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Datasheet VM600M-18W0073

Art.-No: VM600M-18W0073-RH20065-021B

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-18W0073-RH20065-021B
Motor topology	PM synchronous motor
Size	
Weight	105 kg
Diameter shaft	38 mm
Length shaft	66.5 mm
Total length	500.5 mm
Length	434 mm
External diameter	305 mm
Technical data	
Noiminal torque ¹⁾	410 Nm
Rated speed	2150 1/min
Max. speed n_{max} ⁴⁾	6500 1/min
Nominal current UVW, per phase	220 A _{rms}
Rated power ³⁾	92 kW
Terminal voltage (AC)	270 V
Torque constant	1.86 Nm/A _{rms}
Peak current UVW, per phase	480 A _{rms}
Max. overload for 10 sec ²⁾	820 Nm
Max. overload for 1 min ²⁾	800 Nm
Max. overload for 10 min ²⁾	490 Nm
Voltage constant	116 V/1000 rpm
Efficiency at continuous load (up to)	96.6 %
Number of pole pairs	5
Rotor moment of inertia	0.141 kgm ²
Electrical wiring	Star connection
Rotary encoder	<ul style="list-style-type: none"> • Resolver
Encoder manufacturer name	Yingshuang
Encoder manufacturer type	YS J52XU9735A
Shaft design	Cylindric
Temperature sensors	Triplets PTC 1k, PT100
Technical notes	<p>¹⁾ Rated torque at: 2150 rpm, 400VDC, 15l/min coolant flow rate at 35°C and 25°C ambient</p> <p>²⁾ Max. torque at: < 1200 rpm, 400VDC, 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)	3/4"
Min. coolant throughput	15 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

Properties	
Plug type	Amphenol PowerLok 301

Environment	
Max. ambient temperature in operation	65 °C
Min. ambient temperature in operation	-25 °C
Protection class according to EN 60529	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	
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	

