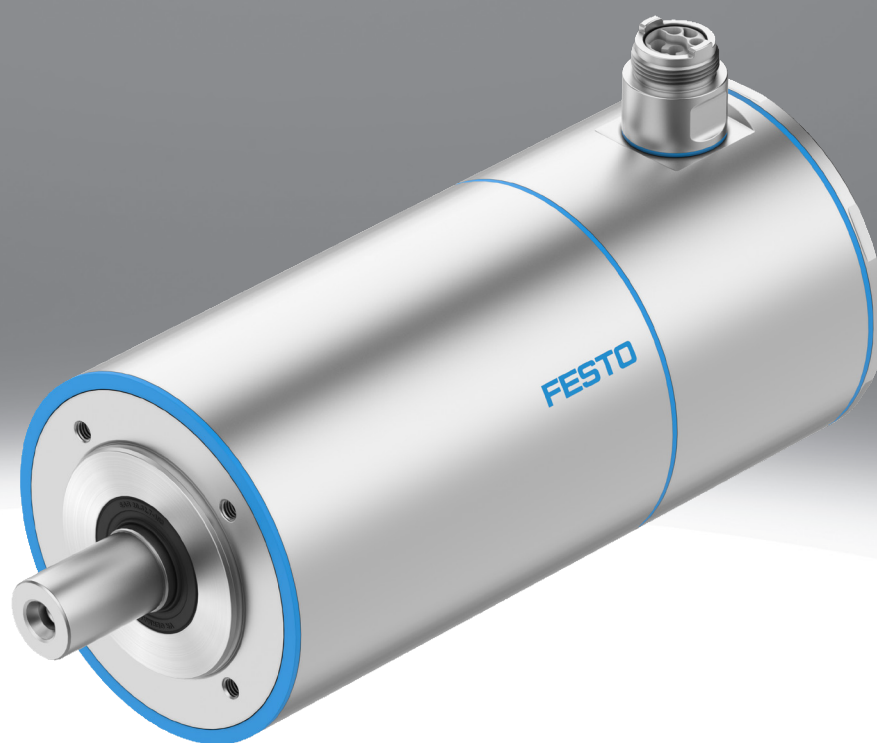


## Servo motor EMMH-AS

**FESTO**



### Characteristics

#### At a glance

The stainless steel servomotor EMMH-AS in clean design is the ideal solution for the most demanding environmental conditions. Hygienic, robust and compact - perfect for the food, pharmaceutical and packaging industries.

- Hygienic series for the most demanding environmental conditions
  - One Cable Plug with integrated pressure equalisation hose
  - Stainless steel housing made from 1.4404 / 316L with protection class IP69K
  - Suitable for contact with food
  - Easy-to-clean clean design for simple maintenance
  - Maximum corrosion resistance for a long service life
  - NSF-H1 Grease certified for hygiene-critical applications
  - Digital absolute measuring system Multi-turn without battery
- Fits perfectly into our comprehensive product portfolio of electromechanical actuators, motors, servo drives and control systems
- Optional:
- Holding brake
  - Shaft with feather key
  - Suitable stainless steel gearboxes from Neugart (type HLAE)

#### 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 [emmh-as](#)



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

#### Radial shaft seal

[A] With shaft sealing ring, double lip

The double-lipped radial shaft seal guarantees reliable protection against dust and liquids and thus ensures a long-lasting seal for the stainless steel motor.

## Characteristics

### Electrical connection

[S1] Straight plug M17

The space-saving one-cable solution with integrated pressure compensation tubing reduces the installation effort, increases operational safety and ensures reliable leak tightness.

### Measuring unit

[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

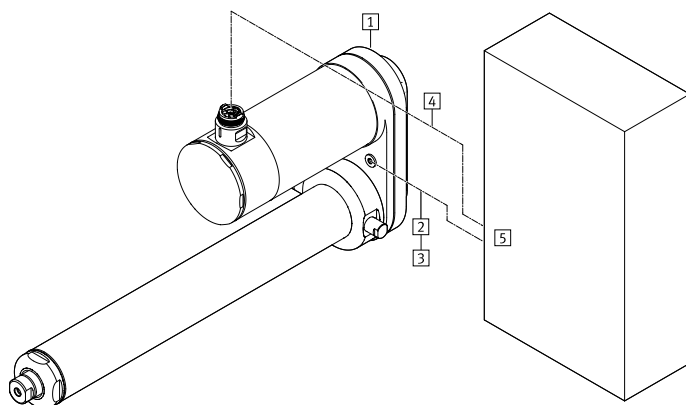
The holding brake should not be used as a safety brake.

### Thermal motor monitoring

[T] Integrated into the winding

The temperature monitoring integrated in the winding precisely records the motor temperature directly in the motor. This increases operational safety and reliably prevents overheating. This technology is particularly suitable for hygienic use in the food industry.

### Application example



An indispensable measure for pressure compensation and preventing condensation

Air is exchanged between the interior of the cylinder and the environment via a pressure compensation hole in the motor mounting kits [1]. This prevents negative pressure or excess pressure from building up inside the cylinder. Connecting plastic tubing [2] to a push-in fitting [3] prevents unwanted media from being drawn in. The plastic tubing must be routed to an area that is not in the food environment. This area could be the control cabinet [5], for example. The motor cable [4], which also contains plastic tubing, is also routed here. Both tubes are left open, allowing air to circulate. Excess pressure or negative pressure must not be connected.

Stainless steel push-in fittings type NPQR are recommended; see [www.festo.com/catalogue/npqr](http://www.festo.com/catalogue/npqr)  
For further information, see [www.festo.com/catalogue/eamm](http://www.festo.com/catalogue/eamm)

## Type code

|      |             |  |
|------|-------------|--|
| 001  | Series      |  |
| EMMH | Servo motor |  |

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

|     |                          |  |
|-----|--------------------------|--|
| 003 | Flange size, motors [mm] |  |
| 68  | 68                       |  |
| 88  | 88                       |  |
| 108 | 108                      |  |
| 138 | 138                      |  |

|     |           |  |
|-----|-----------|--|
| 004 | Length    |  |
| H   | Very long |  |
| M   | Medium    |  |

|     |                                             |  |
|-----|---------------------------------------------|--|
| 005 | Output shaft                                |  |
|     | Smooth shaft                                |  |
| K   | Shaft with featherkey according to DIN 6885 |  |

|     |                                     |  |
|-----|-------------------------------------|--|
| 006 | Radial shaft seal                   |  |
| A   | With shaft sealing ring, double lip |  |

|     |                        |  |
|-----|------------------------|--|
| 007 | Winding                |  |
| HS  | High voltage, standard |  |

|     |                       |  |
|-----|-----------------------|--|
| 008 | Electrical connection |  |
| S1  | Straight plug M17     |  |

|     |                              |  |
|-----|------------------------------|--|
| 009 | Measuring unit               |  |
| M   | Absolute encoder, multi-turn |  |

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

|     |                             |  |
|-----|-----------------------------|--|
| 011 |                             |  |
| T   | Integrated into the winding |  |

