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Datasheet VM620-18W0134

Art.-No: VM620-18W0134-AC30048-0110

VM600M - Expert eMotors

Asynchronous electric motors and generators for mobile applications perfectly matched to the VP600 inverter product line.

VM600M Features

- maximum lifetime and easy maintenance
- high efficiency especially at partial load
- No losses in idle operation
- No generated voltage in idle operation
- No unwanted braking torque in case of error

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| Product overview | |
|--|--|
| Article no. | VM620M-18W0134-AC30048-0110 |
| Finishing | black, RAL9005 |
| Description | "DirectDrive" VECTOPOWER motor for mobile applications, optimized to 1:1 speed of the cardan shaft; Optimized for DC voltage of 670V and 400V. |
| Motor topology | Asynchronous |
| Size | |
| Weight | 360 kg |
| Diameter shaft | 65 mm |
| Length shaft | 110 mm |
| Total length | 873 mm |
| Length | 763 mm |
| External diameter | 400 mm |
| Technical data | |
| Continuous torque M_n | 372 Nm 600 Nm |
| Nominal speed n_N | 3760 rpm 1950 rpm |
| Max. speed $n_{max}^{4)}$ | 4800 1/min |
| Nominal current UVW, per phase | 215 A _{rms} |
| Rated power ³⁾ | 146 kW |
| Terminal voltage (AC) | 460 V |
| Cos Phi | 0.85 |
| Torque constant | 2.8 Nm/A _{rms} |
| Peak current UVW, per phase | 450 A _{rms} |
| Max. overload for 10 sec ²⁾ | 1340 Nm |
| Max. overload for 1 min ²⁾ | 1340 Nm |
| Max. overload for 3 min ²⁾ | 1050 Nm |
| Max. overload for 10 min ²⁾ | 710 Nm |
| Efficiency at continuous load (up to) | 93 % |
| Efficiency at 50% load (up to) | 94 % |
| Number of pole pairs | 2 |
| Rotor moment of inertia | 0.454 kgm ² |
| Electrical wiring | Delta connection |
| Heating | 155°C, class of insulation H according to DIN60034-1 |
| Rotary encoder | <ul style="list-style-type: none"> Resolver |
| Encoder manufacturer name | Yingshuang |
| Encoder manufacturer type | YS J132XU9733 |
| Shaft design | cylindrical without shaft key |
| Temperature sensors | PT100, NTC |

| Technical data | |
|-----------------|---|
| Technical notes | <p>1) -</p> <p>2) Max. torque at: < 2000 rpm, 670VDC, 15l/min coolant flow rate at 35°C and 25°C ambient</p> <p>3) Rated power valid for 30 min.</p> <p>4) dependent on available DC-voltage</p> |

| Cooling | |
|---|------------------------|
| Liquid cooling | yes |
| Cooling medium | Water / glycol (50:50) |
| Cooling water connection (screw thread) | G 3/4 |
| Min. coolant throughput | 20 l / min |
| Max. coolant pressure | 2 bar |
| Min. coolant pressure | 0.5 bar |
| Max. coolant temperature without derating | 35 °C |
| Max. coolant temperature with derating | 65 °C |

| Approval marks | |
|----------------|---|
| Approval marks | <p>Federal Office for Motor Traffic (KBA)</p> <p>E1 85R-003796</p> <p>in combination with</p> <p>VP600-18W160-61.1.22.14.00 (E1 10R-058087)</p> |

| Properties | |
|------------|-----------------------|
| Plug type | Amphenol PowerLok 301 |

| Environment | |
|--|--------|
| Max. ambient temperature in operation | 75 °C |
| Min. ambient temperature in operation | -25 °C |
| Protection class according to EN 60529 | IP65 |

| Pin settings | |
|--------------|--|
|--------------|--|

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| Properties | |
|-------------|-------------------|
| Plug type | A DF A 015 |
| Plug design | 17 pol., type "E" |

| pin-no. | operation | type | I/O |
|---------|-----------|------|-----|
| 1 | P+ | male | |
| 2 | P- | male | |
| 3 | A+ | male | |
| 4 | A- | male | |
| 5 | B+ | male | |
| 6 | B- | male | |
| 7 | N.C. | N.C. | |
| 8 | N.C. | N.C. | |
| 9 | N.C. | N.C. | |
| 10 | N.C. | N.C. | |
| 11 | N.C. | N.C. | |
| 12 | Interlock | male | |
| 13 | Interlock | male | |
| 14 | PT100 | male | |
| 15 | PT100 GND | male | |
| 16 | PTC | male | |
| 17 | PTC GND | male | |

