Disconnect switches
Non-fusible
Fusible
ABB is committed to offering high quality and innovative low voltage products. ABB’s disconnect switch lines are no exception.

Modern materials and manufacturing technology coupled with advanced features allow ABB’s disconnect switches to offer superior customer benefits – exceptional performance, easy installation, and ultimate protection – like no other. Through a broad range of product offerings, ABB sets the standard for disconnect switches industry-wide.

The disconnect switch is largely used in low voltage switchgear for distribution of power, for starting and stopping motors and for isolating loads during maintenance. ABB’s range of disconnect switches are suitable for diverse applications, in motor control centers, in switchboards and as main switches in various equipment and machinery.

The disconnect product line ranges from standard 3-pole configurations to specialty combination switches for transfer, bypass and reversing. The comprehensive ABB range of Low Voltage Disconnect Switch products is the perfect choice for all switching applications.

Disconnect switches are integral to ABB’s line of circuit protection devices to guard against equipment damage in multiple applications. ABB prides itself in being the Safety Pioneer for the low voltage electrical product industry as our products offer maximum protection of the electrical installation and the user. Designed to meet customer requirements for safety, ABB’s disconnect switch lines feature:

**Fingerproof construction – IP 20**
Dead-front construction plus terminal shrouds reduce the risk of touching live parts.

**Padlockable mechanisms & handles**
Handles can be padlocked in the OFF position with up to three padlocks. Additionally, the switch mechanism can be directly padlocked in the OFF position when the door is open.

**Welded contact protection**
Positive opening operation safeguards users in case of welded contacts due to an extreme overcurrent situation. The ABB switch design cannot reach the OFF position unless the contacts are truly open. This safeguards the user by alerting them of the problem, maintains door interlock safety and does not allow a padlock to be inserted.

**Track resistant material**
Excellent track resistant material reduces the risk of flashover between phases even in the most severe circumstances.

**Door Interlock**
The handle and shaft provide door interlock so that the door cannot be opened when the switch is in the ON position.

**Clear position indication**
All ABB disconnect switches and handles are clearly marked with ON and OFF designations, which allow for quick position identification whether the door is open or closed.
ABB differentiates itself in the disconnect switch market by offering UL98, UL508 and IEC rated switches. ABB’s UL98 listed disconnect range includes 30 to 2,000 A non-fusible and 30 to 800 A fusible switches. These may be used in a variety of applications — on service equipment, motor control centers, or as motor branch circuits. The UL508 listed offering has clearance distances less than those required by UL98. ABB’s line of UL508 listed non-fusible disconnects ranges from 16 to 80 A and can be used as motor controllers.

IEC rated switches are available from 16 - 3150 A (non-fusible) and 30 - 1200 A (fusible).

Use of UL98 & UL508 Disconnects according to NEC Article 430

Article 430 of the US National Electric Code includes two methods for properly sizing disconnect switches.

**Single motor application**
A properly sized disconnect switch for a single motor will:

- Have an ampere rating greater than or equal to 115 percent of the rated motor full load current; or,
- Have a HP rating greater than or equal to the rated motor HP (at applied voltage) if the disconnect switch under consideration is HP rated.

**Combination load application**
A properly sized disconnect switch for a combination load will be selected by adding all the simultaneous individual loads in the circuit under consideration.

Using motor nameplate information, load information, and tables from section 430 of the NEC, determine one equivalent full load current and one equivalent locked rotor current. The equivalent locked rotor current can be used with table 430-151 to determine an equivalent HP rating. Select a disconnect switch:

- Greater than or equal to 115 percent of the equivalent full load current; or,
- Greater than or equal to the equivalent HP rating.
ABB’s non-fusible disconnect switches are designed to offer maximum versatility to meet specific customer requirements. All sizes are compact, heavy duty, 600 V disconnect switches. The basic construction provides flexibility, safety, and high performance in an extremely compact size.

The non-fusible switch line includes 16 amperage sizes ranging from 16 A to 3150 A, and includes both UL 98, UL 508 and IEC switches.

ABB non-fusible disconnects are also customizable in that they are available in a number of special premium configurations.

- Side operated
- Maintenance bypass
- Flange operated
- Double throw
- Multiple poles, (2, 3, 4 & 6)
- Motor operators
Flexible installation & mounting options

Mount the switch based on your specific panel requirements. Simply install the handle on the door, in line with the switch. The switch and handle are mechanically linked through an easy to install shaft, allowing fast and flexible installation into various panel depths and configurations.

- Door mounting 16 A - 100 A
- DIN rail mounting 16 A - 100 A
- Base mount with screws 16 A - 3150 A
All ABB UL98 listed fusible switches are designed to meet customer requirements in terms of high interrupting capacity (all rated 200 kA) and long electrical life while occupying little more panel space than the appropriate fuses. The basic construction provides flexibility and high performance in an extremely compact size. The fusible switch line’s unique compact dimensions allow panel size reduction in new applications and easily retrofit into existing applications where space is limited.

