



NeoGear™

The new industry standard in low-voltage switchgear for safe, smart and sustainable electrification



- The safest switchgear in the market
- Enhanced reliability and operational efficiency
- Significantly improved carbon footprint

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ABB NeoGear™: a revolution in motor control and smart power distribution.

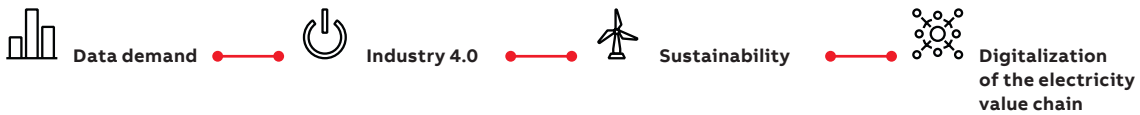
Our world is changing at an ever-increasing pace. New technologies are transforming the way we power our societies, produce our goods and services – as well as how we work, live and move.

Switchgear systems are key to this electrified economy. However, over the past 30 years they have seen little innovation. This all changes with the launch of NeoGear, which heralds a revolution in switchgear technology.

The move to Industry 4.0

Across society and industry, electricity demands are increasing, driven by diverse trends, including data center demand, electric vehicle growth and the electrification of industry.

NEW WAVE OF MACROECONOMIC AND TECHNOLOGICAL TRENDS



DRIVING CHANGES IN THE ELECTRICAL ENERGY LANDSCAPE



LEADING TO EVOLVING CUSTOMER NEEDS



Introducing NeoGear

ABB's low-voltage switchgear has been the product of choice since 1972. Now we introduce the next innovation leap in switchgear technology for industry.

Switchgear are essential technology for safe energy distribution and motor control, but the way they are designed and created hasn't changed for years. With NeoGear, ABB has taken switchgear to the next level, bringing about a revolution in power distribution in the process.

The first real innovation introduced in low-voltage switchgear technologies since the 1980s, NeoGear is ready to help customers

across process industries to manage changing external dynamics and realize new opportunities in their working environments.

Central to NeoGear is its laminated bus plate technology, which replaces traditional horizontal and vertical busbar systems. This innovative bus plate technology, combined with the connectivity and intelligence of the ABB Ability™ platform, make it an unrivalled solution for industry.



1972

First fixed raster-based weld-free frame with MNS®



1983

First modular fully withdrawable arc proof system MNS



1990

First digital LV System with MNS and INSUM



2005/2007

First fully self-supervising LV system MNS iS with condition monitoring



2019

First laminated bus plate technology in NeoGear low-voltage switchgear





Safe



Revolutionary design **eliminates hazardous exposure** to live busbar parts



Arc ignition protected zones keep maintenance personnel safe



Reduced risk of arcs caused by mechanical failures slashes maintenance and down time

Smart



92% fewer busbar parts than traditional switchgear



30% reduction in operational costs through predictive maintenance, **increasing uptime and performance**



90% fewer electrical joints for highest switchgear availability

Sustainable



20% less heat dissipated **saves energy and lowers cost** thanks to excellent cooling efficiency



Efficient use of **reduced CAPEX budgets** for quicker return on investment



Up to 25% less space needed - reduced switchgear footprint brings **space savings**

What our customers say



JÜRIG HITZ, MAINTENANCE AND TECHNOLOGY MANAGER,
AT CEMENT MANUFACTURER JURA.