Attachments

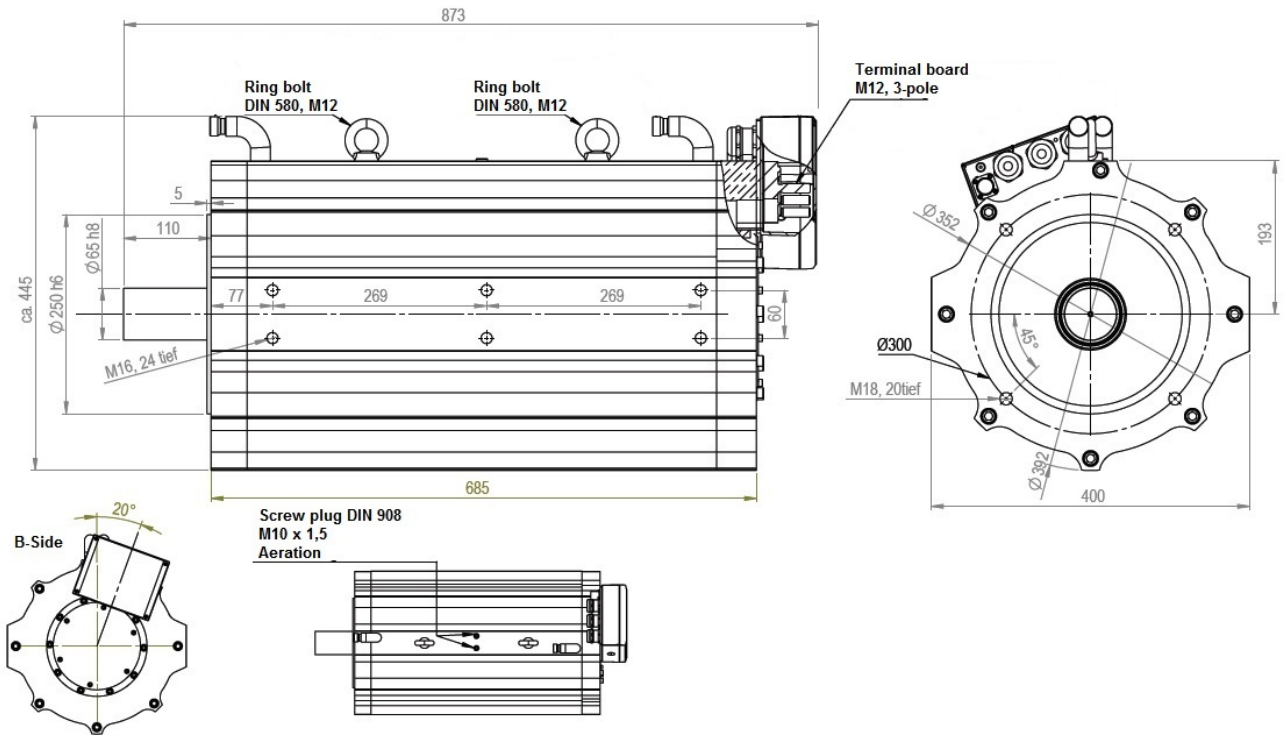


Illustration: Dimensions

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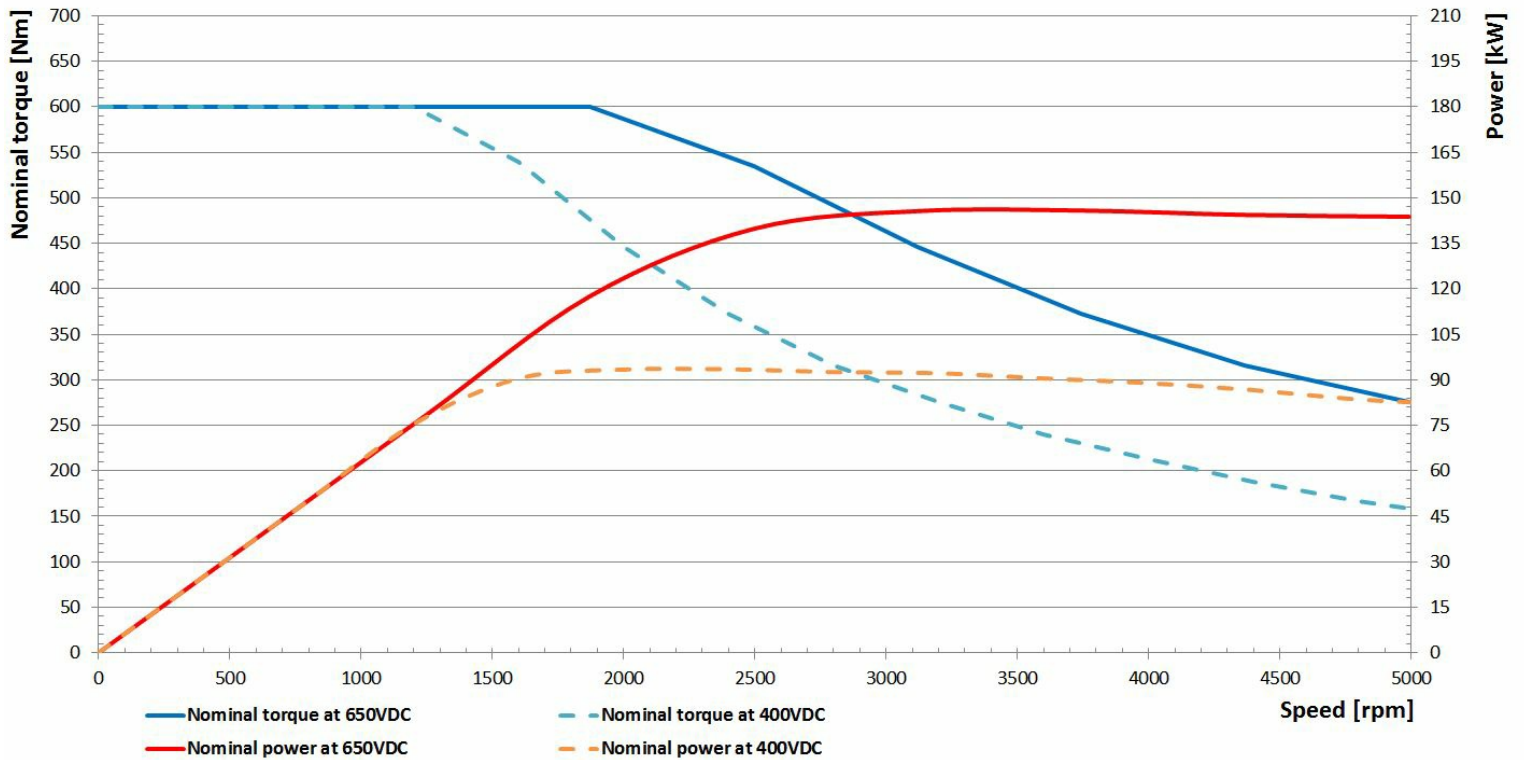


