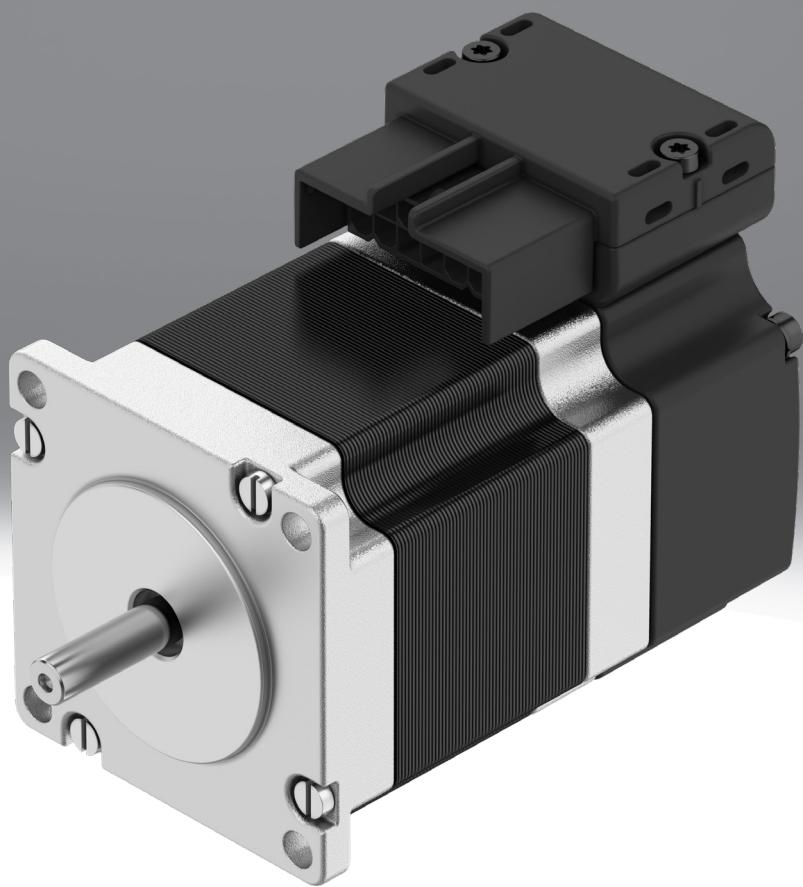


Stepper motor EMMB-ST

FESTO



Characteristics

At a glance

- 2-phase hybrid technology
- 3 flange sizes available: M = 0.25 ... 6.6 Nm

Degree of protection:

- IP20 (motor housing with connection technology)
- IP40 (motor shaft)

Connection technology:

- Simple connection technology (OCP: one cable plug) – hybrid cable: motor cable and connecting cable for supply and encoder in one
- Can be aligned to the front or rear

Digital absolute encoder system:

- Single turn
- Multi-turn

Engineering tools

Link [electric motion sizing](#)



Save time with engineering tools: Smart engineering for the optimal solution. Our goal is to increase your productivity. Our engineering tools play an integral part in achieving this goal. They help you size your system correctly, tap into unimagined productivity reserves and generate additional productivity along the entire value chain. In every phase of your project, from the initial contact to the modernisation of your machine, you will come across a number of different tools that will be of use to you.

Electric Motion Sizing

- Create the optimum drive package quickly and reliably. Electric Motion Sizing calculates suitable combinations of electric axis, electric motor and servo drive using just a few application details. It provides all the relevant data including the bill of materials and documentation for your selected combination. This avoids design errors and results in significantly improved energy efficiency for the system. A smooth connection to the Festo Automation Suite also makes commissioning easier for you.

Festo Automation Suite

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

Diagrams

Link [emmb-st](#)



The diagrams shown in this document are also available online. These can be used to display precise values.

Measuring unit

[S] Absolute encoder, single turn

- The angular position is assigned to a unique value in coded form.
- The position is only detected within one turn. All subsequent turns need to be counted by the higher-level device.
- When switched off, the position is only sensed within one turn.
- Following switch-on, a homing run is required.

[M] Absolute encoder, multi-turn

- A unique value in coded form is assigned to the angular position and each full turn.
- This type counts the full turns until the specified maximum is reached (including when switched off).
- Homing is only required once it has been installed in the application.

Brake

[B] With brake

The holding brake should not be used as a safety brake.

Type code

001	Series	005	Electrical connection
EMMB	Motor	S	Straight plug
002	Motor type	006	Measuring unit
ST	Stepper motor ST		None
003	Flange size, motors [mm]	M	Absolute encoder, multi-turn
42	42	S	Absolute encoder, single turn
57	57		
87	87		
004	Length	007	Brake
S	Short		None
M	Medium	B	With brake
L	Long		

