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Switch rated plugs and receptacles

DB's are the most rugged and highest horsepower rated plugs and receptacles in the DECONTACTOR™ Series product family. They are specifically designed for use on motors and other inductive loads. With their unique internal spring operating mechanism, two stage contact system, arc splitting feature and silver-nickel butt contacts, DB's can easily handle high horsepower inductive loads up to 60 hp.

Main Advantages

- ▼ Switch & Hp rated
- ▼ 100 kA short circuit rated*
- ▼ IP67 environmental ratings
- ▼ Up to 4 auxiliary contacts
- ▼ Durable metal construction.

* See note under General Ratings on the next page

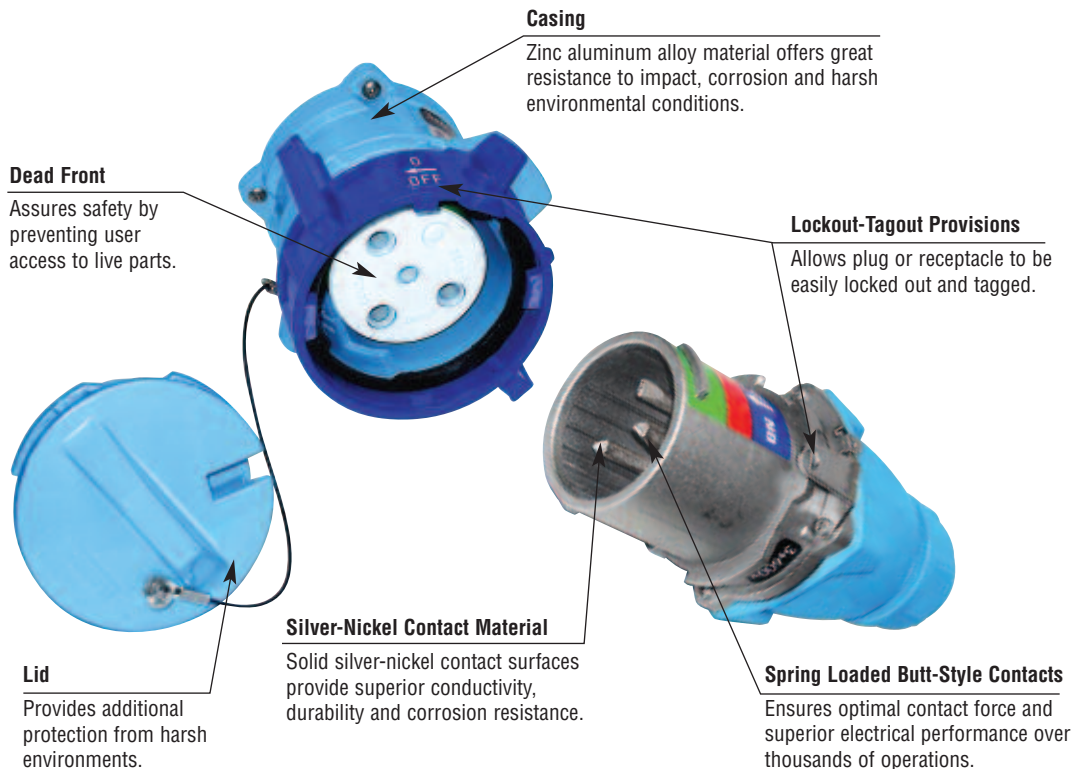
Highlighted Advantage

Simplify NFPA 70E Compliance

See pgs 17-18 for more information



Product Features



General Ratings

Amperage	30 to 100A
Voltage	600 VAC, 250 VDC Max
Frequency	50-400 Hz
Horsepower	1 1/2 to 60 hp
Short-Circuit (Make & Withstand)	100kA*
Environmental	IP67
Temperature	min -40°F/max 140°F

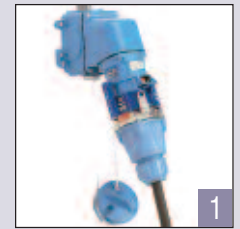
* Testing was performed with RK1 current limiting fuses sized at 400% of the highest full load motor ampacity associated with the devices horsepower ratings, except for the DB100, which was tested with 250A fuses.