pin-no.	operation	type	I/O
15	PT100 GND	male	
16	PTC	male	
17	PTC GND	male	

Attachments

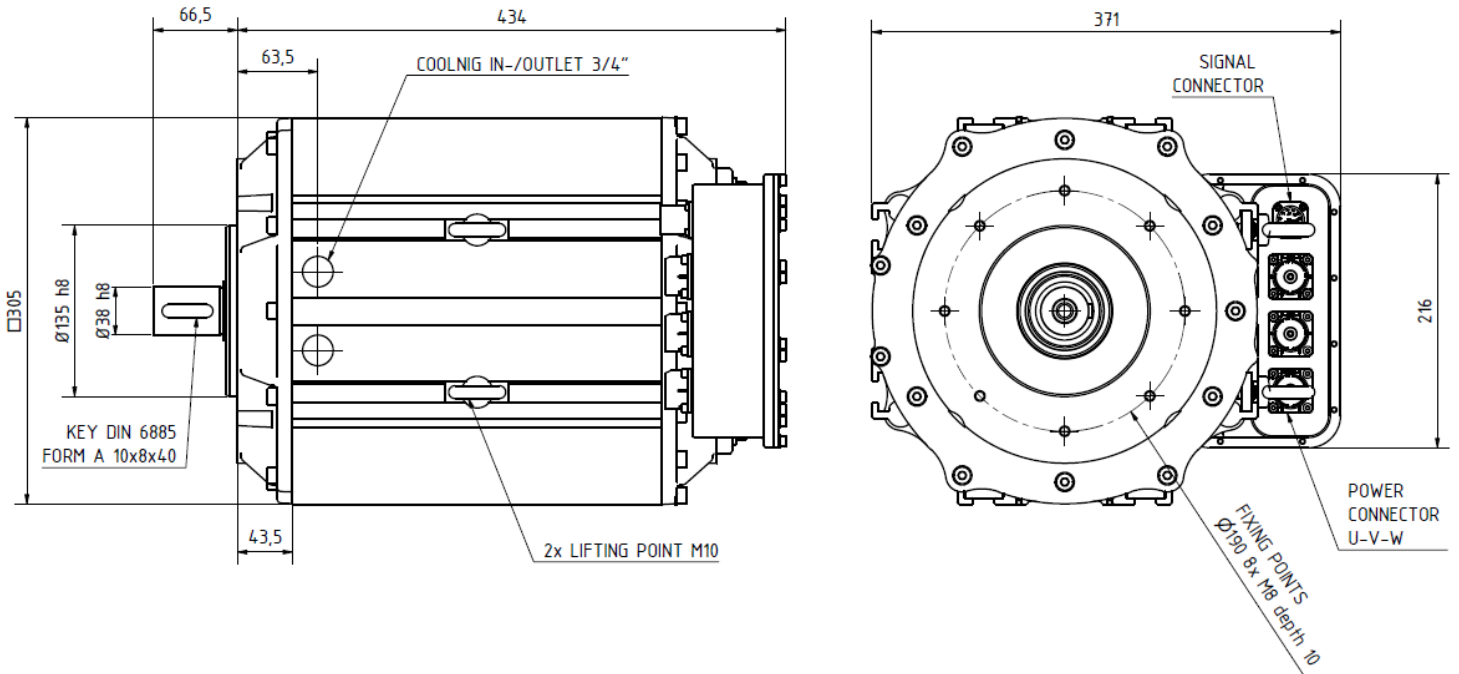


Illustration: Dimensions