Datasheet

General technical data - EMMB-ST-42							
Flange size, motors [mm]	42						
Length	Short [S]						
Measuring unit	None []	Absolute encoder, multi-turn [M]	Absolute encoder, single turn [S]	None []	Absolute encoder, multi-turn [M]		
Nominal operating voltage DC	48 V						
Nominal motor current	1.8 A						
Continuous stall current	2 A						
Peak current	2 A						
Nominal power rating of motor	–	17 W	–	49 W			
Stepper angle for complete step	1.8 deg						
Stepping angle tolerance	±5%						
Motor holding torque	0.25 Nm						
Nominal torque	–	0.24 Nm	–	0.47 Nm			
Peak torque	0.25 Nm						
Standstill torque	–						
Nominal rotary speed ¹⁾	–	600 rpm	–	1,000 rpm			
Max. rotational speed	2,700 rpm						
Max. mechanical speed	9,000 rpm						
Motor constant	0.133 Nm/A						
Voltage constant, phase	12.1 mV/min						
Electric time constant	1.4 ms						
Thermal time constant	22 min						
Thermal resistance	3.5 K/W						
I ² T time motor	2 s						
Number of phases	2						
Number of pole pairs	50						
Phase winding resistance	2.1 Ohm						
Phase winding inductance	3 mH						
Winding longitudinal inductivity Ld (phase)	1.6 mH						
Winding cross inductivity Lq (phase)	3 mH						
Permissible axial shaft load	10 N						
Permissible radial shaft load	28 N						
Measuring flange	200 x 200 x 15 mm, steel						

1) There is no nominal operating point defined for motors without encoders.

Datasheet

General technical data – EMMB-ST-57					
Flange size, motors [mm]	57				
Length	Medium [M]			Long [L]	
Measuring unit	None []	Absolute encoder, multi-turn [M]	Absolute encoder, single turn [S]	None []	Absolute encoder, multi-turn [M]
Nominal operating voltage DC	48 V				
Nominal motor current	5.1 A			5 A	
Continuous stall current	6.1 A			5.8 A	
Peak current	8 A				
Nominal power rating of motor	–	81 W	–	83 W	
Stepper angle for complete step	1.8 deg				
Stepping angle tolerance	±5%				
Motor holding torque	1.05 Nm		1.8 Nm		
Nominal torque	–	0.77 Nm	–	1.58 Nm	
Peak torque	1.1 Nm		2.1 Nm		
Standstill torque	–				
Nominal rotary speed ¹⁾	–	1,000 rpm	–	500 rpm	
Max. rotational speed	2,600 rpm		1,500 rpm		
Max. mechanical speed	8,000 rpm				
Motor constant	0.152 Nm/A		0.32 Nm/A		
Voltage constant, phase	13.1 mV/min		22.6 mV/min		
Electric time constant	2.9 ms		3.7 ms		
Thermal time constant	28 min		32 min		
Thermal resistance	1.6 K/W		1.5 K/W		
I^2T time motor	2 s				
Number of phases	2				
Number of pole pairs	50				
Phase winding resistance	0.17 Ohm		0.26 Ohm		
Phase winding inductance	0.5 mH		0.95 mH		
Winding longitudinal inductivity L_d (phase)	0.7 mH		1.75 mH		
Winding cross inductivity L_q (phase)	0.5 mH		0.95 mH		
Permissible axial shaft load	15 N				
Permissible radial shaft load	75 N				
Measuring flange	200 x 200 x 15 mm, steel				

1) There is no nominal operating point defined for motors without encoders.

Datasheet

General technical data – EMMB-ST-87					
Flange size, motors [mm]	87				
Length	Short [S]		Medium [M]		
Measuring unit	None []	Absolute encoder, multi-turn [M]	Absolute encoder, single turn [S]	None []	Absolute encoder, multi-turn [M]
Nominal operating voltage DC	48 V				
Nominal motor current	6.9 A		7.5 A		
Continuous stall current	9.5 A		8.2 A		
Peak current	12 A				
Nominal power rating of motor	–	142 W	–	87 W	
Stepper angle for complete step	1.8 deg				
Stepping angle tolerance	±5%				
Motor holding torque	2.4 Nm		6.6 Nm		
Nominal torque	–	1.7 Nm	–	5.9 Nm	
Peak torque	2.7 Nm		6.8 Nm		
Standstill torque	–				
Nominal rotary speed ¹⁾	–	800 rpm	–	140 rpm	
Max. rotational speed	2,200 rpm		600 rpm		
Max. mechanical speed	7,000 rpm				
Motor constant	0.24 Nm/A		0.79 Nm/A		
Voltage constant, phase	15.4 mV/min		56.6 mV/min		
Electric time constant	1.75 ms		8.5 ms		
Thermal time constant	37 min		33 min		
Thermal resistance	0.91 K/W		0.88 K/W		
IP time motor	2 s				
Number of phases	2				
Number of pole pairs	50				
Phase winding resistance	0.13 Ohm		0.27 Ohm		
Phase winding inductance	0.35 mH		2.3 mH		
Winding longitudinal inductivity Ld (phase)	0.56 mH		3.6 mH		
Winding cross inductivity Lq (phase)	0.35 mH		2.3 mH		
Permissible axial shaft load	60 N				
Permissible radial shaft load	220 N				
Measuring flange	250 x 250 x 15 mm, steel				

1) There is no nominal operating point defined for motors without encoders.

Technical data – Brakes			
Flange size, motors [mm]	42	57	87
Brake holding torque	0.63 Nm	1.74 Nm	4.26 Nm
Operating voltage DC for brake	24 V		
Brake current consumption	0.34 A	0.38 A	0.49 A
Power consumption, brake	8.2 W	9 W	12 W
Brake coil resistance	70.9 Ohm	63.8 Ohm	49.2 Ohm
Brake coil inductivity	146 mH	107 mH	110 mH
Brake separation time	28 ms	32 ms	44 ms
Brake closing time	41 ms	97 ms	110 ms
DC brake response delay	8 ms	11 ms	30 ms
Max. brake no-load speed	9,000 rpm	8,000 rpm	7,000 rpm
Max. friction per braking process	1,500 J	6,000 J	14,000 J
Number of emergency stops per hour	1		
Mass moment of inertia of brake	0.006 kgcm ²	0.024 kgcm ²	0.11 kgcm ²
Switching cycles holding brake ¹⁾	10 million idle actuations (without friction work!)		

