

**DECONTACTOR™ Series**



Switch Rated  
Plugs &  
Receptacles

# Meltric DECONTACTOR™ Series

## Switch Rated Plugs & Receptacles

### *Switch Rated Safety*

Meltric's DECONTACTOR™ Series switch rated plugs & receptacles combine the safety and functionality of a disconnect switch with the convenience of a plug & receptacle. They are designed to allow users to safely make and break connections under full load and provide significant protection in overload and short circuit conditions.

Decontactors dead front construction 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 ensures that users are protected from exposure to live parts and potential arc flash at all times during the operation of the product.



*Decontactors – The convenient disconnect switch*

### *Switch and Hp Ratings*

Decontactors 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*
- *60 hp for Motor Circuit Disconnect Switching*

### *Short Circuit Ratings*

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

With their switch ratings, push button load breaking, and dead front construction, DECONTACTOR Series plug & receptacles provide a simple and convenient plug & play connection while also ensuring user safety on motor, welding machine, portable equipment and downtime sensitive applications. Decontactors eliminate the need for the mechanical interlocks and auxiliary non-fused disconnect switches required with other types of connectors and help avoid the need for the cumbersome PPE and work practices necessary to meet NFPA 70E requirements for work performed around live conductors.



## Switch Rated Safety Everywhere a Connection is Desired



*In-line Configurations*



*Panel Mounted Configurations*



*Wall Mounted Configurations*



*Motor Mounted Configurations*

Their modular design and numerous mounting accessories allow Deconnectors to be easily configured for use in a wide variety of applications. They may be used as in-line connectors/switches or may be mounted on wall boxes, distribution panels or even directly on equipment.

This makes it simple to install 'line of sight' disconnects exactly where they are needed and eliminates the hassle of finding a convenient mounting location for the interlocks and auxiliary disconnect switches required with other connectors.

Deconnectors make it easy to provide plug & play connections for all your downtime critical equipment. With their switch ratings and dead front construction, the use of Deconnectors allows mechanics to safely make and break the electrical connections required to remove failed motors or other equipment and install pre-wired replacements.

## Reliability & Durability Even in the Harshest Environments



*The DSN Series NEMA 4X protection and the DS Series 3R protection is achieved simply by mating the plug and receptacle*

Deconnectors silver-nickel butt-style contacts and patented spring-assisted terminals are designed and performance tested to provide consistent electrical connections and trouble-free use over thousands of operations. Deconnector contacts are backed with a 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 used in industry.

### *Elsewhere in this Brochure....*

<i>Design Features</i> .....	<i>pg 4</i>	<i>Selection Guide/Ratings</i> .....	<i>pg 20</i>
<i>DECONTACTOR Benefits</i> .....	<i>pg 10</i>	<i>Type DS &amp; DSN</i> .....	<i>pg 22</i>
<i>Application Spotlights</i> .....	<i>pg 12</i>	<i>Type DB</i> .....	<i>pg 24</i>
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# Meltric DECONTACTOR™ Series

The Difference is in the Design

## Spring-Loaded Butt Contacts



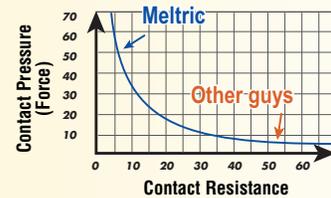
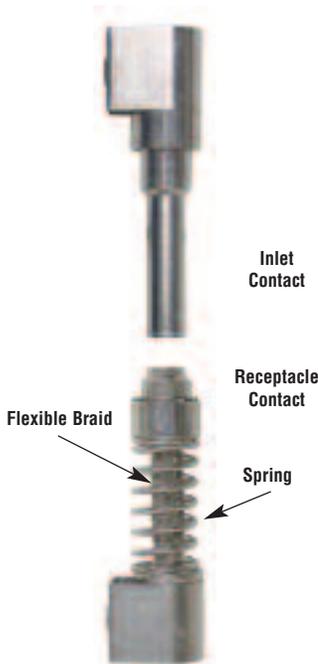
Compression of coil spring ensures a consistent contact force

Decontactors use spring-loaded butt-style contacts similar to those used on contactors and switchgear. Their end-to-end mating provides a solid connection and the spring-loading provides optimal contact pressure. This ensures that the integrity of the electrical connection is consistently maintained over thousands of operations.

The controlled contact area on butt-style contacts permits the use of higher quality contact materials and their end-to-end mating makes it practical to incorporate quick-break technology. Butt contacts also allow users to avoid the problems common with other types of contacts:

- The spring-loaded butt contact design automatically compensates for manufacturing variations and **eliminates the contact mating and connection quality problems** that dimensional variations can cause on other types of contacts.
- End-to-end mating **eliminates the affects of wear** inherent with sliding contacts.
- Consistent spring pressure **eliminates overheating** caused by poor contact force.

Their numerous features and benefits make spring-loaded butt contacts the ideal choice for providing safe and reliable connections.



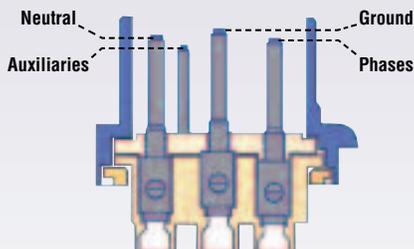
Higher contact force minimizes resistance and temperature rise

## Limitations of Pin & Sleeve Style Contacts



- Manufacturing variations can cause too tight or too loose of a fit between the pin and the sleeve.
- Wear from normal use reduces contact force and thus increases resistance and heat build-up.
- The design requires the use of cheap and easy to machine materials such as brass, which has inferior electrical properties.

## Contact Mating Sequence



The contacts are set in the plug at different levels to achieve the desired mating sequence.

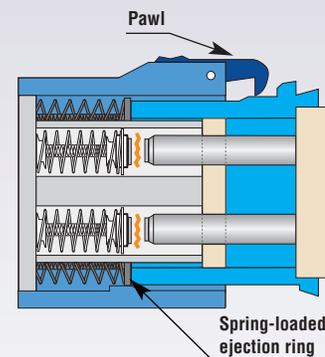
DECONTACTOR contacts mate in a specific sequence to ensure a proper and safe connection.

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

The auxiliary contacts make last and break first, so they are suitable for use as "pilot" contacts.

On opening, the sequence is reversed.

