Data sheet

VECTOPOWER M VP600-18W330-78.9.05.11.00.0

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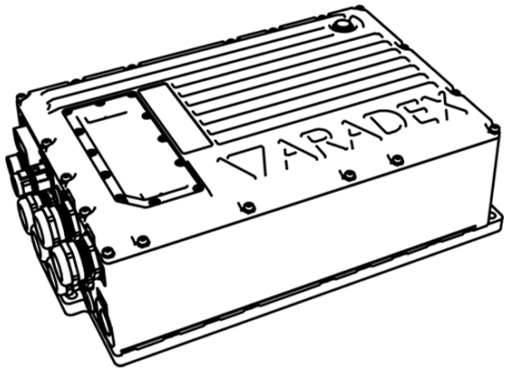

The illustration may contain optional equipment.

Typical applications

Main propulsion for the propeller on vessels of various sizes and types, including cargo ships, river and inland cruise ships, yachts, ferries and any workboats.

Use in hybrid drive systems to support combustion systems in order to reduce emissions and meet environmental standards.

Use in dynamic positioning systems for precise positioning of ships during offshore activities such as drilling, installations and underwater work.

Use for shore power connection or for on-board power generation only possible with optional accessories. Ask us about the application scenarios.

Features

This inverter can output an effective peak current of up to 120 A_{eff} for 1 minute. (For reference values see peak current)

Power connections with EMC cable glands

Signal connections with plug connectors

Evaluation of a wide variety of encoders: resolver, incremental encoder, eddy current-based encoder

Supports synchronous and asynchronous motors, matched to ARADEX electric motors

Radio interference suppression capacitors in the intermediate circuit

Extremely stable construction against shocks and vibrations

Software functions

CAN bus (optional CANopen)

Freely expandable application software

Optional real-time PLC

Control modules for all motor topologies

Field weakening in PM motors with buried magnets and asynchronous motors

Boost function for more torque from a standing start

Implementation of software for comprehensive energy management.

Certifications

Type approval acc. to DNVGL-CG-0339 (probably from August 2024)

Accessories

Benefit from our commissioning tools VEConfig and Analyser for commissioning, analysis and optimization of your application.

You can add individual functions to the inverter. Ask us about VECTOSTUDIO.

Mating connector, EMC cable glands, coolant nozzle, connecting cable between VECTOPOWER and notebook, adapter plate.

DC link

Min./max. operating voltage, in V DC	30...840
DC link switch-off threshold 1 (recommended), in V	860
DC link switch-off threshold 2, in V	880

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Motor circuit

Min./max. PWM frequency, in kHz ..... 1...8

Max. electrical rotational frequency, in Hz 599

Thermal rated current and continuous power

Reference values for rated thermal current and continuous power with DC link 720 VDC, PWM 4 kHz, coolant flow rate 15 l/min at +45°C and ambient temperature +55°C.

Thermal rated current AC (rms), in A_{rms} 95

Continuous power, in kVA 84

Continuous power loss, in kW 1.5

Peak current AC

Reference values for peak current with DC link 720 VDC, PWM 2 kHz, coolant flow rate 15 l/min at +35°C and ambient temperature +55°C.

Peak current AC (rms), for 1 minute, in A_{rms} 120

Peak current AC (rms), for 10 minutes, in A_{rms} 105

Control component

Nominal voltage, in V DC ..... 12 / 24

Interfaces

Connector signal part [ST1]
Manufacturer AMP, connector type AMPSEAL HDR SNAP IN W/G 23pol

Connector signal part [ST2] and [ST3]
Manufacturer: TE, product series Intercontec, connector type A ST A 035, connector design 17 pin, type "P"

Communication interfaces

CAN, CANopen, RS-232, digital inputs/outputs

The optional CAN matrix from ARADEX enables you to communicate actual and setpoint values cyclically. The CAN matrix can be customized.

Hardware interfaces

All data refer to the entire device.

