

Karoo

POWERFUL. SMART. ROBUST

The Karoo inverter range offers compact, high performance & efficient power solutions to the commercial, industrial and IPP market.

High-voltage DC and transformer-less design guarantees highly efficient solar PV operation, assisting either the grid or generator. The storage-based configuration of the Karoo offers unique features like power factor compensation.

- ✓ Designed for harsh environments
- ✓ 70 kVA
- ✓ 3-phase transformer-less
- ✓ High-voltage DC (up to 1000V)
- ✓ Remote Monitoring & Control

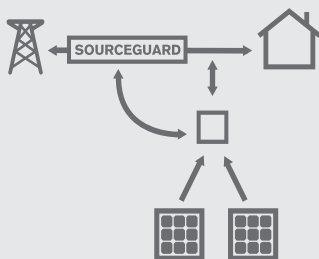
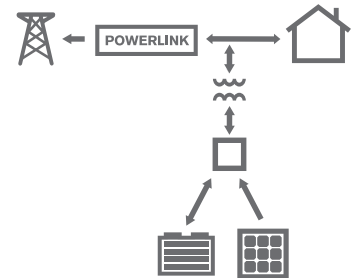


Features

Backup applications with Solar PV

When used with batteries, the Karoo inverter can provide seamless backup power. With two independent DC ports, the Karoo can integrate solar PV and batteries.

The integrated maximum power point tracker makes efficient use of available solar energy to keep the batteries charged and to reduce loading on the grid/generator. The Karoo inverter uses a four-stage battery charging cycle, and also provides peak-load shaving and cloud support.



Grid-tied applications with Export Control

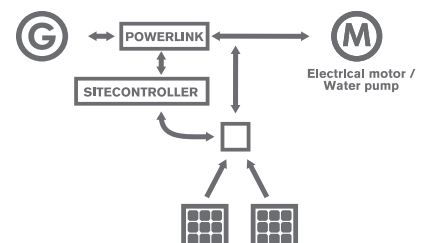
As a solar PV inverter, the Karoo includes two maximum power point trackers to optimize the yield from large solar PV installations. The optional SourceGuard prevents excess PV power from flowing back into the grid or generator.

The SourceGuard can also be used to enable power factor correction, which does not require PV and can therefore be used 24/7.

Off-grid applications without Storage

The Karoo can be used as a stand-alone solar PV inverter. In this configuration, no additional batteries are needed and a backup generator is optional.

With the SiteController, a backup generator can be controlled to run only when the solar PV power is insufficient to support the load, for example in pumped irrigation applications in rural locations.



Specifications

SYSTEM RATINGS

	Karoo 70
Rated Phases / Voltage / Frequency	3 ϕ / 400 V / 50 Hz
Input Voltage Range	340 .. 440 V
Input Frequency Range	47.5 .. 52 Hz
Rated Output Power	70 kVA
Maximum Output Current	110 A
THD I (at rated power)	< 2.5%

PV / BATTERY DC INPUT

Number of DC Inputs	2
Maximum Input Power	2 x 50 kW (40kW for batteries)
Maximum Input Current	2 x 110 A
Number of MPPT Controllers	2
MPPT Voltage Range	450 .. 750 V
Maximum Input Voltage	900 V
MPPT Start-up Input Voltage	630 V
Protection	Surge Protection, Short Circuit, Over Temperature

CONNECTORS

DC Input	35 x 8 mm ² Lug
AC Output	3 x 35 x 8 mm ² Lug

EFFICIENCY

Efficiency (peak)	Up to 97 %
Tare Losses in Standby (Night)	< 20 W

DIMENSIONS AND WEIGHT

Dimensions (W x H x D)	860 x 1309 x 358 mm
Weight	310 kg

GENERAL SPECIFICATIONS

Noise Level	< 80 dBA
IP/NEMA Rating	IP20 / NEMA1
Cooling Method	Forced Air
Cooling Air Required	2000 m ³ / h
Colour	RAL7035

CLIMATIC CONDITIONS

Ambient Temperature	-5 .. 45 °C
Ambient Transport Temperature	-25 .. 70 °C
Maximum Ambient for Rated Power	40 °C
Relative Humidity	5 .. 85 %
Maximum Altitude for Rated Power	1900 m above sea level

OPERATOR PANEL

Display Type	Touch Screen LCD Power export, kWh summations, energy exported previous day, trending graphs
Communications	RS485 / Ethernet MODBUS

Accessories:

Powerlink

The PowerLink allows the Karoo inverter to provide uninterrupted power to priority loads. The PowerLink includes two AC ports that are separated by a fast contactor and a set of voltage and current transducers.

The PowerLink allows the inverter to quickly detect a failure on the AC Source (i.e. grid/generator) and to disconnect from the AC Source and to power the priority loads independently. The transition from grid-tied to backup mode is seamless. When the grid recovers, the inverter will automatically synchronise and reconnect to it.

SourceGuard

The SourceGuard includes a set of current sensors and relays that send analogue and digital signals to the inverter. These signals allow the inverter to prevent excess PV power from flowing to the AC source, and enable power factor correction & source detection.

With source detection, the inverter can automatically adapt settings and targets depending on whether it is running connected to the grid or to a generator.

Karoo Battery Enclosure

The Karoo Battery Bank Enclosure is designed to neatly and safely house a 220Ah 480V battery bank. It includes multiple fuse-break points and safety lock-out switches.

SiteController

The SiteController allows automatic, programmable, and remote control & scheduling of the Karoo inverter, backup generators and loads. The SiteController includes a touch-screen mini-computer which provides a rich and easy to use human machine interface.

Miscellaneous

PV combiner box (smart option also available)
Remote indicator lights to indicate whether the inverter is running, off, or unpowered

3G modem for installations where there is no existing internet connection

Solar irradiance meter



Distributor / Installer
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