## Datasheet

## General technical data – EMMH-AS-68, 88

|                                             |                             |                         |                        |                         |                        |                        |                        |                        |  |
|---------------------------------------------|-----------------------------|-------------------------|------------------------|-------------------------|------------------------|------------------------|------------------------|------------------------|--|
| General technical data                      |                             |                         |                        | LHmini AS 68, 88        |                        |                        |                        |                        |  |
| Flange size, motors [mm]                    | 68                          |                         |                        |                         | 88                     |                        |                        |                        |  |
| Length                                      | Very long [H]               |                         | Medium [M]             |                         | Very long [H]          |                        | Medium [M]             |                        |  |
| Winding                                     | High voltage, standard [HS] |                         |                        |                         |                        |                        |                        |                        |  |
| Brake                                       | None [ ]                    | With brake [B]          | None [ ]               | With brake [B]          | None [ ]               | With brake [B]         | None [ ]               | With brake [B]         |  |
| Nominal operating voltage DC                | 680 V                       |                         |                        |                         |                        |                        |                        |                        |  |
| Nominal motor current                       | 1.6 A                       | 1.2 A                   | 0.9 A                  |                         | 2.5 A                  | 2.3 A                  | 1.8 A                  |                        |  |
| Continuous stall current                    | 2.4 A                       | 2.3 A                   | 1 A                    |                         | 4.8 A                  | 4.6 A                  | 2.9 A                  | 2.7 A                  |  |
| Nominal power rating of motor               | 375 W                       | 260 W                   | 210 W                  | 195 W                   | 620 W                  | 580 W                  | 390 W                  |                        |  |
| Nominal torque                              | 1.15 Nm                     | 0.8 Nm                  | 0.65 Nm                | 0.6 Nm                  | 1.9 Nm                 | 1.8 Nm                 | 1.2 Nm                 |                        |  |
| Peak current                                | 7.5 A                       |                         | 3 A                    |                         | 16.5 A                 |                        | 9.5 A                  |                        |  |
| Peak torque                                 | 5.9 Nm                      |                         | 2.1 Nm                 |                         | 14.3 Nm                |                        | 6.8 Nm                 |                        |  |
| Standstill torque                           | 1.9 Nm                      | 1.75 Nm                 | 0.75 Nm                |                         | 3.95 Nm                |                        | 2.1 Nm                 | 2 Nm                   |  |
| Standstill torque constant <sup>1)</sup>    | 0.79 Nm/A                   | 0.76 Nm/A               | 0.75 Nm/A              |                         | 0.83 Nm/A              |                        | 0.74 Nm/A              |                        |  |
| Nominal rotary speed                        | 3,100 rpm                   |                         |                        |                         |                        |                        |                        |                        |  |
| Max. rotational speed                       | 8,350 rpm                   |                         | 9,550 rpm              |                         | 8,000 rpm              |                        |                        |                        |  |
| Max. mechanical speed                       | 10,000 rpm                  |                         |                        |                         | 8,000 rpm              |                        |                        |                        |  |
| Max. brake no-load speed                    | –                           | 12,000 rpm              | –                      | 12,000 rpm              | –                      | 10,000 rpm             | –                      | 10,000 rpm             |  |
| Angular acceleration                        | 100,000 rad/s <sup>2</sup>  |                         |                        |                         |                        |                        |                        |                        |  |
| Motor constant                              | 0.73 Nm/A                   |                         | 0.72 Nm/A              |                         | 0.79 Nm/A              |                        | 0.69 Nm/A              |                        |  |
| Voltage constant, phase-to-phase            | 53.6 mV/min                 |                         | 49.1 mV/min            |                         | 55.3 mV/min            |                        | 49.6 mV/min            |                        |  |
| Electric time constant                      | 2.2 ms                      |                         | 1.8 ms                 |                         | 3.9 ms                 |                        | 3.5 ms                 |                        |  |
| Thermal time constant                       | 55 min                      |                         | 46 min                 |                         | 62 min                 |                        | 61 min                 |                        |  |
| Thermal resistance                          | 1.25 K/W                    |                         | 1.66 K/W               |                         | 1.01 K/W               |                        | 1.14 K/W               |                        |  |
| Number of pole pairs                        | 5                           |                         |                        |                         |                        |                        |                        |                        |  |
| Phase-phase winding resistance              | 4.8 Ohm                     |                         | 21.3 Ohm               |                         | 1.8 Ohm                |                        | 3.6 Ohm                |                        |  |
| Phase-phase winding inductance              | 9.5 mH                      |                         | 37.5 mH                |                         | 7.1 mH                 |                        | 15 mH                  |                        |  |
| Winding longitudinal inductivity Ld (phase) | 4.3 mH                      |                         | 16.9 mH                |                         | 3.5 mH                 |                        | 6.8 mH                 |                        |  |
| Winding cross inductivity Lq (phase)        | 4.8 mH                      |                         | 18.8 mH                |                         | 3.9 mH                 |                        | 7.5 mH                 |                        |  |
| Total mass moment of inertia of output      | 0.7 kgcm <sup>2</sup>       | 0.809 kgcm <sup>2</sup> | 0.26 kgcm <sup>2</sup> | 0.359 kgcm <sup>2</sup> | 2.09 kgcm <sup>2</sup> | 2.56 kgcm <sup>2</sup> | 1.12 kgcm <sup>2</sup> | 1.53 kgcm <sup>2</sup> |  |
| Permissible axial shaft load                | 68 N                        |                         | 56 N                   |                         | 86 N                   |                        | 76 N                   |                        |  |
| Permissible radial shaft load               | 340 N                       |                         | 280 N                  |                         | 430 N                  |                        | 380 N                  |                        |  |

1) Internal stall torque constant

## Technical data – Brake – EMMH-AS-68, 88

|                                         |                             |            |                        |            |
|-----------------------------------------|-----------------------------|------------|------------------------|------------|
| Technical data – Brake – LWMH-A3-68, 88 |                             |            |                        |            |
| Flange size, motors [mm]                | 68                          |            | 88                     |            |
| Length                                  | Very long [H]               | Medium [M] | Very long [H]          | Medium [M] |
| Winding                                 | High voltage, standard [HS] |            |                        |            |
|                                         |                             |            |                        |            |
| Operating voltage DC for brake          | 24 V                        |            |                        |            |
| Brake current consumption               | 0.44 A                      |            | 0.5 A                  |            |
| Power consumption, brake                | 10.5 W                      |            | 12 W                   |            |
| Brake holding torque                    | 2.8 Nm                      |            | 6 Nm                   |            |
| Brake separation time                   | 40 ms                       |            | 50 ms                  |            |
| Brake closing time                      | 28 ms                       |            | 45 ms                  |            |
| DC brake response delay                 | 10 ms                       |            |                        |            |
| Brake coil resistance                   | 54.5 Ohm                    |            | 48 Ohm                 |            |
| Brake coil inductivity                  | 1,000 mH                    |            | 2,100 mH               |            |
| Mass moment of inertia of brake         | 0.099 kgcm <sup>2</sup>     |            | 0.41 kgcm <sup>2</sup> |            |
| Max. friction per braking process       | 310 J                       |            | 570 J                  |            |
| Number of emergency stops per hour      | 1                           |            |                        |            |
| Total brake friction                    | 310 kJ                      |            | 570 kJ                 |            |

