MICROGRIDS SOLUTIONS FOR OEMS

Specialized power conversion, communication, and control

ENGINEERED TO OUTRUN

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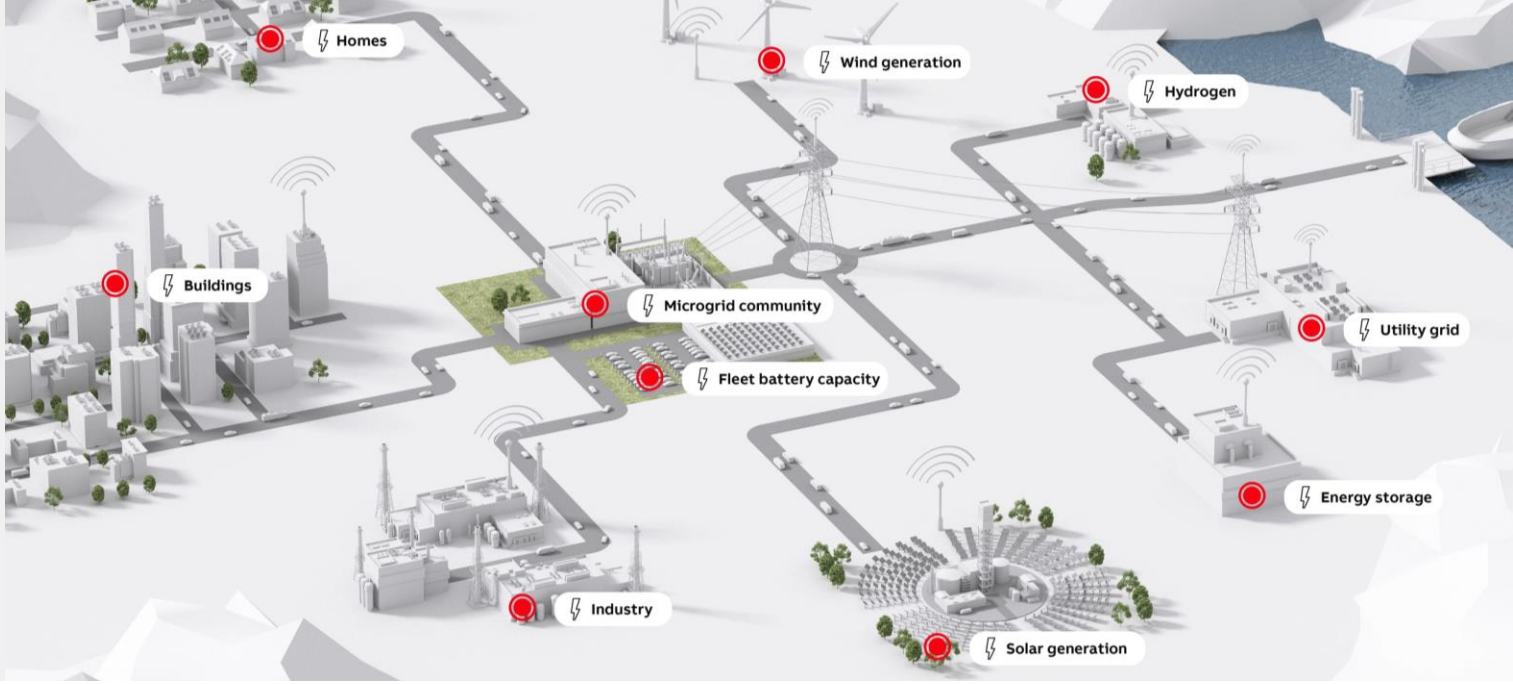
Microgrid industry

Current and future overview



Current positioning

- **Technology:** The current microgrid technology can generate, store, and distribute power locally, and enhance reliability through predictive analytics and preventive maintenance
- **Microgrid standards:** The microgrid communication and protocols are customized for each project based on site requirements
- **Converter standard:** The current converter standard has selective compatibility and grid connectivity for integration into a microgrid

Future trends

- **Technology:** Artificial intelligence (AI) and the Internet of Things (IoT) are transforming adaptive power management in microgrids by enabling real-time monitoring and predictive analytics for enhanced efficiency and reliability
- **Microgrid standardization:** The evolution of microgrid communication and protocols is crucial for supporting advanced energy management and interconnectivity
- **Converter standardization:** UL 1741 standards will improve converter interoperability and grid stability for future microgrids

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Microgrid industry
Key challenges

Unplanned interruptions and downtime due to fast switching, allowing continuous operation, reduced power transition and voltage drop issues in the microgrid processes

Time consuming product installation with hardwired connections, screw terminals, and process interruption for equipment maintenance

Maintaining the required energy efficiency becomes challenging as energy demand increases

Designing safety and protection solutions for both smooth connection and operation transition

Microgrid industry
Key values

Continuous operation

Our advanced solutions provide superior short-circuit protection and advanced trip units help to enhance system reliability and power quality by identifying voltage instabilities

Compact and easy to install

Compact designs and user-friendly installation features help reduce setup time and save valuable space in control panels, making integration into microgrid systems simple

Energy-efficiency

Our innovative solutions optimize energy consumption, reducing operational costs and promoting sustainability in microgrid applications

