

PowerTech converter family for industry and energy



CONVERTERS FOR MAXIMUM PERFORMANCE

Energy generation and storage | Power supply and grid compensation | Test rig applications | Research applications | Demanding environments applications | Drive technology for industrial automation



POWERTECH



CUTTING EDGE TECHNOLOGY FOR INDUSTRY AND ENERGY: EVERYWHERE IT'S NEEDED.

PowerTech ensures that machines and plants run efficiently and reliably and provides safety and cost optimization in your business.

CONVERTER FAMILY FOR INDUSTRY AND ENERGY

The modular converters from PowerTech represent the company's proprietary developments in power electronics and control technology in the form of grid converters and drive converters for high performance in low voltage ranges of 50 kW to 6000 kW, which can be significantly expanded through parallel circuits.

The use of intelligent power modules, compact design, minimal number of components and easy-to-service operation provide flexible solutions for a wide variety of applications: from energy-efficient automation and drive solutions in mechanical and systems engineering, to solutions for the multitude of forms of power generation and storage, to highly dynamic test benches.

Sample configuration of a PowerTech converter with a mains converter and drive converter for 360 kW of drive power

- 1 Control electronics
- 2 Power module with air cooling



INDUSTRY AND ENERGY



PowerTech converter	
Line voltage	380 V to 480 V, 380 V to 690 V
Grid frequency	50 Hz/60 Hz
Maximum output frequency	2500 Hz
Nominal output	50 kW to 6 000 kW, parallel up to 12 MW
Cooling	Air or water cooling
Fieldbus systems	CAN, PROFIBUS, Ethercat

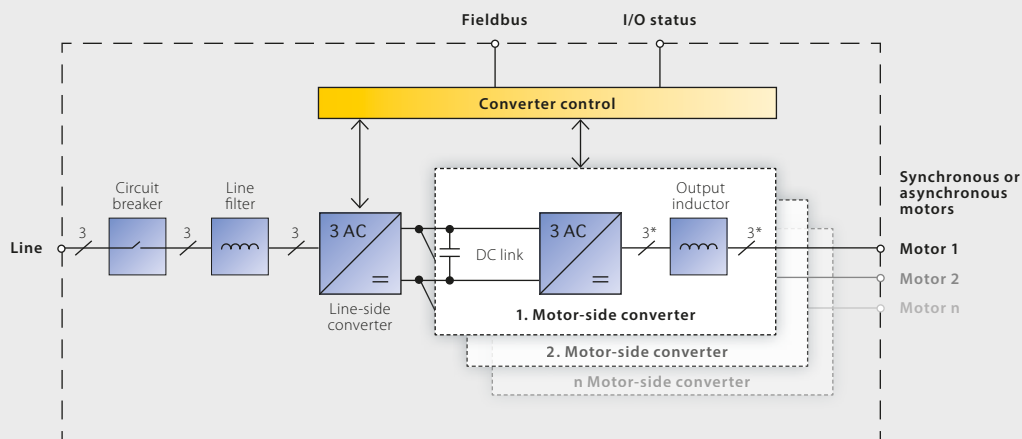
THE CONVERTER FAMILY AT A GLANCE

- For energy generation and storage
- For asynchronous and synchronous drives
- For customer-specific power supplies
- For active mains compensation
- For demanding environmental conditions
- Highly flexible due to the modular design
- High torque and speed dynamics
- High precision in torque, speed, and compensation

- Implementation of individual customer requests
- Own test facility for up to 5 MVA of power
- User friendly service software
- Quick customer service when maintenance is required

TECHNICAL FEATURES

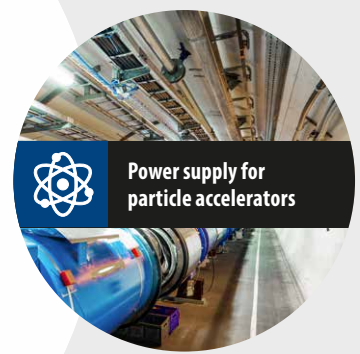
- IGBT-based 4-Q technology
- With voltage link and pulsed mains converter
- Active circuit breakers for active front end (AFE) functionality
- Maximum output frequency of up to 2500 Hz
- Maximum IGBT pulse frequency of up to 15 kHz
- Very good control properties – field-oriented
- Low losses and high immunity
- Minimal electromagnetic emissions
- Single-phase/multi-phase solutions
- Modular and flexible design and construction
- Optimized air or water cooling



*Single-phase or DC/DC solutions also available

THE RIGHT CONVERTERS FOR ANY TASK: CUTTING-EDGE TECHNOLOGY FOR A VARIETY OF SECTORS.

