Rotary gripper modules EHMD

FESTO



Key features

At a glance

- The rotary gripper module is a compact module for handling small parts.
- The rotary motion is generated by a stepper motor.
- The gripping motion is generated either electrically via a stepper motor or pneumatically via a cylinder.
- The gripper can grip in force mode when combined with the motor controller CMMO-ST. This enables flexible gripping.

Applications:

- Pick & place small parts from trays and tablets
- Fitting and removing cover caps on vials

Everything from a single source



Rotary module EHMD

→ Page 5



Motor controller CMMO-ST

→ Page 23

 The motor controller CMMO-ST is a closed-loop and open-loop position controller

Modbus

IO-Link

- Easy actuation via:
 - I/O interface
 - IO-Link or I-Port
 - Modbus TCP
- Monitoring of freely defined positions and torque ranges



Gripper jaw blanks BUB-HGPT

→ Page 23

The technology in detail

Rotation

Closed-loop control

- Makes it possible to control the motor torque via the motor current, so the torque can be limited when twisting on a cover cap
- No step loss is possible in the event of overload
- · It is possible to use the entire output torque of the motor

Homing

- The encoder zero pulse can be used to home the axis of rotation
- One zero pulse per revolution
- Defined angular orientation based on this zero pulse

Gripping

Closed-loop control

- · Makes it possible to control the motor torque via the motor current
- The gripping force of the gripper can be set by a limited driving torque of the lead screw

Open-loop control

- The motor is actuated in microstep operation with a constant, defined phase current
- Reduction of the holding current is required to prevent overheating
- A torque reserve is required to prevent step losses

Open-loop control

- The motor is actuated in microstep operation with a constant, defined phase current
- Reduction of the holding current is required to prevent overheating
- The gripper drive is spring-mounted for force setting, so that defined gripping forces can be set in positioning mode

Homing

- Gripper motor has an incremental encoder. No limit switch is present
- In the opening direction, homing must be to a stop $% \left(1\right) =\left(1\right) \left(1\right)$

Key features

FCT software - Festo Configuration Tool

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

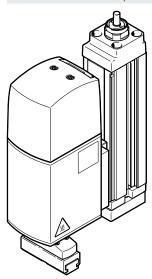


- All drives in a system can be managed and saved in a common project
- Project and data management for all supported types of equipment
- Simple to use thanks to graphically supported parameter entry
- Universal mode of operation for all drives
- Work offline at your desk or online at the machine

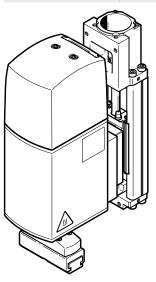
Combinations comprising mini slides EGSC-BS, EGSL and electric slide EGSK

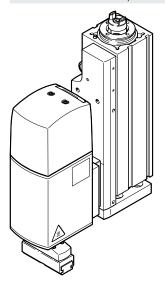
With mini slide EGSC-BS-25/32

With mini slide EGSL-BS-35/45



With electric slide EGSK-20/26

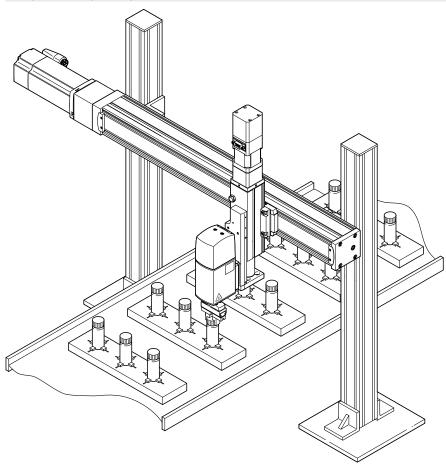




Key features

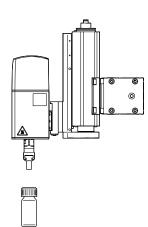
Application example

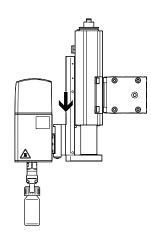
Fitting and removing cover caps on vials

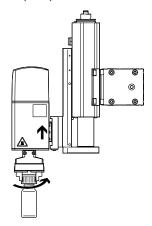


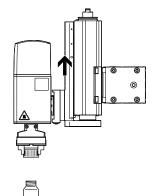
Screwing cover caps onto vials and removing them

- Mini slide EGSC-BS retracted
- Mounting adapter EHAM-E20
- Mini slide EGSC-BS advances
- Rotary gripper module EHMD grips the cover cap
- Rotary gripper module EHMD twists the cover cap from the vial
- The mounting adapter EHAM-E20 takes on the Z-compensation without the need to move the mini slide (Z-axis)
- Once the cover cap has been twisted off, the mini slide EGSC-BS retracts
- The Z-compensation moves back into the lower end position due to the weight