1) Guide value for the number of switching operations (release/engage) when used exclusively as a holding brake without friction (i.e. clamping at a standstill).

Datasheet

Technical data – Encoder

Flange size, motors [mm]	42	57	87		
Measuring unit	Absolute encoder, single turn [S]	Absolute encoder, multi-turn [M]	Absolute encoder, single turn [S]	Absolute encoder, multi-turn [M]	Absolute encoder, single turn [S]
Rotor position sensor, encoder measuring principle	Magnetic				
Rotor position encoder interface	BiSS-C				
rotor position sensor, absolute detectable revolutions	1	65,536	1	65,536	1
rotor position sensor, DC operating voltage	5 V		14 V	5 V	14 V
rotor position sensor, DC operating voltage range	4.75 ... 5.25 V	4.5 ... 5.5 V	4.75 ... 5.25 V	4.75 ... 15 V	4.75 ... 15 V
Rotor pos. enc., sin/cosin p/r	2				
rotor position sensor, position values per revolution	65,536	131,072	65,536	131,072	65,536
Rotor position transducer resolution	16 bit	17 bit	16 bit	17 bit	16 bit
rotor position sensor, system accuracy of angle measurement	-540 ... 540 arcsec	-310 ... 310 arcsec	-540 ... 540 arcsec	-310 ... 310 arcsec	-540 ... 540 arcsec
rotor position sensor, max. operating speed	5,500 rpm	12,000 rpm	5,500 rpm	12,000 rpm	5,500 rpm
rotor position sensor, temperature range	-40 ... 105°C				
Mean time to failure (MTTF), subcomponent ¹⁾	9,666 years, rotor position encoder	20 years, rotor position encoder	9,666 years, rotor position encoder	20 years, rotor position encoder	9,666 years, rotor position encoder
					20 years, rotor position encoder

¹⁾ The data provided applies to an encoder temperature/operating temperature of 40 °C.

Total output moment of inertia - EMMB-ST-42

Flange size, motors [mm]	42										
Length	Short [S]										
Measuring unit	None []	Absolute encoder, multi-turn [M]		Absolute encoder, single turn [S]		None []	Absolute encoder, multi-turn [M]		Absolute encoder, single turn [S]		
Brake	None []	With brake [B]	None []	With brake [B]	None []	With brake [B]	None []	With brake [B]	None []	With brake [B]	None []
Total mass moment of inertia of output	0.035 kg·cm ²	0.041 kg·cm ²	0.037 kg·cm ²	0.043 kg·cm ²	0.035 kg·cm ²	0.041 kg·cm ²	0.082 kg·cm ²	0.088 kg·cm ²	0.084 kg·cm ²	0.09 kg·cm ²	0.082 kg·cm ²
											0.088 kg·cm ²

Total output moment of inertia - EMMB-ST-57

Flange size, motors [mm]	57										
Length	Medium [M]										
Measuring unit	None []	Absolute encoder, multi-turn [M]		Absolute encoder, single turn [S]		None []	Absolute encoder, multi-turn [M]		Absolute encoder, single turn [S]		
Brake	None []	With brake [B]	None []	With brake [B]	None []	With brake [B]	None []	With brake [B]	None []	With brake [B]	None []
Total mass moment of inertia of output	0.3 kgcm ²	0.324 kg·cm ²	0.306 kg·cm ²	0.33 kg·cm ²	0.3 kgcm ²	0.324 kg·cm ²	0.48 kg·cm ²	0.504 kg·cm ²	0.486 kg·cm ²	0.51 kg·cm ²	0.48 kg·cm ²
											0.504 kg·cm ²

Total output moment of inertia - EMMB-ST-87

Flange size, motors [mm]	87										
Length	Short [S]										
Measuring unit	None []	Absolute encoder, multi-turn [M]		Absolute encoder, single turn [S]		None []	Absolute encoder, multi-turn [M]		Absolute encoder, single turn [S]		
Brake	None []	With brake [B]	None []	With brake [B]	None []	With brake [B]	None []	With brake [B]	None []	With brake [B]	None []
Total mass moment of inertia of output	1 kgcm ²	1.11 kg·cm ²	1.006 kg·cm ²	1.116 kg·cm ²	1 kgcm ²	1.11 kg·cm ²	1.9 kgcm ²	2.01 kg·cm ²	1.906 kg·cm ²	2.016 kg·cm ²	1.9 kgcm ²
											2.01 kg·cm ²

Datasheet

Weight											
Flange size, motors [mm]	42				57				87		
Length	Short [S]		Long [L]		Medium [M]		Long [L]		Short [S]		Medium [M]
Brake	None []	With brake [B]	None []	With brake [B]	None []	With brake [B]	None []	With brake [B]	None []	With brake [B]	None []
Product weight ¹⁾	300 g	520 g	490 g	700 g	810 g	1,220 g	1,170 g	1,580 g	1,890 g	2,720 g	3,320 g
											4,150 g

