SWITCH-RATED PLUGS & RECEPTACLES

Featuring...

DECONTACTOR™ Technology

meltric.com
MELTRIC Switch-Rated Plugs & Receptacles

Advantages

Exclusive Switch-Rated Safety

MELTRIC’s Switch-Rated plugs and receptacles combine the safety and functionality of a disconnect switch with the convenience of a plug and receptacle. Their exclusive design allows users to safely make and break connections under full load and provides significant protection in overload and short circuit conditions.

Their dead-front design and enclosed arc chambers ensure that the load is safely disconnected, and that all live parts are isolated and inaccessible, before the plug can be removed. This design guarantees that users are protected from exposure to live parts and potential arc flash at all times while making and breaking connections.

Motor & Branch Circuit Switching

MELTRIC Switch-Rated plugs and receptacles are UL and CSA rated for “motor circuit” and “branch circuit” disconnect switching and are an approved NEC/CSA “line of sight” disconnect switch. Models are available with ratings up to:

- **200A for Branch Circuit Disconnect Switching**
- **100 hp for Motor Circuit Disconnect Switching**

Short Circuit Overload Protection

MELTRIC Switch-Rated plugs and receptacles are designed to provide short circuit protection far in excess of what is required by the standards. They are rated to successfully close into and withstand short circuit currents of up to 100kA when used in circuits protected by RK1 fuses. *(See page 21 for more information on ratings.)*

MELTRIC Switch-Rated plugs and receptacles provide safe and convenient plug & play connections and can be used as the “line of sight” disconnect switch for most inductive and resistive equipment. They are UL and CSA listed for use as a) a motor circuit disconnect switch, b) a branch circuit disconnect switch, and c) a plug and receptacle. MELTRIC devices eliminate the need for mechanical interlocks and auxiliary non-fused disconnect switches.

Their dead-front design also simplifies compliance with NFPA 70E and CSA Z462. The plug can only be removed from the receptacle after the load has been disconnected and the safety shutter has closed. This isolates the receptacle contacts and prevents an operator from ever being exposed to arcing or live parts. Removing the plug from the receptacle is a NFPA 70E defined normal operation that visually verifies the power is OFF and eliminates the need to wear cumbersome PPE and perform complex procedures. MELTRIC devices allow mechanics or technicians to safely make/break connections.
Switch-Rated Safety Anywhere a Power Connection is Needed

The modular design and numerous mounting accessories of MELTRIC Switch-Rated plugs and receptacles make it easy to configure them for use in a wide variety of applications. They can be used as in-line connectors/switches or mounted on wall boxes, distribution panels, or even directly on equipment.

Their modular design makes it simple to install them as “line of sight” disconnects exactly where they are needed. Plus, they eliminate the hassle of finding convenient mounting locations for spacious interlocks and auxiliary disconnect switches required with other connectors.

They make it easy to provide plug & play connections for all your mission-critical equipment. The switch-ratings and dead-front design of MELTRIC devices make it easy for mechanics to safely break electrical connections, remove failed motors or other equipment, and quickly install pre-wired replacements.

Built For Thousands of Operations in the Harshest Environments

MELTRIC Switch-Rated devices’ silver-nickel, butt-style contacts and patented, spring-assisted terminals have been performance tested for over 6000 trouble-free operations with highly consistent electrical connections. [See “Performance,” page 9.] Their contacts are backed by a best-in-industry, 5-year warranty.

Critical hardware is made of stainless steel to protect against the effects of corrosion. Reinforced polyester and zinc-aluminum alloy casings are used to provide excellent impact resistance as well as protection against UV radiation and most harsh chemicals found in typical industrial applications.

Table of Contents

<table>
<thead>
<tr>
<th>Exclusive Features</th>
<th>pg 4</th>
<th>Motor Applications</th>
<th>pg 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased Functionality</td>
<td>pg 8</td>
<td>Selection Guide &amp; Ratings</td>
<td>pg 20</td>
</tr>
<tr>
<td>Performance Testing</td>
<td>pg 9</td>
<td>DS &amp; DSN Series</td>
<td>pg 22</td>
</tr>
<tr>
<td>Switch-Rated Advantages</td>
<td>pg 10</td>
<td>Accessories</td>
<td>pg 24</td>
</tr>
<tr>
<td>Application Highlights</td>
<td>pg 12</td>
<td>More MELTRIC Solutions</td>
<td>pg 25</td>
</tr>
</tbody>
</table>
MELTRIC Switch-Rated Plugs & Receptacles
Very Low Contact Resistance Improves Connection Quality

Spring-Loaded Butt Contacts Provide for Thousands of Consistent and Reliable Connections

MELTRIC Switch-Rated plugs and receptacles use spring-loaded, butt-style contacts similar to those used on contactors and switchgear. Their end-to-end mating provides a stable connection. The spring-loading delivers optimal contact pressure, and the integrity of the electrical connection is maintained over thousands of operations.

