

MEDIUM VOLTAGE SWITCHGEAR

Advance® 27

ANSI 27 kV switchgear



Advance® 27 is ABB's ANSI platform for 27 kV rated metal-clad switchgear featuring a narrow footprint and designed and tested per IEEE C37.20.2. Featuring galvanized steel construction, hem bending techniques, and Delrin arc-quenching auxiliary unit contacts, Advance 27 is designed with safety, reliability, and durability in mind. Advance 27 is seismic-certified to IBC Region D.

Product highlights

- Fully compliant to IEEE C37.20.2 for metal-clad switchgear construction
- Closed door draw-out PT and draw-out fuse racking
- Standard 36-inch wide, 92-inch deep, 95-inch tall frame
- SmartRack™ remote racking system for breakers, PT and CPTs
- UL certified
- Automatic secondary disconnects
- Large Lexan viewing window for viewing breaker status and position
- Modular design and construction
- Available two-high construction
- Available top and bottom cable or bus duct entry
- Delrin arc-quenching auxiliary unit contacts
- ISO 9001 certified manufacturing facilities

Available configuration/competitive footprint

Advance 27 features the most competitive footprint in the market with available two-high configurations. Each switchgear frame measures 36 inches wide, 92 inches deep and 95 inches tall regardless of one or two-high. Each frame includes a separate isolated low voltage compartment that separates relays, meters and other instruments using grounded metal barriers, protecting maintenance personnel from exposure to high voltage.

Delrin arc-quenching auxiliary unit contacts

For draw-out PT and fuse contacts, ABB uses Delrin arc-quenching contacts. A sleeve with a round conductor probe is inserted into a receptacle with recessed contacts. Due to the unique properties of Delrin, which include self-lubrication, arcs created during load break conditions are extinguished by a gas emitted by the Delrin material as it heats. The recessed contact design also eliminates the need for safety shutters as access to live bus is very difficult.

Galvanized steel construction

Advance 27 uses galvanized steel construction for increased protection from rust, scratches and corrosion. Galvanized steel is used inside low voltage compartments for its increased illumination properties to provide for better instrument viewing.

Hem bending

Hem bends, the process of folding a single sheet of steel over upon itself, are used throughout the construction of Advance 27 for increased rigidity. This construction technique also protects maintenance personnel and any LV wiring inside the switchgear as it eliminates sharp edges and burs in the metal work.

Advance 27 accessories

- Racking crank
- Test cabinet
- Test jumper
- SmartRack™ electric racking device
- Lift truck
- Manually operated ground & test
- Racking release lever
- AMVAC™ manual open handle

Advance 27 options

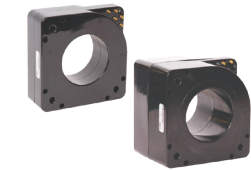
- IR viewing ports
 - SwitchGearMD™ 24x7 monitoring
 - Ground CTs
 - Lightning arresters
 - Cable supports
 - Ground studs
 - REA arc detection system
 - UFES active arc mitigation system
 - Digital switchgear with current and voltage sensors and IEC-61850-based communications
- Reference Descriptive Bulletin 1VAL108401-DB and 1VAL107001-DB.

Advance 27 ratings*

Characteristic	Unit	Rated maximum voltage level**
		27 kV
Rated nominal voltages***	kV	16.9, 24.5, 26.2
Main bus continuous current	A	1200, 2000
Rated Short-time current (rms)(2sec)	kA	25
Rated momentary withstand current (peak withstand current)****	kA	65
Rated frequency	Hz	60
Low frequency withstand (rms)	kV	60
Lightning impulse withstand level (BiL, crest)	kV	125

* Ratings given are for usual service conditions within temperature and altitude limitations as defined by IEEE C37.20.2 metal-clad switchgear standards.
** Breakers have been UL certified to 28.5 kV rated maximum voltage level
*** Other nominal voltages available
**** Rated momentary withstand current is equal to the close and latch ratings of the breaker

01 Current transformers



01

02 AMVAC breaker



02

03 Voltage transformers



03

04 Relion 615 series



04

05 Relion 620 series



05

AMVAC breaker

The AMVAC breaker consists of unique technologies that decrease maintenance requirements while increasing reliability and personnel safety. The actuator in the AMVAC breaker requires no maintenance as it is only one moving part that requires no lubrication or adjustment. Magnetic actuation technology eliminates the cause of failure of traditional close and trip coils as it delivers a current limited pulse, as opposed to holding the current on the coils. Because of this unique design, the AMVAC also draws less than 100W during charging and less than 10W at rest. The AMVAC breaker comes standard with a 5-year warranty.

Instrument transformers

Current transformers

Advance 27 is designed and tested for use with SAB-1/1D current transformers for 1200 and 2000 A applications.

Voltage transformers

VIZ-12 and VIZ-12G indoor voltage transformers are designed for service in metal-clad switchgear and are used for metering, relaying, or control power. Both units are available in single, double, and tapped secondary designs with two accuracy and thermal rating options.

Current and voltage sensors

Advance 27 is designed and tested for use with current and voltage sensors. These sensors are used in digital switchgear applications. The KECA 80 C184 current sensor is designed to fit over all breaker bushings. The KEVA 17.5 B21 and KEVA 24 B21 voltage sensors are installed on a mounting plate assembly which is then located in the bus or cable compartment.

Distribution automation Relion® relays

The Relion® family of protection and control relays for distribution applications provides the performance, safety, and ease-of-use that switchgear specifiers and users demand. The Relion 615, 620 and 640 series offer complete protection and control for feeders, motors, and transformers in switchgear applications and are characterized by their flexibility and performance in today's and future distribution schemes.