

The PMSM is a brushless permanent magnet motor based on axial flux technology. The motor type is commonly referred to as “pancake motor” because of its flat design. Compared to a traditional induction motor the weight is lower and the efficiency is higher which means you can run your system longer and with less heating of the motor. The motor type also opens up for new applications where you cannot fit a larger motor.

The PMSM can be fitted with a compact planetary gearbox for an in-wheel traction solution and is available in both air and water cooled versions.

Typical applications for the motor type include:

- Traction motor for cars, motorcycles, mopeds and other On and Off-road vehicles
- Traction and/or pump motor for material handling vehicles, such as forklifts and AGVs
- Generator in hybrid vehicles, ranging from micro-hybrid to full hybrid
- Various use in agriculture and turf equipment
- Traction motor for wheelchairs, cleaning machines, personal transports etc.
- Generator in stationary applications such as wind turbines or gensets



Motor with in-wheel gearbox

SPECIFICATIONS

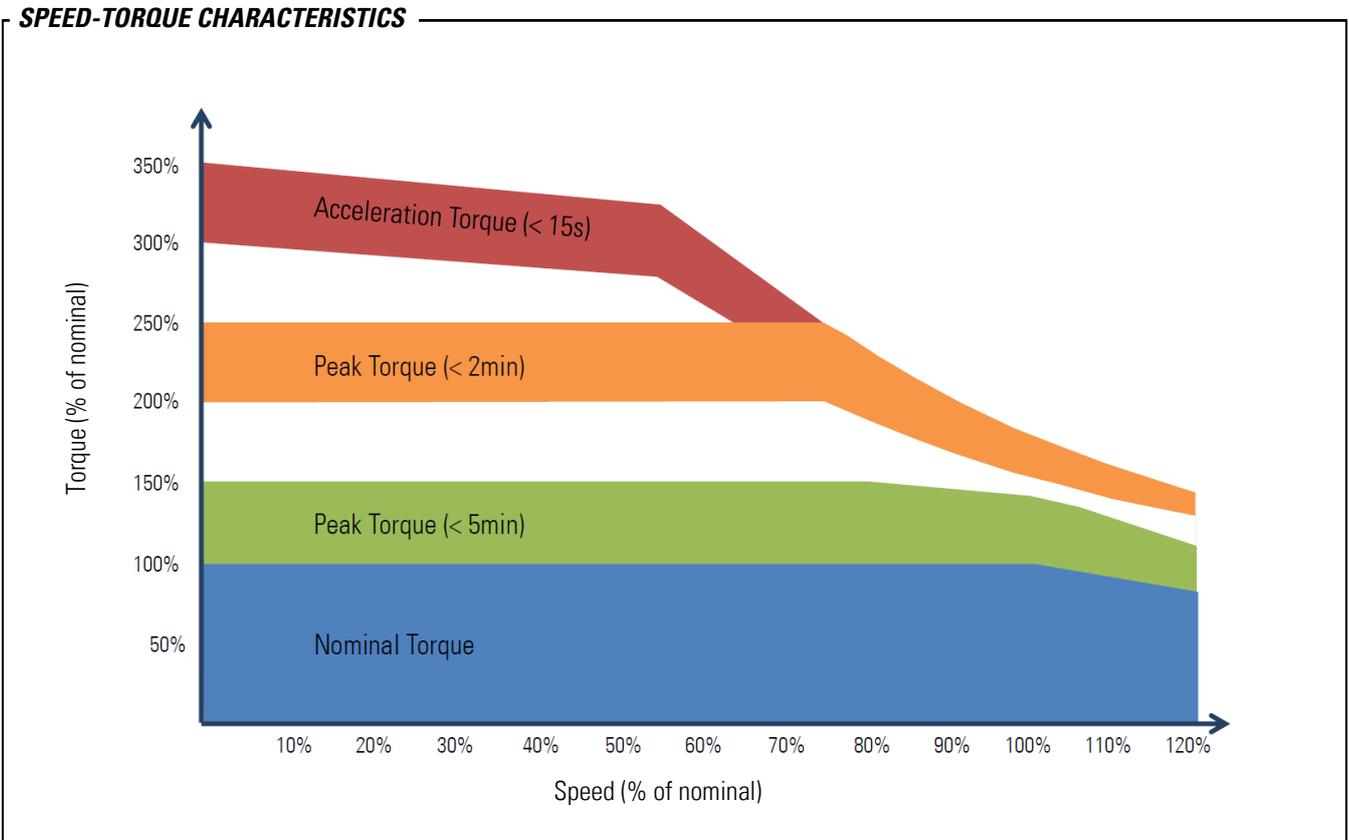
| | |
|-------------------------|--|
| Motor type | Synchronous AC with axial flux |
| Magnet material | Neodymium (NdFeB) |
| Protection class | IP65 housing (IP54 at the shaft) |
| Mounting | IM B14, customization possible |
| Shaft | Cylindrical shaft with key groove, (DIN 5480 on request) |
| Ambient | Storage (-20°C to +40°C) , Operation (-10°C to +40°C) |
| Insulation | Insulation class F (155°C) – IEC 60034 |
| Cooling | Forced air (air flow 5 m/s) or water cooling |
| Battery voltage | Versions available for 24-560V _{DC} |