Butt-style contacts have a designated and controlled contact area, permitting the use of higher quality materials. Meltric uses contacts made of 85% silver and 15% nickel. End-to-end mating allows for quick-break (15-millisecond) technology. And you avoid the problems common with other types of contacts:

- Spring-loaded butt contacts automatically compensate for manufacturing variations, eliminating contact mating and connection quality problems caused by the dimensional variations of other contact designs.
- End-to-end mating eliminates the effects of wear inherent with sliding contacts.
- Consistent spring pressure eliminates overheating caused by poor contact force.

The performance and design advantages of spring-loaded butt contacts make them a superior choice for providing consistently safe and reliable connections.

Contact Mating Sequence

To ensure proper and safe connections, MELTRIC contacts mate in a specific sequence:

1. The ground closes first
2. Then the neutral,
3. Then the phases,
4. Then any auxiliary contacts, if included.

The auxiliary contacts “make last and break first,” making them suitable for use as “pilot” contacts.

On opening, the sequence is reversed.

Quick Break

A spring-loaded ejection system ensures a quick break (15 ms) of the contacts.
**CONTACT TECHNOLOGY**

**Silver-Nickel Contact Material For Superior Conductivity**

MELTRIC uses solid silver-nickel contact surfaces on all of its Switch-Rated plugs and receptacles. The contacts’ 85% silver and 15% nickel composition combines the durability of nickel with the excellent conducting properties of silver.

Silver-nickel contacts provide significant advantages over the brass materials used on most other types of plugs and receptacles:

- **Silver-nickel maintains a low contact resistance and superior electrical properties even after oxidation and tarnishing.**
- **Silver-nickel withstands arcing very well and only welds at extremely high pressure and temperature.**
- **The hardness of nickel gives the silver-nickel contacts excellent wear resistance.**
- **Silver-nickel performs well in and withstands wet and corrosive environments.**

The combination of silver-nickel contacts with a spring-loaded butt-style design makes the contacts ideal for repetitive making and breaking of connections under load.

### MATERIAL CONTACT RESISTANCE

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>CONTACT RESISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SILVER</td>
<td>New: 6 μΩ, Oxidized: 25 μΩ</td>
</tr>
<tr>
<td>SILVER-NICKEL</td>
<td>New: 23 μΩ, Oxidized: 60 μΩ</td>
</tr>
<tr>
<td>COPPER</td>
<td>New: 29 μΩ, Oxidized: 400 μΩ</td>
</tr>
<tr>
<td>BRASS</td>
<td>New: 370 μΩ, Oxidized: 1400 μΩ</td>
</tr>
</tbody>
</table>

In an oxidized state, silver-nickel is over 20 times more conductive than brass.

**Limitations of Brass as a Contact Material**

- Brass is not arc resistant, so it is not suitable for repeated making and breaking under load.
- Brass is a soft material and wears rapidly, degrading the operational characteristics of the contact.
- Brass oxidizes easily, preventing it from performing well in wet or corrosive environments.
- The contact resistance of brass increases rapidly due to tarnishing that occurs during normal use.

**Operating Mechanism**

On MELTRIC Switch-Rated devices, the circuit is safely interrupted by simply depressing the pawl on the receptacle. Doing so releases the energy in the spring-loaded operating mechanism, which instantaneously breaks the circuit and ejects the plug to the OFF position. **Contact breaking time is about 15 milliseconds.** The quick break mechanism is automatically reloaded when the plug is re-inserted into the receptacle.

In contrast, the disconnection speed of pin and sleeve and twist type devices depends on the user’s motion and strength when removing the plug.

**Self-Cleaning Closing Motion**

MELTRIC contacts close with a self-cleaning, wiping action. When the contacts initially mate, they are slightly offset. While closing the connection, the plug contacts are rotated partially across the receptacle contacts, helping to remove deposits from the contact surface.
**MELTRIC Switch-Rated Plugs & Receptacles**

Eliminate Arc Exposure

Enclosed arc chambers, skirted plug casings, and safety shutters on the receptacles together create the dead-front design of MELTRIC Switch-Rated devices. With the dead-front design, it is virtually impossible for users to be exposed to either live parts or arcing.

**Safety Shutter Eliminates Exposure Hazards**

DS and DSN Series Switch-Rated devices have safety shutters that close over the receptacle contacts before the plug can be removed. Users have no exposure to arcing, or access to live parts, at any time during or after the removal of the plug.

To remove a plug from a receptacle, the plug must be rotated 30° counter-clockwise in the OFF position. This rotation of the plug automatically closes and locks the safety shutter, creating an insulating barrier between the plug and receptacle contacts before the plug can be removed.

The safety shutter can only be opened by the insertion and rotation of an electrically compatible plug. Twenty-four different keying arrangements ensure that only electrically compatible plugs can be inserted into a receptacle.

