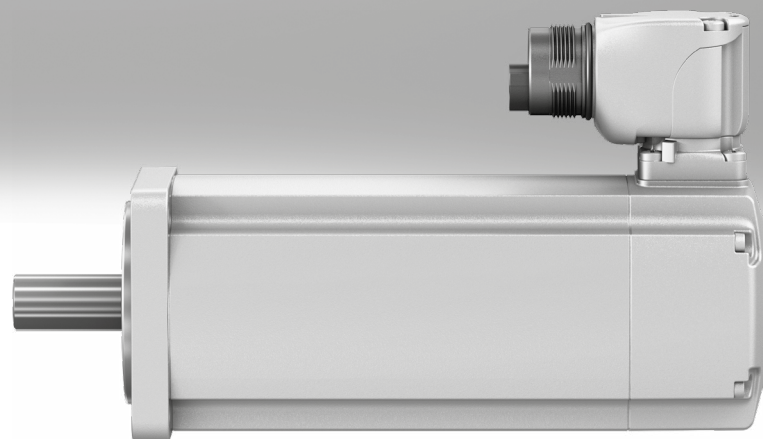


Servo motors EMMT-AS

FESTO



Key features

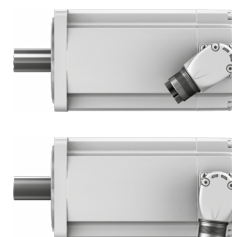
Everything from a single source

Motors EMMT-AS

→ Page 3



- Dynamic, brushless, permanently excited synchronous servo motors
- Extremely low cogging torque – supports high synchronisation even at low rotational speeds
- Digital absolute displacement encoder; choose from:
 - Single-turn
 - Multi-turn, no batteries
 - Multi-turn safety, no batteries
- Motor temperature transmission, digital via EnDat 2.2; motor protection via CMMT-AS
- Torque-optimised
- Speed-optimised
- Degree of protection:
 - IP21 (motor shaft) for sizes 150/190
 - IP40 (motor shaft)
 - IP67 (motor housing with connection technology)
 - IP65 (motor shaft with rotary shaft seal made from PTFE)
- Optional:
 - Holding brake
 - Shaft with feather key
 - Motor shaft with rotary shaft seal
- Simple connection technology (OCP: one cable plug) – hybrid cable: motor and connecting cable for supply and encoder rolled into one
- Plug can be rotated:
 - page 23



Gear unit EMGA-EAS/-SAS

→ Page 34



- Planetary/right-angle gear unit
- Gear ratio $i = 3, 5, 8, 12, 20$
- Life-time lubrication
- Degree of protection: IP54
- Other gear unit types, ratios, designs and versions on request

Servo drive CMMT-AS

→ Internet: cmmt-as



- Universal servo drive for synchronous servo motors
- Integrated EMC filters
- Integrated brake chopper
- Integrated braking resistor
- Integrated safety functions
- Position controller
- Speed controller
- Force controller
- Range of control functions
- Interfaces:
 - EtherCAT®
 - PROFINET RT/IRT
 - EtherNet/IP
 - Modbus TCP

Motor cables NEBM

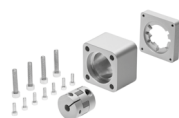
→ Page 36



- Suitable for energy chains
- Connection technology on motor side with degree of protection to IP67
- Can be used in a wide temperature range

Axial and parallel kits EAMM

→ Internet: eamm



- Specific kits for all electro-mechanical axes from Festo
- Each kit includes the relevant necessary coupling housing, couplings and motor flange as well as all screws
- Optionally with degree of protection IP65

Type codes

| 001 | Series |
|------|-------------|
| EMMT | Servo motor |

| 002 | Motor type |
|-----|----------------|
| AS | AC synchronous |

| 003 | Flange size, motors [mm] |
|-----|--------------------------|
| 60 | 60 |
| 80 | 80 |
| 100 | 100 |
| 150 | 150 |
| 190 | 190 |

| 004 | Length |
|-----|-----------|
| H | Very long |
| L | Long |
| M | Medium |
| S | Short |

| 005 | Output shaft |
|-----|-------------------|
| | Smooth shaft |
| K | Shaft to DIN 6885 |

| 006 | Radial shaft seal |
|-----|----------------------------------|
| | None |
| R | With standard shaft sealing ring |

| 007 | Winding |
|-----|--------------------------------|
| LS | Low voltage, standard |
| HS | High voltage, standard |
| HV | High voltage, speed optimised |
| HT | High voltage, torque optimised |

| 008 | Electrical connection |
|-----|----------------------------|
| R | Angled plug, rotatable |
| R2 | Angled plug M23, rotatable |
| R3 | Angled plug M40, rotatable |

| 009 | Measuring unit |
|-----|--|
| S | Absolute encoder, single turn |
| M | Absolute encoder, multi-turn |
| MY | Absolute multi-turn safety encoder, EnDat® |

| 010 | Brake |
|-----|------------|
| | None |
| B | With brake |

Datasheet



Note
Motors and motor controllers from Festo have been specially designed to be used together. Trouble-free operation cannot be guaranteed in combination with third-party controllers.



Technical data

| | | | | | | | |
|--|-----------------------|------------------|-------------|-------------|-------------|-------------|-------------|
| Flange size | | 60 | | | | | |
| Length | | S | | M | | L | |
| Winding | | LS | HS | LS | HS | LS | HS |
| Nominal operating voltage ¹⁾ | [V DC] | 325 | 680 | 325 | 680 | 325 | 680 |
| Nominal current ²⁾ | [A] | 1.6/1.4 | 1.6/1.4 | 2.4/2.2 | 2.4/2.2 | 3.2/3 | 3.2/3 |
| Continuous stall current ²⁾ | [A] | 1.7/1.6 | 1.7/1.6 | 2.7/2.5 | 2.7/2.5 | 3.8/3.5 | 3.8/3.5 |
| Peak current | [A] | 5.4 | 5.4 | 11.0 | 11.0 | 18.3 | 18.3 |
| Nominal power ²⁾ | [W] | 200/190 | 200/190 | 350/310 | 350/310 | 440/410 | 440/410 |
| Nominal torque ²⁾³⁾ | [Nm] | 0.64/0.6 | 0.64/0.6 | 1.1/1.0 | 1.1/1.0 | 1.4/1.3 | 1.4/1.3 |
| Peak torque | [Nm] | 1.6 | 1.6 | 3.4 | 3.4 | 5.6 | 5.6 |
| Stall torque ²⁾ | [Nm] | 0.7/0.66 | 0.7/0.66 | 1.24/1.15 | 1.24/1.15 | 1.66/1.56 | 1.66/1.56 |
| Stall torque constant ⁴⁾ | [Nm/A] | 0.49 | 0.49 | 0.53 | 0.53 | 0.52 | 0.52 |
| Nominal rotational speed | [rpm] | 3000 | | | | | |
| Max. rotational speed | [rpm] | 7100 | 15000 | 6800 | 14200 | 6800 | 14300 |
| Max. mechanical rotational speed | [rpm] | 16000 | | | | | |
| Max. idling rotational speed with brake | [rpm] | 10000 | | | | | |
| Angular acceleration | [rad/s ²] | ≤ 100000 | | | | | |
| Motor constant | [Nm/A] | 0.41 | 0.41 | 0.45 | 0.45 | 0.44 | 0.44 |
| Voltage constant (phase-to-phase) | [mV/min] | 29.9 | 29.9 | 32 | 32 | 31.2 | 31.2 |
| Electric time constant | [ms] | 2.1 | 2.1 | 2.7 | 2.7 | 3 | 3 |
| Thermal time constant ²⁾ | [min] | 40/41 | 40/41 | 41/42 | 41/42 | 43/44 | 43/44 |
| Thermal resistance ²⁾ | [K/W] | 1.3/1.5 | 1.3/1.5 | 1.1/1.3 | 1.1/1.3 | 1/1.2 | 1/1.2 |
| Number of pole pairs | | 5 | 5 | 5 | 5 | 5 | 5 |
| Winding resistance (phase-to-phase) | [Ω] | 11.7 | 11.7 | 4.85 | 4.85 | 2.68 | 2.68 |
| Winding inductance (phase-to-phase) | [mH] | 38 | 38 | 20 | 20 | 12 | 12 |
| Winding series inductance Ld (phase) | [mH] | 15.5 | 15.5 | 8 | 8 | 5 | 5 |
| Winding shunt inductance Lq (phase) | [mH] | 19 | 19 | 10 | 10 | 6 | 6 |
| Total output moment of inertia ²⁾ | [kgcm ²] | 0.169/0.257 | 0.169/0.257 | 0.286/0.373 | 0.286/0.373 | 0.403/0.490 | 0.403/0.490 |
| Shaft load at nominal rotational speed | | | | | | | |
| Radial | [N] | 350 | | | | | |
| Axial | [N] | 65 | | | | | |
| Brake | | | | | | | |
| Operating voltage | [V DC] | 24 (+6 ... -10%) | | | | | |
| Current consumption | [A] | 0.46 | | | | | |
| Power | [W] | 11 | | | | | |
| Holding torque (static) | [Nm] | 2.5 | | | | | |
| Separation time | [ms] | ≤ 35 | | | | | |
| Closing time | [ms] | 10 | | | | | |
| Response delay | [ms] | ≤ 2 | | | | | |
| Coil resistance | [Ω] | 52.4 | | | | | |
| Coil inductance | [mH] | 700 | | | | | |
| Mass moment of inertia | [kgcm ²] | 0.074 | | | | | |
| Max. friction per braking process | [J] | 5600 | | | | | |
| Total friction | [kJ] | 615 | | | | | |

1) With 3-phase mains supply to the servo drive, a voltage up to 3x 480 V AC +10% is permitted
 2) Without brake/with brake
 3) When using the radial shaft seal, a reduction (derating) of the nominal torque of 10% must be taken into account
 For motors with safety encoders, a derating must be taken into account in line with the specification in the datasheet when using the radial shaft seal.
 4) Inner stall torque constant

Datasheet

| Technical data | | | | | | | | | |
|--|-----------------------|------------------|-----------|-----------|-----------|-----------|-----------|-----------|--|
| Flange size | | 80 | | | | | | | |
| Length | | S | | M | | L | | H | |
| Winding | | LS | HS | LS | HS | LS | HS | HS | |
| Nominal operating voltage ¹⁾ | [V DC] | 325 | 680 | 325 | 680 | 325 | 680 | 680 | |
| Nominal current | [A] | 2.7 | 1.76 | 4.1 | 2.2 | 5.5 | 3.5 | 3.8 | |
| Continuous stall current | [A] | 3.1 | 2 | 4.9 | 2.6 | 6.7 | 4.3 | 4.8 | |
| Peak current | [A] | 8.4 | 5.4 | 17.1 | 9 | 27.3 | 17.5 | 21.7 | |
| Nominal power | [W] | 408 | 408 | 690 | 690 | 910 | 910 | 1070 | |
| Nominal torque ³⁾ | [Nm] | 1.3 | 1.3 | 2.2 | 2.2 | 2.9 | 2.9 | 3.4 | |
| Peak torque | [Nm] | 2.8 | 2.8 | 6.4 | 6.4 | 9.9 | 9.9 | 13.5 | |
| Stall torque | [Nm] | 1.46 | 1.46 | 2.6 | 2.6 | 3.5 | 3.5 | 4.3 | |
| Stall torque constant ⁴⁾ | [Nm/A] | 0.57 | 0.89 | 0.62 | 1.17 | 0.6 | 0.93 | 1 | |
| Nominal rotational speed | [rpm] | 3000 | | | | | | | |
| Max. rotational speed | [rpm] | 6700 | 8950 | 6150 | 6800 | 6400 | 8540 | 7820 | |
| Max. mechanical rotational speed | [rpm] | 14000 | | | | | | | |
| Max. idling rotational speed with brake | [rpm] | 10000 | | | | | | | |
| Angular acceleration | [rad/s ²] | ≤ 100000 | | | | | | | |
| Motor constant | [Nm/A] | 0.48 | 0.74 | 0.54 | 1 | 0.53 | 0.82 | 0.9 | |
| Voltage constant (phase-to-phase) | [mVmin] | 34.3 | 53.6 | 37.3 | 70.7 | 36 | 56 | 61.4 | |
| Electric time constant | [ms] | 4.9 | 4.8 | 6.5 | 6.4 | 6.9 | 7 | 7.2 | |
| Thermal time constant | [min] | 42 | 42 | 45 | 45 | 48 | 48 | 51 | |
| Thermal resistance | [K/W] | 0.95 | 0.95 | 0.78 | 0.78 | 0.68 | 0.68 | 0.65 | |
| Number of pole pairs | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | |
| Winding resistance (phase-to-phase) | [Ω] | 4.93 | 12.4 | 2.04 | 7.43 | 1.13 | 2.69 | 2.21 | |
| Winding inductance (phase-to-phase) | [mH] | 16.3 | 39.8 | 8.9 | 31.8 | 5.2 | 12.6 | 10.7 | |
| Winding series inductance Ld (phase) | [mH] | 10.2 | 25 | 5.4 | 19.4 | 3.1 | 7.5 | 6.6 | |
| Winding shunt inductance Lq (phase) | [mH] | 12.2 | 29.8 | 6.6 | 23.8 | 3.9 | 9.45 | 8.0 | |
| Total output moment of inertia ²⁾ | [kgcm ²] | 0.59/0.89 | 0.59/0.89 | 1.04/1.28 | 1.04/1.28 | 1.47/1.99 | 1.47/1.99 | 1.91/2.42 | |
| Shaft load at nominal rotational speed | | | | | | | | | |
| Radial | [N] | 620 | | | | | | | |
| Axial | [N] | 120 | | | | | | | |
| Brake | | | | | | | | | |
| Operating voltage | [V DC] | 24 (+6 ... -10%) | | | | | | | |
| Current consumption | [A] | 0.5 | 0.5 | 0.5 | 0.5 | 0.63 | 0.63 | 0.63 | |
| Power | [W] | 12 | 12 | 12 | 12 | 15 | 15 | 15 | |
| Holding torque (static) | [Nm] | 4.5 | 4.5 | 4.5 | 4.5 | 7 | 7 | 7 | |
| Separation time | [ms] | ≤ 55 | ≤ 55 | ≤ 55 | ≤ 55 | ≤ 45 | ≤ 45 | ≤ 45 | |
| Closing time | [ms] | ≤ 15 | ≤ 15 | ≤ 15 | ≤ 15 | ≤ 30 | ≤ 30 | ≤ 30 | |
| Response delay | [ms] | ≤ 3 | ≤ 3 | ≤ 3 | ≤ 3 | ≤ 4 | ≤ 4 | ≤ 4 | |
| Coil resistance | [Ω] | 48 | 48 | 48 | 48 | 38.4 | 38.4 | 38.4 | |
| Coil inductance | [mH] | 1000 | 1000 | 1000 | 1000 | 900 | 900 | 900 | |
| Mass moment of inertia | [kgcm ²] | 0.249 | 0.249 | 0.249 | 0.249 | 0.459 | 0.459 | 0.459 | |
| Max. friction per braking process | [J] | 8200 | 8200 | 8200 | 8200 | 12000 | 12000 | 12000 | |
| Total friction | [kJ] | 580 | | | | 2400 | | | |

1) With 3-phase mains supply to the servo drive, a voltage up to 3x 480 V AC +10% is permitted

2) Without brake/with brake

3) When using the radial shaft seal, a reduction (derating) of the nominal torque of 10% must be taken into account

For motors with safety encoders, a derating must be taken into account in line with the specification in the datasheet when using the radial shaft seal.

