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Datasheet VP600-18W140-HP

Art.-No: VP600-18W140-61.1.20.14.00

VP600 product family - Expert Inverters

Bidirectional inverter 78 - 1560 kVA peak power

- Application software can be extended
- Protection of your application know-how
- Bidirectional without switchover pauses

Applications

These product line of VP600 is optimized for commercial vehicles and various functions in marine applications:

- Optional real-time PLC with floating point unit
- Control modules for all motor topologies
- Comprehensive diagnosis tools

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General	
Article no.	VP600-18W140-61.1.20.14.00
product name	VP600-18W140-HP
updated on	07.01.2020 10:19:13
status	09 Serial production
product family	VP600
product description	

Size	
Height with connectors	98 mm
Width with connectors	261 mm
Depth with connectors	424 mm
Height (basic housing)	98 mm
Width (basic housing)	261 mm
Depth (basic housing)	392 mm
Weight	15 kg

Technical data	
Min. voltage DC-link [V DC]	30 V
Max. voltage DC-link [V DC]	770 V
Recommended voltage DC-link	650 V
DC-link shutdown threshold level 1	800 V
DC-link shutdown threshold level 2	820 V
Continuous power ⁴⁾	229 kVA
Peak power for 10sec	413 kVA
Continuous current AC ¹⁾	250 A _{rms}
Continuous current 2 AC ²⁾	250 A _{rms}
Peak current AC, for 10sec ³⁾	450 A _{rms}
Peak current AC for 60sec ³⁾	340 A _{rms}
Min. PWM frequency	2 kHz
Max. PWM frequency	6 kHz
Max. electrical rotary frequency	599 Hz
Max. continuous power dissipation	3 kW
DC Controller voltage min.	9 V
DC Controller voltage max.	28 V

Technical data

Technical notes

- 1) Continuous current at 650VDC, 4kHz PWM frequency, 15l/min coolant flow rate at 65 °C and 45 °C ambient temperature
- 2) Continuous current at 750VDC, 4kHz PWM frequency, 15l/min coolant flow rate at 65 °C and 45 °C ambient temperature
- 3) Peak current at 650VDC, 2.5kHz PWM frequency, 15l/min coolant flow rate at 65 °C and 45 °C ambient temperature
- 4) Continuous power at 750VDC, 4kHz PWM frequency, 15l/min coolant flow rate at 65 °C and 45 °C ambient temperature

Interfaces

Communication bus	<ul style="list-style-type: none"> ● VECTOBUS ● CAN
Number of NTC (PTC) inputs	3
Number of PT100 inputs	1
Analogue inputs	2
Digital inputs	2
Digital outputs (each 0,2A)	2
Resolver inputs	1
Encoder inputs	1
External voltage measurement	yes

Cooling

Liquid cooling	yes
Cooling medium	Water + glycol (50:50)
Min. coolant throughput	15 l / min
Pressure difference typical	0.3 bar
Max. coolant pressure	2 bar
Min. coolant pressure	0.5 bar
Max. coolant temperature without derating	65 °C
Max. coolant temperature with derating	75 °C

Environment

Max. altitude of site above sea level	2000 m
Protection class according to EN 60529	IP67
Polution degree according to DIN EN 61800	2, inside space
Humidity according to IEC 60068-2-35	max. 90%, noncondensing
Min. ambient temperature in operation	-25 °C
Max. ambient temperature in operation	75 °C
Max. ambient temperature in operation with derating	75 °C

Pin settings

ST1

Properties

Plug type	AMPSEAL HDR SNAP IN W/G 23pol.
Plug design	Gehäusevariante WF

Pin no.	Description	Function	I/O
1	KL 31	Logic supply voltage, DC GND	Input
2	KL 30b	Logic supply voltage, DC +	Input
3	Enable	Enabling power Output	Input
4	Digi Out1	Digital output 1	Output
5	Digi Out2	Digital output 2	Output
6	NTC1	NTC temperature sensor no. 1	Input
7	NTC2	NTC temperature sensor no. 2	Input
8	AN_I1+	Analog current input no. 1 +	Input
9	CAN_L	Can Bus low	bidirectional
10	CAN_H	Can Bus high	bidirectional
11	COM1_TxD	RS232 Interface for firmware updates TxD	bidirectional
12	COM1_rxD	RS232 Interface for firmware updates RxD	bidirectional
13	EN_CONF#	Enable / Allow firmware update	input
14	CAN_GND	Can Bus Ground	bidirectional
15	COM_GND	Rs232 Ground	bidirectional
16	Digi_In1	Digital Input no. 1	Input
17	Digi_In2	Digital Input no. 2	Input
18	NTC_GND	Ground for NTC temperature	Input
19	Interlock_In	NC	
20	Interlock_Out	NC	
21	An_U1+	Analog voltage input no. 1 +	Input
22	An_U1-	Analog voltage input no. 1 -	Input
23	An_I1-	Analog current input no. 1 -	Input

