

TECHNICAL BROCHURE

# ReliaGear® LV Switchgear

Low voltage, metal-enclosed,  
drawout switchgear



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**ABB's ReliaGear LV Switchgear provides a turn-key solution for customers requiring ANSI C37.20.1 for distributing power in a critical application. Utilizing the new UL 1066 Emax 2 Circuit Breaker with advanced power distribution technology, ReliaGear LV Switchgear from ABB provides a safe, compact and flexible design that is cost effective in today's market for distribution switchgear.**

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# ReliaGear LV Switchgear

## Low voltage, metal-enclosed, drawout switchgear

ABB's ReliaGear LV Switchgear is industrial-duty equipment built and tested to ANSI/UL/CSA standards and designed to use 100% rated Emax 2 circuit breakers. It represents a further extension of the ABB vision to deliver products that provide customers with advanced solutions. ReliaGear LV Switchgear delivers reliable performance even under the mechanical, electrical and thermal stress which is characteristic of manufacturing applications.



### Smarter

Complete integration into smart grids, buildings and industrial plants is now possible:

- Synchro check function integrated into the trip unit
- Integrated automatic transfer schemes
- Simultaneous or redundant communications available
- Seven industrial communications protocols available
- Power controller function available
- Network Analyzer function available
- Generator Protection functions available

### Smaller

One of the smallest footprints in the industry:

- Main-Tie-Main in one section
- Up to 2000A in 18" wide section
- Up to 3200A in 22" wide section
- Up to 5000A in 38" wide section
- 72" or 84" deep sections

### Safer, more reliable

A set of standard features for personnel safety and reliable operation:

- Safety shutters
- Insulating barriers to isolate the bus compartment from the cable compartment
- No ventilation required in front of the equipment
- Optional arc flash detection and other active arc mitigation solutions
- Optional remote operation of circuit breakers with Ekip Link system



# Product overview

Each section of ReliaGear LV Switchgear has been designed to connect as a complete line-up that minimizes floor space while allowing maximum density within each section. Breaker accessories and options are field installable from the front of the breaker.

## 1 No front ventilation

ReliaGear requires no ventilation openings in front of the equipment. Doors are manufactured in 12 gauge steel. Built-in base channels to allow for ventilation from the bottom of the enclosure.

## 2 Safety shutters

Independent automatic shutters for upper and lower terminals to isolate the connections when the breaker is withdrawn or in test position. Shutter lock for up to three 4mm/0.15"–8mm/0.31" padlocks.

## 3 Control wireways

Standard built-in top and bottom horizontal wireways for control wires with no additional height.

## 4 Instrument compartment

Standard white paint mounting pans are provided in each instrument compartment.

## 5 Trip units

Field interchangeable trip units divided in two families: Ekip for distribution protection and Ekip G for generator protection. Rogowski coils eliminate the need to replace current transformers when adjusting the circuit breaker current rating.



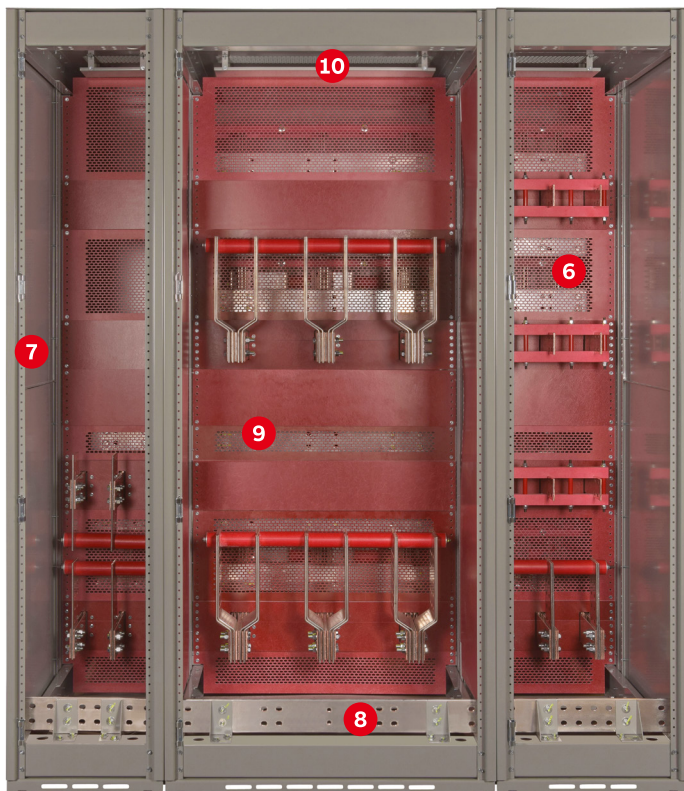
## Communication modules

Several communications modules have the ability for simultaneous or redundant protocols:

- Bluetooth wireless communication
- IEC 61850
- Modbus TCP
- Modbus RS-485
- Profibus
- Profinet
- DeviceNet
- EtherNet/IP



With Emax 2 circuit breaker, ABB has created the perfect blend of control, connectivity, safety and performance that not only meets today's needs of efficiency, but anticipates the needs of tomorrow. ReliaGear LV Switchgear with Emax 2 circuit breaker—The reliable switchgear for power management.



