

Product overview brochure

# ABB Medium Voltage Products

Our one-stop approach for every  
medium voltage application

Power and productivity  
for a better world™



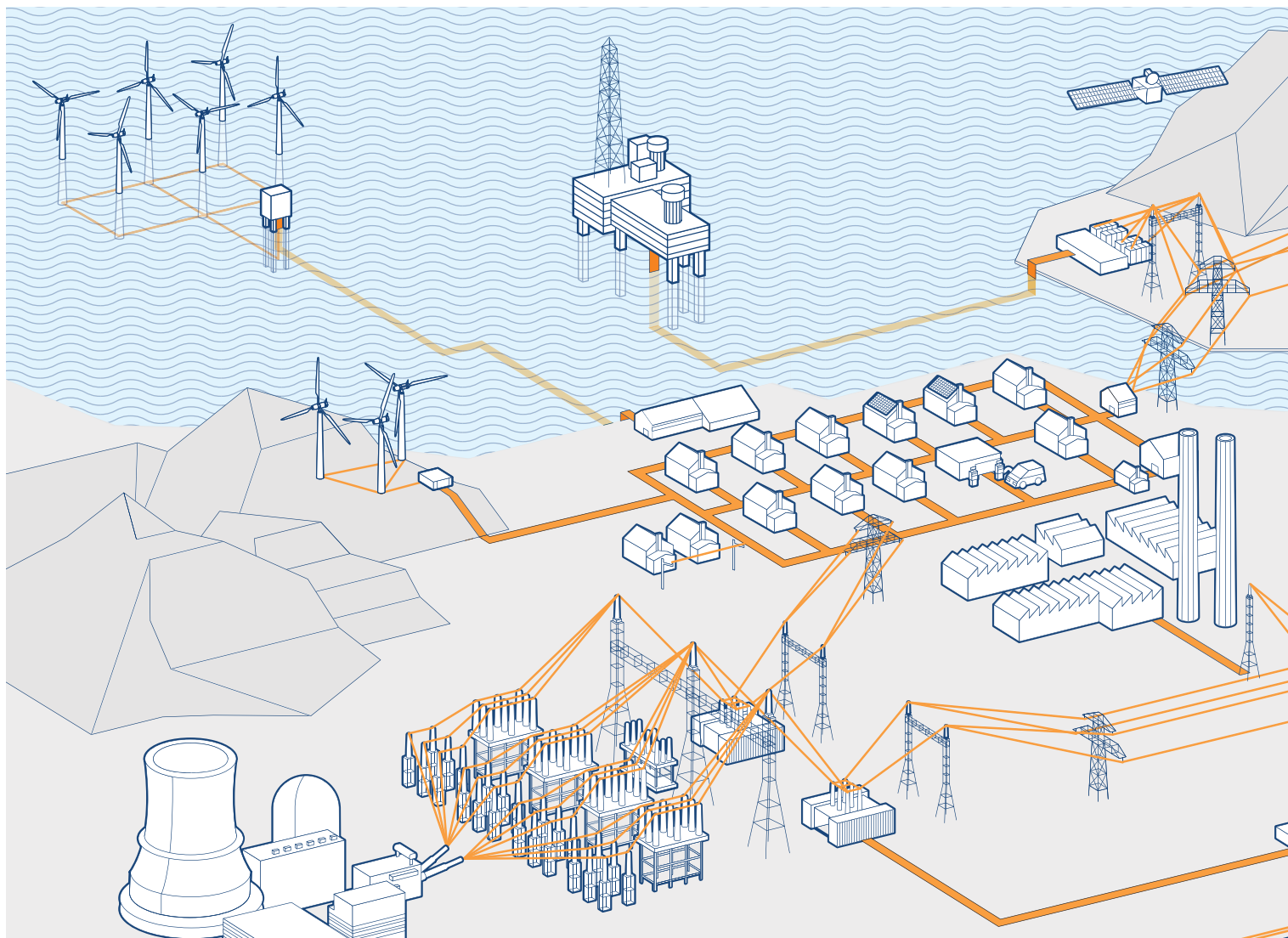
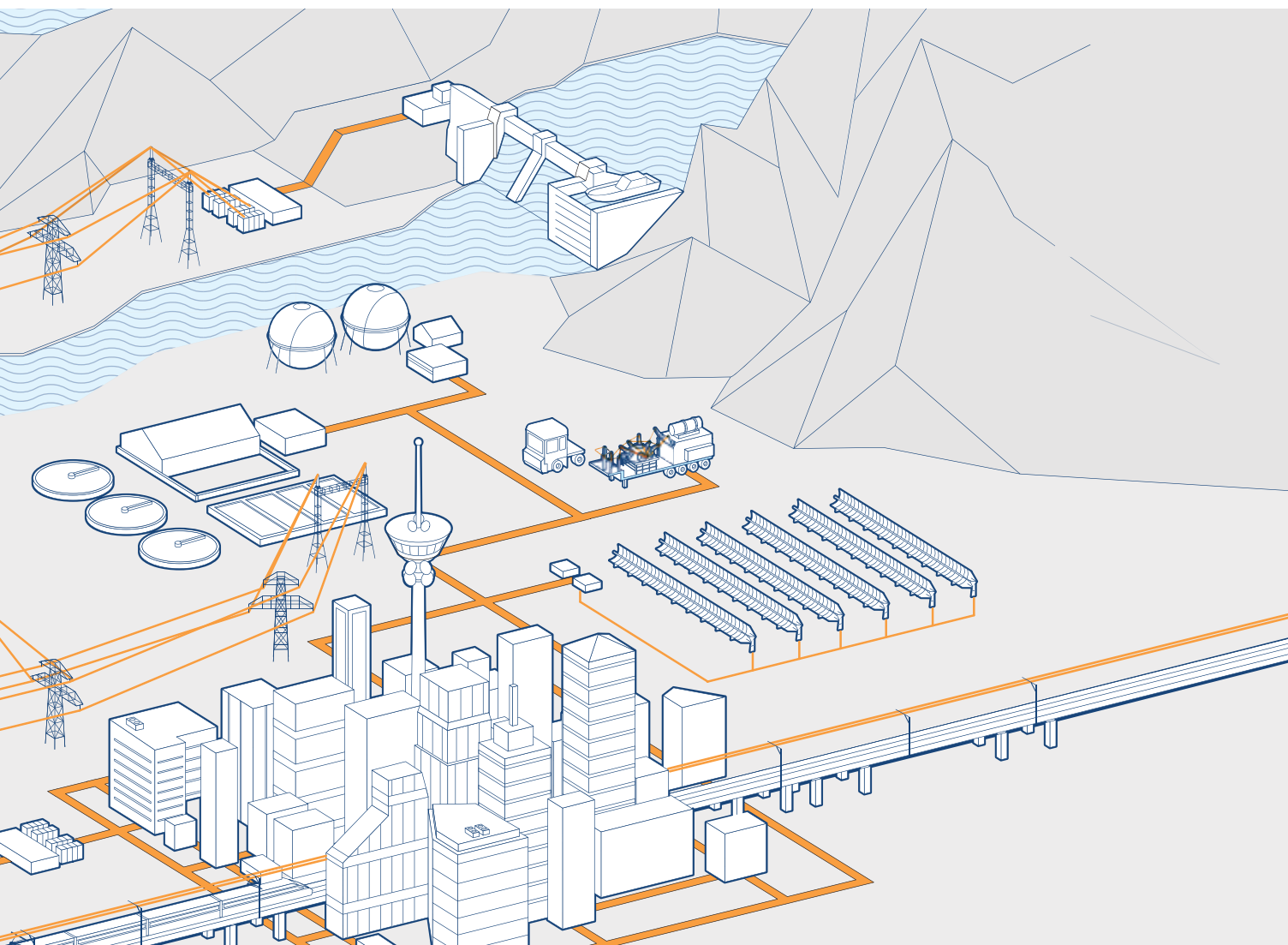


ABB meets every need for reliable, safe and energy-efficient medium voltage switchgear, apparatus, modular systems and distribution automation used in industrial, commercial, transport and utility applications.