Listings

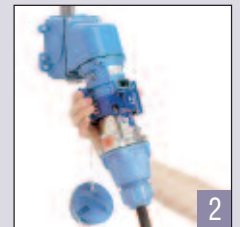
Category	UL	CSA	IEC
Plugs and Receptacles	UL 1682	C22.2 No. 182.1	60309-1
Branch Circuit Disconnect Switching (AC only)	UL Subject 2682 (Performance tested to UL 98)	UL Subject 2682	60947-3, AC22, AC23
Motor Circuit Disconnect Switching (AC only)	UL Subject 2682 (Performance tested to UL 508)	UL Subject 2682	

CE ratings available upon request

Operating Instructions



When the plug and receptacle are latched together, the circuit is connected.



Turning the receptacle ring counterclockwise releases the plug and rapidly opens the circuit. The plug is ejected to its rest position.



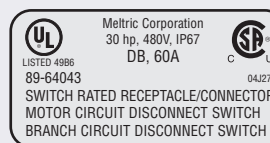
From the rest position the 'dead' plug can be withdrawn by rotating it counterclockwise. The receptacle can be made watertight up to IP67 by replacing the lid and turning the locking ring fully clockwise.



To reconnect, insert plug and twist. Pushing the plug fully home safely makes the circuit. The plug is held in the 'on' position by a locking ring. IP 67 protection is enabled by fully rotating the locking ring in the clockwise direction.

Highlighted Feature

Typical Device Labels



DB Deconnectors are UL & CSA rated for "motor circuit" and "branch circuit" disconnect switching – up to 60 hp and up to 100A

Product Features

Spring Loaded Operating Mechanism

DB Series Decontactors use an internal spring-loaded operating mechanism to open and close the contacts at high speed, independent of the manual motion of the user.

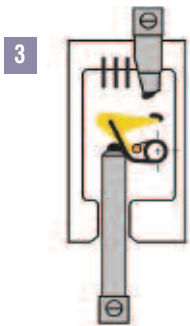
Load-Making



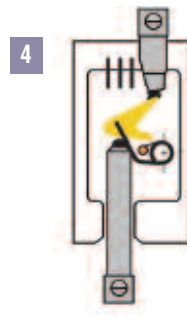
1. As the plug is first inserted into the receptacle, the contact travels toward the operating mechanism. Only the receptacle contact (shown at the top of the drawing) is live.



2. As the plug contact is inserted further, it engages a mobile intermediate contact on the operating mechanism, which it begins to move around a stop. This motion also begins to wind the operating spring.

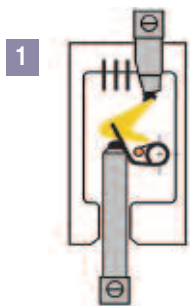


3. As the plug is inserted further, to the almost completely engaged position, the operating spring becomes fully loaded and the mobile contact rotates into a position where any further insertion motion will release it from the stop.

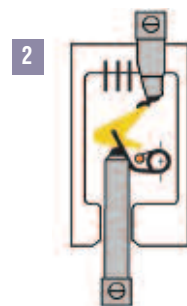


4. As the last small insertion motion is made, the mobile contact clears the stop and releases the energy in the spring. This instantly drives the mobile contact into engagement with the receptacle contact and completes the electrical connection.

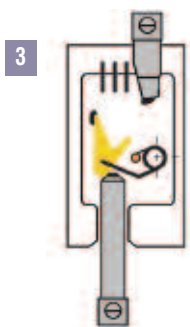
Load-Breaking



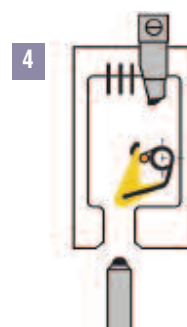
1. When the contacts are engaged, the operating spring is still almost fully charged. This maintains contact pressure and provides energy for the breaking operation.



