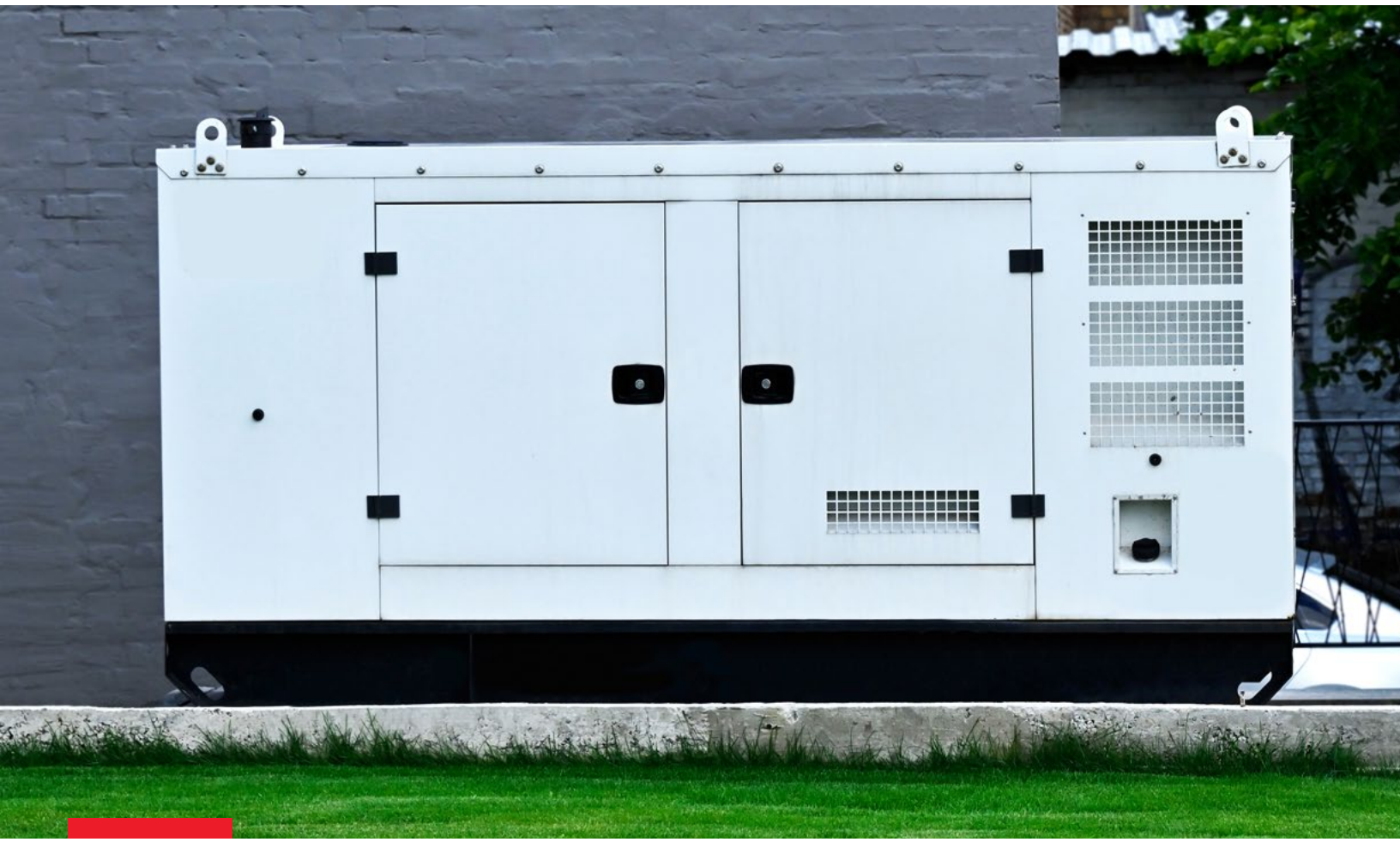


BROCHURE

Genset solutions for the equipment manufacturer

Keep up with the increasing demand for sustainable power solutions using innovative and reliable components for dependable performance.

Genset applications

Genset is an abbreviation of generator set, which refers to a generator and engine combination.

