



DS & DSN DECONTACTORS

INSDS/DSN 011012 M



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GENERAL

DS and DSN Decontactor™ Series products are designed to provide the safety and functionality of a switch with the convenience of a plug & receptacle. They can safely be used to make and break electrical connections, even in overload situations and are an approved 'line of sight' disconnect switch. Please follow the instructions below to ensure the proper installation and use of the product.

RATINGS

Meltric's Decontactor™ Series Switch Rated plugs & receptacles are UL & CSA listed in accordance with UL Subject 2682, UL 1682 and CSA 22.2 182.1. All are listed as 'Branch Circuit Disconnect Switches' and most are also horsepower rated and listed as 'Motor Circuit Disconnect Switches'. The amperage, voltage, horsepower, switch and environmental ratings are indicated on the product labels.

All Decontactors are rated to make and withstand short circuit currents of 65kA or more with appropriate fusing as indicated in Table 1. Some DS and DSN devices are provided with optional auxiliary contacts that make after and break before the phase contacts. The ratings for auxiliary contacts are shown in Table 2.

Device	Rating Fuse	Type*
DSN20 - 20A	100 kA @ 480 VAC	RK1 35A
DSN30 - 30A	100 kA @ 600 VAC	RK1 125A
DSN60 - 60A	100 kA @ 600 VAC	RK1 110A
DS20 - 20A	100 kA @ 600 VAC	RK1 80A
DS30 - 30A	100 kA @ 600 VAC	RK1 125A
DS60 - 60A	100 kA @ 600 VAC	RK1 250A
DS100C - 100A	100 kA @ 600 VAC	RK1 250A
DS100 - 100A	65 kA @ 600 VAC	RK5 100A
DS200 - 200A	65 kA @ 600 VAC	RK5 200A

* Rating applies with fusing up to this amperage. Ratings are based on tests performed with Ferraz Shawmut non-time delay current limiting fuses.

Device	120VAC	240VAC	480VAC	600VAC
DSN30, DSN60	6A	3A	1.5A	1.2A
DS20, DS30	6A	3A	1.5A	1.2A
DS60, DS100C	6A	3A	1.5A	1.2A
DS100, DS200	3A	1.5A	.75A	0.6A

INSTALLATION

Decontactors should be installed by qualified electricians in accordance with all applicable local and national electrical codes. Before starting, verify that the power

is off, that the product ratings are appropriate for the application, and that the conductors meet code requirements and are within the capacities of the terminals noted in Table 3.

Device	Main Contacts		Aux. Contacts ²	Min	Max	Max
	Min	Max	Max	Black Casings	Blue Casings	
DSN20 - 20A	14	12	n/a	.375	.750	.750
DSN30 - 30A	14	8	14	.375	.750	.750
DSN60 - 60A	12	4	14	.510	1.25	1.25
DS20 - 20A	14	8	14	.300	-	1.380
DS30 - 30A	14	6	14	.510	-	1.380
DS60 - 60A	10	2	14 ³	.500	-	1.812
DS100C- 100A	10	2	14 ³	.500	-	1.812
DS100 - 100A	4	2/0 ⁴	14 ³	.700	-	1.812
DS200 - 200A	4	4/0 ⁵	14 ³	.870	-	2.400

¹ Capacity is based on THHN wire sizes

² Auxiliary contacts are optional and may not be on all products.

³ Auxiliary contacts are prewired at the factory.

⁴ 1/0 AWG if part number does not include the 'E323' suffix.

⁵ 2/0 AWG if part number does not include the 'A06' suffix.

General Notes & Precautions

- Self-tapping screws are provided for use with some polymeric accessories. High torque may be required to drive them in. Once they are seated, care should be taken in order to avoid over-tightening them against the plastic material.
- Various handles and cord grip options may be used. These instructions are based on handles provided with integral multi-layer bushing cord grips.
- Wire strip lengths are indicated in Table 4. Strip lengths for cable sheathing will depend on the specific application. When used with handles, the cable sheathing should extend into the handle to ensure secure cord gripping.



