BUYLOG SECTION 16

Switchgear - low voltage
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Low-voltage switchgear

Introduction

ABB low-voltage switchgear is heavy-duty equipment built to ANSI Standards. ABB switchgear is designed to have more margin within its ratings and to provide maximum continuity of service for those applications subject to severe duty such as repetitive switching encountered with motor starting, power factor correction, demand control, and load shedding, etc. A major factor contributing to this extended continuity of service is the availability of renewal parts complete with detailed maintenance instructions and original equipment documentation. From a coordination standpoint, Air circuit breakers can provide full selectivity with each other and with other protective devices. The bus is thermally rated; i.e. based upon temperature rise, as opposed to switchboards where the bus may be sized on a current density basis.

Switchgear also houses instrumentation and other auxiliary circuit protective devices. It is available in single or multiple source configurations and applied as a power distribution unit or as part of a unit substation in indoor or outdoor construction.

AKD-20 Arc Resistant low-voltage switchgear continues the AKD tradition while delivering system reliability features, enhanced arc flash protection and arc resistance gear construction. It fits into a smaller area for the most common configurations.

Key switchgear features

• Full tin-plated copper bus
• Optional insulated/isolated bus bar system—protects against accidental contact by people or foreign objects and inhibits the spread of any arcing faults.
• Breaker compartment doors without ventilating slots
• True closed-door draw-out—added protection for operator
• Instrument panel for breaker control circuitry—permits several maintenance functions without subjecting operators to energized primary circuits of an open breaker compartment door
• Optional shutters over primary disconnects—provides personnel protection from energized disconnects
• Modular construction—for greater installation flexibility
Low-voltage switchgear

Introduction

CSI specifications
- Low voltage metal enclosed
  16400 low voltage switchgear
  26 23 00 low voltage switchgear
Low-voltage switchgear
AKD-20 low-voltage switchgear

For pricing and application assistance, contact your local ABB sales office.

ABB type AKD-20 low-voltage switchgear consists of EntelliGuard G power circuit breakers and state-of-the art EntelliGuard TU digital trip unit that together provide enhanced protection, endurance and safety. The key features of the AKD-20 are the tried and true construction of the AKD family heritage, common transitions to older versions of AKD equipment, true closed door racking with remote racking devices, non-vented circuit breaker panels, insulated and isolated bus construction and it integrates our new state-of-the-art EntelliGuard breaker-trip unit system. It also features an optimized footprint so that it now fits into a smaller area for the most common configurations. The product is fully rated to UL 1066 and 1558; CSA C22.2; NEMA SG-3 and SG-5; ANSI C37.13, ANSI C37.16, C37.17, C37.20.1 and C37.50; Seismic ratings to IBC-2003, UBC-2015 and IEEE-693-1997.

Main features/ratings
- Up to 8000A horizontal bus and 6000A breakers
- 150kAIC @ 480V, 100kAIC @ 600V
- EntelliGuard G breakers
- Low voltage power circuit breakers
  - Time proven—for trouble free performance
  - Five cycle stored energy closing
  - 6 frame sizes 400-6000 amps—for application flexibility
  - Interrupting ratings: 50kA-150kA
  - Fully maintainable—to assure operational readiness
  - The EntelliGuard trip units may be supplied with either Modbus or Profibus communications protocols. The breaker-trip unit system delivers superior circuit protection without compromising selectivity or arc flash protection.
- NEMA 1, 3R (walk-in and non walk-in)

Optional features
- Rear extensions to 60, 67 and 74 inch deep frames
- Infrared scanning window in rear doors
- Lockable T-handles on circuit breaker cubicle door
- Lockable T-handles on rear doors
- Overhead breaker lifting hoist
- Insulated/isolated bus
- Section barriers and shutters
Low-voltage switchgear
AKD-20 Arc Resistant low-voltage switchgear

For pricing and application assistance, contact your local ABB sales office.

AKD-20 Arc Resistant (AR) switchgear solutions are for applications where an extra margin of safety is essential. They meet the IEEE C37.20.7 Type 2B AR standard which states that the equipment will provide arc resistance protection on the front, rear, and sides while opening designated low-voltage compartments.

Redirect arc flash explosions
AKD-20 AR is designed to contain and redirect the arc flash energy and exhaust gases up through vent flaps at the top of the enclosure and away from the system through a plenum. In the case of an arc flash event, pressure activated flaps slam shut to seal ventilation areas in the rear cable compartment.

Main features/ratings
• Up to 5000A horizontal bus and 5000A breakers
• 65kA @ 480V and 600V
• NEMA 1 only
• EntelliGuard G breakers
• UL-1558 equipment and UL-1066 breakers
• IEEE C37.20.7 Type 2B (Arc Res)
• UBC-2015 Seismically rated

Optional features
• Rear extensions to 60, 67, 74 inch deep frame
• Infrared scanning window in rear doors
• Lockable T-handles on circuit breaker cubicle door
• Lockable T-handles on rear doors
• Overhead breaker lifting hoist
• Insulated/isolated bus
• Section barriers and shutters
EntelliGuard G
Low voltage power circuit breakers

- Time proven—for trouble free performance
- Five cycle stored energy closing
- 6 frame sizes 800-5000 amps—for application flexibility
- Interrupting ratings: 30kA-200kA
- Fully maintainable—to assure operational readiness
- MicroVersaTrip™ solid-state protection trip unit with LCD—increased flexibility and accuracy with true rms sensing for standard (s) and optional (o) time-current adjustments:
  - Adjustable current setting (s)
  - Adjustable long-time delay (s)
  - Phase selectable digital rms ammeter (s)
  - Adjustable instantaneous pick-up (s)
  - Adjustable ground fault pick-up and adjustable ground fault delay with selectable I²t curve (o)
  - Adjustable short-time pick-up and adjustable short-time delay with selectable I²t curve (o)
  - Zone selective interlocking—for improved selectivity on both short-time and ground-fault or ground-fault only (o)
  - Defeatable GF (o)
  - Switchable INST/ST and GF (o)
- Integrally fused breakers—for high fault-current applications
- Rating plugs for added flexibility
- Power+ trip unit with true rms sensing and rotary selection of pick-up and delay settings:
  - Adjustable long-time pick-up and delay (s)
  - Adjustable instantaneous pick-up (s)
  - Adjustable short-time pick-up and delay with I²t in or out (o)
  - Adjustable ground fault pick-up and delay with I²t in or out (o)
  - Defeatable ground fault (o)
  - Target module with LED trip indicators (o)
  - Ground fault function contained within the rating plug

Instructions/Maintenance

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