## Quick Break



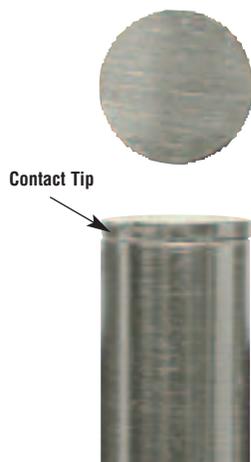
A spring-loaded ejection system ensures a quick break of the contacts.

# CONTACT TECHNOLOGY

## Silver-Nickel Contact Material



Silver-Nickel Contact Tip  
(85% Ag/15% Ni)



Closeup of Silver-Nickel Contact Tip

Meltric uses solid silver-nickel contact surfaces on all its DECONTACTOR™ Series products. The 85% silver/15% nickel composition of the contacts add the beneficial physical properties of nickel to the excellent electrical characteristics of silver.

This silver-nickel material provides significant advantages over the brass materials used on most other types of plugs and receptacles.

- Silver-nickel **maintains its 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.
- Thanks to the influence of the nickel, silver-nickel **provides excellent wear resistance**.
- Silver-nickel performs well in and **withstands wet and corrosive environments**.

The combination of the silver-nickel material with spring-loaded butt-style contacts provides an ideal contact for devices intended to repetitively make and break connections under load.

MATERIAL	CONTACT RESISTANCE	
	New	Oxidized
SILVER	6 $\mu\Omega$	25 $\mu\Omega$
SILVER-NICKEL	23 $\mu\Omega$	60 $\mu\Omega$
COPPER	29 $\mu\Omega$	400 $\mu\Omega$
BRASS	370 $\mu\Omega$	1400 $\mu\Omega$

*In an oxidized state, silver-nickel is 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 and thus does not perform well in wet or corrosive environments.
- Brass's contact resistance increases rapidly due to tarnishing that occurs in normal use.

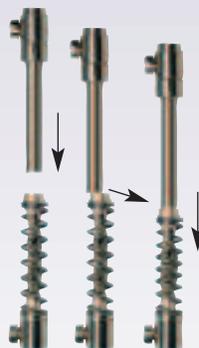
## Operating Mechanism

With Decontactors, the circuit is broken simply by depressing the pawl.\* Doing so releases the energy in a 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.

In contrast, the disconnection speed of pin and sleeve and twist type devices is dependent on the user's motion when removing the plug.

\* DB Series plugs and receptacles require the turning of an operation ring.

## Self-Cleaning Closing Motion



Meltric contacts are self cleaning.

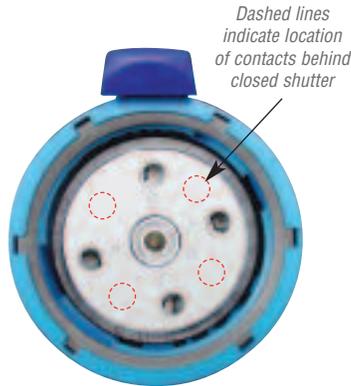
Meltric contacts close with a self-cleaning, wiping action. When the contacts initially mate, they are slightly offset. In completing the connection, the plug contacts are rotated partially across the receptacle contacts, helping to remove deposits from the contact surface.

# Meltric DECONTACTOR™ Series

The Difference is in the Design

Meltric Decontactors have a dead front design to protect users from accidental exposure to live parts and arcing. The dead front is accomplished with a safety shutter on the receptacle along with enclosed arc chambers and a skirted plug casing.

## Safety Shutter

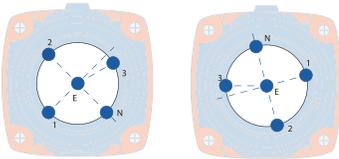


DECONTACTOR safety shutters block access to live receptacle contacts

DS and DSN Series Decontactors have safety shutters that close over the receptacle contacts before the plug can be removed. This ensures that users have no access to live parts or exposure to arcing at any time during or after the removal of the plug.

To remove a plug from a receptacle, the plug must first 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. Different keying arrangements are used to ensure that only electrically compatible plugs can be inserted into a receptacle.



Position 04  
480V 60Hz

Position 14  
600V 60Hz

Different keying prevents mating of electrically incompatible plugs & receptacles

## Other plugs & receptacles allow access to live parts



Pin & Sleeve Receptacle



Twist Type Receptacle

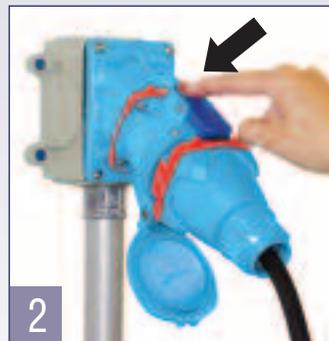


Twist type with exposed contacts while still conducting

## Connect & Disconnect Under Load...



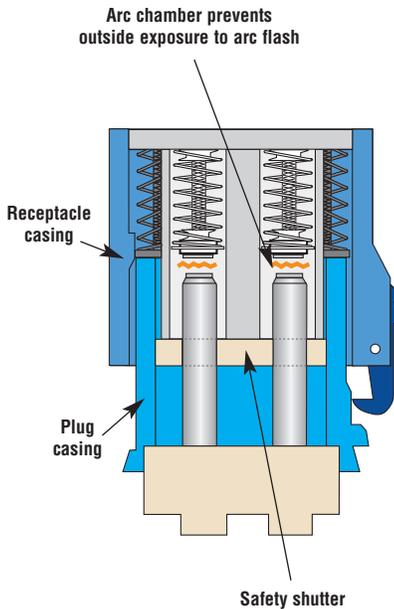
When the plug and receptacle are latched together, the circuit is connected.



Pressing the pawl causes the DECONTACTOR to break the circuit. The plug is ejected to its rest position; its contacts are now dead.

# DEAD FRONT CONSTRUCTION

## Enclosed Arc Chambers



Drawing an arc during plug removal is an inherent hazard with traditional pin & sleeve and twist type devices. Meltric Decontactors are designed to eliminate this hazard by isolating the making and breaking of the contacts in enclosed arc chambers and by ensuring that the plug contacts are de-energized and isolated from live parts before the plug can be removed.

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

In the 'OFF' position, the plug contacts are dead and are separated from live parts by a safe distance. All contacts remain isolated in an enclosure formed by the interface of the skirted plug casing with the receptacle and are inaccessible to the user.

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.