Illustration: S1 torque and power curve

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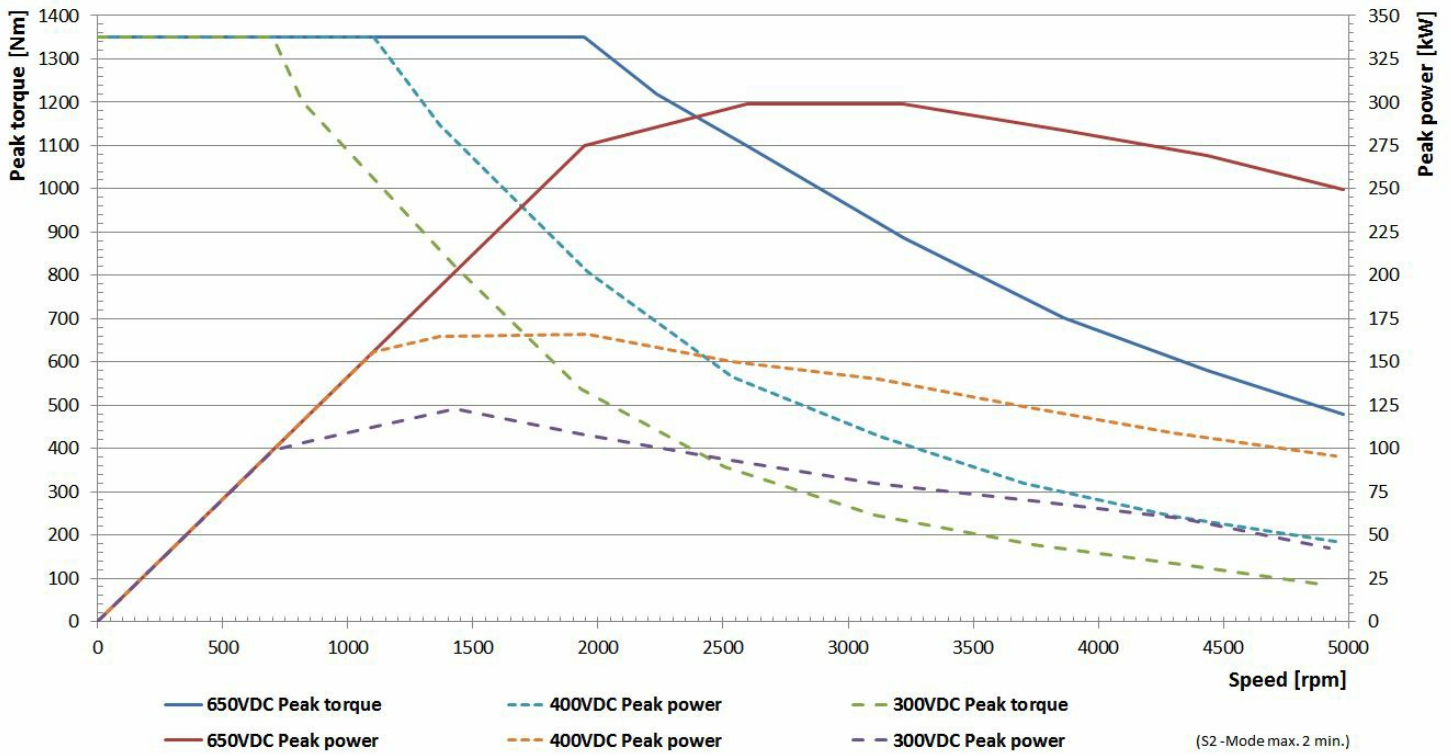


