

# Data sheet

## VECTOPOWER VPEVOM2 VP600-28WA44

Art. No. VP600-28WA44-8F.3.17.27.00.0



The illustration may contain optional equipment.

### Typical applications

#### Traction Drive

To drive an electric motor in a vehicle or in a mobile working machine with regenerative braking energy.

#### Auxiliary drive

To drive an electric motor for vehicle superstructures, such as the winch of a mobile crane

### Features

This inverter can output an effective peak current of up to 420 A<sub>rms</sub> for 1 minute. (For reference values see peak current)

Power and signal connections with connectors

Power connections with interlock

Supports encoder: resolver

Supports synchronous and asynchronous motors, matched to ARADEX electric motors

Radio interference suppression capacitors in the DC link

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 at low revs from a standstill

UDS bootloader for easy flashing in a line production.

### Certifications

Device according to UN ECE R10.

### 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, coolant nozzle, connecting cable between VECTOPOWER and notebook.

### DC link

Min./max. operating voltage, in V DC ..... 200...850

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

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 24 l/min at 65°C and ambient temperature 85°C.*

Thermal rated current AC (rms), in  $A_{rms}$  ..... 220

Continuous power, in kVA ..... 194

Continuous power loss, in kW ..... 5.2

Peak current AC

*Reference values for peak current with DC link 720 VDC, PWM 2 kHz, coolant flow rate 24 l/min at 50°C and ambient temperature 85°C.*

Peak current AC (rms), for 1 minute, in  $A_{rms}$  ..... 420

Peak current AC (rms), for 10 minutes, in  $A_{rms}$  ..... 340

Design current AC

*Reference values for peak current with DC link 720 VDC, PWM 2 kHz, coolant flow rate 24 l/min at 65°C and ambient temperature 85°C.*

Design current AC (rms), for 1 minute, in  $A_{rms}$  ..... 380

Design current AC (rms), for 10 minutes, in  $A_{rms}$  ..... 340

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

Max. electrical rotational frequency, in Hz ..... 1000

### Control component

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

Rated voltage for applications according to ECE R10, in V DC ..... 24

### Interfaces

Power connector

Fabric. Amphenol, Type PowerLok, 1-pole, series 300.

Connector signal part [X1]

connector type 35pol. AMPSEAL SOC HSG ASSY,SLD,COD 1, protection class IP67, IP6K9K

Connector signal part [X2]

connector type 14pol. AMPSEAL SOC HSG ASSY, SLD, COD 1, protection class IP67, IP6K9K

### Communication interfaces

CAN, CANopen and RS-232

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

### Hardware interfaces

Number of encoder inputs ..... 2

External voltage measurement ..... no

Temperature measurement

Quantity PT100 inputs ..... 2

Quantity NTC/PTC inputs ..... 2

Number of CAN interfaces ..... 2

### Operating conditions

The following ambient conditions apply to operation.

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

Min. ambient temperature, in °C ..... -40

Max. ambient temperature with derating, in °C ..... 85

Max. operating altitude for mains and battery operation, in m above sea level ..... +3000

Overvoltage category ..... III

Max. operating altitude for battery operation, no mains operation possible, in m above sea level .... 5000

Overvoltage category ..... II

Pollution degree according to EN 61800-5-1 ..... 3

Protection class according to EN 60529 and ISO 20653 ..... IP66, IP6K8

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Environmental influences validated according to:  
 Sinusoidal vibration according to EN 60068-2-6 from 10 - 500 Hz ..... 5 g / 0.7 mm  
 Permanent shock according to EN 60068-2-27... 40 g / 6 ms  
 Shock test according to EN 60068-2-27 ..... 50 g / 11 ms  
 Free fall according to EN 60068-2-31 ..... 250 mm  
 Broadband noise according to EN 60068-2-64 ..... ISO 16750, Test XVI  
*Strain-relieved cable routing is necessary to fulfil the requirements of EN 60068-2-64.*

### Cooling

Liquid cooling ..... yes  
 Coolant connection ..... G 1/2"  
 Flow rate, in l/min ..... 24...40  
 Min. temperature of the coolant, in °C ..... -40  
 Max. temperature of the coolant with derating, in °C ..... +75  
 Max. temperature of the coolant without derating, in °C ..... +65  
 Max. pressure, in bar ..... 2  
 Coolant ..... water and glycol

