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## Operation and Maintenance Instructions for Class 87 and 3RE48 Pump Panels

### IMPORTANT

THESE INSTRUCTIONS DO NOT PURPORT TO COVER ALL DETAILS OR VARIATIONS IN EQUIPMENT, NOR TO PROVIDE FOR EVERY POSSIBLE CONTINGENCY TO BE MET IN CONNECTION WITH INSTALLATION, OPERATION OR MAINTENANCE. SHOULD FURTHER INFORMATION BE DESIRED OR SHOULD PARTICULAR PROBLEMS ARISE WHICH ARE NOT COVERED SUFFICIENTLY FOR THE PURCHASER'S PURPOSES. THE MATTER SHOULD BE REFERRED TO THE LOCAL SIEMENS SALES OFFICE.

THE CONTENTS OF THIS INSTRUCTION MANUAL SHALL NOT BECOME PART OF OR MODIFY ANY PRIOR OR EXISTING AGREEMENT, COMMITMENT OR RELATIONSHIP THE SALES CONTRACT CONTAINS THE ENTIRE OBLIGATION OF SIEMENS. THE WARRANTY CONTAINED IN THE CONTRACT BETWEEN THE PARTIES IS THE SOLE WARRANTY OF SIEMENS. ANY STATEMENTS CONTAINED HEREIN DO NOT CREATE NEW WARRANTIES OR MODIFY THE EXISTING WARRANTY.



**Class 87**

### Description of Class 87 Pump Panels

Class 87 pump control panels include a Class 14 NEMA rated contactor, a solid-state overload relay, either a circuit breaker or fusible disconnect switch, a START push button, a HAND-STOP-AUTO selector switch, a ground bar and external overload reset button as standard. These components are mounted in a NEMA 3R weather resistant enclosure with a gasketed door that can be easily removed. Sizes 1 through 4 are furnished with conduit knockouts on the bottom as well as pole mounting brackets. Size 5 is furnished with mounting legs and size 6 is base mounted. Factory installed and field accessories are available.




**3RE48**

### Description of Class 3RE48 Pump Panels

3RE48 pump control panels include a 3RT Innovations NEMA rated magnetic contactor, a solid-state overload relay, either a circuit breaker or fusible disconnect switch, a START push button, a HAND-STOP-AUTO selector switch, a ground bar and external overload reset button as standard. These components are mounted in a NEMA 3R weather resistant enclosure with a gasketed door that can be easily removed. Sizes 1 through 4 are furnished with conduit knockouts on the bottom as well as pole mounting brackets. Field accessories are available.

## Installation of Class 87 and 3RE48 Pump Panels

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|---|--|
|  | <h3>⚠ WARNING</h3>   |
|   | <p>Hazardous voltage.<br/>Can cause death, serious personal injury, or property damage.<br/>Disconnect power before working on this equipment.</p> |

**Important! Prior to performing steps 1 through 13 verify that all power is turned off to the pump control panel.**

1. Examine each device on the panel for shipping damage and if any is noted, notify carrier for claim. Do not apply power to any damaged device.
2. Operate disconnect switch or circuit breaker with external handle to verify operation.
3. Manually operate magnetic starter contactor to determine that moving parts do not bind. Manual operation of the contactor is performed by pressing on the movable contact assembly as shown in Figure 1 for Class 87 and Figure 2 for 3RE48.
4. Verify that the supply voltage matches the voltage rating of the pump panel.
5. Verify that the horsepower rating of the motor does not exceed the horsepower rating of the pump control panel and the current rating of the motor is within the adjustable range of the overload relay. Set the FLA dial on the overload relay to the motor FLA. Make sure the DIP switches are set to trip class 10 for pumping applications. Refer to the overload relay instruction sheet for details.
6. Install in conformance with National Electric Code – NFPA70 in the US or Canadian Electrical Code – CSA C22.1 in Canada, and any applicable local electric codes.
7. Install the proper size dual element fuses in the disconnect switch. The disconnect switch and fuse load block will accept Class H, K, J or R fuses depending on the fuse holder. If the available fault current of the supply is greater than 10kA, Class R or J fuses must be used. Verify the available fault current of supply does not exceed the interrupting rating of the fuses in stalled and does not exceed the short circuit rating of the pump panel controller.
8. If the pump controller includes an instantaneous trip breaker, adjust the trip setting of the breaker according to the instruction on the door label. Verify the available fault current of the supply does not exceed the short circuit current rating of the pump controller.
9. Firmly fasten enclosure to solid mounting surface with customer supplied fasteners.
10. Install necessary grounding means and wire pump control panel in accordance with wiring diagram supplied. Conduits installed in knockouts at the bottom of the enclosure must be located below all live parts. Conduit hubs or fittings installed on the top or side walls of the enclosure must have a NEMA 3R rating.
11. Check that all wiring is secure and does not interfere with proper operation of any devices.
12. Check that all wiring connections are tight, including factory connections.
13. Make a final installation check of steps 1 through 12 and remove any foreign material from the enclosure.