Device	Receptacle		Plug/Inlet	
	Inches	mm	Inches	mm
DSN20 Phase	1/2	13	5/8	16
DSN30 Phase	7/16	10	3/4	19
Auxil.	1/2	12	3/4	19
DSN60 Phase	9/16	14	7/8	22
Auxil.	1/2	13	5/8	16
DS20 Phase	7/16	10	3/4	19
Auxil.	1/2	12	3/4	19
DS30 Phase	9/16	14	7/8	22
Auxil.	1/2	13	5/8	16
DS60 Phase	15/16	24	15/16	24
DS100C Phase	15/16	24	15/16	24
DS100 Phase	1 3/16	30	1 3/16	30
DS200 Phase	1 3/16	30	1 3/16	30

- Wiring terminals are spring assisted to prevent loosening due to wire strand settlement, vibration and thermal cycling. They should not be over-tightened. Appropriate tools and tightening torques are indicated in Table 5.

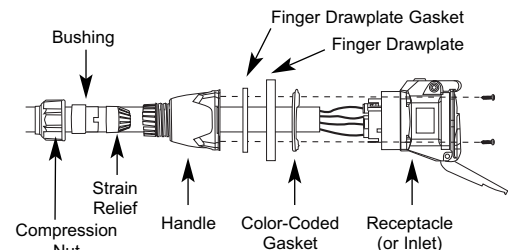
Device/Contact	Torque		Required Screwdriver or Allen Wrench
	in-lbs	N-m	
DSN20 Phase	15	1.7	3 mm or 1/8" precision tip
DSN30 Phase	15	1.7	4 mm or 3/16" precision tip
Auxil.	13	1.5	4 mm or 3/16" precision tip
DSN60 Phase	25	2.8	5 mm or 3/16" precision tip
Auxil.	7	0.8	3 mm or 1/8" precision tip
DS20 Phase	15	1.7	4 mm or 3/16" precision tip
Auxil.	13	1.5	4 mm or 3/16" precision tip
DS30 Phase	25	2.8	5 mm or 3/16" precision tip
Auxil.	7	0.8	3 mm or 1/8" precision tip
DS60 Phase	48	5.4	4 mm hex head
DS100C Phase	48	5.4	4 mm hex head
DS100 Phase	90	10.2	4 mm hex head
DS200 Phase	110	12.4	5 mm hex head

- The DS100 and DS200 are rated as general purpose switches, but are not horsepower rated. If these devices are installed in motor power supply applications, warning labels may be required to advise users not to disconnect the device under load. Labels are provided in the package, but should only be used when required.

- ▲ Meltric threaded handles come with tapered style threads. The use of fitting seal tape is recommended to maintain watertightness of all NPT fittings and joints.

Assembly for In-Line Connections

When most Decontactors are used as in-line connectors, finger drawplates should be installed on both the receptacle and plug in order for the user to more easily provide the leverage required to connect the device. On the larger sized devices, (DS100 & DS200) the finger drawplates are not needed because an easy closing mechanism is provided as standard.



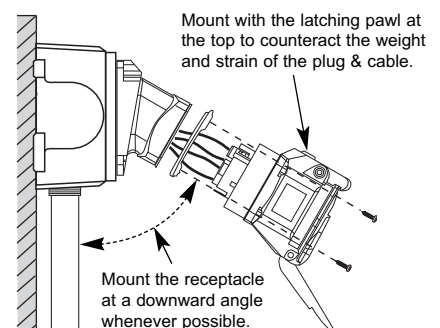
Adjust the bushing diameter to fit the cable by removing inner sections of it as required. Insert the bushing into the strain relief, then insert the assembly into the handle and loosely install the compression nut. Insert the cable through the handle, the thin black drawplate gasket and finger drawplate (if applicable) and the color coded gasket. Strip the cable sheath to provide a workable wire length, being mindful that the sheath must extend into the handle to achieve a secure cord grip. Then strip the individual wires to the lengths indicated in Table 4 and twist the strands of each conductor together.

Back out the terminal screws on the receptacle (or inlet) far enough (but not completely) to allow the conductors to pass, insert the conductors fully into the proper terminals and tighten the screws with the appropriate tool to the torque indicated in Table 4.