Electric power generators can be classified in one of three ways depending on their intended use:

Standby power	**Short-term operating reserve**	**Continuous power**
• Emergency power supply • Used to sustain a facility through extended utility power outages	• Peak shaving: reducing grid demand or islanding • Paralleling and exporting power to the grid • Grid energy allocation	• Used in places without power connection to the power grid • Used for remote location

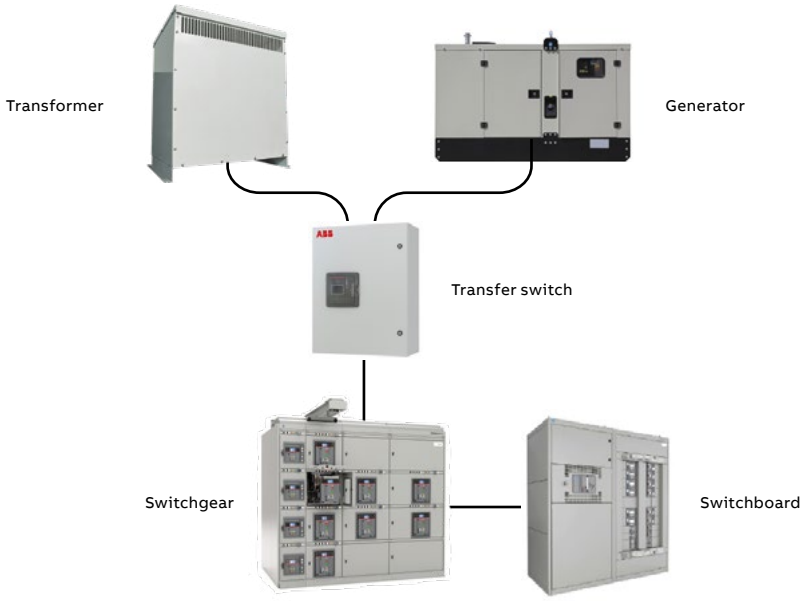
Generators can be found in industrial, commercial and residential locations and used for various industries. Some examples are:

Industrial	**Commercial**	**Residential**
• Manufacturing • Oil and gas • Mining • Construction	• Hospitals • Data center • Government buildings • Retail centers • Apartment complexes • Outdoor venues	• Homes • Apartment buildings

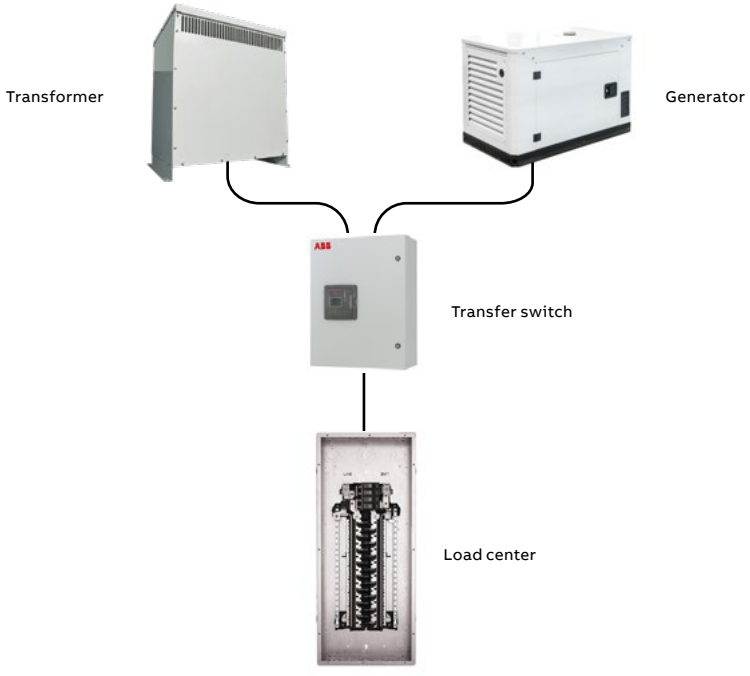
Genset use case

The functional layout is the same for standby and short-term power for industrial, commercial and residential applications; however, the use cases are different.

