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Datasheet VM600M-18W0115-2

Art.-No: VM600M-18W0115-RH20032-0210-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-18W0115-RH20032-0210-A
Finishing	black
Description	DirectDrive VECTOPOWER engine for mobile applications, optimized for transmission applications; Winding in star connection.
Motor topology	PM reluctance

Size	
Weight	170 kg
Diameter shaft	48 mm
Length shaft	80 mm
Total length	675.5 mm
Length	595.5 mm
External diameter	247 mm

Technical data	
Noiminal torque ¹⁾	600 Nm
Rated speed	1450 1/min
Max. speed n_{max} ⁴⁾	3200 1/min
Nominal current UVW, per phase	129 A _{rms}
Rated power ³⁾	91 kW
Terminal voltage (AC)	480 V
Cos Phi	0.85
Torque constant	4.65 Nm/A _{rms}
Peak current UVW, per phase	300 A _{rms}
Max. overload for 10 sec ²⁾	1150 Nm
Max. overload for 1 min ²⁾	1150 Nm
Max. overload for 3 min ²⁾	800 Nm
Max. overload for 10 min ²⁾	640 Nm
Voltage constant	250 V/1000 rpm
Efficiency at continuous load (up to)	93 %
Number of pole pairs	4
Electrical wiring	Star connection
Rotary encoder	<ul style="list-style-type: none"> • Resolver
Encoder manufacturer name	LTN
Encoder manufacturer type	RE-15-1-A15
Shaft design	cylindrical with shaft key
Temperature sensors	PTC, PT100

Technical data	
Technical notes	<p>1) Continuous torque at: 870 rpm, 440VDC, 15l/min coolant flow rate at 35 °C and 25 °C ambient temperature, dT=95K</p> <p>2) Max. torque at: < 870 rpm, 440VDC, 15l/min coolant flow rate at 65 °C and 25 °C ambient temperature</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
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-003766</p> <p>in combination with</p> <p>VP600-18W160-61.1.22.14.00 (E1 10R-058087)</p> <p>or</p> <p>VP600-18W140-6C.1.20.11.00 (E1 10R-058088)</p>

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	
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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	
15	PT100 GND	male	
16	PTC	male	
17	PTC GND	male	

