THE POWER BEHIND POWER.

Ready, where you are!
GRIDCON® Power Conversion System
On-grid and off-grid converters from Reinhausen

reinhausen.com

GRIDCON® Power Conversion Systems for off-grid and on-grid operation

Energy storage is making a vital contribution to the energy transformation. It provides ancillary services for grid stabilization and optimizes energy management in industrial operations. Maschinenfabrik Reinhausen (MR) combines its expertise in power quality with energy storage technologies to create real added value for energy storage integrators.

The GRIDCON® Power Conversion System (PCS) is designed to address the needs for flexibility and configurability in a quickly growing market for energy storage. Renewable energies and electromobility are accelerating the development of energy storage. Stationary energy storage systems are primarily used to balance energy volatility resulting from renewable energy sources and fluctuating loads.

To design individual and sophisticated solutions for these applications, MR developed GRIDCON® PCS 3W and GRIDCON® PCS XW on the solid basis of its decade-long experience in power conversion technologies.

Power conversion systems from MR combine the mutual benefits and dynamics of an active power filter with solid reliability. This allows GRIDCON® PCS to operate in the most challenging applications and integrate renewable technologies. From the edge of the electrical network to full off-grid operation, GRIDCON® PCS makes its contribution to the energy transformation. The holistic approach of MR includes optional grid analysis and grid studies and aims to ensure compliance with grid codes and required power quality.

GRIDCON® PCS filters grid voltage and sustains it dynamically through reactive-power injection.

"With Reinhausen-technology, we can always serve our customers with clean Power Quality."

Jens Schwedler | MITNETZ STROM

Energy: anytime, anywhere!

GRIDCON® PCS 3W and PCS XW offer flexible, scalable solutions for modern energy systems.

The PCS 3W is a modular central inverter designed for high efficiency, compact installation, and reliable performance, ideal for systems in the Commercial & Industrial market(s). Its redundancy and thermal optimization ensure maximum uptime. **The PCS XW is primarily built for autonomous microgrid operation**, enabling full off-grid functionality with advanced cyber-security and seamless integration of renewables and storage. Both systems feature real-time monitoring, modular expansion, and compatibility with global low-voltage networks, making them future-ready solutions for resilient, efficient, and secure energy conversion across diverse applications.

NEW!

The modular central inverter: GRIDCON® PCS 3W

Power that grows with you – the modular, scalable central inverter 3-wire solution

The ultimate microgrid inverter: GRIDCON® PCS XW

Empower your energy independ–ence with our resilient microgrid inverter in both 3- or 4-wire mode

Technical data	GRIDCON® PCS 3W	GRIDCON® PCS XW
Nominal Power	85 kW, 170 kW, 255 kW, 340 kW	80 W, 165 kW, 250 kW, 330 kW, 410 kW
Wires	3-wire	3-wire/ 4-wire
Grid operation mode	On- & off-grid capable (optional)	On- & off-grid capable
Black start functionality	Capable	Capable
AC voltage	400 V/480 V (max. 690 V, on request) +/- 10 %	400 V/480 V +/- 10 %
DC voltage	Up to 1200 V	Up to 940 V
Cooling	Air-cooled (liquid-cooling optional)	Air-cooled
Hardware design	Modular & scalable	Modular & scalable
Redundancy	Included	Included
Cybersecurity	Yes	Yes
Monitoring	Real-time monitoring	Real-time monitoring
Impact	Compact footprint	Highest load per sqm
DC grid forming	Yes	Yes
Protection class	IP20...IP54	IP20