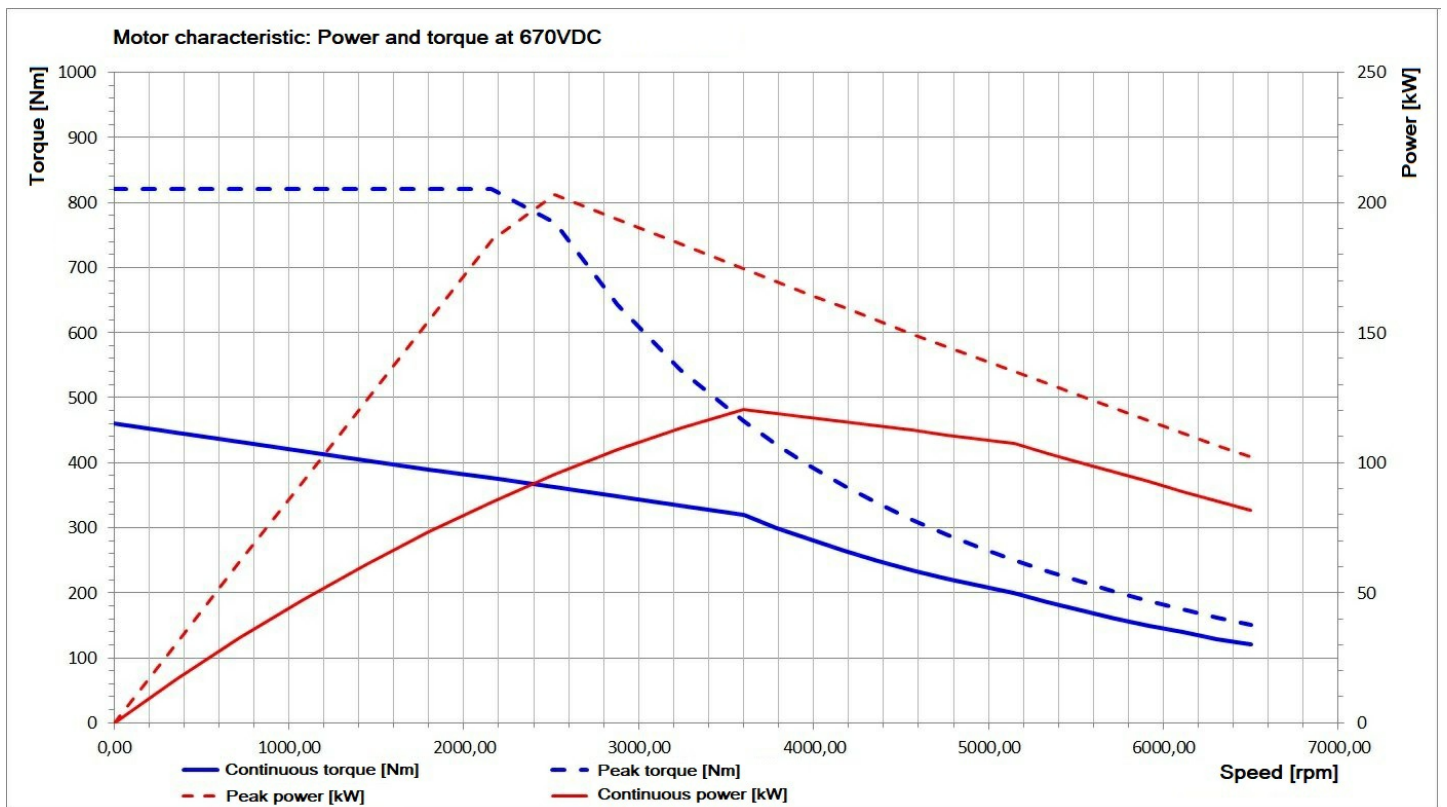


Illustration: S1 torque and power curve

Motor characteristic: Peak and tourque at 400VDC

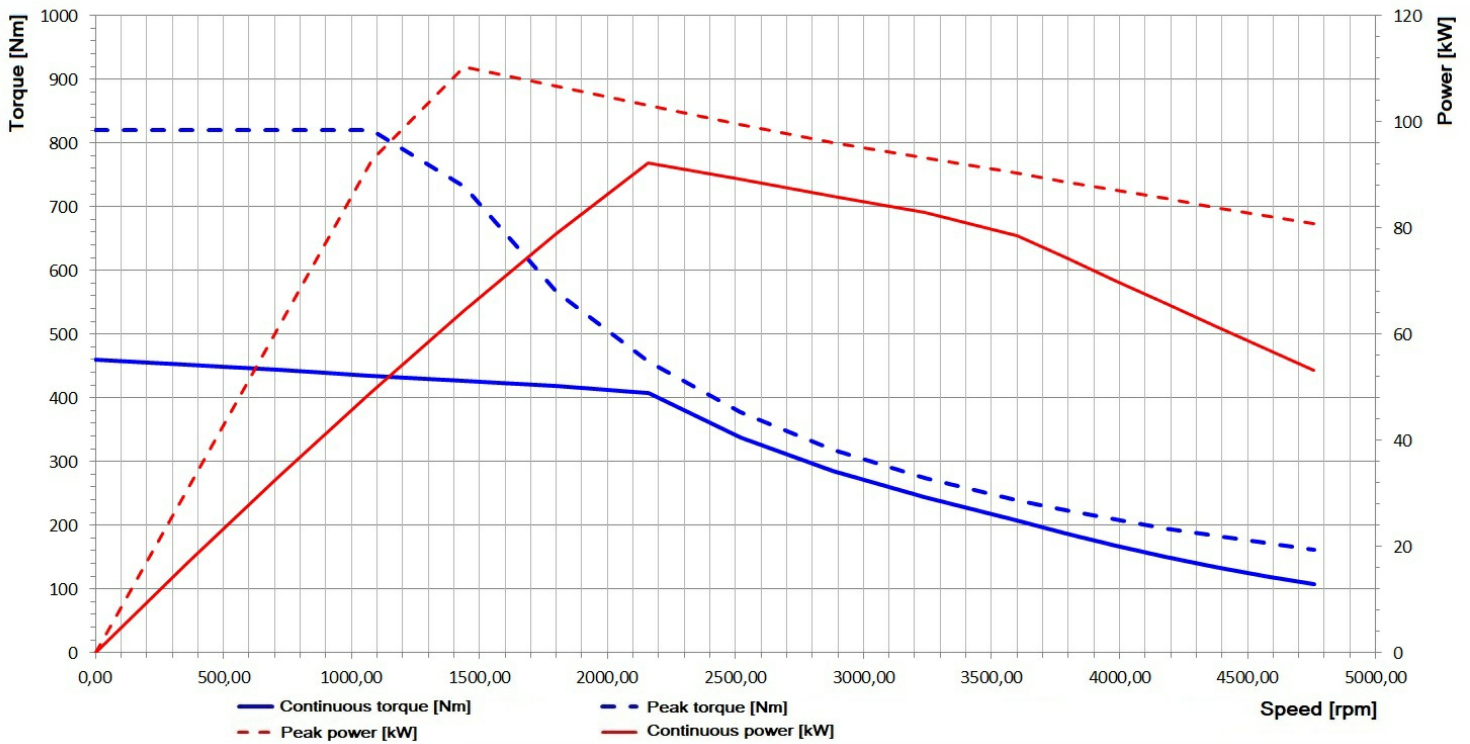