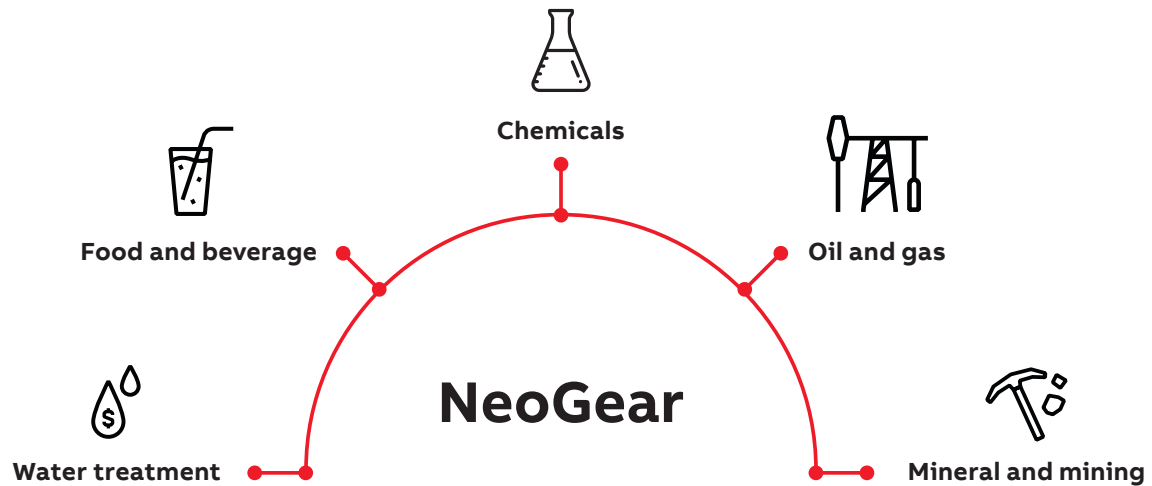
“We’ve been piloting ABB’s laminated bus plate technology in our cement plant in Switzerland since 2017. We, as a business, have always been open to learning about new technologies and are generally keen to participate in these types of projects, as a part of our continuous search for solutions to improve our operations. We have had a positive experience testing this technology in a real-life environment over the last two years and have seen first-hand the increased safety for our operations and personnel.”



PERRY JASPERS, PROCESS OWNER – ELECTRICITY & AUTOMATION,
AT MINERAL FERTILIZER BUSINESS YARA.

“This is the type of switchgear industry has been waiting for. Safer by design with a fully encapsulated and touch proof main current carrying system, more reliable, less components. Using this type of switchgear as a standard solution is a no brainer.”

Segments and solutions



Safe

Pain point:

- Exposed conductors
- Existing risk of internal arc
- Increased risk to personnel safety

Solution:

- Increase safety for maintenance personnel handling live switchgear compartments with arc ignition protected zones
- Higher process availability by reducing switchgear downtime due to need of maintenance or internal arc
- Eliminate hazardous exposure to live busbar parts with a revolutionary design that further reduces the chance of serious injuries

Smart

Pain point:

- Reactive maintenance needs and unplanned downtime
- Reduced CAPEX budgets
- Long supplier lead times

Solution:

- Predictive maintenance for increased uptime enabled by asset management based on digital monitoring and diagnostics and highest process availability through a simplified and robust module contact system
- Smart design and digital capabilities lower total cost of ownership
- Radical reduction in number of parts, which allows faster delivery and a simplified engineering process

Sustainable

Pain point:

- Need for operational efficiencies
- Carbon footprint targets

Solution:

- Reduced switchgear footprint for more efficient design of the electrical room
- Reduced heat dissipation for saving cooling energy and lower cost for switchgear room conditioning

Digital capabilities to deliver Industry 4.0

Advancements in IoT, connectivity and cloud computing all present an opportunity to gain unprecedented operational efficiency and flexibility.

NeoGear can be enabled with digital capabilities, including predictive maintenance, remote assistance, fault and solutions diagnostics and data analytics for Industry 4.0. It takes monitoring to a new level, using information collected to analyze performance data – including current levels, temperature, operating cycles and load levels – in such a way that plant and maintenance managers can use it effectively to improve reliability and reduce maintenance costs. All this can be done from a remote location, eliminating the need for maintenance personnel to conduct regular onsite checks.

An ABB Ability™ enabled NeoGear provides a complete and scalable solution for new projects and future upgrades, to keep systems up-to-date and future-proof for emerging trends in smart electricity distribution.