Verify that the cable jacket extends beyond the strain relief and into the handle. Assemble the receptacle (or inlet), the color coded gasket, the finger drawplate, and the thin black drawplate gasket to the handle with the four self-tapping screws provided. Adjust the cable location so that it will not be under tension inside the handle and tighten the compression nut to secure the cable.

Assembly for Mounted Receptacles (or Inlets)

In applications where DS or DSN receptacles (or inlets) are mounted to wall boxes, panels or other equipment, optimal operation is achieved when the device is installed with the latch at the top and with the force from the cable being exerted in a downward direction opposite the latch.



Insert the cable or wires through the wall box and cut to allow adequate length, strip the cable sheath as desired, strip the individual wires to the lengths indicated in Table 3, and twist the strands of each conductor together. Back out the terminal screws on the receptacle (or inlet) far enough (but not completely) to allow the conductors to pass, insert the conductors fully into their respective terminals and hand tighten the terminal screws to the torque indicated in Table 5.

Assemble the receptacle (or inlet) and the color-coded gasket to the box with the appropriate hardware. Assemble the mating plug (or receptacle) to the cord end as indicated in the assembly instructions above for in-line connections, except there will be no finger drawplate or associated black gasket.

Hole Pattern for Custom Mounting

In applications where custom mounting to a panel or box is being performed, the clearance and mounting holes should be drilled as indicated in the following diagram and Table 6.

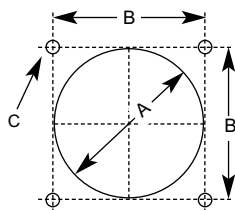


Table 6 - Custom Mounting Dimensions						
Model	'A'		'B'		C	
	Inches	mm	Inches	mm	Inches	mm
DSN20-Receipt	2.00	51	1.65	42	.19	5
DSN30	2.25	57	1.89	48	.19	5
DSN60	2.50	64	2.17	55	.19	5
DS20	2.25	57	1.89	48	.19	5
DS30	2.50	64	2.17	55	.19	5
DS60 & DS100C	3.25	83	2.59	66	.22	5.5
DS100	4.00	102	3.20	81	.22	5.5
DS200	4.50	114	3.86	98	.28	7

In order to maintain the NEMA 4X or IP 66 & 67 protection provided in custom installations, watertight seals should be used under the heads of the four mounting bolts and they must be retained by a lock washer and nut on the inside of the box or panel. Alternatively, four blind holes may be drilled and threaded to accommodate the mounting screws, provided that the hole depth is sufficient to achieve adequate gasket compression.

OPERATION

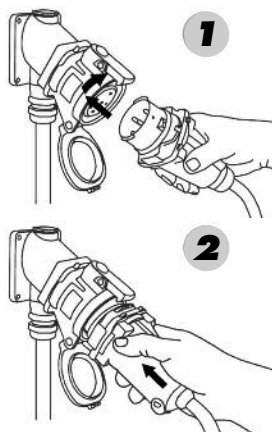
To ensure safe and reliable operation Meltric plugs and receptacles must be used in accordance with their assigned ratings. They can only be used in conjunction with mating receptacles or plugs manufactured by Meltric or another licensed producer of products bearing the **Melrecha**™ technology trademark.

Meltric plugs & receptacles are designed with different keying arrangements, so that only plugs and receptacles with compatible contact configurations and electrical ratings will mate with each other.

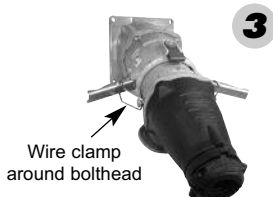
Connection

To connect a plug and receptacle, first depress the pawl to open the lid on the receptacle, then orient the plug as shown in figure 1 so that the red dot on the outside of the casing lines up with the red dot just to the left of the latch on the receptacle casing. Push the plug partially into the receptacle until it hits a stop, then rotate the plug in the clockwise direction until it hits another stop after about 30° of rotation. At this point, the circuit is still open. Push the plug straight into the receptacle as shown in figure 2 until

it becomes securely latched in place. The electrical connection is now made. On in-line connectors, squeeze the drawplates on both sides of the device together until the plug latches in place.