## **Our one-stop approach for every medium voltage application**

With ABB, you can meet all your requirements for medium voltage products and systems from a single supplier. We have over 100 years of experience in the design, development, manufacturing and through-life service support of medium voltage switchgear and the largest installed base of any manufacturer worldwide. Whatever your application – utility, industrial, transportation or commercial – we can provide the perfect, coordinated solution that delivers maximum energy efficiency, reliability and safety.

Our comprehensive medium voltage portfolio covers switchgear, apparatus, modular systems and distribution automation. Thanks to ABB's global service network, we support our products and systems through a comprehensive range of services that ensure optimum performance throughout their life – from installation and commissioning through routine maintenance, retrofit and upgrades to eventual decommissioning.



### A wide range of applications

ABB's medium voltage equipment serves a wide variety of applications throughout the world including:

- Power generation
- Power distribution
- Nuclear
- Rail, metro and trams
- Wind and other renewables
- Utilities, industrial and commercial
- Mining and mineral processing
- Oil, gas and petrochemicals
- Hospitals and education
- Infrastructure
- Marine

### Product portfolio overview

ABB offers a wide range of medium voltage products for primary and secondary distribution applications, conforming to IEC and ANSI/NEMA standards as well as those of the major industrialized countries. These products include:

- Distribution automation
- Primary switchgear
- Secondary switchgear
- Apparatus
- Modular systems
- Service

### Quality systems

ABB operates the very highest global, national and industry-specific quality standards including ISO 9001. Our environmental management systems conform to ISO 14001 and our health and safety management system conforms to OHSAS 18001.

# Distribution automation

## ABB distribution automation

ABB delivers a full range of genuine IEC 61850 protection and control products including network automation. ABB's IEC 61850 compliant solutions offer a unified user experience for operating power distribution systems from the secondary substation level up to the network control centre (NCC) level.

The unified user experience provides enhanced reliability, safety and the operational efficiency of network control and management. The protection and control devices also measure and collect data from the power system and intelligent network components to support the asset and business management of power system operators.

ABB distribution automation products are built to withstand the rigors of the most demanding environments including marine and offshore, industrial facilities such as mines and paper and petrochemical plants, as well as power utilities in urban and rural locations.

## IEC 61850

ABB's IEC 61850 compliant Relion® protection and control product family provides open, future-proof and flexible system architectures with state-of-the-art performance.

The Relion family includes a variety of protection and control product series that are tailored for specific applications. Of particular interest to MV installations are:

**Relion 630 series** – preconfigured for feeder, transformer and motor protection and control in utility and industrial distribution substations.

**Relion 615 series** – with standard configurations for protection of utility substations and industrial power systems.

**Relion 610 series** – for MV power systems in large industrial plants, such as in the pulp and paper, petrochemical and other process industries.

**Relion 605 series** – basic devices that fulfil essential protection needs in MV networks.



### A comprehensive portfolio

ABB's comprehensive distribution automation portfolio includes dedicated products for protection, control, measurement and supervision of utility and industrial power systems. The following application areas are covered:

- Feeder protection and control for radial, looped and meshed networks
- Motor protection and control for synchronous and asynchronous motors and for generators
- Transformer protection and control for power transformers, unit and step-up transformers including power generator-transformer blocks
- Line differential protection and control for overhead line and cable feeders
- Voltage and frequency based protection and control applications and automatic voltage regulation
- Arc protection system for establishing fast busbar protection

The distribution automation portfolio also comprises solutions for substation and feeder automation.

### Retrofit and upgrades

ABB's distribution automation products are ideally suited to retrofit or upgrade projects designed to bring existing equipment up to the very latest industry standards.