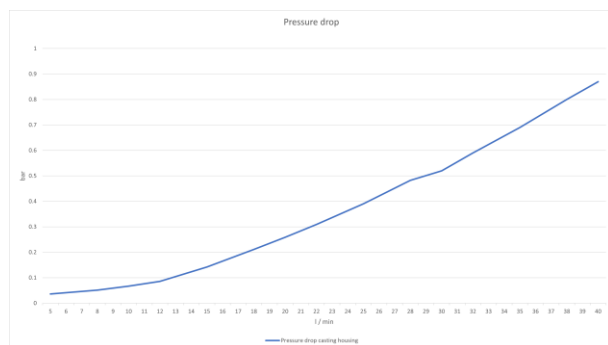


Figure 1: Pressure drop in the cooling system

### 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 and DC link voltage  
 Active short circuit application-specific adjustable

### More information

Reference reports can be found at [www.aradex.com](http://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](mailto:sales@aradex.com).

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

### Storage conditions

Min./max. ambient temperature, in °C ..... -40/85  
 Max. change, in K/h ..... 20

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### Location, dimensions and designation of the connections

L x W x H with sockets on the device, in mm ..... 560 x 420 x 131

Weight, in kg ..... 25

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

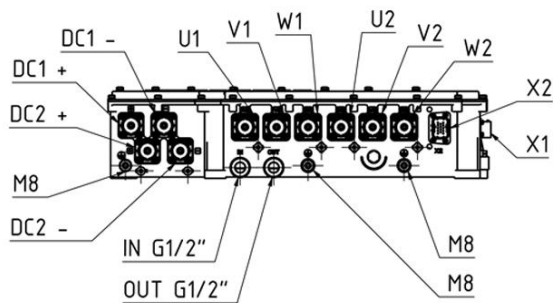


Figure 2: Front view, position of the connections

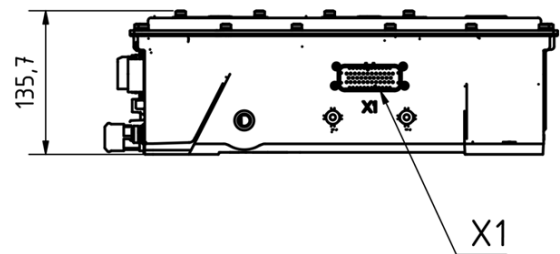



Figure 3: Side view

- [+] , [-]: Power connections for DC link
- [U1], [V1], [W1]: Power connections for motor circuit
- [U2], [V2], [W2]: Power connections for motor circuit
- : Protective conductor (M8)
- [X1]: Signal connection for voltage supply, CAN bus
- [X2]: Signal connection for resolver, SIN/COS position sensor, interlock, STO, temperature sensors
- [IN]: Cooling flow
- [OUT]: Cooling return

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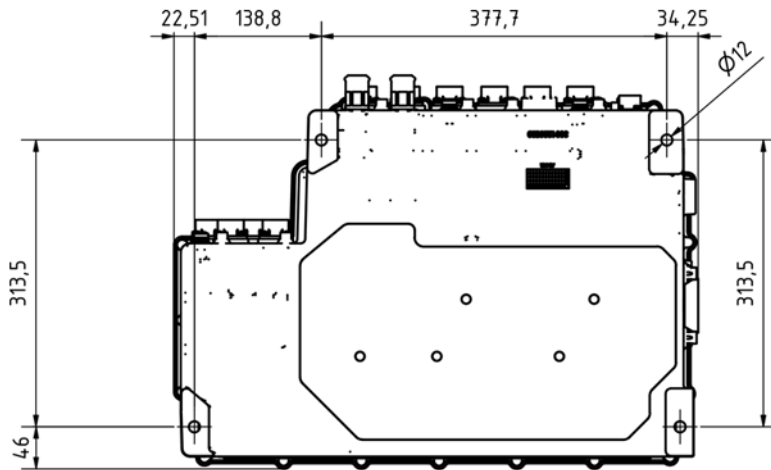


Figure 4: View from below with hole pattern