**Connect & Disconnect Under Load...**

1. When the plug and receptacle are latched together, the circuit is connected.
2. Pressing the pawl causes the MELTRIC receptacle to eject the plug which breaks the circuit. The plug is ejected to its rest position; its contacts are now dead.
It’s Impossible to Draw an Arc

Drawing an arc during plug removal is an inherent hazard with traditional pin & sleeve and twist-type devices. By contrast, MELTRIC Switch-Rated devices isolate the making and breaking of the contacts in an enclosed arc chamber. The plug contacts are deenergized and isolated from live parts within the enclosed arc chamber before the plug can be physically removed.

When the receptacle’s OFF button is pushed, its spring-loaded operating mechanism instantly opens the contacts to break the circuit and ejects the plug to its OFF position. The quick (15 milliseconds) breaking of the contacts minimizes arcing; any arcing that does occur is safely contained within the arc chamber.

In the OFF position, the plug contacts are dead and separated from live parts by a safe distance. Isolated and inaccessible to users, all contacts are fully contained within an enclosure formed by the plug’s skirted casing and the receptacle’s casing.

The rotation of the plug and closing of the safety shutter during plug removal ensures that potential arc paths are blocked before the plug can be removed. There is no possibility of drawing an arc.

...Without Exposure to Live Parts or Arcing

Rotating the ‘dead’ plug 30° counterclockwise closes the safety shutter and frees the plug to be withdrawn from the receptacle.

The plug and the receptacle are separated. The safety shutter on the receptacle prevents access to live parts.
MELTRIC Switch-Rated Plugs & Receptacles
Special Features Increase Functionality

Control, Monitor, Communicate

Most MELTRIC Switch-Rated plugs and receptacles are available with optional auxiliary/pilot contacts that allow users the convenience and flexibility of controlling auxiliary equipment, monitoring process parameters, and/or communicating alarms without the need for secondary connectors. The larger switch-rated models are available with up to 6 auxiliary contacts.

Lock Together or Lockout

All Switch-Rated devices include provisions on the plug that allow users to perform lockout/tagout by simply inserting a lock through an existing hole on the device. The user only needs to provide the lock – no additional mechanisms are required.

Simple lockout provisions for the receptacle are also provided as an option on the DS and DSN Series. The lockout provision on DS and DSN Series receptacles can also be used to lock the plug and receptacle together, if desired, to prevent unauthorized disconnection.

Spring-Assisted Terminals Provide Superior Conductor Connections

On traditional plugs and receptacles, the loosening of terminal screws is a common cause of failure. MELTRIC devices have patented, spring-assisted terminals that provide more permanent and secure conductor connections.

As the terminal screw is tightened, pressure is generated against the conductor and causes the split-terminal body to expand and elliptically deform the spring ring around the terminal. Since the spring ring wants to return to its original circular shape, it exerts a constant pressure against the terminal conductor, pushing them together. This constant spring pressure on the screw and conductor helps to compensate for strand settlement and conductor yield, while providing superior resistance to the effects of vibration, shock, and thermal cycling.

Field Replacement of Modular Parts

With their robust construction and reliable operation, the need to replace worn MELTRIC parts is unusual. If a repair is needed, parts are readily available and reasonably priced. The modular construction of Switch-Rated plugs and receptacles makes field replacement of many components easy.
To attain their UL/CSA switch-ratings, MELTRIC Switch-Rated plugs and receptacles must pass electrical and mechanical endurance tests, horsepower/locked-rotor overload tests, and short-circuit make and withstand tests that far exceed the testing required of ordinary plugs and receptacles. In fact, the tests performed to achieve the devices’ switch-ratings are the same electrical performance tests required of manual motor controllers and enclosed disconnect switches (UL 508 and UL 98 or CSA 22.2 No. 14 and 4 type devices).

The chart below compares the tests passed by MELTRIC devices to achieve their “Switch-Rated Plug & Receptacle” listings to the tests required for a standard pin & sleeve plug and receptacle listing.

