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# Datasheet VM600M-18W0018

Art.-No: VM600M-18W0018-PM10040-0210-A

## VM600M - Expert eMotors

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

### VM600M Features

- maximum lifetime
- high efficiency especially at partial load
- scalable performance and easy implementation of redundancy

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Product overview	
Article no.	VM600M-18W0018-PM10040-0210-A
Finishing	black
Description	AuxiliaryDrive VECTOMOTOR for mobile applications. Use for auxiliary and functional drives.
Motor topology	Permanent magnet synchronous
Size	
External dimensions	190
Weight	50 kg
Diameter shaft	32 mm
Length shaft	58 mm
Total length	495 mm
Length	437 mm
Technical data	
Noiminal torque <sup>1)</sup>	72 Nm
Rated speed	3000 1/min
Max. speed $n_{max}$ <sup>4)</sup>	4000 1/min
Nominal current UVW, per phase	49.6 A <sub>rms</sub>
Rated power <sup>3)</sup>	22 kW
Terminal voltage (AC)	360 V
Torque constant	1.45 Nm/A <sub>rms</sub>
Peak current UVW, per phase	163 A <sub>rms</sub>
Max. overload for 10 sec <sup>2)</sup>	221 Nm
Voltage constant	101 V/1000 rpm
Number of pole pairs	3
Rotor moment of inertia	0.0148 kgm <sup>2</sup>
Electrical wiring	Star connection
Heating	155°C, class of insulation F according to DIN57530
Rotary encoder	<ul style="list-style-type: none"> <li>Resolver</li> </ul>
Encoder manufacturer name	Tamagawa
Encoder manufacturer type	TS2640N321E64 (RT22)
Shaft design	cylindrical with shaft key according to DIN6885
Temperature sensors	PTC, PT100

## Technical data

Technical notes	1) at 3000 1/min, 560Vdc, 35 ° C liquid cooling temperature and 25 ° C ambient temperature
	2) at 2000 1/min, 560Vdc, 35 ° C liquid cooling temperature and 25 ° C ambient temperature
	3) at 3000 1/min, 560Vdc, 35 ° C liquid cooling temperature and 25 ° C ambient temperature

## Cooling

Liquid cooling	yes
Cooling medium	Water/glycol (50:50)
Min. coolant throughput	8 l / min
Max. coolant pressure	2 bar
Min. coolant pressure	0.15 bar
Max. coolant temperature without derating	35 °C
Max. coolant temperature with derating	65 °C
General information about cooling	Cooling A-flange and B-flange in serial

## Properties

Plug type	3 x HVBI-02R6-AMHA-xx
Plug design	Phase U = Codierung "C"; Phase V = Codierung "D"; Phase W = Codierung "E"

## Environment

Max. ambient temperature in operation	65 °C
Min. ambient temperature in operation	-25 °C
Protection class according to EN 60529	IP64* *with gearbox IP65