4) Inner stall torque constant

Datasheet

| Technical data | | | | | |
|--|-----------------------|------------------|-----------|-----------|------------|
| Flange size | | 100 | | | |
| Length | | S | M | L | H |
| Winding | | HS | HS | HS | HS |
| Nominal operating voltage ¹⁾ | [V DC] | 680 | 680 | 680 | 680 |
| Nominal current ²⁾ | [A] | 3.5 | 4.3 | 4.7/4.3 | 5.9/5.5 |
| Continuous stall current ²⁾ | [A] | 4.4 | 5.9 | 7/6.7 | 9.7/9.5 |
| Peak current | [A] | 13.7 | 22.1 | 28.6 | 36 |
| Nominal power ²⁾ | [W] | 1450 | 1770 | 2030/1870 | 2200/2060 |
| Nominal torque ²⁾³⁾ | [Nm] | 5.1 | 6.3 | 7.2/6.6 | 7.8/7.3 |
| Peak torque | [Nm] | 13.7 | 22.4 | 30.5 | 38.7 |
| Stall torque ²⁾ | [Nm] | 6.3 | 8.6 | 10.8/10.4 | 13/12.4 |
| Stall torque constant ⁴⁾ | [Nm/A] | 1.67 | 1.66 | 1.75 | 1.54 |
| Nominal rotational speed | [rpm] | 2700 | | | |
| Max. rotational speed | [rpm] | 4770 | 4790 | 4530 | 5150 |
| Max. mechanical rotational speed | [rpm] | 13000 | | | |
| Max. idling rotational speed with brake | [rpm] | 10000 | | | |
| Angular acceleration | [rad/s ²] | ≤ 100000 | | | |
| Motor constant | [Nm/A] | 1.45 | 1.46 | 1.54 | 1.32 |
| Voltage constant (phase-to-phase) | [mVmin] | 101 | 100 | 106 | 93.2 |
| Electric time constant | [ms] | 14.5 | 16.6 | 15.8 | 16.7 |
| Thermal time constant | [min] | 74 | 73 | 71 | 68 |
| Thermal resistance | [K/W] | 0.6 | 0.5 | 0.46 | 0.39 |
| Number of pole pairs | | 5 | 5 | 5 | 5 |
| Winding resistance (phase-to-phase) | [Ω] | 3.35 | 1.84 | 1.49 | 0.81 |
| Winding inductance (phase-to-phase) | [mH] | 32.4 | 20.4 | 15.7 | 9 |
| Winding series inductance Ld (phase) | [mH] | 17.8 | 10.2 | 8.7 | 5.7 |
| Winding shunt inductance Lq (phase) | [mH] | 24.3 | 15.3 | 11.8 | 6.8 |
| Total output moment of inertia ²⁾ | [kgcm ²] | 3.15/4.04 | 4.46/5.34 | 5.77/8.06 | 8.80/11.09 |
| Shaft load at nominal rotational speed | | | | | |
| Radial | [N] | 1110 | | | 815 |
| Axial | [N] | 200 | | | |
| Brake | | | | | |
| Operating voltage | [V DC] | 24 (+6 ... -10%) | | | |
| Current consumption | [A] | 0.75 | 0.75 | 1 | |
| Power | [W] | 18 | 18 | 24 | |
| Holding torque (static) | [Nm] | 11 | 11 | 18 | |
| Separation time | [ms] | ≤ 80 | | | |
| Closing time | [ms] | ≤ 20 | ≤ 20 | ≤ 40 | |
| Response delay | [ms] | ≤ 4 | ≤ 4 | ≤ 5 | |
| Coil resistance | [Ω] | 32 | 32 | 24 | |
| Coil inductance | [mH] | 900 | 900 | 900 | |
| Mass moment of inertia | [kgcm ²] | 0.74 | 0.74 | 2.15 | |
| Max. friction per braking process | [J] | 12000 | 12000 | 15000 | |
| Total friction | [kJ] | 1335 | | 3600 | |

- 1) With 3-phase mains supply to the servo drive, a voltage up to 3x 480 V AC +10% is permitted
- 2) Without brake/with brake
- 3) When using the radial shaft seal, a reduction (derating) of the nominal torque of 10% must be taken into account
For motors with safety encoders, a derating must be taken into account in line with the specification in the datasheet when using the radial shaft seal.
- 4) Inner stall torque constant

Datasheet

| Technical data | | | | | |
|--|-----------------------|-----------|-------|-----------|-------|
| Flange size | | 150 | | | |
| Length | | M | | L | |
| Winding | | HS | HV | HT | HS |
| Nominal operating voltage ¹⁾ | [V DC] | 680 | 680 | 680 | 680 |
| Nominal current | [A] | 9.5 | 10.2 | 10.3 | 15.4 |
| Continuous stall current | [A] | 11.4 | 24 | 11.4 | 23.6 |
| Peak current | [A] | 24 | 50 | 24 | 49.5 |
| Nominal power | [W] | 4257 | 4948 | 4157 | 6377 |
| Nominal torque ³⁾ | [Nm] | 27.1 | 13.5 | 39.7 | 29 |
| Peak torque | [Nm] | 64 | 60 | 86 | 87 |
| Stall torque | [Nm] | 33 | 33 | 44 | 45.5 |
| Stall torque constant ⁴⁾ | [Nm/A] | 3.3 | 1.54 | 4.38 | 2.23 |
| Nominal rotational speed | [rpm] | 1500 | 3500 | 1000 | 2100 |
| Max. rotational speed | [rpm] | 2368 | 5051 | 1812 | 3495 |
| Max. mechanical rotational speed | [rpm] | 10000 | | | |
| Angular acceleration | [rad/s ²] | ≤ 100000 | | | |
| Motor constant | [Nm/A] | 2.85 | 1.32 | 3.85 | 1.88 |
| Voltage constant (phase-to-phase) | [mVmin] | 199.4 | 92.9 | 264.9 | 135.1 |
| Electric time constant | [ms] | 15.4 | 15.6 | 15.6 | 17.1 |
| Thermal time constant | [min] | 45 | 45 | 55 | 55 |
| Thermal resistance | [K/W] | 0.45 | 0.46 | 0.42 | 0.39 |
| Number of pole pairs | | 5 | 5 | 5 | 5 |
| Winding resistance (phase-to-phase) | [Ω] | 0.935 | 0.211 | 1.016 | 0.250 |
| Winding inductance (phase-to-phase) | [mH] | 14.6 | 3.3 | 15.7 | 4.4 |
| Winding series inductance L _d (phase) | [mH] | 7.2 | 1.65 | 7.95 | 2.15 |
| Winding shunt inductance L _q (phase) | [mH] | 7.3 | 1.65 | 7.85 | 2.2 |
| Total output moment of inertia ²⁾ | [kgcm ²] | 38.7/46.9 | | 57.6/70.1 | |
| Shaft load at nominal rotational speed | | | | | |
| Radial | [N] | 1470 | 1085 | 1730 | 1370 |
| Axial | [N] | 294 | 217 | 346 | 274 |
| Brake | | | | | |
| Operating voltage | [V DC] | 24 | | | |
| Current consumption | [A] | 1.08 | | | |
| Power | [W] | 26 | | | |
| Holding torque (static) | [Nm] | 45 | 65 | | |
| Separation time | [ms] | 230 | 200 | | |
| Closing time | [ms] | 45 | 40 | | |
| Response delay | [ms] | ≤ 6 | ≤ 10 | | |
| Mass moment of inertia | [kgcm ²] | 8.2 | 12.5 | | |
| Max. friction per braking process | [J] | 28000 | 40000 | | |
| Total friction | [kJ] | 2600 | 4500 | | |

1) With 3-phase mains supply to the servo drive, a voltage up to 3x 480 V AC +10% is permitted

2) Without brake/with brake

3) When using the radial shaft seal, a reduction (derating) of the nominal torque of 10% must be taken into account

4) Inner stall torque constant

Datasheet

| Technical data | | | |
|--|-----------------------|----------|---------|
| Flange size | | 190 | |
| Length | | M | L |
| Winding | | HS | HT |
| Nominal operating voltage ¹⁾ | [V DC] | 680 | 680 |
| Nominal current | [A] | 19.2 | 20 |
| Continuous stall current | [A] | 25 | 22.8 |
| Peak current | [A] | 41.5 | 49.7 |
| Nominal power | [W] | 7427 | 8629 |
| Nominal torque ³⁾ | [Nm] | 59.1 | 82.4 |
| Peak torque | [Nm] | 118.3 | 183.3 |
| Stall torque | [Nm] | 76.7 | 93.7 |
| Stall torque constant ⁴⁾ | [Nm/A] | 3.56 | 4.79 |
| Nominal rotational speed | [rpm] | 1200 | 1000 |
| Max. rotational speed | [rpm] | 2163 | 1654 |
| Max. mechanical rotational speed | [rpm] | 8000 | |
| Angular acceleration | [rad/s ²] | ≤ 100000 | |
| Motor constant | [Nm/A] | 3.08 | 4.12 |
| Voltage constant (phase-to-phase) | [mVmin] | 215.2 | 289.7 |
| Electric time constant | [ms] | 39.6 | 38.8 |
| Thermal time constant | [min] | 70 | 80 |
| Thermal resistance | [K/W] | 0.31 | 0.30 |
| Number of pole pairs | | 5 | 5 |
| Winding resistance (phase-to-phase) | [Ω] | 0.285 | 0.358 |
| Winding inductance (phase-to-phase) | [mH] | 12.3 | 13.8 |
| Winding series inductance Ld (phase) | [mH] | 5.65 | 6.95 |
| Winding shunt inductance Lq (phase) | [mH] | 6.15 | 6.9 |
| Total output moment of inertia ²⁾ | [kgcm ²] | 110/160 | 145/195 |
| Shaft load at nominal rotational speed | | | |
| Radial | [N] | 2420 | 2620 |
| Axial | [N] | 480 | 520 |
| Brake | | | |
| Operating voltage | [V DC] | 24 | |
| Current consumption | [A] | 2.08 | |
| Power | [W] | 50 | |
| Holding torque (static) | [Nm] | 115 | |
| Separation time | [ms] | 190 | |
| Closing time | [ms] | 65 | |
| Response delay | [ms] | ≤ 12 | |
| Mass moment of inertia | [kgcm ²] | 50 | |
| Max. friction per braking process | [J] | 62000 | |
| Total friction | [kJ] | 13000 | |

1) With 3-phase mains supply to the servo drive, a voltage up to 3x 480 V AC +10% is permitted

2) Without brake/with brake

3) When using the radial shaft seal, a reduction (derating) of the nominal torque of 10% must be taken into account

4) Inner stall torque constant

Datasheet

| Weight [kg] | | | | | | | | | | | |
|---------------|------|------|------|------|------|------|------|-----|-----|------|------|
| Flange size | 60 | | | 80 | | | | 100 | | | |
| Length | S | M | L | S | M | L | H | S | M | L | H |
| Without brake | 1.18 | 1.53 | 1.91 | 2.02 | 2.64 | 3.29 | 3.91 | 5.5 | 7.1 | 8.7 | 11.9 |
| With brake | 1.50 | 1.85 | 2.23 | 2.72 | 3.36 | 4.12 | 4.75 | 6.7 | 8.2 | 10.1 | 13.3 |

| Weight [kg] | | | | | |
|---------------|------|--|------|------|------|
| Flange size | 150 | | 190 | | |
| Length | M | | L | M | L |
| Without brake | 18.7 | | 25.4 | 42.2 | 53 |
| With brake | 22.2 | | 29.7 | 50.6 | 61.5 |

| Operating and environmental conditions | | | | | | | | | | | |
|---|---|--|------|------|------|------|------|------|------|------|-------------|
| Flange size | 60 | | | 80 | | | | 100 | | | |
| Length | S | M | L | S | M | L | H | S | M | L | H |
| Standard | IEC 60034 | | | | | | | | | | |
| Motor type to EN 60034-7 | IM B5/IM V1/IM V3 | | | | | | | | | | |
| Degree of protection | | | | | | | | | | | |
| Motor shaft | IP40 | | | | | | | | | | |
| With rotary shaft seal | IP65 | | | | | | | | | | |
| Motor housing incl. connection technology | IP67 | | | | | | | | | | |
| Ambient temperature | | | | | | | | | | | |
| Temperature | [°C] | -15 ... +40 | | | | | | | | | |
| Up to 80 °C with derating of ... per degree Celsius ¹⁾ | [%] | -1.5 | -1.5 | -1.5 | -1.5 | -1.5 | -1.5 | -1.5 | -1.5 | -1.5 | -1.75/-2.25 |
| Storage temperature | [°C] | -20 ... +70 | | | | | | | | | |
| Max. winding temperature | [°C] | 155 | | | | | | | | | |
| Temperature monitoring | Digital motor temperature transmission via EnDat 2.2 | | | | | | | | | | |
| Rating class to EN 60034-1 | S1 | | | | | | | | | | |
| Thermal class to EN 60034-1 | F | | | | | | | | | | |
| Relative humidity | [%] | 0 ... 90 (non-condensing) | | | | | | | | | |
| Concentricity to DIN SPEC 42955 | N | | | | | | | | | | |
| Balance quality | G 2.5 | | | | | | | | | | |
| Pollution degree | 2 | | | | | | | | | | |
| Max. setup altitude | [m] | 4000 (at 1000 m or higher only with derating of -1.0% per 100 m) | | | | | | | | | |
| Bearing lifetime under nominal conditions | [h] | 20000 | | | | | | | | | |
| Switching cycles of holding brake ¹⁾ | 10 million idle actuations | | | | | | | | | | |
| CE marking (see declaration of conformity) | To EU Low Voltage Directive To EU EMC Directive ²⁾ To EU RoHS Directive | | | | | | | | | | |
| UKCA marking (see declaration of conformity) | To UK regulations for electrical equipment To UK EMC regulations To UK RoHS regulations | | | | | | | | | | |
| Certification | c UL us - Recognized (OL) RCM Mark | | | | | | | | | | |
| Certificate-issuing authority | UL E342973 TÜV 968/INS 464.00/24 ³⁾ | | | | | | | | | | |
| Energy efficiency | ENEFF (CN) / Class 2 | | | | | | | | | | |
| Vibration resistant | To EN 60068-2-6 | | | | | | | | | | |
| Shock resistance | To EN 60068-2-27 | | | | | | | | | | |
| LABS (PWIS) conformity | VDMA24364 zone III | | | | | | | | | | |
| Note on materials | RoHS-compliant | | | | | | | | | | |

1) Without friction

Without brake/with brake

2) 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.

3) Only variant with absolute safety encoder, multi-turn

Datasheet

| Operating and environmental conditions | | | | |
|---|--|--|------|------|
| Flange size | 150 | | 190 | |
| Length | M | L | M | L |
| Standard | IEC 60034 | | | |
| Motor type to EN 60034-7 | IM B5/IM V1/IM V3 | | | |
| Degree of protection | | | | |
| Motor shaft | IP21 | | | |
| With rotary shaft seal | IP65 | | | |
| Motor housing incl. connection technology | IP67 | | | |
| Ambient temperature | | | | |
| Temperature | [°C] | -15 ... +40 | | |
| Up to 80 °C with derating of ... per degree Celsius ¹⁾ | [%] | -1.5 | -1.5 | -1.5 |
| Storage temperature | [°C] | -20 ... +70 | | |
| Max. winding temperature | [°C] | 155 | | |
| Temperature monitoring | Digital motor temperature transmission via EnDat 2.2 | | | |
| Rating class to EN 60034-1 | S1 | | | |
| Thermal class to EN 60034-1 | F | | | |
| Relative humidity | [%] | 0 ... 90 (non-condensing) | | |
| Concentricity to DIN SPEC 42955 | N | | | |
| Balance quality | G 2.5 | | | |
| Pollution degree | 2 | | | |
| Max. setup altitude | [m] | 4000 (at 1000 m or higher only with derating of -1.0% per 100 m) | | |
| Bearing lifetime under nominal conditions | [h] | 20000 | | |
| Switching cycles of holding brake ¹⁾ | 5 million idle actuations | | | |
| CE marking (see declaration of conformity) | To EU Low Voltage Directive | | | |
| | To EU EMC Directive ²⁾ | | | |
| | To EU RoHS Directive | | | |
| UKCA marking (see declaration of conformity) | To UK regulations for electrical equipment | | | |
| | To UK EMC regulations | | | |
| | To UK RoHS regulations | | | |
| Certification | cUL us - Recognized (OL) | | | |
| | RCM Mark | | | |
| Certificate-issuing authority | UL E342973 | | | |
| | TÜV 968/FSP 2317.00/21 ³⁾ | | | |
| Energy efficiency | ENEFF (CN) / Class 1 | | | |
| Vibration resistant | To EN 60068-2-6 | | | |
| Shock resistance | To EN 60068-2-27 (15g/11ms) | | | |
| Continuous shock resistance | To EN 60068-2-29 | | | |
| LABS (PWIS) conformity | VDMA24364 zone III | | | |
| Note on materials | RoHS-compliant | | | |

1) Without friction work

2) 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.