Drawing an arc is possible with pin & sleeve devices

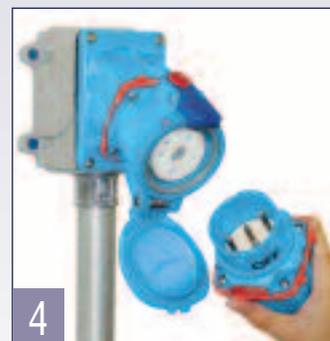


Don't let this happen to you!

## ...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.



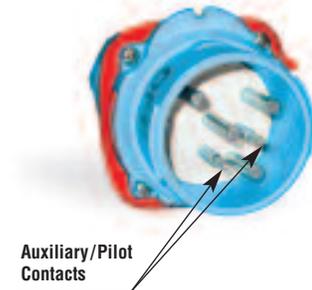
The plug and the receptacle are separated. The safety shutter on the receptacle prevents access to live parts.

# Meltric DECONTACTOR™ Series

The Difference is in the Design

## Optional Auxiliary Contacts

Most Decontactors 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 Decontactors are available with up to 5 auxiliary contacts.



## Integral Lockout Provisions

All switch rated Decontactors include provisions on the plug that allow users to perform lock-out by simply inserting a lock through an existing hole in the device. The user only needs to provide the lock – no additional mechanisms are required.

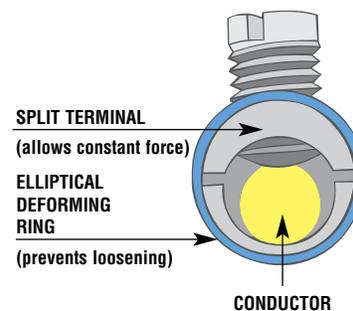
Simple lockout provisions for the receptacle are also provided as a standard feature on the DB Series and as a no-charge option on the DS and DSN. The lock-out provision on DS and DSN Series receptacles can alternatively be used to lock the plug and receptacle together, if desired, to prevent unauthorized disconnection.



## Spring-Assisted Terminals

The loosening of terminal screws is a common cause for failure on standard plugs and receptacles. Meltric's patented spring-assisted terminal design helps to solve this problem and provide a more permanent and secure connection.

Pressure generated as the terminal screw is tightened against the conductor expands the split terminal body and elliptically deforms the spring ring around the terminal. The natural tendency for the spring ring to return to its original shape ensures that a constant pressure is maintained on the conductor. This helps compensate for strand settlement and conductor yield and provides superior resistance to the effects of vibration, shock and thermal cycling.



## Modular Construction

With the Decontactor's robust construction and reliable operation, the need to replace worn parts is unusual. In the event repairs are required, parts are readily available and reasonably priced and the Decontactor's modular construction makes field replacement of many components easy.



# SPECIAL FEATURES

## PERFORMANCE TESTING

To attain their switch ratings, DECONTACTOR™ Series 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 Decontactor's switch ratings are the same electrical performance tests required of manual motor controllers and enclosed disconnect switches (UL 508 and UL 98 type devices).

The chart below compares the tests passed by Meltric Decontactors to achieve their Switch Rated Plug & Receptacle listings with those required for a standard pin and sleeve plug & receptacle listing.

### Performance Testing Comparison

Test	Meltric Switch Rated Plugs & Receptacles	Pin & Sleeve Plugs & Receptacles	
	UL Subject 2682 (used for both UL & CSA listings)	UL 1682 & CSA 22.2 No. 182.1	
	Motor Circuit/Branch Circuit Switching	Non-Current Interrupting	Current Interrupting
Temperature Rise	< 30°C	< 30°C	< 30°C
Voltage Withstand	1000V + 200% of Device Rating	1000V + 200% of Device Rating	1000V + 200% of Device Rating
Overload General Use Devices	50 Operations @ 150% of Rated Current (p.f. = .75 - .80)	3 Operations @ 150% of Rated Current (p.f. = .75 - .80)	50 Operations @ 150% of Rated Current (p.f. = .75 - .80)
Mechanical Endurance (Plus Req'd Electrical Opns)	covered by Electrical Endurance test	15-20A = 5000 Opns 21-63A = 2000 Opns 64-250A = 250 Opns	15-20A = 0 Opns 21-63A = 1000 Opns 64-250A = 500 Opns
Electrical Endurance (With Load)	6000 Operations @ Rated Current & Voltage (p.f. = .75 - .80)	–	15-20A = 5000 Opns 21-63A = 1000 Opns <sup>1</sup> 64-250A = 250 Opns <sup>1</sup> @ Rated Current & Voltage (p.f. = .75 - .80)
Overload - Locked Rotor (Horsepower Rated Devices)	50 Operations @ 600% of Full Load Motor Current (p.f. = .40 - .50)	–	–
Short Circuit Withstand	≥ 65 kA <sup>+</sup> (600V and ≤ .15 power factor)	–	–
Short Circuit Make	≥ 65 kA <sup>+</sup> (600V and ≤ .15 power factor)	–	–

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

• See page 21 for specific ratings and associated fusing for each model.

# Meltric DECONTACTOR™ Series

## Switch Rated Plugs & Receptacles

### Ensure User Safety



*Pressing the pawl on the DECONTACTOR receptacle safely ejects the plug to its rest (OFF) position*



Using Decontactors to connect equipment helps to protect users from electrical hazards that are common with other types of connections. Decontactors...

- Provide the safety of a disconnect switch wherever users must make or break connections.
- Eliminate the 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 NFPA 70E Compliance

Using Decontactors 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 needed.
- Removal of the plug from the receptacle provides visual verification of deenergization; the need for voltage testing is avoided.
- Dead front construction ensures a safe work condition; the extra precautions necessary for work on/near energized parts are not required.
- Integral provisions make lock-out/tag-out quick and easy.
- Making and breaking connections with Decontactors is a Risk Category '0' operation; the need for the cumbersome PPE required when working near live parts is eliminated.
- Decontactors allow mechanics to safely make/break electrical connections; specially trained electrical personnel may not be required on-site.



# PROVIDING BENEFITS THROUGHOUT YOUR FACILITY

## *Reduce Equipment Change-out Downtime*

Replacement motors and equipment that are pre-wired with Deconnectors can be installed with plug & play simplicity, reducing change-out downtime by 50% and allowing critical processes to get back online faster.

- The need for hard-wiring during downtime is eliminated and mechanics can safely make & break the electrical connections.
- There is no need to bring electricians to the site; their work to pre-wire replacements can be performed during non-downtime 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 make & break secondary connections on control circuits.