## Datasheet

## General technical data – EMMH-AS-108, 138

|                                             |                             |                        |                        |                       |                      |                        |                        |                        |
|---------------------------------------------|-----------------------------|------------------------|------------------------|-----------------------|----------------------|------------------------|------------------------|------------------------|
| Flange size, motors [mm]                    | 108                         |                        |                        |                       | 138                  |                        |                        |                        |
| Length                                      | Very long [H]               |                        | Medium [M]             |                       | Very long [H]        |                        | Medium [M]             |                        |
| Winding                                     | High voltage, standard [HS] |                        |                        |                       |                      |                        |                        |                        |
| Brake                                       | None [ ]                    | With brake [B]         | None [ ]               | With brake [B]        | None [ ]             | With brake [B]         | None [ ]               | With brake [B]         |
| Nominal operating voltage DC                | 680 V                       |                        |                        |                       |                      |                        |                        |                        |
| Nominal motor current                       | 4.9 A                       | 3.6 A                  | 4.5 A                  | 4.4 A                 | 6.6 A                | 6.2 A                  | 4.9 A                  | 4.3 A                  |
| Continuous stall current                    | 8 A                         | 7.1 A                  | 6.5 A                  |                       | 11.9 A               |                        | 7.9 A                  | 7.4 A                  |
| Nominal power rating of motor               | 1,000 W                     | 750 W                  | 840 W                  | 810 W                 | 1,520 W              | 1,410 W                | 1,510 W                | 1,300 W                |
| Nominal torque                              | 4.8 Nm                      | 3.55 Nm                | 4 Nm                   | 3.85 Nm               | 9.7 Nm               | 9 Nm                   | 7.2 Nm                 | 6.2 Nm                 |
| Peak current                                | 27.5 A                      |                        | 22.8 A                 |                       | 42.8 A               |                        | 23.1 A                 |                        |
| Peak torque                                 | 26.3 Nm                     |                        | 19 Nm                  |                       | 59 Nm                |                        | 33.3 Nm                |                        |
| Standstill torque                           | 8.2 Nm                      | 7.3 Nm                 | 5.9 Nm                 |                       | 18.1 Nm              |                        | 11.9 Nm                | 11 Nm                  |
| Standstill torque constant <sup>1)</sup>    | 1.03 Nm/A                   |                        | 0.92 Nm/A              |                       | 1.52 Nm/A            |                        | 1.51 Nm/A              |                        |
| Nominal rotary speed                        | 2,000 rpm                   |                        |                        |                       | 1,500 rpm            |                        | 2,000 rpm              |                        |
| Max. rotational speed                       | 7,000 rpm                   |                        |                        |                       | 4,550 rpm            |                        | 4,590 rpm              |                        |
| Max. mechanical speed                       | 7,000 rpm                   |                        |                        |                       | 5,000 rpm            |                        |                        |                        |
| Max. brake no-load speed                    | –                           | 10,000 rpm             | –                      | 10,000 rpm            | –                    | 10,000 rpm             | –                      | 10,000 rpm             |
| Angular acceleration                        | 100,000 rad/s <sup>2</sup>  |                        |                        |                       |                      |                        |                        |                        |
| Motor constant                              | 1 Nm/A                      |                        | 0.89 Nm/A              |                       | 1.48 Nm/A            |                        | 1.47 Nm/A              |                        |
| Voltage constant, phase-to-phase            | 66.8 mV/min                 |                        | 59.5 mV/min            |                       | 98.3 mV/min          |                        | 97.6 mV/min            |                        |
| Electric time constant                      | 5.6 ms                      |                        | 5.2 ms                 |                       | 11.2 ms              |                        | 9.8 ms                 |                        |
| Thermal time constant                       | 89 min                      |                        | 82 min                 |                       | 111 min              |                        | 100 min                |                        |
| Thermal resistance                          | 0.81 K/W                    |                        | 0.77 K/W               |                       | 0.73 K/W             |                        | 0.68 K/W               |                        |
| Number of pole pairs                        | 5                           |                        |                        |                       |                      |                        |                        |                        |
| Phase-phase winding resistance              | 0.77 Ohm                    |                        | 1.03 Ohm               |                       | 0.34 Ohm             |                        | 0.89 Ohm               |                        |
| Phase-phase winding inductance              | 4.4 mH                      |                        | 5.3 mH                 |                       | 3.8 mH               |                        | 8.8 mH                 |                        |
| Winding longitudinal inductivity Ld (phase) | 2 mH                        |                        | 2.4 mH                 |                       | 1.7 mH               |                        | 3.9 mH                 |                        |
| Winding cross inductivity Lq (phase)        | 2.2 mH                      |                        | 2.7 mH                 |                       | 1.9 mH               |                        | 4.4 mH                 |                        |
| Total mass moment of inertia of output      | 5.1 kgcm <sup>2</sup>       | 5.95 kgcm <sup>2</sup> | 3.57 kgcm <sup>2</sup> | 4.3 kgcm <sup>2</sup> | 19 kgcm <sup>2</sup> | 21.3 kgcm <sup>2</sup> | 9.78 kgcm <sup>2</sup> | 12.1 kgcm <sup>2</sup> |
| Permissible axial shaft load                | 147 N                       |                        | 137 N                  |                       | 262 N                |                        | 227 N                  |                        |
| Permissible radial shaft load               | 735 N                       |                        | 685 N                  |                       | 1,310 N              |                        | 1,135 N                |                        |

1) Internal stall torque constant

## Technical data – Brake – EMMH-AS-108, 138

|                                            |                             |                        |                       |                        |
|--------------------------------------------|-----------------------------|------------------------|-----------------------|------------------------|
| Technical data - Brake - ENIMM AS 100, 138 |                             |                        |                       |                        |
| Flange size, motors [mm]                   | 108                         |                        | 138                   |                        |
| Length                                     | Very long [H]               | Medium [M]             | Very long [H]         | Medium [M]             |
| Winding                                    | High voltage, standard [HS] |                        |                       |                        |
|                                            |                             |                        |                       |                        |
| Operating voltage DC for brake             | 24 V                        |                        |                       |                        |
| Brake current consumption                  | 0.57 A                      |                        | 0.68 A                |                        |
| Power consumption, brake                   | 13.6 W                      |                        | 16.4 W                |                        |
| Brake holding torque                       | 11 Nm                       |                        | 20 Nm                 |                        |
| Brake separation time                      | 60 ms                       |                        | 90 ms                 |                        |
| Brake closing time                         | 58 ms                       |                        | 81 ms                 |                        |
| DC brake response delay                    | 10 ms                       |                        |                       |                        |
| Brake coil resistance                      | 42.1 Ohm                    |                        | 35.3 Ohm              |                        |
| Brake coil inductivity                     | 2,600 mH                    |                        | 3,200 mH              |                        |
| Mass moment of inertia of brake            | 0.85 kgcm <sup>2</sup>      | 0.73 kgcm <sup>2</sup> | 2.3 kgcm <sup>2</sup> | 2.32 kgcm <sup>2</sup> |
| Max. friction per braking process          | 910 J                       |                        | 1,980 J               |                        |
| Number of emergency stops per hour         | 1                           |                        |                       |                        |
| Total brake friction                       | 910 kJ                      |                        | 1,980 kJ              |                        |

## Datasheet

## Operating and environmental conditions – EMMH-AS-68, 88

|                                                            |                                                                                                     |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------|----------|-----------------------------------------------------|----------------------|-----------------------------------------------------|----------|-----------------------------------------------------|--|
| Operating and environmental conditions                     |                                                                                                     |                                                     |          | Enmin AS 68, 88                                     |                      |                                                     |          |                                                     |  |
| Flange size, motors [mm]                                   | 68                                                                                                  |                                                     |          |                                                     | 88                   |                                                     |          |                                                     |  |
| Length                                                     | Very long [H]                                                                                       |                                                     |          | Medium [M]                                          |                      | Very long [H]                                       |          | Medium [M]                                          |  |
| Brake                                                      | None [ ]                                                                                            | With brake [B]                                      | None [ ] | With brake [B]                                      | None [ ]             | With brake [B]                                      | None [ ] | With brake [B]                                      |  |
|                                                            |                                                                                                     |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Conforms to standard                                       | IEC 60034                                                                                           |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Motor type to EN 60034-7                                   | IM B14, IM V18                                                                                      |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Degree of protection                                       | IP69K                                                                                               |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Ambient temperature                                        | -30 ... 40°C                                                                                        |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Note on ambient temperature <sup>1)</sup>                  | Up to 80°C with derating of -1.5% per degree Celsius                                                |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Storage temperature                                        | -20 ... 70°C                                                                                        |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Max. winding temperature                                   | 155°C                                                                                               |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Temperature monitoring                                     | Digital motor temperature transmission via EnDat® 2.2                                               |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Rating class as per EN 60034-1                             | S1                                                                                                  |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Temperature class as per EN 60034-1                        | F                                                                                                   |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Relative air humidity                                      | 0 - 100%                                                                                            |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Concentricity, coaxiality, axial runout to DIN SPEC 42955  | N                                                                                                   |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Balance quality                                            | G 2.5                                                                                               |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Pollution degree                                           | 2                                                                                                   |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Max. installation height                                   | 3,000 m                                                                                             |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Note on max. installation height                           | As of 1,000 m: only with derating of -1.0% per 100 m                                                |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Bearing lifetime under nominal conditions                  | 20,000 h                                                                                            |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Switching cycles holding brake                             | –                                                                                                   | 10 million idle actuations (without friction work!) | –        | 10 million idle actuations (without friction work!) | –                    | 10 million idle actuations (without friction work!) | –        | 10 million idle actuations (without friction work!) |  |
| CE mark (see declaration of conformity) <sup>2)</sup>      | To EU EMC Directive<br>To EU Low Voltage Directive<br>In accordance with EU RoHS Directive          |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| UKCA marking (see declaration of conformity) <sup>3)</sup> | To UK instructions for EMC<br>To UK RoHS instructions<br>To UK regulations for electrical equipment |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Approval                                                   | RCM<br>c UL us - Recognised (Oil)                                                                   |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Certificate issuing authority                              | UL E342973                                                                                          |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Efficiency (CN)                                            | –                                                                                                   |                                                     |          |                                                     | 83.4%                | 83%                                                 | –        |                                                     |  |
| Energy efficiency                                          | –                                                                                                   |                                                     |          |                                                     | ENEFF (CN) / Class 2 |                                                     | –        |                                                     |  |
| Suitable for use with food                                 | Approved for direct contact with food                                                               |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Vibration resistance                                       | As per EN 60068-2-6                                                                                 |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Shock resistance                                           | As per EN 60068-2-29, 15 g/11 ms to EN 60068-2-27                                                   |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Corrosion resistance class CRC <sup>4)</sup>               | 4 - Very high corrosion stress, (except laser marking)                                              |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| LABS (PWIS) conformity                                     | VDMA24364 zone III                                                                                  |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |
| Note on materials                                          | RoHS compliant                                                                                      |                                                     |          |                                                     |                      |                                                     |          |                                                     |  |

