

E-Facts

Creating local grids & typical applications

We drive new energy for a greener future



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ARADEx and our role for electrified and hybridized drivetrains

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CREATE LOCAL GRIDS

Complete solutions to create local grids. Mobile and stationary

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And advantageous functions we can offer.

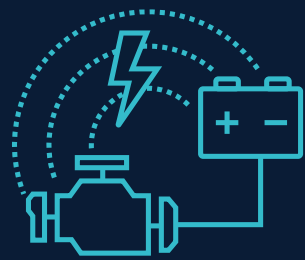
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CONTACT US

Contact us and challenge us with your applications

/ We are ARADEX

Smart electrical and hybrid solutions for commercial vehicles, mobile working machines, and ships. We offer HV-DCDC, inverters, e-motors and accessories



Multi energy supply

Modular subsystems which can be adapted to future demands. Battery, hybrids, hydrogen, cable.



Matching e-motors

According to your application and requirements: direct drives, gearbox drives. PMSM or magnet-free motors.



Mastering HV systems

Mastering interactions in high voltage systems. With our devices, matching accessories, and system knowledge.

/ ARADEx AG, Germany

Application center(ed)



ARADEx is part of WEICHAI Power. At our headquarters in Lorch near Stuttgart, Germany, we focus completely on mobile high voltage products and their usage in your application:

- Development & Application
- Visitors & Training Center
- Test benches
- Service-Center, Production Warehouse

/ Application fields

Our main target markets are commercial vehicles, mobile working machines and marine applications. And in addition: stationary applications.

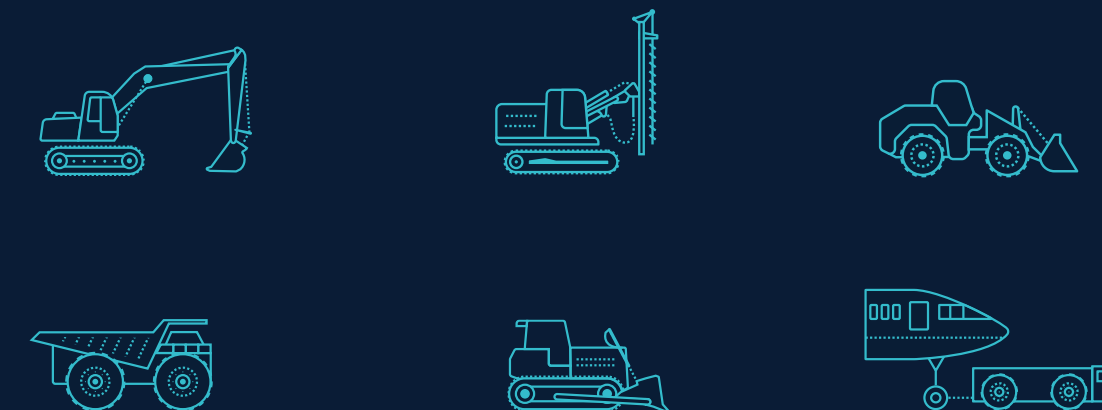
(On-highway)

COMMERCIAL VEHICLES



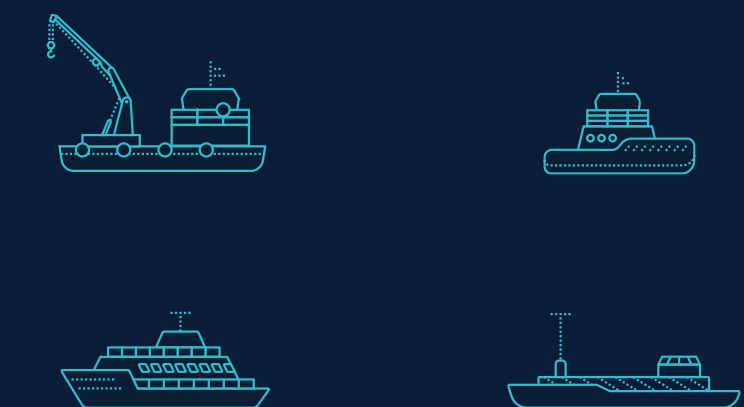
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WORKING MACHINES