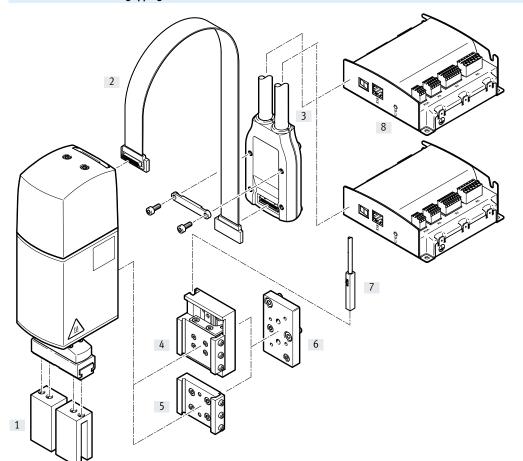
Type codes

001	Series	
EHMD	Rotary gripper module	
	1	
002	Size	
40	40	
003	Rotary module drive system	
RE	Electric	

004	Gripper drive system	
GP	Pneumatic	
GE	Electric	
005	Stroke per gripper jaw [mm]	
16	16	

Peripherals overview

EHMD-40-RE-GE – electric gripping



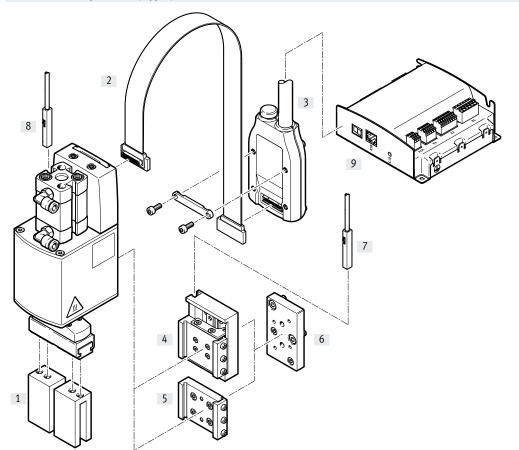
- Note

The gripper is only intended as an external gripper (in the closing direction).

Acces	sories		
	Type/order code	Description	→ Page/Internet
[1]	Gripper jaw blank BUB-HGPT-16-B	 Blanks specially matched to the gripper jaws for manufacturing gripper fingers Not permitted for EHMD-40-RE-GE-16 	23
[2]	Motor cable NEBM-F1W31	Connecting cable between EHMD and motor cable NEBM-SF1 The cable is mandatory for compliance with the EMC Directive	23
[3]	Motor cable NEBM-SF1	Cable with adapter between motor cable NEBM-F1 and motor controller CMMO-ST	23
[4]	Mounting adapter (with Z-compensation) EHAM-E20-40-Z	Mounting option via dovetail mounting. The mounting adapter makes it possible to fit or remove cover caps on vials, for example, without additional Z-axis (Z-compensation = 12 mm).	17
[5]	Mounting adapter (rigid) EHAM-E20-40	Mounting option via dovetail mounting	21
[6]	Adapter kit EHAM-E20-40-E	For attaching the mounting adapters to the Z-axes: • Mini slide EGSC-BS-2 5/32 • Mini slide EGSL-BS-3 5/45 • Electric slide EGSK-2 0/26	22
[7]	Proximity switch, T-slot SIES-M8	Inductive proximity switch for sensing the Z-compensation position	24
[8]	Motor controller CMMO-ST	For positioning the rotary or gripping motion	23

Peripherals overview

EHMD-40-RE-GP - pneumatic gripping



- Note

The gripper is only intended as an external gripper (in the closing direction).

Acces	Accessories							
	Type/order code	Description	→ Page/Internet					
[1]	Gripper jaw blank BUB-HGPT-16-B	Blanks specially matched to the gripper jaws for manufacturing gripper fingers	23					
[2]	Motor cable NEBM-F1W31	Connecting cable between EHMD and motor cable NEBM-SF1 The cable is mandatory for compliance with the EMC Directive	23					
[3]	Motor cable NEBM-SF1	Cable with adapter between motor cable NEBM-F1 and motor controller CMMO-ST	23					
[4]	Mounting adapter (with Z-compensation) EHAM-E20-40-Z	Mounting option via dovetail mounting. The mounting adapter makes it possible to fit or remove cover caps on vials, for example, without additional Z-axis (Z-compensation = 12 mm).	17					
[5]	Mounting adapter (rigid) EHAM-E20-40	Mounting option via dovetail mounting	21					
[6]	Adapter kit EHAM-E20-40-E	For attaching the mounting adapters to the Z-axes: • Mini slide EGSC-BS-2 5/32 • Mini slide EGSL-BS-3 5/45 • Electric slide EGSK-2 0/26	22					
[7]	Proximity switch, T-slot SIES-M8	Inductive proximity switch for sensing the Z-compensation position	24					
[8]	Proximity switch, T-slot SME/SMT-M8	Proximity switch for sensing the position of the gripper fingers (open/closed)	24					
9]	Motor controller CMMO-ST	For positioning the rotary or gripping motion	23					

Output torque
0.3 Nm

Rotation angle

- Total stroke 32 mm

infinite

Actuation via:

- Motor controller CMMO-ST
- Controller for stepper motors with encoder input



General technical data					
Туре		EHMD			
		-GE	-GE-16	-GP	
Design		Electric rotary drive		Electric rotary drive	
		Electric gripper		Pneumatic gripper	
Motor type		Stepper motor		·	
Position sensing					
Rotation		Motor encoder			
Gripping		Motor encoder	Motor encoder		
Homing				·	
Rotation		Encoder index			
Gripping		Fixed-stop block		-	
Gripper function		Parallel			
Rotation angle		Infinite			
Number of gripper jaws		2			
Stroke per gripper jaw	[mm]	05	0 15	5	
Rated load ¹⁾	[g]	250			
Type of mounting		Via dovetail slot			
Mounting position		Any			
Product weight	[g]	681	724	577	