1) Without friction work

2) More information [www.festo.com/catalogue/emmt](http://www.festo.com/catalogue/emmt) → Downloads.3) More information [www.festo.com/catalogue/emmt](http://www.festo.com/catalogue/emmt) → Downloads.4) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Datasheet

## Operating and environmental conditions – EMMH-AS-108, 138

|                                                            |                                                                                                     |                                                     |            |                                                     |               |                                                     |            |                                                     |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------|------------|-----------------------------------------------------|---------------|-----------------------------------------------------|------------|-----------------------------------------------------|
| Flange size, motors [mm]                                   | 108                                                                                                 |                                                     |            |                                                     | 138           |                                                     |            |                                                     |
| Length                                                     | Very long [H]                                                                                       |                                                     | Medium [M] |                                                     | Very long [H] |                                                     | Medium [M] |                                                     |
| Brake                                                      | None [ ]                                                                                            | With brake [B]                                      | None [ ]   | With brake [B]                                      | None [ ]      | With brake [B]                                      | None [ ]   | With brake [B]                                      |
| Conforms to standard                                       | IEC 60034                                                                                           |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Motor type to EN 60034-7                                   | IM B14, IM V18                                                                                      |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Degree of protection                                       | IP69K                                                                                               |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Ambient temperature                                        | -30 ... 40°C                                                                                        |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Note on ambient temperature <sup>1)</sup>                  | Up to 80°C with derating -2%/°C                                                                     |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Storage temperature                                        | -20 ... 70°C                                                                                        |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Max. winding temperature                                   | 155°C                                                                                               |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Temperature monitoring                                     | Digital motor temperature transmission via EnDat® 2.2                                               |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Rating class as per EN 60034-1                             | S1                                                                                                  |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Temperature class as per EN 60034-1                        | F                                                                                                   |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Relative air humidity                                      | 0 - 100%                                                                                            |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Concentricity, coaxiality, axial runout to DIN SPEC 42955  | N                                                                                                   |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Balance quality                                            | G 2.5                                                                                               |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Pollution degree                                           | 2                                                                                                   |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Max. installation height                                   | 3,000 m                                                                                             |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Note on max. installation height                           | As of 1,000 m: only with derating of -1.0% per 100 m                                                |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Bearing lifetime under nominal conditions                  | 20,000 h                                                                                            |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Switching cycles holding brake                             | –                                                                                                   | 10 million idle actuations (without friction work!) | –          | 10 million idle actuations (without friction work!) | –             | 10 million idle actuations (without friction work!) | –          | 10 million idle actuations (without friction work!) |
| CE mark (see declaration of conformity) <sup>2)</sup>      | To EU EMC Directive<br>To EU Low Voltage Directive<br>In accordance with EU RoHS Directive          |                                                     |            |                                                     |               |                                                     |            |                                                     |
| UKCA marking (see declaration of conformity) <sup>3)</sup> | To UK instructions for EMC<br>To UK RoHS instructions<br>To UK regulations for electrical equipment |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Approval                                                   | RCM<br>c UL us - Recognised (Oil)                                                                   |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Certificate issuing authority                              | UL E342973                                                                                          |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Efficiency (CN)                                            | 85.7%                                                                                               | 84.6%                                               | 85%        | 84.9%                                               | 89.1%         | 88.9%                                               | 87.4%      | 86.8%                                               |
| Energy efficiency                                          | ENEFF (CN) / Class 2                                                                                |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Suitable for use with food                                 | Approved for direct contact with food                                                               |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Vibration resistance                                       | As per EN 60068-2-6                                                                                 |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Shock resistance                                           | As per EN 60068-2-29, 15 g/11 ms to EN 60068-2-27                                                   |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Corrosion resistance class CRC <sup>4)</sup>               | 4 - Very high corrosion stress, (except laser marking)                                              |                                                     |            |                                                     |               |                                                     |            |                                                     |
| LABS (PWIS) conformity                                     | VDMA24364 zone III                                                                                  |                                                     |            |                                                     |               |                                                     |            |                                                     |
| Note on materials                                          | RoHS compliant                                                                                      |                                                     |            |                                                     |               |                                                     |            |                                                     |

1) Without friction work

2) More information [www.festo.com/catalogue/emmt](http://www.festo.com/catalogue/emmt) → Downloads.3) More information [www.festo.com/catalogue/emmt](http://www.festo.com/catalogue/emmt) → Downloads.4) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Weight - EMMH-AS-68, 88

|                          |               |                |            |                |               |                |            |                |
|--------------------------|---------------|----------------|------------|----------------|---------------|----------------|------------|----------------|
| Flange size, motors [mm] | 68            |                |            |                | 88            |                |            |                |
| Length                   | Very long [H] |                | Medium [M] |                | Very long [H] |                | Medium [M] |                |
| Brake                    | None [ ]      | With brake [B] | None [ ]   | With brake [B] | None [ ]      | With brake [B] | None [ ]   | With brake [B] |
| Product weight           | 3,300 g       | 3,900 g        | 1,900 g    | 2,500 g        | 6,000 g       | 6,700 g        | 4,500 g    | 5,200 g        |

## Datasheet

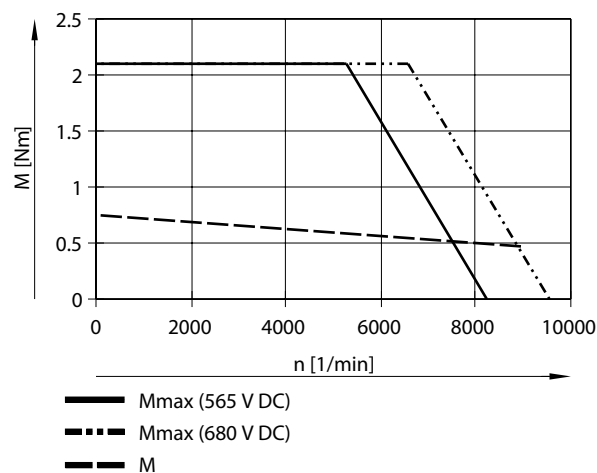
## Weight - EMMH-AS-108, 138

|                          |               |                |            |                |               |                |            |                |
|--------------------------|---------------|----------------|------------|----------------|---------------|----------------|------------|----------------|
| Flange size, motors [mm] | 108           |                |            |                | 138           |                |            |                |
| Length                   | Very long [H] |                | Medium [M] |                | Very long [H] |                | Medium [M] |                |
| Brake                    | None [ ]      | With brake [B] | None [ ]   | With brake [B] | None [ ]      | With brake [B] | None [ ]   | With brake [B] |
| Product weight           | 8,900 g       | 10,300 g       | 7,300 g    | 8,900 g        | 20,100 g      | 24,500 g       | 12,500 g   | 14,400 g       |

## Technical data – Encoder, multi-turn

|                                                             |                              |    |                   |     |
|-------------------------------------------------------------|------------------------------|----|-------------------|-----|
| Flange size, motors [mm]                                    | 68                           | 88 | 108               | 138 |
| Winding                                                     | High voltage, standard [HS]  |    |                   |     |
| Rotor position sensor                                       | Absolute encoder, multi-turn |    |                   |     |
| rotor position sensor, DC operating voltage                 | 5 V                          |    |                   |     |
| rotor position sensor, DC operating voltage range           | 3.6 ... 14 V                 |    |                   |     |
| Rotor position encoder interface                            | EnDat 22                     |    |                   |     |
| rotor position sensor, position values per revolution       | 524,288                      |    |                   |     |
| Rotor position sensor, encoder measuring principle          | Inductive                    |    |                   |     |
| Rotor position transducer resolution                        | 19 bit                       |    |                   |     |
| rotor position sensor, absolute detectable revolutions      | 4,096                        |    |                   |     |
| rotor position sensor, system accuracy of angle measurement | -120 ... 120 arcsec          |    | -65 ... 65 arcsec |     |

## Torque M as a function of rotational speed n for EMMH-AS-68-MA-HS



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

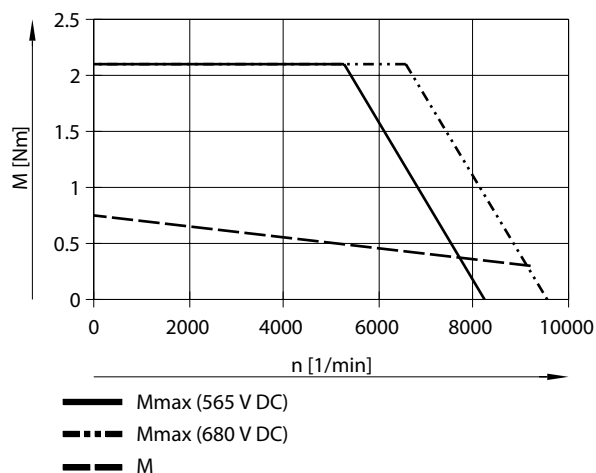
Observe the maximum permissible rotational speeds of add-ons and installation components (such as brake, encoder, etc.).