2. In order to break the circuit, the plug retaining ring is turned to the 'off' position. This releases the plug, which in turn releases the mobile contact and the spring energy in the operating mechanism.



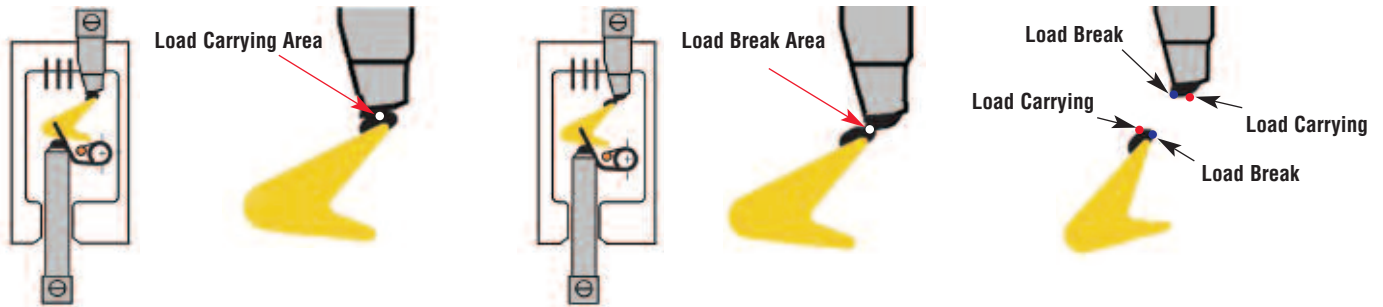
3. The spring energy instantly drives the mobile contact away from the live receptacle contact. It follows a different path than on making and is moved along an arc chute.



4. The mobile contact returns to its initial position, preparing the device to be used again.

Two Stage Contact System

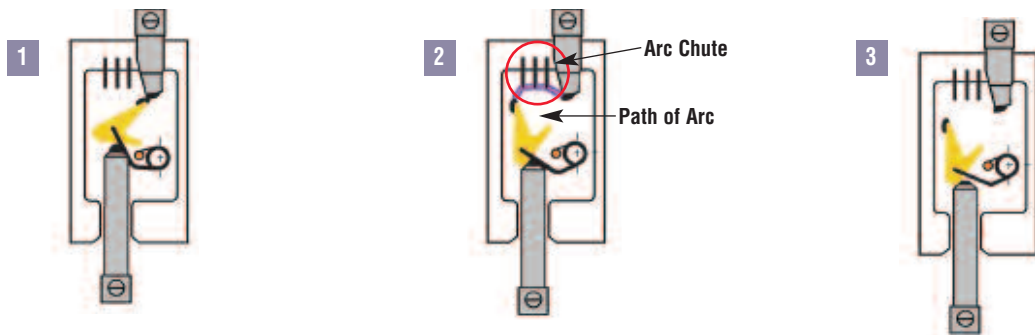
The operation of the DB's contacts was specifically designed to ensure that load-breaking and load-carrying are performed in separate locations on the contacts.



This is accomplished with the motion of the mobile contact relative to the receptacle contact. The opening of the contacts begins with a wiping action that moves the contact area toward the edges of the contacts, where load-breaking occurs. This allows numerous overload-breaking operations without deteriorating the main contact surfaces or the continuity of the connection.

Arc-Extinguishing System

For higher currents, or when significant overloads are involved, additional provision is desirable to handle the arcing that occurs during load-breaking. Meltric accomplishes this on its DB Series Decontactors with a series of magnetic V-shaped blades, which create an arc chute.



As the contacts open, the mobile intermediate contact moves along the arc chute. The arc is transferred to the magnetic "V" shaped blades, which splits and destabilizes it. This helps to cool and quickly extinguish the arc, minimizing any potential damage to the contacts. Together with the spring operator, two stage contact system and silver-nickel butt style contacts, this feature allows the DB series to easily and safely break high horsepower inductive loads and significant overloads.