



FUSION™

by CSI Controls

Duplex Pump Control Panel • Installation Instructions

 WARNING	ELECTRICAL SHOCK HAZARD Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.	 WARNING	EXPLOSION OR FIRE HAZARD Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.
Failure to follow these precautions could result in serious injury or death. Replace product immediately if switch cable becomes damaged or severed. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within boxes, conduit bodies, fittings, float housing, or cable.			

NOTE: These instructions apply to the standard catalog Fusion Series control panels. Additional options or special features may change some or all of the control panel's installation requirements.

Installation

- Installation of Floats – **Warning: Turn off all power before installing floats in pump chamber.**
 - Determine your normal operating level, as illustrated in **Figures 1 & 2**. Either configuration is acceptable.
 - If using a single wide-angle float switch for pump operation and/or if combining the lag pump and high level alarm into one float, see **Figure 3** for those configurations. See the wiring diagram for any special float wiring needed for those configurations.
 - Mount float switches at appropriate levels as illustrated in **Figures 4 & 5**. Be sure that floats have free range of motion without touching each other, or other equipment in the basin.
- Choose a control panel mounting location with maximum accessibility and visibility of visual alarm. If distance to the basin exceeds the length of the float switch cables or the pump power cables, splicing will be required. For outdoor or wet installation, we recommend the use of a CSI Controls 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 control panel.**
- Determine conduit entrance locations on control panel. Check local codes and schematic for the number of power circuits required. (“-ACB” Fusion panels have the capability of accepting a separate incoming alarm power circuit from the pump/control power incoming power.) Drill proper size holes and attach cable and/or conduit connectors to control panel.
- If a cable splice is required, determine a location for and mount the junction box according to local code requirements. Drill power size holes for and install conduit to junction box using liquid tight connectors. Identify and label each wire before pulling through conduit into control panel and junction box. Make wire splice connections in junction box, and firmly tighten and seal all fittings in junction box, ensuring all cable connectors are liquid-tight and sealed.
- Connect incoming pump power (and alarm power, for –ACB panels) conductors and pump and float conductors to the proper position on the terminal strip. See schematic inside control panel or wiring diagram on inside of enclosure door for terminal connections.
- Verify correct operation of control panel after installation is complete.

Operation

Fusion Series duplex control panels are designed to operate as a four-float system. When all floats are in the open or OFF position, the panel is inactive. As the liquid level changes and closes the “Pumps Off” float, the panel remains inactive until the “Lead On” float also closes. At this point the lead pump will start, providing the H-O-A switch is in the AUTO position and the power is on. The pump will remain on until the “Pumps Off” float opens (returns to the OFF position.) If the water continues to rise (due to failed lead pump, very high inflow, etc.), then the lag pump will also start when the “Lag On” float closes. Both pumps will remain on until the “Pumps Off” float opens. When the pump(s) shut off, the alternator will cycle, which will swap which pumps are assigned as lead and lag for the next pump cycle. If the liquid level reaches the alarm float, the alarm will be activated.

- Alarm System – When an alarm condition occurs, a flashing red alarm light and horn will be activated. If the external “Silence” pushbutton is pressed, the horn will be silenced until the next alarm occurs. When the alarm condition is cleared, the alarm light and horn are reset. The alarm system can be tested by moving the On-Off-Test switch to the “Test” position. When this switch is in the “Off” position, no audible or visual indication of an alarm condition will be given. This On-Off-Test switch should typically be left in the “On” position.
- H-O-A Switch – A Hand-Off-Automatic switch is provided for each pump to control pump operation. In the “Hand” mode, the pump will turn on regardless of the liquid level. In “Off” mode, the pump will not turn on regardless of the liquid level. In “Auto” mode, the pump will run on demand as described in “Operation” above.
- Pump Run Light – The green pump run light will be ON whenever the pump is called to run.
- Circuit Breakers (optional) – The pump and control circuits (and alarm circuit in “-ACB” panels) have a thermal-magnetic circuit breaker which provides disconnect protection.
- Dry Auxiliary Contacts (optional) – Contacts are open under normal conditions, and closed when alarm condition is present. Contacts are rated 120VAC, 5A max. and are cleared once alarm condition is cleared.