Mmax = peak torque

M = nominal torque

## Datasheet

Torque M as a function of rotational speed n for EMMH-AS-68-MA-HS-B



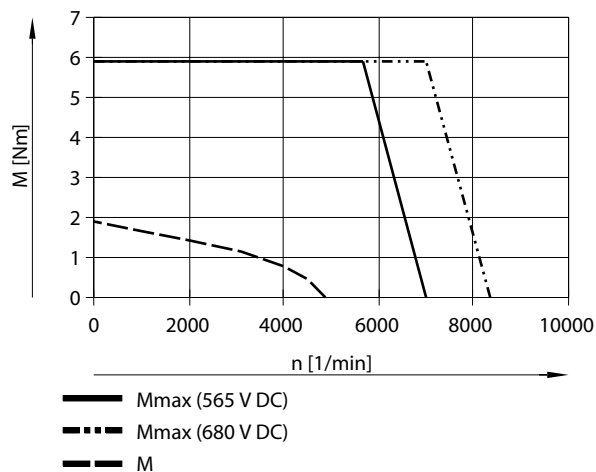
Typical motor characteristic curve with nominal voltage and optimal motor controller.

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

Mmax = peak torque

M = nominal torque

Torque M as a function of rotational speed n for EMMH-AS-68-HA-HS



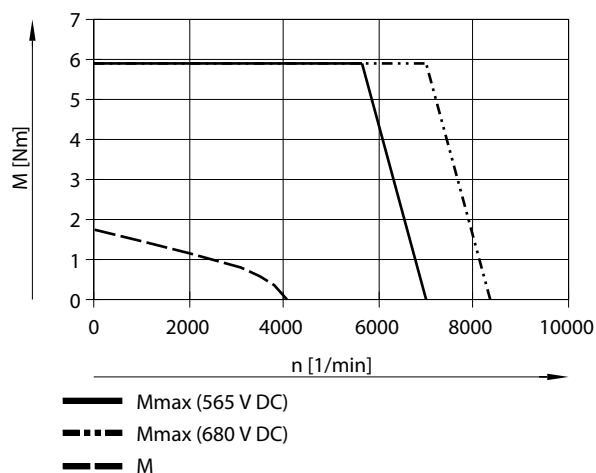
Typical motor characteristic curve with nominal voltage and optimal motor controller.

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

Mmax = peak torque

M = nominal torque

Torque M as a function of rotational speed n for EMMH-AS-68-HA-HS-B



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

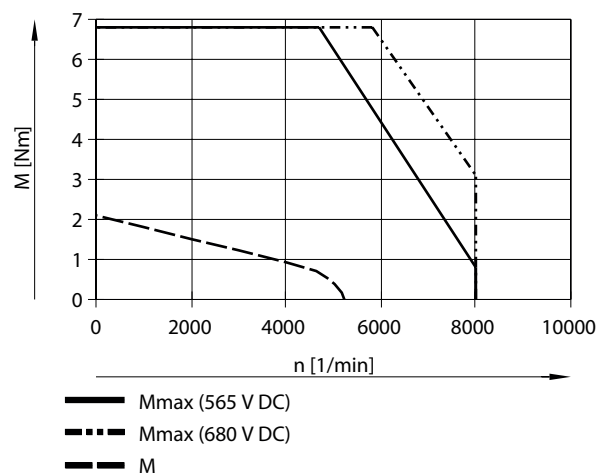
Observe the maximum permissible rotational speeds of add-ons and installation components (such as brake, encoder, etc.).

Mmax = peak torque

M = nominal torque

## Datasheet

Torque M as a function of rotational speed n for EMMH-AS-88-MA-HS



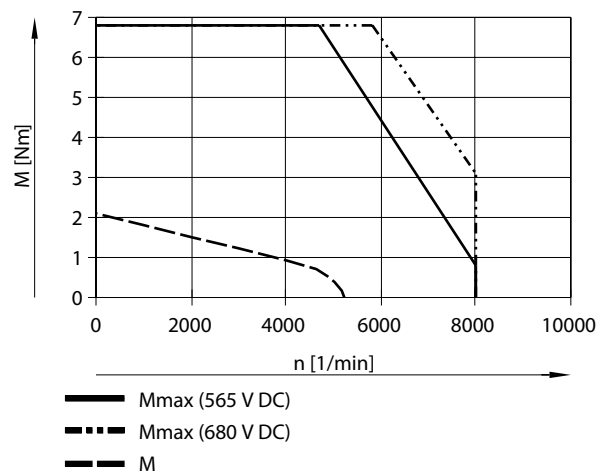
Typical motor characteristic curve with nominal voltage and optimal motor controller.

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

Mmax = peak torque

M = nominal torque

Torque M as a function of rotational speed n for EMMH-AS-88-MA-HS-B



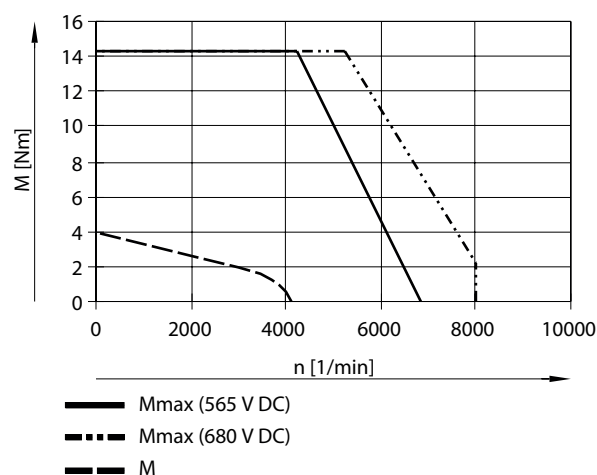
Typical motor characteristic curve with nominal voltage and optimal motor controller.

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

Mmax = peak torque

M = nominal torque

Torque M as a function of rotational speed n for EMMH-AS-88-HA-HS



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

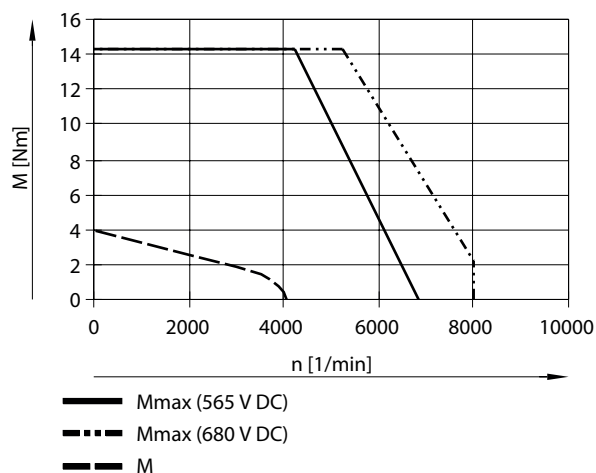
Observe the maximum permissible rotational speeds of add-ons and installation components (such as brake, encoder, etc.).

Mmax = peak torque

M = nominal torque

## Datasheet

Torque M as a function of rotational speed n for EMMH-AS-88-HA-HS-B



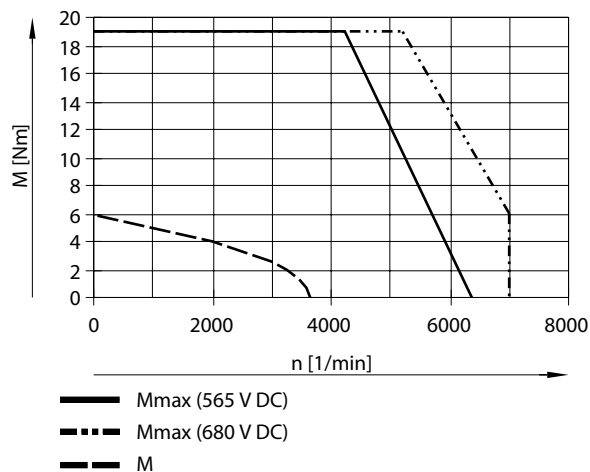
Typical motor characteristic curve with nominal voltage and optimal motor controller.