1 The station automation device COM600 | 2 The 630 series products | 3 The 615 series products | 4 Arc protection system REA

1



2



3



4



# Primary switchgear

## Gas insulated primary switchgear

ABB's ZX series gas insulated primary switchgear is designed to offer the ideal combination of flexibility, reliability, availability, safety and economy for industrial and utility applications up to 40.5 kV.

Housed in robust metal enclosures, the ZX series design features hermetically sealed pressure systems to ensure that it remains gas-tight throughout a long service life. The use of vacuum circuit-breakers together with digital protection and control technology, sensor system and plug-in connections makes the ZX series easy to install, operate and maintain as well as offering a truly future-proof solution.

### – Gas insulated primary switchgear

ZX0, ZX0.2, ZX1.2, ZX2 and ZX2.2 (ANSI)

## Air insulated primary switchgear

ABB offers arc-proof, air insulated switchgear to cover all primary distribution requirements up to 40.5 kV. This wide portfolio ensures that ABB can provide the ideal solution for all applications including single busbar, double level switchgear, double busbar and MCCs (motor control centers). Arc-proof construction combines with safety interlocks to ensure maximum safety and reliability.

ABB's air insulated primary switchgear can be equipped with a choice of vacuum circuit-breakers and contactors as well as gas insulated circuit-breakers and switch-disconnectors.

### – Air insulated primary switchgear

UniGear range (IEC), Advance and SafeGear (ANSI)

1 ZX series | 2 UniGear series



# Secondary switchgear

## Gas insulated secondary switchgear

SafeLink/SafeRing/SafePlus provides a complete, flexible and compact switchgear system solution for distribution applications up to 40.5 kV. It is a completely sealed system with a stainless steel tank containing all the live parts and switching functions. This ensures a high level of reliability as well as personnel safety and a virtually maintenance-free system.

The new SafeRing/SafePlus 36/40.5 kV features a 36/40.5 kV circuit-breaker module that is just 420mm wide. It is ideally suited to installation in compact substations and wind farm towers.

### – Gas insulated secondary switchgear

SafeLink/SafePlus/SafeRing and SafePlus/SafeRing  
36/40.5 kV

## Air insulated secondary switchgear

ABB's metal-enclosed air insulated switchgear ranges are ideal for any secondary power distribution application of low and medium duty.

In addition to the well established UniSwitch and UniMix ranges, the new UniSec range is based on a highly flexible, modular concept with fewer parts and standardized solutions that can be readily configured to meet the specific needs of each application. This approach reduces training and maintenance requirements, ensures fast installation and facilitates future expansion to meet changing needs, contributing to optimized life-cycle costs.

### – Air insulated secondary switchgear

UniSec, UniSwitch and UniMix

1 Compact SafePlus 36 module | 2 UniSec switchgear



# Apparatus

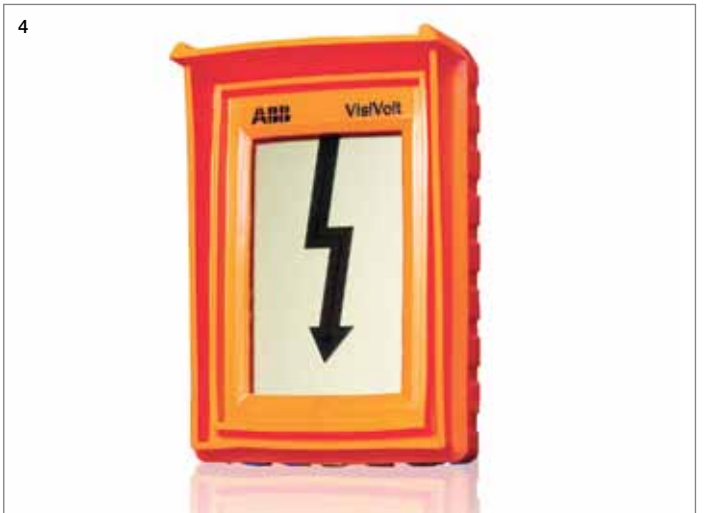
## Apparatus

In addition to supplying complete high-technology equipment and systems, ABB also offers a wide variety of discrete apparatus. This apparatus is available for OEMs to incorporate in their own installations or for use in repair, retrofit and upgrade projects.

ABB's MV apparatus range covers products in these categories:

- [Contactors](#)
- [Circuit-breakers](#)
- [Current limiters](#)
- [Railway traction](#)
- [Enclosures and fixed parts](#)
- [Switch-disconnectors](#)
- [Fuses](#)
- [Apparatus for outdoor applications](#)
- [Voltage indicators and connectors](#)
- [Relays and multi-function units](#)
- [Instrument transformers and sensors](#)

1 OVR-3 three-phase solid dielectric recloser | 2 Low Voltage OVR control cabinet | 3 NPS – Air insulated pole switch-disconnectors for outdoor installation | 4 VisiVolt voltage indicator



# Modular systems

## Modular systems

ABB modular systems provide all the vital MV and LV equipment pre-assembled in an engineered enclosure, reducing time and risk on site as the unit is simply shipped to location and plugged in. This minimizes the need for project management and coordination while ensuring rapid startup and commissioning. They are ideal for remote installations, where skilled labor is often hard to find and all labor is expensive and difficult to manage.

ABB modular systems are prefabricated, walk-in or non-walk-in, outdoor enclosures or buildings designed to house MV switchgear, distribution transformers, LV switchboards, connections and ancillaries, such as battery banks. Specific application modules in stationary and mobile versions are also available including:

- Compact secondary substations (CSS), in steel or concrete enclosures
- E-houses (electrical houses)
- Mobile substations
- Railway modules

## CSS

ABB's global CSS platform provides type tested and arc tested CSS solutions to suit even the most demanding environmental conditions.

## E-houses

ABB E-houses are custom-engineered metal enclosures designed with optimization to protect critical electrical equipment in power distribution networks.

CSS and E-houses offer a compact design and minimized installation footprint for a wide variety of applications including renewable energy schemes and smart grids such as:

- Wind
- Solar
- Distributed energy storage (DES)
- Utilities
- Industrial applications

1 E-house | 2 Mobile substation | 3 Concrete CSS | 4 Steel CSS



# Service

## Diagnosis

Inspection and analysis to improve operating efficiencies and extend asset life.

## Environmental services

Plant, equipment, PCB disposal, pollution prevention/control, waste minimization.

## Installation and commissioning

Cold and hot commissioning including protection and control systems.

## Migration and upgrades

Services and products to evolve or upgrade to the next generation of hardware and software.

## Retrofit

Exchange of worn parts or outdated components while maintaining original configuration.

## Support and remote services

On demand expert support for ABB equipment using telephone consultations, online knowledge management and remote equipment monitoring services.

## Engineering and consulting

Identify opportunities and implementing solutions to improve performance, processes and compliance.

## Extension

Expansions and extensions to installed systems by adding new equipment or functionality.

## Maintenance and field services

Preventative, predictive and corrective services to maximize the performance, reliability and availability of equipment.

## Repair and refurbish

Factory approved repair, partial or complete reconditioning of products or systems.

## Spare parts

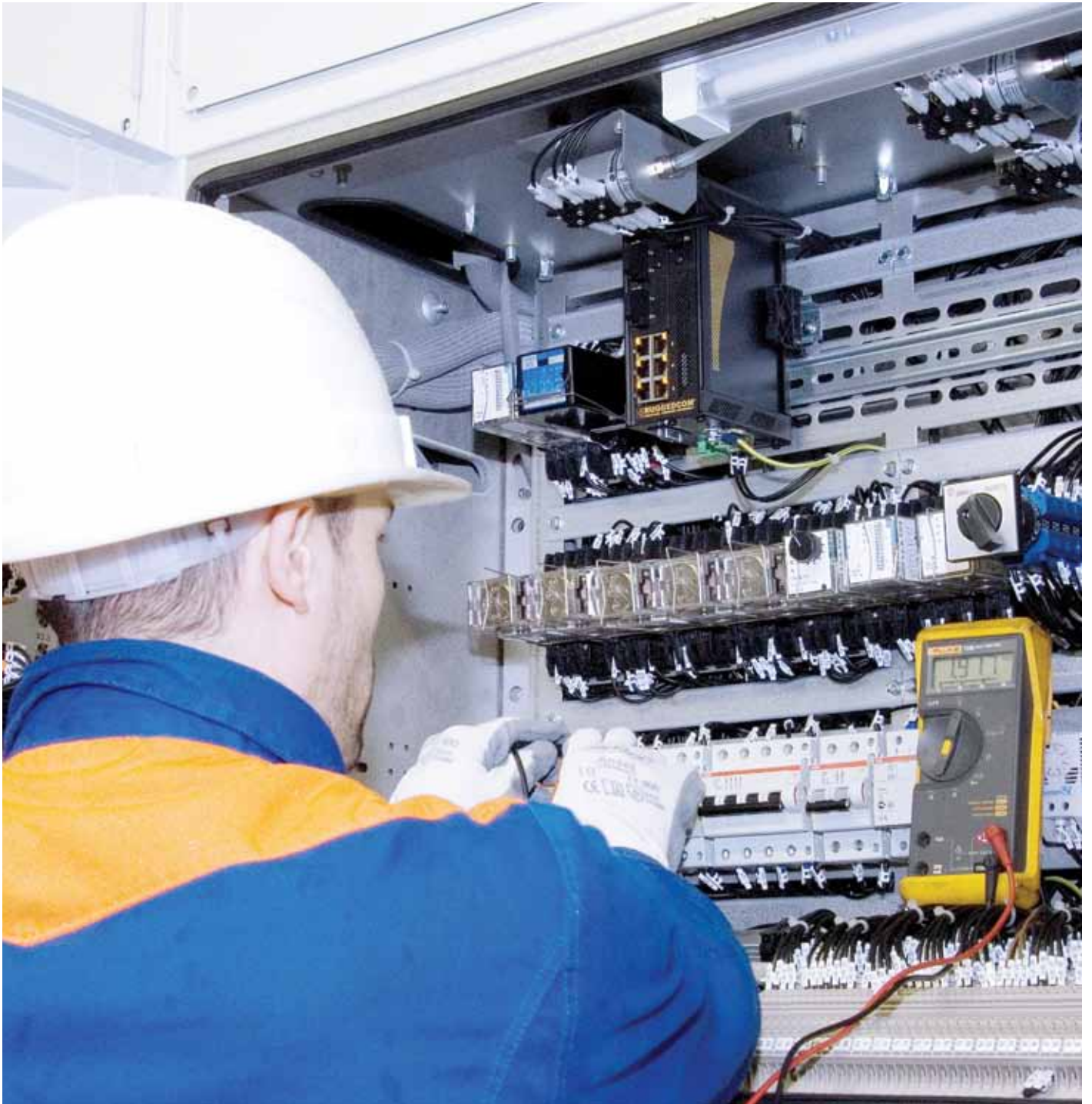
Spare parts, emergency support, repair and exchange, inventory management and logistics solutions.

## Training

Training for personnel including supervisors, engineers, technicians, operators, programmers, maintenance personnel on all aspects of ABB products, systems, processes and technology.

ABB's wide range of world class medium voltage products comes with unrivalled service support that covers every requirement from installation and commissioning to through-life preventive and corrective maintenance. This ensures that customers enjoy reliable, trouble-free and efficient operation over the entire product life cycle.





ABB's Medium Voltage Products business unit provides utility, industrial and commercial customers with safe, reliable and smart technologies for the distribution of electricity. The extensive global offering includes distribution automation products, switching, limiting, measuring and sensing devices, switchgear, modular substation packages and related services.

# Contact us

**Your sales contact:**

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