¹⁾ Rated load = gripper fingers + payload

Technical data – Rotation					
Туре		EHMD			
		-GE	-GE-16	-GP	
Design		Electric rotary drive		Electric rotary drive	
Max. output torque	[Nm]	0.3			
Max. output rotational speed	[rpm]	240			
Functional principle		Stepper motor, direct drive	е		
Nominal voltage	[V DC]	24			
Nominal current	[A]	0.9			
Holding torque at nominal current	[Nm]	0.3			
Resistance per phase	[Ω]	5.8 ±15%			
Inductance per phase	[mH]	11 ±20%			
Step angle	[°]	1.8 ±5%			
Moment of inertia	[kgm ²]	1.25x 10 ⁻⁵	2.34x 10 ⁻⁵	1.25x 10 ⁻⁵	
Electrical connection		Plug			
		Plug pattern F1			
Encoder					
Operating voltage	[V DC]	5 ±10%			
Current consumption (without load)	[mA]	60	<u> </u>	<u> </u>	
Pulses/revolution	[1/rev]	500	<u> </u>	<u> </u>	
Rotor position sensor		RS422 TTL AB channel + ze	ero index		
		Incremental	·	<u> </u>	
Rotor position sensor measuring principle		Optical			

Technical data – Gripping				
Туре		EHMD		
		-GE	-GE-16	-GP
Design		Electric gripper		Pneumatic gripper
Gripping force per gripper jaw	[N]	7 35		5 35
Max. gripping force				
Closed-loop control mode	[N]	35	14	-
Open-loop control mode	[N]	20 25	68	-
Residual gripping force ¹⁾	[N]	> 10	> 4	-
Gripping force per gripper jaw at 6 bar, closing	[N]	-	•	25
Minimum gripping force	[N]	7		5
Pneumatic connection		-		QS-4
Functional principle		Stepper motor with lead so	crew	-
Nominal voltage	[V DC]	24		-
Nominal current	[A]	0.5		-
Holding torque at nominal current	[Nm]	0.043		-
Resistance per phase	[Ω]	5.6 ±15%		-
Inductance per phase	[mH]	4.0 ±20%		-
Step angle	[°]	1.8 ±5%		-
Moment of inertia	[kgm ²]	9x 10 ⁻⁷		-
Max. motor rotational speed	[rpm]	1000		-
Feed constant	[mm/rev]	1.478	4.4	-
Max. velocity per gripper jaw	[mm/s]	25	70	-
Permissible velocity for homing to stop	[mm/s]	2	5	-
Reversing backlash	[mm]	0.3	0.8	-
Electrical connection		Plug		-
		Plug pattern F1		-
Encoder				
Operating voltage	[V DC]	5 ±10%		-
Current consumption (without load)	[mA]	30		-
Pulses/revolution	[1/rev]	500		-
Rotor position sensor		RS422 TTL AB channel + zero index		-
		Incremental		-
Rotor position sensor measuring principle		Optical		-



 In the event of a power failure, a residual gripping force (gripping force backup) is ensured by the mechanical design. However, the maximum gripping force cannot be maintained.

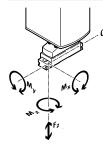
Operating and environmental conditions				
Туре		EHMD		
		-GE	-GE-16	-GP
Operating pressure	[bar]	-		1.5 8
Operating medium		-		Compressed air to ISO 8573-1:2010
				[7:4:4]
Note on the operating/pilot medium		-		Operation with lubricated medium
				possible (in which case lubricated
				operation will always be required)
Ambient temperature	[°C]	0 +40		
Storage temperature	[°C]	-20 +70		
Relative humidity	[%]	0 85 (non-condensin	g)	
Degree of protection		IP20		
Insulation class		В		
Duty cycle	[%]	100		
Corrosion resistance CRC ¹⁾		1		
CE marking (see declaration of conformity) ³⁾		To EU-EMC Directive ²⁾		
		(with screened cables a	nd a cable length of max. 30 m)	
KC mark		KC EMC		
Certification	· ·	RCM		
Suitability for the food industry ³⁾		See supplementary ma	terial information	

- 1) Corrosion resistance class CRC 1 to Festo standard FN 940070

 Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).
- For information about the area of use, see the EC declaration of conformity at: www.festo.com/sp → Certificates.
 If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.
- Additional information available at www.festo.com/sp → Certificates.

Materials						
Туре	EHMD-	EHMD-				
	-GE	-GE-16	-GP			
Cover	Reinforced PA		PA			
Housing	Anodised wrought aluminiu	Anodised wrought aluminium alloy				
Tie rod	Stainless steel					
Gripper kinematics	Tempered steel	Stainless steel	Tempered steel			
Note on materials	Contains paint-wetting impa	Contains paint-wetting impairment substances				
	RoHS-compliant					

Static characteristic load values at the gripper jaws

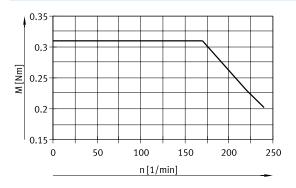


The indicated permissible forces and torques apply to a single gripper jaw. They include the lever arm, additional weight forces due to the workpiece or external gripper fingers and acceleration forces during movement. The zero coordinate line (gripper jaw guide) must be taken into consideration for the calculation of torques.