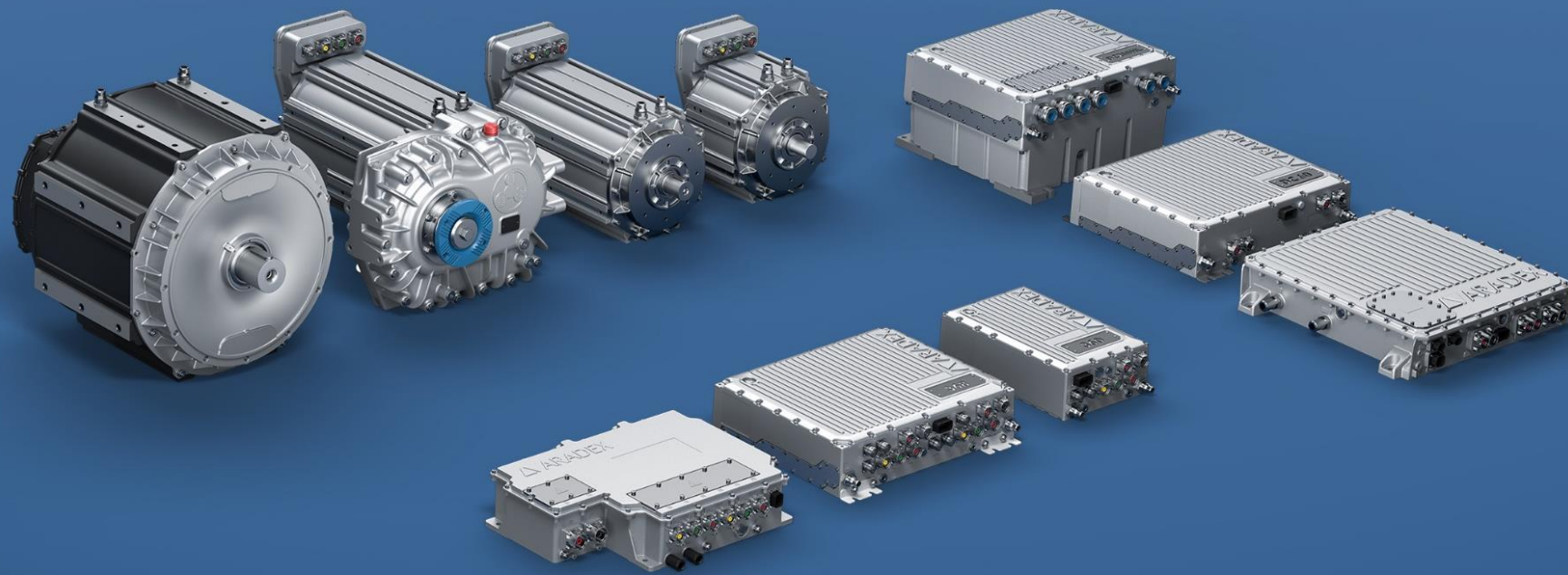
(Marine)

SHIPS



/ What we offer

Our portfolio



HV DC/DCs, inverters, motors, motors with gearboxes

We cover voltage from 300 to 840 VDC and power range from 30 to 1200 kW (with cascaded solutions). Our subsystems for power supply by public grids or to create local grids can perfectly be combined with other ARADEx HV devices such as inverters and drives to realize systems. In the design we paid particular attention to EMC-compatibility and low harmonic distortion of the AC grid.



CREATE LOCAL GRIDS

Complete solutions to create local grids,
mobile and stationary

/ Grid supply & local grids

An overview



THE COMPLETE SUBSYSTEM

We offer complete subsystems to supply a working machine from public grid or to create local grids from (battery) DC voltage.



