Non-Fused Manual AC Disconnect Safety Switch
30–1200A Safety Switches
Instruction Manual

Thank you for your purchase of the Larson Electronics PDU-NFMDS Series Manual AC Disconnect Safety Switch.

WARNING:

READ CAREFULLY BEFORE INSTALLING FIXTURE. RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE. CRITICAL SAFETY INSTRUCTIONS:

- INSTALLATION SHOULD ONLY BE CONDUCTED BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH NEC AND ANY RELEVANT LOCAL BUILDING CODES.
- RISK OF FIRE OR ELECTRIC SHOCK. FIXTURE INSTALLATION REQUIRES KNOWLEDGE OF FIXTURE'S ELECTRICAL SYSTEMS. IF NOT QUALIFIED, CONTACT A QUALIFIED ELECTRICIAN.
- BE CERTAIN ELECTRICAL POWER IS OFF BEFORE AND DURING INSTALLATION AND MAINTENANCE.
- MAKE SURE THE SUPPLY VOLTAGE IS THE SAME AS THE FIXTURE'S RATED VOLTAGE.
- TO PREVENT WIRING DAMAGE OR ABRASION, DO NOT EXPOSE WIRING TO EDGES OF SHEET METAL OR SHARP OBJECTS. SUITABLE FOR DAMP LOCATIONS.

The PDU-NFMDS Series is a Disconnect Switch that is an accessory for power distribution systems. This disconnect switch power distribution accessory acts as an overload breaker that will protect operators from overloading a transformer. The PDU-NFMDS is encased in a NEMA 3R enclosure and is UL listed.

INTRODUCTION

Safety switches are properly lubricated at the factory. However, periodic cleaning and lubrication may be required. The maintenance interval between lubrications depends on the amount of switch usage and the ambient operating conditions. The maximum maintenance interval should not exceed one year for mechanical or current-carrying parts.

For additional information, refer to publication NFPA-70B, “Recommended Practice for Electrical Equipment Maintenance”.



Unusual Performance Conditions

Contact Larson Electronics for information regarding performance under unusual conditions. Examples of unusual conditions are shown in Table 1 below:

TABLE 1:

- Ambient temperatures below -22 °F (-30 °C) or above 104 °F (40 °C) /
- Altitudes over 6600 ft (2012 m) /
- Corrosive or explosive environments /
- Abnormal vibration, shock, or tilting /
- Unusual operating duties /

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Never operate energized switch with door open.
- Turn off switch before removing or installing fuses or making load side connections.
- Always use a properly rated voltage sensing device at all line and load fuse clips to confirm switch is off.
- Turn off power supplying switch before doing any other work on or inside switch.
- Do not use renewable link fuses in fused switches.

Failure to follow these instructions will result in death or serious injury.

ANNUAL MAINTENANCE PROCEDURES

1. Turn off power supplying the switch before performing any work on or inside the switch.
2. Open the switch blades by moving the operating handle to the OFF position.
3. Lock out or tag the switch, per local procedures.
4. Open the enclosure door.
5. Always use a properly rated voltage sensing device at all line and load-side lugs (teminals) to confirm power is off.

NOTE: Do not remove any parts from the switch or operating mechanism unless specifically instructed to do so in the following procedures. Vacuum any loose material from inside the switch. Wipe internal parts and the inside of the enclosure with a damp, lint-free cloth.

6. Visually inspect the switch for loose parts or hardware:
   a. Retighten the hardware as needed. Refer to the wiring diagram.
   b. Do not re-energize the switch if any worn or damaged parts are found. Replace them before re-energizing the switch.

Parts Removal

1. Remove the arc supressor(s) or arc shield(s) from the switches by loosening the fastener(s) holding the suppressor(s) / shield(s) in place.

See Figures 1 and 2.

HAZARD OF EQUIPMENT DAMAGE

Do not disassemble the switch line base assembly or remove the blade rotor when cleaning the line-side jaw or the switch blade. See Figure 3 on age 4.

Failure to follow this instruction can result in equipment damage.

2. Remove old grease and other contaminants from the line-side jaws and switchblades with a clean, lint-free cloth. If the lubricant has dried, remove it with CRC®-type HF Contact Cleaner, or equivalent, sprayed on a cloth.

3. Relubricate the cleaned areas with a thin film of Dow Corning® BG20 grease only.
   NOTE: Do not substitute any other lubricant. Other lubricants may not be suitable for electrical applications and could alter the performance of the switch..

4. Exercise the operating mechanism to ensure proper operation by opening and closing the switch five times with the door closed. Open the switch blades.