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

Mmax = peak torque

M = nominal torque

Torque M as a function of rotational speed n for EMMH-AS-108-MA-HS



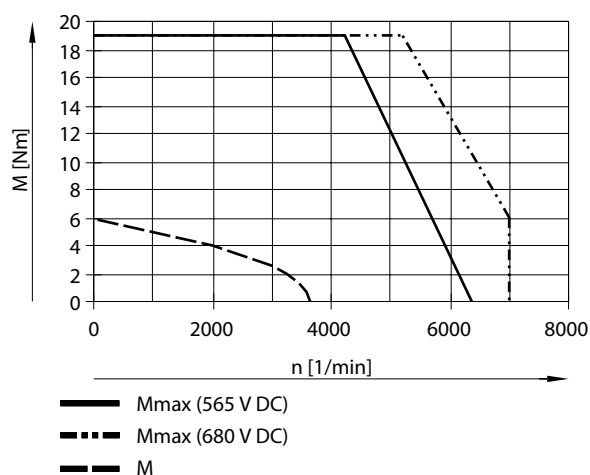
Typical motor characteristic curve with nominal voltage and optimal motor controller.

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

Mmax = peak torque

M = nominal torque

Torque M as a function of rotational speed n for EMMH-AS-108-MA-HS-B



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

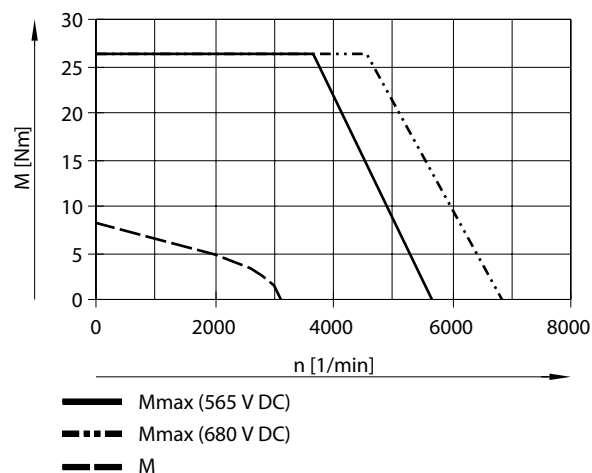
Observe the maximum permissible rotational speeds of add-ons and installation components (such as brake, encoder, etc.).

Mmax = peak torque

M = nominal torque

## Datasheet

Torque M as a function of rotational speed n for EMMH-AS-108-HA-HS



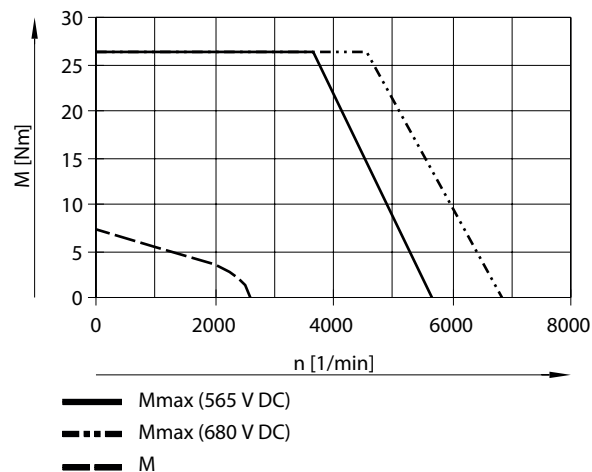
Typical motor characteristic curve with nominal voltage and optimal motor controller.

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

Mmax = peak torque

M = nominal torque

Torque M as a function of rotational speed n for EMMH-AS-108-HA-HS-B



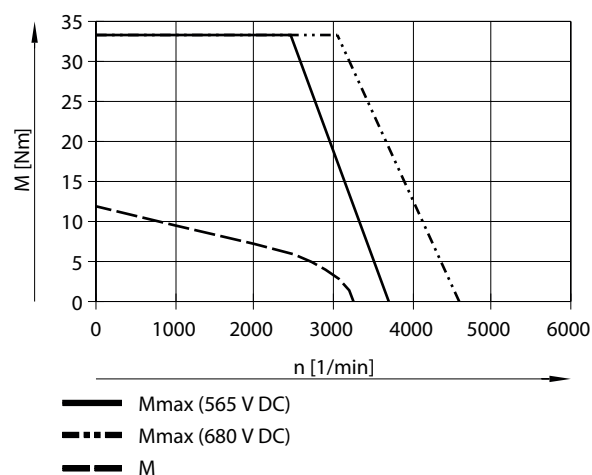
Typical motor characteristic curve with nominal voltage and optimal motor controller.

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

Mmax = peak torque

M = nominal torque

Torque M as a function of rotational speed n for EMMH-AS-138-MA-HS



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

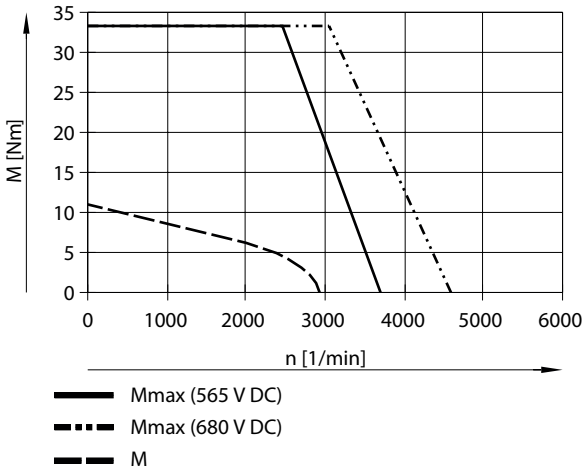
Observe the maximum permissible rotational speeds of add-ons and installation components (such as brake, encoder, etc.).

Mmax = peak torque

M = nominal torque

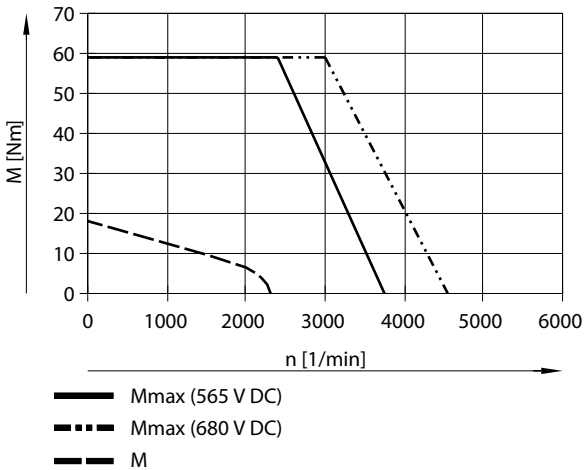
Datasheet

Torque M as a function of rotational speed n for EMMH-AS-138-MA-HS-B



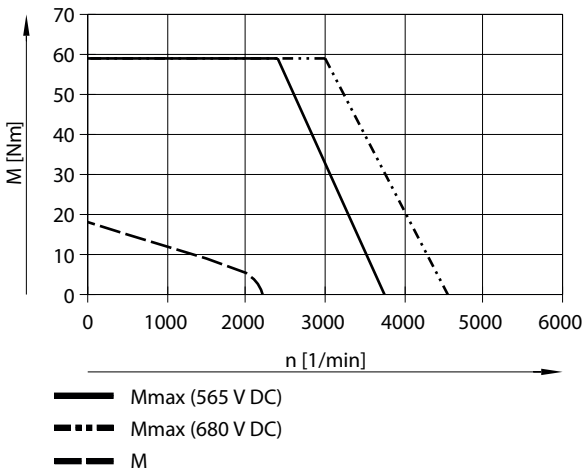
Typical motor characteristic curve with nominal voltage and optimal motor controller.  
Observe the maximum permissible rotational speeds of add-ons and installation components (such as brake, encoder, etc.).  
Mmax = peak torque  
M = nominal torque

