		7	**8214681**	**NEBM-M17G12-EH-7.5-Q9N-LE12**
		10	**8214682**	**NEBM-M17G12-EH-10-Q9N-LE12**
		15	**8214683**	**NEBM-M17G12-EH-15-Q9N-LE12**

Designation	Description	Cable length [m]	Part no.	Type
For stepper motor EMMB-ST				
Motor cable				
	• For EMMB-ST-57-... with CMMT-ST	2.5	**8181677**	**NEBM-L10G14-EH-2.5-Q6N-LE12**
		5	**8181667**	**NEBM-L10G14-EH-5-Q6N-LE12**
		7	**8181674**	**NEBM-L10G14-EH-7.5-Q7N-LE12**
		10	**8181673**	**NEBM-L10G14-EH-10-Q7N-LE12**
		15	**8214689**	**NEBM-L10G14-EH-15-Q9N-LE12**
	• For EMMB-ST-87-... with CMMT-ST	2.5	**8181666**	**NEBM-L10G14-EH-2.5-Q7N-LE12**
		5	**8181671**	**NEBM-L10G14-EH-5-Q7N-LE12**
		7	**8214687**	**NEBM-L10G14-EH-7.5-Q9N-LE12**
		10	**8214688**	**NEBM-L10G14-EH-10-Q9N-LE12**
		15	**8214689**	**NEBM-L10G14-EH-15-Q9N-LE12**

Possible cable lengths

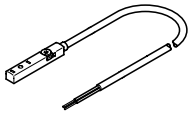
- Cables are selected so that the length specified when ordering will be the minimum connection length from the energy chain output.
- Cables are only available in fixed lengths as stated in the table below. This can mean that the cable plugs of the different cables do not end at the same point.

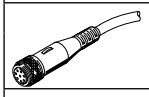
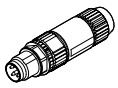
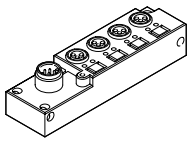
Length	2 m	5 m	7 m	10 m
Motor cable	■	■	■	■
Encoder cable	■	■	■	■
Multi-pin plug connecting cable	■	■	■	■

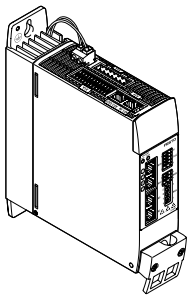
Ordering data – Accessories

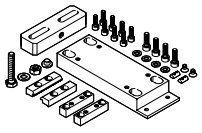
Standard components within the handling system

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 type and scope of the accessories in the configurator HGO on the "System configuration" page.

Designation	Description		Cable length	Part no.	Type
Proximity switch (inductive) for sensing the position of the slide					
	**Cable with open end** • For toothed belt axis EGC-TB, EGC-HD-TB • For DC voltage • Flush mounting 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**

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**
Plug				
	• 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, all electrical signals such as for end-position sensing can be transferred Options: – 4 individual connections – 6 individual connections	–	**574586**	**NEDU-L4R1-M8G3L-M12G8**
			574587	**NEDU-L6R1-M8G3L-M12G8**

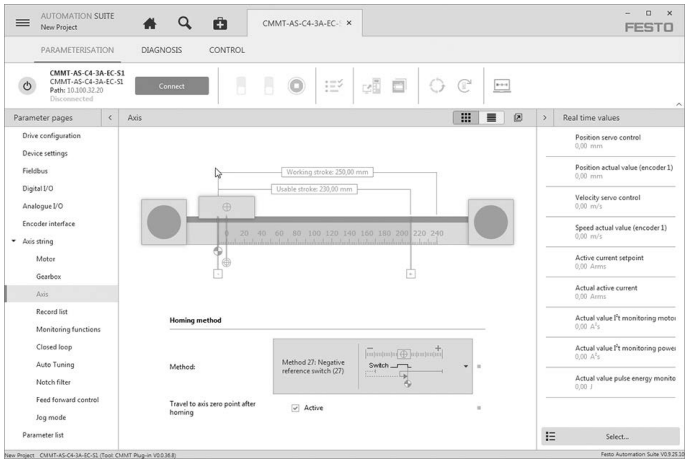
Designation	Description
Motor controller/servo drive	
	The accessories for the relevant motor controllers/servo drives can be found at: • www.festo.com/catalogue/cmmt

Designation	Description		Part no.	Type
Adjusting kit				
	• Used to mount the handling system on a vertical surface • Once mounted, the axis can be aligned horizontally	EHMY-...-EGC-50-TB-KF	**8047576**	**EADC-E16-50-E7**
		EHMY-...-EGC-80-TB-KF	**8047577**	**EADC-E16-80-E7**
		EHMY-...-EGC-120-TB-KF	**8047578**	**EADC-E16-120-E7**
		EHMY-...-EGC-185-TB-KF	**8047579**	**EADC-E16-185-E7**
		EHMY-...-EGC-125-TB-HD	**8047580**	**EADC-E16-125-E14**
		EHMY-...-EGC-160-TB-HD	**8047581**	**EADC-E16-160-E14**
		EHMY-...-EGC-220-TB-HD	**8047582**	**EADC-E16-220-E14**

Programming aid

Festo Automation Suite

Parameterisation and programming software for electronic devices from Festo



- Parameterisation, programming and commissioning in a clear and user-friendly interface
- Optimum support for complex processes thanks to guided wizards (e.g. for commissioning, drive configuration, etc.)
- Fast access to the required documents and additional information
- Easy integration of electric drives in the controller programming