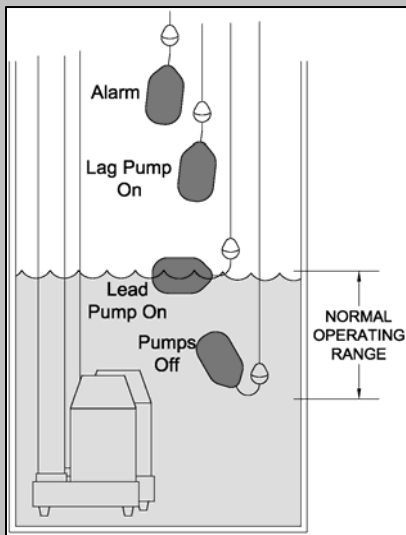


Figure 1

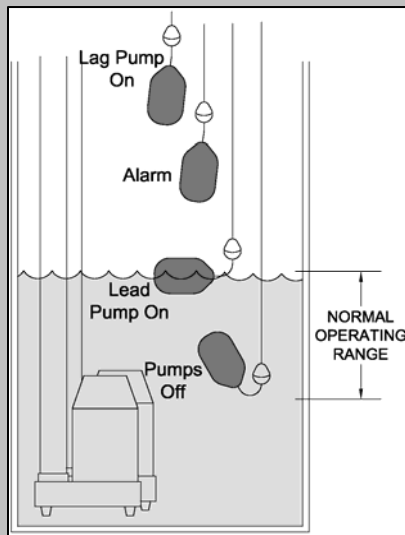


Figure 2

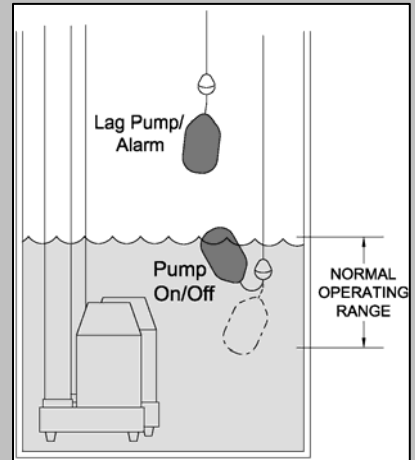


Figure 3

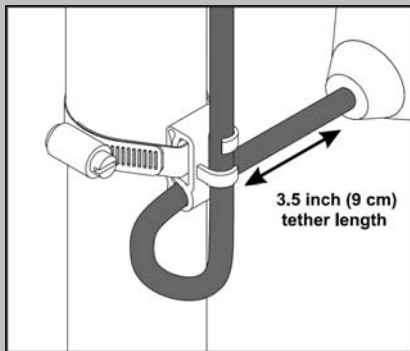


Figure 4

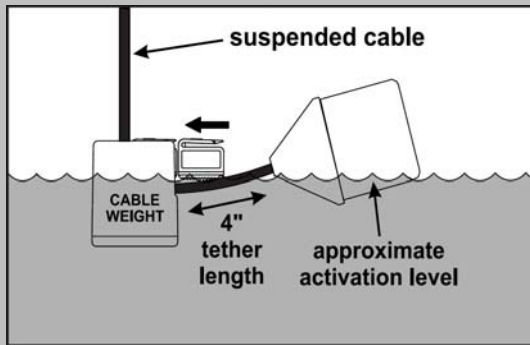
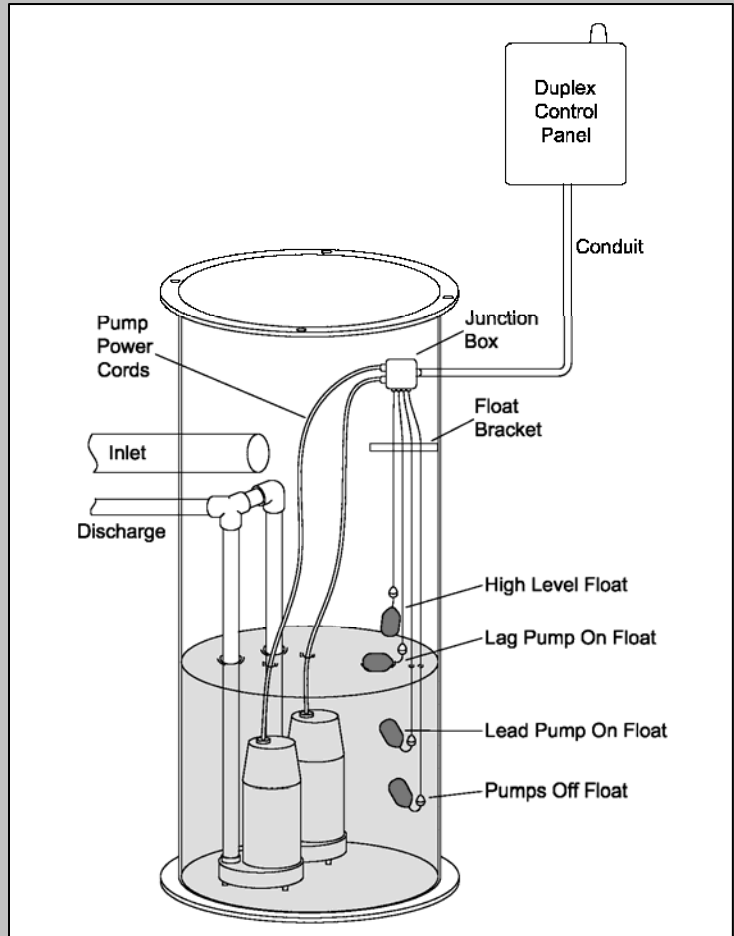


Figure 5



Typical Installation