→ More information

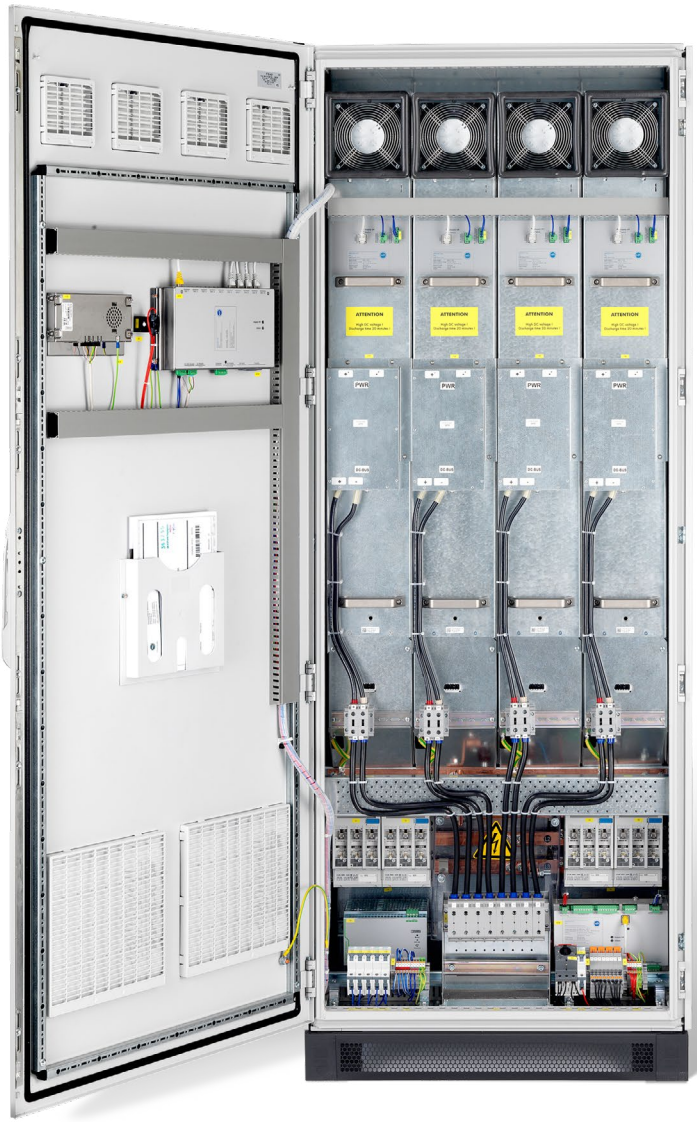
GRIDCON® PCS 3W

For exceptionally demanding tasks and environments

Unlock the next generation of energy conversion with our GRIDCON® PCS 3W – engineered for flexibility, efficiency, and future-ready performance.

Your advantages at a glance

- Power range: 3-wire connection for industrial networks
- Rated current up to 500 A
- Rated voltage up to 690 V
- Optionally with liquid cooling



- **Modular concept: up to four IGBT Power Units per cabinet**
- **Switchable control transformer in combination with a wide-range DC power supply enables adoption to a wide range of different AC grid voltages**
- **Separate fans for cooling the peripheral components, protection class up to IP 54 possible**
- **IPU 3W (IGBT Power Unit) with autonomous control and self-monitoring**
- **Optional touch panel for comfortable use of active filter functionalities similar to GRIDCON® ACF**
- **Control computer (CCU) for up to four power modules (IPU 3W) with Modbus TCP interface**
- **Fan drawer for easy replacement of the main fans**
- **Optional second measuring and I/O unit e.g. for superior external grid re-synchronisation**
- **Behind the terminal compartment: sealed ventilation duct without sensitive components for the main cooling of the IGBTs – air is supplied through the base/plinth**

GRIDCON® PCS XW

Maximum flexibility for almost all applications

In a world where energy security and sustainability are more critical than ever, our innovative GRIDCON® PCS XW provides a power supply that is both secure and stable, and can be managed at any time and in any location.

Designed for resilience, this intelligent inverter is the backbone of modern microgrids, seamlessly integrating renewable energy generation, storage capacities, DC-grids and backup generation.

Whether you are powering a remote community, set yourself up for net-zero energy autarky or are in a full off-grid operation, our solution ensures your power.