Standby and short-term operating reserve
Industrial and commercial one-line diagram example

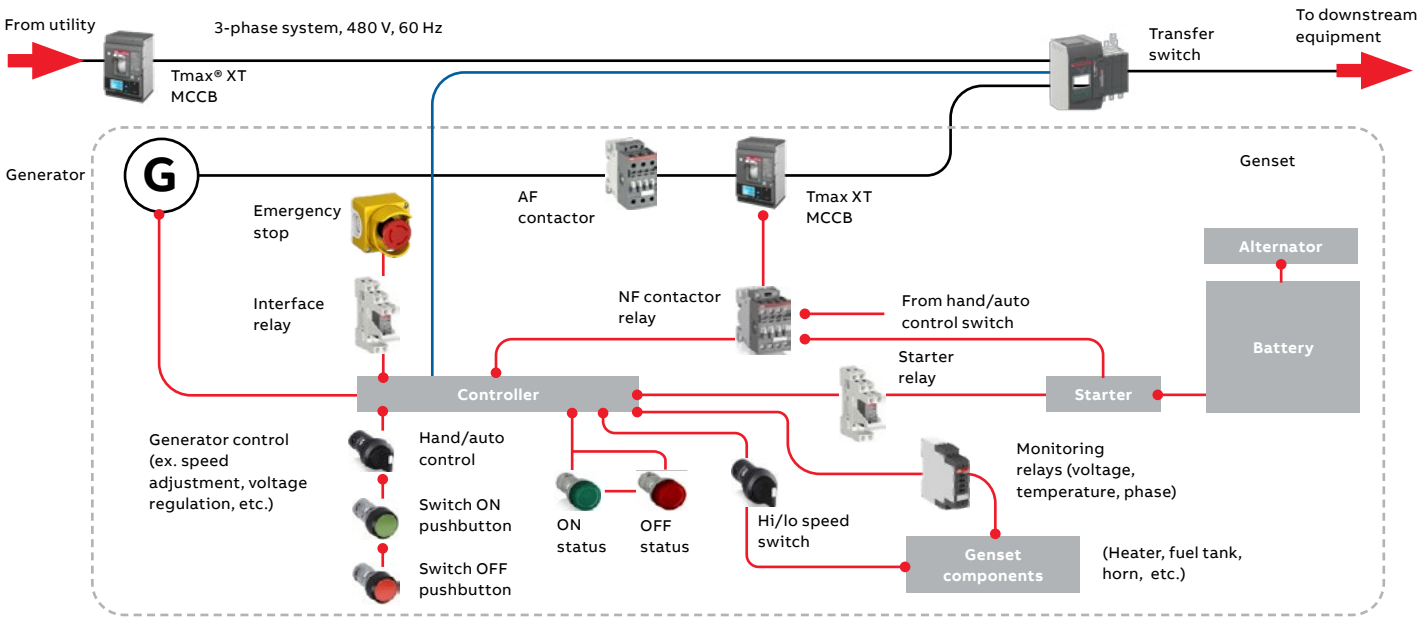


Standby only
Residential one-line diagram example

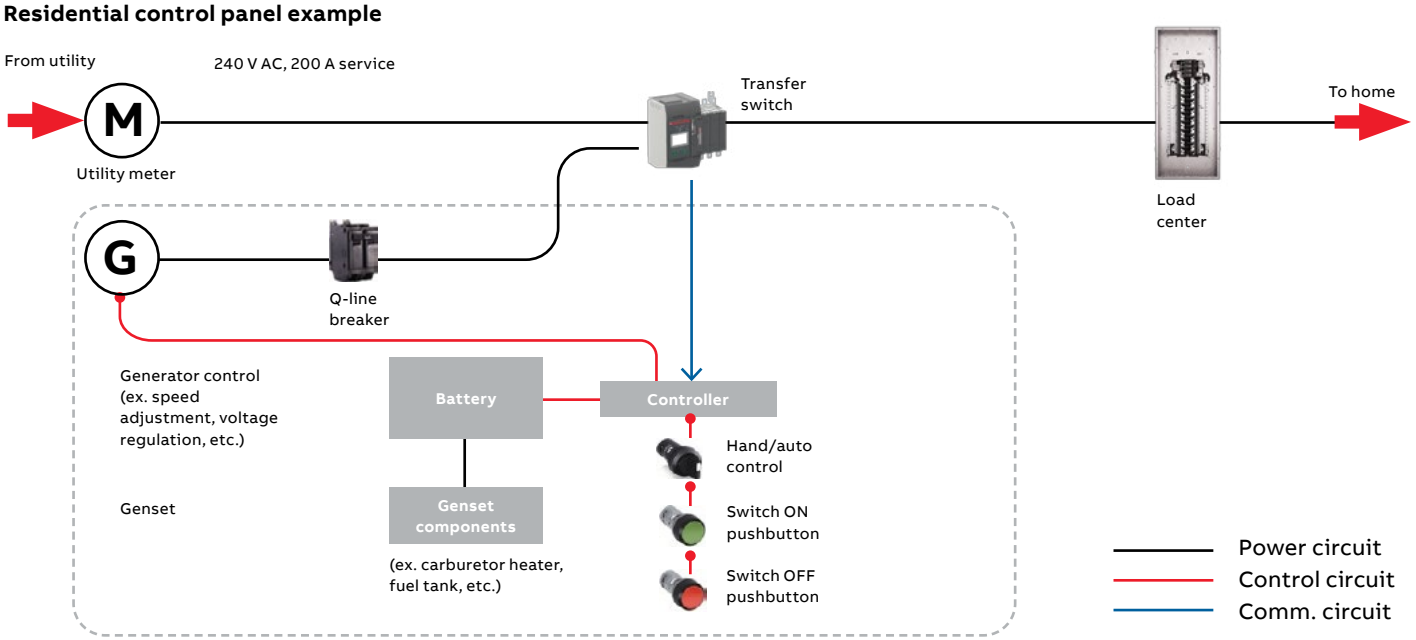


Genset application

Standby and short-term operating reserve
Industrial and commercial control panel example



Standby only
Residential control panel example



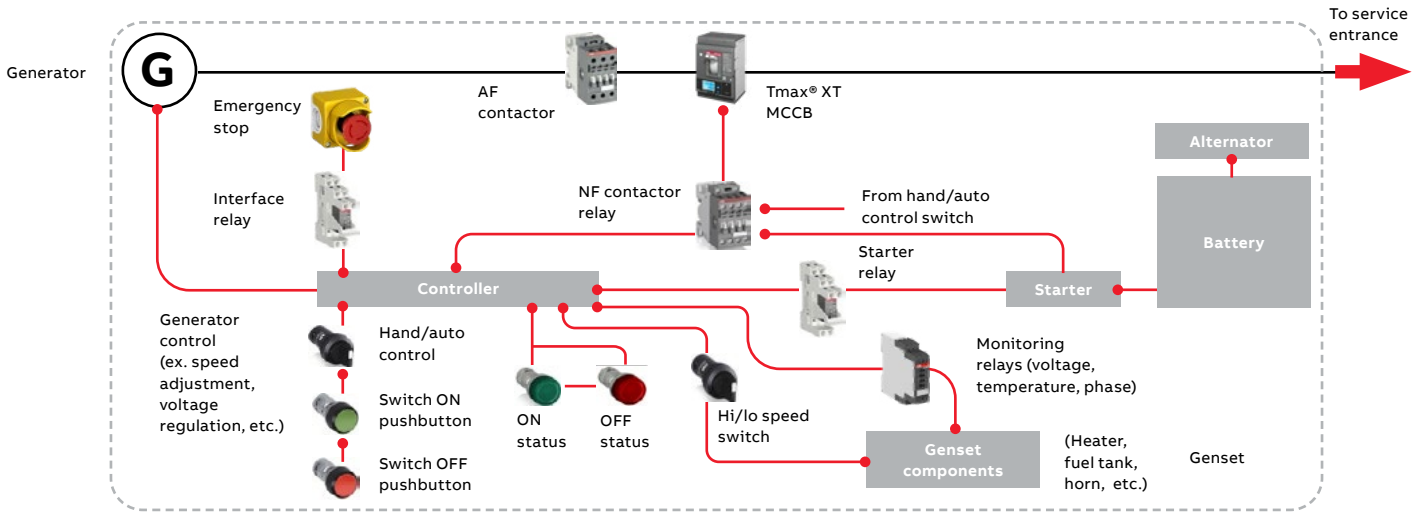
Genset use case and application

Continuous power
Industrial, commercial and residential one-line diagram example

Generator

Switchboard or other equivalent distribution equipment

Continuous power
Industrial, commercial and residential control panel example



Power circuit
Control circuit

Featured products

SACE® Tmax® XT molded case circuit breakers (MCCBs)
Flexible solutions to meet exact requirements with trip units allowing “future-ready” installations and cost-effective breakers for common applications, making them the ideal solution for designers, installers, OEMs and end users. For applications in accordance with UL 489 standards. Other available certifications include IEC and CCC.

The embedded features of all-in-one innovation extraordinarily streamline the installation, programming and testing of advanced functions with ready-to-go programming and simplified connections all in a compact, reliable system.

FASTER installation, EASIER commissioning and SAFER operation with the EPiC app across Tmax XT MCCBs and Emax 2 air circuit breakers.