Illustration: S2 torque and power curve

VM600M-18W0073-RH20065 -- Pressure drop

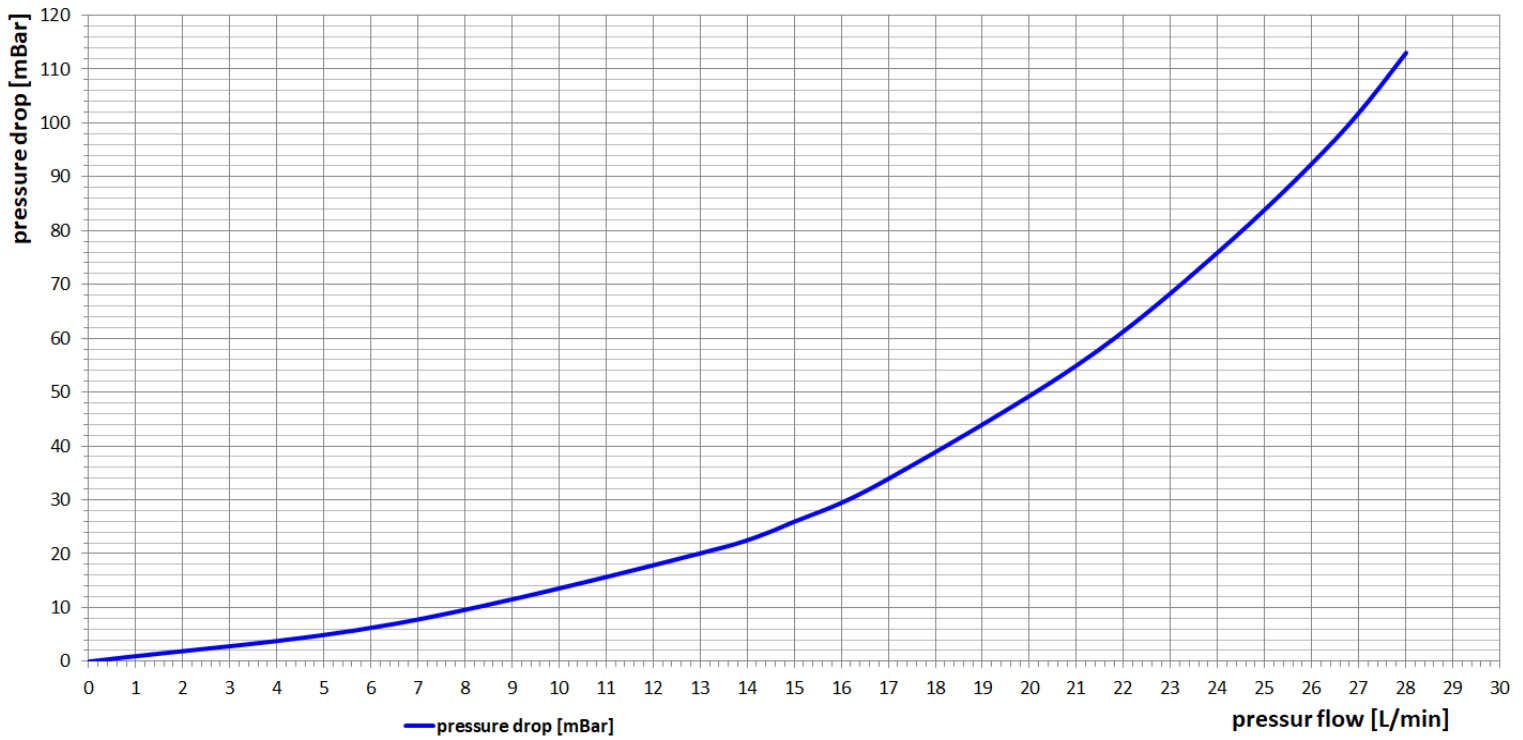


Illustration: pressure loss vs coolant flow