3) Only variant with absolute safety encoder, multi-turn

Datasheet

| Technical data – Encoder | | | | | |
|--|--|--|--------------|------------------------------|--|
| Measuring unit | | Absolute encoder, single-turn | | Absolute encoder, multi-turn | |
| Rotor position encoder, operating voltage | | [V DC] | 5 | | |
| Rotor position encoder, operating voltage range | | [V DC] | 3.6 ... 14 | | |
| Protocol | | EnDat 2.2, digital channel only, max. switching frequency (CLOCK) ≤ 16 MHz | | | |
| Rotor position sensor measuring principle | | Inductive | | | |
| Position values per revolution | | | | | |
| Flange size 60; 80 | | 262144 | | 524288 | |
| Flange size 100; 150; 190 | | 524288 | | 524288 | |
| Rotor position encoder resolution | | | | | |
| Flange size 60; 80 | | 18 bits | | 19 bits | |
| Flange size 100; 150; 190 | | 19 bits | | 19 bits | |
| Absolute detectable revolutions | | 1 | | 4096 (12 bit) | |
| Rotor position encoder, system accuracy of angle measurement | | | | | |
| Flange size 60 | | [arcsec] | -120 ... 120 | | |
| Flange size 80 | | [arcsec] | -120 ... 120 | | |
| Flange size 100; 150; 190 | | [arcsec] | -65 ... 65 | | |

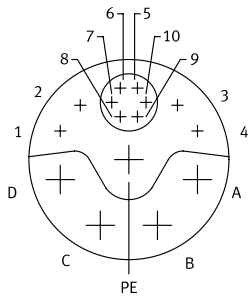
| Technical data – Safety encoder | | | | |
|--|--|--|--------------|------------|
| Measuring unit | | Absolute safety encoder, multi-turn, EnDat | | |
| Flange size | | 60, 80 | 100 | 150, 190 |
| Rotor position encoder, operating voltage | | [V DC] | 5 | |
| Rotor position encoder, operating voltage range | | [V DC] | 3.6 ... 14 | |
| Rotary position encoder interface | | EnDat 2.2 | | |
| Rotor position sensor measuring principle | | Inductive | | |
| Position values per revolution | | 524288 | | |
| Rotor position encoder resolution | | 19 bits | | |
| Absolute detectable revolutions | | 4096 (12 bit) | | |
| Rotor position encoder, system accuracy of angle measurement | | [arcsec] | -120 ... 120 | -65 ... 65 |

| Safety data – Safety encoder | | | | |
|---|--|---|---------------------------------|---------------------------------|
| Measuring unit | | Absolute safety encoder, multi-turn | | |
| Flange size | | 60, 80 | 100 | 150, 190 |
| Maximum SIL | | SIL 3 | | SIL 2 |
| Maximum performance level and category | | Performance Level e, Category 3 | | Performance Level d, Category 3 |
| Safety sub-function up to SIL 2 | | Reliable acquisition and transmission of single-turn position data | | |
| Safety sub-function up to SIL 3 | | Reliable acquisition and transmission of single-turn position data, only with additional software function in the servo drive | | – |
| Safety sub-function up to Performance Level d, Category 3 | | Reliable acquisition and transmission of single-turn position data | | |
| Safety sub-function up to Performance Level e, Category 3 | | Reliable acquisition and transmission of single-turn position data, only with additional software function in the servo drive | | – |
| PFH _D , subcomponent | | [1/h] | 15 x 10 ⁻⁹ , encoder | |
| Service life | | 20 years, rotor position sensor | | |

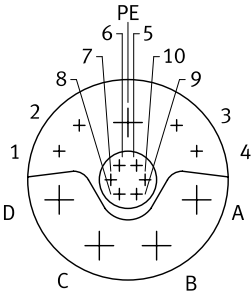
Datasheet

Pin allocation – Motor side

M23x1, pins, 15-pin

| | PIN | Function |
|---|-----|-------------------------------|
|  | 1 | BR- Brake |
| | 2 | - |
| | 3 | - |
| | 4 | BR+ Brake |
| | 5 | Up Encoder power supply |
| | 6 | 0 V Encoder power supply |
| | 7 | Data + Encoder communication |
| | 8 | Data - Encoder communication |
| | 9 | CLK + Encoder communication |
| | 10 | CLK - Encoder communication |
| | A | U Motor power supply |
| | B | V Motor power supply |
| | C | W Motor power supply |
| | D | - |
| | PE | PE Protective earth conductor |

M40x1, pins, 15-pin

| | PIN | Function |
|--|-----|-------------------------------|
|  | 1 | BR- Brake |
| | 2 | - |
| | 3 | - |
| | 4 | BR+ Brake |
| | 5 | Up Encoder power supply |
| | 6 | 0 V Encoder power supply |
| | 7 | Data + Encoder communication |
| | 8 | Data - Encoder communication |
| | 9 | CLK + Encoder communication |
| | 10 | CLK - Encoder communication |
| | A | U Motor power supply |
| | B | V Motor power supply |
| | C | W Motor power supply |
| | D | - |
| | PE | PE Protective earth conductor |

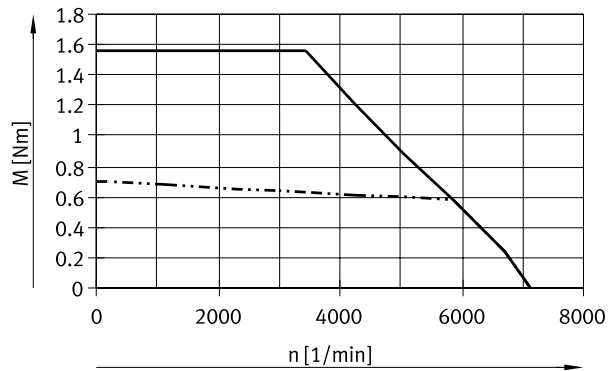
Datasheet

Torque M as a function of rotational speed n

Flange size 60

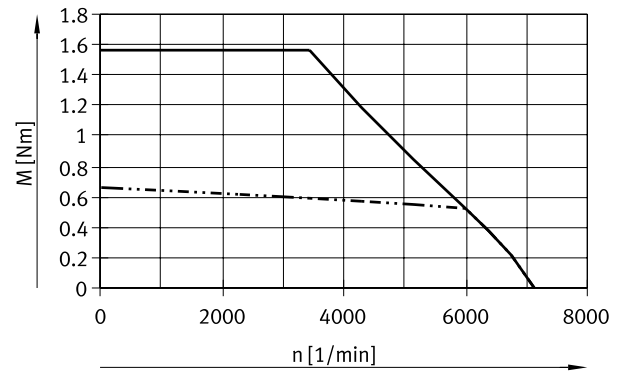
Length S

Winding LS (without brake)

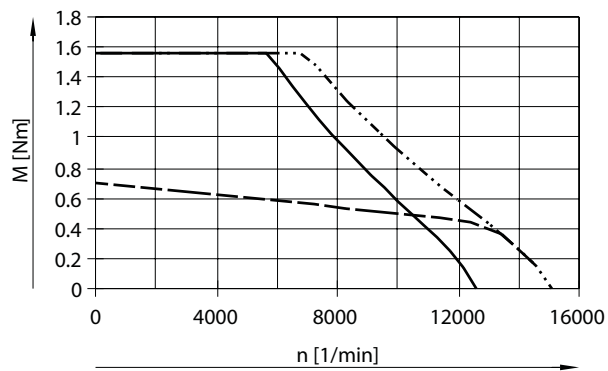


- Peak torque at 325 V DC
- · · · · · Nominal torque

Winding LS-B (with brake)

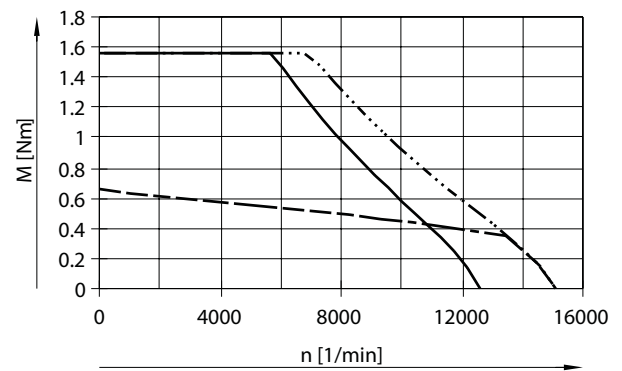



Winding HS (without brake)



- Peak torque at 565 V DC
- · · · · · Peak torque at 680 V DC
- - - - - Nominal torque

Winding HS-B (with brake)



 Note

Typical motor characteristic curve with nominal voltage and optimal motor controller.
Observe the maximum permissible rotational speeds of add-on and installation components (such as brake, encoder, etc.).

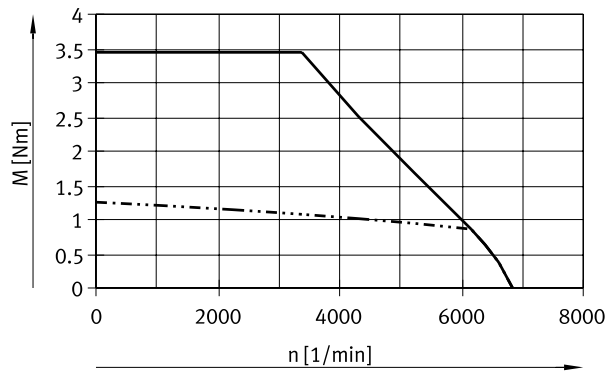
Datasheet

Torque M as a function of rotational speed n

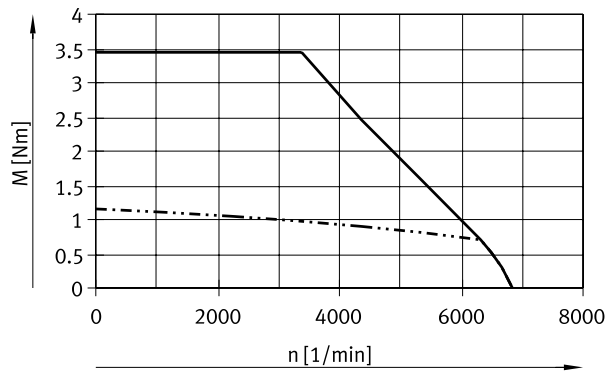
Flange size 60

Length M

Winding LS (without brake)

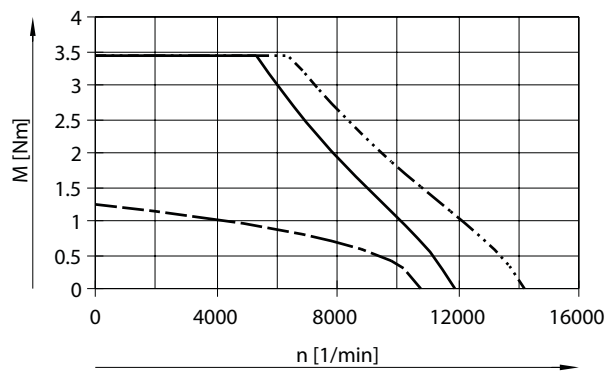


Winding LS-B (with brake)

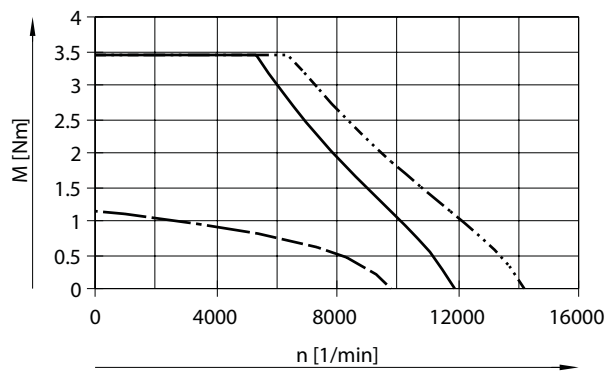


- Peak torque at 325 V DC
- · · · · · Nominal torque

Winding HS (without brake)



Winding HS-B (with brake)



- Peak torque at 565 V DC
- · · · · · Peak torque at 680 V DC
- - - - - Nominal torque

Note

Typical motor characteristic curve with nominal voltage and optimal motor controller.
Observe the maximum permissible rotational speeds of add-on and installation components (such as brake, encoder, etc.).

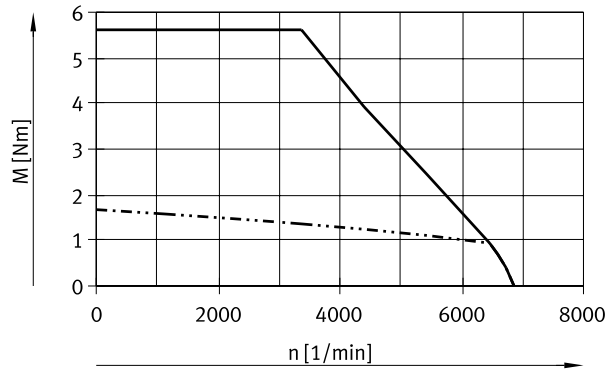
Datasheet

Torque M as a function of rotational speed n

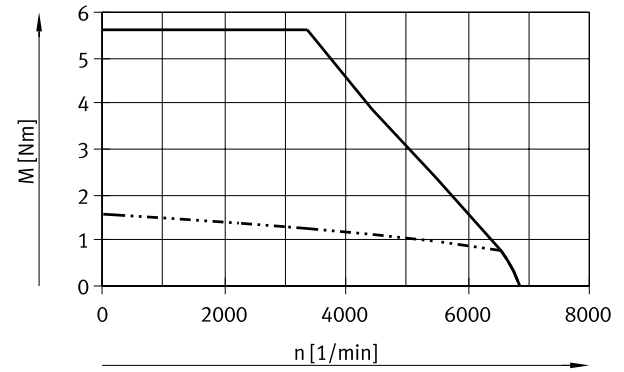
Flange size 60

Length L

Winding LS (without brake)

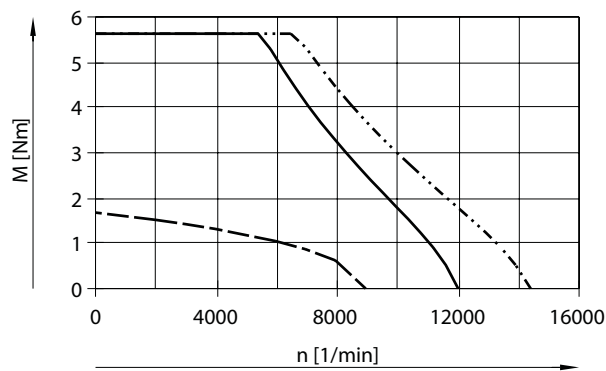


Winding LS-B (with brake)

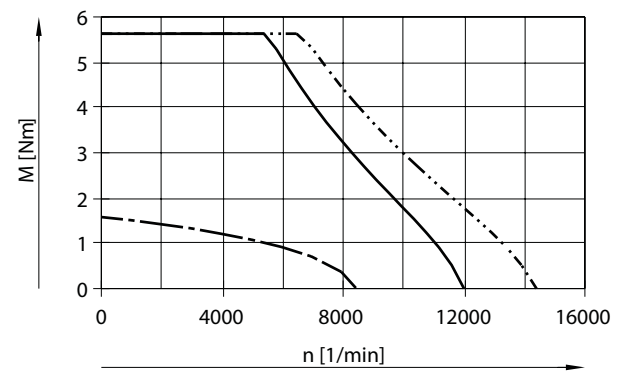


- Peak torque at 325 V DC
- · · · · · Nominal torque

Winding HS (without brake)



Winding HS-B (with brake)



- Peak torque at 565 V DC
- · · · · · Peak torque at 680 V DC
- - - - - Nominal torque

Note

Typical motor characteristic curve with nominal voltage and optimal motor controller.
Observe the maximum permissible rotational speeds of add-on and installation components (such as brake, encoder, etc.).

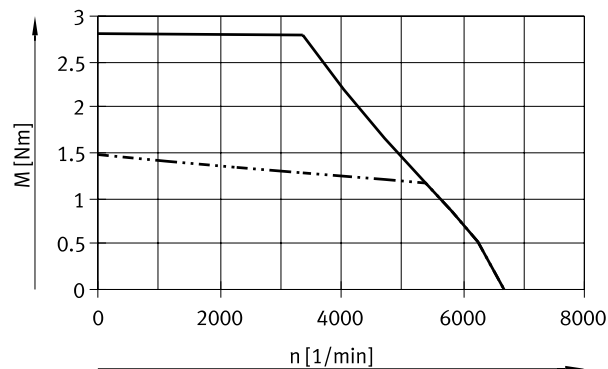
Datasheet

Torque M as a function of rotational speed n

Flange size 80

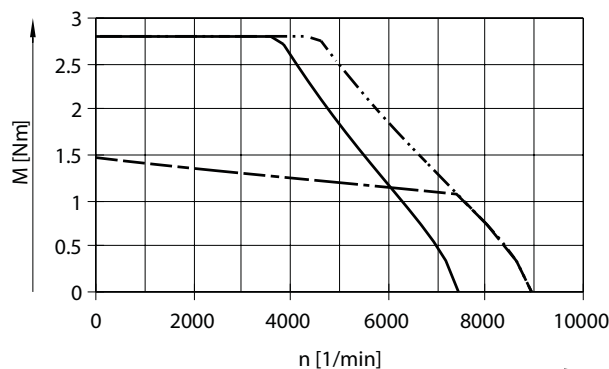
Length S

Winding LS (without/with brake)



— Peak torque at 325 V DC
 - · - · - Nominal torque

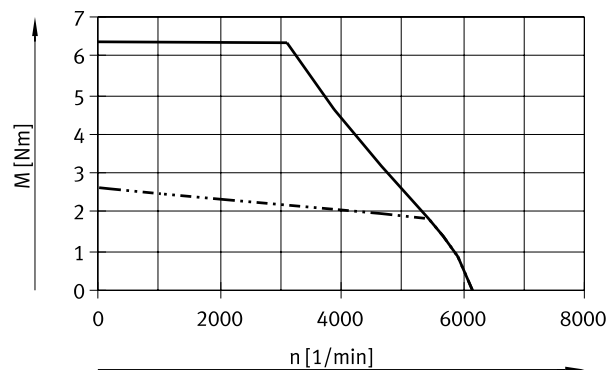
Winding HS (without/with brake)



— Peak torque at 565 V DC
 - · - · - Peak torque at 680 V DC
 - - - - Nominal torque

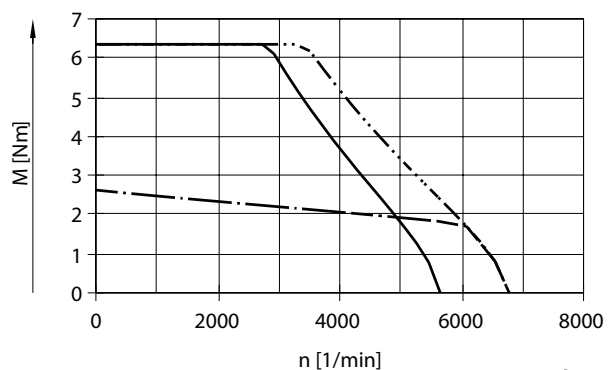
Length M

Winding LS (without/with brake)



— Peak torque at 325 V DC
 - · - · - Nominal torque

Winding HS (without/with brake)



— Peak torque at 565 V DC
 - · - · - Peak torque at 680 V DC
 - - - - Nominal torque

Note

Typical motor characteristic curve with nominal voltage and optimal motor controller.
 Observe the maximum permissible rotational speeds of add-on and installation components (such as brake, encoder, etc.).