*Deconnectors enable equipment to be connected and disconnected with plug & play simplicity.*

## *Reduce Equipment & Operating Costs*

Using Deconnectors to connect motors and other equipment helps improve the 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 manpower utilization by allowing electrical work to be performed back at the shop.
- Switch ratings and short circuit ratings eliminate the need for expensive 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.



# Application Spotlights



## *Air Compressors*

Minimize process downtime with plug & play replacement modules.



## *Process Pumps*

DECONTACTORS are UL/CSA switch rated and thus can be used as a NEC required "line of sight" disconnect for motors.



## *Welding Machines*

Bring facilities up to code by retrofitting existing receptacles to Meltric. Adapter plates allow installation on existing wall boxes.



## *Trailers / Unloading Systems*

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



## *Exhaust Fan*

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



# MANUFACTURING & PROCESSING PLANTS



## *Hoists & Cranes*

Simplify servicing of difficult to access equipment.



## *Conveyor Systems*

Deconnectors are available with pilot contacts for power and control requirements.



## *Portable Process Equipment*

Safely reconfigure factory equipment with plug and play simplicity.



## *Downtime Critical Motors*

Enable quick changeouts of motors without the need for an electrician at the job site.



# Application Spotlights



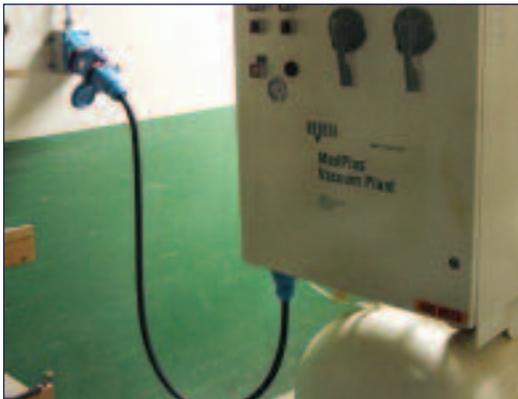
## *Mobile Facilities*

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



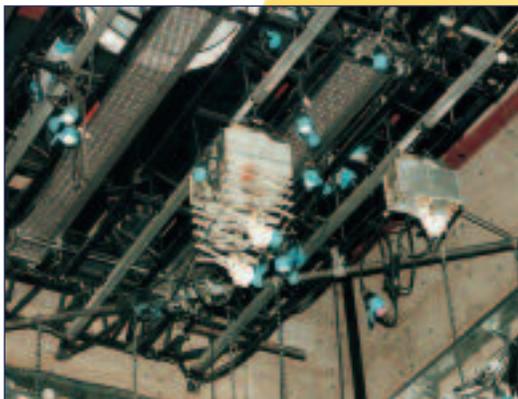
## *Emergency/Rescue Equipment*

Safe, reliable, NEMA 4X connections for fire trucks, ambulance and other emergency vehicle equipment.



## *Compressors & Pumps*

Simplify service and comply to NFPA 70E requirements for safe work practices.



## *Power Distribution*

Overhead or floor mounted Deconnectors ensure the safety of convention center exhibitors and setup/teardown personnel, even when equipment is disconnected under load.



## *HVAC Equipment*

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



# COMMERCIAL & INSTITUTIONAL FACILITIES



## *Maintenance Equipment*

Safely disconnect welders and other inductive loads.



## *Lab & Test Equipment*

Protect students and technicians from live contacts and arc flash.



## *Kitchen Equipment*

NEMA 4X rated DSN Deconnectors are ideal for washdown environments.



## *Lighting Disconnects*

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



# Application Spotlights



## *Wastewater Pumps/Mixers*

Easily disconnect pumps and mixers for replacement or servicing. There is no need for an electrician on site.



## *Oil Rigs & Batch Plants*

Provide plug & play connections for quick setup & teardown and safe and convenient disconnects for process and maintenance equipment.



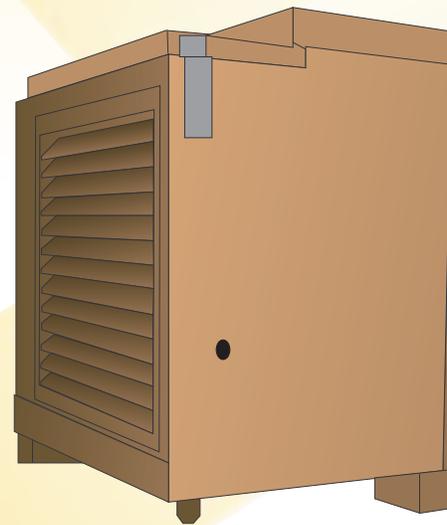
## *Shore Power*

Silver-nickel contacts offer superior corrosion resistance relative to brass pin and sleeve contacts.



## *Motor Control Centers*

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



## *Portable Equipment*

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



# OUTDOOR FACILITIES



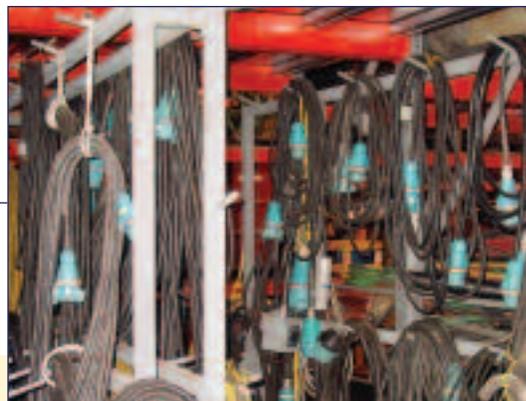
## *Conveyors & Stackers*

Wiping action upon mating cleans contacts and maintains performance in dusty and dirty environments.



## *Cordsets*

Deconnector equipped cordsets provide the safety of a switch wherever users make or break connections.



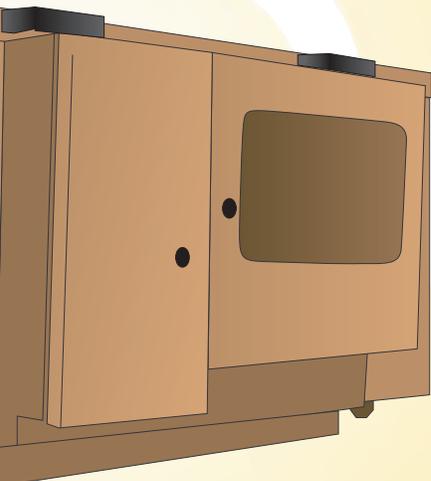
## *Portable Generators*

Switch ratings and dead front construction ensure user and public safety. Optional provisions allow the plug & receptacle to be locked together to prevent unintended disconnection.



