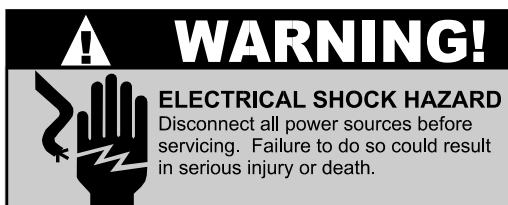# Installer Friendly Series® Subsurface Drip Control Panel

SJE-Rhombus® Type IFS Drip

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®

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 the tank 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

The Installer Friendly Series® Subsurface Drip control panel is designed to control one single-phase pump. The installer can program a PCB containing all the timer settings and monitor information for the system. These changes are made with the touch pad and screen display on the PCB. The panels are designed to be used with four floats. They are: low level cutout, on/off, peak enable, and high water alarm.

Low Level Cutout - Used as a redundant off to insure the water level can not be pumped below this float. Low level alarm can be set "Enabled" or "Disabled".

On/Off - Activates a program sequence that starts in the REST mode.

Peak Enable - Starts a different program sequence used to decrease the rest time.

High Water Alarm - Activates the audible and visual alarm.

Installation of Floats

CAUTION: If control switch cables are not wired and mounted in the correct order, the pump system will not function properly.

WARNING: Turn off all power before installing floats in pump chamber. Failure to do so could result in serious or fatal electrical shock.

1. Determine your normal operating level, as illustrated in **Figures 1 & 2**.

2. Mount float switches at appropriate levels as illustrated in **Figures 1 & 2**. Be sure that floats have free range of motion without touching each other or other equipment in the basin.

3. For mounting clamp installation: place the cord into the clamp as shown in **Figure 3**. Locate the clamp at the desired activation level and secure the clamp to the discharge pipe as shown in **Figure 3**.
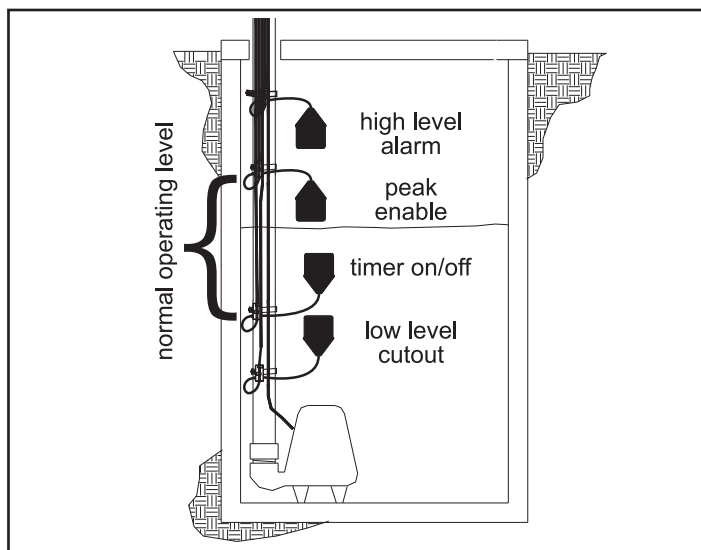
NOTE: Do not install cord under hose clamp.

4. Tighten the hose clamp using a screwdriver. Over tightening may result in damage to the plastic clamp. Make sure the float cable is not allowed to touch the excess hose clamp band during operation.

NOTE: All hose clamp components are made of 18-8 stainless steel material. See SJE-Rhombus® for replacements.

Mounting the control panel

1. Determine mounting location for panel. If distance exceeds the length of the float switches or pump, splicing will be required. **You must use conduit sealant to prevent moisture or gases from entering the panel.**

2. Mount control panel using the mounting flanges furnished with control panel.

3. Route 1/8" airline tubing from "T" at compressor manifold to control panel.

4. Slide 1/8" airline tubing over bulkhead connector on bottom of control panel.

5. Determine conduit entrance locations on control panel. Check local codes and schematic for the number of power circuits required.

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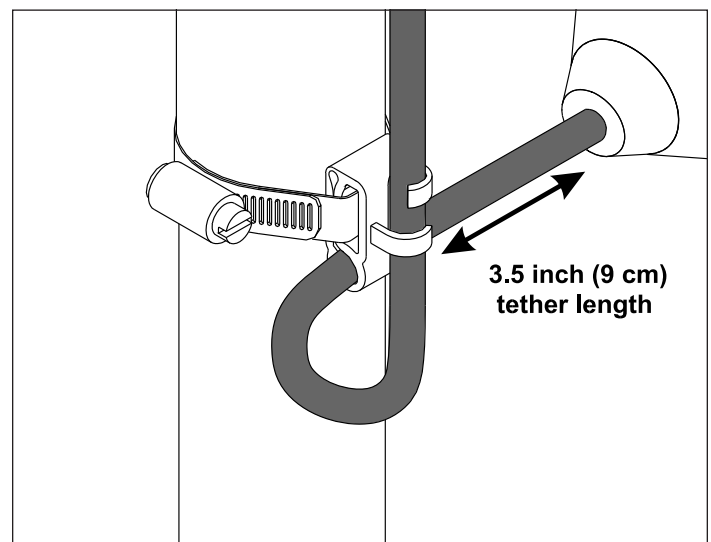
6. Drill proper size holes for type of connectors being used.