- Thermal-magnetic and electronic versions
- Up to 1200 A with up to 200 kA of short circuit protection
- Up to 600 V AC/DC
- Fixed, plug-in or draw-out
- Accessories include: motor operators, auxiliary and signal contacts, shunt trip, under-voltage release, bell alarms and industrial communication protocol modules

SACE® Emax 2 circuit breakers
SACE Emax 2 sets a new circuit breaker benchmark for the needs of today and tomorrow, matching all the new grid requirements thanks to its distinctive features. It enables direct communication to the new energy management cloud-computing platform ABB Ability™ Energy and Asset Manager. Smart, plug-and-play architecture makes SACE Emax 2 all-in-one easy to use.

- E1.2 frame: Reaches 1200 A with breaking capacity up to 65 kA and short time withstand rating of 50 kA. It is the most compact power breaker, perfect for applications where space is limited.
- E2.2 frame: Offers a rating up to 2000 A, breaking capacity up to 100 kA and short time withstand rating of 85 kA.
- E4.2 frame: Ratings up to 3600 A with a breaking capacity of 100 kA and short time withstand rating of 100 kA.
- E6.2 frame: The top of the range model with ratings up to 6000 A, breaking capacity up to 100k A and short time withstand rating of 100 kA.

AF contactor
Featuring AF technology as standard, our contactors have helped to establish the industry benchmark. They come standard with electronic coils and built-in surge suppression. The integrated electronically controlled coil offers multiple benefits over conventional alternatives, and together with ABB’s wide product offering, an optimal configuration, every time.

- Optimize logistics and cut administration costs with fewer product variants to handle
- Access global support and use the same products in all parts of the world: the 100… 250 V AC/DC coil covers all standard network voltages
- Push-in spring terminals require only one push for extremely fast wiring — faster-than-ever installation, easier-than-ever wiring and reliable-as-ever connections
- A reduction of the coil’s energy consumption by 80% lets you save energy
- Secure your uptime by letting AF technology overbridge voltage drops and sags

Featured products

AFC contactors for AC control applications

3-pole and 4-pole contactor relays with screw or push-in connection contactors ranging from 9 A to 96 A with AC control. AFC is complementing a solid contactor platform, using the same accessories and principles, all in one.

- AFC is a compliment to the AF contactor, sharing the same accessories and principals, all in one platform
- Optimized operating time for AC control applications
- Only electromagnetic coil with high inrush capacity
- Common footprint with other AF range and uses the same accessories and protection devices

ABB Ability™ embedded automatic transfer switch (ATS)

The embedded ATS is a high-performance energy automation system, easy to install and program. It helps ensure service continuity and smooth power supply thanks to the monitoring, controlling and communication capabilities of SACE® Emax 2 and Tmax® XT circuit breakers.

- Maximize service continuity of any process
- Provide a power supply with high quality voltage if the main network is out of service
- Manage microgrid connection and disconnection from the main grid
- Reduce effects caused by network faults on parts of the installation (voltage reduction leads to loss of stability in rotating machines, a higher voltage drop, faults in equipment, etc.)
- Achieve a good compromise among reliability, simplicity and cost-effectiveness
- Provide maintenance staff and management system with a power source able to supply the installation, or a specific part of it, when the transformer is being serviced

TruONE™ automatic transfer switch (ATS)

The all-new TruONE is the world's first true purpose-built automatic transfer switch, engineered to incorporate switch and controller in one seamless unit. Performance tested beyond standard requirements, TruONE stands always ready to ensure the steady delivery of critical power.

- Auto configuration and programming through Ekip Connect software makes easy to install, commission and operate
- Simplified service made possible with fewer parts to replace in ≤1200 amp OT, DT ATS
- Proactive outage prevention with 24/7 temperature and contact health monitoring
- Wide range of field-upgradable options available, and its advanced connectivity is ready for the future
- TruONE represents a major shift in engineering and a critical breakthrough for critical power, replacing complexity with simplicity

Complementary products

Safety switches

ABB offers a wide variety of general-duty switches for residential and light commercial purposes, while the extensive line of heavy-duty switches is best suited for commercial and industrial applications. For the toughest industrial environments — such as cement foundries, steel mills and processing plants — dust-tight and stainless steel switches are available. We also offer a variety of double-throw switches for emergency generators. No matter what the application, we've got you covered with a rugged, reliable and easy-to-install Spec-Setter™ safety switch.