Illustration: S2 torque and power curve

VM620-18W0134-AC30048 -- Pressure drop

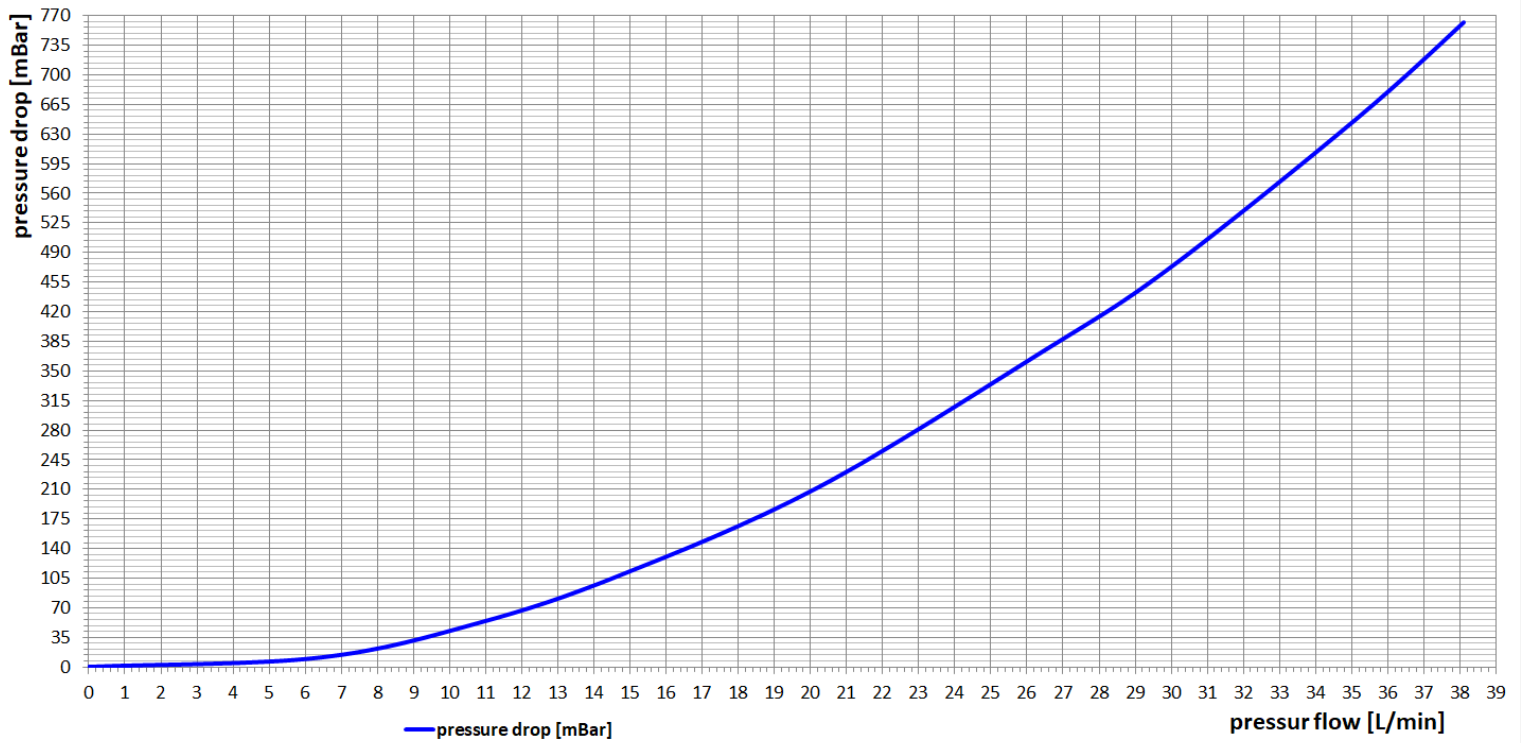


Illustration: pressure loss vs coolant flow

