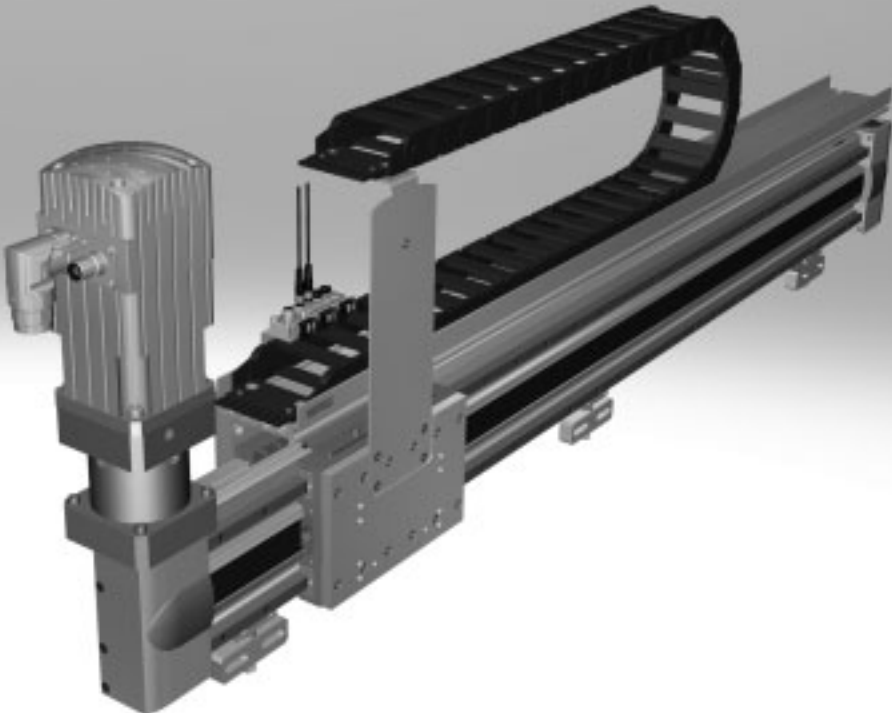


Single-axis systems

FESTO



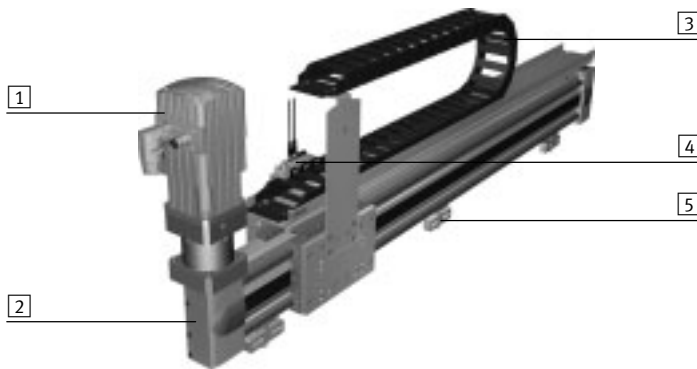
# Single-axis systems

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 Y module
- 2 Y-axis
- 3 Energy chain for Y module
- 4 Multi-pin plug distributor which collectively transfers electrical signals such as end-position sensing
- 5 Profile mounting/adjusting kit

## Description of the modules

Single-axis system

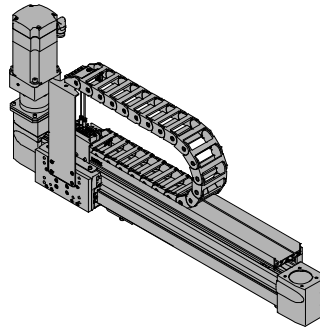
Structure:

The Y module EHY comprises a linear axis which is powered by a servo motor.

The following elements are located on the motor side:

- Energy chain
- Multi-pin plug distributor for proximity sensor (if 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<sup>1)</sup>

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

1) Drive package depending on configuration selected.