- General duty available in 30–600 amps, 240 V AC, 250 V DC maximum in both fusible and non-fusible units, and in NEMA Type 1 (indoor) and Type 3R (outdoor) enclosures
- Heavy duty available in 30–1200 amps, 600 V AC, 600 V DC maximum, fusible and non-fusible units, and in NEMA Type 1 (indoor), Type 3R (outdoor), Type 4/4X (water and dust-tight, corrosion-resistant) and Type 5/12 (drip- and dust-tight) enclosures
- Double-throw switches are available in 30–1200 amps, 600 V AC, 250 V DC maximum in fusible and non-fusible construction, and in NEMA Type 1 (indoor), Type 3R (outdoor) and NEMA Type 4X (stainless steel) enclosures
- Emergency power transfer switches are non-fusible and available in 100–200 amps for 120/240 V three-wire systems, in 200 amps for 240 V four-wire systems and in NEMA Type 3R (outdoor) enclosures

OS fusible disconnect switches

ABB's OS range includes manually operated fused switches from 20 to 1250 amps, available for all types of fuses: DIN, BS, NFC, CC, JJ and L types.

- Reliable in extreme conditions
- Easy to install
- Safety and protection
- Speed up your project

OT non-fusible disconnect switches

ABB has a wide portfolio of low-voltage non-fusible switches with ratings between 16 and 2000 A for AC. ABB disconnect switches are designed, built and tested for the best possible performance. They are designed to be virtually maintenance-free across their entire extended lifespan and offer reliable performance.

- UL 508 and UL 98 listed
- Compact size
- High performance
- Safe to use and easy to install

OT_C Change-over disconnects

Choose OT_C change-over disconnects for a smooth and safe transition from one power source to another. In case of power source failure, whether planned or unplanned, a rapid switch to back-up power is often crucial. Open transition manual change-over switches designed according to UL/CSA certification from 30 to 800 amperes (UL).

- Reliable in extreme conditions
- Energy efficiency
- Space saving
- Global availability

Complementary products

eOT rotary enclosed

The eOT series of enclosed manual motor controllers are rotary-operated, 3-pole, 600 V, HP-rated switches, housed in thermoplastic/polycarbonate, steel sheet or stainless steel sheet enclosures. They are suitable for wet and corrosive environments.

- Plastic-enclosed disconnect switches, 16 to 600 amps, UL/NEMA 3R/12 and 4/4X
- Steel sheet-enclosed disconnect switches, 16 to 600 amps, UL/NEMA 1 and 3R/12
- Stainless steel sheet-enclosed disconnect switches, 16 to 600 amps, UL/NEMA 4/4X

Interface relays and optocouplers

ABB interface relays and optocouplers provide reliable voltage conversion between process peripherals and higher-level control systems. Our relays help ensure reliable signal switching and provide electrical isolation for sensitive electronics such as PLCs in all kinds of machinery. The wide variety of pluggable interface relays with standard or logic sockets can be used for switching AC or DC loads.

- Coil voltages from 5 V DC to 230 V AC
- Up to 16 A contact ratings
- Up to 4 output contacts
- Pluggable function modules, such as RC elements, available
- Integrated test button for manual operation
- Gold-plated contacts available for lowest contact resistivity

Measuring and monitoring relays

ABB relays are designed to detect overloads, temperature, liquid and other potentially damaging fluctuations. Choose from a large range of products that provide reliable protection, cost savings and maximum availability for processes and equipment.

- Wide range of products from single- and three-phase monitors to grid-feeding monitoring relays
- Huge variety of applications covered
- Value devices (CM-E range)
- Advanced solutions (CM-S and CM-N range)
- Easy connect technology with push-in terminals

Time relays

Available in three different ranges to cover every application, CT range time relays are used to provide reliable timing functions worldwide. They have proven their excellent functionality in daily use under the toughest conditions.

- Single and multifunctional devices
- Wide supply voltage range
- Time range from 0.05 s to 300 h
- Push-in and screw terminals
- Solutions for rolling stock and harsh environments
- Modular DIN-rail component housings for building automation

Complementary products

Miniature circuit breakers (MCBs)
ABB, the inventor of miniature circuit breaker technology, offers the largest selection of current-limiting, compact, DIN-rail mounted MCBs for AC and DC applications. Thermal and magnetic trips are provided to cover both over-current and short-circuit faults.

