NRS SERIES INDUSTRIAL SAFETY SWITCHES

Installation & Maintenance Information

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

APPLICATIONS
NRS Series enclosed Heavy Duty Industrial Safety Switches are used as a means of disconnecting power from motors, lighting, and power circuits. The NRS is available with a 40, 60 or 100 amp switch. The enclosure is made of thermoplastic material and is suitable for wet and corrosive environments, indoors and outdoors. The enclosure is rated for NEMA 4X, IP66 environmental suitability.

ENCLOSURE DISASSEMBLY

WARNING
To avoid electrical shock hazard, electrical power must be turned OFF before and during installation and maintenance.

1. Place operating handle in the OFF position.
2. Loosen the captive cover screws.
3. The hinged cover will swing open.

ENCLOSURE INSTALLATION

To avoid electrical shock hazard, electrical power must be turned OFF before and during installation and maintenance.

1. Select mounting location that will provide suitable strength and rigidity for supporting the enclosure and all contained wiring. The enclosure dimensions and mounting dimensions for the four mounting feet for lag screws or mounting bolts are shown in Figure 1.

2. Solidly bond installed hub(s), grounding bushing(s), mounting plate and any exposed metal parts.

CONDUIT HUB INSTALLATION

NRS enclosures can be field drilled for conduit openings. Hubs must be ordered separately. See Table A for Hub information.

TABLE A

<table>
<thead>
<tr>
<th>Cat No.</th>
<th>Size</th>
<th>Cat No.</th>
<th>Size</th>
<th>Cat No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHUB1</td>
<td>1/2“</td>
<td>STG-1</td>
<td>1/2“</td>
<td>SSTG-1</td>
<td>1/2“</td>
</tr>
<tr>
<td>NHUB3</td>
<td>1”</td>
<td>STG-3</td>
<td>1”</td>
<td>SSTG-3</td>
<td>1”</td>
</tr>
<tr>
<td>NHUB4</td>
<td>1 1/4“</td>
<td>STG-4</td>
<td>1 1/4“</td>
<td>SSTG-4</td>
<td>1 1/4“</td>
</tr>
<tr>
<td>NHUB5</td>
<td>1 1/2“</td>
<td>STG-5</td>
<td>1 1/2“</td>
<td>SSTG-5</td>
<td>1 1/2“</td>
</tr>
</tbody>
</table>

Refer to the installation instructions furnished with conduit hub for proper installation procedure.

All machining should be done prior to installation of enclosure.

1. Locate and drill conduit hub opening then install conduit hub. While making hole in enclosure body, protect switch with a clean cloth or plastic film so particles will not enter the device. Clean all foreign material out of enclosure after hub installation.

Figure 1 - Dimensions (Inches)

<table>
<thead>
<tr>
<th>Enclosure Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 Amp Nonfused</td>
<td>6.0</td>
<td>6.0</td>
<td>5.9</td>
<td>8.1</td>
<td>5.75</td>
<td>4.0</td>
</tr>
<tr>
<td>60 Amp Nonfused</td>
<td>8.0</td>
<td>6.0</td>
<td>5.9</td>
<td>8.1</td>
<td>3.75</td>
<td>4.0</td>
</tr>
<tr>
<td>100 Amp Nonfused</td>
<td>10.0</td>
<td>8.0</td>
<td>7.9</td>
<td>10.1</td>
<td>10.75</td>
<td>6.0</td>
</tr>
<tr>
<td>30 Amp Fused</td>
<td>10.0</td>
<td>8.0</td>
<td>7.9</td>
<td>10.1</td>
<td>10.75</td>
<td>6.0</td>
</tr>
<tr>
<td>60 Amp Fused</td>
<td>14.0</td>
<td>12.0</td>
<td>7.9</td>
<td>10.1</td>
<td>14.75</td>
<td>8.0</td>
</tr>
<tr>
<td>100 Amp Fused</td>
<td>14.0</td>
<td>12.0</td>
<td>7.9</td>
<td>10.1</td>
<td>14.75</td>
<td>8.0</td>
</tr>
</tbody>
</table>

- Enclosure is shipped with the mounting feet in a separate bag. Make sure feet are seated firmly in recess before tightening down holding screws. Do not exceed 35 lb.-in. torque on mounting feet.
- Slots in mounting feet allow the use of mounting bolts up to 1/2 inch diameter, however, 3/8 inch diameter mounting bolts are recommended.
- Install flat washers under the heads of all four mounting fasteners.
2. Securely fasten enclosure in desired location.
3. Install conduit in entrance hubs following instruction supplied with each hub.

WIRING

1. Pull all phase conductors and grounding conductors into enclosure and make connections to the line pressure connector terminations on the switch following the wiring pattern established for your system (see Table B for wire size information). Connect grounding conductors.

<table>
<thead>
<tr>
<th>Amps</th>
<th>Wire Size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>14 - 4 AWG</td>
<td>17.7 lb.-in.</td>
</tr>
<tr>
<td>60</td>
<td>14 - 4 AWG</td>
<td>17.7 lb.-in.</td>
</tr>
<tr>
<td>100</td>
<td>6 - 1/0 AWG</td>
<td>53 lb.-in.</td>
</tr>
</tbody>
</table>

2. Pull all load side conductors into enclosure and make connections to the load pressure connector terminations on the switch following the wiring pattern established for your system. Connect grounding conductors.
3. Connect auxiliary contact conductors (if applicable) to the small contact block terminals.
4. Test wiring for correctness with continuity checks and for unwanted grounds with insulation resistance tester. Be certain all exposed metal parts are grounded.

WARNING
Proper grounding of systems and circuit conductors is required to limit hazardous voltages caused by lightning, line surges, or unintentional contact with higher voltage lines and to stabilize the voltage to ground during normal operation. All conductive materials that enclose the electrical conductors or attached equipment or forming part of such equipment must be grounded. A permanent conducting connection must be made between all such equipment and the earth.

5. Position operating handle on cover in OFF position and close cover. Tighten cover screws to screw driver tight. Do not overtighten.

MAINTENANCE

1. Frequent inspection should be made. A schedule for maintenance checks should be determined by the environment and frequency of use. It is recommended that it should be at least once a year. We recommend an Electrical Preventative Maintenance program as described in the National Fire Protection Association Bulletin NFPA No. 70B.
2. Perform visual, electrical and mechanical checks on all components on a regular basis.
   • Visually check for undue heating evidenced by discoloration of wires or other components, damaged or worn parts, leakage evidenced by water or corrosion in the interior.
   • Electrically check to make sure that all connections are clean and tight.
   • Mechanically check that all parts are properly assembled, and operating handle is moving freely.

REPLACEMENT PARTS

NRS-K1 40A - 100A nonfused auxiliary contact kit
NRS-K2 60A - 100A fused auxiliary contact kit
NRS-K3 30A fused auxiliary contact kit

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Cooper Industries Inc., Crouse-Hinds Division
PO Box 4999
Syracuse, New York 13221 • U.S.A.
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