Unlocking industry of the future with new technology

ABB Ability™ Condition Monitoring for electrical systems (CMES) to provide diagnostics and predictability



Enabling predictive maintenance



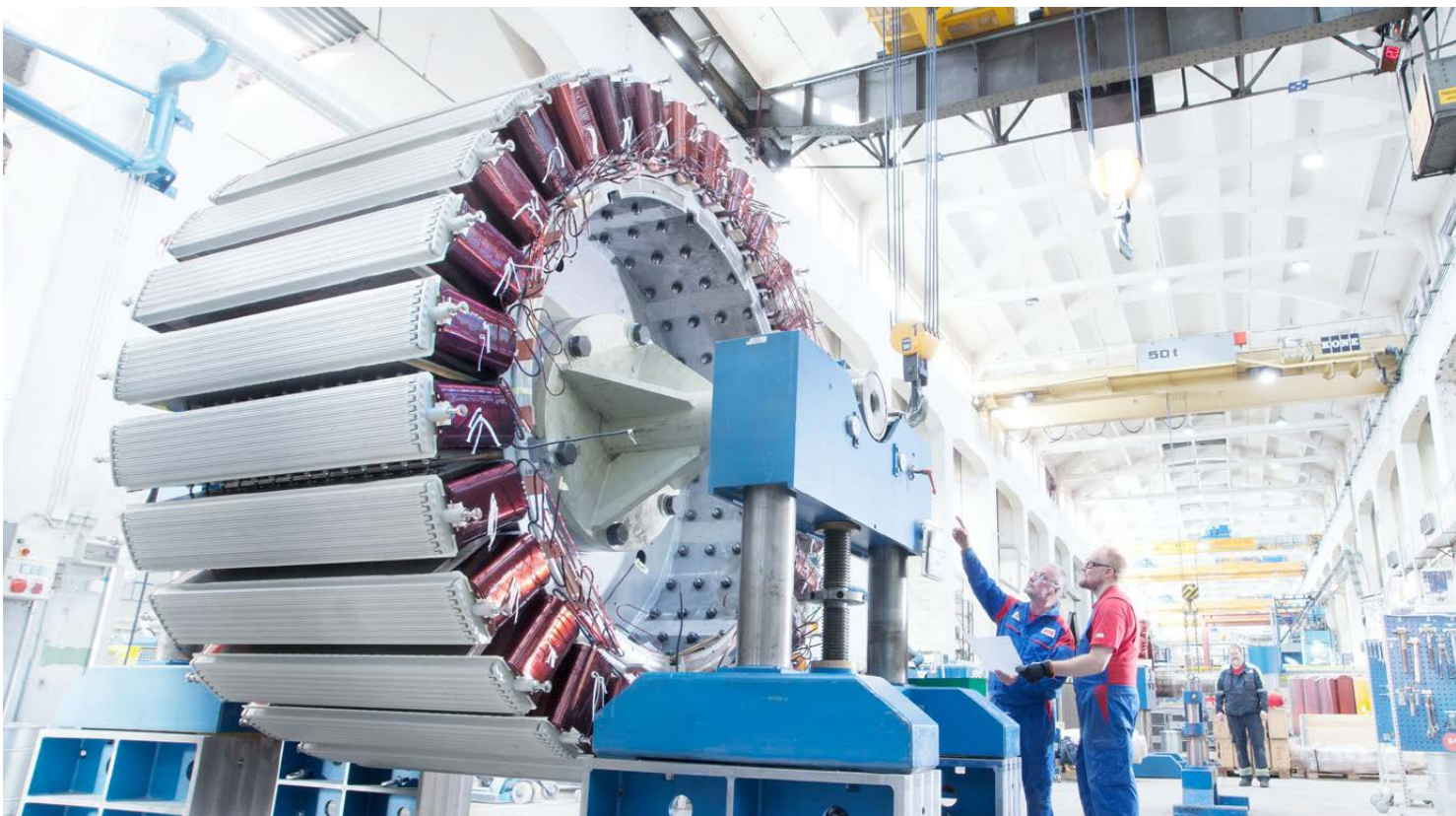
Remote assistance



Fault analysis and solution suggestions

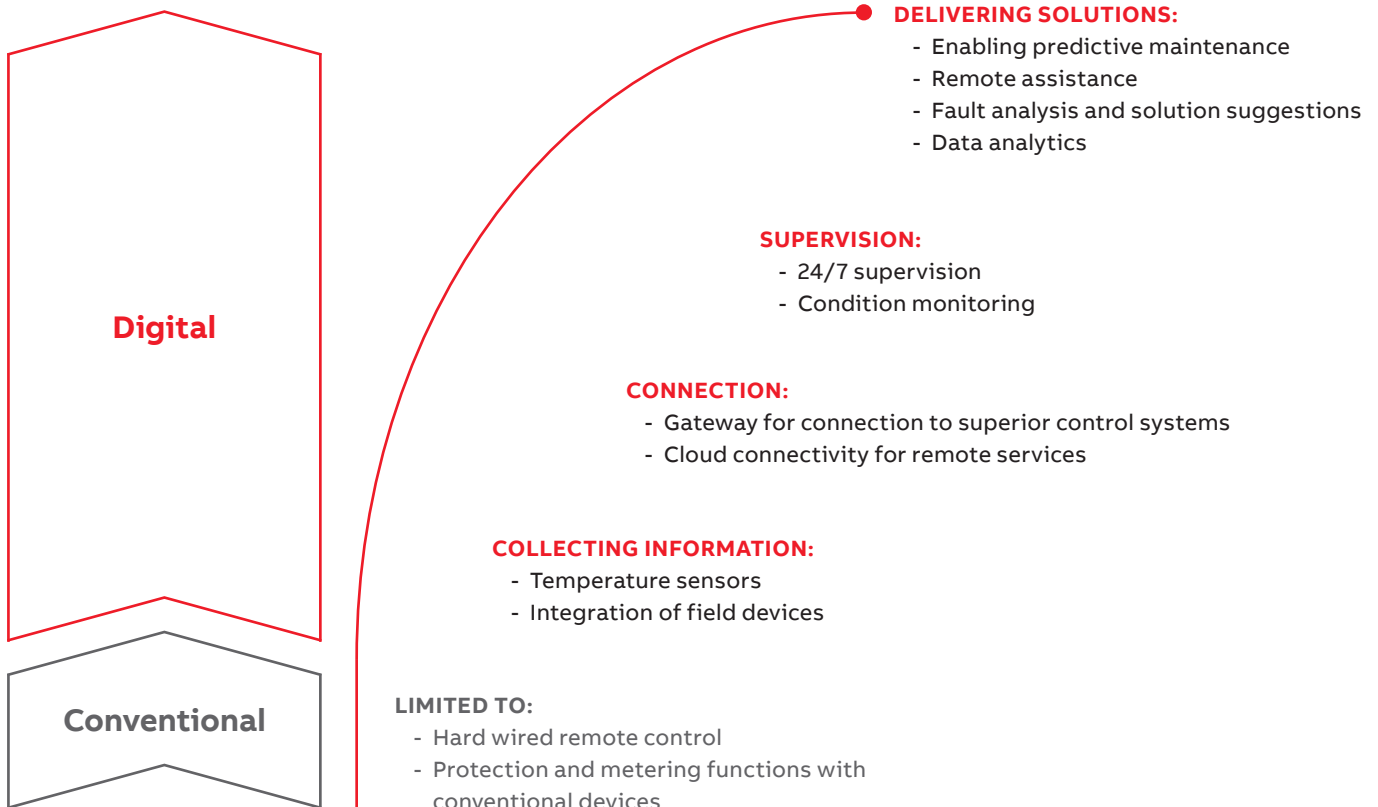


Data analytics





From conventional to digital



Technical overview

Laminated bus plate technology has revolutionized today's switchgear, but the journey doesn't stop there. Over the coming years, ABB will continue to build on this innovative technology with additional functionality that will deliver safe, smart, and sustainable solutions long into the future.

First release

Standards and approvals

Standards	IEC 61439-1 and -2
Arc proof	IEC/TR 61641 Class C

Electrical rating

Rated current laminated bus plate	Up to 3200 A
Poles	3
Short circuit current	Up to 80 kA (1 sec)
Service voltage	Up to 400/415 V ac
Service frequency	50 Hz

Protection rating

Degree of protection	Up to IP43
Internal separation ACB/MCC	Up to 4b/3b
Arc proof execution	Up to 80 kA (0.5 sec)

Second release

Standards and approvals

Standards	IEC 61439-1 and -2
Arc proof	IEC/TR 61641 Class C

Electrical rating

Rated current laminated bus plate	Up to 6300 A
Poles	3 and 4
Short circuit current	Up to 100 kA (1 sec)
Service voltage	Up to 690 V ac
Service frequency	50–60 Hz

Protection rating

Degree of protection	Up to IP54
Internal separation ACB/MCC	Up to 4b/4b
Arc proof execution	Up to 100 kA (0.5 sec)



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