

## Outdoor medium voltage products

### Global product offering for outdoor applications

ABB delivers a wide portfolio of medium voltage distribution solutions for outdoor applications, ranging from full-fledged substation breakers to fuse cutouts, through digital intelligent reclosers and sectionalizers ready to support the different needs of the smart grid of tomorrow.

Built to withstand the rigors of the most demanding environments, ABB outdoor medium voltage products provide value to our customers and partners by allowing energy to flow into their lives and businesses in a smarter, safer and more reliable way.

Product / Offering	Benefits and Features
<b>SUBSTATION CIRCUIT BREAKERS</b>	
<b>R-MAG® Dead Tank Breaker</b> 	<p>The ABB R-MAG® combines the unique benefits of vacuum interrupter technology with a state of the art magnetic actuator with limited moving parts. This field-proven design leads to higher operational safety, reliability and availability, eliminating maintenance activities on springs or motors in the operating mechanism. With simple open-close coils, an electronic controller and capacitors for energy storage, R-MAG® is capable of 10,000 full-load operations. The dead tank design allows housing of several ring core current transformers for protection and/or measurement purposes and an optional on-board protection relay for full solution flexibility. Configuration and customization are available to adapt this solution to the most complex substation environment, with a full range of 15 kV, 27 kV and 38 kV versions available with different footprints, up to 200 kV BIL and 40 kA.</p>
<b>OVB-SDB and OVB-VBF Live Tank Breakers</b> 	<p>ABB live tank circuit breakers are designed to bring together the superiority of vacuum interruption inside “sealed for life” poles, with the reliability of a long-life spring mechanism inside a weather-proof cabinet. Product robustness ensures high performance in stressful environments, while the simple design minimizes the number of spare parts and makes maintenance quick and easy. Several structure options are available to improve flexibility and reduce installation time; in particular, the telescopic structure option is useful when the circuit breaker height needs to be regulated on site. OVB-SDB is available up to 15 kV 2000 A and 25 kA. OVB-VBF is available in 24 kV, 36 kV and 40.5 kV versions up to 2500 A and 31.5 kA, to support the new challenging requirements of the future interconnected grid.</p>

## Product / Offering

## Benefits and Features

## OUTDOOR RECLOSERS

GridShield® triple-single phase Recloser and OVR three phase Recloser



With a full portfolio up to 38 kV and 16 kA, the GridShield® and OVR recloser families are ready for any challenge and geared to support the different needs of the grid of tomorrow. Performance of the high voltage unit is guaranteed even in heavy-polluted environment, thanks to the highest creepage distance on the market and the Hydrophobic Cycloaliphatic Epoxy (HCEP) material of the poles, shedding water and reducing the probability of flashover. State-of-the-art ABB vacuum interrupters and magnetic actuators, together with the absence of electronics in the high voltage unit, minimize downtime risk and reduces maintenance costs.



GridShield® - The high voltage unit is modular and available in single tank and individual tank design for easy adaptation to any mounting condition and unique three- or single-phase tripping capabilities. To ensure seamless integration into the network and consistency in installed base, GridShield® is available with single and dual voltage sensing options and it can be paired with multiple recloser controllers: ABB RER620, SEL651-R, or Beckwith M-7679.



OVR - This recloser is fully type-tested with RER615 Relion® intelligent electronic device, providing high-end relay features and offering IEC61850 native communication with GOOSE messaging capabilities and backward compatibility with Modbus, IEC60870-104 and DNP3.0 communication to connect to SCADA. This enables seamless integration into the network and advanced smart grid features, i.e. loop-control, feeder automation, sensitive earth fault, etc.