ST2

Description only for devices with DriveMain Version 2.x

Properties	
Plug type	A ST A 035
Plug design	17 poles, type "P"

pin-no.	operation	type	I/O
1	Resolver P+	female	
2	Resolver P-	female	
3	Resolver A+	female	
4	Resolver A-	female	
5	Resolver B+	female	
6	Resolver B-	female	
7	GND	female	
8	+5V	female	
9	NC	female	
10	C	female	
11	/C	female	
12	D	female	
13	/D	female	
14	PT100-1	female	
15	PT100-1 GND	female	
16	NTC-3	female	
17	NTC-3 GND	female	

ST3

Properties	
Plug type	A ST A 035
Plug design	17 pol, Typ "p"

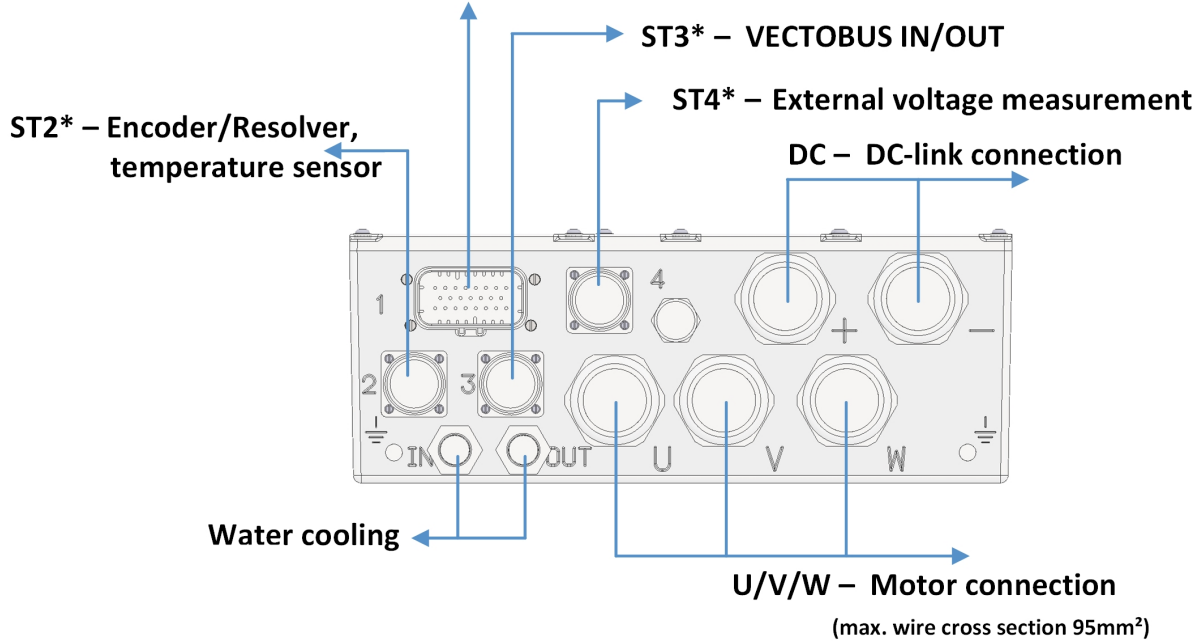
pin-no.	operation	type	I/O
1			
2			
3			
4			
5			
6	+5V_MST	female	
7	/VB_MAOU	female	
8	VB_MAOU	female	
9	VB_MSTIN	female	
10	/VB_MSTIN	female	
11	0V_MST	female	
12	+5V_EXT	male	
13	/VB_SLVOU	male	
14	VB_SLVOU	male	
15	VB_SLVIN	male	
16	/VB_SLVIN	male	
17	0V_EXT	male	

ST4

pin-no.	operation	type	I/O
1	Phase U	male	
2	Phase V	male	
3	Phase W	male	
4	NC		
A	NC		
B	NC		
C	NC		
D	NC		

Attachments

ST1 – CAN, RS232, Hardware enable, digital in-/outputs, supply voltage, analog inputs



*Pin assignment depends on the VECTOPOWER variant

Illustration: Connectivity

Continuous current depends on voltage, PWM frequency and cooling water temperature

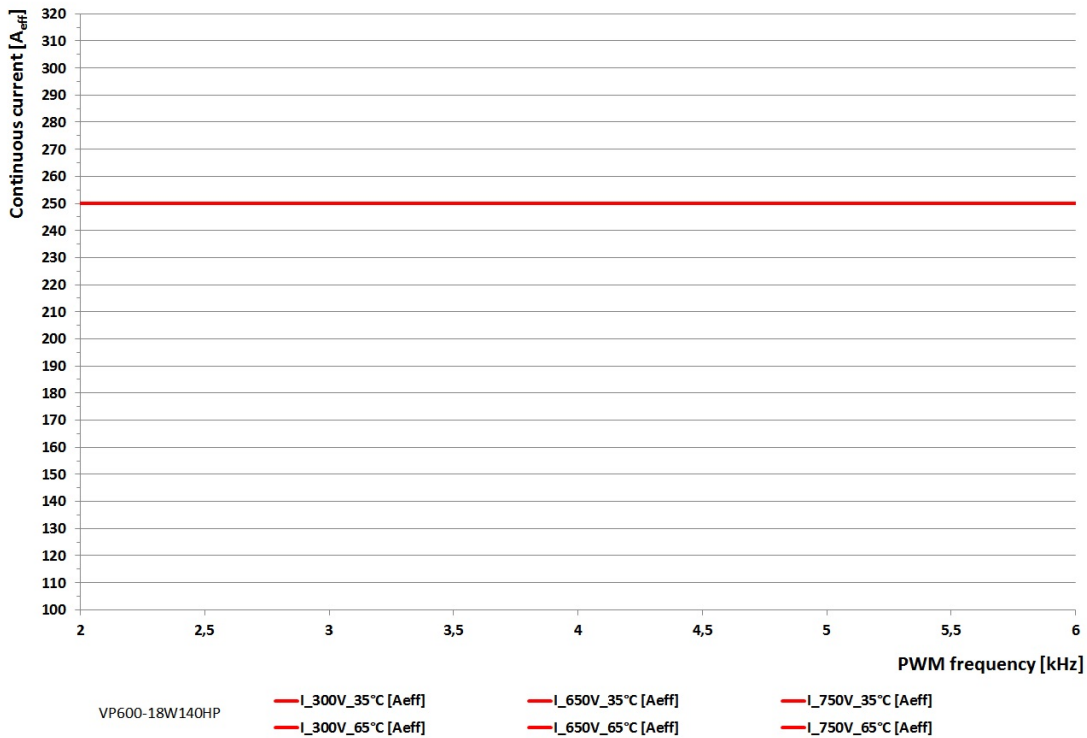


Illustration: Diagram: Continuous current about PWM

Peak current depends on voltage, PWM frequency and cooling water temperature

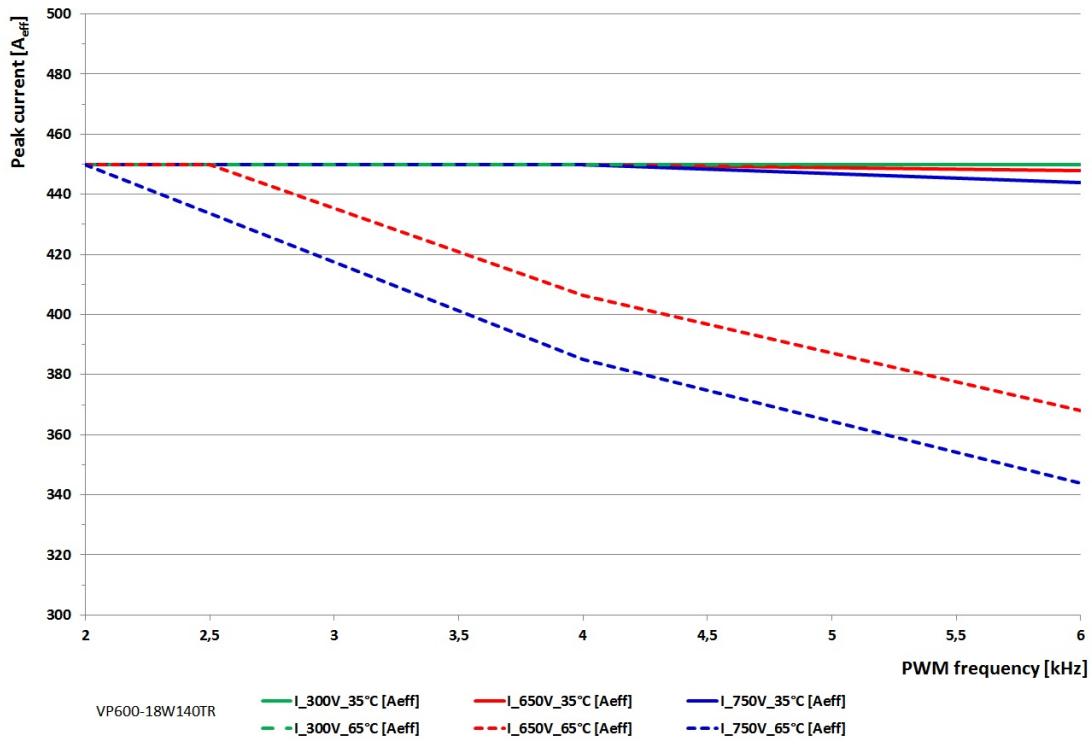


Illustration: Diagram: Peak current for 10sec about PWM

Short-time current at low electric rotary frequencies at different voltages and PWM frequencies (cooling water 65°C)

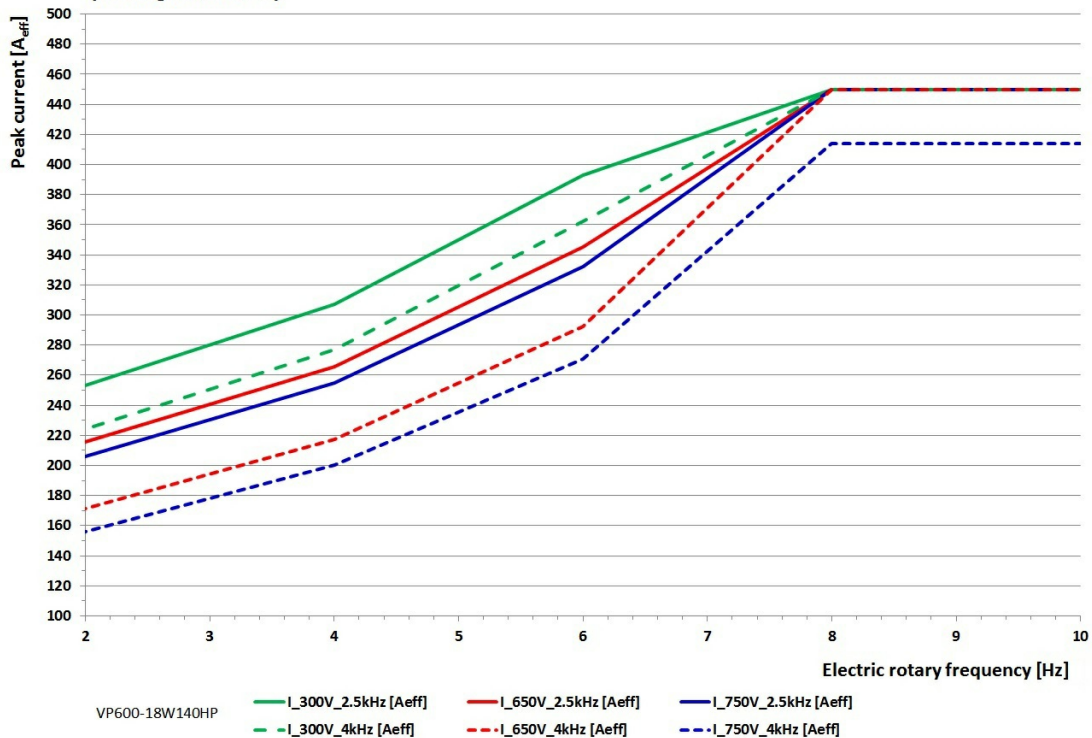


Illustration: Diagram: Peak current for 5s about rotary frequency