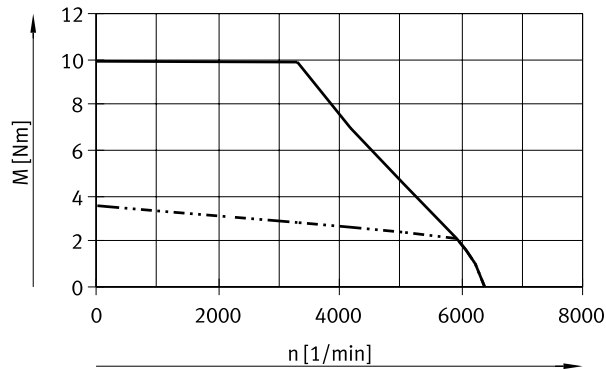
Datasheet

Torque M as a function of rotational speed n

Flange size 80

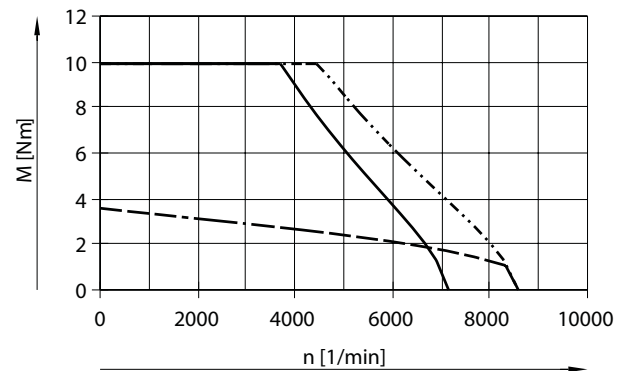
Length L

Winding LS (without/with brake)



- Peak torque at 325 V DC
- · - · - Nominal torque

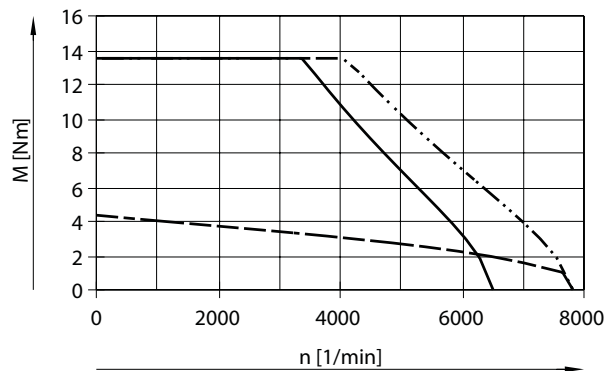
Winding HS (without/with brake)



- Peak torque at 565 V DC
- · - · - Peak torque at 680 V DC
- - - Nominal torque

Length H

Winding HS (without/with brake)



- Peak torque at 565 V DC
- · - · - Peak torque at 680 V DC
- - - Nominal torque

Note

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

Observe the maximum permissible rotational speeds of add-on and installation components (such as brake, encoder, etc.).

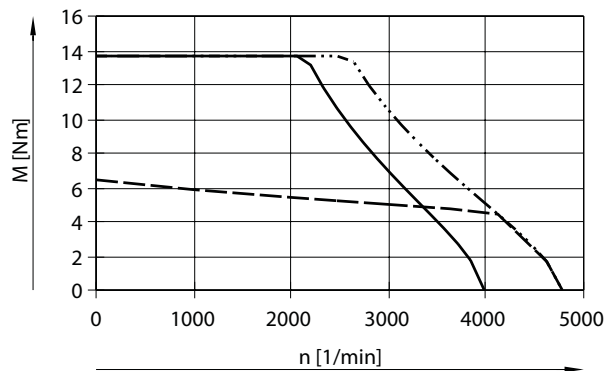
Datasheet

Torque M as a function of rotational speed n

Flange size 100

Length S

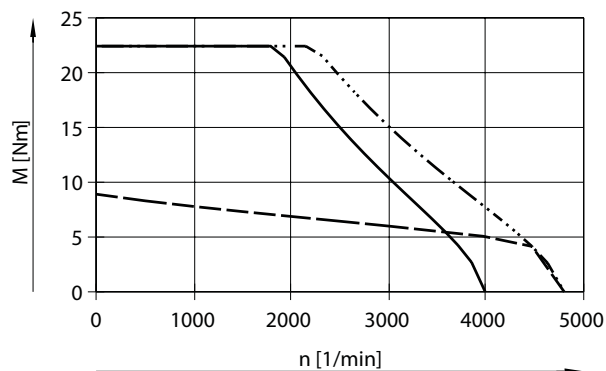
Winding HS (without/with brake)



- Peak torque at 565 V DC
- Peak torque at 680 V DC
- - - Nominal torque

Length M

Winding HS (without/with brake)



- Peak torque at 565 V DC
- Peak torque at 680 V DC
- - - Nominal torque

Note

Typical motor characteristic curve with nominal voltage and optimal motor controller.
Observe the maximum permissible rotational speeds of add-on and installation components (such as brake, encoder, etc.).

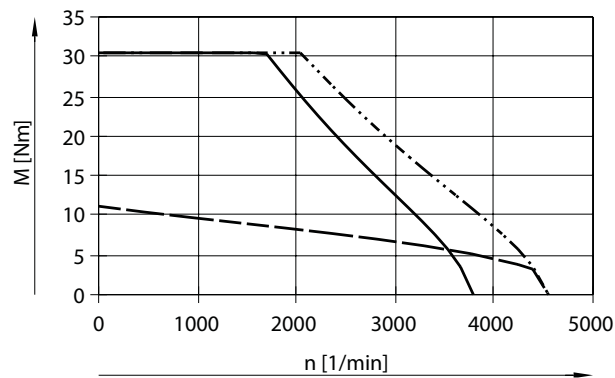
Datasheet

Torque M as a function of rotational speed n

Flange size 100

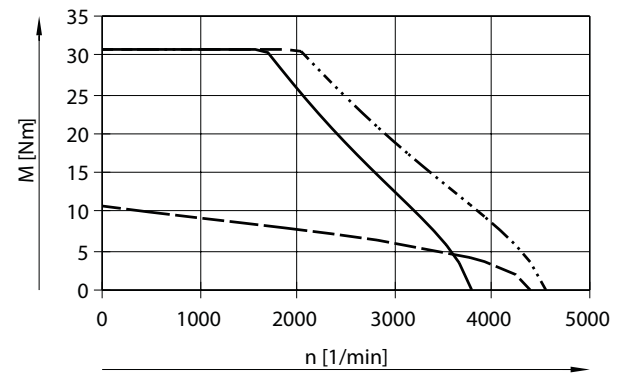
Length L

Winding HS (without brake)



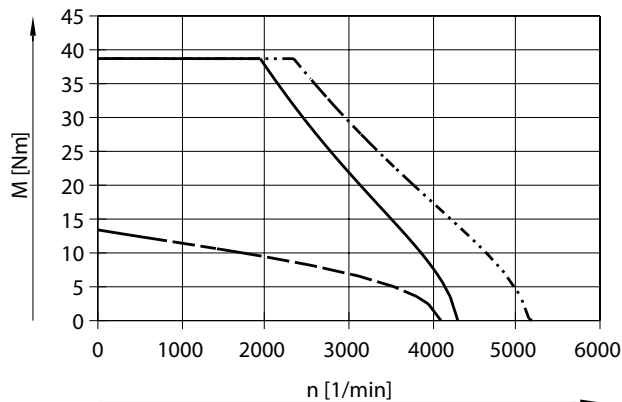
— Peak torque at 565 V DC
 Peak torque at 680 V DC
 - - - - - Nominal torque

Winding HS-B (with brake)



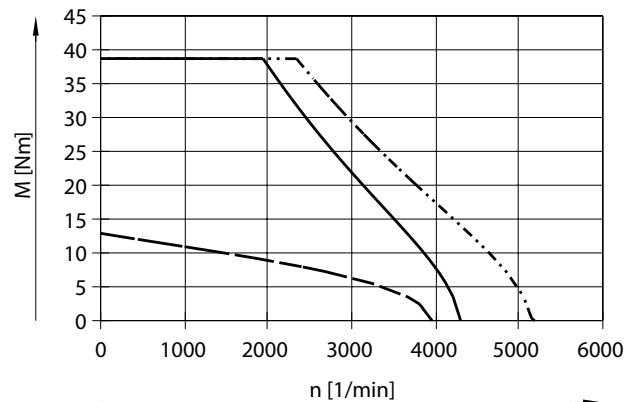
Length H

Winding HS (without brake)



— Peak torque at 565 V DC
 Peak torque at 680 V DC
 - - - - - Nominal torque

Winding HS-B (with brake)



⚠ **Note**

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

Observe the maximum permissible rotational speeds of add-on and installation components (such as brake, encoder, etc.).

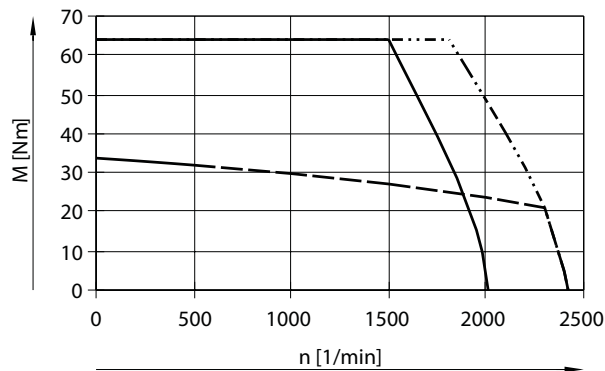
Datasheet

Torque M as a function of rotational speed n

Flange size 150

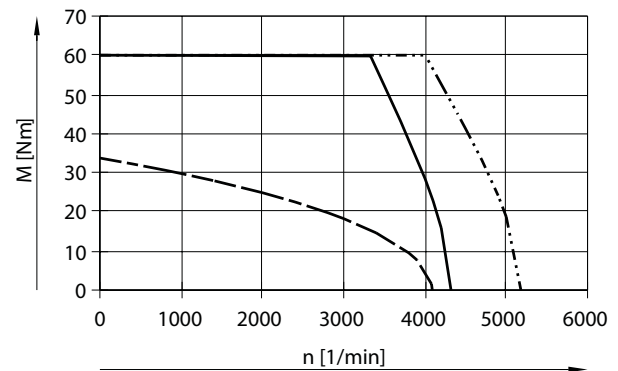
Length M

Winding HS (without/with brake)



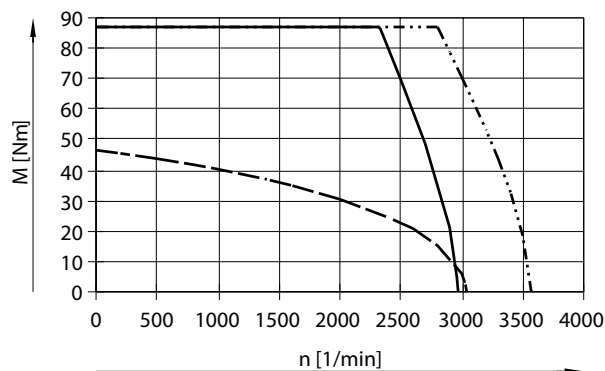
- Peak torque at 565 V DC
- ⋯ Peak torque at 680 V DC
- - - Nominal torque

Winding HV (without/with brake)



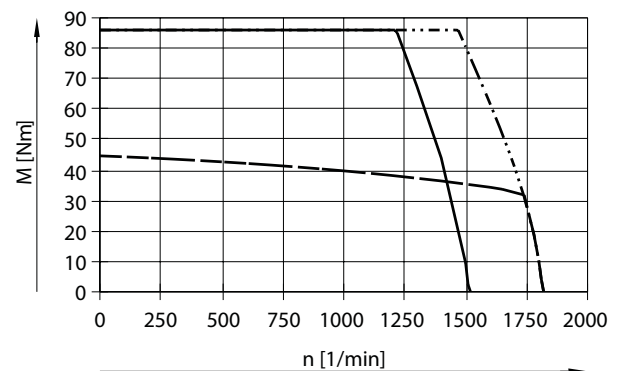
Length L

Winding HS (without/with brake)



- Peak torque at 565 V DC
- ⋯ Peak torque at 680 V DC
- - - Nominal torque

Winding HT (without/with brake)



Note

Typical motor characteristic curve with nominal voltage and optimal motor controller.
Observe the maximum permissible rotational speeds of add-on and installation components (such as brake, encoder, etc.).

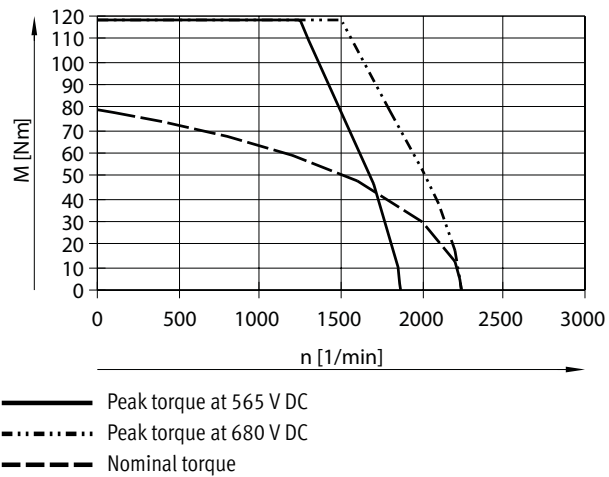
Datasheet

Torque M as a function of rotational speed n

Flange size 190

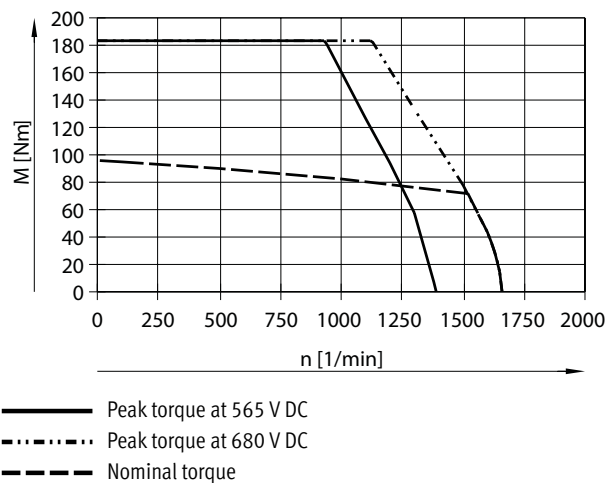
Length M

Winding HS (without/with brake)



Length L

Winding HT (without/with brake)

**Note**

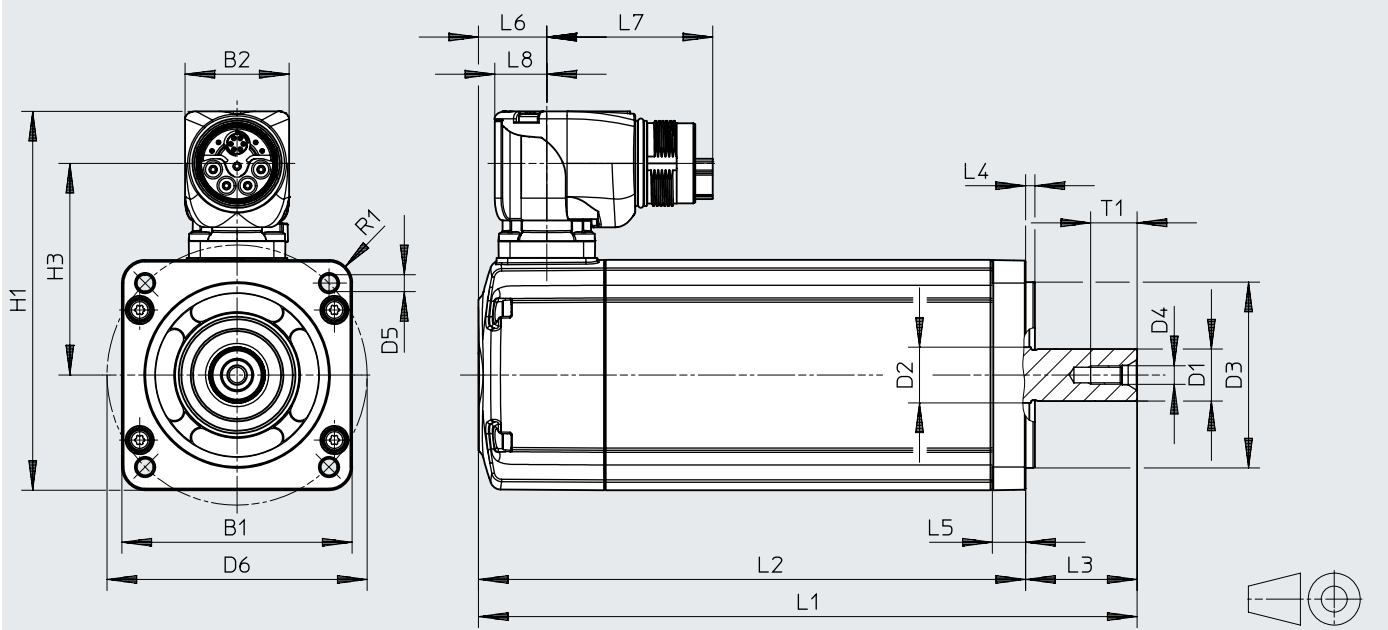
Typical motor characteristic curve with nominal voltage and optimal motor controller.