Attachments

Motor characteristic S1

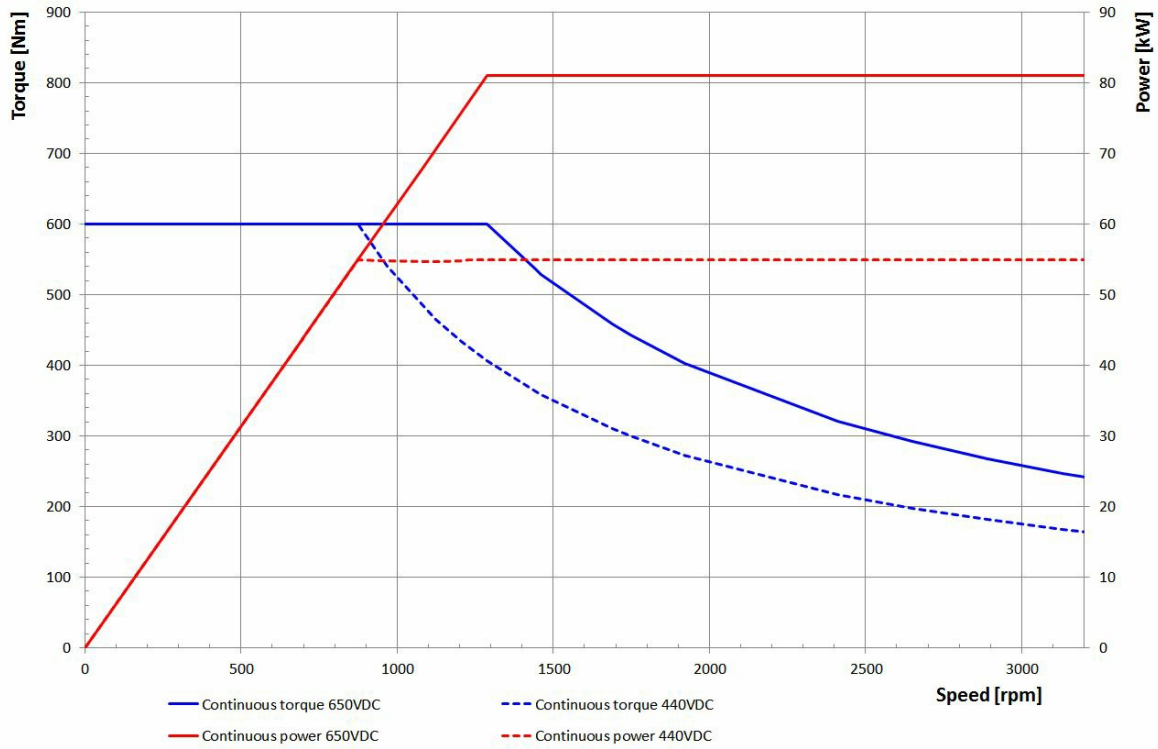


Illustration: S1 torque and power curve

Motor characteristic S2

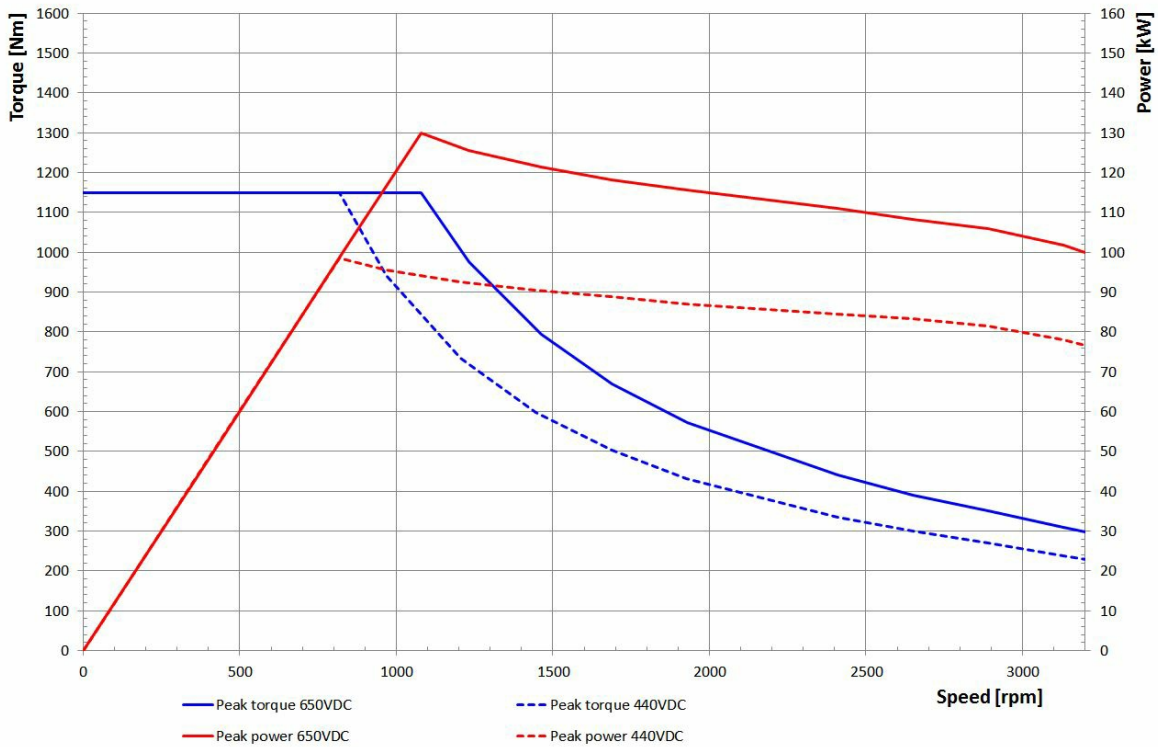