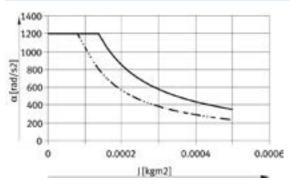
Туре		EHMD			
		-GE	-GE-16	-GP	
Max. permissible force F _x	[N]	30			
Max. permissible force F _z	[N]	30			
Max. permissible torque M _x	[Nm]	0.7	1.5	0.7	
Max. permissible torque M _y	[Nm]	1.5	1.5	1.5	
Max. permissible torque M _z	[Nm]	0.7	1.5	0.7	

Graphs for rotation

Torque M as a function of rotational speed n



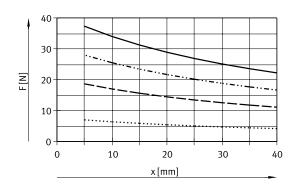
Angular acceleration as a function of moment of inertia J

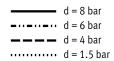


Closed-loop control
Open-loop control

Graphs for gripping, pneumatic

Gripping force F as a function of the lever arm x and operating pressure d



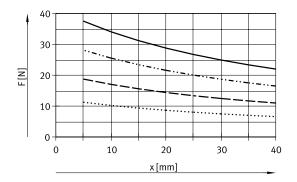


Graphs for gripping, electric with motor controller CMMO-ST

Gripping force x as a function of the lever arm x and force specification



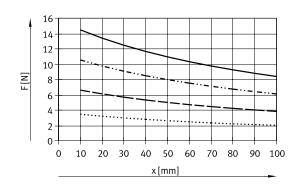
EHMD-...-GE



100%
75%
50%
30%

Even if the workpiece size is not known, it is possible to close the gripper with a defined gripping force by limiting the torque. With the CMMO-ST, the force mode can be used to close the gripper. The force setpoint is specified as a percentage value and corresponds to the motor current in relation to the nominal current.

EHMD-...-GE-16

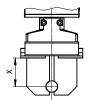


For EHMD-...-GE-16:

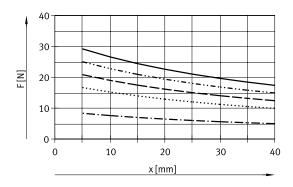
The characteristic curves show typical gripping forces in the new state. Depending on the function, these may fluctuate as a result of internal friction.

Graphs for gripping, electric with motor controller (without torque control)

Gripping force F as a function of the lever arm x and additional path

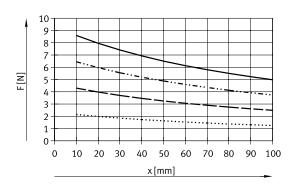


EHMD-...-GE



If the workpiece size is known, a defined gripping force can be achieved by the deflection of the gripper drive. Here, the gripper continues to be closed along a specific path once it is touching the workpiece. The gripper fingers then stay where they are while the drive continues to move and the spring is tensioned.

EHMD-...-GE-16

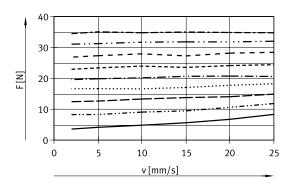


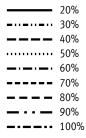
2 mm ------ 1.5 mm ------ 1 mm ------ 0.5 mm

Gripping force F as a function of velocity v

Requirement:

- Motor controller CMMO-ST in force mode
- Ambient temperature = 25 °C

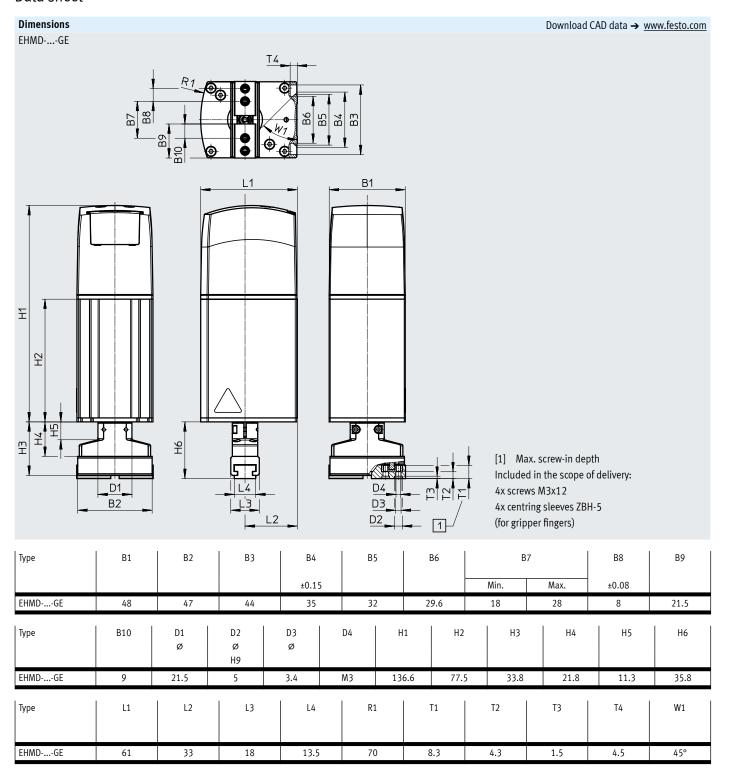


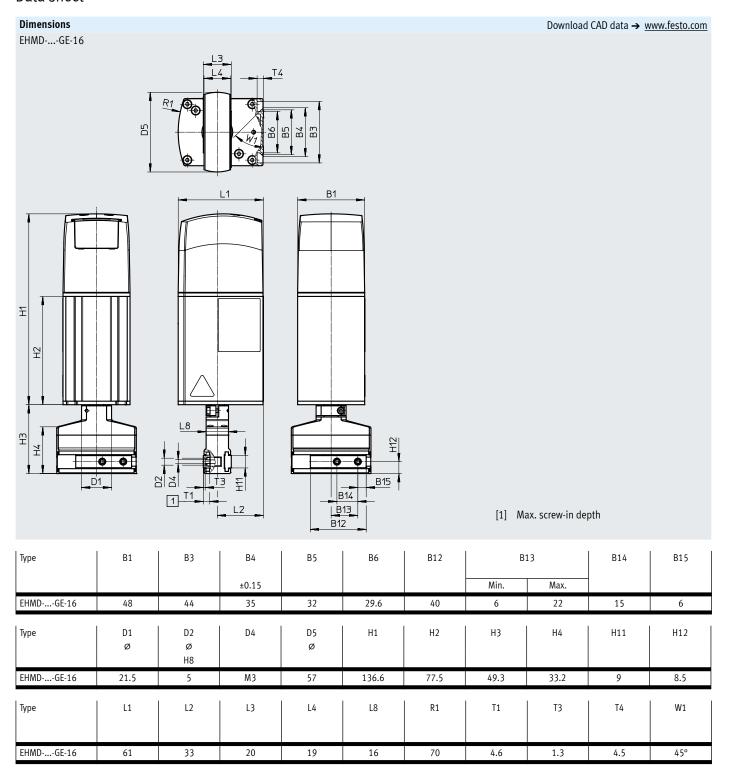


Pin allocation



PIN	Function	
	EHMDGE	EHMDGP
1	Encoder for rotation I	Encoder for rotation I
2	Encoder for rotation B	Encoder for rotation B
3	Encoder for rotation A	Encoder for rotation A
4	Encoder for gripper I	-
5	Encoder for gripper B	-
6	Encoder for gripper A	-
7	Screen	Screen
8	+5 V DC encoder for gripper	-
9	+5 V DC encoder for rotation	+5 V DC encoder for rotation
10	Screen	Screen
11	Motor for rotation phase B	Motor for rotation phase B
12	Motor for rotation phase B	Motor for rotation phase B
13	Motor for rotation phase A	Motor for rotation phase A
14	Motor for rotation phase A	Motor for rotation phase A
15	Motor for gripper phase B	-
16	Motor for gripper phase A	-
17	Motor for gripper phase A/	-
18	Motor for gripper phase B/	-
19	Motor for rotation phase A/	Motor for rotation phase A/
20	Motor for rotation phase A/	Motor for rotation phase A/
21	Motor for rotation phase B/	Motor for rotation phase B/
22	Motor for rotation phase B/	Motor for rotation phase B/
23	Screen	Screen
24	GND encoder	GND encoder
25	Screen	Screen
26	Encoder for gripper A/	-
27	Encoder for gripper B/	-
28	Encoder for gripper I/	-
29	Encoder for rotation A/	Encoder for rotation A/
30	Encoder for rotation B/	Encoder for rotation B/
31	Encoder for rotation I/	Encoder for rotation I/



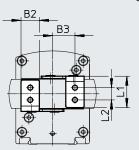


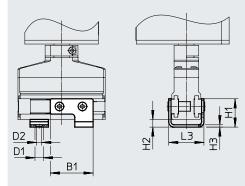
Download CAD data → www.festo.com

Data sheet

Dimensions

 $\hbox{EHMD-...-GE-16 with bracket for gripper jaw mounting}\\$



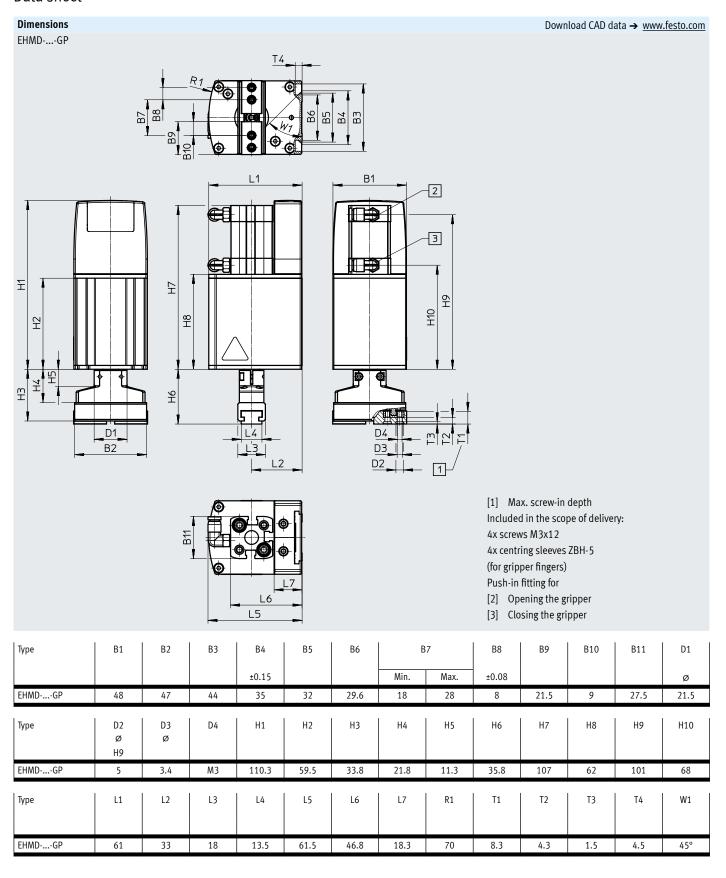


- 🛔 - Note

Included in the scope of delivery of the gripper:

- 2x brackets
- 8x countersunk screws M3x6
- 4x centring sleeves ZBH-5

Туре	B1	B2	B3		D1 Ø	D2 Ø	H1
			Min.	Max.			
EHMDGE-16	28	12	7	23	5.5	3.3	18.5
Туре	Н2	H3	L1		L2	L3	L4
EHMDGE-16	5	1.5	20.5		8	23	19



Ordering data					
	Drive type		Max. stroke per	Part no.	Туре
	Rotation	Gripping	gripper jaw		
	Electrical	Electrical	5	4788875	EHMD-40-RE-GE
			15	8099502	EHMD-40-RE-GE-16
	Electrical	Pneumatic	5	4790698	EHMD-40-RE-GP