From energy-efficient automation and drive solutions in mechanical and systems engineering, to solutions for the varied forms of power generation and storage, to the implementation of fundamental research projects.



INDUSTRY AND ENERGY

PowerTech technology serves a wide variety of applications and markets: whether it is the optimized series of frequency converters, special customer-specific solutions or fine-tuned technological concepts, including installation and commissioning. PowerTech converters can be used anywhere where consumers have specific requirements for voltage and power. Powertech serves diverse customers from a wide variety of markets.

Highly dynamic test benches

PowerTech converters for simulating complete technological processes with very high drive dynamics:

- Motor, gear and hybrid test systems
- Transformer and cable test systems
- Rail vehicle test benches
- Special applications in the test bench sector

Power supply for particle generators

PowerTech converters for high precision current and voltage sources for scientific applications

- Precise high current sources for magnets for HEDS (High Energy Drift Space)
- Used in applications including particle accelerators in CERN, STFC Rutherford, FERMI

Energy generation and storage

PowerTech converters for efficient energy conversion with grid stability from energy generation to storage:

- Energy generation from regenerative energy sources
- Storage systems ranging from battery solutions to Power-to-Gas

Power supply and grid compensation

PowerTech converters for compensation of voltage and frequency fluctuations in power supplies

- Optimized power supplies for industrial consumers and processes
- Optimized grid quality and reduced loads on operating equipment
- Grid compatibility for renewable energies
- Fulfillment of grid codes in wind turbines

Drive technology for machines and systems

PowerTech converters improve the energy balance and reduce operating costs in industrial automation:

- Processing machines as used in the medical/ pharmaceutical sector
- Moving machinery as used in metallurgy and environmental and recycling technology
- Processing machinery as used in mechanical engineering and the manufacturing sector

Demanding environments applications

Long-lasting drive systems and efficient energy supply units under even the most difficult conditions:

- Mining and strip mining: For driving transport, crushing and auxiliary equipment and auxiliary systems for auxiliary power units
- Oil and gas extraction: Provision of auxiliary voltage and supplies during operation: from drives to air conditioning systems
- Building material machinery/cranes: For driving machines for preparation of building materials such as rotary kilns, mixers and crushers

Sample application of a gear test bench for Formula One



POWERTECH DEVELOPS, BUILDS, SIMULATES AND TESTS: FORWARD-LOOKING SOLUTIONS FOR ENERGY CONVERSION.