# Single-axis systems

Key features

## Configurator: Handling Guide Online (HGO)

Selecting a handling system

Planning complex handling systems takes a lot of time. You can use the "Handling Guide Online" (HGO) configurator 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
- 3D gantry

### Benefits:

- Automatic selection of all relevant components
- Automatic design and calculation of workload
- Quote created automatically
- CAD model available immediately
- Fully automated processing
- You can order fully assembled or unassembled systems through the online shop
- Lots of possible options

### Single-axis system

① Single-axis system




Single-axis movement  
Single-axis module as a complete system.  
Easy to connect to your own front unit.

Animation

### 2D linear gantry

② 2D linear gantry



Movements in 2D in the vertical working space:  
Linear gantries as complete systems.  
Combining electric and pneumatic axes is possible.

Animation

### 2D planar surface gantry

③ 2D gantry



Movements in 2D in the horizontal working space:  
Planar surface gantries as complete systems.  
Combining electric axes.  
Easy to connect to your own Z-unit.

Animation

### 3D gantry

④ 3D gantry



Movements in 3D:  
Three-dimensional gantries as complete systems.  
Combining electric and pneumatic axes is possible.

Animation

## Entering the application data

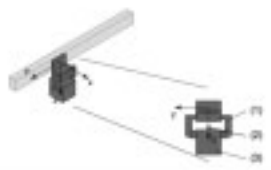
- Payload
- Drive system of the axis
- Distance from the centre of the load
- Working stroke
- Reference cycle

### Payload

Find your handling solution after steps

Definition of payload

- ① Your front unit
- ② Centre of gravity
- ③ Your workspace



Specify the characteristic values of the payload

Payload (mass and working stroke)

	<input type="text"/>		kg
--	----------------------	--	----

Distance from the centre of the load

	X	<input type="text"/>	mm	+
	Y	<input type="text"/>	mm	+
	Z	<input type="text"/>	mm	+

# Single-axis systems

Key features

## Result of calculation

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

The following are available immediately:

- CAD model
- Technical data for the selected system
- Price information

## Result of calculation

Find your handling solution in 3 steps

Select the appropriate system and continue with the configuration:

No.	System series	System workload	Repetition accuracy (±)
<input type="checkbox"/> 1	YXC3	0%	0.04 mm
<input type="checkbox"/> 2	YXC3	0%	0.04 mm
<input type="checkbox"/> 3	YXC3	0%	0.04 mm
<input type="checkbox"/> 4	YXC3	4%	0.04 mm
<input type="checkbox"/> 5	YXC3	0%	0.1 mm

## Single-axis system YXC3: 01

Drive module	Clearance	Motor type	Motor position	Motor controller	Nominal voltage phase	Guide workload	Drive workload	Axis workload
Travel unit (TUC-01)	0.1	Servo motor FMS-AS	Left	CALCULATED	1 phase	0%	2%	4%

- Please note:
- Existing position limit
  - Motor positioner controller from Festo
  - No loading on actuators with load cell

## 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

## Your handling solution

Find your handling solution in 3 steps

### Your selected system overview

Your criteria	Value
Characteristics	
Handling type	Single-axis system
Payload	0.2 kg
Drive system of the axis	Electric servo position
Working stroke	100 mm
Motor position on the axis	Left
Control interface	0/1 operation or Colson integrated
AC 1-phase	230 V
AC 3-phase	400 V
Travel	100 mm
Repetition	0%

3D preview

Your next step

[Request price](#)

# Single-axis systems

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 HGO configurator on the “Result of calculation” page.

**Result of calculation**  
 First handling system in a few steps

Select the appropriate system and confirm with the configuration:

No.	System series
01	YXCS
02	YXCS
03	YXCS
04	YXCS
05	YXCS

Single-axis system YXCS: 01

Drive module	Gear units	Motor type
Toothed belt 203-000-00	01	Motor type 1000-00

## 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<sup>1)</sup>

YXCS	<ul style="list-style-type: none"> <li>• Toothed belt axis EGC-50-TB-KF</li> <li>• Toothed belt axis EGC-80-TB-KF</li> <li>• Toothed belt axis EGC-120-TB-KF</li> <li>• Toothed belt axis EGC-185-TB-KF</li> <li>• Toothed belt axis with heavy-duty guide EGC-HD-125-TB</li> <li>• Toothed belt axis with heavy-duty guide EGC-HD-160-TB</li> <li>• Toothed belt axis with heavy-duty guide EGC-HD-220-TB</li> </ul>
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1) Drive package depending on configuration selected.