## Pin settings

## ENC

### 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	

pin-no.	operation	type	I/O
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

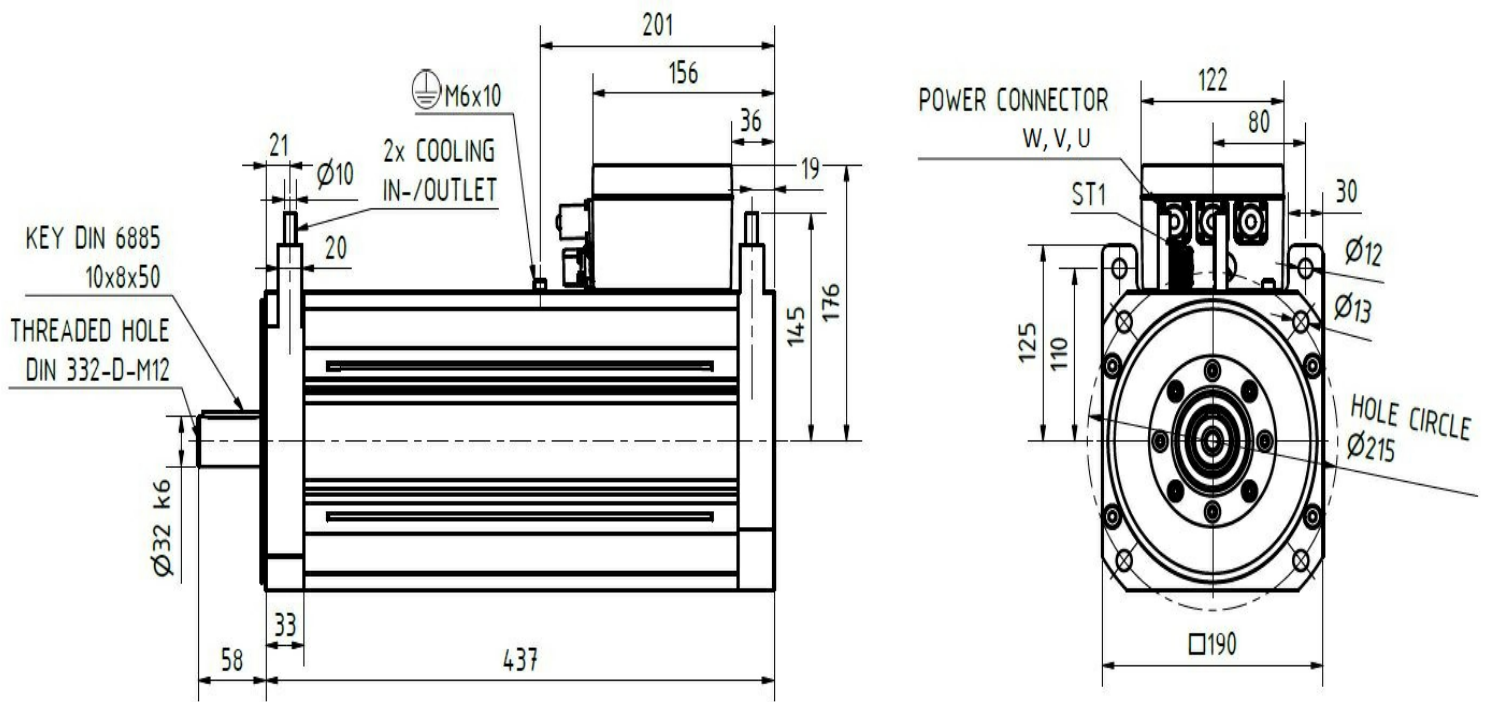