## *Power Distribution Panels*

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



# Meltric DECONTACTOR™ Series

## Switch Rated Plugs & Receptacles

### *Switch Ratings Allow Users to Safely Make and Break Connections*

Decontactors are designed and rated to make and break motor loads in complete safety and provide users with significant protection in the event of overloads or short circuits. Special protective equipment and training are not required to make & break connections.

- *Overload testing includes 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 Decontactors are rated to close into and withstand short circuit currents up to 100kA in circuits protected with RK1 fusing.*

**Note:** Although Decontactors are rated to safely make and break motor loads, they are not rated or intended for continuous use as a motor starter.



Decontactors are UL and CSA switch rated up to 60 hp and 200A

### *Mounting Options Make Providing 'Line of Sight' Disconnects Easy*

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. With their UL & CSA ratings for 'Motor Circuit Disconnect Switching' and 'Branch Circuit Disconnect Switching', Meltric Decontactors are an approved 'line of sight' disconnect switch, for meeting this requirement.

Decontactors 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. This flexibility makes it simple to locate disconnects where they are easily visible and convenient to use.



### *Pre-wired Replacements Help Prevent Improper Motor Rotation*

Replacement motors that are pre-wired and tested with appropriately phased receptacles in the service center will automatically provide the desired direction of rotation when connected (plugged in) on site. This eliminates the need to jog the motor and prevents the additional downtime and production problems that result from improper rotation.



### *Auxiliary Contacts Simplify Motor Temperature Monitoring*

Optional integral auxiliary contacts can be used to communicate motor temperature concerns back to the control center so that preventative maintenance can be performed before motor failure occurs.



# APPLICATION SPOTLIGHTS

## THE IDEAL MOTOR PLUG



### Plug & Play Simplicity Allows Quick Change-outs

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

- The need to wait for an electrician to perform field wiring is eliminated
- The need to 'suit-up' and take special electrical precautions is avoided
- The need to jog the motor to ensure proper rotation can be eliminated

### Motor Change-out Process Comparison

#### Typical Disconnect Switch

**CUMBERSOME**



*After operating the disconnect switch, a worker still needs to verify deenergization. Exposure to live parts is inevitable, so PPE is required.*

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. Voltage test to verify deenergization
8. Disconnect motor from hard-wiring
9. Remove old/install new motor
10. Connect new motor to hard wiring



Deconnectors can be added to existing disconnects to avoid PPE requirements when verifying blade separation

#### Meltric DECONNECTOR

**QUICK & EASY**



*Mechanics can quickly and safely make and break electrical connections, without special PPE.*

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



- ✓ Change-out downtime is reduced by up to 50%.
- ✓ Equipment and installation costs are reduced by eliminating the need for interlocks and safety switches.
- ✓ Maintenance efficiency is improved by allowing mechanics to perform change-outs. Pre-wiring can be done at a convenient time back at the electrical shop.

# Meltric DECONTACTOR™ Series

## Switch Rated Plugs & Receptacles

### 3 MODELS TO CHOOSE FROM:

DSN



#### Choose the DSN Series for its...

- Compact, lightweight design
- Automatic NEMA 4X watertightness

#### Common Applications

- Wet or washdown environments
- Plug & play electrical connections

DS



#### Choose the DS Series for its...

- High amperage range (up to 200A)
- Metal casing materials (60A and above)
- Larger conductor capacities

#### Common Applications

- Heavy industry
- High amperage equipment

DB



#### Choose the DB Series for its...

- High HP ratings (up to 60 hp)
- Robust, heavy duty construction
- Quick Make/Quick Break Mechanism