Figure 1

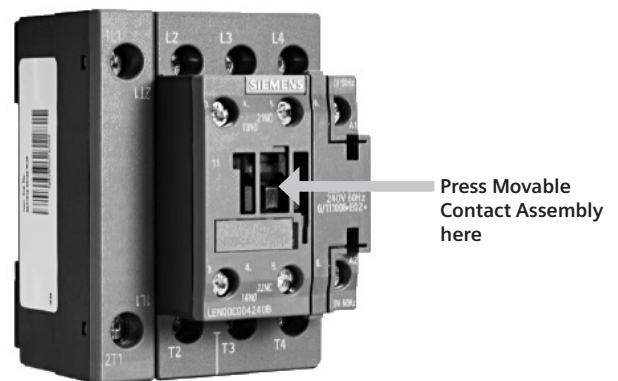



Figure 2

### General Pump Controller Start Up and Operating Instructions

1. Before applying power to the pump controller, close and latch door, make sure the selector switch is in the OFF position and make sure the disconnect switch is in the OFF position.
2. Apply power by placing the disconnect handle in the ON position.
3. Rotate selector switch to HAND position and depress START button.
4. Check for proper pump motor rotation.

### General Pump Controller Maintenance

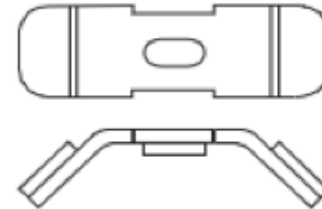
|   |  |
|---|--|
|  | <p style="text-align: center;"><b>⚠ WARNING</b></p> <p><b>Hazardous voltage.</b><br/>Can cause death, serious personal injury, or property damage.</p> <p>Disconnect power before working on this equipment.</p> |
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When properly installed, and with routine inspection and maintenance, the pump panel control can be expected to be trouble free during the entire operating life of the pump.

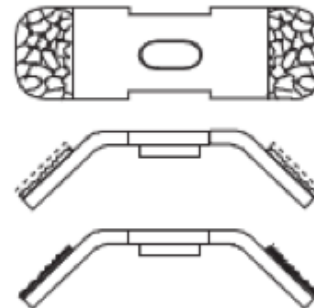
1. Periodically clean the inside of the enclosure by blowing out dust and debris which may have accumulated.
2. Check all screws for tightness.
3. Check to verify that the normally closed contacts open when the overload relay's test trip button is depressed. Reset the relay. Check to verify the normally closed contacts have closed. If the overload relay's contacts do not open or reset during this test process the overload relay must be replaced.
4. Clean weep hole in the bottom of the enclosure to ensure proper drainage.

### Class 87 Pump Panel Contactor Maintenance

1. Periodically examine the contacts – cleaning is not required since the contact material is a special pre-oxidized silver cadmium oxide alloy. Replacement is required only when the contact material is almost worn down to the backing. A complete pole consists of stationary and movable contacts and a contact spring. This feature ensures proper contact mating which, in turn provides maximum life.
2. Check magnet poles for foreign deposits and if present, carefully clean pole faces with solvent.



Clean Contacts



Worn and Dirty Contacts

Figure 3

### 3RE48 Pump Panel Contactor Maintenance.

The 3RT Innovations NEMA rated contactors can be examined for contact wear. Follow the instructions available with the appropriate contact replacement kit.