# Single-axis systems

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 HGO configurator on the "System configuration" page.

**System configuration**  
Configure handling station in order view

<b>Electrical systems</b>	
Motor supply type from energy chain cable	000 <input type="button" value="OK"/>
<b>Power supply</b>	
Number of addressable units	000 <input type="button" value="OK"/>
Voltage standard of addressable units for load and	000 <input type="button" value="OK"/>
Motor supply type from energy chain cable	000 <input type="button" value="OK"/>
<b>Assembly</b>	
Mounting method	000 <input type="button" value="OK"/>
Predefined identification	000 <input type="button" value="OK"/>

## Motors and controllers

### Servo motors EMMS-AS



- Dynamic, brushless, permanently excited servo motor
  - Digital absolute displacement encoder, singleturn or multiturn
  - With optional brake
- Options:
- With or without brake
  - Type of encoder: singleturn or multiturn

### Gear unit EMGA



- Low-backlash planetary gear unit
- 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

- Fieldbus interface
  - CANopen
  - DeviceNet
  - EtherCAT
  - EtherNet/IP
  - PROFIBUS DP
  - PROFINET

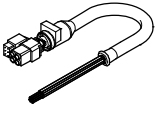

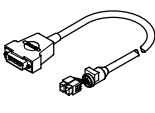
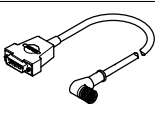
# Single-axis systems

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
<b>Y module</b>	
EHMY-...-EGC-50-TB-KF	EMMS-AS-40-M-LS-...
EHMY-...-EGC-80-TB-KF	EMMS-AS-70-S-LS-...
EHMY-...-EGC-120-TB-KF	EMMS-AS-100-S-HS-...
EHMY-...-EGC-125-TB-HD	EMMS-AS-70-S-LS-...
EHMY-...-EGC-160-TB-HD	EMMS-AS-100-S-HS-...
EHMY-...-EGC-185-TB-KF	EMMS-AS-100-S-HS-...
EHMY-...-EGC-220-TB-HD	EMMS-AS-140-S-HS-...

Designation	Description	Cable length	Part No.	Type
<b>Motor cable<sup>1)</sup></b>				
	• For servo motor EMMS-AS-40-M-LS-...	5 m	<b>550306</b>	<b>NEBM-T1G8-E-5-Q7N-LE8</b>
		10 m	<b>550307</b>	<b>NEBM-T1G8-E-10-Q7N-LE8</b>
		15 m	<b>550308</b>	<b>NEBM-T1G8-E-15-Q7N-LE8</b>
<b>Motor cable<sup>1)</sup></b>				
	• For servo motor EMMS-AS-70-S-LS-.../ EMMS-AS-100-S-HS-.../EMMS-AS-140-S-HS-...	5 m	<b>550310</b>	<b>NEBM-M23G8-E-5-Q9N-LE8</b>
		10 m	<b>550311</b>	<b>NEBM-M23G8-E-10-Q9N-LE8</b>
		15 m	<b>550312</b>	<b>NEBM-M23G8-E-15-Q9N-LE8</b>
<b>Encoder cable<sup>1)</sup></b>				
	• For servo motor EMMS-AS-40-M-LS-...	5 m	<b>550314</b>	<b>NEBM-T1G8-E-5-N-S1G15</b>
		10 m	<b>550315</b>	<b>NEBM-T1G8-E-10-N-S1G15</b>
		15 m	<b>550316</b>	<b>NEBM-T1G8-E-15-N-S1G15</b>
<b>Encoder cable<sup>1)</sup></b>				
	• For servo motor EMMS-AS-70-S-LS-.../ EMMS-AS-100-S-HS-.../EMMS-AS-140-S-HS-...	5 m	<b>550318</b>	<b>NEBM-M12W8-E-5-N-S1G15</b>
		10 m	<b>550319</b>	<b>NEBM-M12W8-E-10-N-S1G15</b>
		15 m	<b>550320</b>	<b>NEBM-M12W8-E-15-N-S1G15</b>