#### Common Applications

- Motors with frequent make and break requirements
- Harsh environments

# PRODUCT SELECTION GUIDE

## DECONTACTOR Ratings

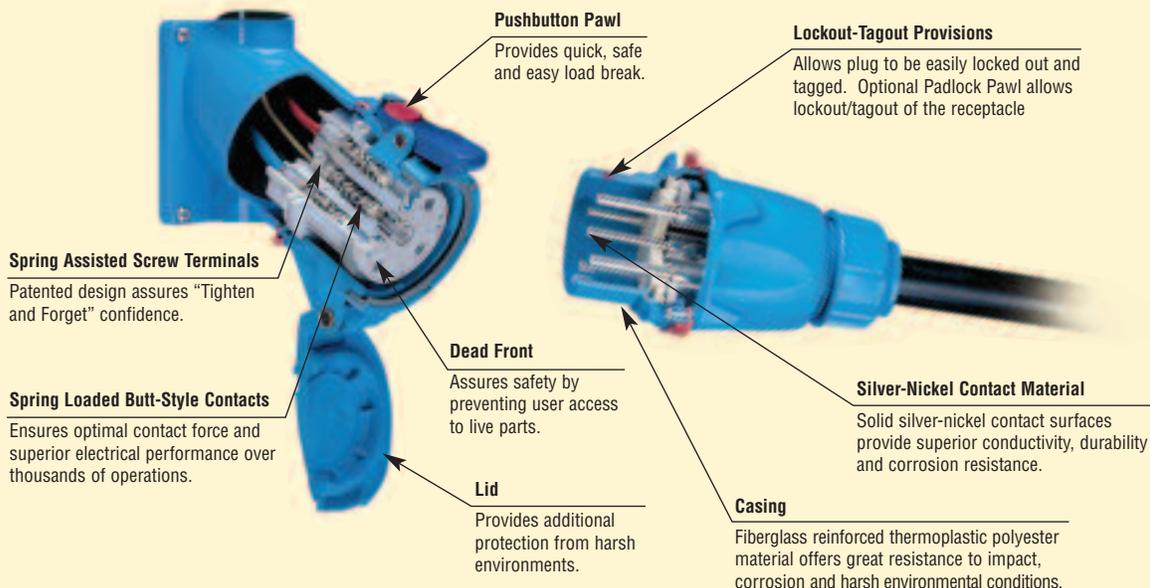
Product	DSN			DS						DB		
	20	30	60	20	30	60	100C	100	200	30	60	100
<b>Branch Circuit Disconnect Switch Ratings (A.C. only)</b>												
<b>Amperage</b>	20A	30A	60A	20A	30A	60A	100A	100A	200A	30A	60A	100A
<b>Max VAC</b>	480V	600V	600V	600V	600V	600V	600V	600V	480V	600V	600V	600V
<b>Motor Circuit Disconnect Switch Ratings - Horsepower (A.C. Only)</b>												
<b>120V 1Ø</b>	.5 hp	1 hp	2 hp	.5 hp	.75 hp	2 hp	2 hp	–	–	1.5 hp	3 hp	7.5 hp
<b>240V 1Ø</b>	1 hp	3 hp	3 hp	1.5 hp	2 hp	3 hp	3 hp	–	–	3 hp	7.5 hp	10 hp
<b>208V 3Ø</b>	2 hp	5 hp	7.5 hp	3 hp	3 hp	7.5 hp	7.5 hp	–	–	7.5 hp	15 hp	30 hp
<b>240V 3Ø</b>	2 hp	5 hp	7.5 hp	1.5 hp	3 hp	7.5 hp	7.5 hp	–	–	7.5 hp	15 hp	30 hp
<b>480V 3Ø</b>	5 hp	10 hp	20 hp	5 hp	10 hp	20 hp	20 hp	–	–	10 hp	30 hp	60 hp
<b>600V 3Ø</b>	–	15 hp	20 hp	7.5 hp	–	25 hp	25 hp	–	–	10 hp	30 hp	60 hp
<b>Short Circuit Closing &amp; Withstand Ratings (A.C. only)</b>												
<b>S.C. Rating</b>	100kA	100kA	100kA	100kA	100kA	100kA	100kA	65kA	65kA	100kA	100kA	100kA
<b>Fuse Type</b>	RK1	RK1	RK1	RK1	RK1	RK1	RK1	RK5	RK5	RK1	RK1	RK1
<b>Fuse Size</b>	35A	125A	110A	80A	125A	250A	250A	100A	200A	125A	250A	250A
<b>Non-Load Break Plug &amp; Receptacle Ratings for Direct Current</b>												
<b>Amperage</b>	20A	30A	60A	20A	30A	60A	100A	100A	200A	30A	60A	100A
<b>Max VDC</b>	250V	250V	250V	250V	250V	250V	250V	250V	250V	250V	250V	250V
<b>Casing Materials</b>												
<b>Standard</b>	Poly	Poly	Poly	Poly	Poly	Poly/Metal	Poly/Metal	Poly/Metal	Metal	Metal	Metal	Metal
<b>Environmental Ratings</b>												
<b>NEMA</b>	4X	4X	4X	3R	3R	3R	3R	3R	3R	–	–	–
<b>IP</b>	66+67	66+67	66+67	54/55	54/55	54/55	54/55	54/55	54/55	67	67	67
<b>Temp Max</b>	140°	140°	140°	140°	140°	140°	140°	140°	140°	140°	140°	140°
<b>Temp Min</b>	-40°	-40°	-40°	-40°	-40°	-40°	-40°	-40°	-40°	-40°	-40°	-40°
<b>Optional Auxiliary Contacts</b>												
<b>Max Number</b>	–	2	4	2	4	3	3	5	5	2	2	4
<b>A @ 120VAC</b>	–	6A	6A	6A	6A	6A	6A	3A	3A	6A	6A	6A
<b>A @ 240VAC</b>	–	3A	3A	3A	3A	3A	3A	1.5A	1.5A	3A	3A	3A
<b>A @ 480VAC</b>	–	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	.75A	.75A	1.5A	1.5A	1.5A
<b>A @ 600VAC</b>	–	1.2A	1.2A	1.2A	1.2A	1.2A	1.2A	.6A	.6A	1.2A	1.2A	1.2A
<b>Wiring Terminal Capacities - AWG THHN</b>												
<b>Phase - Max</b>	12	8	4	8	4	2	2	2/0	4/0*	8	3	2/0
<b>Phase - Min</b>	20	14	12	14	12	6	6	4	4	14	8	1/0
<b>Aux - Max</b>	–	8	12	8	12	14	14	14	14	14	14	14

# DS & DSN DECONTACTOR™ Series

## Switch Rated Plugs & Receptacles



The DS & DSN Series Decontactors are based on a similar design concept. Together, they provide a range of switch rated plugs & receptacles that allow users to safely and easily make and break connections under full load in applications up to 200A and 25 hp. In conjunction with their automatic watertightness, this makes them the ideal choice for most industrial applications. The larger DS Series provides NEMA 3R protection suitable for most outdoor applications, while the DSN Series provides a more compact device and the NEMA 4X protection required for washdown applications.



### General Ratings

Product	Amperage	Voltage	Frequency	Horsepower	Short-Circuit (Make & Withstand)	Environmental	Temperature
DS	20 – 200A	600 VAC*, 250 VDC Max	50-400 Hz	1/2 to 25 hp	65kA to 100kA***	NEMA 3R, IP54/55**	min -40°F/max 140°F
DSN	20 – 60A	600 VAC*, 250 VDC Max	50-400 Hz	1/2 to 20 hp	100kA***	NEMA 4X, IP66+67	min -40°F/max 140°F

\* DS200 and DSN20 devices are 480 VAC

\*\* IP54 rated when receptacle and plug are mated. When not mated the receptacle alone is IP55 rated provided that the lid is latched closed.

\*\*\* DS20, 30, 60 & 100C and all DSN's are rated 100kA. Testing was performed with RK1 current limiting fuses sized at 400% of the highest full load motor ampacity associated with the devices hp rating. DS100 & 200 are rated 65kA. Testing was performed with RK5 time delay fuses sized at 100% of the devices rated ampacity.

### 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 (Performance tested to UL 98)	60947-3 (AC22 or AC23)
Motor Circuit Disconnect Switching (AC only)	UL Subject 2682 (Performance tested to UL 508)	UL Subject 2682 (Performance tested to UL 508)	

CE ratings available upon request

### Automatic Watertightness



On many pin and sleeve devices, an additional plastic ring must be tightened in order to ensure the achievement of rated watertightness. Users frequently fail to do this, resulting in leakage.

Meltric solves this problem with its DS and DSN DECONTACTOR™ Series plugs and receptacles, which achieve their rated watertightness of up to NEMA 4X simply by mating the plug with the receptacle. After the removal of the plug, rated watertightness is maintained for the receptacle by simply closing the lid.