1) Product weight / With encoder / With brake / With encoder and brake

Operating and ambient conditions - EMMB-ST-42										
Flange size, motors [mm]	42									
Length	Short [S]			Long [L]						
Measuring unit	None []	Absolute encoder, multi-turn [M]	Absolute encoder, single turn [S]	None []	Absolute encoder, multi-turn [M]	Absolute encoder, single turn [S]				
Conforms to standard	IEC 60034									
Motor type to EN 60034-7	IM B5, IM V1, IM V3									
Degree of protection	IP20									
Note on degree of protection	IP40 for motor shaft without rotary shaft seal									
Ambient temperature	0 ... 40°C		-15 ... 40°C							
Note on ambient temperature	Up to 80°C with derating -2%/°C									
Storage temperature	-20 ... 70°C									
Max. winding temperature	130°C									
Temperature monitoring	-	Dig. motor temp. via BiSS-C	-	Dig. motor temp. via BiSS-C	-	-				
Rating class as per EN 60034-1	S1									
Temperature class as per EN 60034-1	B									
Relative air humidity	0 - 90%, Non-condensing									
Bearing lifetime under nominal conditions	-									
CE mark (see declaration of conformity) ¹⁾	To EU EMC Directive In accordance with EU RoHS Directive									
UKCA marking (see declaration of conformity) ²⁾	To UK instructions for EMC To UK RoHS instructions									
Approval	RCM trademark c UL us - Recognized (OL)									
Certificate issuing authority	UL E342973									
Vibration resistance	Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6									
Shock resistance	Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27									
Isolation resistance AC	0.6									
LABS (PWIS) conformity	VDMA24364 zone III									
Note on materials	RoHS-compliant									

1) More information www.festo.com/catalogue/emms-st → Support/Downloads.2) More information www.festo.com/catalogue/emms-st → Support/Downloads.

Datasheet

Operating and environmental conditions – EMMT-ST-57						
Flange size, motors [mm]	57					
Length	Medium [M]			Long [L]		
Measuring unit	None []	Absolute encoder, multi-turn [M]	Absolute encoder, single turn [S]	None []	Absolute encoder, multi-turn [M]	Absolute encoder, single turn [S]
Conforms to standard	IEC 60034					
Motor type to EN 60034-7	IM B5, IM V1, IM V3					
Degree of protection	IP20					
Note on degree of protection	IP40 for motor shaft without rotary shaft seal					
Ambient temperature	-15 ... 40°C					
Note on ambient temperature	Up to 80°C with derating -2%/°C					
Storage temperature	-20 ... 70°C					
Max. winding temperature	130°C					
Temperature monitoring	-	Dig. motor temp. via BiSS-C	-	Dig. motor temp. via BiSS-C	-	-
Rating class as per EN 60034-1	S1					
Temperature class as per EN 60034-1	B					
Relative air humidity	0 - 90%, Non-condensing					
Bearing lifetime under nominal conditions	-					
CE mark (see declaration of conformity) ¹⁾	To EU EMC Directive In accordance with EU RoHS Directive					
UKCA marking (see declaration of conformity) ²⁾	To UK instructions for EMC To UK RoHS instructions					
Approval	RCM trademark c UL us - Recognized (OL)					
Certificate issuing authority	UL E342973					
Vibration resistance	Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6					
Shock resistance	Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27					
Isolation resistance AC	0.6					
LABS (PWIS) conformity	VDMA24364 zone III					
Note on materials	RoHS-compliant					

1) More information www.festo.com/catalogue/emms-st → Support/Downloads.

2) More information www.festo.com/catalogue/emms-st → Support/Downloads.

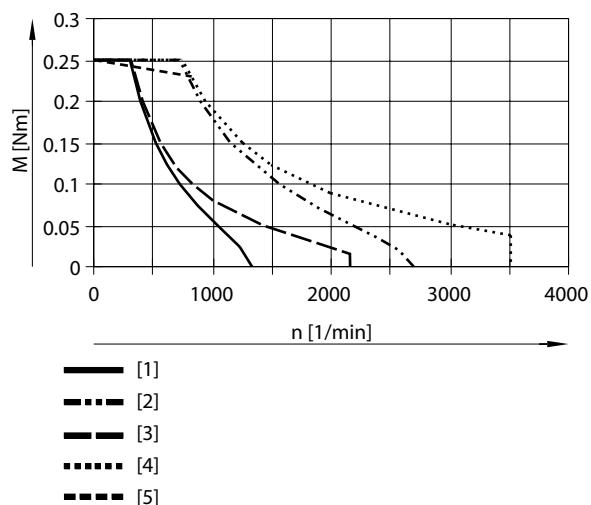
Datasheet

Operating and ambient conditions - EMMB-ST-87

Flange size, motors [mm]	87			
Length	Short [S]		Medium [M]	
Measuring unit	None []	Absolute encoder, multi-turn [M]	Absolute encoder, single turn [S]	None []
Conforms to standard	IEC 60034			
Motor type to EN 60034-7	IM B5, IM V1, IM V3			
Degree of protection	IP20			
Note on degree of protection	IP40 for motor shaft without rotary shaft seal			
Ambient temperature	-15 ... 40°C			
Note on ambient temperature	Up to 80°C with derating -2%/°C			
Storage temperature	-20 ... 70°C			
Max. winding temperature	130°C			
Temperature monitoring	-	Dig. motor temp. via BiSS-C	-	Dig. motor temp. via BiSS-C
Rating class as per EN 60034-1	S1			
Temperature class as per EN 60034-1	B			
Relative air humidity	0 - 90%, Non-condensing			
Bearing lifetime under nominal conditions	-			
CE mark (see declaration of conformity) ¹⁾	To EU EMC Directive In accordance with EU RoHS Directive			
UKCA marking (see declaration of conformity) ²⁾	To UK instructions for EMC To UK RoHS instructions			
Approval	RCM trademark c UL us - Recognized (OL)			
Certificate issuing authority	UL E342973			
Vibration resistance	Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6			
Shock resistance	Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27			
Isolation resistance AC	0.6			
LABS (PWIS) conformity	VDMA24364 zone III			
Note on materials	RoHS-compliant			