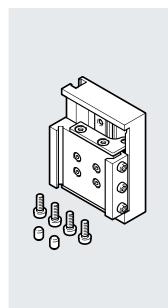
Mounting adapter EHAM-E20-40-Z

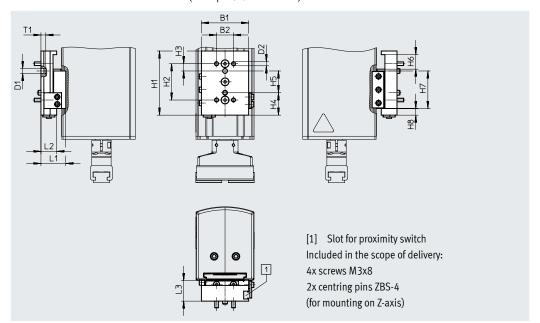
Mounting position: vertical Material:

Wrought aluminium alloy

RoHS-compliant Contains paint-wetting impairment substances Mounting option via dovetail mounting.

The mounting adapter compensates for the thread pitch when turning (fitting/removing) cover caps on vials without needing additional movement of the Z-axis. (Z-compensation = 12 mm)





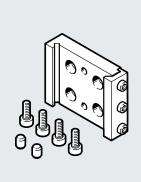
Dimensions and ord	ering data									
For size	B1	B2	D1 Ø H8	D3 Ø	H1	H2	Н3	H4	H5 ±0.05	Н6
40	39	14	4	3.4	53	30	6	18.5	18	12
For size	H7	Н8	L1	L2	L3	T1	Weight [g]	Part no.	Туре	
40	31	5.5	20.5	13	17	2.5	82	5293408	EHAM-E20-40-Z	

Mounting adapter EHAM-E20-40

Mounting position: any Material:

Wrought aluminium alloy

RoHS-compliant Contains paint-wetting impairment substances Rigid mounting option via dovetail mounting.



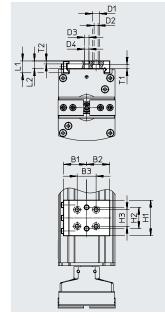
±0.05

18

14

10

40



Included in the scope of delivery: 4x screws M3x8 2x centring pins ZBS-4 (for mounting on Z-axis)

4991965

EHAM-E20-40

Dimensions and ordering	g data							
For size	B1	B2	В3	D1	D2	D3	D4	H1
				Ø	Ø	Ø H8	Ø	
40	19.5	19.5	16	6	3.4	4	3.8	30
For size	H2	H3 L:	1 L2	T1	T2 We	eight Part no.	Туре	

3.4

2.5

26

6.5

Mounting adapter EHAM-E20-40-E...

Mounting position: any Material:

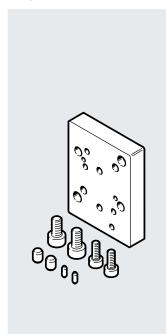
Wrought aluminium alloy

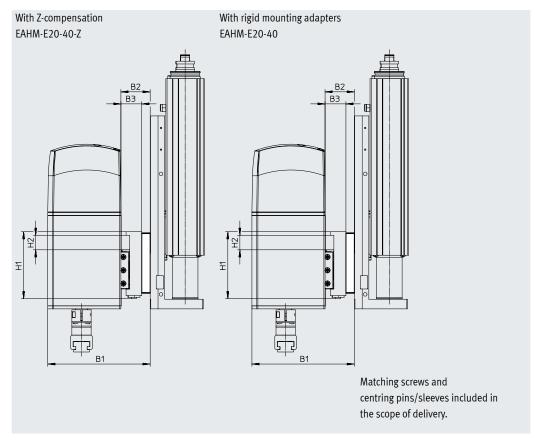
RoHS-compliant

Contains paint-wetting impairment substances

For attaching the mounting adapters to the Z-axes:

- Mini slide EGSC-BS-2 5/32
- Mini slide EGSL-BS-3 5/45
- Electric slide EGSK-2 0/26





Dimensions and ordering	g data							
For Z-axis	B1	B2	В3	H1	H2 ¹⁾	Weight	Part no.	Туре
						[g]		
And flexible mounting a	dapter EHAM-E20-4	0-Z					,	
EGSC-BS-2 5/32	85	24.3	17.3	55.6	12	30	8080760	EHAM-E20-40-E19-25
EGSL-BS-3 5/45						24	8081015	EHAM-E20-40-E8-35
EGSK-2 0/26						36	8081016	EHAM-E20-40-E9-20
And rigid mounting adap	oter FHAM-F20-40							
EGSC-BS-2 5/32	74.5	13.8	6.8	30	_	30	8080760	EHAM-E20-40-E19-25
EGSL-BS-3 5/45						24	8081015	EHAM-E20-40-E8-35
EGSK-2 0/26						36	8081016	EHAM-E20-40-E9-20

¹⁾ Automatic Z-stroke compensation.

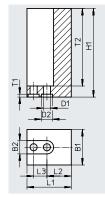
Gripper jaw blank BUB-HGPT

(2 included in scope of delivery)

Material: Aluminium

Not permitted for EHMD-40-RE-GE-16





Note

For mounting on the rotary gripper module EHMD, use the matching screws and centring sleeves included in the scope of delivery of the EHMD.