Performance Testing Comparison

<table>
<thead>
<tr>
<th>Test</th>
<th>MELTRIC Switch-Rated Plugs &amp; Receptacles</th>
<th>Pin &amp; Sleeve Plugs &amp; Receptacles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UL Subject 2682 (used for both UL &amp; CSA listings)</td>
<td>UL 1682 &amp; CSA 22.2 No. 182.1</td>
</tr>
<tr>
<td></td>
<td>Motor Circuit/Branch Circuit Switching</td>
<td>Non-Current Interrupting</td>
</tr>
<tr>
<td>Temperature Rise</td>
<td>&lt; 30°C</td>
<td>&lt; 30°C</td>
</tr>
<tr>
<td>Voltage Withstand</td>
<td>3,000VAC for 1 Minute</td>
<td>1000V + 200% of Device Rating</td>
</tr>
<tr>
<td>Overload General Use Devices</td>
<td>50 Operations @ 150% of Rated Current (p.f. = .75 - .80)</td>
<td>3 Operations @ 150% of Rated Current (p.f. = .75 - .80)</td>
</tr>
<tr>
<td>Mechanical Endurance (Plus Required Electrical Operations)</td>
<td>4,000 Cycles</td>
<td>15 - 20A = 5000 Opns</td>
</tr>
<tr>
<td></td>
<td>21 - 63A = 2000 Opns</td>
<td>21 - 63A = 1000 Opns</td>
</tr>
<tr>
<td></td>
<td>64 - 250A = 250 Opns</td>
<td>64 - 250A = 500 Opns</td>
</tr>
<tr>
<td>Electrical Endurance (With Load)</td>
<td>6000 Operations @ Rated Current &amp; Voltage (p.f. = .75 - .80)</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>–</td>
<td>21 - 63A = 1000 Opns</td>
</tr>
<tr>
<td></td>
<td>64 - 250A = 250 Opns @ Rated Current &amp; Voltage (p.f. = .75 - .80)</td>
<td>–</td>
</tr>
<tr>
<td>Overload - Locked Rotor (Horsepower Rated Devices)</td>
<td>50 Operations @ 600% of Full Load Motor Current (p.f. = .40 - .50)</td>
<td>–</td>
</tr>
<tr>
<td>Short Circuit Withstand</td>
<td>≥ 65 kA* (600V and ≤ .15 power factor)</td>
<td>–</td>
</tr>
<tr>
<td>Short Circuit Make</td>
<td>≥ 65 kA* (600V and ≤ .15 power factor)</td>
<td>–</td>
</tr>
</tbody>
</table>

1 Testing alternates between mechanical & electrical operations. This reduces the severity of the electrical test by allowing additional cooling time during electrical testing.

* DS200 tested at 10 kA. See page 21 for specific ratings and associated fusing for each model.
MELTRIC Switch-Rated Plugs & Receptacles

2x Faster Change-outs

Superior User Safety

Using MELTRIC devices to connect equipment helps to protect users from electrical hazards that are common with hardwired connections and other types of connectors.

Switch-Rated plugs and receptacles:

- Provide the safety of a disconnect switch wherever users must make or break connections.
- Eliminate potential exposure to live parts and arcing that exists with other plugs & receptacles.
- Provide protection against overloads and short circuit currents of up to 100kA with RK1 fusing.
- Provide a consistently reliable connection that does not degrade with use.

Simplify Compliance to NFPA 70E®/CSA Z462

Using MELTRIC Switch-Rated plugs and receptacles wherever electrical connections must be made or broken can greatly simplify compliance with NFPA 70E Article 130 requirements:

- Switch ratings ensure the safe disconnection of the load; interlocks and auxiliary disconnects are not required since MELTRIC’s Switch-Rated devices are an NEC-approved ‘line of sight’ disconnect switch.
- A safety shutter on the receptacle prevents worker exposure to live parts and arc flash - so wearing cumbersome PPE is unnecessary when disconnecting or connecting a MELTRIC device.
- Removal of the plug from the receptacle provides visual verification of deenergization; the need for voltage testing is eliminated.
- Lockout/tagout is quick and easy since all MELTRIC devices have integral locking provisions.
- MELTRIC devices allow mechanics to safely make/break electrical connections; specially trained electrical personnel may not be required on-site.
Reduce Equipment Change-out Downtime by 50%

Replacement motors and equipment that are pre-wired with MELTRIC Switch-Rated devices offer many benefits. They can be installed with plug and play simplicity. They reduce change-out downtime by 50%. And they allow mission-critical processes to get back in operation faster.

- The need for hard-wiring during downtime is eliminated because mechanics can safely make & break electrical connections with the plug & play simplicity of MELTRIC Switch-Rated devices.

- There is no need to bring electricians to the site after hours; their work to pre-wire replacements can be performed during normal working periods.

- Advance verification of phasing on pre-wired replacement motors avoids problems and delays due to improper rotation.

- Integral auxiliary contacts can eliminate the need to install additional contacts to make & break secondary connections on control circuits.

Reduce Equipment & Operating Costs

Using MELTRIC Switch-Rated devices to connect motors and other equipment helps improve your bottom line by reducing equipment, installation, and operating costs:

- Improved safety reduces accidents, injuries and related costs.

- Faster change-outs reduce lost production during downtime.

- Plug & play simplicity improves maintenance personnel utilization by allowing electrical work to be performed more quickly and conveniently back at the electrical shop.

- Switch-ratings and short circuit ratings eliminate the need for expensive and spacious interlocks and auxiliary disconnects.

- Numerous configurations and mounting options help simplify the location and installation of ‘line of sight’ disconnects.

- Reliable butt-contacts, robust construction, and long operating lives reduce replacement costs.
MELTRIC Application Highlights

Washdown-Rated Equipment

MELTRIC Switch-Rated devices rated watertightness up to Type 4X is achieved as soon as the plug mates with the receptacle.

Process Pumps

MELTRIC plugs and receptacles are UL/CSA switch-rated and can be used as an NEC required “line of sight” disconnect for motors.