1) More information www.festo.com/catalogue/emms-st → Support/Downloads.2) More information www.festo.com/catalogue/emms-st → Support/Downloads.

Torque M as a function of rotational speed n for EMMB-ST-42-S



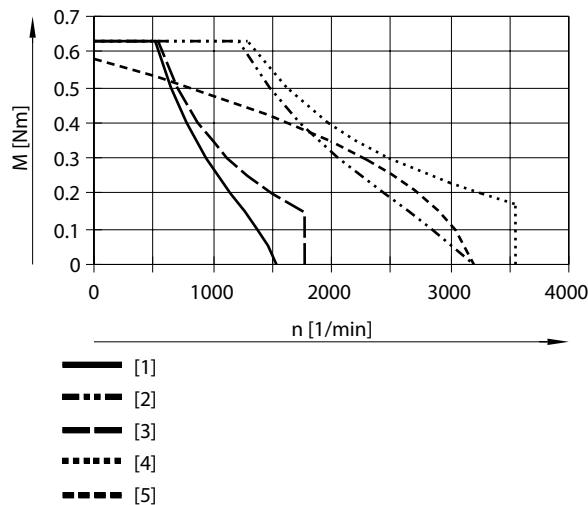
- [1] Peak torque at 24V DC
- [2] Peak torque at 48V DC
- [3] Field weakened peak torque at 24V DC
- [4] Field weakened peak torque at 48V DC
- [5] Nominal torque

Typical motor characteristic curve with nominal voltage and optimal motor controller.

Observe max. permissible rotational speed for add-on and installation components (such as encoders, brakes, etc.)!

Datasheet

Torque M as a function of rotational speed n for EMMB-ST-42-L

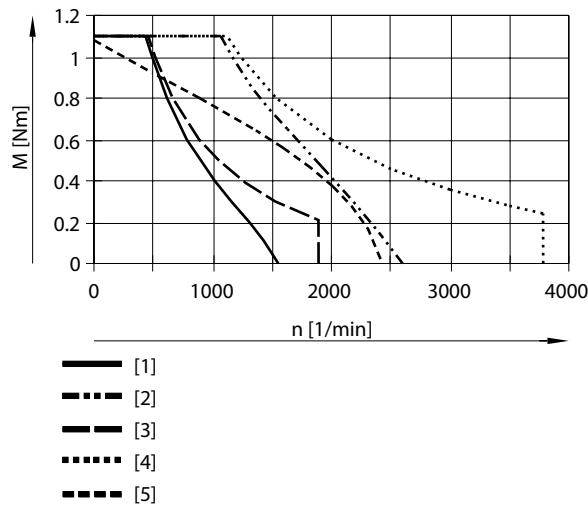


- [1] Peak torque at 24V DC
- [2] Peak torque at 48V DC
- [3] Field weakened peak torque at 24V DC
- [4] Field weakened peak torque at 48V DC
- [5] Nominal torque

Typical motor characteristic curve with nominal voltage and optimal motor controller.

Observe max. permissible rotational speed for add-on and installation components (such as encoders, brakes, etc.)!

Torque M as a function of rotational speed n for EMMB-ST-57-M

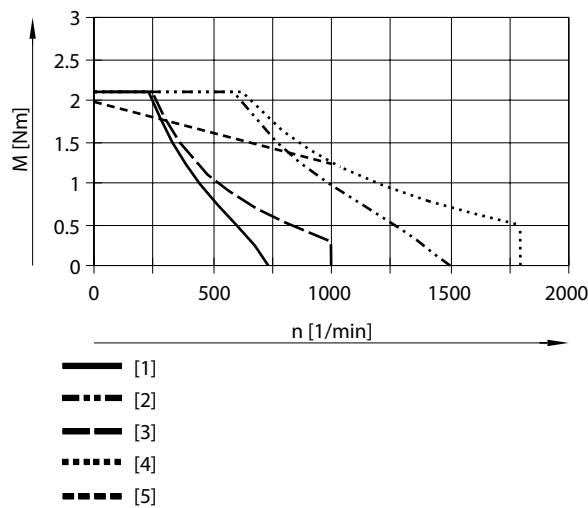


- [1] Peak torque at 24V DC
- [2] Peak torque at 48V DC
- [3] Field weakened peak torque at 24V DC
- [4] Field weakened peak torque at 48V DC
- [5] Nominal torque

Typical motor characteristic curve with nominal voltage and optimal motor controller.

Observe max. permissible rotational speed for add-on and installation components (such as encoders, brakes, etc.)!