### Similar, but Different

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

#### DSN

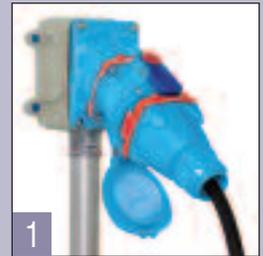
- 20 – 60A
- Smaller compact size
- NEMA 4X; IP66+67
- Reinforced polyester casings

#### DS

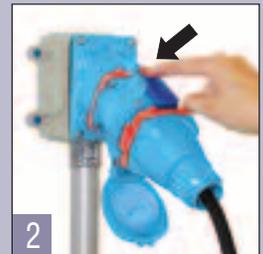
- 20 – 200A
- Larger contacts & terminals
- NEMA 3R; IP54/55
- Poly & metal casings (some sizes)



60A  
Relative Size  
Comparison



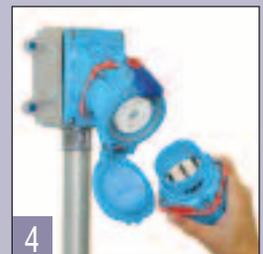
1 When the plug and receptacle are latched together, the circuit is connected.



2 Pressing the pawl causes the DECONTACTOR to break the circuit. The plug is ejected to its rest position; its contacts are now dead.



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

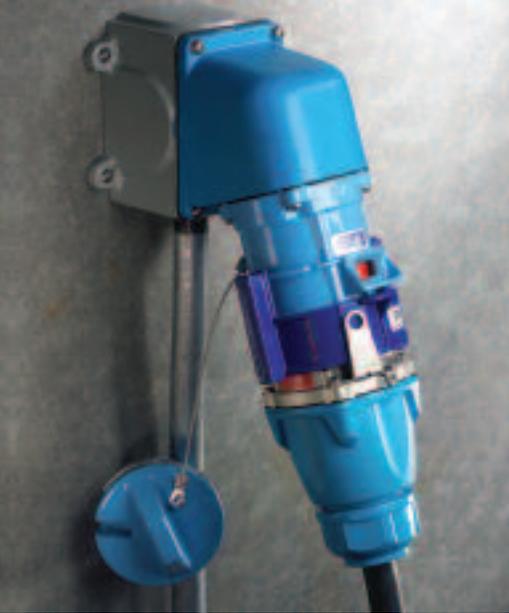


4 The plug and the receptacle are separated. The safety shutter prevents access to live parts.

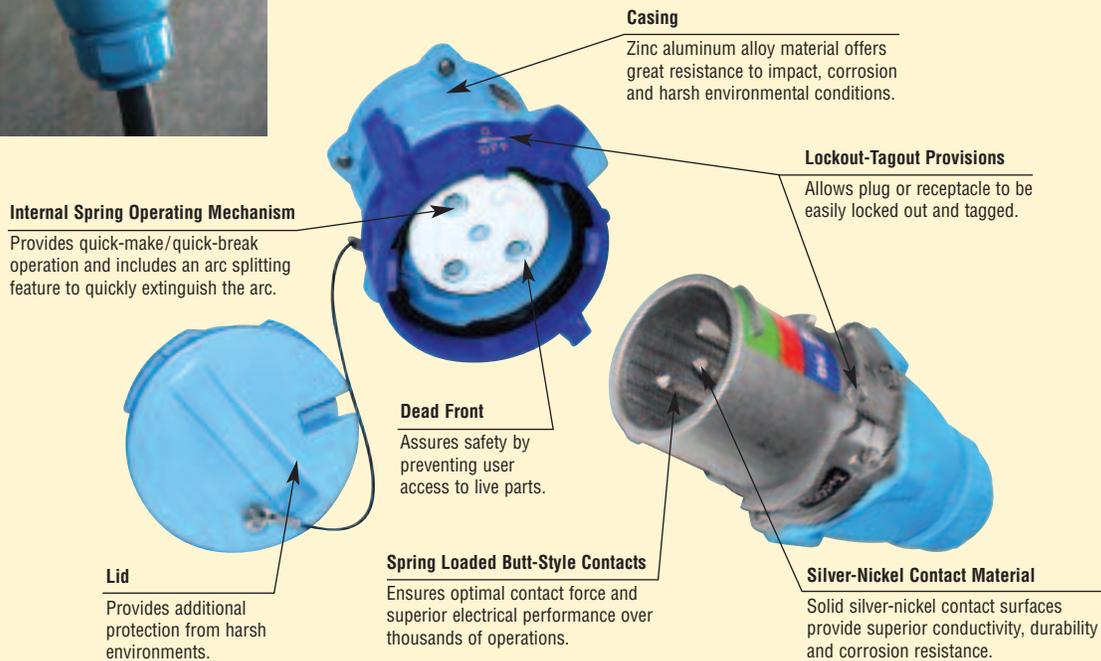
5 To reconnect, insert plug into receptacle, rotate 30° clockwise, and apply insertion force.

# DB DECONTACTOR™ Series

## Switch Rated Plugs & Receptacles



The DB Series are the most rugged and highest horsepower rated plugs & receptacles in the DECONTACTOR™ Series product family. They were designed specifically for use on motors and other highly inductive loads. With their unique quick-make/quick-break operating mechanism, two stage contact system, arc chutes and spring loaded silver nickel butt contacts, they can easily handle loads up to 60 hp. Their zamak (zinc-aluminum) casings and IP 67 environmental rating provide ample protection in harsh and demanding environments.



### General Ratings

Product	Amperage	Voltage	Frequency	Horsepower	Short-Circuit (Make & Withstand)	Environmental	Temperature
DB	30 – 100A	600 VAC, 250 VDC Max	50-400 Hz	1 1/2 to 60 hp	100kA*	IP67	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.

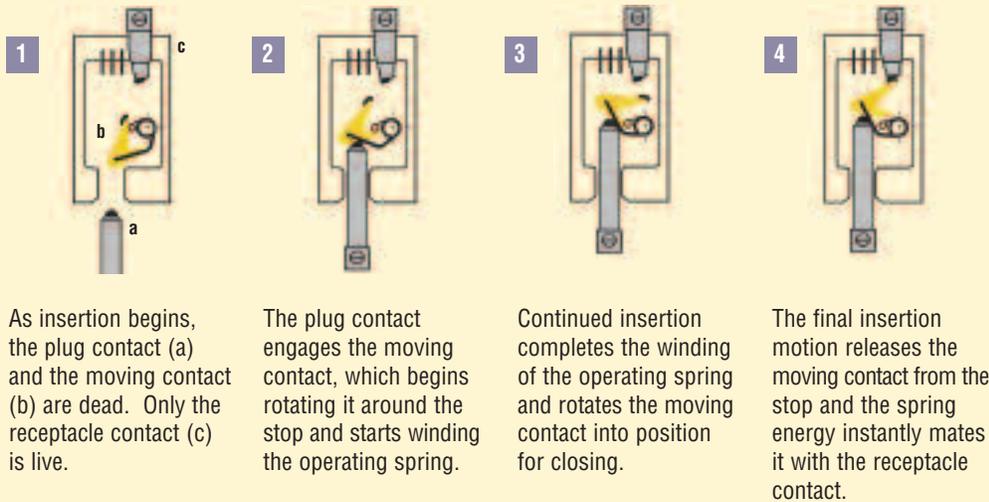
### Listings

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 (Performance tested to UL 98)	60947-3 (AC22 or AC23)
Motor Circuit Disconnect Switching (AC only)	UL Subject 2682 (Performance tested to UL 508)	UL Subject 2682 (Performance tested to UL 508)	