**6 Internal barriers**

Standard insulating barriers to isolate the bus compartment from the cable compartment. Optional barriers are also available between sections in the bus and cable compartments.

**7 Rear covers or hinged doors**

Standard rear covers or optional left/right hinged rear doors for access to the cable compartment.

**8 Ground bus**

Silver or tin plated 1/4"x4" ground bus mounted at bottom of the enclosure as standard with factory or field changeable option for top mounting.

**9 Optional insulated bus**

Standard silver plated bus or optional tin plated bus; epoxy coated insulated bus available.

**10 Drip pans**

Drip pans under top ventilation openings to prevent foreign objects from falling into the equipment.

**Power controller function**

Ekip Power Controller function available in Ekip Touch trip units to monitor loads and generators, allowing the circuit breaker to manage power consumption.

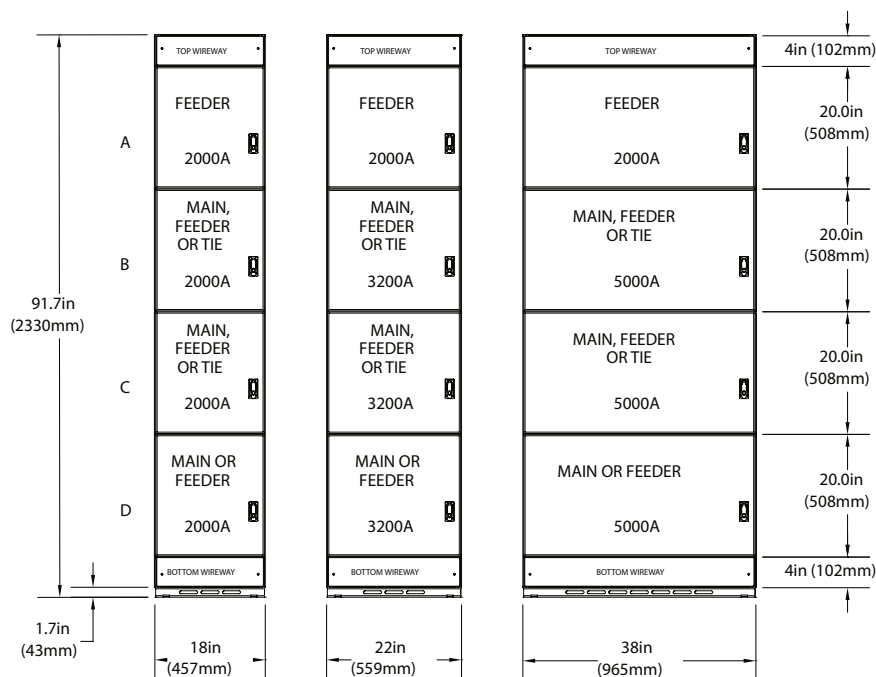
**Other available options**

- Zone Selective Interlocking
- Modified Differential Ground Fault
- High resistance grounding systems
- Bus duct connections
- Close-coupled connections to dry-type transformers



# Technical data

## Breaker arrangements



Ratings		
Switchgear standards	ANSI C37.20.1	Metal-enclosed low-voltage power circuit breaker switchgear
	ANSI C37.51	Metal-enclosed low-voltage AC power circuit breaker switchgear assemblies—Conformance test procedures
Circuit breaker standards	ANSI C37.13	Low-voltage AC power circuit breakers used in enclosures
	ANSI C37.17	Trip systems for low-voltage power circuit breaker switchgear
Certifications and markings	UL 1558	Standard for metal-enclosed low-voltage power circuit breaker switchgear
	UL 1066	Standard for low-voltage AC and DC power circuit breakers used in enclosures
	CSA 22.2, No. 31	Switchgear assemblies
Switchgear ratings	Maximum rated voltage	635V AC
	Rated operating voltage	240V AC, 480V AC, 600V AC—3-phase 3-wire, 3-phase, 4-wire
	Rated frequency	50/60Hz
	Rated current	5000A maximum horizontal/vertical bus
	Short-circuit withstand (4 cycles)	100kA
	Short-time withstand (60 cycles)	85kA, 100kA
Circuit breaker ratings	Neutral	5000A maximum
	E1.2	Up to 1200A, 65kA @480V, 42kA @600V
	E2.2	Up to 2000A, 100kA @480V, 85kA @600V
	E4.2	Up to 3200A, 100kA @480V, 100kA @600V
	E6.2	Up to 5000A, 100kA @480V, 100kA @600V
Environment	Enclosure rating	NEMA 1
	Storage temperature	+32 to +104 °F (0 to +40 °C)
	Operating (ambient) temperature	-13 to +104 °F (-25 to +40 °C)
	Altitude	6600 ft (2000 m)
Other documentation	1SXU900193C0201	ReliaGear LV Switchgear technical catalog
	1SXU900190G0201	ReliaGear LV Switchgear installation and maintenance guide
	Doc 26 23 00	ReliaGear LV Switchgear guide form specification
	1SDC200039D0202	Emax 2 UL technical catalog document
	1SDH000999R0002	Emax 2 E1.2 instructions
	1SDH001000R0002	Emax 2 E2.2-E4.2-E6.2 instructions





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