Illustration: S2 torque and power curve

VM600M-18W0115-RH20032 -- Pressure drop

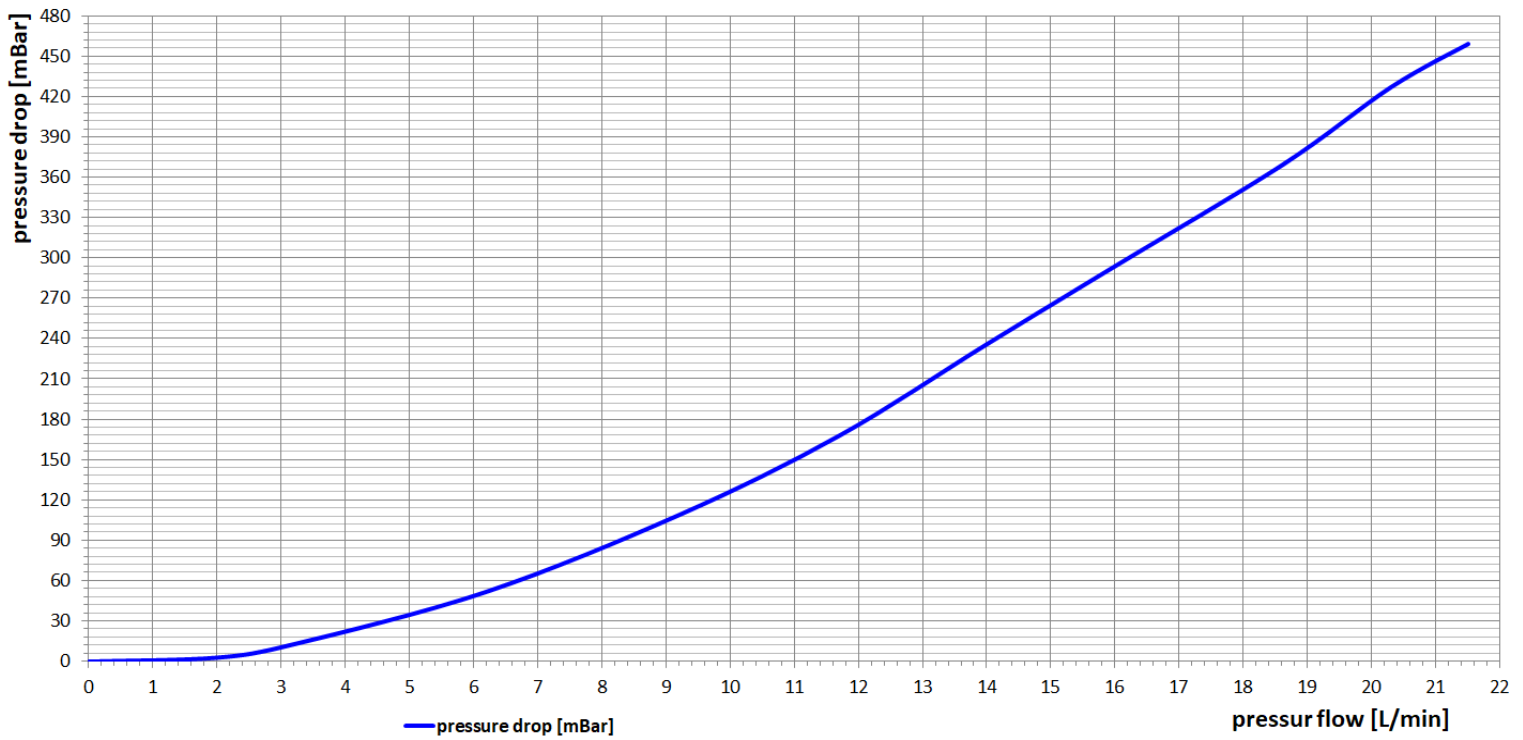


Illustration: pressure loss vs coolant flow