- UL 489, UL 1077 and IEC
- 0.2 to 100 A, up to 600 V DC
- Accessories: bus bars, auxiliary and signal contacts, shunt trip, under-voltage release and lock out/tag out

Q-Line miniature circuit breakers
Q-Line circuit breakers are one-inch wide per pole, compact thermal-magnetic devices designed for OEM applications. All Q-Line circuit breakers feature quick-make / quick-break mechanisms, common trip bars and easy-to-spot trip indications to ensure safety and reliability. Q-Line breakers are available in 1-, 2- and 3-pole versions and can be ordered with auxiliary contact and shunt trip accessories.

- Available in 15 A to 100 A
- 10 and 22 kA versions
- 120/240 and 240 V AC ratings
- Single-, two- or three-pole units

TEY circuit breakers
TEY circuit breakers have dependable and effective thermal-magnetic trip units with time-current curves designed for easy coordination with upstream main devices. Multiple short circuit tiers (TEY 14 kA, TEYF 18 kA, TEYD 25 kA, TEYH 35 kA and TEYL 65 kA) allow the most cost-effective ratings for the particular application.

- Thermal-magnetic trip system
- Ambient compensating
- Short circuit ratings to 65 kA at 480/277 V AC and 100 kA at 240 V AC
- 15 A to 125 A in 1-inch per pole spacing
- 1-, 2- and 3-pole versions
- Multiple short circuit tiers
- Cost-effective protection
- Mounting base for unit-mount installations

SACE® Formula circuit breakers
The SACE Formula range consists of two frames, A1 and A2, which reach up to 100 A and 250 A, respectively. Both frames are available in a fixed configuration with front terminals.

- Fixed configuration
- Polarity: 1-pole, 2-pole and 3-pole
- Maximum breaking capacity of 25 kA at 240 V AC
- DIN-rail mounting
- Fixed thermal-magnetic trip unit (TMF) for protection of networks in alternating current
- Single depth of 2.36 inches
- Standard front terminals

Complementary products

Record Plus molded case circuit breakers — FB100 thermal-magnetic trip
Record Plus molded case circuit breakers offer a new standard of performance: Available up to 600 A with interruption capacities up to 200 kAIC, global approvals, compact size, dual AC/DC ratings, common internal accessories and a broad range of improved external accessories.

- FB100 molded case circuit breakers offer 1⅜" pole spacing for easy integration into equipment
- High interrupt ratings for the expanding available short circuit currents associated with networked transformers
- Thermal-magnetic trip for a broad range of applications
- Adjustable dial to set amp rating on PremEon™ S trip unit
- Large range of rating plug sizes for SMR2 trip units to provide design flexibility
- Compact size for easy integration into switchboard and power panels
- Consistent white finish across the range
- Complete set of field-installable accessories
- Tested to exceed UL requirements of 8000 operations
- Meets UL/cUL 489 and IEC 947-2 and is CE marked — a truly global breaker

E150 thermal-magnetic molded case circuit breakers
Applicable in switchboards, motor control centers and lighting and ipower panelboards, ABB molded case circuit breakers are being used to provide reliable circuit protection. Molded case circuit breakers in individual enclosures are also being used in numerous applications. Downtime is reduced and fuse replacement is eliminated with circuit breakers. In case of overload or short circuit, the breaker trips, opening the circuit and protecting the conductors. When normal conditions are restored, the breaker can be closed ("ON") again

- Molded case
- Thermal-magnetic trip
- Proven reliability
- Provide cost-effective solutions
- Multiple types to fit in your application

SACE® Tmax® T8
The Tmax T8 has undergone a severe sequence of testing in accordance with UL 489 to obtain UL listing and marking. Certification in accordance with UL 489 has been extended to the most common accessories as well.

- Up to 3000 amps, 600 V AC, 125 kAIC at 480 V AC
- Equipped with electronic trip units guaranteeing extremely high performances able to satisfy all installation requirements

Complementary products

ReliaGear® interiors for neXT power panels and switchboards
The ReliaGear neXT power panelboard can be equipped with circuit breakers from 15 A to 1200 A with options of 100% rated breakers up to 1200 A. The maximum short circuit rating is equal to 200 kAIC at 480 V or 100 kAIC at 600 V, or the lowest current interruption rating of any device installed. ABB's ReliaGear® group-mounted switchboard distribution panels were designed with the flexibility to move and/or add Tmax® XT, TEY and Record Plus molded case circuit breakers in the field with ease. Assemblers have access to these circuit breaker assemblies and to double- or single-sided switchboard interiors with tiered connections

Ekip UP+
Ekip UP+ is a multifunction relay that allows you to monitor, protect and control your electrical distribution assets. Its plug-and-play design and flexibility make it easy to realize the value of the ever-growing flow of device-level data, and its modular design allows users to configure a system that is tailored to their specific requirements.