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

## 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 plug connectors 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	■	■	■	■

# Single-axis systems

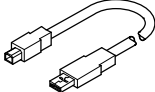
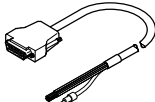
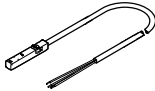
Ordering data – Accessories



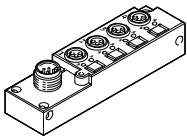


## Standard components within the handling system

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 scope and design of the accessories in the HGO configurator on the “System configuration” page.



Designation	Description	Cable length	Part No.	Type	
<b>Programming cable</b>					
	<ul style="list-style-type: none"> <li>High-speed USB 2.0 connecting cable</li> </ul>	1.8 m	1501332	NEBC-U1G4-K-1.8-N-U2G4	
<b>Control cable</b>					
	<ul style="list-style-type: none"> <li>For I/O interface to any controller</li> </ul>	2.5 m	552254	NEBC-S1G25-K-2.5-N-LE26	
<b>Proximity sensor (inductive) for sensing the position of the slide</b>					
	Cable with open end				
	<ul style="list-style-type: none"> <li>For toothed belt axis EGC-TB, EGC-HD-TB</li> <li>For DC voltage</li> <li>Flush installation</li> </ul> Included if “Festo sensor package” is selected: <ul style="list-style-type: none"> <li>2 pieces</li> </ul>	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

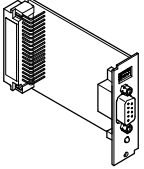
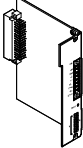
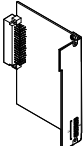

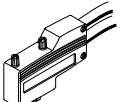
Designation	Description	Cable length	Part No.	Type
<b>Plug socket with cable</b>				
	<ul style="list-style-type: none"> <li>Connection between multi-pin plug distributor and control cabinet</li> </ul>	5 m	525618	SIM-M12-8GD-5-PU
		10 m	570008	SIM-M12-8GD-10-PU
<b>Plug connector</b>				
	<ul style="list-style-type: none"> <li>For connection to the multi-pin plug distributor</li> </ul>	–	562024	NECU-S-M8G3-HX
<b>Multi-pin plug distributor</b>				
	<ul style="list-style-type: none"> <li>With the help of the multi-pin plug distributor, electrical signals such as end-position sensing can be collectively transferred</li> </ul> Options: <ul style="list-style-type: none"> <li>– 4 individual connections</li> <li>– 6 individual connections</li> </ul>	–	574586	NEDU-L4R1-M8G3L-M12G8
			574587	NEDU-L6R1-M8G3L-M12G8

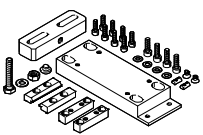


# Single-axis systems

Ordering data – Accessories

FESTO

Designation	Description	Part No.	Type
<b>Interface</b>			
	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
<b>Safety module</b>			
	For safe torque off (STO)	1501330	CAMC-G-S1
<b>Switch module</b>			
	If the safety module CAMC-G-S1 is not used, the switch module is absolutely essential for operating of the motor controller CMMP-AS-...-M3	1501329	CAMC-DS-M1
<b>Bus connection</b>			
	For DeviceNet interface	525635	FBSD-KL-2X5POL
<b>Plug connector</b>			
	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
<b>Adjusting kit</b>			
	<ul style="list-style-type: none"> <li>Used to mount the handling system on a vertical surface</li> <li>Following mounting, the axis can be aligned horizontally</li> </ul>	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

# Single-axis systems

Programming aid

## Easy programming with

### FCT software – Festo Configuration Tool

Software platform for electric drives from Festo

- All drives in a system can be managed and saved in a common project
- Project and data management for all supported device types
- 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