Welding Machines

Bring facilities up to code by retrofitting existing receptacles with MELTRIC Switch-Rated devices. Adapter plates allow installation on existing wall boxes.

Exhaust Fan

Safely disconnect power at the fan without needing an electrician on the roof.

Trailers/Unloading Systems

Self-ejecting option automatically releases the plug if the truck pulls away, minimizing damage to the electrical system.
MANUFACTURING & PROCESSING PLANTS

Hoists & Cranes
Simplify servicing of difficult-to-access equipment.

Conveyor Systems
MELTRIC devices are available with pilot contacts for power and control requirements.

Portable Process Equipment
Safely reconfigure factory equipment with plug and play simplicity. Easily add a convenient disconnect switch for busway drops and cord drops.

Downtime Critical Motors
Enable quick change-outs of motors without the need for an electrician to remove hard-wired connections on site.
MELTRIC Application Highlights

Mobile Facilities
Ideal for quickly and easily connecting MRI trailers, mobile classrooms, offices, etc.

Emergency/Rescue Equipment
Safe, reliable, Type 4X connections for fire trucks, ambulances, and other emergency vehicle equipment.

Compressors & Pumps
Simplify servicing and compliance to NFPA 70E/CASA Z462 requirements for safe work practices.

HVAC Equipment
Cooling towers and AC units can be easily connected and disconnected for quick installation or servicing.

Power Distribution
Overhead or floor-mounted MELTRIC Switch-Rated plugs and receptacles ensure the safety of convention center exhibitors and setup/teardown personnel, even when equipment is disconnected under load.
COMMERCIAL & INSTITUTIONAL FACILITIES

**Maintenance Equipment**

Safely disconnect welding machines and other inductive loads.

**Lab & Test Equipment**

Protect students and technicians from live contacts and arc flash.

**Kitchen Equipment**

The MELTRIC Switch-Rated DSN Series is Type 4X rated, making them ideal for wash-down environments.

**Lighting Disconnects**

Provide a convenient and visible disconnect for the safe servicing of high mast, fluorescent and temporary lighting.
MELTRIC Application Highlights

Wastewater Pumps/Mixers
A qualified technician can easily disconnect pumps and mixers for replacement or servicing.

Oil Rigs & Batch Plants
Provide plug & play connections for quick setup and teardown. Create safe and convenient disconnects for process and maintenance equipment.

Shore Power
Silver-nickel contacts offer superior corrosion resistance compared to brass pin and sleeve contacts.

Portable Equipment
Safely and quickly connect and disconnect float pumps and other equipment.

Motor Control Centers
Enclosed arc chambers prevent user exposure to arc flash, even if disconnected in locked rotor conditions.
Applications

Conveyors & Stackers

MELTRIC Switch-Rated contacts close [mate] with a self-cleaning, wiping action – so they maintain high conductivity even in dusty and dirty environments.

Cordsets

Cordsets equipped with MELTRIC plugs and receptacles provide the safety of a switch wherever users make or break connections.

Power Distribution Panels

Provide safe power connections for carnival, concert, construction site, railway maintenance, and other temporary events or work sites.

Portable Generators

Switch-ratings and dead-front construction ensure user and public safety. Optional provisions allow the plug and receptacle to be locked together to prevent unintended or unauthorized disconnection.
MELTRIC Switch-Rated Plugs & Receptacles
Motor Connection Advantages

Safely Make/Break Connections, Even During Overloads

MELTRIC Switch-Rated plugs and receptacles are designed and rated to make and break motor loads in complete safety while providing users with significant protection in the event of overloads or short circuits. Special protective equipment and training are not required to make and break connections.

- Overload testing included 50 opening and closing operations performed at 600% of full load motor ampacity with a power factor of 0.5 or less.
- All hp-rated MELTRIC devices are rated to close into and withstand short circuit currents up to 100kA in circuits protected with RK1 fusing.

Note: Although MELTRIC Switch-Rated plugs and receptacles are rated to safely make and break motor loads, they are not rated or intended for continuous use as a motor starter.

MELTRIC Switch-Rated Devices Are Approved as a ‘Line of Sight’ Disconnect

MELTRIC Switch-Rated devices are an approved ‘line of sight’ disconnect switch for meeting the requirements in NEC Sections 430.102 – 430.109, and they are rated by UL & CSA for “Motor Circuit Disconnect Switching” and “Branch Circuit Disconnect Switching.” Sections 430.102 – 430.109 of the National Electric Code require approved disconnecting means to be located in a readily accessible location within sight of the motor and driven equipment.

A Variety of Mounting Options

MELTRIC plugs and receptacles are available with numerous handles, mounting angles, wall boxes, and other accessories. They may be used as in-line connectors or may be mounted on walls, panels, equipment, or even directly on the motor. Since MELTRIC devices function as ‘line of sight’ disconnect switches, their compact form factor and numerous mounting options give you more flexibility in locating them where they are easily visible and convenient to use.