Number of encoder inputs 1

External voltage measurement ..... no

Temperature measurement
Number of PT100 inputs 2
Number of NTC/PTC inputs 4

Operating conditions

Max. Humidity acc. to EN 61800-5-1, non-condensing, in % 93

Min. ambient temperature, in °C ..... -25

Max. ambient temperature with derating, in °C .... +75

Max. operating altitude for mains and battery operation, in m above sea level 2000
Overvoltage category II

Max. operating altitude for battery operation, no mains operation possible, in m above sea level . 4000
Overvoltage category I

Pollution degree according to EN 61800-5-1 3

Protection class acc. to EN 60529 ..... IP66, IP67

Environmental influences validated acc. to:

Sinusoidal vibration acc. to EN 60068-2-6
from 10 - 500 Hz ..... 5 g / 0.7 mm

Permanent shock acc. to EN 60068-2-27... 40 g / 6 ms

Shock test acc. to EN 60068-2-27 ..... 50 g / 11 ms

Free fall acc. to EN 60068-2-31 ..... 250 mm

Sinusoidal vibration acc. to DNVGL-CG-0339... Class B

Broadband noise acc. to EN 60068-2-64 .....
ISO 16750, Test VII

Strain-relieved cable routing is necessary to achieve the specifications of EN 60068-2-64.

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Cooling

Liquid cooling ..... yes

Coolant connection ..... G 3/4"

Flow rate, in l/min ..... 15...25

Min. temperature of the coolant, in °C ..... -25

Max. temperature of the coolant with derating, in °C ..... +75

Max. temperature of the coolant without derating, in °C ..... +45

Coolant ..... water and glycol

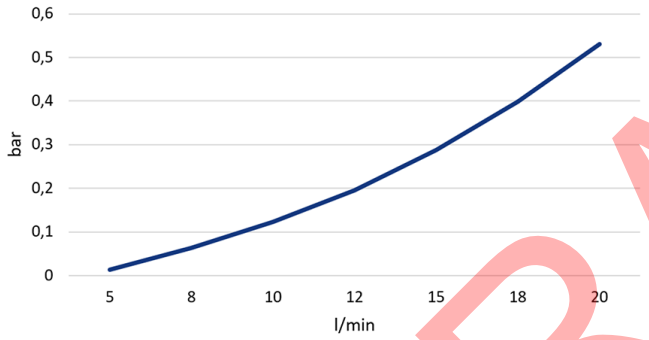

Figure 1: Pressure drop in the cooling system

Protective measures

Short circuit rating acc. to EN 62477-1 ..... 10 kA / 1 ms

Power section: switch-off threshold adjustable

Control section: switch-off thresholds for under-/overvoltage

Thermal protection of inverter and motor by peak current and temperature monitoring

Thermal monitoring of the motor by temperature inputs, freely programmable warning and error thresholds

Monitoring of overcurrent, short circuit, total current and DC link voltage

Active short circuit application-specific adjustable

More information

Reference reports can be found at www.aradex.com

Detailed technical data can be found in the installation manual in the product description chapter.

Quick start guide, installation manual, safety manual, VEConfig operating manual and VE operating manual can be requested by mail via sales@aradex.com.

The VEConfig software is available as a download from the Microsoft Store: https://www.microsoft.com/store/productId/9N1P7CFQT04S

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Location, dimensions and designation of the connections

L x W x H with sockets on the device, in mm ..... 266 x 420.4 x 130.6

Weight, in kg 19

All dimensions in the drawings are in millimeters. The drawings may show optional accessories.

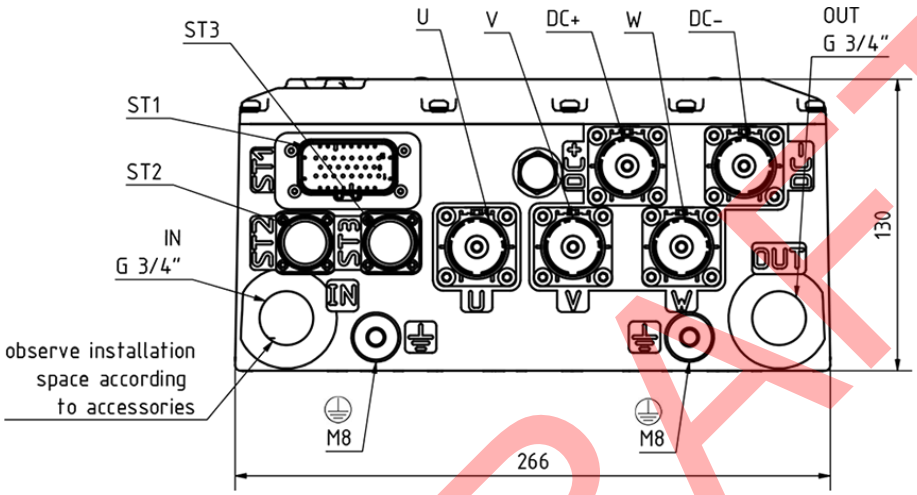

Figure 2: Front view, position of the connections (Figure similar)

- [DC+], [DC-]: Power connections for DC link
- [U], [V], [W]: Power connections for motor circuit
- ⏚: Protective conductor
- [ST1]: Signal connection for CAN, RS-232, HW release, Interlock, supply voltage
- [ST2]: Signal connection Resolver, Eddy current based encoder
- [ST3]: Signal connection for incremental encoder with/without absolute track
- [IN]: Cooling flow
- [OUT]: Cooling return

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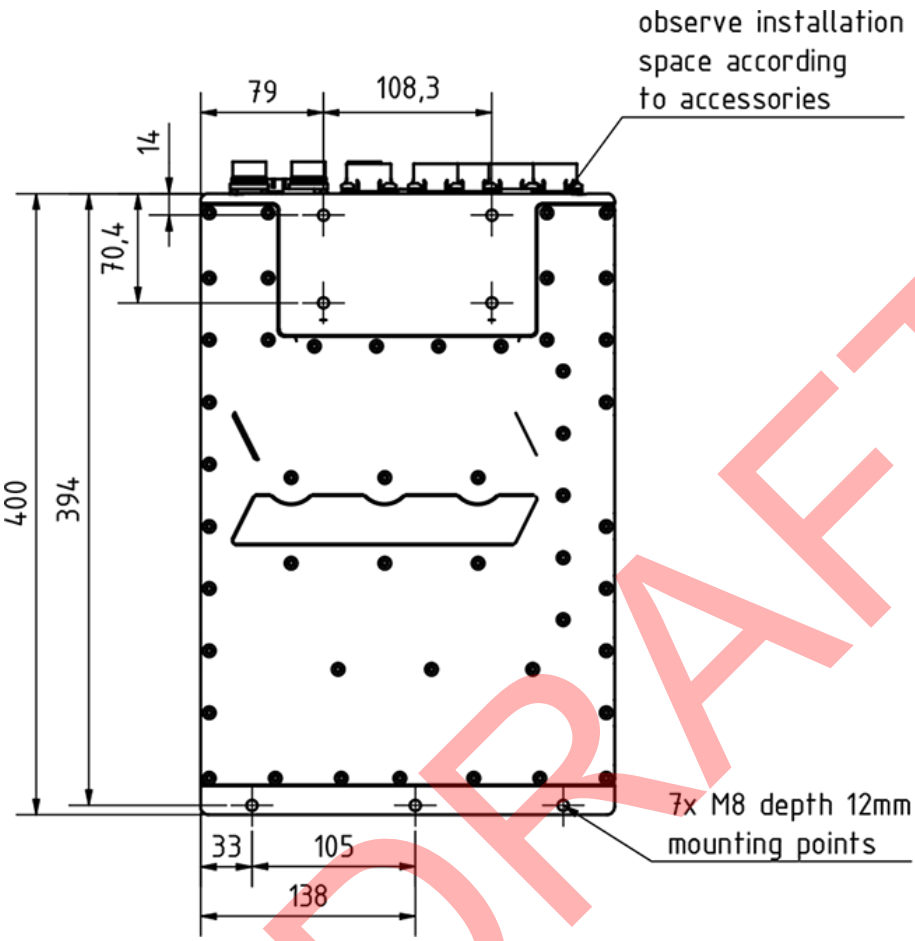

Figure 3: View from below with hole pattern

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