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

FOR INSTALLATION REQUIRING A SPLICE, FOLLOW STEPS 6-10; FOR INSTALLATION WITHOUT A SPLICE, GO TO STEP 11.

8. Determine location for mounting junction box(es) according to local code requirements.

9. Mount junction box to proper support according to local codes.

10. Run conduit to junction box(es). Drill proper size holes for the type of conduit used.

11. Identify and label each wire before pulling through conduit into control panel and junction box(es). Make wire splice connections at junction box(es).

12. Firmly tighten and seal all fittings on junction box(es).

13. If a junction box is not required, pull cables through conduit into control panel.

14. Connect pump wires and float switches to proper position on terminals. See schematic inside control panel for terminal connections.

NOTE: It is the recommendation of the factory to use separate pump and control/alarm power sources.

VERIFY CORRECT OPERATION OF CONTROL PANEL AFTER INSTALLATION IS COMPLETE.

high level alarm

peak enable

timer on/off

low level cutout

normal operating level

FIGURE 1 - Simplex Four float system

3.5 inch (9 cm) tether length

FIGURE 2 - Mounting Clamp Detail

Operations

The Installer Friendly Series® Subsurface Drip control panel is designed to control one single-phase pump and two valves. The installer can program a PCB to contain all the timer settings and monitor information for the system. These changes are made with the touch pad and screen displays on the PCB.

Float Switches
Four float switches are used to monitor the water height in the tank. The water height will determine what function the control panel will perform.

PCB/Control
The control panel contains a PCB used for all the timing sequences required. Motor contactor is used for pump operation. Circuit breaker is provided for the branch circuit protection and pump disconnect.

High Level Alarm Float
This float activates the alarm audible and visual alarm when lifted. The audible alarm may be silenced with the external test/normal/silence switch. This switch will also test the audible and visual alarm.

Peak Enable Float
This float activates the peak enable rest timer. The timer will start the pump at a faster rate.

On/Off Float
This float activates the program sequence. The timer will control pump cycles beginning in the rest mode.

Low Level Cutout Float
This float turns off the pump when lowered. The float will override all timers to insure the pump will not run when the water level drops below the float. The audio/visual alarm will also be activated if low level alarm activation has been selected.

Pump & Valve Operation:
Four (4) float switches (low level, timer on/off, peak enable, and high alarm floats) control the operation. Timers internal to the PCB control the pump dosing cycles. When the liquid level activates the timer on float, the following operations occur:

1. Rest time.
2. The pump turns on and the spin filter valve opens for the user-programmed length of time.
3. The spin filter valve closes and the pump continues to run for the user-programmed dose time.
4. The pump continues to run and the flush valve opens for the user-programmed length of time
5. The pump turns off and the flush valve remains open for the user-programmed drain time.
6. The flush valve closes for the user-programmed off time.

Air Compressor Fail
The control incorporates an audio/visual alarm for air compressor fail. AcFail also flashes on the display during compressor fail. The air compressor fail is activated by a low air pressure condition.

Manual Operation
Internal to the panel is a Hand/Off/Auto (HOA) switch for manual control of these devices.

(H) - manually runs the device
(O) - turns the device off.
(A) - sets the device to Auto Mode for PCB control.

Programming Instructions
The IFS default times are as follows:

Std = (Standard rest time) 60 minutes
PEA = (Peak enable rest time) 30 minutes
SPin = (Spin filter flush time) 0 seconds
dOSE = (Field dose time) 5 minutes
FLSH = (Field flush time) 30 seconds
Fdt = (Field drain time) 30 seconds
LLAL = (Low level alarm ENABLE or DISABLE)

If these times are not desired times, follow the steps below to program panel.

1. Power up panel.
2. Press "OFF" button.
3. Press and hold "SELECT" button until the display flashes between "Std" and "60".
4. Press "NEXT" button until desired time code is on display.
   Press "SELECT" button. Time will be on display with a flashing digit.
   Press "NEXT" button until desired digit is flashing.
   Press "UP" button untill desired time is selected.
5. Follow step 4 until all times are set for desired times, and low level alarm is enabled or disabled.
6. To leave programming, press and hold "SELECT" button until display clears or wait 1 minute and display will automatically clear.
7. Press "AUTO" button to place panel back in the automatic mode.

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.

NOTES: _____

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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.