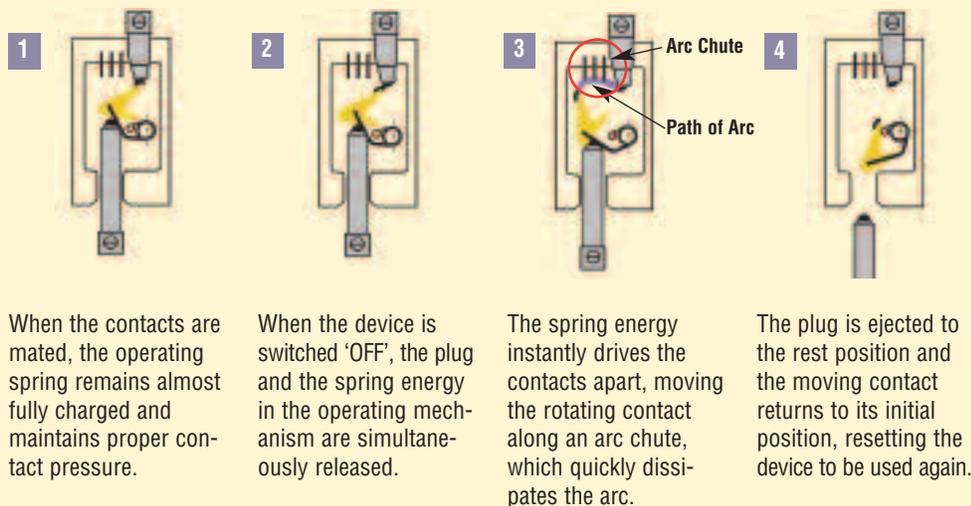
CE ratings available upon request

## Quick-Make / Quick-Break Operating Mechanism

### Load-Making

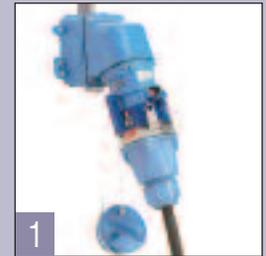
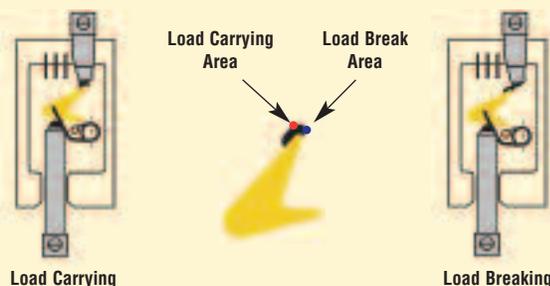


### Load-Breaking with Arc Extinguishing Technology

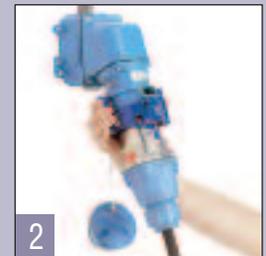


### Two Stage Contact Operation

The opening of the contacts begins with a wiping motion that moves the contact area from the load-carrying areas to the edges of the contacts where load-breaking occurs. This protects the load-carrying areas from the effects of overload breaking operations and ensures that good continuity is maintained during use.



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.

# Common DECONTACTOR™ Accessories

## Handle Options

Optional Cord Grip  
with Wire Mesh



Poly Handle PH Handle PM Handle Neoprene Handle

Meltric offers handles 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, and PM handles have cable clamps and interior bushings. PH or PM style handles are recommended for cord-drop applications. Neoprene handles are available for situations where a rubber handle is preferred.



## Angles and Boxes



Nylon Conduit Entry Metal Junction Box 30° Metal Angle 70° Metal Angle Metal Straight Adapter

Meltric offers a variety of poly and metal angles and adapters to help users locate and position their devices in the most effective orientation for the application. Meltric also offers a range of metal junction boxes to support all sizes of Decontactors and a line of nylon conduit entry boxes for applications where non-metallic accessories are preferred.



## Pawl Options

Locking device  
not included



Emergency Stop Pawl Padlockable Pawl

An emergency stop 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.

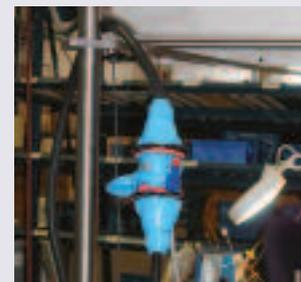


## Finger Drawplates & Drawbars



Finger Drawplates Drawbar & Plates

Optional finger drawplates are recommended for easier closure of DS & DSN's when used as cord-to-cord connectors up to 100A. Available drawbar mechanisms are recommended for 200A devices.



# Other Meltric Product Lines to Provide Additional Connection Solutions

## *PF/PFQ Series – For High Amperage Connections*



PF/PFQ Series plugs & 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, and auxiliary pilot contacts ensure disconnection of the load before the plug can be removed.



## *Multipin Series – For Control Wire Connections*



Meltric's multipin connectors are available with up to 37 contacts and NEMA 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 – For Hazardous Duty 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. With their ability to be used as in-line connectors, DXN's bring plug & play convenience to hazardous duty environments.



## *Power Distribution Products – For Custom Power Needs*



Meltric's power distribution products make it easy for plants to provide the safety of DECONTACTOR™ Series switch rated plugs & receptacles wherever power is required. Meltric offers a number of standard panels and boxes that can be equipped to suit users needs, or will custom design a package specifically for the intended application.



# Insist on The DECONTACTOR Advantage

Use Meltric's Decontactor™ Series switch rated plugs & receptacles to:

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

