

SJE-Rhombus® Select Start™ Starter Boxes

Installation Instructions and Operation/Troubleshooting Manual



Warranty void if panel is modified.

Call factory with servicing questions:

1-800-RHOMBUS
(1-800-746-6287)

Manufactured by:

SJE
Rhombus®

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This control panel must be installed and serviced by a licensed electrician in accordance with the National Electric Code NFPA-70, state and local electrical codes.

All conduit running from to the control panel must be sealed with conduit sealant to prevent moisture or gases from entering the panel. NEMA 4X enclosures are for indoor or outdoor use, primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water and hose-directed water. **Cable connectors must be liquid-tight in NEMA 4X enclosures.**

Installation

Three phase starter boxes control one motor in water, wastewater, and sewage installations using incoming voltage of 208, 240, 480, or 575 VAC.

Mounting the Control Panel

1. Determine mounting location for panel. If distance exceeds the length of pump power cables, splicing will be required. For outdoor or wet installation, we recommend the use of a SJE-Rhombus® liquid-tight junction box with liquid-tight connectors to make required connections. **You must use conduit sealant to prevent moisture or gases from entering the panel.**
2. Mount control panel with mounting devices furnished.
3. Determine conduit entrance locations on control panel.

NOTE: Be sure the incoming power, voltage, amperage, and phase meet the requirements of the pump motor being installed. If in doubt, see the pump identification plate for electrical requirements.

4. Drill proper size holes for type of connectors being used.

NOTE: If using conduit, be sure that it is of adequate size to pull the pump and switch cables through.

5. Attach cable connectors and/or conduit connectors to control panel.

**FOR INSTALLATION WITHOUT A SPLICE,
GO TO STEP 10; FOR INSTALLATION REQUIRING
A SPLICE, FOLLOW STEPS 6-9.**

6. Determine location for mounting junction box according to state and local code requirements. Mount junction box to proper support.
7. Run conduit to junction box. Drill proper size holes for the type of conduit used. Attach connectors to junction box.
8. Identify and label each wire before pulling through conduit into control panel and junction box. Make wire splice connections at junction box.

Installation Instructions

9. Firmly tighten all fittings on junction box.
10. If a junction box is not required, pull cables through conduit into control panel.
11. Set overload protective switch. Set the dial to match motor full load amps.
NOTE: Resetting the dial with power applied to the overload could start the motor.
12. Connect pump wires directly to TB1, positions 4, 5 & 6.
NOTE: Three phase motors will run in either direction. Check pump motor before installation for proper rotation. To correct rotation, change pump cable connections on any two terminals on TB1 position 4, 5, or 6.
13. Connect "power-in" conductor to proper location: 208/240/480 on transformer. **Install tagged factory wire to appropriate transformer primary voltage tap position. (This step is not needed with the 575V version.)**

VERIFY CORRECT OPERATION OF CONTROL PANEL AFTER INSTALLATION IS COMPLETE.

14. Install float, pressure switch or other control device to TB1:7 & 8 for Auto control.
15. Install incoming power to TB1: 1, 2, & 3.

Operations

SJE-Rhombus® Select Start™ three phase starter boxes control one motor in water, wastewater, and sewage installations using incoming voltage of 208, 240, 480, or 575 VAC. Select Start starter boxes utilize a wide angle float switch to activate a combination motor controller to turn the motor on and off in Auto Mode and have an adjustable overload that allows for adjustment of motor overload current. Common applications include pump chambers, sump pump basins, irrigation systems, lift stations, and air compressor systems.

HOA Switch

A hand-off-automatic switch is provided for the pump. In the hand mode, the pump will turn on unless other safety features are employed. In the automatic mode, the pump will turn on from commands by the external auto motor start.

Motor Overload Switch

A motor overload switch is supplied for the pump to provide an adjustable overload and disconnect. The overload must be set in the field. To set the overload, dial the amp scale to the pump's full load amps (FLA). If the FLA's are unknown, use a calibrated amp meter to measure the pump amperage draw under loaded conditions. In the event of an overload trip, the motor overload switch must be reset by first turning the handle counterclockwise to the OFF position and then turning the handle 90° clockwise to the ON position.

For information regarding the
operations of options not listed here
or servicing questions,
please call a SJE-Rhombus
customer service technician at
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Troubleshooting

Float Controls

Check the floats during their entire range of operation. Clean, adjust, or replace floats.

Checking the float resistance - The float resistance can be measured to determine if the float is operating correctly or is defective. Use the following procedure to measure the float resistance:

1. Isolate the float by disconnecting one or both of the float leads from the float terminals.
2. Place one ohmmeter lead on one of the float wires, and the other ohmmeter lead on the other float wire.
3. Place the ohmmeter dial to read ohms and place on the R X 1 scale. With the float in the "off" position, the scale should read infinity (high resistance). Replace the float if you do not get this reading. With the float in the ON position, the scale should read nearly zero (very low resistance). Replace the float if you do not get this reading.

NOTE: Readings may vary depending on the length of wire and accuracy of the measuring device.

Indicator Lights

If defective, replace all indicator pilot lights with same type.

Motor Overload Switch

Test by pressing the test switch. The relay will trip.



SJE-Rhombus® Five-Year Limited Warranty

SJE-RHOMBUS® warrants to the original consumer that this product shall be free of manufacturing defects for five years after the date of consumer purchase. During that time period and subject to the conditions set forth below, **SJE-RHOMBUS®** will repair or replace, for the original consumer, any component which proves to be defective due to defective materials or workmanship of **SJE-RHOMBUS®**.

ELECTRICAL WIRING AND SERVICING OF THIS PRODUCT MUST BE PERFORMED BY A LICENSED ELECTRICIAN.

THIS WARRANTY DOES NOT APPLY: (A) to damage due to lightning or conditions beyond the control of **SJE-RHOMBUS®**; (B) to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided; (C) to failures resulting from abuse, misuse, accident, or negligence; (D) to units which are not installed in accordance with applicable local codes, ordinances, or accepted trade practices, and (E) to units repaired and/or modified without prior authorization from **SJE-RHOMBUS®**.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

TO OBTAIN WARRANTY SERVICE: The consumer shall assume all responsibility and expense for removal, reinstallation, and freight. Any item to be repaired or replaced under this warranty must be returned to **SJE-RHOMBUS®**, or such place as designated by **SJE-RHOMBUS®**.

ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. SJE-RHOMBUS® SHALL NOT, IN ANY MANNER, BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES AS A RESULT OF A BREACH OF THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY.

NOTICE!

Products returned must be cleaned, sanitized, or decontaminated as necessary prior to shipment to ensure that employees will not be exposed to health hazards in handling said material. All applicable laws and regulations shall apply.

NOTES:



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