

## 26 Stepper motor special versions

### Stepper motors for extended operating temperature range – options Z80 and Z240

The operating temperature range for all STÖGRA standard motors is -30°C until 80°C permanently (short time 100°C). This max. allowed temperature at the motor surface (measured at stator housing - backside near the cast connection box) may not exceeded. The motor temperature reached during operation depends from various factors: e.g. motor current, motor speed, ambient temperature, duty cycle, forced draft, heat flow from motor to other bodies, ...

For extreme applications STÖGRA offers motors with extended operating temperature:

type	temperature range
Z240	-30°C until 100°C (short time until 120°C)
Z80	-30°C until 120°C (short time until 130°C)

Ordering examples: SM 87.2.18M6 Z240, SM 88.1.18M4 Z80

STÖGRA also offers further versions, e.g. for low temperature until -50°C – please contact us.

### Shaft diameter options for series SM 87 and SM 88 – options Z8 and Z200

The shaft diameter for series SM 87 is Ø10mm (dimension D2 in drawing page 5) for the standard »M« version (metrical dimensions). Standard shaft diameter for series SM 88 is Ø12mm.

Optionally motors SM 87 and SM 88 are available with following shaft diameters (dimension D2):

SM 87 with Ø12mm: option »Z8« – SM 87... M...Z8 (e.g. SM 87.2.18M4,6 Z8)

SM 88 with Ø10mm: option »Z200« – SM 88... M...Z200 (e.g. SM 88.2.18M8 Z200)

Also other customer specific shaft diameters and modifications are possible.

### Metalic back cover for STÖGRA stepper motor series SM 87, SM 88 and SM 107 – Option Z48

In standard version series SM 87, SM 88 and SM 107 are delivered with a PVC back cover.

Only SM 56 and SM 168 are delivered in standard version with metalic back cover.

But optionally series SM 87, SM 88 and SM 107 also are available with metalic back cover (aluminium).

The metalic cover may be used e.g. for mounting an external encoder at motors with second shaft end.

ordering example: SM 87.3.18M3,5W Z48

### Vacuum compatible motors series SM ... V and SM ... V Z138



For vacuum and clean room applications we offer our vacuum compatible series SM ...V and SM ...V Z138.

Specifications:

- vakuum compatible until 10<sup>-6</sup> Torr
- blank stator surface
- vacuum compatible special bearing grease
- for leads motor versions including teflon leads
- metalic back cover (aluminium)
- motors are not gased out!

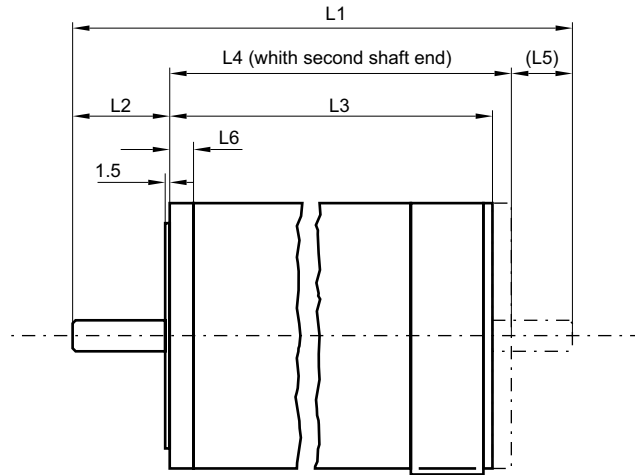
Ordering example: SM 87.3.18M6V

The option Z138 additionally includes a galvanically nickled motor surface (protection against corrosion for the blank stator).

Ordering example: SM 87.3.18M6V Z138

These options are available for all **STÖGRA** motor series (but not for options brake or encoder).

**IP68 motors – Z9 and Z177**



All motor series from **STÖGRA** are available optionally with **protection class IP68** <sup>3)</sup>.

The IP68 motors are tested under water with 1 bar pressure (corresponds to operation of motor in 10m water depth).

Typical applications for IP68 motors are, beside underwater, any plants outside (e.g. faced to rain) or in the food industry, where motors are cleaned with water.

The motors include special sealings and some special parts as special flanges.

Options »brake« and »encoder« are also possible for IP68 motors.

IP68 motors need to be ordered with the extension »Z9« in the type designation.

Ordering example: SM 87.2.18M6 E50 Z9

Generally we recommend to order our **IP68** motors **with additional special coating** for protection against corrosion (see also below Z119 und Z177).

Ordering key for **Z9 and special coated: Z177**

mm	L1	L2 ±0.5	L3 ±0.5	L4 ±0.5	L5 ±0.5	L6
SM 56.1.18	108	17.2	79.8	81.3	9.5	5
SM 56.2.18	134		105.8	107.3		
SM 56.3.18	162		133.8	135.3		
SM 87.1.18	137	27	90	97	13	11.5
SM 87.2.18	169		122	129		
SM 87.3.18	201		154	161		
SM 87.4.18	233		186	193		
SM 88.1.18	145	27	98	105	13	11.5
SM 88.2.18	177		130	137		
SM 88.3.18	209		162	169		
SM 88.4.18	241		194	201		
SM 107.1.18	170	32	111	116	22	9
SM 107.2.18	238	50	161	166		
SM 107.3.18	288		211	216		
SM 107.4.18	338		261	266		

<sup>3)</sup> IP68 according to DIN 40050 / EN60529 / IEC529 – IP58 according to VDE0530-5 / EN60034-5 / IEC34-5

**Motors with special coating for protection against corrosion Z119 / Z177**



All **STÖGRA** motors are available optionally with special coating.

The complete motor surface will be primed two times and then specially coated. This guarantees an extremely robust protection of the complete motor surface against corrosion.

Typically motors in IP68 version (see above Z9) or motors in IP55 (standard-cast connection box version) for the food industry are ordered in special coated version.

Coated motors in IP55 (standard cast connection box) must be ordered with the extension »Z119«. Ordering example: SM 87.2.18M6 E50 Z119

Coated motors in IP68 version (see above »Z9«) must be ordered with the extension »Z177«. Ordering example: SM 87.2.18M6 E50 Z177

Motors usable in **sea water environment** are also available (please contact us for more informations).