- Intuitive user interface
- All-in-one platform integrates advanced functionalities into switchgear
- DIN-rail and door-mounted options in the same unit
- Fully redundant breaker protection schemes
- Conforms to UL 508, CSA C22.2 No. 14-13 "Standard for Industrial Control Equipment" and IEC 60255 "Measuring relays and protection equipment"
- Optional modules for communication gateway, synchrocheck and embedded or external I/O modules
- Compatible with all switching devices from all manufacturers
- Makes system data available to all users and other applications via cloud-connected ABB Ability™ platform

Load centers
ABB load centers offers a wide range of products— main breaker, main lug, convertible, single- or three-phase, indoor or outdoor — to meet your application needs.

- PowerMark™ PRO load center is an essential electrical component to receive and distribute power from the utility source throughout residential applications
- Solar-ready PowerMark Gold™ meter socket load centers are UL listed, NEC compliant, and meet EUSERC standards, which make them the perfect complement for residential applications that use solar power
- PowerMark Gold generator panel connects the residential generator with the electrical system of the home
- With PowerMark Gold generator interlock kits, there's no need for a separate generator panel — these kits contain everything needed to convert an existing load center or meter socket load center to a generator panel

Complementary products

DP contactor

Definite purpose (DP) contactors provide high performance with flexibility and reliability and are designed to match numerous applications.

- Wide current range (from 20 A to 75 A, up to 600 V AC)
- Flexible sizes: compact 1- and 2-pole contactors as well as full-size 2-, 3- and 4-pole devices
- Various contact configuration from one pole up to four poles
- Industry-standard mounting plate provides easily accessible mounting holes
- UL listed, CSA certified
- Coil is class B (130 °C) insulation system with a wide range of voltages and 50/60 Hz ratings
- Double E magnet assembly provides optimal performance with reduced power consumption
- Snap-in auxiliary switch with one SPDT or two SPDT contacts available as an option

DIN-rail surge protective devices (SPDs)

ABB offers the most comprehensive portfolio of surge protective devices (SPDs) that can be externally or internally mounted. They help reduce costly downtime while protecting sensitive electronic equipment against the damaging effects of transients caused by lightning, utility load switching, internal load switching and more.

- UL 1449 listed
- Options for voltages up to 600 V AC and 1500 V DC
- OVR DIN rail SPD for equipment protection; 15 kA and 40 kA
- Replaceable MOV cartridges and modules

22 mm pilot devices

Trust is everything and in industrial environments, it is essential to have human-machine interfaces you can count on. Whenever you start or stop a process, the response must be assured. That’s why ABB pilot devices are designed and engineered to deliver reliability.

- Increase uptime with products designed and engineered to deliver total reliability
- Modular plastic and metal ranges include flexible and adjustable products to meet your exact needs
- Save up to 30% installation time with unique, tool-free, snap-on components in the modular range
- Reduce your installation size with the compact range

Complementary products

Power supplies

ABB's CP range of power supplies offers the latest technology in a more compact package. Modern power supply units are a vital component in most areas of energy management and battery storage systems. The CP range of primary switch-mode power supplies provides compact construction, easy DIN-rail mounting, high efficiency, reliability and safety. ABB's range of complementary accessories, such as buffering units and redundancy modules, provides an additional level of reliability in critical applications.

- Rated output voltages 5, 12, 24 or 48 V DC
- Rated output currents 5 A, 10 A, 20 A
- Rated output powers 120 W, 240 W, 480 W
- Wide range of AC or DC supply voltages
- High efficiency, up to 94%
- Open-circuit, overload and short-circuit proof input fuse
- Coated (PCBA) and ATEX certification available for hazardous locations

Control power and machine tool transformer

Machine tool transformers are used to provide voltage to control devices in applications where voltage regulation and minimum space are critical. Welded cores provide the highest quality electrical performance and quiet operation. Control power transformers are an economical alternative to high inrush/machine tool transformers.

- Finger-safe terminals offer added protection and safety
- Pressure-plate terminals ensure secure connections
- Wide variety of fusing options
- Type IP transformers are seismically qualified

CONTACT US

Do you have a similar project and are you searching for the right Application configuration? Contact us and talk to our experts!

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