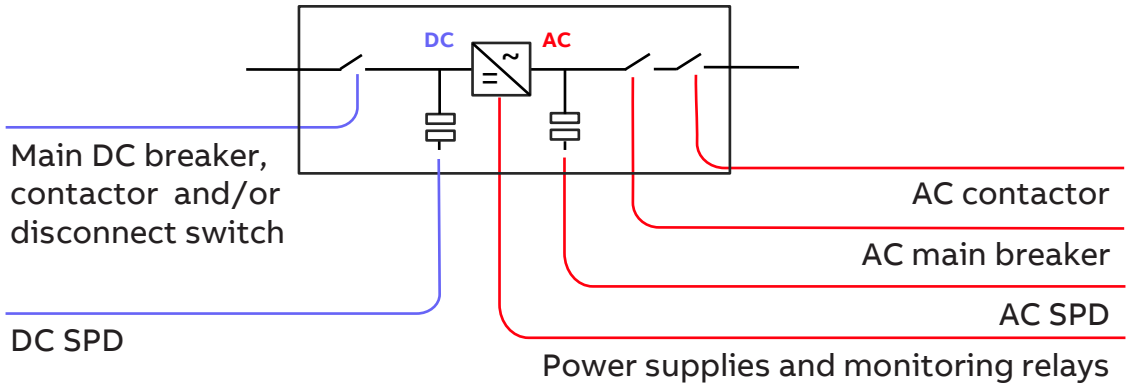
Smarter metering & monitoring

Integrated metering and monitoring capabilities and interconnectivity with several communication protocols provide real-time insights into system performance, enabling proactive management and improved reliability

Microgrid equipment

Key components for inverters and converters

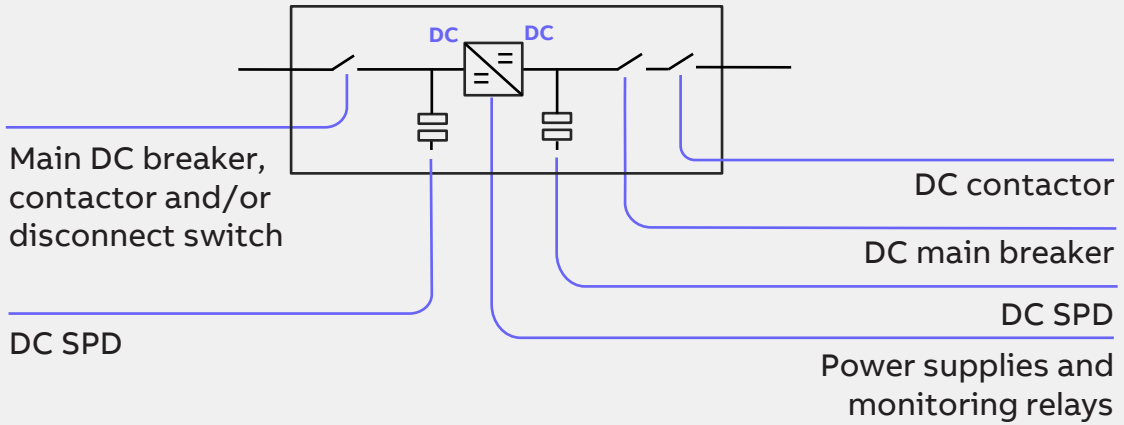
Inverter diagram



AC Power circuit

DC Power circuit

Converter diagram



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MICROGRID INDUSTRY

Commercialization

- National and global connectivity
- Quality and innovation
- ABB and customer collaboration and support
- Continuous product improvement
- Local distribution support
- Strategically focused on segment trends and solutions

Resources

Product portfolio: Microgrid solutions for power conversion, communications, and control

Application note: Power and control solutions for inverters

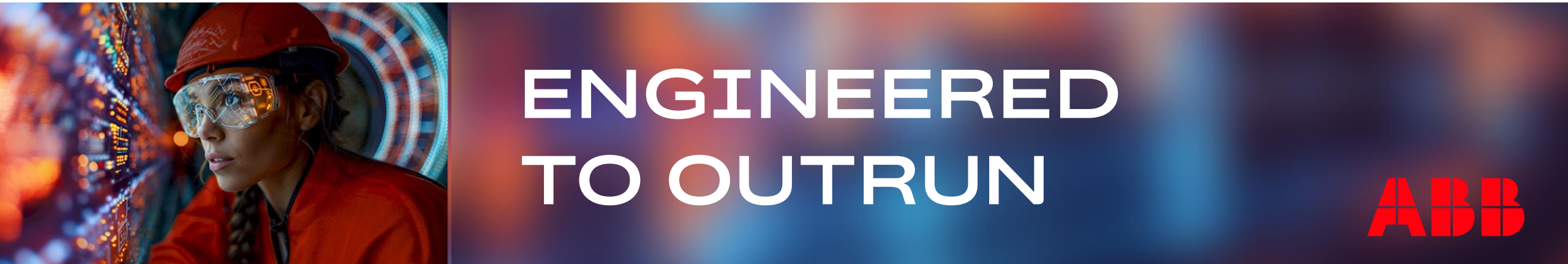
Application note: Power and control solutions for converters

Application note: Communication and control solutions for the Point of Common Coupling

Mt. Juliet distribution center stocking guide

ABB OEM microgrid equipment manufacturer page

ABB Sustainability & EcoSolutions™



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