PERFECTLY ADAPTED

The filters and transformers are in one water-cooled box and prepared to be connected to VECTOPOWER inverter.



SCALABLE POWER

In applications already implemented we covered grid connections up to 600 kVA and local grids up to 300 kVA.

/ Local & public grids

Inverter + filter + transformer

To connect to public grids
& for creating local grids:
Transformer + filters - water cooled
housing.

- Similar housing for grid connection and for local grid
- Shown in diagram: 44 kVA solution
- Integrated components are dependent on voltage and function.
- The Inverter is connected externally



Dimensions 86kVA:

1200 mm * 800 mm * 460 mm

Dimensions 44kVA:

1000 mm * 800 mm * 460 mm

Dimensions 22kVA:

800 mm * 800 mm * 360 mm

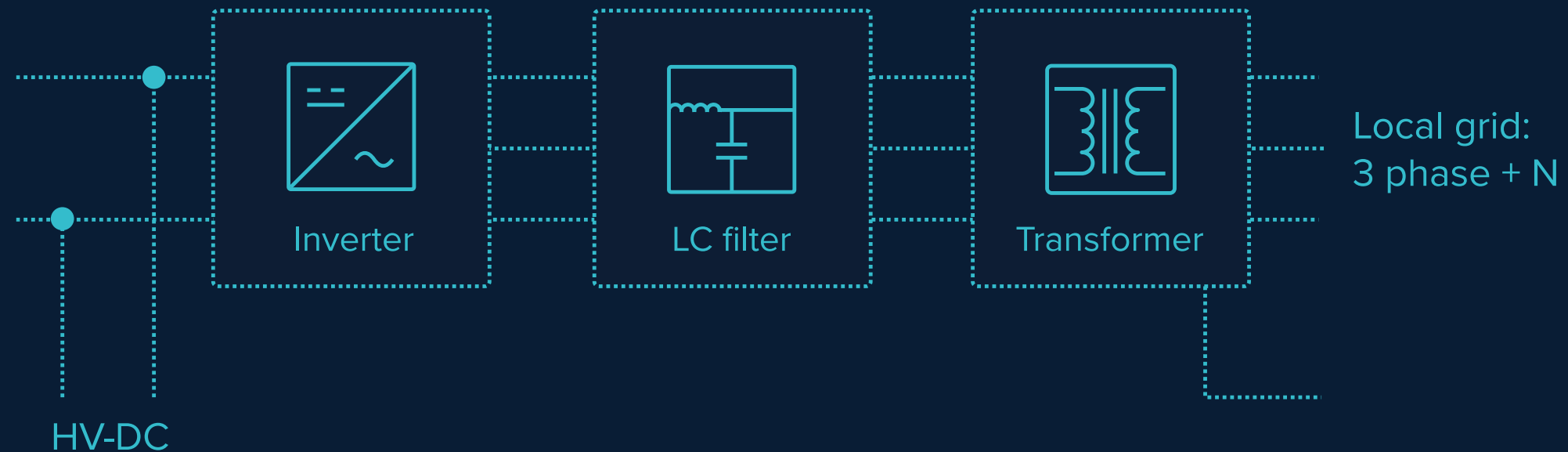
Filter & transformer:

Steel housing IP55



/ Create local grids

For ships, mobile machines, stationary usage



From a HV system we create a local grid by a transformer and a filter as a package + inverter. Both water-cooled and for mobile use.

- Local grid is capable of asymmetric load.
- Available power versions 11, 22, 44, 86 kVA.
- Higher power with operation in parallel
- Versions to adapt to HV systems 350 - 840VDC.
- Complete subsystem, including inverter-software.