Observe the maximum permissible rotational speeds of add-on and installation components (such as brake, encoder, etc.).

Datasheet

Dimensions – Flange size 60, 80, 100

Download CAD data → www.festo.com



Note
 Only motors without feather key may be used in combination with parallel and axial kits (EAMM-U/EAMM-A).

| | Length | Interface code, motor | B1 | B2 | D1 ∅ h6 | D2 ∅ | D3 ∅ h7 | D4 | D5 ∅ |
|-----|--------|-----------------------|-----|----|---------------|---------|---------------|----|---------|
| 60 | S | 60P | 62 | 28 | 14 | 15 | 50 | M5 | 4.3 |
| | M | | | | | | | | |
| | L | | | | | | | | |
| 80 | S | 80P | 82 | 28 | 19 | 20 | 70 | M6 | 5.3 |
| | M | | | | | | | | |
| | L | | | | | | | | |
| | H | | | | | | | | |
| 100 | S | 100A | 104 | 28 | 19 | 20 | 95 | M6 | 9 |
| | M | | | | | | | | |
| | L | | | | | | | | |
| | H | | | | | | | | |

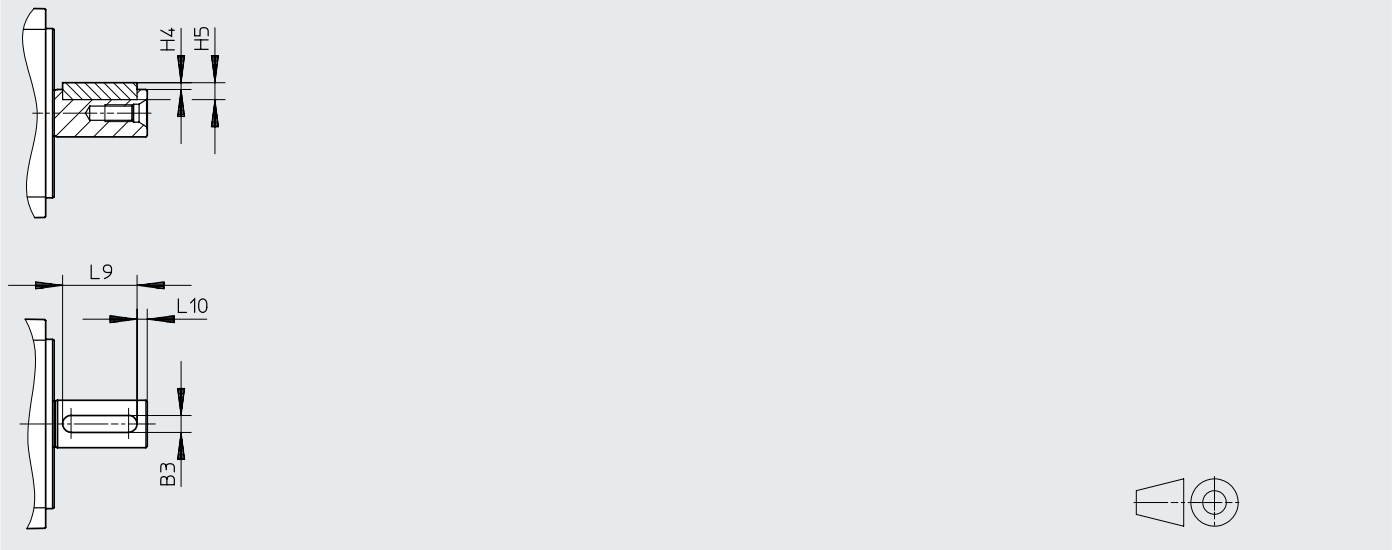
| | Length | D6 ∅ ±0.3 | H1 | H3 | L1 | | L2 | | L3 |
|-----|--------|-----------------|-----|----|-------|------------|-------|------------------|-------------|
| | | | | | | With brake | ±2 | With brake ±2 | |
| 60 | S | 70 | 102 | 57 | 144.5 | 177.3 | 114.5 | 147.3 | 30+0.5/-0.2 |
| | M | | | | 164.5 | 197.3 | 134.5 | 167.3 | |
| | L | | | | 184.5 | 217.3 | 154.5 | 187.3 | |
| 80 | S | 90 | 122 | 67 | 165.2 | 209.4 | 130.2 | 174.4 | 35+0.4/-0.2 |
| | M | | | | 185.2 | 229.4 | 150.2 | 194.4 | |
| | L | | | | 205.2 | 249.4 | 170.2 | 214.4 | |
| | H | | | | 225.2 | 269.4 | 190.2 | 234.4 | |
| 100 | S | 115 | 144 | 78 | 227.5 | 271.7 | 187.5 | 231.7 | 40+0.4/-0.2 |
| | M | | | | 257.5 | 301.7 | 217.5 | 261.7 | |
| | L | | | | 287.5 | 330.7 | 247.5 | 290.7 | |
| | H | | | | 344.5 | 388.7 | 304.5 | 348.7 | |

Datasheet

| | Length | L4 | L5 | L6 | L7 | L8 | R1 | T1 |
|-----|--------|------|------|------|------|----|----|------|
| | | ±0.2 | ±0.3 | | | | | |
| 60 | S | 2.5 | 9 | 18.4 | 44.7 | 14 | 6 | 12.5 |
| | M | | | | | | | |
| | L | | | | | | | |
| 80 | S | 3 | 10 | 20.1 | 44.7 | 14 | 8 | 16 |
| | M | | | | | | | |
| | L | | | | | | | |
| | H | | | | | | | |
| 100 | S | 3 | 12 | 22.7 | 44.7 | 14 | 11 | 16 |
| | M | | | | | | | |
| | L | | | | | | | |
| | H | | | | | | | |

Dimensions – Feather key for flange size 60, 80, 100

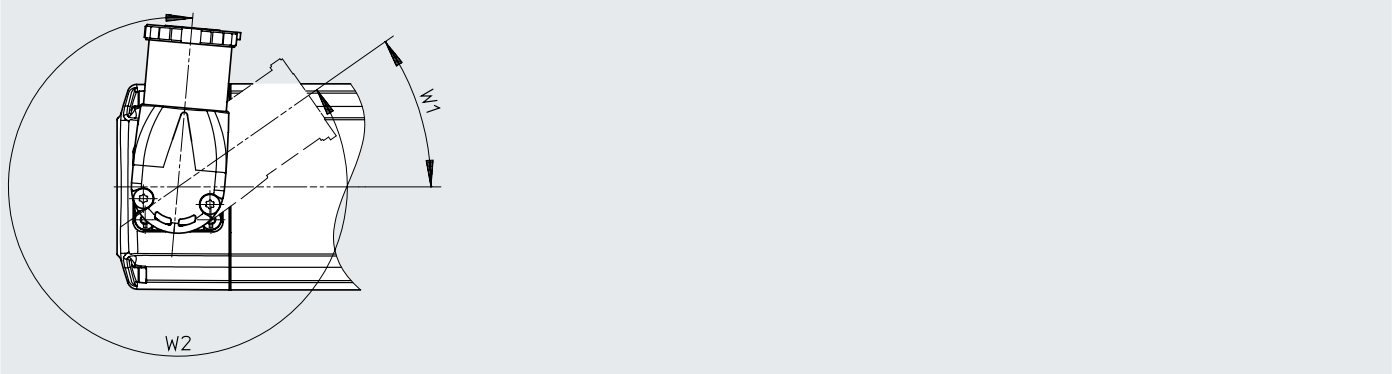
Download CAD data → www.festo.com



| | B3 | H4 | H5 | L9 | L10 | Feather key |
|-------------------|----|-----|----|----|-----|-------------------|
| EMMT-AS-60-...-K | 5 | 2 | 5 | 22 | 3 | DIN 6885 A 5x5x22 |
| EMMT-AS-80-...-K | 6 | 2.5 | 6 | 22 | 3 | DIN 6885 A 6x6x22 |
| EMMT-AS-100-...-K | 6 | 2.5 | 6 | 32 | 3 | DIN 6885 A 6x6x32 |

Dimensions – Connection for flange size 60, 80, 100

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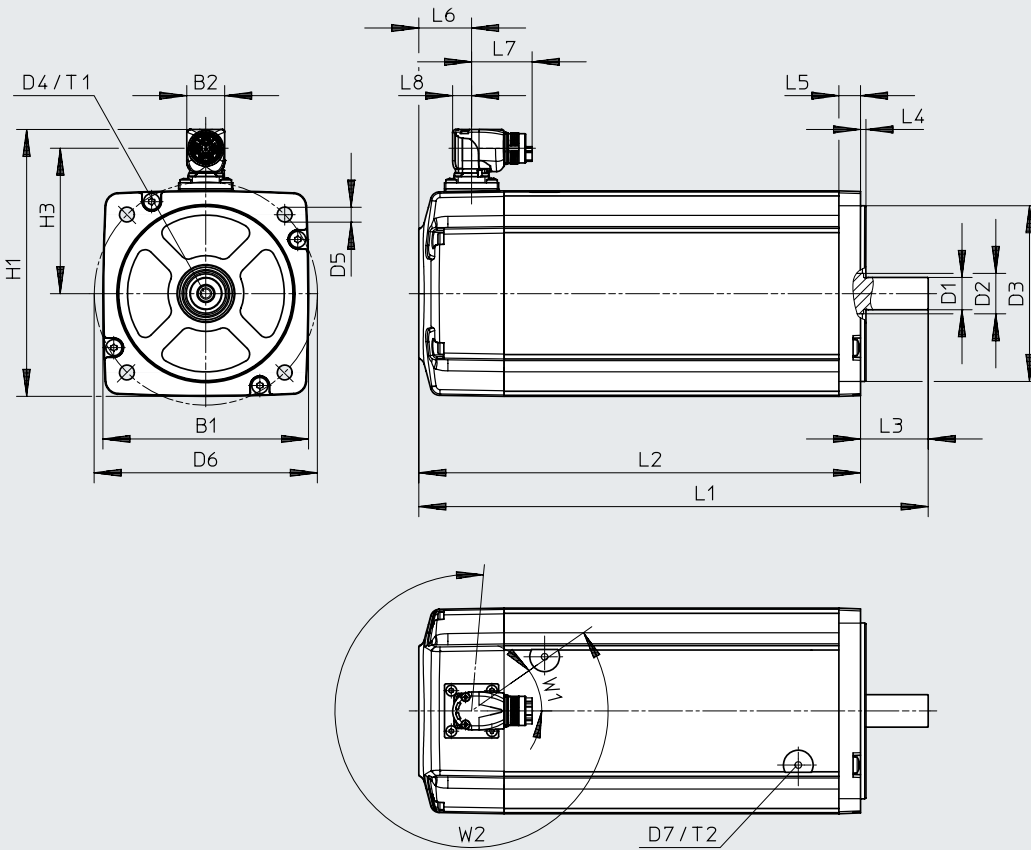


| | W1 | W2 |
|-------------|------|------|
| EMMT-AS-... | -35° | 310° |

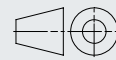
Datasheet

Dimensions – Flange size 150, 190

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Note
Only motors without feather key may be used in combination with parallel and axial kits (EAMM-U/EAMM-A).



| | Length | Winding | Interface code, motor | B1 | B2 | D1 ø h6 | D2 ø | D3 ø h7 | D4 | D5 ø | D6 ø ±0.3 |
|-----|--------|---------|-----------------------|-----|------|---------------|---------|---------------|----|---------|-----------------|
| 150 | M | HS | 150A | 152 | 28 | 24 | 30 | 130 | M8 | 11 | 165 |
| | L | HT | | | 42.8 | | | | | | |
| | M | HV | | | | | | | | | |
| | L | HS | | | | | | | | | |
| 190 | M | HS | 190B | 190 | 42.8 | 32 | 40 | 180 | M8 | 13.5 | 215 |
| | L | HT | | | | | | | | | |

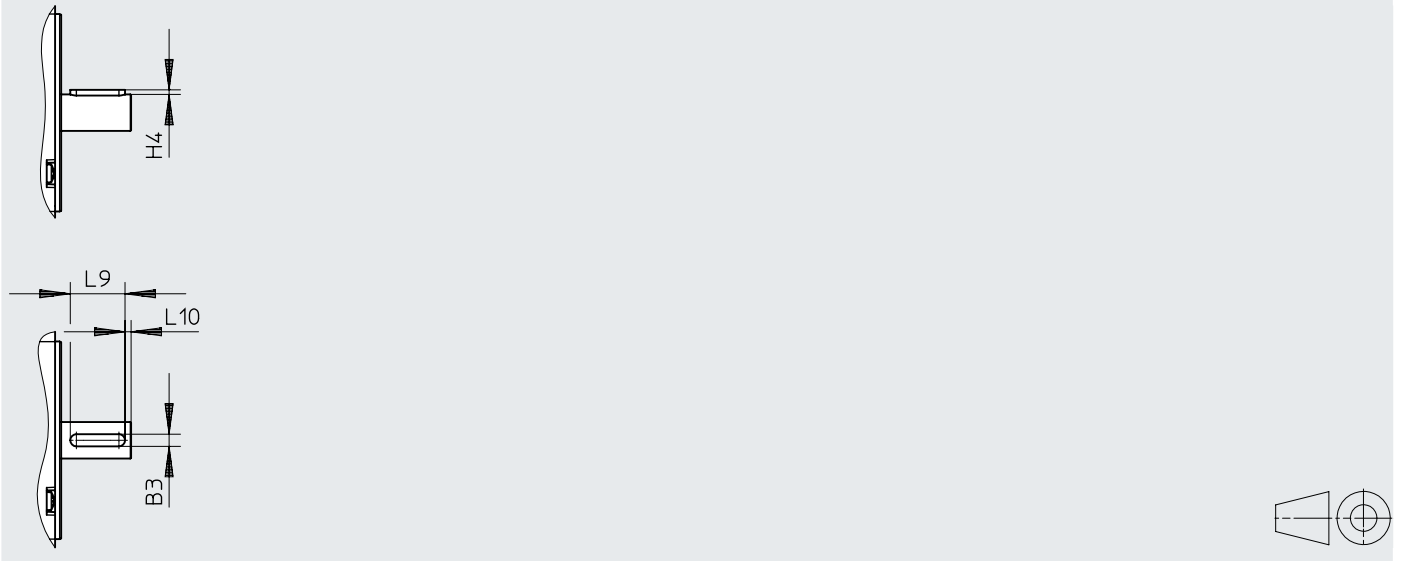
| | Length | Winding | D7 | H1 | H3 | L1 | | L2 | | L3 | L4 ±0.2 |
|-----|--------|---------|----|-------|-------|-------|------------|-------|------------------|-----------------------|------------|
| | | | | | | | With brake | ±2 | With brake ±2 | | |
| 150 | M | HS | M6 | 197.4 | 107.4 | 316.5 | 367.5 | 266.5 | 317.5 | 50 ^{+0.5/-1} | 4 |
| | L | HT | | | | 376.5 | 440.5 | 326.5 | 390.5 | | |
| | M | HV | | | | 316.5 | 367.5 | 266.5 | 317.5 | | |
| | L | HS | | | | 376.5 | 440.5 | 326.5 | 390.5 | | |
| 190 | M | HS | M8 | 258.3 | 137.3 | 414.5 | 477 | 356.5 | 419 | 58 ^{+0.5/-1} | 5 |
| | L | HT | | | | 474.5 | 537 | 416.5 | 479 | | |

| | Length | Winding | L5 ±0.3 | L6 | L7 | L8 | T1 | T2 | W1 | W2 |
|-----|--------|---------|------------|----|------|------|----|----|-----|-----|
| | | | | | | | | | | |
| 150 | M | HS | 16 | 39 | 44.7 | 14 | 19 | 13 | -35 | 310 |
| | L | HT | | | | | | | | |
| | M | HV | | | | | | | | |
| | L | HS | | | | | | | | |
| 190 | M | HS | 18 | 46 | 80.9 | 19.9 | 28 | 13 | -35 | 310 |
| | L | HT | | | | | | | | |