Torque M as a function of rotational speed n for EMMB-ST-57-L



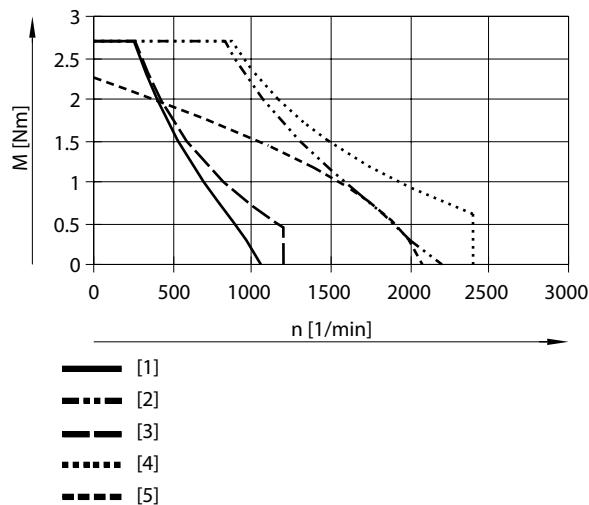
- [1] Peak torque at 24V DC
- [2] Peak torque at 48V DC
- [3] Field weakened peak torque at 24V DC
- [4] Field weakened peak torque at 48V DC
- [5] Nominal torque

Typical motor characteristic curve with nominal voltage and optimal motor controller.

Observe max. permissible rotational speed for add-on and installation components (such as encoders, brakes, etc.)!

Datasheet

Torque M as a function of rotational speed n for EMMB-ST-87-S

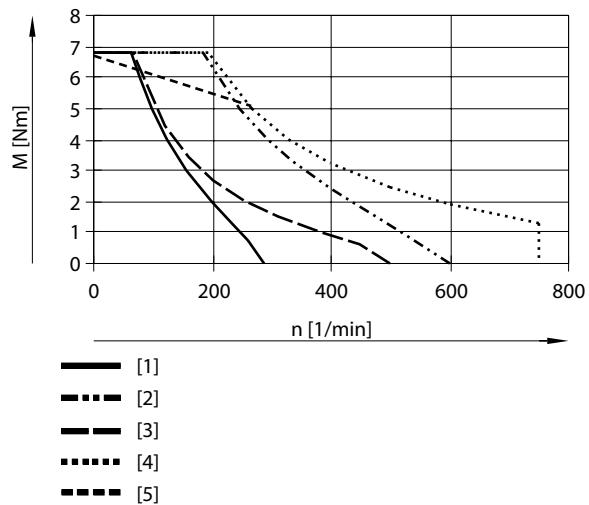


- [1] Peak torque at 24V DC
- [2] Peak torque at 48V DC
- [3] Field weakened peak torque at 24V DC
- [4] Field weakened peak torque at 48V DC
- [5] Nominal torque

Typical motor characteristic curve with nominal voltage and optimal motor controller.

Observe max. permissible rotational speed for add-on and installation components (such as encoders, brakes, etc.)!

Torque M as a function of rotational speed n for EMMB-ST-87-M



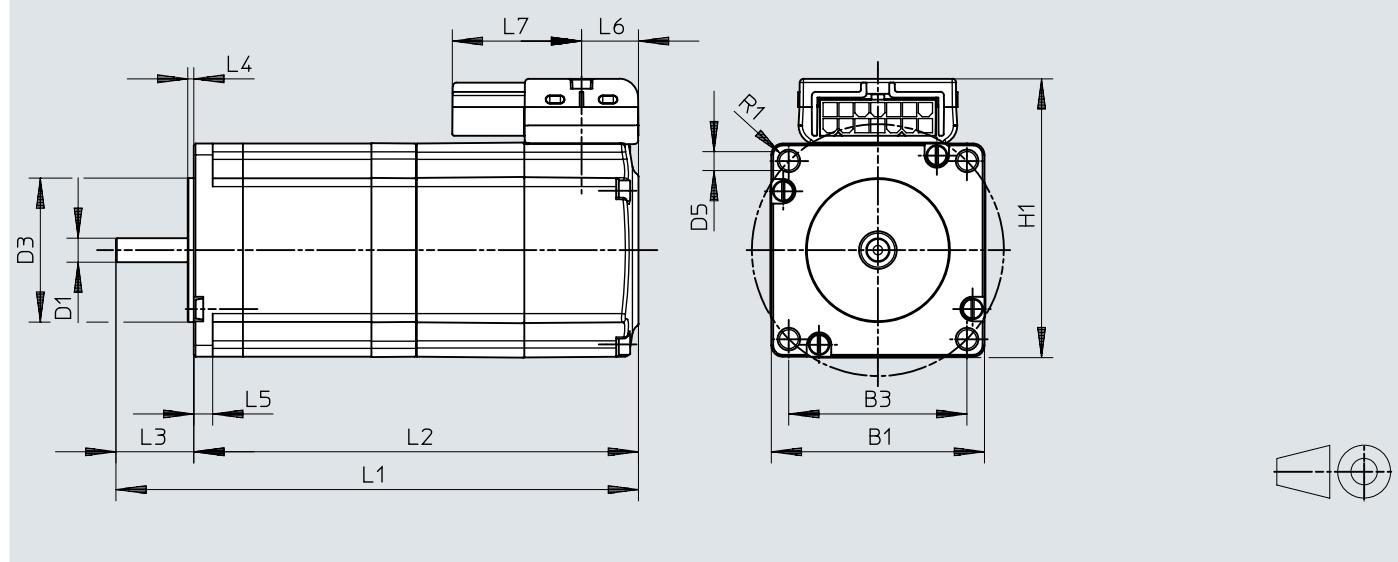
- [1] Peak torque at 24V DC
- [2] Peak torque at 48V DC
- [3] Field weakened peak torque at 24V DC
- [4] Field weakened peak torque at 48V DC
- [5] Nominal torque

Typical motor characteristic curve with nominal voltage and optimal motor controller.