On the DS100 and DS200 devices, an integral mechanism provides easy connection of the plug to the receptacle. With the DS100 or DS200 plug partially inserted and rotated 30° so that it is positioned for connection, place the wire clamps around the boltheads as shown in figure 3.



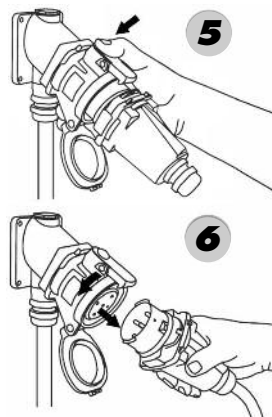
To pull the plug into the receptacle, simply push the handles back along the side of the receptacle and then push the plug into the receptacle until the plug is latched in place, as shown in figure 4. After connection, the mechanism must be released to allow disconnection of the device.



Note: Additional instructions are provided for some DS100 receptacle configurations and must be followed in order to ensure that the closing mechanism is set up to operate properly.

Disconnection

To break the connection, simply depress the pawl as shown in figure 5. This will break the circuit and eject the plug straight out to the rest, or off, position. The plug contacts are de-energized at this point. To remove the plug, rotate it counter-clockwise (about 30°) until it releases from the receptacle as shown in figure 6. Close and latch the lid on the receptacle.



Achieving Environmental Ratings & Watertightness

For devices rated Type 4, 4X, or 3R, use only with mating devices having identical markings to maintain enclosure rating of the mated pair. Rated ingress protection applies to the device when the plug and receptacle are mated and latched together. It also applies to the receptacle when the lid is latched closed.

Lockout Provisions

All DS and DSN plugs are provided with lockout provisions. To lockout the plug, insert a locking device through the hole provided in the casing. This will prevent the plug from being inserted into a receptacle.

DS and DSN receptacles may be purchased with optional lockout provisions and used with 5/16-inch shank locks. To lockout the receptacle, close and latch the lid and then attach the locking device through the hole provided in the pawl. This will prevent the lid from being opened for the insertion of a plug. **NOTE:** Attaching the receptacle locking device with the receptacle lid open will not prevent the insertion of a plug. Lockout of the receptacle is only accomplished when the lid is locked closed.

MAINTENANCE

Meltric products require little on-going maintenance. However, it is a good practice to periodically perform the following general inspections:

- Check the mounting screws for tightness.
- Verify that the weight of the cable is supported by the strain relief mechanism and not by the terminal connections.
- Check the IP gaskets for wear and resiliency. Replace as required.
- Verify the electrical continuity of the ground circuit.
- Check the contact surfaces for cleanliness and pitting.

Deposits of dust or similar foreign materials can be rubbed off the contacts with a clean cloth. Sprays should not be used, as they tend to collect dirt. If any significant pitting of the contacts or other serious damage is observed, the device should be replaced.

Receptacle contacts may be inspected by a qualified electrician. This should only be done with the power off. It is accomplished by depressing the numbered ring around the circumference of the interior on two opposite points. This will allow the shutter to be manually turned clockwise as required to permit access to the contacts. Once the inspection is complete, the shutter **must** be rotated counter-clockwise until it is locked in the closed position.

MANUFACTURER'S RESPONSIBILITY

Meltric's responsibility is strictly limited to the repair or replacement of any product that does not conform to the warranty specified in the purchase contract. Meltric shall not be liable for any penalties or consequential damages associated with the loss of production, work, profit or any financial loss incurred by the customer.

Meltric Corporation shall not be held liable when its products are used in conjunction with products not bearing the **Melrecha**™ technology trademark. The use of Meltric products in conjunction with mating devices that are not marked with **Melrecha**™ technology trademark shall void all warranties on the product.

Meltric Corporation is an ISO 9001 certified company. Its products are designed, manufactured and rated in accordance with applicable UL, CSA and IEC standards. Meltric is also a member of BECMA, the international Butt-contact Electrical Connectors Manufacturers' Association. Like all members, Meltric additionally designs and manufactures its products in accordance with BECMA standards established to ensure intermatability with similarly rated products manufactured by other members. www.becma.ch