## LOAD BREAK SWITCHES AND SECTIONALIZERS

Sectos SF6 Load Break Switch



ABB Sectos is an SF6 gas-insulated, pole-mounted load break switch used in electrical distribution networks. The main active part is enclosed in a stainless steel SF6 tank and the state-of-the-art operating mechanism is sealed to guarantee reliable operation even in the most demanding climatic conditions including corrosive atmospheres, snow, and ice. The optional integrated earthing switch with making capacity guarantees fast and reliable earthing of the cable or line, while the main contacts in open position satisfy the isolation requirements of disconnecter standards for additional safety during power line work. The Sectos offering ranges from basic manual unit to a tele-controlled fully-automated motorized version with REC615 Relion® relay, current and voltage measurements and SCADA integration to support grid modernization and FDIR concept (Fault Detection, Isolation, Restoration). It is available with NXB version up to 24 kV, NXA up to 36 kV, 630 A, nominal and breaking current, and 50 kA making capacity. ABB is also able to provide the unique NXBD design up to 24 kV, a three-way load break switch also available with earthing switches to implement powerful smart-grid logic in complex networks where limited physical dimensions and investment are key constraints.

NPS Air Load Break Switch



The ABB NPS is a modular air insulated load break switch that provides a visible break of main contacts, used in medium voltage overhead lines to disconnect or sectionalize feeders and branches. Modularity minimizes logistics and storage costs, allowing late customization and integration, while ensuring simple and fast maintenance or replacement of parts, e.g. the arching chamber. Robust mechanical construction together with the different insulator materials available (epoxy resin, porcelain, silicon), ensures reliability in all weather conditions and in different installation positions. In order to guarantee full flexibility, the NPS offering ranges from the basic manual unit to a fully-automated motorized version with earthing switches, current measurement, SCADA integration and other smart grid features. Available ratings are up to 36 kV, 630 A nominal current and breaking capacity ranging from 16 A up to 630 A, depending on the application.

Product / Offering	Benefits and Features
<b>CUTOUT MOUNT ELECTRONIC SETIONALIZER</b>	
<p data-bbox="76 277 357 338">AutoLink and WiAutoLink Electronic Sectionalizer</p> 	<p data-bbox="451 277 1501 786">The electronic sectionalizer is an isolating device designed to improve the service continuity of overhead distribution networks. This smart device automatically isolates the faulted grid section when a permanent fault occurs; in such case, the units can be re-set without the need for special tools and quickly put back in service. In case of temporary fault, the electronic sectionalizer allows the upstream recloser or reclosing breaker to clear the fault without isolating the circuit. The application in any interchangeable fuse cutout base, together with the flexibility in configuration, makes this solution ideal to replace coordination fuses for lateral lines with nominal currents above 3 A. ABB solutions are fully self-supplied and do not need additional auxiliary power, and the status LED provides important information of the condition of the device. While AutoLink is available in single-phase and three-phase mechanically-ganged versions, WiAutoLink has onboard advanced electronics with data storage capabilities (failure records, operation time, temperature, etc.) and a reliable wireless communication which allows single, bi-phase and three-phase operation. The 15 kV, 27 kV and 38 kV versions up to 170 kV BIL, 200 A and 8 kA are available in three standard fully configurable models to minimize inventory needs. A load break option is also available to ensure safe manual opening under load conditions.</p>
<b>FUSE CUTOUTS AND DISCONNECT SWITCHES</b>	
<p data-bbox="76 853 225 887">Fuse Cutouts</p> 	<p data-bbox="451 853 1501 1111">ABB fuse cutouts are used on overhead distribution systems to provide safe and reliable overcurrent protection and visible break as indication of fuse operation. The full portfolio includes an interchangeable (ICX) design, a non-interchangeable (NCX) ABB proprietary design with double venting capability, and a load break version (LBU). Porcelain, silicone rubber, and polymer concrete insulators are available for a full offering up to 38 kV and 200 kV BIL, 100 A and 200 A fused and 300 A disconnect blade. ABB fuse cutouts are designed to perform without fail even in stressful environments, including extreme cold/hot, heavy pollution and coastal applications.</p>
<p data-bbox="76 1122 400 1189">DCD single phase disconnect switch</p> 	<p data-bbox="451 1122 1501 1323">The hook stick operated disconnect switch is used for sectionalizing or isolating circuits on electrical distribution networks up to 38 kV and 900 A, providing a clear and safe visible break. The ABB DCD is available with porcelain or polymer insulators and it is flexible for different mounting configurations.</p>
<p data-bbox="76 1335 416 1368">RBD bypass disconnect switch</p> 	<p data-bbox="451 1335 1501 1547">Using the same technology of the DCD, the ABB RBD provides a quick and easy means of bypassing and disconnecting reclosers or other equipment, allowing quick system reconfigurations to work on any device without interrupting service. It is available up to 38 kV and 900 A continuous current.</p>
<p data-bbox="76 1559 427 1603">SID and LSID disconnect switch</p> 	<p data-bbox="451 1559 1501 1760">The ABB SID is a single insulator disconnect based on the cutout design, available with different insulator options up to 38 kV and 900 A continuous current. The LSID version includes a self-contained load break chamber capable of interrupting up to 600 A.</p>
<p data-bbox="76 1771 400 1839">ITD inline tension disconnect switch</p> 	<p data-bbox="451 1771 1501 2029">The hook stick operated disconnect switch is used to manually disconnect de-energized or parallel circuits of overhead distribution lines up to 38 kV, 200 kV BIL and 900 A continuous current. The special design of the ABB ITD allows installation directly on the line under mechanical tension, saving space and additional installation time and material.</p>