Illustration: Dimensions

Motor characteristic S1

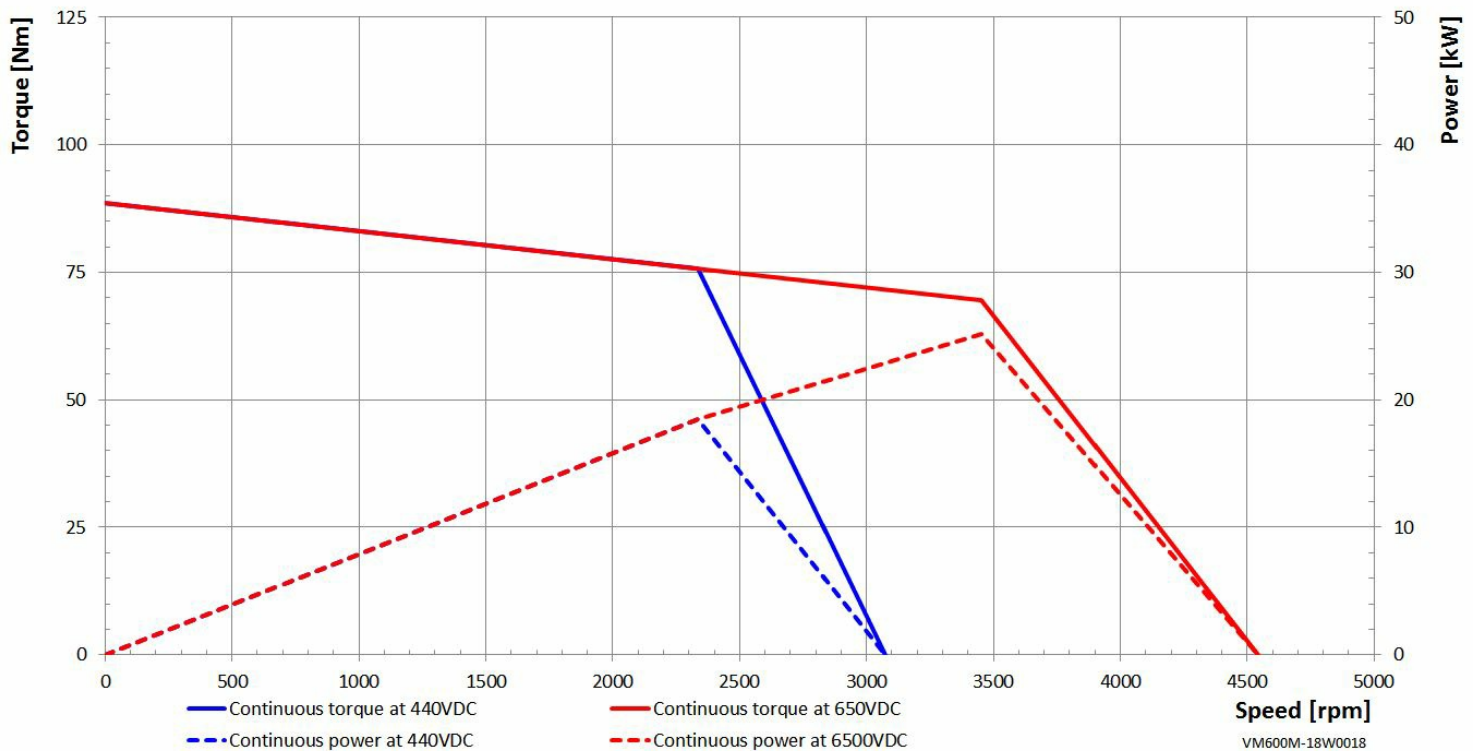


Illustration: S1 torque and power curve

**Motor characteristic S2**

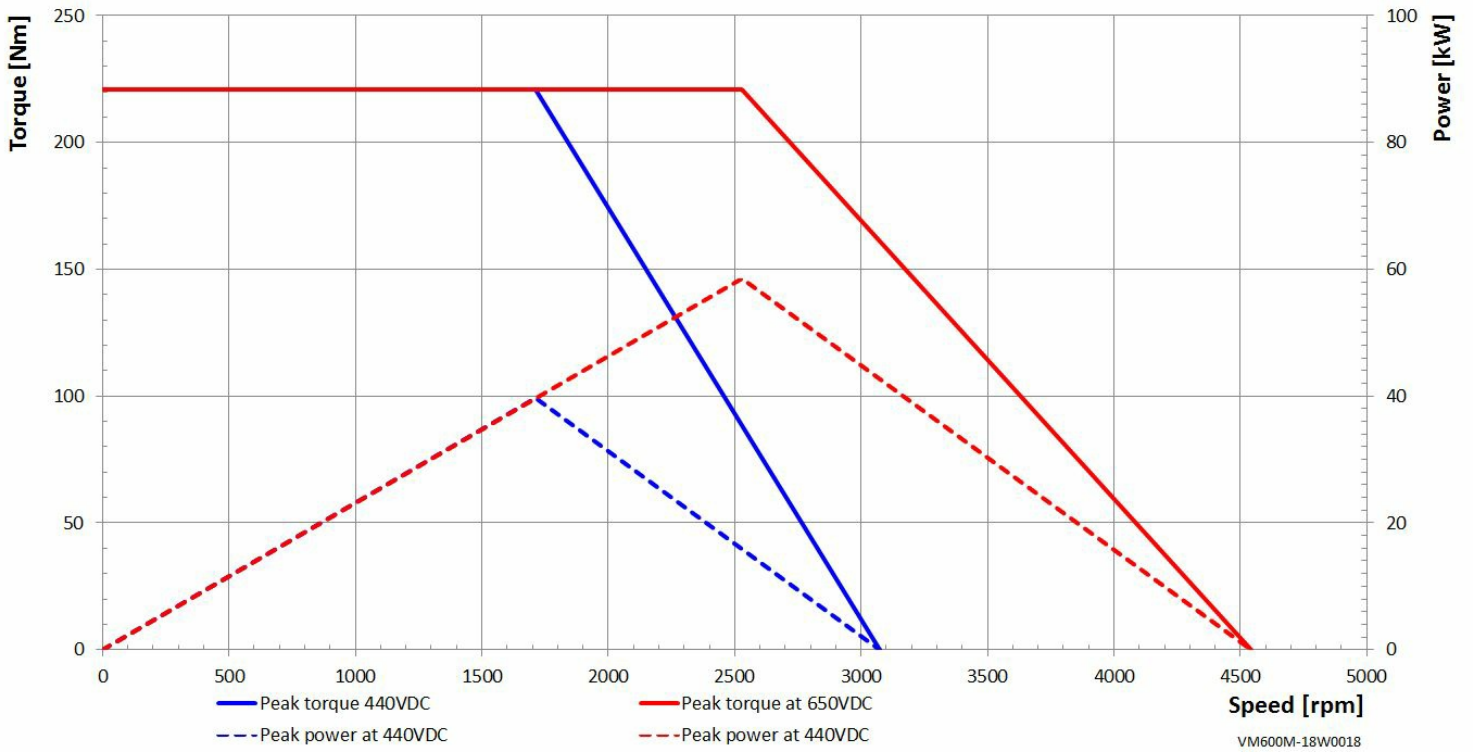