Datasheet

Dimensions – Feather key for flange size 150, 190

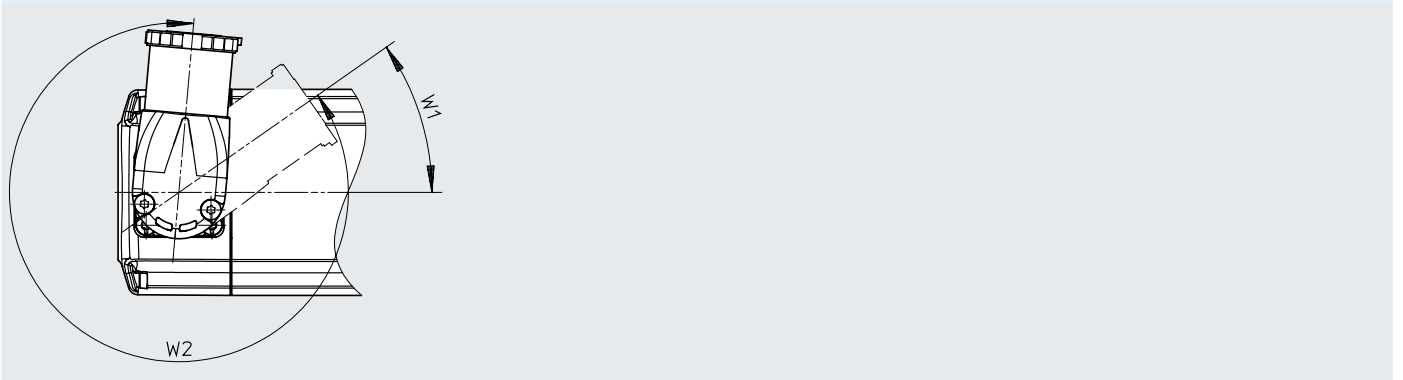
Download CAD data → www.festo.com



| | B3 | H4 | L9 | L10 | Feather key |
|-------------------|----|----|------|-----|--------------------|
| | h9 | | -0.2 | | |
| EMMT-AS-150-...-K | 8 | 3 | 36 | 4 | DIN 6885 A 8x7x36 |
| EMMT-AS-190-...-K | 10 | 3 | 45 | 4 | DIN 6885 A 10x8x45 |

Dimensions – Connection for flange size 150, 190

Download CAD data → www.festo.com



| | W1 | W2 |
|-------------|------|------|
| EMMT-AS-... | -35° | 310° |

Datasheet

| Ordering data | | | | | | | | | | | | |
|-----------------------|--------|------|-----------|-----------------------|------------------------|-------------------------|------------|--------------------|-------|----------|----------------------|--|
| Length | | | | Winding | | Measuring unit, encoder | | | Brake | Part no. | Type | |
| Short | Medium | Long | Very long | Low voltage, standard | High voltage, standard | Single-turn | Multi-turn | Safety, multi-turn | | | | |
| Flange size 60 | | | | | | | | | | | | |
| ■ | | | | ■ | | ■ | | | | 5242196 | EMMT-AS-60-S-LS-RS | |
| ■ | | | | ■ | | | ■ | | | 5242197 | EMMT-AS-60-S-LS-RM | |
| ■ | | | | ■ | | | | ■ | | 8160630 | EMMT-AS-60-S-LS-RMY | |
| ■ | | | | ■ | | ■ | | | ■ | 5242198 | EMMT-AS-60-S-LS-RSB | |
| ■ | | | | ■ | | | ■ | | ■ | 5242199 | EMMT-AS-60-S-LS-RMB | |
| ■ | | | | ■ | | | | ■ | ■ | 8160631 | EMMT-AS-60-S-LS-RMYB | |
| ■ | | | | | ■ | ■ | | | | 5242200 | EMMT-AS-60-S-HS-RS | |
| ■ | | | | | ■ | | ■ | | | 5242201 | EMMT-AS-60-S-HS-RM | |
| ■ | | | | | ■ | | | ■ | | 8160632 | EMMT-AS-60-S-HS-RMY | |
| ■ | | | | | ■ | ■ | | | ■ | 5242202 | EMMT-AS-60-S-HS-RSB | |
| ■ | | | | | ■ | | ■ | | ■ | 5242203 | EMMT-AS-60-S-HS-RMB | |
| ■ | | | | | ■ | | | ■ | ■ | 8160633 | EMMT-AS-60-S-HS-RMYB | |
| | ■ | | | ■ | | ■ | | | | 5242204 | EMMT-AS-60-M-LS-RS | |
| | ■ | | | ■ | | | ■ | | | 5242205 | EMMT-AS-60-M-LS-RM | |
| | ■ | | | ■ | | | | ■ | | 8160634 | EMMT-AS-60-M-LS-RMY | |
| | ■ | | | ■ | | ■ | | | ■ | 5242206 | EMMT-AS-60-M-LS-RSB | |
| | ■ | | | ■ | | | ■ | | ■ | 5242207 | EMMT-AS-60-M-LS-RMB | |
| | ■ | | | ■ | | | | ■ | ■ | 8160635 | EMMT-AS-60-M-LS-RMYB | |
| | ■ | | | | ■ | ■ | | | | 5242208 | EMMT-AS-60-M-HS-RS | |
| | ■ | | | | ■ | | ■ | | | 5242209 | EMMT-AS-60-M-HS-RM | |
| | ■ | | | | ■ | | | ■ | | 8160636 | EMMT-AS-60-M-HS-RMY | |
| | ■ | | | | ■ | ■ | | | ■ | 5242210 | EMMT-AS-60-M-HS-RSB | |
| | ■ | | | | ■ | | ■ | | ■ | 5242211 | EMMT-AS-60-M-HS-RMB | |
| | ■ | | | | ■ | | | ■ | ■ | 8160637 | EMMT-AS-60-M-HS-RMYB | |
| | | ■ | | ■ | | ■ | | | | 5242212 | EMMT-AS-60-L-LS-RS | |
| | | ■ | | ■ | | | ■ | | | 5242213 | EMMT-AS-60-L-LS-RM | |
| | | ■ | | ■ | | | | ■ | | 8160638 | EMMT-AS-60-L-LS-RMY | |
| | | ■ | | ■ | | ■ | | | ■ | 5242214 | EMMT-AS-60-L-LS-RSB | |
| | | ■ | | ■ | | | ■ | | ■ | 5242215 | EMMT-AS-60-L-LS-RMB | |
| | | ■ | | ■ | | | | ■ | ■ | 8160639 | EMMT-AS-60-L-LS-RMYB | |
| | | ■ | | | ■ | ■ | | | | 5242216 | EMMT-AS-60-L-HS-RS | |
| | | ■ | | | ■ | | ■ | | | 5242217 | EMMT-AS-60-L-HS-RM | |
| | | ■ | | | ■ | | | ■ | | 8160640 | EMMT-AS-60-L-HS-RMY | |
| | | ■ | | | ■ | ■ | | | ■ | 5242218 | EMMT-AS-60-L-HS-RSB | |
| | | ■ | | | ■ | | ■ | | ■ | 5242219 | EMMT-AS-60-L-HS-RMB | |
| | | ■ | | | ■ | | | ■ | ■ | 8160641 | EMMT-AS-60-L-HS-RMYB | |

Datasheet

| Ordering data | | | | | | | | | | | |
|-----------------------|--------|------|-----------|-----------------------|------------------------|-------------------------|------------|--------------------|-------|----------|----------------------|
| Length | | | | Winding | | Measuring unit, encoder | | | Brake | Part no. | Type |
| Short | Medium | Long | Very long | Low voltage, standard | High voltage, standard | Single-turn | Multi-turn | Safety, multi-turn | | | |
| Flange size 80 | | | | | | | | | | | |
| ■ | | | | ■ | | ■ | | | | 5255425 | EMMT-AS-80-S-LS-RS |
| ■ | | | | ■ | | | ■ | | | 5255426 | EMMT-AS-80-S-LS-RM |
| ■ | | | | ■ | | | | ■ | | 8160642 | EMMT-AS-80-S-LS-RMY |
| ■ | | | | ■ | | ■ | | | ■ | 5255427 | EMMT-AS-80-S-LS-RSB |
| ■ | | | | ■ | | | ■ | | ■ | 5255428 | EMMT-AS-80-S-LS-RMB |
| ■ | | | | ■ | | | | ■ | ■ | 8160643 | EMMT-AS-80-S-LS-RMYB |
| ■ | | | | | ■ | ■ | | | | 5255429 | EMMT-AS-80-S-HS-RS |
| ■ | | | | | ■ | | ■ | | | 5255430 | EMMT-AS-80-S-HS-RM |
| ■ | | | | | ■ | | | ■ | | 8160644 | EMMT-AS-80-S-HS-RMY |
| ■ | | | | | ■ | ■ | | | ■ | 5255431 | EMMT-AS-80-S-HS-RSB |
| ■ | | | | | ■ | | ■ | | ■ | 5255432 | EMMT-AS-80-S-HS-RMB |
| ■ | | | | | ■ | | | ■ | ■ | 8160645 | EMMT-AS-80-S-HS-RMYB |
| | ■ | | | ■ | | ■ | | | | 5255433 | EMMT-AS-80-M-LS-RS |
| | ■ | | | ■ | | | ■ | | | 5255434 | EMMT-AS-80-M-LS-RM |
| | ■ | | | ■ | | | | ■ | | 8160646 | EMMT-AS-80-M-LS-RMY |
| | ■ | | | ■ | | ■ | | | ■ | 5255435 | EMMT-AS-80-M-LS-RSB |
| | ■ | | | ■ | | | ■ | | ■ | 5255436 | EMMT-AS-80-M-LS-RMB |
| | ■ | | | ■ | | | | ■ | ■ | 8160647 | EMMT-AS-80-M-LS-RMYB |
| | ■ | | | | ■ | ■ | | | | 5255437 | EMMT-AS-80-M-HS-RS |
| | ■ | | | | ■ | | ■ | | | 5255438 | EMMT-AS-80-M-HS-RM |
| | ■ | | | | ■ | | | ■ | | 8160648 | EMMT-AS-80-M-HS-RMY |
| | ■ | | | | ■ | ■ | | | ■ | 5255439 | EMMT-AS-80-M-HS-RSB |
| | ■ | | | | ■ | | ■ | | ■ | 5255440 | EMMT-AS-80-M-HS-RMB |
| | ■ | | | | ■ | | | ■ | ■ | 8160649 | EMMT-AS-80-M-HS-RMYB |
| | | ■ | | ■ | | ■ | | | | 5255441 | EMMT-AS-80-L-LS-RS |
| | | ■ | | ■ | | | ■ | | | 5255442 | EMMT-AS-80-L-LS-RM |
| | | ■ | | ■ | | | | ■ | | 8160650 | EMMT-AS-80-L-LS-RMY |
| | | ■ | | ■ | | ■ | | | ■ | 5255443 | EMMT-AS-80-L-LS-RSB |
| | | ■ | | ■ | | | ■ | | ■ | 5255444 | EMMT-AS-80-L-LS-RMB |
| | | ■ | | ■ | | | | ■ | ■ | 8160651 | EMMT-AS-80-L-LS-RMYB |
| | | ■ | | | ■ | ■ | | | | 5255445 | EMMT-AS-80-L-HS-RS |
| | | ■ | | | ■ | | ■ | | | 5255446 | EMMT-AS-80-L-HS-RM |
| | | ■ | | | ■ | | | ■ | | 8160652 | EMMT-AS-80-L-HS-RMY |
| | | ■ | | | ■ | ■ | | | ■ | 5255447 | EMMT-AS-80-L-HS-RSB |
| | | ■ | | | ■ | | ■ | | ■ | 5255448 | EMMT-AS-80-L-HS-RMB |
| | | ■ | | | ■ | | | ■ | ■ | 8160653 | EMMT-AS-80-L-HS-RMYB |
| | | | ■ | | ■ | ■ | | | | 610909 | EMMT-AS-80-H-HS-RS |
| | | | ■ | | ■ | | ■ | | | 8172104 | EMMT-AS-80-H-HS-RM |
| | | | ■ | | ■ | | | ■ | | 8185112 | EMMT-AS-80-H-HS-RMY |
| | | | ■ | | ■ | ■ | | | ■ | 610908 | EMMT-AS-80-H-HS-RSB |
| | | | ■ | | ■ | | ■ | | ■ | 8172026 | EMMT-AS-80-H-HS-RMB |
| | | | ■ | | ■ | | | ■ | ■ | 8185114 | EMMT-AS-80-H-HS-RMYB |

Datasheet

| Ordering data | | | | | | | | | | | |
|------------------------|--------|------|-----------|-----------------------|------------------------|-------------------------|------------|--------------------|-------|----------|-----------------------|
| Length | | | | Winding | | Measuring unit, encoder | | | Brake | Part no. | Type |
| Short | Medium | Long | Very long | Low voltage, standard | High voltage, standard | Single-turn | Multi-turn | Safety, multi-turn | | | |
| Flange size 100 | | | | | | | | | | | |
| ■ | | | | | ■ | ■ | | | | 5255519 | EMMT-AS-100-S-HS-RS |
| ■ | | | | | ■ | | ■ | | | 5255521 | EMMT-AS-100-S-HS-RM |
| ■ | | | | | ■ | | | ■ | | 8160654 | EMMT-AS-100-S-HS-RMY |
| ■ | | | | | ■ | ■ | | | ■ | 5255528 | EMMT-AS-100-S-HS-RSB |
| ■ | | | | | ■ | | ■ | | ■ | 5255529 | EMMT-AS-100-S-HS-RMB |
| ■ | | | | | ■ | | | ■ | ■ | 8160655 | EMMT-AS-100-S-HS-RMYB |
| | ■ | | | | ■ | ■ | | | | 5255530 | EMMT-AS-100-M-HS-RS |
| | ■ | | | | ■ | | ■ | | | 5255531 | EMMT-AS-100-M-HS-RM |
| | ■ | | | | ■ | | | ■ | | 8160656 | EMMT-AS-100-M-HS-RMY |
| | ■ | | | | ■ | ■ | | | ■ | 5255532 | EMMT-AS-100-M-HS-RSB |
| | ■ | | | | ■ | | ■ | | ■ | 5255533 | EMMT-AS-100-M-HS-RMB |
| | ■ | | | | ■ | | | ■ | ■ | 8160657 | EMMT-AS-100-M-HS-RMYB |
| | | ■ | | | ■ | ■ | | | | 5255534 | EMMT-AS-100-L-HS-RS |
| | | ■ | | | ■ | | ■ | | | 5255535 | EMMT-AS-100-L-HS-RM |
| | | ■ | | | ■ | | | ■ | | 8160658 | EMMT-AS-100-L-HS-RMY |
| | | ■ | | | ■ | ■ | | | ■ | 5255536 | EMMT-AS-100-L-HS-RSB |
| | | ■ | | | ■ | | ■ | | ■ | 5255537 | EMMT-AS-100-L-HS-RMB |
| | | ■ | | | ■ | | | ■ | ■ | 8160659 | EMMT-AS-100-L-HS-RMYB |
| | | | ■ | | ■ | ■ | | | | 8182017 | EMMT-AS-100-H-HS-RS |
| | | | ■ | | ■ | | ■ | | | 8182016 | EMMT-AS-100-H-HS-RM |
| | | | ■ | | ■ | | | ■ | | 8160660 | EMMT-AS-100-H-HS-RMY |
| | | | ■ | | ■ | ■ | | | ■ | 8182015 | EMMT-AS-100-H-HS-RSB |
| | | | ■ | | ■ | | ■ | | ■ | 8182014 | EMMT-AS-100-H-HS-RMB |
| | | | ■ | | ■ | | | ■ | ■ | 8160661 | EMMT-AS-100-H-HS-RMYB |