Reduce Improper Motor Rotation with Pre-wired Replacements

Replacement motors that are pre-wired and tested with appropriately phased receptacles at your maintenance shop will automatically provide the desired direction of rotation when connected (plugged in) on site. Pre-wiring and testing eliminates the need to jog the motor and avoids additional down-time and production problems resulting from improper rotation.

Monitor Motor Temperature Using Built-In Auxiliary Contacts

Optional integral auxiliary contacts can be used to communicate motor temperatures back to a control center so preventative maintenance can be performed before motor failure occurs.
APPLICATION SPOTLIGHTS

THE IDEAL MOTOR PLUG

Plug & Play Simplicity Allows Quick Change-outs

Using MELTRIC Switch-Rated plugs and receptacles to connect motors instead of hard-wiring can help to reduce equipment change-out downtime by as much as 50%. When replacement motors are pre-wired with MELTRIC inlets or plugs, a mechanic can safely perform the electrical connections by simply unplugging the old motor and plugging in the new one.

- No waiting for an electrician to perform field wiring.
- No “suiting-up” or extraordinary electrical precautions.
- No need to field test (jog the motor) to ensure proper rotation.

Motor Change-out Process Comparison

Typical Disconnect Switch

1. Switch disconnect to OFF position
2. Apply lockout/tagout
3. Perform Shock/Arc Flash Hazard Analysis
4. Obtain permit for energized electrical work
5. Suit up with appropriate PPE
6. Remove the disconnect switch cover
7. Test the voltage to verify deenergization
8. Disconnect motor from hard-wiring
9. Remove old/install new motor
10. Connect new motor to hard-wiring
11. Jog the motor to ensure proper rotation

MELTRIC receptacles can be added to existing disconnects. Users can then verify blade separation and deenergization without needing PPE.

MELTRIC Switch-Rated Plugs & Receptacles

1. Switch MELTRIC receptacle to OFF position
2. Remove plug from receptacle
3. Apply lockout/tagout
4. Remove old/install new motor
5. Insert plug into receptacle

PROCESS COMPLETE

✔ Motor change-outs can be made much faster.
✔ Equipment and installation costs are reduced by eliminating the need for interlocks and safety switches.
✔ Maintenance efficiency is increased since a licensed electrician is not needed to remove hard-wiring to change-out a motor. Pre-wiring can be done at a convenient time back at the electrical shop.
TWO SERIES TO CHOOSE FROM:

Choose the DSN Series for:
- Compact, lightweight design
- Automatic Type 4X/IP69k watertightness
- High HP ratings (up to 75 hp)

Common Applications
- Wet or washdown environments
- Plug & play electrical connections

Choose the DS Series for:
- High amperage range (up to 200A)
- High HP ratings (up to 100 hp)
- NEC-compliant motor disconnect
- Metal casing materials (60A and above)
- Larger conductor capacities

Common Applications
- Heavy industry
- High-amperage equipment
## MELTRIC Switch-Rated Models & Ratings

### Branch Circuit Disconnect Switch Ratings (A.C. only)

<table>
<thead>
<tr>
<th>Amperage</th>
<th>20A</th>
<th>30A</th>
<th>60A</th>
<th>150A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max VAC</td>
<td>600V</td>
<td>600V</td>
<td>600V</td>
<td>600V</td>
</tr>
</tbody>
</table>

### Motor Circuit Disconnect Switch Ratings - Horsepower (A.C. only)

<table>
<thead>
<tr>
<th>Voltage</th>
<th>120V 1Ø</th>
<th>240V 1Ø</th>
<th>208V 3Ø</th>
<th>240V 3Ø</th>
<th>480V 3Ø</th>
<th>600V 3Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horsepower</td>
<td>.5 hp</td>
<td>1.5 hp</td>
<td>2 hp</td>
<td>2 hp</td>
<td>5 hp</td>
<td>5 hp</td>
</tr>
</tbody>
</table>

### Short Circuit Closing & Withstand Ratings (A.C. only)

<table>
<thead>
<tr>
<th>Type</th>
<th>100kA</th>
<th>100kA</th>
<th>100kA</th>
<th>100kA</th>
<th>100kA</th>
<th>65kA</th>
<th>10kA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuse Type</td>
<td>RK1</td>
<td>RK1</td>
<td>RK1</td>
<td>RK1</td>
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<tr>
<td>Fuse Size</td>
<td>35A</td>
<td>125A</td>
<td>110A</td>
<td>225A</td>
<td>80A</td>
<td>125A</td>
<td>250A</td>
</tr>
</tbody>
</table>

### Casing Materials

<table>
<thead>
<tr>
<th>Standard</th>
<th>Poly</th>
<th>Poly</th>
<th>Poly</th>
<th>Poly/Metal</th>
<th>Poly</th>
<th>Poly</th>
<th>Poly/Metal</th>
<th>Poly/Metal</th>
<th>Metal</th>
</tr>
</thead>
</table>