Product / Offering	Benefits and Features
<b>ACCESSORIES</b>	
<p data-bbox="78 282 400 342">Instrument transformers and sensors</p> 	<p data-bbox="453 282 1513 566">ABB has one of the widest global portfolios of instrument transformers and sensors to be used for revenue and non-revenue measurement applications, control and protection applications and for auxiliary power when needed. The hydrophobic surface properties of HCEP ensure highly reliable performance in wet or humid environments. All the instrument transformers and sensors are designed and manufactured to achieve superior performances according to the latest standards: IEC, ANSI, GB, GOST, etc. Various types of CTs and PTs are available to cover all medium voltage applications in any voltage class range. Sensors have advantages in terms of weight and ease of installation, superior safety and reliability and improved efficiency by decreasing power consumption and energy costs</p>
<p data-bbox="78 618 384 678">Communication with Arctic wireless connectivity</p> 	<p data-bbox="453 618 1513 835">The Arctic product family offers secure and cost-effective wireless connectivity for all industrial and utility applications, including enabling the industrial Internet of Things as well as real-time remote grid automation. As the backbone for communication, the Arctic family utilizes wireless cellular networks, making it possible to combine the products into secure and cost-effective wireless communication systems with global coverage. The Arctic products allow accessing and managing any remote asset from a central location, allowing remote firmware update or configuration.</p>
<p data-bbox="78 887 268 916">Control Cabinets</p> 	<p data-bbox="453 887 1513 1140">ABB's smart control cabinets are based on standardized ready-to-be-deployed solutions applicable to switch disconnectors and reclosers, that can be used for both new installations and to upgrade or retrofit existing assets. ABB's comprehensive range of communication gateways and wireless controllers are part of the offering when basic remote control and monitoring is needed. In the most challenging environments and applications, advanced measurements and leading-edge earth-fault detection and protection functionalities are enabled by ABB's proven fault detection algorithms supported by ABB's Relion® protection relays and RIO600 remote I/O unit.</p>
<b>CUSTOMER SUPPORT AND SERVICE</b>	
<p data-bbox="78 1209 368 1270">Spare parts, upgrades and retrofits</p>	<p data-bbox="453 1209 1513 1330">A wide range of spare parts is available to service the ABB installed base and support an extended product life. Thanks to the modular design of the products, technology upgrades (i.e., new relay versions, retrofit of components or parts) are easily available upon request to improve performances during the product's lifetime.</p>
<p data-bbox="78 1350 300 1411">Service support and commissioning</p>	<p data-bbox="453 1350 1513 1471">Present in more than 100 countries worldwide, ABB ranks as one of the largest service support providers globally. ABB can offer basic maintenance services, spare part replacement and re-pair, and support through commissioning and configuration of products to ensure a seamless customer experience.</p>
<p data-bbox="78 1491 169 1520">Training</p>	<p data-bbox="453 1491 1513 1648">ABB training and learning centers offer a wide range of courses from the basics of operation and maintenance of equipment in our portfolio to advanced training on repairs, spare parts replacement or Relion® relay configuration for different smart grid scenarios. With a deep knowledge of products and solutions, users can be in full control of their installed base and are also able to use ABB products more safely and efficiently</p>