Your advantages at a glance

- AC grid connection: 3-wire or 4-wire
- Rated current up to 600 A
- Rated voltage 400 V, up to 480 V on request
- Optionally expandable for DC network

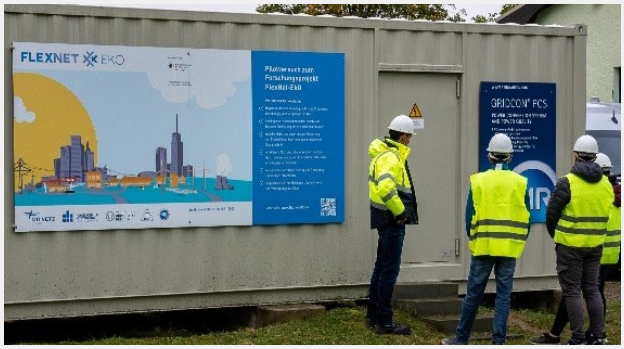
- **Cable entry optionally from top**
- **Air intake through the door and exhaust air via a ducht through the roof**
- **NH00 AC-fuse protection for each power unit**
- **Modular concept with up to five IGBT power units per cabinet with autonomous control and self-monitoring**
- **Optionally available also with integrated DC-fuses per power unit**
- **Optional touch panel for comfortable use of active filter functionalities similar to GRIDCON® ACF**
- **Control Computer (CCUv2) for up to five power modules (IPU XW)**
- **Optional second measuring and I/O unit e.g. for superior external grid re-synchronisation**
- **Wide-range DC power supply allows use in low-voltage networks worldwide**
- **Spacious connection room**

From Industry to Infrastructure

GRIDCON® PCS supports a broad spectrum of field-tested applications including on-grid and off-grid operation. It can be configured and enhanced based on customer needs. A variety of designs are available for use on the grid and in industrial applications (buildings, industry, containers, IP20 to IP54)

GRIDCON® Power Converters have proven themselves in various applications over the years:

Industrial and commercial storage
- High-performing peak-shaving functionality with internal droop control (peak-shaving possible even without action from the EMS side, that enables fast reaction times)
- Strong back-up power with ultra-fast seamless transfer due to PCS enabling on- and off-grid mode



Grid-service storage
- BESS with the GRIDCON® PCS support local grid operations, making them more flexible and stable (see also grid operation project „FlexNet-EkO“)
- Operation of BESS possible even when local public grids offer only unstable conditions

Island networks (off-grid & mobile applications)
- GRIDCON® PCS enables the operation in partial or full off-grid mode, thanks to its black start- and grid-forming capabilities
- Operation in both industrial surroundings or remote applications
- High power density and robust hardware, available in full cabinets or components strongly support mobile applications
- Due to year-long experiences in such applications, MR can efficiently support its partners in their system design

Forming DC-Microgrids
- Intelligent adjustments to the public grid in e-mobility and industry applications
- Connecting energy sources, storage and charging infrastructure (users) efficiently DC to DC, minimizing conversion losses
- Decoupling microgrids from the public grid, ensuring full flexibility in infrastructure expansion, underlying minimal regulation

→ More information

GRIDCON® DC Transformer

Enabling innovative DC grids – Realizing DC coupled battery storage

DC networks offer various advantages over the classic supply with AC voltage as DC networks eliminate one step of conversion. Innovative DC solutions are therefore attracting interest in industry as in electric mobility or any other application that combines energy sources and loads that run on DC voltage anyways. DC grids help to locally consume also locally produced energy in efficient ways which takes away pressure from public grids.

The GRIDCON® DC Transformer efficiently converts DC voltages of varying levels or values in a scalable and compact design. Applications can be found in the field of energy storage and charging infrastructure as well as highly automated factories.

Why DC grids?

- Improved utilization of existing AC grid connections
- Coupling of generation (PV), storage (battery) and consumption (charging stations) DC/DC maximises system efficiency
- High scaled self-consumption of locally produced energy
- Saving large amounts of copper through higher grid voltage and less cables (two wires only, smaller diameter in cables)
- View more basics about → **Low Voltage DC grids**

Competitiveness through reliability and efficiency with industrial DC grids

AC- and DC-connected solutions by MR – Compact & Scalable

MR delivers efficient and modular AC and DC solutions tailored for modern power systems. Choose whatever is most efficient on site.

With thousands of GRIDCON® devices in operation and over 500 MVAR installed capacity, MR ensures reliable performance and stability for industry and different on- and off-grid locations.

The Plug & Play design enables fast deployment, while the consistently modular concept allows flexible scaling.

All functions can be combined as needed, offering maximum adaptabilty across AC and DC applications.

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Learn more about the GRIDCON® Universe of MR

myReinhausen – digital access to your MR data
Register now for free on our customer platform **myReinhausen.com**!

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