Datasheet

| Ordering data | | Winding | | | Measuring unit | | | Brake | Part no. | Type |
|------------------------|------|--------------|-----------------|------------------|----------------|------------|--------------------|-------|----------|------------------------|
| Length | | High voltage | | | Encoder | | | | | |
| Medium | Long | Standard | Speed-optimised | Torque-optimised | Single-turn | Multi-turn | Safety, multi-turn | | | |
| Flange size 150 | | | | | | | | | | |
| ■ | | ■ | | | ■ | | | | 8148270 | EMMT-AS-150-M-HS-R2S |
| ■ | | ■ | | | | ■ | | | 8148271 | EMMT-AS-150-M-HS-R2M |
| ■ | | ■ | | | | | ■ | | 8148272 | EMMT-AS-150-M-HS-R2MY |
| ■ | | ■ | | | ■ | | | ■ | 8148273 | EMMT-AS-150-M-HS-R2SB |
| ■ | | ■ | | | | ■ | | ■ | 8148274 | EMMT-AS-150-M-HS-R2MB |
| ■ | | ■ | | | | | ■ | ■ | 8148275 | EMMT-AS-150-M-HS-R2MYB |
| ■ | | | ■ | | ■ | | | | 8148276 | EMMT-AS-150-M-HV-R3S |
| ■ | | | ■ | | | ■ | | | 8148277 | EMMT-AS-150-M-HV-R3M |
| ■ | | | ■ | | | | ■ | | 8148278 | EMMT-AS-150-M-HV-R3MY |
| ■ | | | ■ | | ■ | | | ■ | 8148279 | EMMT-AS-150-M-HV-R3SB |
| ■ | | | ■ | | | ■ | | ■ | 8148280 | EMMT-AS-150-M-HV-R3MB |
| ■ | | | ■ | | | | ■ | ■ | 8148281 | EMMT-AS-150-M-HV-R3MYB |
| | ■ | | | ■ | ■ | | | | 8148318 | EMMT-AS-150-L-HT-R2S |
| | ■ | | | ■ | | ■ | | | 8148319 | EMMT-AS-150-L-HT-R2M |
| | ■ | | | ■ | | | ■ | | 8148320 | EMMT-AS-150-L-HT-R2MY |
| | ■ | | | ■ | ■ | | | ■ | 8148321 | EMMT-AS-150-L-HT-R2SB |
| | ■ | | | ■ | | ■ | | ■ | 8148322 | EMMT-AS-150-L-HT-R2MB |
| | ■ | | | ■ | | | ■ | ■ | 8148323 | EMMT-AS-150-L-HT-R2MYB |
| | ■ | ■ | | | ■ | | | | 8148324 | EMMT-AS-150-L-HS-R3S |
| | ■ | ■ | | | | ■ | | | 8148325 | EMMT-AS-150-L-HS-R3M |
| | ■ | ■ | | | | | ■ | | 8148326 | EMMT-AS-150-L-HS-R3MY |
| | ■ | ■ | | | ■ | | | ■ | 8148327 | EMMT-AS-150-L-HS-R3SB |
| | ■ | ■ | | | | ■ | | ■ | 8148328 | EMMT-AS-150-L-HS-R3MB |
| | ■ | ■ | | | | | ■ | ■ | 8148329 | EMMT-AS-150-L-HS-R3MYB |
| Flange size 190 | | | | | | | | | | |
| ■ | | ■ | | | ■ | | | | 8148366 | EMMT-AS-190-M-HS-R3S |
| ■ | | ■ | | | | ■ | | | 8148367 | EMMT-AS-190-M-HS-R3M |
| ■ | | ■ | | | | | ■ | | 8148368 | EMMT-AS-190-M-HS-R3MY |
| ■ | | ■ | | | ■ | | | ■ | 8148369 | EMMT-AS-190-M-HS-R3SB |
| ■ | | ■ | | | | ■ | | ■ | 8148370 | EMMT-AS-190-M-HS-R3MB |
| ■ | | ■ | | | | | ■ | ■ | 8148371 | EMMT-AS-190-M-HS-R3MYB |
| | ■ | | | ■ | ■ | | | | 8148390 | EMMT-AS-190-L-HT-R3S |
| | ■ | | | ■ | | ■ | | | 8148391 | EMMT-AS-190-L-HT-R3M |
| | ■ | | | ■ | | | ■ | | 8148392 | EMMT-AS-190-L-HT-R3MY |
| | ■ | | | ■ | ■ | | | ■ | 8148393 | EMMT-AS-190-L-HT-R3SB |
| | ■ | | | ■ | | ■ | | ■ | 8148394 | EMMT-AS-190-L-HT-R3MB |
| | ■ | | | ■ | | | ■ | ■ | 8148395 | EMMT-AS-190-L-HT-R3MYB |

Datasheet

| Ordering data – With feather key | | | | | | | | | | |
|----------------------------------|------|--------------|---------------------|----------------------|----------------|------------|-----------------------|-------|----------|-------------------------|
| Length | | Winding | | | Measuring unit | | | Brake | Part no. | Type |
| Medium | Long | High voltage | | Encoder | | | | | | |
| | | Standard | Speed- optimised | Torque- optimised | Single-turn | Multi-turn | Safety, multi-turn | | | |
| Flange size 150 | | | | | | | | | | |
| ■ | | ■ | | | ■ | | | | 8148282 | EMMT-AS-150-MK-HS-R2S |
| ■ | | ■ | | | | ■ | | | 8148283 | EMMT-AS-150-MK-HS-R2M |
| ■ | | ■ | | | | | ■ | | 8148284 | EMMT-AS-150-MK-HS-R2MY |
| ■ | | ■ | | | ■ | | | ■ | 8148285 | EMMT-AS-150-MK-HS-R2SB |
| ■ | | ■ | | | | ■ | | ■ | 8148286 | EMMT-AS-150-MK-HS-R2MB |
| ■ | | ■ | | | | | ■ | ■ | 8148287 | EMMT-AS-150-MK-HS-R2MYB |
| ■ | | | ■ | | ■ | | | | 8148288 | EMMT-AS-150-MK-HV-R3S |
| ■ | | | ■ | | | ■ | | | 8148289 | EMMT-AS-150-MK-HV-R3M |
| ■ | | | ■ | | | | ■ | | 8148290 | EMMT-AS-150-MK-HV-R3MY |
| ■ | | | ■ | | ■ | | | ■ | 8148291 | EMMT-AS-150-MK-HV-R3SB |
| ■ | | | ■ | | | ■ | | ■ | 8148292 | EMMT-AS-150-MK-HV-R3MB |
| ■ | | | ■ | | | | ■ | ■ | 8148293 | EMMT-AS-150-MK-HV-R3MYB |
| | ■ | | | ■ | ■ | | | | 8148330 | EMMT-AS-150-LK-HT-R2S |
| | ■ | | | ■ | | ■ | | | 8148331 | EMMT-AS-150-LK-HT-R2M |
| | ■ | | | ■ | | | ■ | | 8148332 | EMMT-AS-150-LK-HT-R2MY |
| | ■ | | | ■ | ■ | | | ■ | 8148333 | EMMT-AS-150-LK-HT-R2SB |
| | ■ | | | ■ | | ■ | | ■ | 8148334 | EMMT-AS-150-LK-HT-R2MB |
| | ■ | | | ■ | | | ■ | ■ | 8148335 | EMMT-AS-150-LK-HT-R2MYB |
| | ■ | ■ | | | ■ | | | | 8148336 | EMMT-AS-150-LK-HS-R3S |
| | ■ | ■ | | | | ■ | | | 8148337 | EMMT-AS-150-LK-HS-R3M |
| | ■ | ■ | | | | | ■ | | 8148338 | EMMT-AS-150-LK-HS-R3MY |
| | ■ | ■ | | | ■ | | | ■ | 8148339 | EMMT-AS-150-LK-HS-R3SB |
| | ■ | ■ | | | | ■ | | ■ | 8148340 | EMMT-AS-150-LK-HS-R3MB |
| | ■ | ■ | | | | | ■ | ■ | 8148341 | EMMT-AS-150-LK-HS-R3MYB |
| Flange size 190 | | | | | | | | | | |
| ■ | | ■ | | | ■ | | | | 8148372 | EMMT-AS-190-MK-HS-R3S |
| ■ | | ■ | | | | ■ | | | 8148373 | EMMT-AS-190-MK-HS-R3M |
| ■ | | ■ | | | | | ■ | | 8148374 | EMMT-AS-190-MK-HS-R3MY |
| ■ | | ■ | | | ■ | | | ■ | 8148375 | EMMT-AS-190-MK-HS-R3SB |
| ■ | | ■ | | | | ■ | | ■ | 8148376 | EMMT-AS-190-MK-HS-R3MB |
| ■ | | ■ | | | | | ■ | ■ | 8148377 | EMMT-AS-190-MK-HS-R3MYB |
| | ■ | | | ■ | ■ | | | | 8148396 | EMMT-AS-190-LK-HT-R3S |
| | ■ | | | ■ | | ■ | | | 8148397 | EMMT-AS-190-LK-HT-R3M |
| | ■ | | | ■ | | | ■ | | 8148398 | EMMT-AS-190-LK-HT-R3MY |
| | ■ | | | ■ | ■ | | | ■ | 8148399 | EMMT-AS-190-LK-HT-R3SB |
| | ■ | | | ■ | | ■ | | ■ | 8148400 | EMMT-AS-190-LK-HT-R3MB |
| | ■ | | | ■ | | | ■ | ■ | 8148401 | EMMT-AS-190-LK-HT-R3MYB |

Datasheet

| Ordering data – With rotary shaft seal | | | | | | | | | | |
|--|------|--------------|-----------------|------------------|----------------|------------|--------------------|-------|----------|-------------------------|
| Length | | Winding | | | Measuring unit | | | Brake | Part no. | Type |
| Medium | Long | High voltage | | Encoder | | | | | | |
| | | Standard | Speed-optimised | Torque-optimised | Single-turn | Multi-turn | Safety, multi-turn | | | |
| Flange size 150 | | | | | | | | | | |
| ■ | | ■ | | | ■ | | | | 8148294 | EMMT-AS-150-MR-HS-R2S |
| ■ | | ■ | | | | ■ | | | 8148295 | EMMT-AS-150-MR-HS-R2M |
| ■ | | ■ | | | | | ■ | | 8148296 | EMMT-AS-150-MR-HS-R2MY |
| ■ | | ■ | | | ■ | | | ■ | 8148297 | EMMT-AS-150-MR-HS-R2SB |
| ■ | | ■ | | | | ■ | | ■ | 8148298 | EMMT-AS-150-MR-HS-R2MB |
| ■ | | ■ | | | | | ■ | ■ | 8148299 | EMMT-AS-150-MR-HS-R2MYB |
| ■ | | | ■ | | ■ | | | | 8148300 | EMMT-AS-150-MR-HV-R3S |
| ■ | | | ■ | | | ■ | | | 8148301 | EMMT-AS-150-MR-HV-R3M |
| ■ | | | ■ | | | | ■ | | 8148302 | EMMT-AS-150-MR-HV-R3MY |
| ■ | | | ■ | | ■ | | | ■ | 8148303 | EMMT-AS-150-MR-HV-R3SB |
| ■ | | | ■ | | | ■ | | ■ | 8148304 | EMMT-AS-150-MR-HV-R3MB |
| ■ | | | ■ | | | | ■ | ■ | 8148305 | EMMT-AS-150-MR-HV-R3MYB |
| | ■ | | | ■ | ■ | | | | 8148342 | EMMT-AS-150-LR-HT-R2S |
| | ■ | | | ■ | | ■ | | | 8148343 | EMMT-AS-150-LR-HT-R2M |
| | ■ | | | ■ | | | ■ | | 8148344 | EMMT-AS-150-LR-HT-R2MY |
| | ■ | | | ■ | ■ | | | ■ | 8148345 | EMMT-AS-150-LR-HT-R2SB |
| | ■ | | | ■ | | ■ | | ■ | 8148346 | EMMT-AS-150-LR-HT-R2MB |
| | ■ | | | ■ | | | ■ | ■ | 8148347 | EMMT-AS-150-LR-HT-R2MYB |
| | ■ | ■ | | | ■ | | | | 8148348 | EMMT-AS-150-LR-HS-R3S |
| | ■ | ■ | | | | ■ | | | 8148349 | EMMT-AS-150-LR-HS-R3M |
| | ■ | ■ | | | | | ■ | | 8148350 | EMMT-AS-150-LR-HS-R3MY |
| | ■ | ■ | | | ■ | | | ■ | 8148351 | EMMT-AS-150-LR-HS-R3SB |
| | ■ | ■ | | | | ■ | | ■ | 8148352 | EMMT-AS-150-LR-HS-R3MB |
| | ■ | ■ | | | | | ■ | ■ | 8148353 | EMMT-AS-150-LR-HS-R3MYB |
| Flange size 190 | | | | | | | | | | |
| ■ | | ■ | | | ■ | | | | 8148378 | EMMT-AS-190-MR-HS-R3S |
| ■ | | ■ | | | | ■ | | | 8148379 | EMMT-AS-190-MR-HS-R3M |
| ■ | | ■ | | | | | ■ | | 8148380 | EMMT-AS-190-MR-HS-R3MY |
| ■ | | ■ | | | ■ | | | ■ | 8148381 | EMMT-AS-190-MR-HS-R3SB |
| ■ | | ■ | | | | ■ | | ■ | 8148382 | EMMT-AS-190-MR-HS-R3MB |
| ■ | | ■ | | | | | ■ | ■ | 8148383 | EMMT-AS-190-MR-HS-R3MYB |
| | ■ | | | ■ | ■ | | | | 8148402 | EMMT-AS-190-LR-HT-R3S |
| | ■ | | | ■ | | ■ | | | 8148403 | EMMT-AS-190-LR-HT-R3M |
| | ■ | | | ■ | | | ■ | | 8148404 | EMMT-AS-190-LR-HT-R3MY |
| | ■ | | | ■ | ■ | | | ■ | 8148405 | EMMT-AS-190-LR-HT-R3SB |
| | ■ | | | ■ | | ■ | | ■ | 8148406 | EMMT-AS-190-LR-HT-R3MB |
| | ■ | | | ■ | | | ■ | ■ | 8148407 | EMMT-AS-190-LR-HT-R3MYB |

Datasheet

| Ordering data – With feather key and rotary shaft seal | | | | | | | | | | |
|--|------|--------------|-----------------|------------------|----------------|------------|--------------------|-------|----------|--------------------------|
| Length | | Winding | | | Measuring unit | | | Brake | Part no. | Type |
| Medium | Long | High voltage | | | Encoder | | | | | |
| | | Standard | Speed-optimised | Torque-optimised | Single-turn | Multi-turn | Safety, multi-turn | | | |
| Flange size 150 | | | | | | | | | | |
| ■ | | ■ | | | ■ | | | | 8148306 | EMMT-AS-150-MKR-HS-R2S |
| ■ | | ■ | | | | ■ | | | 8148307 | EMMT-AS-150-MKR-HS-R2M |
| ■ | | ■ | | | | | ■ | | 8148308 | EMMT-AS-150-MKR-HS-R2MY |
| ■ | | ■ | | | ■ | | ■ | | 8148309 | EMMT-AS-150-MKR-HS-R2SB |
| ■ | | ■ | | | | ■ | ■ | | 8148310 | EMMT-AS-150-MKR-HS-R2MB |
| ■ | | ■ | | | | | ■ | ■ | 8148311 | EMMT-AS-150-MKR-HS-R2MYB |
| ■ | | | ■ | | ■ | | | | 8148312 | EMMT-AS-150-MKR-HV-R3S |
| ■ | | | ■ | | | ■ | | | 8148313 | EMMT-AS-150-MKR-HV-R3M |
| ■ | | | ■ | | | | ■ | | 8148314 | EMMT-AS-150-MKR-HV-R3MY |
| ■ | | | ■ | | ■ | | ■ | | 8148315 | EMMT-AS-150-MKR-HV-R3SB |
| ■ | | | ■ | | | ■ | ■ | | 8148316 | EMMT-AS-150-MKR-HV-R3MB |
| ■ | | | ■ | | | | ■ | ■ | 8148317 | EMMT-AS-150-MKR-HV-R3MYB |
| | ■ | | | ■ | ■ | | | | 8148354 | EMMT-AS-150-LKR-HT-R2S |
| | ■ | | | ■ | | ■ | | | 8148355 | EMMT-AS-150-LKR-HT-R2M |
| | ■ | | | ■ | | | ■ | | 8148356 | EMMT-AS-150-LKR-HT-R2MY |
| | ■ | | | ■ | ■ | | ■ | | 8148357 | EMMT-AS-150-LKR-HT-R2SB |
| | ■ | | | ■ | | ■ | ■ | | 8148358 | EMMT-AS-150-LKR-HT-R2MB |
| | ■ | | | ■ | | | ■ | ■ | 8148359 | EMMT-AS-150-LKR-HT-R2MYB |
| | ■ | ■ | | | ■ | | | | 8148360 | EMMT-AS-150-LKR-HS-R3S |
| | ■ | ■ | | | | ■ | | | 8148361 | EMMT-AS-150-LKR-HS-R3M |
| | ■ | ■ | | | | | ■ | | 8148362 | EMMT-AS-150-LKR-HS-R3MY |
| | ■ | ■ | | | ■ | | ■ | | 8148363 | EMMT-AS-150-LKR-HS-R3SB |
| | ■ | ■ | | | | ■ | ■ | | 8148364 | EMMT-AS-150-LKR-HS-R3MB |
| | ■ | ■ | | | | | ■ | ■ | 8148365 | EMMT-AS-150-LKR-HS-R3MYB |
| Flange size 190 | | | | | | | | | | |
| ■ | | ■ | | | ■ | | | | 8148384 | EMMT-AS-190-MKR-HS-R3S |
| ■ | | ■ | | | | ■ | | | 8148385 | EMMT-AS-190-MKR-HS-R3M |
| ■ | | ■ | | | | | ■ | | 8148386 | EMMT-AS-190-MKR-HS-R3MY |
| ■ | | ■ | | | ■ | | ■ | | 8148387 | EMMT-AS-190-MKR-HS-R3SB |
| ■ | | ■ | | | | ■ | ■ | | 8148388 | EMMT-AS-190-MKR-HS-R3MB |
| ■ | | ■ | | | | | ■ | ■ | 8148389 | EMMT-AS-190-MKR-HS-R3MYB |
| | ■ | | | ■ | ■ | | | | 8148408 | EMMT-AS-190-LKR-HT-R3S |
| | ■ | | | ■ | | ■ | | | 8148409 | EMMT-AS-190-LKR-HT-R3M |
| | ■ | | | ■ | | | ■ | | 8148410 | EMMT-AS-190-LKR-HT-R3MY |
| | ■ | | | ■ | ■ | | ■ | | 8148411 | EMMT-AS-190-LKR-HT-R3SB |
| | ■ | | | ■ | | ■ | ■ | | 8148412 | EMMT-AS-190-LKR-HT-R3MB |
| | ■ | | | ■ | | | ■ | ■ | 8148413 | EMMT-AS-190-LKR-HT-R3MYB |