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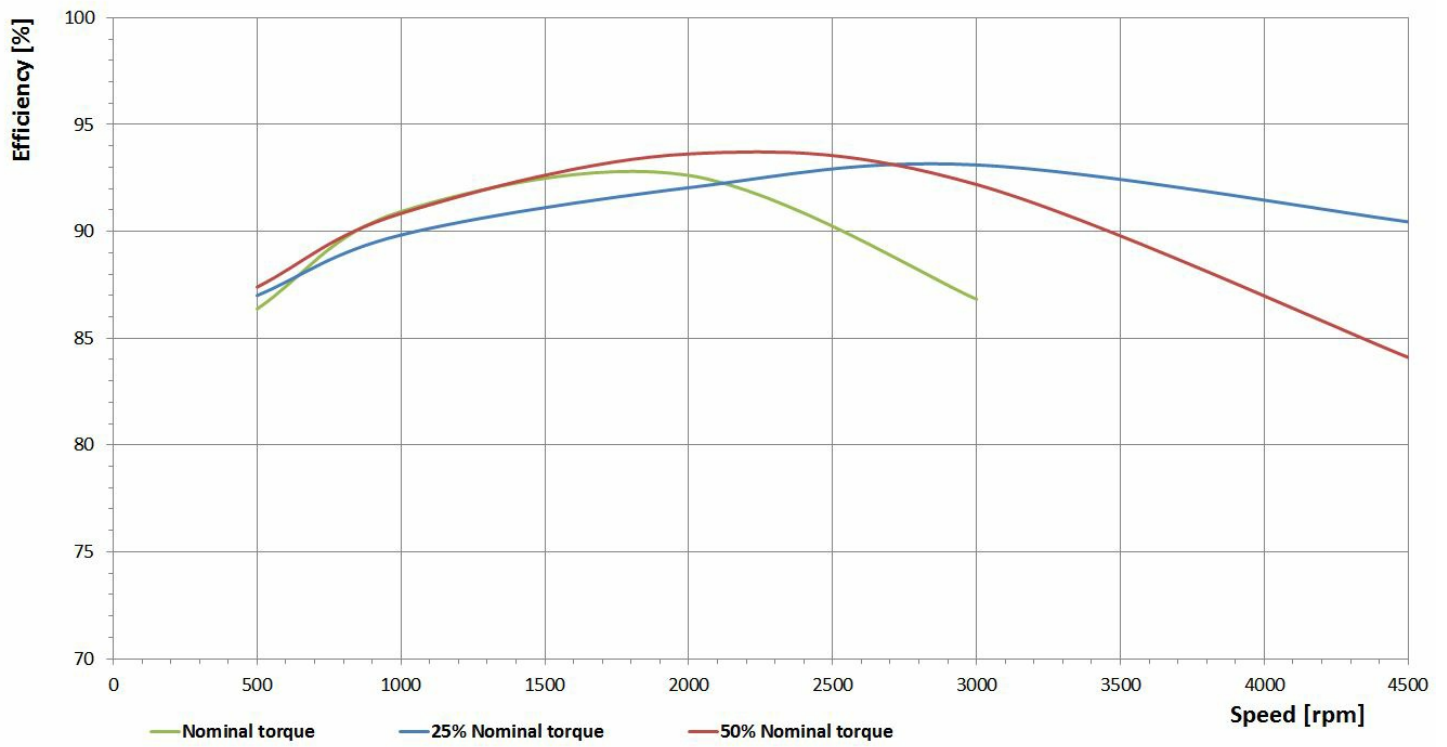


Illustration: Efficiency curves