/ Create local grids

Available versions

Continuous power	DC-voltage	Width * Depth * Height [mm*mm*mm]	Weight [kg]	Item number	Matching VP inverter VP600 series3 and M-series3
11 kVA	≥ 350 VDC	800x600x360	104	VPGC_1.GRD.1100350	VP600-18W361 / 28W345
11 kVA	≥ 480 VDC	800x600x360	97	VPGC_1.GRD.1100480	VP600-18W361 / 28W345
11 kVA	≥ 600 VDC	800x600x360	94	VPGC_1.GRD.1100600	VP600-18W361 / 28W345
22 kVA	≥ 350 VDC	880*600*440	160	VPGC_1.GRD.2200350	VP600-18W361 / 28W345
22 kVA	≥ 480 VDC	880*600*440	150	VPGC_1.GRD.2200480	VP600-18W361 / 28W345
22 kVA	≥ 600 VDC	880*600*440	150	VPGC_1.GRD.2200600	VP600-18W361 / 28W345

REMARKS:

- As DC-voltage the lowest value must be taken into account. If a battery for example works from 550 VDC to 700 VDC the correct version is “≥ 480 VDC”.
- Ask our sales team for further information

/ Create local grids

Available versions

Continuous power	DC-voltage	Width * Depth * Height [mm*mm*mm]	Weight [kg]	Item number	Matching VP inverter VP600 series3 / series2
44 kVA	≥ 350 VDC	880*600*440	283	VPGC_1.GRD.4400350	VP600-18W369
44 kVA	≥ 480 VDC	880*600*440	274	VPGC_1.GRD.4400480	VP600-18W361 / 28W345
44 kVA	≥ 600 VDC	880*600*440	274	VPGC_1.GRD.4400600	VP600-18W361 / 28W345
86 kVA	≥ 480 VDC	1110*800*450	426	VPGC_1.GRD.8600480	VP600-18W369
86 kVA	≥ 600 VDC	1110*800*450	396	VPGC_1.GRD.8600600	VP600-18W369

REMARKS:

- As DC-voltage the lowest value must be taken into account. If a battery for example works from 550 VDC to 700 VDC the correct version is “≥ 480 VDC”.
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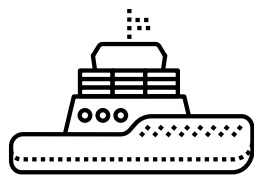


TYPICAL APPLICATIONS

And advantageous functions
we can offer

/ Local grid solutions

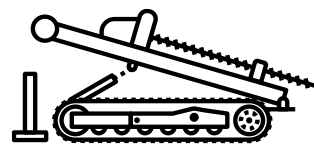
Typical applications



Ships

e.g. working ships and tugs

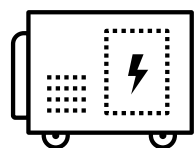
Ships need local grids for several usage. This ranges from air conditioning to the preparation of food and the supply of various electrical consumers.



Big mobile machines

Working machines

Large mobile machines benefit when they can offer a local 3-phase electric grid. For example: big drilling machines or track work machines for railway.



Power blocks and gensets

Stationary and transportable

Stationary working power blocks as well transportable container solutions for use as power supply blocks e.g. in construction sites. They can contain batteries or/and hydrogen fuel cells.

/ Features and added values



VARIOUS VOLTAGES

Solutions for various battery and grid voltages: Versions for various battery voltages from 350VDC to 840VDC makes a big range of market available batteries usable. As grid types we support 50 and 60 Hz.



PHASES LOAD

Able to supply asymmetrical load of the phases: The integrated transformer of type dyn5 creates a neutral which can be loaded with full current which means 1/3 of total power.



BOOST GENERATOR'S POWER

Several VECTOPOWER local grids can be connected in parallel to build up a local grid with higher power and can also be synchronized with conventional generators and boost their power.

/ Challenge us

Review of your application




Challenge us with your application, your demands and your ideas!

- Our engineers can calculate or support the project planning for your application.
- You receive the result as an electronic document: cornerstones of your project regarding electrification or hybridization including dimensioning done by our experienced project engineers.
- Contact our sales team for more information.

Thanks for your attention!

Optimized usability and performance for the best e-mobility



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