Illustration: S2 torque and power curve

**Pressure loss: A- and B-motor flange - series connection**

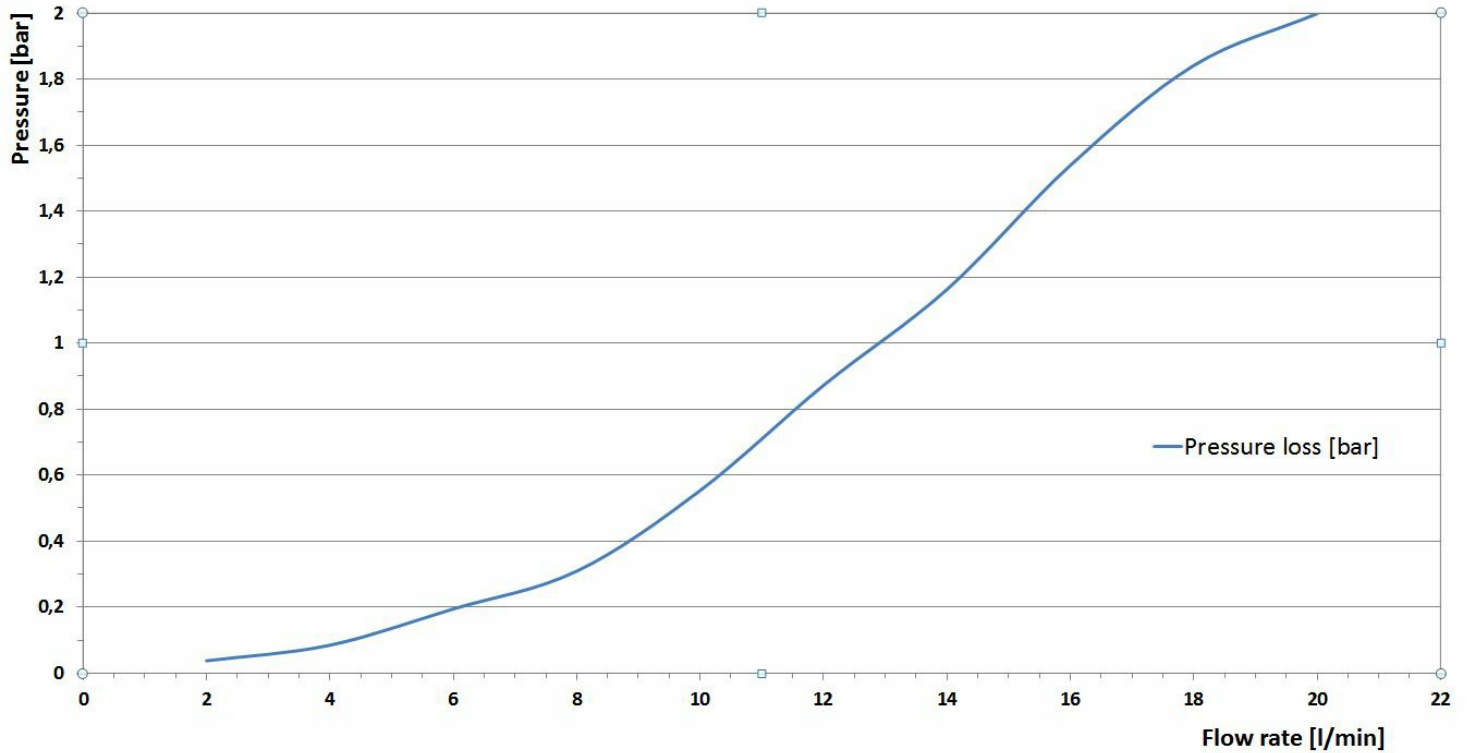


Illustration: pressure loss vs coolant flow