Dimensions and	ordering data						
For size	B1	B2	D1	D2	D3	H1	L1
			Ø	Ø	Ø		
	±0.05	H13	H13	H8	H13	±0.05	±0.05
40	16	6	3.2	5	_	40	21
For size	L2 ¹⁾	L3 ¹⁾	T1	T2	0 -	Part no. Type	
					per blank		
			+0.1		[g]		
40	10	8	1.3	35	29	560244 BUB-HGP1	Г-16-В

Ordering data – Cables	Description	Cable length	Part no.	Туре
		[m]		
Motor cable				
	Connecting cable between EHMD and motor cable NEBM-SF1 For EHMDGE and EHMDGP	0.5	8079819	NEBM-F1W31-XC-0.5-F1N-DF1W31
Motor cable				
	Cable with adapter between motor cable NEBM-F1 and motor controller CMMO-ST For EHMDGE	2.6	5213342	NEBM-SF1W31-EH-2.6-Q15N-LE28
	Cable with adapter between motor cable NEBM-F1 and motor controller CMMO-ST For EHMDGP	2.6	5213343	NEBM-SF1W31-EH-2.6-Q15N-LE14

Ordering data – Motor con	troller		Data sheets → Internet: cmmo
	Description	Part no.	Туре
	With I/O interface		
	Switching input/output PNP	1512316	CMMO-ST-C5-1-DIOP
	Switching input/output NPN	1512317	CMMO-ST-C5-1-DION
	With IO-Link		
	Switching input/output PNP	1512320	CMMO-ST-C5-1-LKP

¹⁾ Tolerance for centring hole ± 0.02 mm Tolerance for through-hole $\pm 0.1 \text{ mm}$