FIG. 1 : Examples of Arc Suppressors / Ejemplos de supresores de arco / Exemples de suppresseurs d'arc

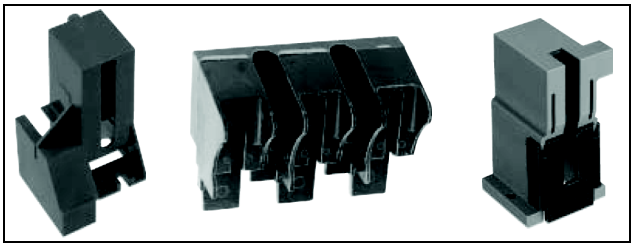


FIG. 2 : Examples of Arc Shields / Ejemplos de protectores de arco / Exemples de blindages d'arc

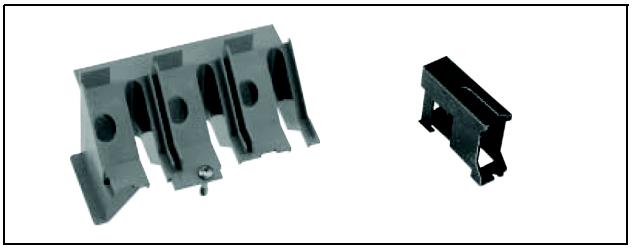


FIG. 3 : Examples of Line Base Assemblies / Ejemplos de ensambles de la base de línea / Exemples d'assemblages de la base de ligne

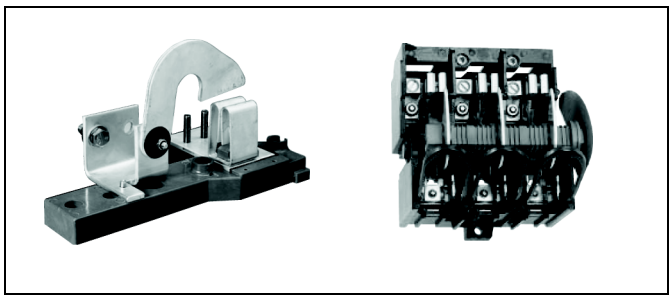
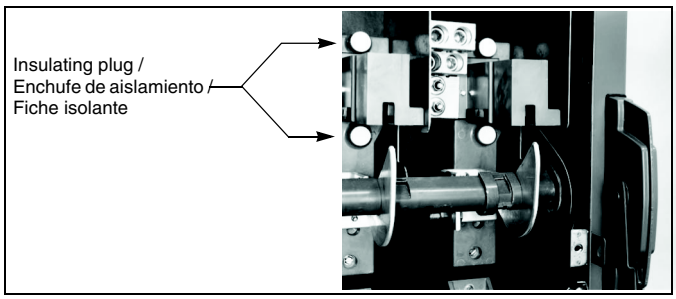


FIG. 4 : Insulating Plugs on Pole Unit / Enchufes de aislamiento en la unidad de polos / Fiches isolantes sur l'unité polaire



Parts Replacement

1. Reinstall the arc suppressor(s) or arc shield(s) according to the torque values in Table 2.
2. Ensure that the two insulating plugs in each phase (400–1200 A only) are firmly seated. See Figure 4.

Switch Type	Torque Value
30–100 A	5–10 lb-in (0,57–1,13 N•m)
200 A, F Series	10–20lb-in (1,13–2,26 N•m)
200 A, E Series	20–25 lb-in (2,26–2,83 N•m)
400–800 A General Duty	20–25 lb-in (2,26–2,83 N•m)
400–1200 A Heavy Duty	30–40 lb-in (3,39–4,52 N•m)

RE-ENERGIZE THE SWITCH

1. Close and latch the door.
2. Turn off all downstream loads.
3. Turn on power supplying the switch.
4. Turn on the switch.
5. Turn on all downstream loads.

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel.

THESE INSTRUCTIONS MAY NOT COVER ALL DETAILS OR VARIATIONS OF THIS PRODUCT FOR YOUR EQUIPMENT OR INSTALLATION REQUIREMENTS. SHOULD FURTHER INFORMATION NOT COVERED BY THESE INSTRUCTIONS BE REQUIRED, PLEASE CONTACT LARSON ELECTRONICS BY EMAIL AT SALES@LARSONELECTRONICS.COM OR BY PHONE AT 1-877-348-9680 FOR FURTHER ASSISTANCE.

PLEASE VISIT LARSONELECTRONICS.COM FOR **WARRANTY** AND **RETURN** INFORMATION.