Torque M as a function of rotational speed n for EMMH-AS-138-HA-HS



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

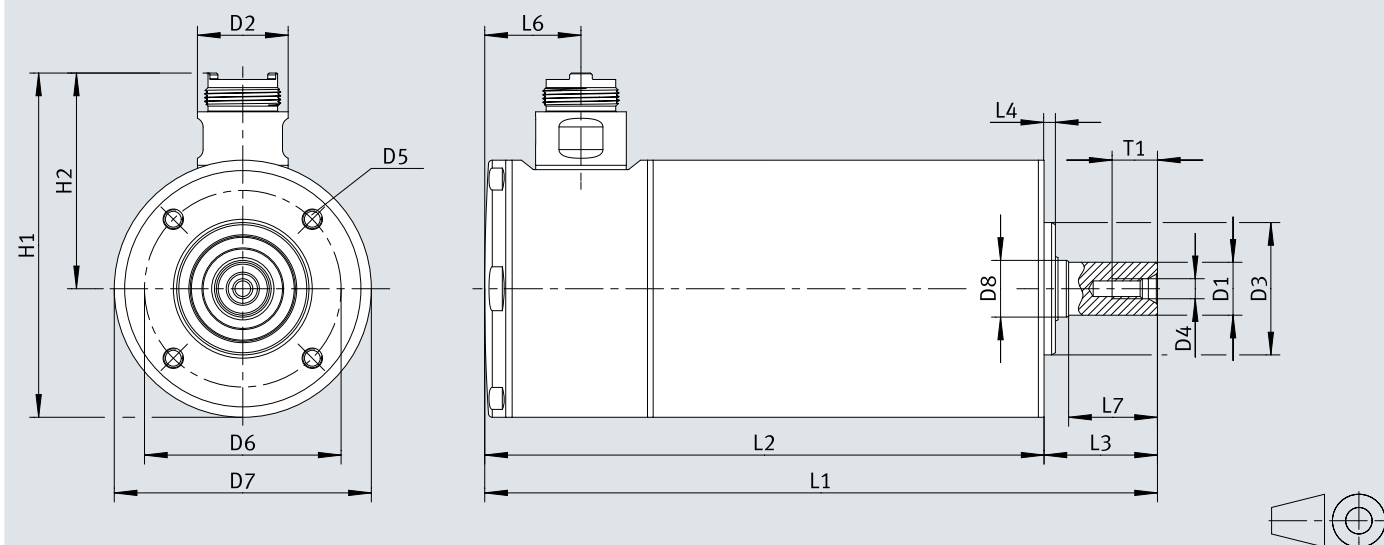
Torque M as a function of rotational speed n for EMMH-AS-138-HA-HS-B



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

## Dimensions

Dimensions – Dimensions - EMMH-AS

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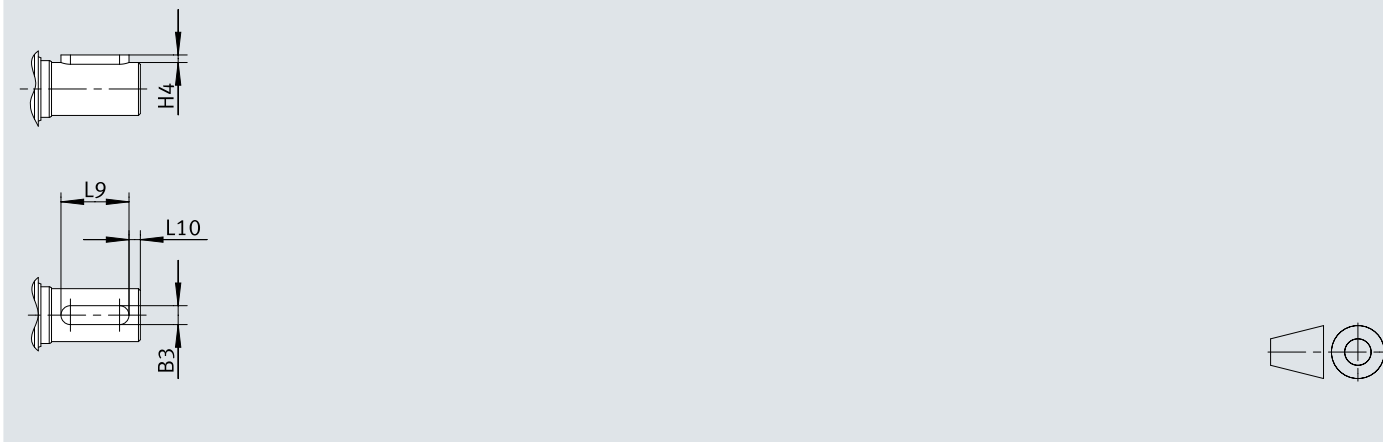
## Dimensions

|                     | D1<br>Ø<br>h6 | D2<br>Ø | D3<br>Ø<br>h7 | D4 | D5 | D6<br>Ø | D7<br>Ø | D8<br>Ø<br>h11 |
|---------------------|---------------|---------|---------------|----|----|---------|---------|----------------|
| EMMH-AS-68-MA-HS    | 14            | 24      | 35            | M5 | M5 | 52      | 68      | 15             |
| EMMH-AS-68-MA-HS-B  |               |         |               |    |    |         |         |                |
| EMMH-AS-68-HA-HS    |               |         |               |    |    |         |         |                |
| EMMH-AS-68-HA-HS-B  |               |         |               |    |    |         |         |                |
| EMMH-AS-88-MA-HS    | 19            | 24      | 55            | M6 | M5 | 65      | 88      | 20             |
| EMMH-AS-88-MA-HS-B  |               |         |               |    |    |         |         |                |
| EMMH-AS-88-HA-HS    |               |         |               |    |    |         |         |                |
| EMMH-AS-88-HA-HS-B  |               |         |               |    |    |         |         |                |
| EMMH-AS-108-MA-HS   | 19            | 24      | 65            | M6 | M6 | 80      | 108     | 25             |
| EMMH-AS-108-MA-HS-B |               |         |               |    |    |         |         |                |
| EMMH-AS-108-HA-HS   |               |         |               |    |    |         |         |                |
| EMMH-AS-108-HA-HS-B |               |         |               |    |    |         |         |                |
| EMMH-AS-138-MA-HS   | 22            | 24      | 95            | M8 | M8 | 110     | 138     | 25             |
| EMMH-AS-138-MA-HS-B |               |         |               |    |    |         |         |                |
| EMMH-AS-138-HA-HS   |               |         |               |    |    |         |         |                |
| EMMH-AS-138-HA-HS-B |               |         |               |    |    |         |         |                |

|                     | H1    | H2   | L1  | L2  | L3      | L4   | L6   | L7   | T1 |
|---------------------|-------|------|-----|-----|---------|------|------|------|----|
|                     | ±1    | ±1   | ±2  | ±2  | +0,5/-1 | ±0,2 |      |      |    |
| EMMH-AS-68-MA-HS    | 90,8  | 56,8 | 144 | 114 | 30      | 3    | 25,5 | 23,5 | 12 |
| EMMH-AS-68-MA-HS-B  |       |      | 178 | 148 |         |      |      |      |    |
| EMMH-AS-68-HA-HS    |       |      | 194 | 164 |         |      |      |      |    |
| EMMH-AS-68-HA-HS-B  |       |      | 228 | 198 |         |      |      |      |    |
| EMMH-AS-88-MA-HS    | 111,3 | 67,3 | 178 | 143 | 35      | 3    | 25,6 | 28,6 | 16 |
| EMMH-AS-88-MA-HS-B  |       |      | 213 | 178 |         |      |      |      |    |
| EMMH-AS-88-HA-HS    |       |      | 223 | 188 |         |      |      |      |    |
| EMMH-AS-88-HA-HS-B  |       |      | 258 | 223 |         |      |      |      |    |
| EMMH-AS-108-MA-HS   | 131,7 | 77,7 | 197 | 157 | 40      | 3    | 25,9 | 33,5 | 16 |
| EMMH-AS-108-MA-HS-B |       |      | 234 | 194 |         |      |      |      |    |
| EMMH-AS-108-HA-HS   |       |      | 227 | 187 |         |      |      |      |    |
| EMMH-AS-108-HA-HS-B |       |      | 264 | 224 |         |      |      |      |    |
| EMMH-AS-138-MA-HS   | 162,1 | 93,1 | 219 | 164 | 55      | 3,5  | 26,3 | 48   | 19 |
| EMMH-AS-138-MA-HS-B |       |      | 266 | 211 |         |      |      |      |    |
| EMMH-AS-138-HA-HS   |       |      | 279 | 224 |         |      |      |      |    |
| EMMH-AS-138-HA-HS-B |       |      | 326 | 271 |         |      |      |      |    |