Ordering data -	- Proximity switches for T-slot, inductive					Data sheets → Internet
	Type of mounting	Switching output	Electrical connection	Cable length	Part no.	Туре
· · ·		output		[m]		
/O contact	The state of the s	LDND		1	554206	CIEC ON DC 2/V/7 7 F OF
	Insertable in the slot from above, flush	PNP	Cable, 3-wire	7.5	551386	SIES-8M-PS-24V-K-7.5-0E
<i></i>	with the cylinder profile	NDV.	Plug M8x1, 3-pin	0.3	551387	SIES-8M-PS-24V-K-0.3-M8D
		NPN	Cable, 3-wire	7.5	551396	SIES-8M-NS-24V-K-7.5-OE
			Plug M8x1, 3-pin	0.3	551397	SIES-8M-NS-24V-K-0.3-M8D
/C contact						
	Insertable in the slot from above, flush	PNP	Cable, 3-wire	7.5	551391	SIES-8M-PO-24V-K-7,5-OE
	with the cylinder profile		Plug M8x1, 3-pin	0.3	551392	SIES-8M-PO-24V-K-0,3-M8D
<i>7</i> /		NPN	Cable, 3-wire	7.5	551401	SIES-8M-NO-24V-K-7,5-OE
			Plug M8x1, 3-pin	0.3	551402	SIES-8M-NO-24V-K-0,3-M8D
rdering data -	- Proximity switch for T-slot, magneto-resi	stive	•	·		Data sheets → Internet
·	Type of mounting	Switching	Electrical connection	Cable length	Part no.	Туре
	Type of mounting	output	Licetifed confidence	[m]	T dit iio.	1,500
10 cont		1		find		
/O contact	Insertable in the slot from above,	PNP	Cable, 3-wire	2.5	574335	SMT-8M-A-PS-24V-E-2,5-0E
	flush with the cylinder profile,	PNP		0.3		
			Plug M8x1, 3-pin		574334	SMT-8M-A-PS-24V-E-0,3-M8D
	short design		Plug M12x1, 3-pin	0.3	574337	SMT-8M-A-PS-24V-E-0,3-M12
3.4		NDN		۱ ۵ -	/	
	snort design	NPN	Cable, 3-wire Plug M8x1, 3-pin	0.3	574338 574339	SMT-8M-A-NS-24V-E-2,5-OE SMT-8M-A-NS-24V-E-0,3-M8D
rdering data -	– Proximity switches for T-slot, magnetic re	eed	Cable, 3-wire Plug M8x1, 3-pin	0.3	574339	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet:
rdering data -			Cable, 3-wire			SMT-8M-A-NS-24V-E-0,3-M8D
	– Proximity switches for T-slot, magnetic re	eed Switching	Cable, 3-wire Plug M8x1, 3-pin	0.3 Cable length	574339	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet:
	– Proximity switches for T-slot, magnetic re	eed Switching	Cable, 3-wire Plug M8x1, 3-pin	0.3 Cable length	574339	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet:
	– Proximity switches for T-slot, magnetic re Type of mounting	eed Switching output	Cable, 3-wire Plug M8x1, 3-pin Electrical connection	Cable length	574339 Part no.	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type
	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush	eed Switching output	Cable, 3-wire Plug M8x1, 3-pin Electrical connection	Cable length [m]	574339 Part no.	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE
	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush	eed Switching output	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire	0.3 Cable length [m] 2.5 5.0	Part no. 543862 543863	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE
/O contact	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile	eed Switching output	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire	0.3 Cable length [m] 2.5 5.0 2.5	Part no. 543862 543863 543872	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE SME-8M-ZS-24V-K-2,5-OE SME-8M-DS-24V-K-0,3-M8D
/O contact	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile - Connecting cables	eed Switching output Contacting	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire Plug M8x1, 3-pin	0.3 Cable length [m] 2.5 5.0 2.5 0.3	574339 Part no. 543862 543863 543872 543861	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE SME-8M-ZS-24V-K-2,5-OE
/O contact	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile	eed Switching output Contacting	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire	0.3 Cable length [m] 2.5 5.0 2.5 0.3 Cable length	Part no. 543862 543863 543872	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE SME-8M-ZS-24V-K-2,5-OE SME-8M-DS-24V-K-0,3-M8D
/O contact	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile - Connecting cables	eed Switching output Contacting	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire Plug M8x1, 3-pin	0.3 Cable length [m] 2.5 5.0 2.5 0.3	574339 Part no. 543862 543863 543872 543861	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-0,3-M8D Data sheets → Internet:
/O contact	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile - Connecting cables	eed Switching output Contacting	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire Plug M8x1, 3-pin	0.3 Cable length [m] 2.5 5.0 2.5 0.3 Cable length	574339 Part no. 543862 543863 543872 543861	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-0,3-M8D Data sheets → Internet:
/O contact	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile - Connecting cables Electrical connection, left	eed Switching output Contacting	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire Plug M8x1, 3-pin connection, right	Cable length m	574339 Part no. 543862 543863 543872 543861 Part no.	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-0E SME-8M-DS-24V-K-5,0-0E SME-8M-DS-24V-K-0,3-M8D Data sheets → Internet: Type
/O contact	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile - Connecting cables Electrical connection, left Straight socket, M8x1, 3-pin	Switching output Contacting Electrical	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire Plug M8x1, 3-pin connection, right	Cable length m	543862 543862 543863 543872 543861 Part no.	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE SME-8M-DS-24V-K-0,3-M8D Data sheets → Internet: Type NEBU-M8G3-K-2.5-LE3 NEBU-M8G3-K-5-LE3
/O contact	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile - Connecting cables Electrical connection, left	Switching output Contacting Electrical	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire Plug M8x1, 3-pin connection, right	Cable length m	543862 543862 543863 543872 543861 Part no.	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE SME-8M-ZS-24V-K-2,5-OE SME-8M-DS-24V-K-0,3-M8D Data sheets → Internet: Type NEBU-M8G3-K-2.5-LE3
/O contact	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile - Connecting cables Electrical connection, left Straight socket, M8x1, 3-pin	Switching output Contacting Electrical	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire Plug M8x1, 3-pin connection, right	Cable length [m] 2.5 5.0 2.5 0.3 Cable length [m] 2.5 5 2.5	543862 543863 543872 543861 Part no. 541333 541334 541338	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE SME-8M-DS-24V-K-0,3-M8D Data sheets → Internet: Type NEBU-M8G3-K-2.5-LE3 NEBU-M8W3-K-2.5-LE3 NEBU-M8W3-K-2.5-LE3
Ordering data	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile - Connecting cables Electrical connection, left Straight socket, M8x1, 3-pin Angled socket, M8x1, 3-pin	Switching output Contacting Electrical	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire Plug M8x1, 3-pin connection, right	Cable length [m] 2.5 5.0 2.5 0.3 Cable length [m] 2.5 5 2.5	574339 Part no. 543862 543863 543872 543861 Part no. 541333 541334 541338 541341	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE SME-8M-DS-24V-K-0,3-M8D Data sheets → Internet: Type NEBU-M8G3-K-2.5-LE3 NEBU-M8W3-K-5-LE3 NEBU-M8W3-K-5-LE3 NEBU-M8W3-K-5-LE3
/O contact	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile - Connecting cables Electrical connection, left Straight socket, M8x1, 3-pin Angled socket, M8x1, 3-pin	Switching output Contacting Electrical	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire Plug M8x1, 3-pin connection, right	Cable length [m] 2.5 5.0 2.5 0.3 Cable length [m] 2.5 5 2.5	543862 543863 543872 543861 Part no. 541333 541334 541338	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE SME-8M-DS-24V-K-0,3-M8D Data sheets → Internet: Type NEBU-M8G3-K-2.5-LE3 NEBU-M8W3-K-2.5-LE3 NEBU-M8W3-K-2.5-LE3
/O contact	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile - Connecting cables Electrical connection, left Straight socket, M8x1, 3-pin Angled socket, M8x1, 3-pin	Switching output Contacting Electrical	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire Plug M8x1, 3-pin connection, right	Cable length [m] 2.5 5.0 2.5 0.3 Cable length [m] 2.5 5 2.5	574339 Part no. 543862 543863 543872 543861 Part no. 541333 541334 541338 541341	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE SME-8M-DS-24V-K-0,3-M8D Data sheets → Internet: Type NEBU-M8G3-K-2.5-LE3 NEBU-M8W3-K-5-LE3 NEBU-M8W3-K-5-LE3 NEBU-M8W3-K-5-LE3
ordering data	- Proximity switches for T-slot, magnetic real Type of mounting Insertable in the slot from above, flush with the cylinder profile - Connecting cables Electrical connection, left Straight socket, M8x1, 3-pin Angled socket, M8x1, 3-pin	eed Switching output Contacting Electrical Cable, op	Cable, 3-wire Plug M8x1, 3-pin Electrical connection Cable, 3-wire Cable, 2-wire Plug M8x1, 3-pin connection, right	Cable length [m] 2.5 5.0 2.5 0.3 Cable length [m] 2.5 5 2.5	574339 Part no. 543862 543863 543872 543861 Part no. 541333 541334 541338 541341	SMT-8M-A-NS-24V-E-0,3-M8D Data sheets → Internet: Type SME-8M-DS-24V-K-2,5-OE SME-8M-DS-24V-K-5,0-OE SME-8M-DS-24V-K-0,3-M8D Data sheets → Internet: Type NEBU-M8G3-K-2.5-LE3 NEBU-M8W3-K-5-LE3 NEBU-M8W3-K-5-LE3 NEBU-M8W3-K-5-LE3

¹⁾ Packaging unit