Observe max. permissible rotational speed for add-on and installation components (such as encoders, brakes, etc.)!

Dimensions

Dimensions – EMMB-ST

Download CAD data  www.festo.com

		B1	B3	D1 ∅ h6	D3 ∅ h8	D5	H1	L1
EMMB-ST-42	S	42	31	5	22	M3	55	94
	S-B							124
	L							112
	L-B							142
EMMB-ST-57	M	56,4	47,1	6,35	38,1	5	75	108,3
	M-B							138,3
	L							129,3
	L-B							159,3
EMMB-ST-87	S	85,9	69,5	11	73	6,6	104	120,7
	S-B							149,2
	M							154,2
	M-B							182,7

		L2	L3	L4	L5	L6	L7	R1
		±2	±0,5	±0,2				
EMMB-ST-42	S	70	24	2	–	15	25,6	2,3
	S-B	100						
	L	88						
	L-B	118						
EMMB-ST-57	M	88	20,6	1,6	5	15,1	34,2	3
	M-B	118						
	L	109						
	L-B	139						
EMMB-ST-87	S	93,7	27	2	8	15,1	34,2	5,5
	S-B	122,2						
	M	127,2						
	M-B	155,7						

Ordering data

Flange size 42

	Flange size, motors [mm]	Measuring unit	Brake	Part no.	Type
	42 mm	None	None	8156125	EMMB-ST-42-S-S
				8156131	EMMB-ST-42-L-S
			With brake	8156128	EMMB-ST-42-S-SB
				8156134	EMMB-ST-42-L-SB
		Absolute encoder, multi-turn	None	8156133	EMMB-ST-42-L-SM
				8156127	EMMB-ST-42-S-SM
			With brake	8156130	EMMB-ST-42-S-SMB
				8156136	EMMB-ST-42-L-SMB
		Absolute encoder, single turn	None	8156132	EMMB-ST-42-L-SS
				8156126	EMMB-ST-42-S-SS
			With brake	8156129	EMMB-ST-42-S-SSB
				8156135	EMMB-ST-42-L-SSB

Flange size 57

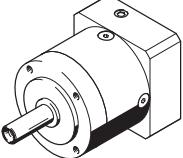
	Flange size, motors [mm]	Measuring unit	Brake	Part no.	Type
	57 mm	None	None	8156143	EMMB-ST-57-L-S
				8156137	EMMB-ST-57-M-S
			With brake	8156140	EMMB-ST-57-M-SB
				8156146	EMMB-ST-57-L-SB
		Absolute encoder, multi-turn	None	8156139	EMMB-ST-57-M-SM
				8156145	EMMB-ST-57-L-SM
			With brake	8156142	EMMB-ST-57-M-SMB
				8156148	EMMB-ST-57-L-SMB
		Absolute encoder, single turn	None	8156144	EMMB-ST-57-L-SS
				8156138	EMMB-ST-57-M-SS
			With brake	8156141	EMMB-ST-57-M-SSB
				8156147	EMMB-ST-57-L-SSB

Flange size 87

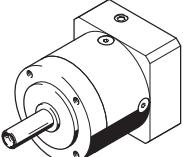
	Flange size, motors [mm]	Measuring unit	Brake	Part no.	Type
	87 mm	None	None	8156149	EMMB-ST-87-S-S
				8156155	EMMB-ST-87-M-S
			With brake	8156152	EMMB-ST-87-S-SB
				8156158	EMMB-ST-87-M-SB
		Absolute encoder, multi-turn	None	8156151	EMMB-ST-87-S-SM
				8156157	EMMB-ST-87-M-SM
			With brake	8156160	EMMB-ST-87-M-SMB
				8156154	EMMB-ST-87-S-SMB
		Absolute encoder, single turn	None	8156150	EMMB-ST-87-S-SS
				8156156	EMMB-ST-87-M-SS
			With brake	8156153	EMMB-ST-87-S-SSB
				8156159	EMMB-ST-87-M-SSB

Accessories

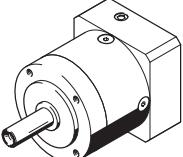
Planetary gear for EMMB-ST-42

	Gear unit ratio	Note on materials	Product weight	Part no.	Type
	3:1	RoHS-compliant	350 g	549428	EMGA-40-P-G3-SST-42
	5:1			549429	EMGA-40-P-G5-SST-42
	8:1		400 g	8141762	EMGA-40-P-G8-SST-42
	12:1		450 g	8141763	EMGA-40-P-G12-SST-42

Planetary gear for EMMB-ST-57

	Gear unit ratio	Note on materials	Product weight	Part no.	Type
	3:1	RoHS-compliant	900 g	549430	EMGA-60-P-G3-SST-57
	5:1			549431	EMGA-60-P-G5-SST-57
	8:1			8141764	EMGA-60-P-G8-SST-57
	12:1		1,100 g	8141765	EMGA-60-P-G12-SST-57

