

Data sheet

VECTOPOWER EVO

Art. Nr. VP600-28WA44-8F.3.15.27.00.0



Illustration similar.

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_{rms} 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

Motor circuit

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

Max. electrical rotational frequency, in Hz 1000

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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 +75°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 +75°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 +75°C.

Design current AC (rms), for 1 minute, in A_{rms}	380
Design current AC (rms), for 10 minutes, in A_{rms}	340

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 35pin. AMPSEAL SOC HSG ASSY, SLD, COD 1

Connector signal part [X2]
 Connector type 14pin. AMPSEAL SOC HSG ASSY, SLD, COD 1

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 acc. to EN 60068-2-2, in °C	-40
Max. ambient temperature with derating acc. to EN 60068-2-78, 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, IP68

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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 +50

Max. pressure, in bar 2

Coolant water and glycol

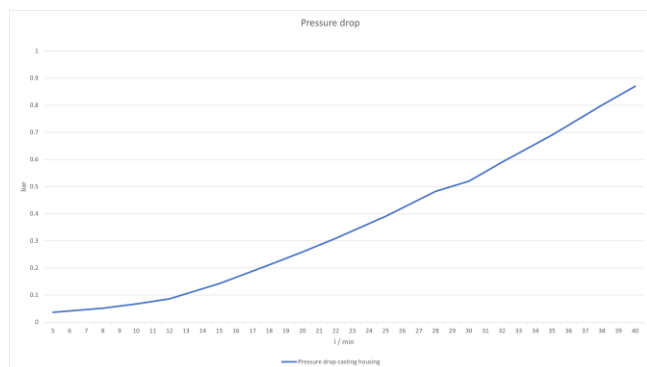


Figure 1: Pressure drop in the cooling system at a coolant temperature of 20°C

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

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>

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.

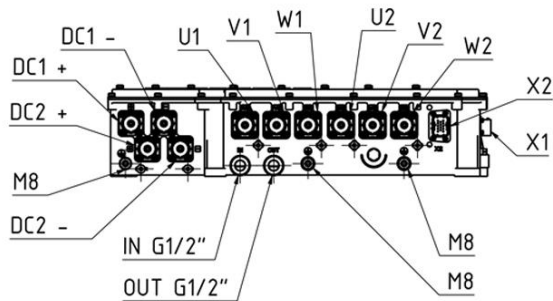


Figure 2: Front view, position of the connections

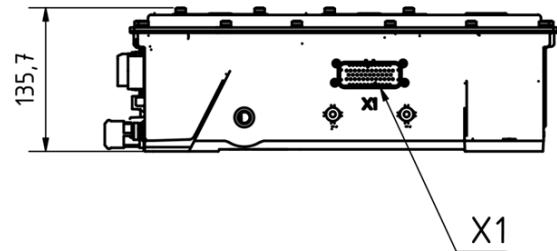


Figure 3: Side view

- [+] , [-]: 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

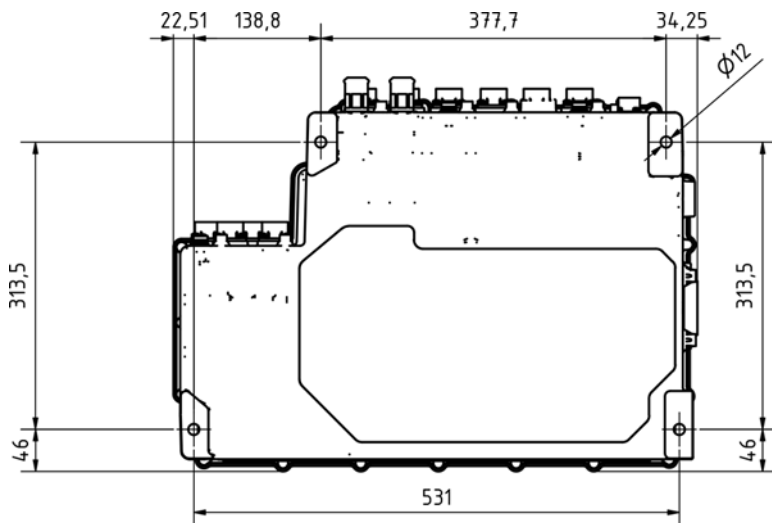


Figure 4: View from below with hole pattern