Ordering data – Modular product system

| Ordering table | | | | | | |
|-----------------------|--|----------------|----------------|------------|-------------|------------|
| Size | 60 | 80 | 100 | Conditions | Code | Enter code |
| Module no. | 4808568 | 4595815 | 5185818 | | | |
| Series | EMMT | | | | EMMT | EMMT |
| Motor technology | AC synchronous | | | | -AS | -AS |
| Motor flange size | 60 mm | 80 mm | 100 mm | | - | - |
| Length | Short | | | | -S | |
| | Medium | | | | -M | |
| | Long | | | | -L | |
| | - | Very long | | | -H | |
| Output shaft | Smooth shaft | | | | | |
| | Shaft to DIN 6885 | | | | K | |
| Radial shaft seal | None | | | | | |
| | With standard shaft seal | | | [1] | R | |
| Winding | Low voltage, standard | | | [2] | -LS | |
| | High voltage, standard | | | | -HS | |
| Electrical connection | Angled plug, rotatable | | | | -R | -R |
| Measuring unit | Absolute encoder, single-turn | | | | S | |
| | Absolute encoder, multi-turn | | | | M | |
| | Absolute safety encoder, multi-turn, EnDat | | | | MY | |
| Brake | None | | | | | |
| | With brake | | | | B | |

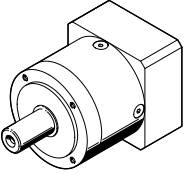
[1] R When using the radial shaft seal, a reduction (derating) of the nominal torque of 10% must be taken into account

[2] LS Not in combination with length H

Accessories

Ordering data – Gear unit

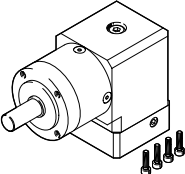
Datasheets → Internet: emga



| For motor | Gear ratio | Part no. | Type |
|-------------|------------|-----------------------|------------------------|
| EMMT-AS-60 | 3 | 2297686 | EMGA-60-P-G3-EAS-60 |
| | 5 | 2297687 | EMGA-60-P-G5-EAS-60 |
| | 8 | 8141735 | EMGA-60-P-G8-EAS-60 |
| | 12 | 8141736 | EMGA-60-P-G12-EAS-60 |
| | 20 | 8141737 | EMGA-60-P-G20-EAS-60 |
| EMMT-AS-80 | 3 | 2297690 | EMGA-80-P-G3-EAS-80 |
| | 5 | 2297691 | EMGA-80-P-G5-EAS-80 |
| | 8 | 8141741 | EMGA-80-P-G8-EAS-80 |
| | 12 | 8141742 | EMGA-80-P-G12-EAS-80 |
| | 20 | 8141743 | EMGA-80-P-G20-EAS-80 |
| EMMT-AS-100 | 3 | 552194 | EMGA-80-P-G3-SAS-100 |
| | 5 | 552195 | EMGA-80-P-G5-SAS-100 |
| | 8 | 8141750 | EMGA-80-P-G8-SAS-100 |
| | 12 | 8141751 | EMGA-80-P-G12-SAS-100 |
| | 20 | 8141752 | EMGA-80-P-G20-SAS-100 |
| | 3 | 552196 | EMGA-120-P-G3-SAS-100 |
| | 5 | 552197 | EMGA-120-P-G5-SAS-100 |
| | 8 | 8141753 | EMGA-120-P-G8-SAS-100 |
| | 12 | 8141754 | EMGA-120-P-G12-SAS-100 |
| | 20 | 8141755 | EMGA-120-P-G20-SAS-100 |
| EMMT-AS-150 | 3 | 552198 | EMGA-120-P-G3-SAS-140 |
| | 5 | 552199 | EMGA-120-P-G5-SAS-140 |
| | 8 | 8141759 | EMGA-120-P-G8-SAS-140 |
| | 12 | 8141760 | EMGA-120-P-G12-SAS-140 |
| | 20 | 8141761 | EMGA-120-P-G20-SAS-140 |
| | 3 | 552200 | EMGA-160-P-G3-SAS-140 |
| 5 | 552201 | EMGA-160-P-G5-SAS-140 | |


Ordering data – Right-angle gear unit

Datasheets → Internet: emga

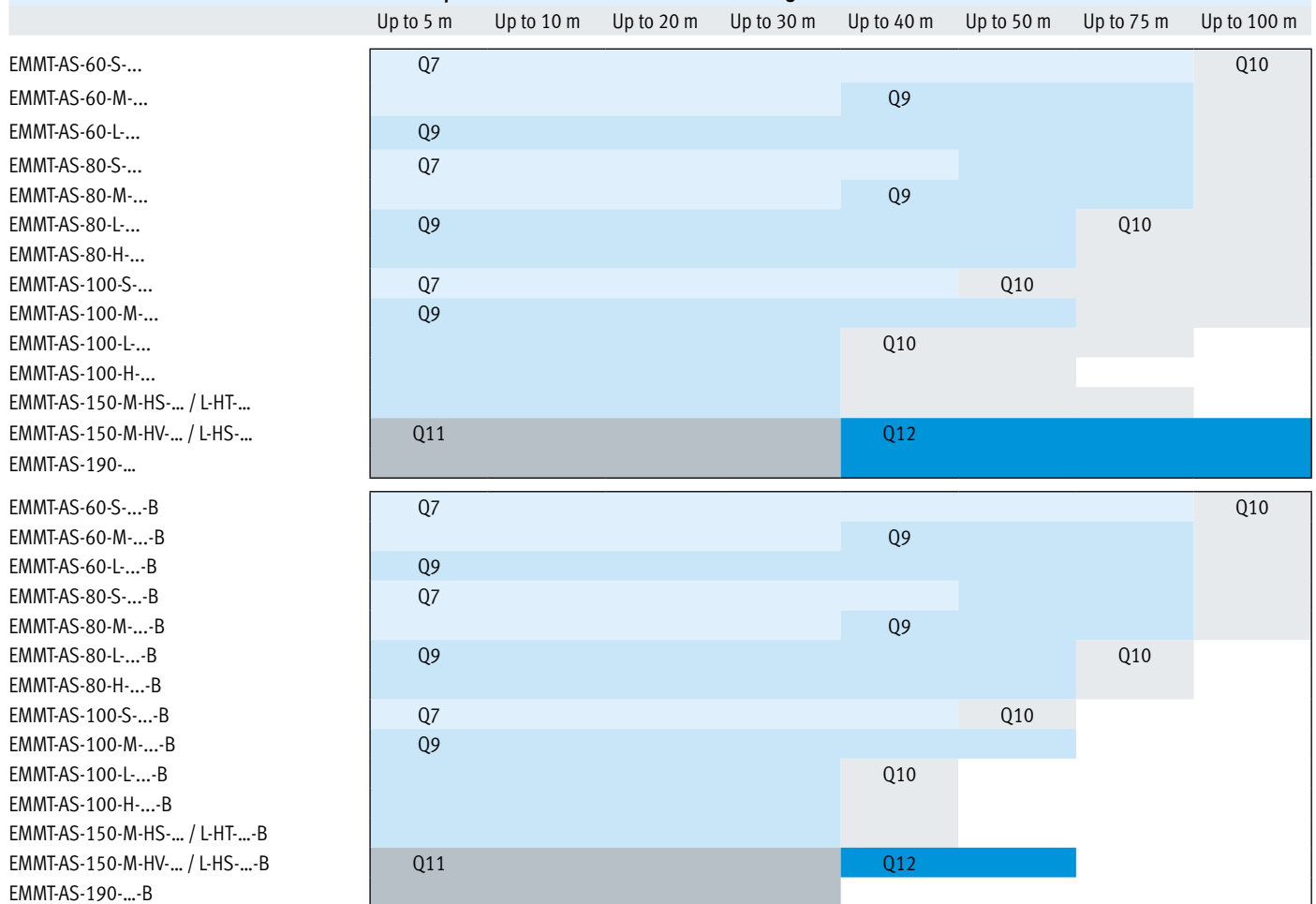


| For motor | Gear ratio | Part no. | Type |
|-------------|------------|----------|--------------------|
| EMMT-AS-60 | 3 | 8085344 | EMGA-60-A-G3-60P |
| | 5 | 8085345 | EMGA-60-A-G5-60P |
| | 8 | 8141738 | EMGA-60-A-G8-60P |
| | 12 | 8141739 | EMGA-60-A-G12-60P |
| | 20 | 8141740 | EMGA-60-A-G20-60P |
| EMMT-AS-80 | 3 | 8085346 | EMGA-80-A-G3-80P |
| | 5 | 8085347 | EMGA-80-A-G5-80P |
| | 8 | 8141744 | EMGA-80-A-G8-80P |
| | 12 | 8141745 | EMGA-80-A-G12-80P |
| | 20 | 8141746 | EMGA-80-A-G20-80P |
| EMMT-AS-100 | 3 | 8085348 | EMGA-80-A-G3-100A |
| | 5 | 8085349 | EMGA-80-A-G5-100A |
| | 8 | 8141747 | EMGA-80-A-G8-100A |
| | 12 | 8141748 | EMGA-80-A-G12-100A |
| | 20 | 8141749 | EMGA-80-A-G20-100A |


Accessories

| Ordering data – Rotary shaft seal | | | | |
|---|-----------------|---|----------|-------------------------|
| | For flange size | Description | Part no. | Type |
|  | 60 | <ul style="list-style-type: none"> For the motors EMMT-AS Protection to IP65 is achieved in combination with the sealing ring Based on the operating conditions, the shaft seal must be replaced after a maximum of 5000 operating hours When using the radial shaft seal, a reduction (derating) of the nominal torque of 10% must be taken into account Information on installation/replacement → www.festo.com/sp | 8079786 | EASS-RS-T-A-4P-15-30-B7 |
| | 80, 100 | | 8079785 | EASS-RS-T-A-4P-20-40-B7 |
| | 150 | | 8154298 | EASS-RS-T-A-4P-30-42-B7 |
| | 190 | | 8154299 | EASS-RS-T-A-4P-40-55-B7 |
| | | | | |

Recommended cable cross section at an ambient temperature of 40 °C as a function of cable length and servo drive CMMT-AS



- Q7 = 0.75 mm²
- Q9 = 1.5 mm²
- Q10 = 2.5 mm²
- Q11 = 4 mm²
- Q12 = 6 mm²
- no cable recommendation

 Note

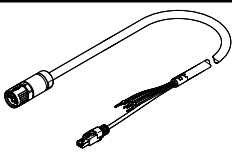
- When using other servo drives, the max. cable lengths may be shorter or the cable cross sections may be different.
- For cable lengths > 25 m, prior technical clarification is recommended.
- Motors with a holding brake require a logic power supply of UB ≥ 24 V DC. In this case, the recommended motor cables from Festo with the appropriate cross sections should also be used.
- This recommendation is made on the basis that the servo drive is connected to the supply network via a short connecting cable and network-side voltage drops can therefore be neglected.

Accessories

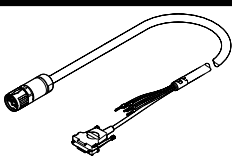
| Technical data – Motor cables | | | |
|--|---|---|--|
| Cable cross section | 0.75 mm ² | 1.5 mm ² | 2.5 mm ² |
| Type | NEBM-M23G15-...-Q7N | NEBM-M23G15-...-Q9N | NEBM-M23G15-...-Q10N |
| Cable composition | 4x 0.75 mm ² + 1x (2x 0.75 mm ²) + 1x (2x 0.24 mm ² + 2x 2x0.15 mm ²) | 4x 1.5 mm ² + 1x (2x 0.75 mm ²) + 1x (2x 0.24 mm ² + 2x 2x 0.15 mm ²) | 4x 2.5 mm ² + 1x (2x 1.0 mm ²) + 1x (2x 0.24 mm ² + 2x 2x 0.15 mm ²) |
| | Shielded | | |
| Cable diameter [mm] | 12 | 12.8 | 13.9 |
| Min. bending radius | | | |
| With fixed cable installation [mm] | ≥ 48 | ≥ 51.2 | ≥ 55.6 |
| With flexible cable installation [mm] | ≥ 90 | ≥ 96 | ≥ 97.3 |
| Pollution degree | 1 | 3 | 3 |
| Ambient temperature | | | |
| With fixed cable installation [°C] | -40 ... +90 | | |
| With flexible cable installation [°C] | -25 ... +80 | | |
| Cable characteristic | Suitable for energy chains | | |
| Degree of protection | IP67 (when mounted) | | |
| Material | TPE-U (PUR) | | |
| Note on materials | RoHS-compliant | | |
| LABS (PWIS) conformity | VDMA24364-B2-L | | |
| CE marking (see declaration of conformity) | To EU Low Voltage Directive To EU RoHS Directive | | |
| UKCA marking (see declaration of conformity) | To UK regulations for electrical equipment To UK RoHS regulations | | |

| Technical data – Motor cables | | |
|--|--|--|
| Cable cross section | 4 mm ² | 6 mm ² |
| Type | NEBM-M40G15-...-Q11N | NEBM-M40G15-...-Q12N |
| Cable composition | 4x 4 mm ² + 1x (2x 1.5 mm ²) + 1x (2x 0.24 mm ² + 2x 2x 0.15 mm ²) | 4x 6 mm ² + 1x (2x 1.5 mm ²) + 1x (2x 0.24 mm ² + 2x 2x 0.15 mm ²) |
| | Shielded | |
| Cable diameter [mm] | 16.4 | 18.7 |
| Min. bending radius | | |
| With fixed cable installation [mm] | ≥ 65.6 | ≥ 74.8 |
| With flexible cable installation [mm] | ≥ 123 | ≥ 140.25 |
| Pollution degree | 3 | 3 |
| Ambient temperature | | |
| With fixed cable installation [°C] | -40 ... +90 | |
| With flexible cable installation [°C] | -25 ... +80 | |
| Cable characteristic | Suitable for energy chains | |
| Degree of protection | IP67 (when mounted) | |
| Material | TPE-U (PUR) | |
| Note on materials | RoHS-compliant | |
| LABS (PWIS) conformity | VDMA24364-B2-L | |
| CE marking (see declaration of conformity) | To EU Low Voltage Directive To EU RoHS Directive | |
| UKCA marking (see declaration of conformity) | To UK regulations for electrical equipment To UK RoHS regulations | |

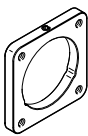
Accessories

| Ordering data – Motor cable for servo drive CMMT-AS | | | | |
|---|------------------------|------------------------|---------------------------------|---------------------------------|
| | Cable cross section | Cable length [m] | Part no. | Type |
|  | 0.75 mm ² | 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 |
| | | X length ¹⁾ | 5251373 | NEBM-M23G15-EH-...-Q7N-R3LEG14 |
| | 1.5 mm ² | 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 |
| | | X length ¹⁾ | 5251380 | NEBM-M23G15-EH-...-Q9N-R3LEG14 |
| | 2.5 mm ² | 2.5 | 5251388 | NEBM-M23G15-EH-2.5-Q10N-R3LEG14 |
| | | 5 | 5251389 | NEBM-M23G15-EH-5-Q10N-R3LEG14 |
| | | 7.5 | 5251390 | NEBM-M23G15-EH-7.5-Q10N-R3LEG14 |
| | | 10 | 5251391 | NEBM-M23G15-EH-10-Q10N-R3LEG14 |
| | | 15 | 5251392 | NEBM-M23G15-EH-15-Q10N-R3LEG14 |
| | | 20 | 5251393 | NEBM-M23G15-EH-20-Q10N-R3LEG14 |
| | | X length ¹⁾ | 5251387 | NEBM-M23G15-EH-...-Q10N-R3LEG14 |
| | 4 mm ² | 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 |
| | | X length ¹⁾ | 5251394 | NEBM-M40G15-EH-...-Q11N-R3LEG14 |
| 6 mm ² | X length ¹⁾ | 5251401 | NEBM-M40G15-EH-...-Q12N-R3LEG14 | |

1) Choice of cable lengths: 0.5 ... 99.9 m, in increments of 0.1 m.

| Ordering data – Motor cable for motor controller CMMF-AS | | | | |
|---|----------------------|------------------------|----------|--------------------------------|
| | Cable cross section | Cable length [m] | Part no. | Type |
|  | 0.75 mm ² | 5 | 8190885 | NEBM-M23G15-EH-2.5-Q7N-S1LEG21 |
| | | 7.5 | 8190886 | NEBM-M23G15-EH-7.5-Q7N-S1LEG21 |
| | | 10 | 8190887 | NEBM-M23G15-EH-10-Q7N-S1LEG21 |
| | | X length ¹⁾ | 8190874 | NEBM-M23/40 |
| | 1.5 mm ² | 5 | 8190888 | NEBM-M23G15-EH-2.5-Q9N-S1LEG21 |
| | | 7.5 | 8190889 | NEBM-M23G15-EH-7.5-Q9N-S1LEG21 |
| | | 10 | 8190890 | NEBM-M23G15-EH-10-Q9N-S1LEG21 |
| | | X length ¹⁾ | 8190874 | NEBM-M23/40 |
| | 4 mm ² | X length ¹⁾ | 8190874 | NEBM-M23/40 |
| | 6 mm ² | X length ¹⁾ | 8190874 | NEBM-M23/40 |

1) Choice of cable lengths: 0.5 ... 99.9 m, in increments of 0.1 m.

| Ordering data – Mounting flange for fitting the motor cable plug (e.g. on the control cabinet) | | | |
|--|-------------------|----------|-------------|
| | Note on materials | Part no. | Type |
|  | RoHS-compliant | 8201098 | NEAM-MF-M23 |
| | | 8201099 | NEAM-MF-M40 |