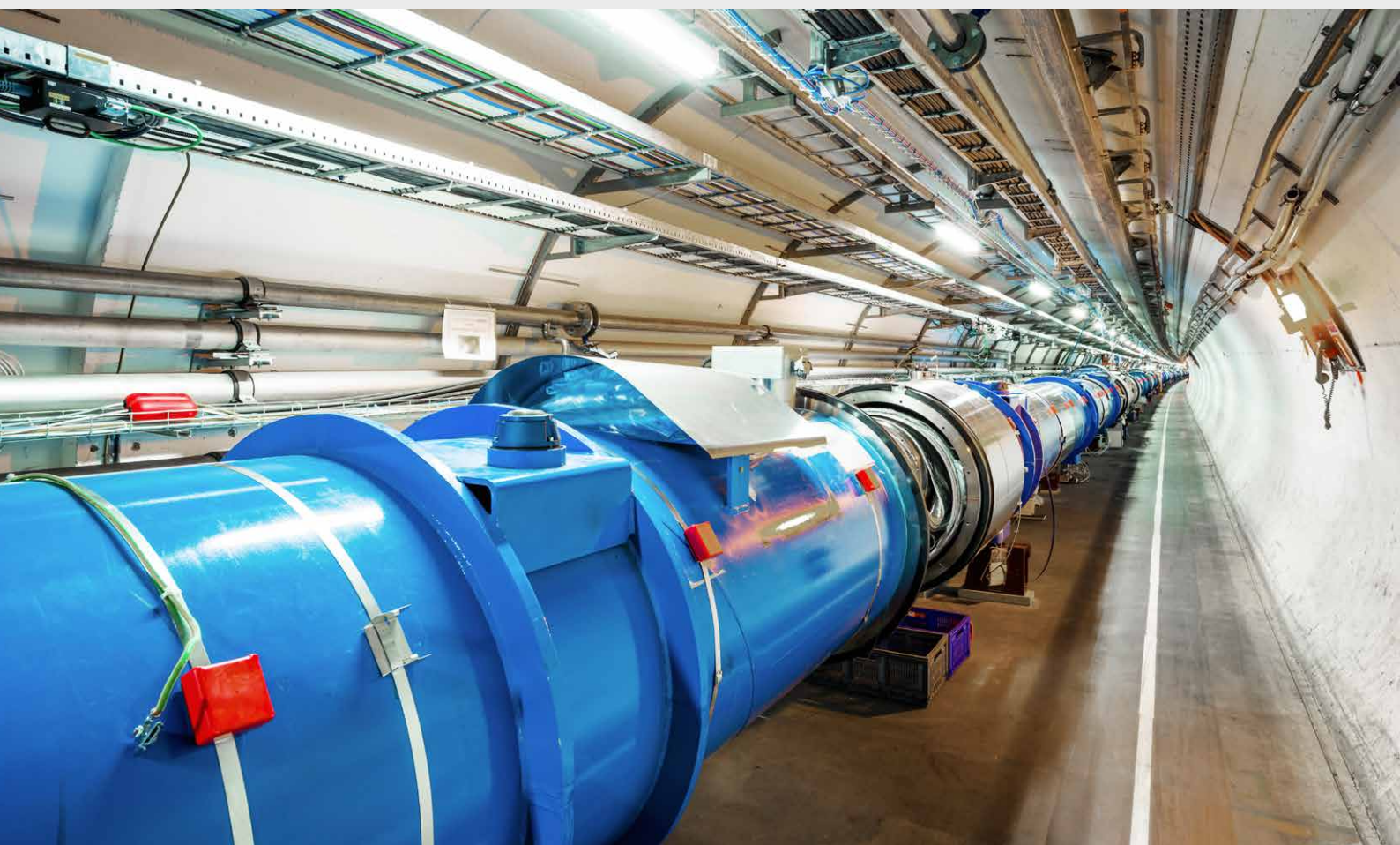
Our technological excellence is based on intensive research and development, a fact reflected in our highly reliable products and innovative features.

POWERTECH IS THE SPECIALIST FOR SCALABLE PEAK PERFORMANCE

The flexibility of a medium-sized company and large-scale industrial capacities make PowerTech an excellent technology partner for its customers. With more than 500 qualified employees at five locations on four continents, PowerTech has decades of expertise at its disposal.

- Flexible series production of large and small volumes in close collaboration with development and design
- By separating individual production steps and structuring the production process in a modular system, we can deal with changing, short-notice customer requests extremely rapidly

PowerTech provides precise constant voltage power supply for the CERN electron accelerator



INDUSTRY AND ENERGY



PowerTech test facility



PowerTech production

DEVELOPMENT AND CUSTOMIZATION
IN OWN TEST FACILITY

The PowerTech converter family is designed for maximum flexibility. Our engineers handle the performance electronics and thermal design, and create the software application, including the control of specific PowerTech converter applications.

Each system is designed and produced in our 2000 m² production facilities and checked and tested in our own state-of-the-art testing facility: from load tests with air or liquid-cooled systems and machines, to the implementation of simulated grids and simulation of entire drive systems:

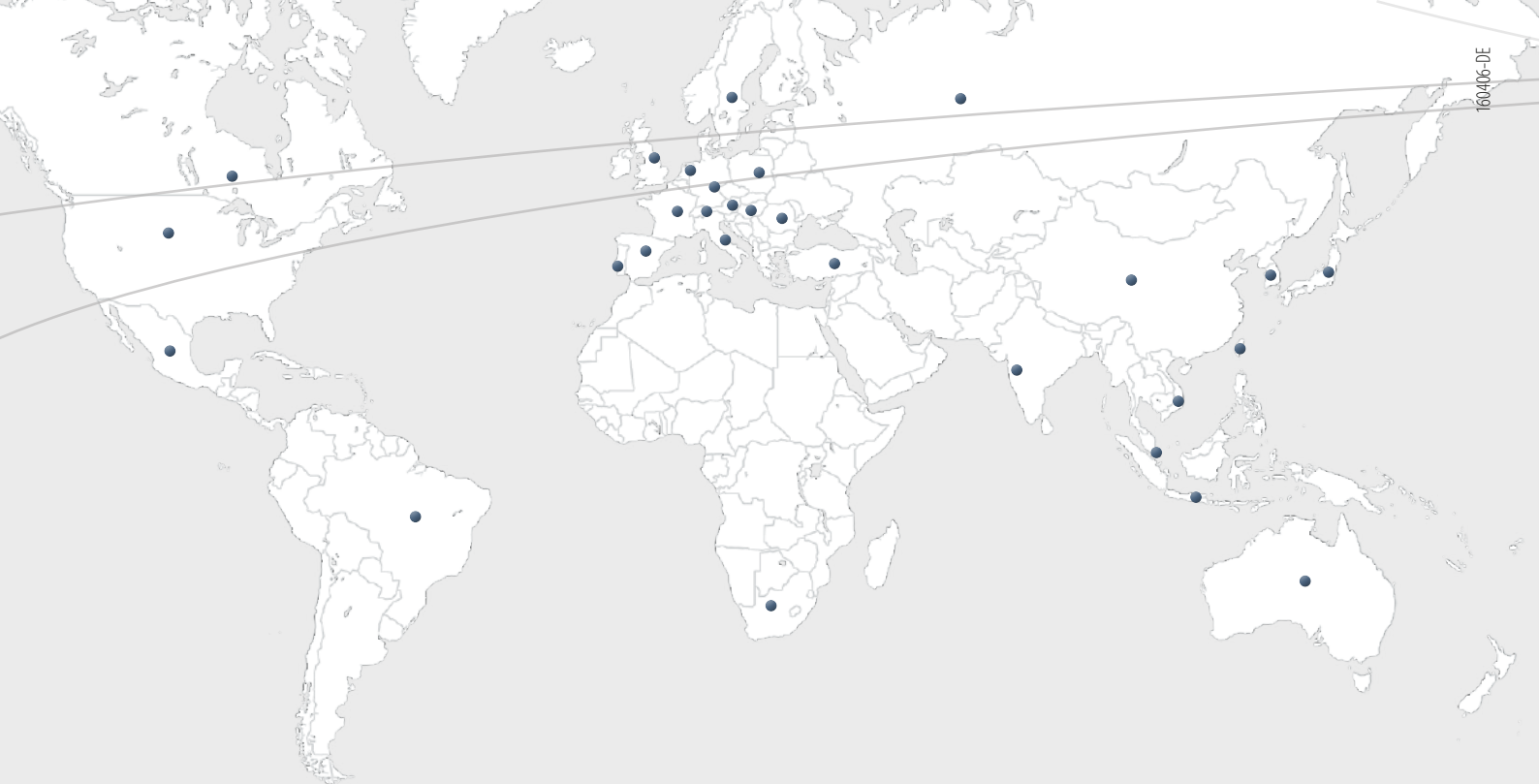
- Electrical, thermal and mechanical tests
- Tests of electromagnetic compatibility
- Simulated grids using converters
- Measuring technology for determining vibration velocities, torques and speeds
- Testing of symmetrical and asymmetrical voltage drops
- Generation of flickers and harmonics LVRT, HVRT, ZVRT, etc.
- Test racks for setting up paired drive sets

OUR EXCELLENT SERVICE IS
ALWAYS BY YOUR SIDE – WORLDWIDE

PowerTech establishes sustainable and long-lasting customer relationships throughout the world. Local consulting and expert service from our specialists in all projects is a matter of course to us. Our major global service network is by your side at all times for staff training and starting operations with our products. Naturally, you'll also receive user-friendly software straight from PowerTech.

PowerTech converters for grid compensation for wind energy are used in South Africa, China, Spain, Portugal and Germany





POWERTECH PRODUCTS FOR INDUSTRY AND ENERGY ARE USED IN OVER 600 VERSIONS WORLDWIDE

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