### Environmental Ratings

<table>
<thead>
<tr>
<th>Type</th>
<th>IP</th>
<th>Temp. Max</th>
<th>Temp. Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>4X</td>
<td>69k</td>
<td>140˚</td>
<td>-40˚</td>
</tr>
</tbody>
</table>

### Optional Auxiliary Contacts

<table>
<thead>
<tr>
<th>Max Number</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>2</th>
<th>4</th>
<th>4</th>
<th>4</th>
<th>6</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>A@120VAC</td>
<td>6A</td>
<td>6A</td>
<td>1.5A</td>
<td>6A</td>
<td>6A</td>
<td>6A</td>
<td>1.5A</td>
<td>1.5A</td>
<td></td>
</tr>
<tr>
<td>A@240VAC</td>
<td>3A</td>
<td>3A</td>
<td>.75A</td>
<td>3A</td>
<td>3A</td>
<td>3A</td>
<td>.75A</td>
<td>.75A</td>
<td></td>
</tr>
<tr>
<td>A@480VAC</td>
<td>1.5A</td>
<td>1.5A</td>
<td>.37A</td>
<td>1.5A</td>
<td>1.5A</td>
<td>1.5A</td>
<td>.37A</td>
<td>.37A</td>
<td></td>
</tr>
<tr>
<td>A@600VAC</td>
<td>1.2A</td>
<td>1.2A</td>
<td>.30A</td>
<td>1.2A</td>
<td>1.2A</td>
<td>1.2A</td>
<td>.3A</td>
<td>.3A</td>
<td></td>
</tr>
</tbody>
</table>

### Wiring Terminal Capacities - AWG THHN

<table>
<thead>
<tr>
<th>Phase – Max</th>
<th>12</th>
<th>8</th>
<th>4</th>
<th>2/0</th>
<th>8</th>
<th>4</th>
<th>2</th>
<th>2</th>
<th>2/0</th>
<th>4/0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase – Min</td>
<td>14</td>
<td>14</td>
<td>12</td>
<td>4</td>
<td>14</td>
<td>14</td>
<td>10</td>
<td>10</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Aux – Max</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

* Type 4X is available as an option
MELTRIC Switch-Rated DS & DSN Series

Features, Ratings & Listings

MELTRIC Switch-Rated DS and DSN Series devices are based on a similar design concept. Together, they provide a range of switch-rated plugs and receptacles that allow users to safely and easily make and break connections under full load in applications up to 200A and 100 hp. In conjunction with their automatic watertightness, their wide range of available ratings make them ideal choices for most industrial applications.

The larger DS Series provides Type 3R protection suitable for most outdoor applications.

The more compact DSN Series provides Type 4X protection needed for washdown applications.

<table>
<thead>
<tr>
<th>Product</th>
<th>Amperage</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Horsepower</th>
<th>Short-Circuit (Make &amp; Withstand)</th>
<th>Environmental</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS</td>
<td>20 – 200A</td>
<td>600 VAC</td>
<td>50-400 Hz</td>
<td>3/4 to 100 hp</td>
<td>65kA to 100kA**</td>
<td>Type 3R*</td>
<td>min -40°F/max 140°F</td>
</tr>
<tr>
<td>DSN</td>
<td>20 – 150A</td>
<td>600 VAC, 250 VDC Max</td>
<td>50-400 Hz</td>
<td>1/2 to 75 hp</td>
<td>100kA**</td>
<td>Type 4X, IP69k</td>
<td>min -40°F/max 140°F</td>
</tr>
</tbody>
</table>

* Type 4X is available as an option.

** DS20, 30, 60, 100C and all DSN’s are rated 100kA. DS100 is rated 76kA and DS200 is rated 10kA. Testing was performed with RK1 current limiting fuses sized at 400% of the highest full load motor ampacity associated with the device’s hp rating. DSN150 is 100kA Close & Withstand with 225A RK1 non-time delay Mersen fuses (or 10kA with 400A fuses).

General Ratings

- **DECONTACTOR™ Technology**
  - Casing: Fiberglass reinforced thermoplastic polyester material offers great resistance to impact, corrosion and harsh environmental conditions.
  - Silver-Nickel Contact Material: Solid silver-nickel contact surfaces provide superior conductivity, durability and corrosion resistance.
  - Lid: Provides 4X watertightness for additional protection in harsh environments.
  - Dead Front Safety Shutter: Assures safety by preventing user access to live parts.
  - Spring Assisted Screw Terminals: Patented design assures “Tighten and Forget” confidence.
  - Spring-Loaded Butt-Style Contacts: Ensures optimal contact force and superior electrical performance over thousands of operations.