Planetary gear for EMMB-ST-87

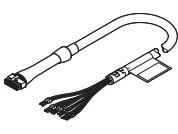
	Gear unit ratio	Note on materials	Product weight	Part no.	Type
	3:1	RoHS-compliant	2,100 g	549432	EMGA-80-P-G3-SST-87
	5:1			549433	EMGA-80-P-G5-SST-87
	8:1			8141766	EMGA-80-P-G8-SST-87
	12:1		2,600 g	8141767	EMGA-80-P-G12-SST-87

Recommended cable cross-section as a function of cable length and servo drive CMMT-ST

≤ 5 m	≤ 10 m	≤ 20 m	≤ 25 m
Q6	Q6	Q6	Q6
Q6	Q6	Q6	Q6
Q6	Q7	Q9	Q9
Q6	Q7	Q9	Q9
Q7	Q9	Q9	Q9
Q7	Q9	Q9	Q9

Q6 = 0.5 mm²
Q7 = 0.75 mm²
Q9 = 1.5 mm²

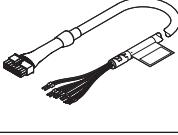
Motor cable for EMMB-ST-42 with cable cross-section 0.5 mm² for servo drive CMMT-ST

	Bending radius, moving cable	Cable characteristic	Ambient temperature	Cable length ¹⁾	Part no.	Type
	78.75 mm	Suitable for energy chains	-40 ... 90 °C	2.5 m	8181675	NEBM-L5G14-EH-2.5-Q6N-LE12
				5 m	8181664	NEBM-L5G14-EH-5-Q6N-LE12
				7.5 m	8181676	NEBM-L5G14-EH-7.5-Q6N-LE12
				10 m	8181672	NEBM-L5G14-EH-10-Q6N-LE12
				0.5 ... 20 m	8181663	NEBM-LX/M17-

1) For NEBM-LX/M17-...: cable lengths can be selected from 0.5 ... 25 m, in increments of 0.5 m and in all cable cross-sections Q6, Q7, Q9

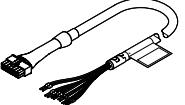
For NEBM-LX/M17-...: the extension cables can also be configured via the modular product system.

Motor cable for EMMB-ST-57/87 with cable cross-section 0.5 mm² for servo drive CMMT-ST

	Bending radius, moving cable	Cable characteristic	Ambient temperature	Cable length ¹⁾	Part no.	Type
	78.75 mm	Suitable for energy chains	-40 ... 90 °C	2.5 m	8181677	NEBM-L10G14-EH-2.5-Q6N-LE12

Accessories

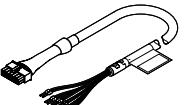
Motor cable for EMMB-ST-57/87 with cable cross-section 0.5 mm² for servo drive CMMT-ST

	Bending radius, moving cable	Cable characteristic	Ambient temperature	Cable length ¹⁾	Part no.	Type		
	78.75 mm	Suitable for energy chains	-40 ... 90 °C	5 m	8181667	NEBM-L10G14-EH-5-Q6N-LE12		
				7.5 m	8181669	NEBM-L10G14-EH-7.5-Q6N-LE12		
	78.75 ... 81 mm			10 m	8181665	NEBM-L10G14-EH-10-Q6N-LE12		
				0.5 ... 20 m	8181663	NEBM-LX/M17-		

1) For NEBM-LX/M17-...: cable lengths can be selected from 0.5 ... 25 m, in increments of 0.5 m and in all cable cross-sections Q6, Q7, Q9

For NEBM-LX/M17-...: the extension cables can also be configured via the modular product system.

Motor cable for EMMB-ST-57/87 with cable cross-section 0.75 mm² for servo drive CMMT-ST

	Bending radius, moving cable	Cable characteristic	Ambient temperature	Cable length ¹⁾	Part no.	Type		
	78.75 mm	Suitable for energy chains	-40 ... 90 °C	2.5 m	8181666	NEBM-L10G14-EH-2.5-Q7N-LE12		
				5 m	8181671	NEBM-L10G14-EH-5-Q7N-LE12		
	78.75 ... 81 mm			7.5 m	8181674	NEBM-L10G14-EH-7.5-Q7N-LE12		
				10 m	8181673	NEBM-L10G14-EH-10-Q7N-LE12		
				0.5 ... 20 m	8181663	NEBM-LX/M17-		

1) For NEBM-LX/M17-...: cable lengths can be selected from 0.5 ... 25 m, in increments of 0.5 m and in all cable cross-sections Q6, Q7, Q9

For NEBM-LX/M17-...: the extension cables can also be configured via the modular product system.

Motor cable for EMMB-ST-57/87 with cable cross-section 1.5 mm² for servo drive CMMT-ST

	Bending radius, moving cable	Cable characteristic	Ambient temperature	Cable length ¹⁾	Part no.	Type
	78.75 ... 81 mm	Suitable for energy chains	-40 ... 90 °C	0.5 ... 20 m	8181663	NEBM-LX/M17-

1) For NEBM-LX/M17-...: cable lengths can be selected from 0.5 ... 25 m, in increments of 0.5 m and in all cable cross-sections Q6, Q7, Q9

For NEBM-LX/M17-...: the extension cables can also be configured via the modular product system.