## Dimensions

### Dimensions – Dimensions - Featherkey for EMMH-AS

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|                    | B3 | H4  | L9   | L10  |
|--------------------|----|-----|------|------|
|                    | h9 |     | -0,2 | ±0,2 |
| EMMH-AS-68-...-KA  | 5  | 2   | 18   | 3    |
| EMMH-AS-88-...-KA  | 6  | 2,5 | 22   | 3    |
| EMMH-AS-108-...-KA | 6  | 2,5 | 28   | 4    |
| EMMH-AS-138-...-KA | 8  | 3   | 40   | 5    |

## Ordering data

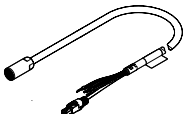
| EMMH-AS-68 |            |                                             |          |                          |
|------------|------------|---------------------------------------------|----------|--------------------------|
| Length     | Brake      | Output shaft                                | Part no. | Type                     |
| Very long  | None       | Smooth shaft                                | 8215345  | EMMH-AS-68-HA-HS-S1M-T   |
|            |            | Shaft with featherkey according to DIN 6885 | 8215346  | EMMH-AS-68-HKA-HS-S1M-T  |
|            | With brake | Smooth shaft                                | 8215347  | EMMH-AS-68-HA-HS-S1MB-T  |
|            |            | Shaft with featherkey according to DIN 6885 | 8215348  | EMMH-AS-68-HKA-HS-S1MB-T |
| Medium     | None       | Smooth shaft                                | 8215341  | EMMH-AS-68-MA-HS-S1M-T   |
|            |            | Shaft with featherkey according to DIN 6885 | 8215342  | EMMH-AS-68-MKA-HS-S1M-T  |
|            | With brake | Smooth shaft                                | 8215343  | EMMH-AS-68-MA-HS-S1MB-T  |
|            |            | Shaft with featherkey according to DIN 6885 | 8215344  | EMMH-AS-68-MKA-HS-S1MB-T |

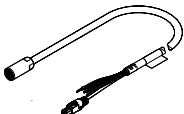
| EMMH-AS-88 |            |                                             |          |                          |
|------------|------------|---------------------------------------------|----------|--------------------------|
| Length     | Brake      | Output shaft                                | Part no. | Type                     |
| Very long  | None       | Smooth shaft                                | 8215353  | EMMH-AS-88-HA-HS-S1M-T   |
|            |            | Shaft with featherkey according to DIN 6885 | 8215354  | EMMH-AS-88-HKA-HS-S1M-T  |
|            | With brake | Smooth shaft                                | 8215355  | EMMH-AS-88-HA-HS-S1MB-T  |
|            |            | Shaft with featherkey according to DIN 6885 | 8215356  | EMMH-AS-88-HKA-HS-S1MB-T |
| Medium     | None       | Smooth shaft                                | 8215349  | EMMH-AS-88-MA-HS-S1M-T   |
|            |            | Shaft with featherkey according to DIN 6885 | 8215350  | EMMH-AS-88-MKA-HS-S1M-T  |
|            | With brake | Smooth shaft                                | 8215351  | EMMH-AS-88-MA-HS-S1MB-T  |
|            |            | Shaft with featherkey according to DIN 6885 | 8215352  | EMMH-AS-88-MKA-HS-S1MB-T |

| EMMH-AS-108 |            |                                             |          |                           |
|-------------|------------|---------------------------------------------|----------|---------------------------|
| Length      | Brake      | Output shaft                                | Part no. | Type                      |
| Very long   | None       | Smooth shaft                                | 8215361  | EMMH-AS-108-HA-HS-S1M-T   |
|             |            | Shaft with featherkey according to DIN 6885 | 8215362  | EMMH-AS-108-HKA-HS-S1M-T  |
|             | With brake | Smooth shaft                                | 8215363  | EMMH-AS-108-HA-HS-S1MB-T  |
|             |            | Shaft with featherkey according to DIN 6885 | 8215364  | EMMH-AS-108-HKA-HS-S1MB-T |
| Medium      | None       | Smooth shaft                                | 8215357  | EMMH-AS-108-MA-HS-S1M-T   |
|             |            | Shaft with featherkey according to DIN 6885 | 8215358  | EMMH-AS-108-MKA-HS-S1M-T  |
|             | With brake | Smooth shaft                                | 8215359  | EMMH-AS-108-MA-HS-S1MB-T  |
|             |            | Shaft with featherkey according to DIN 6885 | 8215360  | EMMH-AS-108-MKA-HS-S1MB-T |

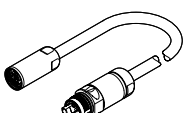
| EMMH-AS-138 |            |                                             |          |                           |
|-------------|------------|---------------------------------------------|----------|---------------------------|
| Length      | Brake      | Output shaft                                | Part no. | Type                      |
| Very long   | None       | Smooth shaft                                | 8215369  | EMMH-AS-138-HA-HS-S1M-T   |
|             |            | Shaft with featherkey according to DIN 6885 | 8215370  | EMMH-AS-138-HKA-HS-S1M-T  |
|             | With brake | Smooth shaft                                | 8215371  | EMMH-AS-138-HA-HS-S1MB-T  |
|             |            | Shaft with featherkey according to DIN 6885 | 8215372  | EMMH-AS-138-HKA-HS-S1MB-T |
| Medium      | None       | Smooth shaft                                | 8215365  | EMMH-AS-138-MA-HS-S1M-T   |
|             |            | Shaft with featherkey according to DIN 6885 | 8215366  | EMMH-AS-138-MKA-HS-S1M-T  |
|             | With brake | Smooth shaft                                | 8215367  | EMMH-AS-138-MA-HS-S1MB-T  |
|             |            | Shaft with featherkey according to DIN 6885 | 8215368  | EMMH-AS-138-MKA-HS-S1MB-T |

## Accessories

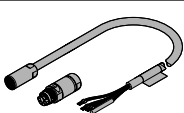
| Motor cable with cable cross-section 1.5 mm <sup>2</sup> for servo drive CMMT-AS  |                             |                                       |                     |              |          |                                |
|-----------------------------------------------------------------------------------|-----------------------------|---------------------------------------|---------------------|--------------|----------|--------------------------------|
|                                                                                   | Bending radius, fixed cable | Cable characteristic                  | Ambient temperature | Cable length | Part no. | Type                           |
|  | 57.5 mm                     | Suitable for use in the food industry | -40 ... 90 °C       | 2.5 m        | 8226143  | NEBM-H17G12-FH-2.5-Q9N-R3LEG14 |
|                                                                                   |                             |                                       |                     | 5 m          | 8226144  | NEBM-H17G12-FH-5-Q9N-R3LEG14   |
|                                                                                   |                             |                                       |                     | 10 m         | 8226145  | NEBM-H17G12-FH-10-Q9N-R3LEG14  |

| Configurable motor cable with cable cross-section 1.5 mm <sup>2</sup> for servo drive CMMT-AS |                             |                     |                            |          |             |
|-----------------------------------------------------------------------------------------------|-----------------------------|---------------------|----------------------------|----------|-------------|
|                                                                                               | Bending radius, fixed cable | Ambient temperature | Cable length <sup>1)</sup> | Part no. | Type        |
|              | 48 ... 74.8 mm              | -40 ... 90 °C       | 0.5 ... 99.9 m             | 8190874  | NEBM-M23/40 |

1) Choice of cable lengths: 0.5 ... 29.9 m, in increments of 0.1 m.

| Configurable motor cable with cable cross-section 1.5 mm <sup>2</sup> , version: Extension with mounted plug |                             |                     |                            |          |             |
|--------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------|----------------------------|----------|-------------|
|                                                                                                              | Bending radius, fixed cable | Ambient temperature | Cable length <sup>1)</sup> | Part no. | Type        |
|                            | 48 ... 74.8 mm              | -40 ... 90 °C       | 0.5 ... 99.9 m             | 8190874  | NEBM-M23/40 |

1) Choice of cable lengths: 0.5 ... 29.9 m, in increments of 0.1 m.

| Configurable motor cable with cable cross-section 1.5 mm <sup>2</sup> , version: Extension with plug kit |                             |                     |                            |          |             |
|----------------------------------------------------------------------------------------------------------|-----------------------------|---------------------|----------------------------|----------|-------------|
|                                                                                                          | Bending radius, fixed cable | Ambient temperature | Cable length <sup>1)</sup> | Part no. | Type        |
|                       | 48 ... 74.8 mm              | -40 ... 90 °C       | 0.5 ... 99.9 m             | 8190874  | NEBM-M23/40 |

1) Choice of cable lengths: 0.5 ... 29.9 m, in increments of 0.1 m.