Descriptive bulletin

Medium voltage load interrupter switchgear

Reliable, low maintenance and economical for distribution applications

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General overview

Reliable, low maintenance and economical Load Interrupter Switchgear assemblies for medium voltage distribution applications

The ABB load interrupter switchgear is reliable, low maintenance and economical for medium voltage distribution applications such as transformers and load switching feeders.

Cost effective in utility, industrial and commercial applications where switching is infrequent, and the absence of quick reclosing and protective relaying functions eliminate the need for more expensive metal-clad switchgear with draw-out circuit breakers.

All major components of ABB load interrupter switchgear including switches, operating mechanisms, and fuses are integrated into a single assembly with coordinated ratings matched to specific system requirements.

Modular design supports standardized cubicle construction including free-standing single frames. This approach provides simple, economical solutions for immediate application requirements.

36” W x 60” D x 90” H

Application

- 5 and 15 kV
- 600 or 1200 ampere continuous
- 40 or 61 kA short circuit ratings, see rating table for complete information
- Non-fused or fused with current limiting or expulsion fuses
- Manually or motor operated
- Indoor and outdoor enclosures
- Single frame cable connected

Design features

- Inspection reinforced glass window allows easy observation of switch position and general condition
- Split front door with mechanical interlock to ensure switch position
- Provisions for user padlock
- Switch position indicator, open-closed
- Removable phase barriers for easy switch maintenance
- Horizontal isolation barrier between switch and fuse compartments
- Rear compartment space for cable termination
- Epoxy insulators
- Additional options include: lightning arrestors, voltage indicators, shunt trips, auxiliary contacts

Interrupter switch

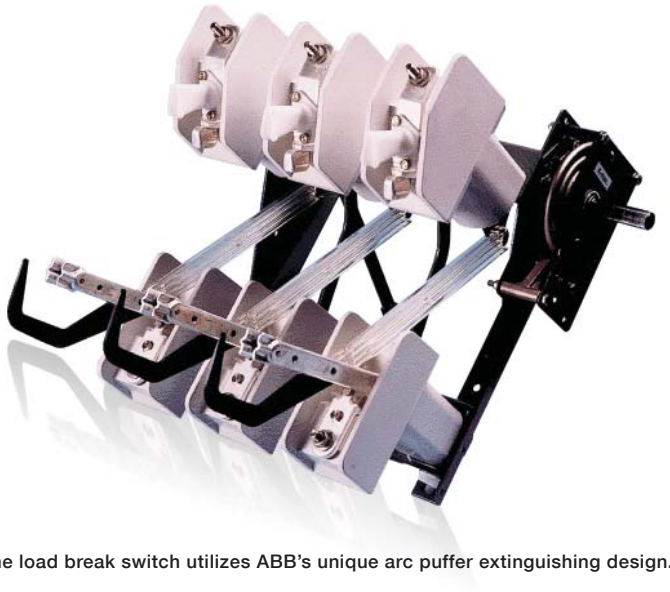
ABB VersaRupter or NAL switches are offered. The ABB load break switch is compact, economical, flexible and easy to use. The load break switch utilizes ABB's unique arc puffer extinguishing design.

- ABB load break switches are available with a choice of two standard mechanisms
- Three-phase gang operated quick-make, quick-break with Snap Action mechanism type K
- Three-phase gang operated quick-make, quick-break with Stored Energy mechanism type A

Switch live parts include heavy one-piece cast copper alloy contacts and terminals, which are silver-plated to conduct heat away from contact surfaces. Main blades are round edge copper bars, and compression springs on the blade members maintain high pressure contact with jaw-type stationary contact casting. With main blades open, interrupting blades are fully visible for inspection and maintenance.

The switch blades are operated through a stored energy spring operating mechanism, which provides uniform contact movement and mechanical power for positive action and fault closing, independent of switchgear operator reaction time.

Manual opening and closing are provided through a dependable, operating handle system that connects the operating mechanism to the front of the switch enclosure for convenient and safe actuation by the operator.



The load break switch utilizes ABB's unique arc puffer extinguishing design.

Construction

The ABB Load Interrupter Switchgear meets or exceeds the following industry standards: ANSI/IEEE C37.20; ANSI C37.57 & C37.58.

Four different metal enclosed enclosures are available:
- NEMA 1, indoor
- NEMA 1A, indoor with front door gasketing
- NEMA 2, drip proof
- NEMA 3R, outdoor

Front accessible only, or front and rear accessibility.

Each independent frame of switchgear is made of bolted sheet steel gauge according to ANSI requirements. Each frame is adequately braced, vented and constructed to properly and safely function under normal operating or short circuit conditions.

The frame and panel surfaces are phosphate treated and painted with an oven-baked corrosion resistant epoxy enamel ANSI 61 light grey finish.

Fuses

Fuses shall be coordinated to meet the short circuit rating and continuous current ratings as specified in project data sheets or single line diagrams. Fuses are readily accessible and easily removed, and shall be retained in position by high pressure fuse clips to prevent slippage or displacement during operation.

Current limiting fuses, complete with indicator, facilitate identification of blown fuses.

All switchgear assemblies supplied with fuses come with a spare fuse pouch.

Provision only for type F2-E Kirk Keys. All L.O. locks mount on top of handle. All L.C. and L.O.C. locks mount on bottom of handle.

Ratings

Voltage				Current				
Nominal Rating System (kV)	Rated Maximum Voltage (kV)	Rated Impulse BIL (kV)	Low Freq. Withstand (kV)	Rated Continuous Current (A)	Load Interrupting Current (A)	Momentary Current RMO Asym. (kA)	Fault Closing Current RMS Asym. (kA)	2-sec Short Time Current Asym. (kA)
2.4-4.16	4.76	60	19	600	600	40	40	25
				600	600	61	61	40
				1200	1200	40	40	25
				1200	1200	61	61	40
6.9-13.8	15.0	95	36	600	600	40	40	25
				600	600	61	61	40
				1200	1200	40	40	25
				1200	1200	61	61	40

Number of operations without maintenance

Voltage				Current		Life Expectancy*	
Nominal Rating System (kV)	Rated Maximum Voltage (kV)	Rated Impulse BIL (kV)	Low Freq. Withstand (kV)	Rated Continuous Current (A)	Load Interrupting Current (A)	No-Load Mechanical Endurance	Load Current Endurance
2.4-4.16	4.76	60	19	600	600	500	50
				600	600	500	30
				1200	1200	500	50
				1200	1200	500	30
6.9-13.8	15.0	95	36	600	600	500	50
				600	600	500	30
				1200	1200	500	50
				1200	1200	500	30

*Operations data provided as guidance for inspection and maintenance.
A visual inspection is recommended after the Load Break Switch opens on a fault.

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