### Fusible disconnect switches

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### Technical ratings – UL_CSA

- **Max operating voltage**: V 600 600 600 600 600 600 600 600 600 600
- **Max horsepower rating**
  - Three phase
    - 240 V HP: 7.5 7.5 15 30 60 125 200 250 —
    - 480 V HP: 15 15 30 60 125 250 400 500 —
    - 600 V HP: 20 20 50 75 150 350 500 600 —
  - Single phase
    - 120 V HP: 2 2 — — — — — —
    - 240 V HP: 3 3 — — — — — —
- **UL fuse class**: CC J J J J J J J L L

### Technical ratings – IEC

- **Rated insulation and operational voltage**: AC20 and DC20 V 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000
- **Rated thermal current, Ith**
  - AC 20/DC 20 open A 32 32 63 160 200 400 630 800 1250
  - AC 20/DC 20 enclosed A 32 32 63 160 200 400 630 800 1250
  - AC 21A ≤500 V A 32 32 63 160 200 400 630 800 1250
  - ≤600 V A 32 32 63 160 200 400 630 800 1250
- **Rated operational power AC23 kW**
  - 400/415 V 14/15 14/15 30 80/90 110 210/230 315/340 350/380 560
  - 690 V 25 25 60 132 200 330 540 600 1000
- **Short circuit interrupting capacity**
  - kA 200 200 200 200 200 200 200 200 200 200
- **UL Fuse size A 30 30 60 100 200 400 600 800 1200**
- **UL Fuse type**
  - CC J J J J J J L L

### Physical characteristics

- **Weight**
  - 3 pole lb 1.54 1.54 2.86 3.30 5.9 17.18 37.44 37.44 63.93
  - 4 pole lb 1.98 1.98 3.52 3.96 7.5 19.38 46.26 46.26 77.16
- **Dimension (3 pole)**
  - H in 3.66 3.60 3.94 5.67 6.5 8.90 10.10 10.10 11.30
  - W in 4.15 4.15 5.63 7.07 7.1 11.26 14.80 14.80 16.42
  - D in 4.10 4.10 5.04 5.10 5.2 8.07 9.17 9.17 11.62

ABB’s fusible disconnect line includes eight amperage sizes from 30A to 1200A and are complimented by a wide range of fuse clip options. ABB fusible switches offer an economical and reliable solution for fused short circuit protection.

**Fuse isolation**

ABB fusible switches contain contacts on both sides of the fuse. The fuses are totally isolated in the OFF position, reducing the risk of shock to authorized personnel – even if the switch has been back fed.
Customize your ABB switch with our extensive line of disconnect switch accessories. From handles to power poles, our accessory line follows the same superior craftsmanship as the switches themselves.

**Selector handles**
The design of the ABB selector handles incorporates quick and easy mounting, ergonomic and uniform design as well as safety in application. The selector handle range offers base mounting and door mounting options with screw and snap-on features. ABB selector handles provide door interlock in the ON position and when padlocked in the OFF position.

**Pistol handles**
Robust construction coupled with stunning high torque allows the use of plastic handles even in a very large current area of switches. ABB pistol handles are easy to install as mounting hardware fastens to brass inserts in the back of the handle.

Pistol handles are available in a variety of lengths from 65mm to 275mm for 6mm and 12mm shaft diameters. Black/Red and Red/Yellow plastic as well as 316L stainless steel versions are available for use with non-fusible and fusible disconnects.

**Shafts**
A full range of 6 and 12mm shafts coordinate with selector and pistol grip handles for all disconnect switches. Shafts are offered in a variety of lengths in order to meet customer mounting depth specifications.

**Flange operators**
Flange operated disconnect switches are available as rigid shaft or flexible cable designs. The cable operated version allows installation of the disconnect anywhere in the enclosure depending on the length of the cable. Cables are available in lengths form 36 to 84 inches. Along with optional direct mount rotary handles, ABB’s full flange offering provides compliance with NFPA79 and UL508A requirements for industrial machinery operation handles.

**Conversion mechanisms**
Convert a standard non-fusible ABB disconnect to a custom solution by installing one of the available conversion mechanisms.

- 6 or 8 pole mechanism - operates 2 switches with a single handle.
- Transfer mechanism - manually transfers between 2 power sources.
- Bypass mechanism - operates 3 switches (2 in a series and 1 transfer switch to provide bypass).
- Mechanical interlock - prevents 2 switches from simultaneously being in the ON position.

**Other common accessories**
- Motor operators
- Terminal shrouds
- Additional power poles
- Additional terminal poles (neutrals and grounds)
- Electro-mechanical interlocks
- Auxiliary contacts
Contact us

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Low Voltage Products
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New Berlin, WI 53151
Phone: 888-385-1221
Web: www.abb.us/lowvoltage

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