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| RATINGS | | | | | | |
|--------------------|------------|---------------|--------------------|------------|---------------------|--------------------|
| Voltage | Motor Size | Nominal Speed | Nominal Power (S1) | Peak Power | Nominal Torque (S1) | Acc. Torque (<15s) |
| 24 V _{DC} | 130 | 3000 rpm | 1,70 kW | 3,00 kW | 5,41 Nm | 18,80 Nm |
| | | 4500 rpm | 1,80 kW | 3,90 kW | 3,82 Nm | 18,30 Nm |
| | | 6000 rpm | 2,00 kW | 4,30 kW | 3,18 Nm | 15,20 Nm |
| | | 3000 rpm | 1,90 kW | 3,30 kW | 6,00 Nm | 19,70 Nm |
| | | 4500 rpm | 2,70 kW | 4,70 kW | 5,70 Nm | 18,10 Nm |
| | | 6000 rpm | 2,80 kW | 5,30 kW | 4,40 Nm | 15,00 Nm |
| 48V _{DC} | 150 | 3000 rpm | 2,30 kW | 4,30 kW | 7,30 Nm | 24,50 Nm |
| | | 4500 rpm | 3,40 kW | 5,80 kW | 7,20 Nm | 23,70 Nm |
| | | 6000 rpm | 3,60 kW | 6,40 kW | 5,70 Nm | 20,20 Nm |
| | | 3000 rpm | 5,50 kW | 11,50 kW | 17,50 Nm | 59,70 Nm |
| | | 4500 rpm | 6,10 kW | 14,30 kW | 12,90 Nm | 48,80 Nm |
| | | 6000 rpm | 7,00 kW | 15,70 kW | 11,10 Nm | 41,80 Nm |
| 80V _{DC} | 170 | 3000 rpm | 5,50 kW | 11,10 kW | 17,50 Nm | 59,50 Nm |
| | | 4500 rpm | 7,60 kW | 16,50 kW | 15,90 Nm | 55,50 Nm |
| | | 6000 rpm | 8,00 kW | 16,50 kW | 12,70 Nm | 45,10 Nm |

This table shows the ratings for a number of standard, air cooled, configurations. Other ratings and characterisations are available on request.

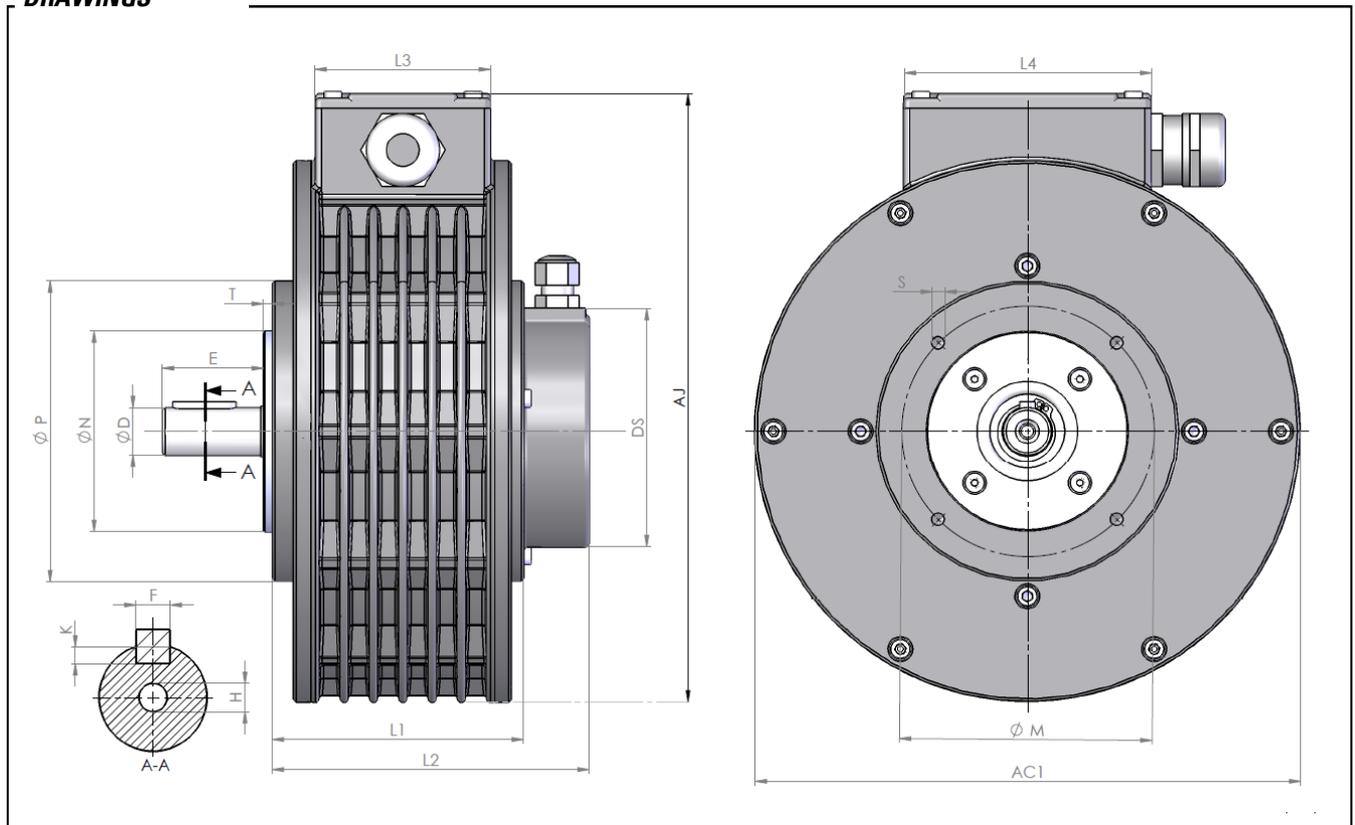


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DIMENSIONS

| | PMSM 130 | PMSM 150 | PMSM 170 |
|----------------------|-----------------------|-----------------------|------------------------|
| $\varnothing M$ (HC) | $\varnothing 100$ | $\varnothing 100$ | $\varnothing 130$ |
| $\varnothing N$ (j6) | $\varnothing 80$ (j6) | $\varnothing 80$ (j6) | $\varnothing 110$ (j6) |
| $\varnothing P$ | $\varnothing 120$ | $\varnothing 120$ | $\varnothing 165$ |
| S | 4xM6 (10mm) | 4xM6 (12mm) | 4xM8 (12mm) |
| T | 3,5 | 3,5 | 3,5 |
| $\varnothing D$ (k6) | $\varnothing 19$ (k6) | $\varnothing 19$ (k6) | $\varnothing 19$ (k6) |
| E | 40 | 40 | 40 |
| $\varnothing AC1$ | $\varnothing 194$ | $\varnothing 216$ | $\varnothing 242$ |
| AJ | 217 | 241 | 269 |
| $\varnothing DS$ | $\varnothing 95$ | $\varnothing 95$ | $\varnothing 95$ |
| L1 | 98 | 100 | 115 |
| L2 | 124 | 126 | 145 |
| L3 | 70 | 70 | 82 |
| L4 | 98 | 98 | 124 |
| F | 6 | 6 | 6 |
| K | 3,5 | 3,5 | 3,5 |
| H (DIN 332-D) | M6x16 | M6x16 | M6x16 |

DRAWINGS



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ISO 9001
BUREAU VERITAS
Certification



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