

## BSM80N-275 Electric Motor Datasheet

This datasheet is a copy from [this internetpage](#).

Interactively adding [your torque and speed requirements at this link](#) allows you to determine the voltage, current, efficiency and motor temperature for your specific loadcase for this specific motor in just a few seconds.

Manufacturer typenumber	BSM80N-275
Manufacturer brand	Baldor
Commutation	brushless AC

### Performance data

Nominal terminal voltage	$U_{nom}$ [V]	650.000
Maximum rated current	$I_{max}$ [A]	14.000
Maximum rated torque at standard temp. 22 °C	$T_{max}$ [Nm]	12.656
Motorconstant at standard temp. 22 °C	$k$ [ $Vs/rad$ or $Nm/A$ ]	9.040e-1
Maximum torque at standstill at nominal voltage	$T_{stall}$ [Nm]	149.889
Maximum theoretical velocity motoraxis at no load (and no friction of motor and reduction) and nominal voltage	$\omega_0$ [ $rad/s$ ]	880.624
Maximum allowed velocity motoraxis	$\omega_{max}$ [ $rad/s$ ]	733.040
Maximum output power equal to $\frac{1}{4} T_{stall} \omega_0$	$P_{max}$ [W]	33007.812

### Mechanical data

Inertia of rotor	$J_{rotor}$ [ $kgm^2$ ]	1.820e-4
Maximum acceleration at standstill if no load or reduction is attached	max. accel [ $rad/s^2$ ]	6.932e+4
Constant friction torque of motor on motoraxis	$T_{fric}$ [Nm]	0.040
Velocity-dependant friction torque of motor on motoraxis	$C_v$ [Nm/rad]	0.000e-1
Amount of pole-pairs	$p$	2
Mechanical timeconstant	$\tau_{mech}$ [s]	1.069e-3

### Electrical data

resistance windings measured at terminals of motor at standard temp. 22 °C	$R_{2ph}$ [ $\Omega$ ]	3.200
Winding inductance measured at terminals of motor	$L_{2ph}$ [H]	1.273e-2
Slope of the motor	$S$ [ $Nms/rad$ ]	1.703e-1
Electrical timeconstant	$\tau_{elec}$ [s]	3.978e-3

### Thermal data

Maximum allowed temperature of windings	$\Theta_{max}$ [°C]	155.000
Maximum continuous current (thermal limit) at surround temp. 22 °C and at stillstand	$I_{max, thermal}$ [A]	3.483
Thermal resistance between rotor and ambient	$R_{th, total}$ [ $K/W$ ]	1.500

### Magnet data

the material of the magnet	magnetmaterial	NdFeB
degrading of the magnetic flux density in percent per °C or K	$TK_{Br}$ [%/K]	-7.692e-2

**Remarks:**

1. The velocity dependant friction is not provided so calculation is done with 0. This means that the current may be larger than calculated and the necessary power of the motor may be larger.
2. The frictiontorque is determined from the slope of the 100% DC-line in the torque-speed-characteristic. This means the value may be inaccurate.
3.  $C_{th,total}$  is not provided. This means that the time when thermal stability occurs can not be calculated.
4. The vendor has not provided information about a heatsink for the given thermal information.

The quality and completeness of the supplied information has quality index: C

This quality index is determined by specAmotor.com. Here is described [what the quality index is](#).