Listings

- **Category**
  - Plugs and Receptacles
  - Branch Circuit Disconnect Switching [AC only]
  - Motor Circuit Disconnect Switching [AC only]

- **UL**
  - UL 1682
  - UL Subject 2682 [Performance tested to UL 98]
  - UL Subject 2682 [Performance tested to UL 508]

- **CSA**
  - C22.2 No. 182.1
  - UL Subject 2682 [Performance tested to C22.2 No. 4]
  - UL Subject 2682 [Performance tested to C22.2 No.14]

- **IEC**
  - 60309-1
  - 60947-3 [AC22 or AC23]

**CE ratings available upon request**
On many pin & sleeve devices, an additional sealing ring must be tightened in order to achieve rated watertightness. Users frequently fail to tighten the sealing ring, resulting in leakage.

DS and DSN Series devices have a “foolproof” design that eliminates the sealing ring. DS models achieve their 3R ratings by simply mating the plug to the receptacle. After the removal of the plug, rated watertightness is maintained for the receptacle by simply closing the lid.

The DS & DSN Series use the same basic technology and design but have differentiating physical characteristics and features.

**DSN**
- 20 – 150A
- Smaller compact size
- Type 4X; IP69k
- Poly & metal casings (some sizes)

**DS**
- 20 – 200A
- 100 hp models available
- Larger contacts & terminals
- Type 3R+
- Poly & metal casings (some sizes)

+ Type 4X is available as an option.

---

**Watertight Every Time You Connect**

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

Pressing the pawl causes the receptacle to break the circuit. The plug is ejected to its rest position. The contacts are electrically dead.

Rotating the “dead” plug 30° counterclockwise closes the safety shutter and frees the plug to be withdrawn from the receptacle.

The plug and the receptacle are separated. The receptacle’s safety shutter prevents access to input power and live parts.

To reconnect, insert plug into receptacle, rotate 30° clockwise, and continue to insert until latched.

---

**DS or DSN Series: Which Model Is Best for your Application?**

The DS & DSN Series use the same basic technology and design but have differentiating physical characteristics and features.
MELTRIC Standard Accessories
For Installation & Operational Flexibility

Handle Options for All Applications

Poly handles feature a layered bushing and compression nut to secure the cable. PH handles are threaded to receive cord grips or conduit fittings. PM handles have cable clamps and interior bushings. PH or PM style handles are recommended for cord-drop applications. Neoprene or Santoprene handles are available for situations where a rubber handle is preferred.

Angles and Boxes for the Perfect Orientation

MELTRIC offers a variety of poly and metal angles and adapters to help you locate and position your devices in the most effective orientation for your application. We also offer a range of metal and poly junction boxes to support all sizes of MELTRIC Switch-Rated devices and adapter plates to allow devices to be mounted on existing boxes.

Pawl Options: Larger & Lockable

A mushroom pawl with a larger and easier to actuate stop button is available for applications where emergency disconnections may be required. Padlock pawls include a .32” diameter hole through the pawl to permit the insertion of a padlock, allowing users to lock the receptacle lid closed or lock the plug and receptacle in the connected state.

Finger Drawplates & Drawbars for Easier Closure

Optional finger drawplates are recommended for easier closure of DS and DSN devices when used as cord-to-cord connectors up to 100A. An easy closing mechanism is a standard feature on models DS100 and DS200.
PF/PFQ Series – High Amperage Connections

PF/PFQ Series plugs and receptacles are engineered for applications up to 600A where routine plug insertion and high reliability are required. Solid silver contacts maximize conductivity and resistance to corrosion. A mechanical locking feature prevents accidental disconnection. Auxiliary pilot contacts, which close after and open before the phase contacts, are used to control the power circuit and ensure the disconnection of the load before the plug can be removed.

Multipin Series – Control Wire Connections

MELTRIC’s multipin connectors are available with up to 37 contacts and Type 4X environmental protection. They help eliminate rewiring errors and simplify equipment change-outs by providing a convenient single connection point for applications where the monitoring of critical parameters and/or the control of secondary circuits or equipment is required.

DX & DXN Series – Hazardous Location Connections

The DX offers ATEX rated models from 20 - 100A in heavy-duty metal casings. The DXN Series provides a compact and lightweight, yet rugged alternative for Class I Zone 1, Class I Division 2 and Class II Division 2 applications up to 60A/20hp. With their ability to be used as in-line connectors, the DXN Series brings plug & play convenience to hazardous duty environments.

Power Distribution Products – Custom and Portable Power Applications

MELTRIC Power Distribution Products make it easy for plants to provide the safety of Switch-Rated plugs and receptacles wherever power is required. We offer a number of standard panels and boxes that can be equipped to suit your application. We can also custom design a package for your application.
Insist on The MELTRIC Switch-Rated Advantage

MELTRIC’s Switch-Rated plugs & receptacles:

✔ Provide the safety of a disconnect switch
✔ Eliminate exposure to live parts & arcing
✔ Simplify NEC/CEC & NFPA 70E®/CSA Z462 compliance
✔ Eliminate interlocks & auxiliary disconnects
✔ Reduce equipment change-out time
✔ Integrate process monitoring & control
✔ Improve connection reliability

Update existing equipment easily with standard MELTRIC Adapter Plates

Presented by MELTRIC and: