M.E.I

Double High Level Float Alarm

Wiring Instructions

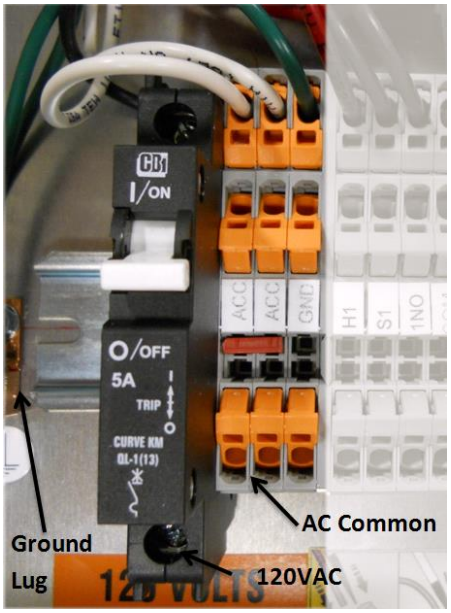
MOUNTING

M.E.I. Double High Level Float enclosures must be mounted to structures that support the weight and sustain all other forces that the enclosure and its associated equipment may impose. Before any circuits are energized, all electrical and mechanical clearances must be checked to confirm that all the equipment functions safely and properly. Installers should observe all regulatory procedures and practices to assure electrical and mechanical conformance.

- The control cabinet should be securely mounted and positioned to protect against moisture, direct sunlight, and vibration where possible.
- Install the enclosure in such a way that the conduits & cable entries are pointing down.
- The control enclosure is not rated for use in hazardous areas. The enclosure is rated NEMA 4x

ELECTRICAL CONNECTIONS

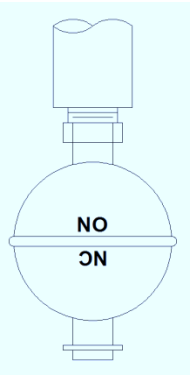
Risk of electrical shock. Switch off the power supply before opening the device. Do not install or wire the device while it is connected to the power supply. Failure to comply with this precaution can result in irreparable damage to the electronics; void the warranty, and cause injury or death.



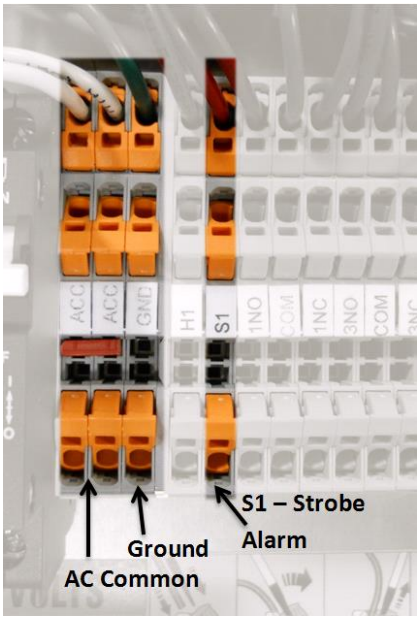
Power Wiring. The M.E.I. Double High Level Float Alarm should be provided with a clean 120VAC, 60Hz, single phase circuit. The incoming power must be provided with a circuit breaker or a disconnect switch with fuses in accordance with NEC and all local codes. Minimum wire size is 14awg.

FLOAT SENSOR WIRING

The pair of F1 and pair of F2 terminals provide normally open contacts for connection to the float sensors. With proper wiring and installation, when a predetermined liquid level is reached, the connection will activate the appropriate switch indicator light, sound the alarm and energize the strobe. The timer is provided so waves, or motion in the liquid doesn't rapidly engage or disengage the circuit. The timer will only disengage the circuit after the fluid level has dropped below the float sensor and the time on the timer has expired. The circuit is completed by connected the leads from a float sensor to the appropriate terminal (*the float sensor leads have no polarity since is it simply closing a circuit*). When each float activates its appropriate circuit, it will also energize its switch light, along with the strobe and audible alarm.



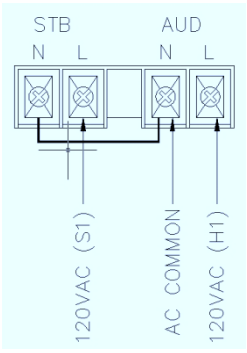
See auxiliary wiring for customization

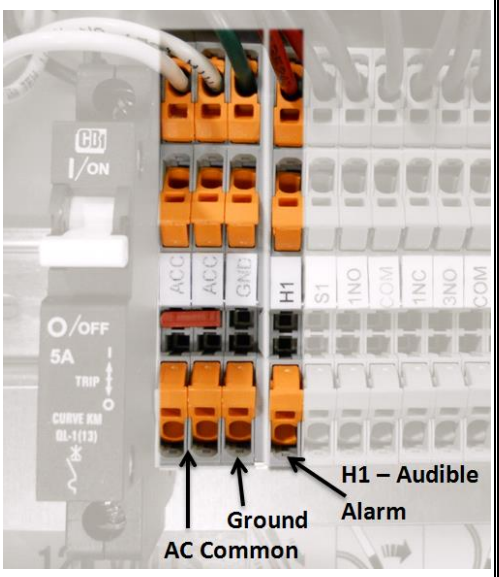


STROBE ALARM WIRING

Terminal "S1" provides 120VAC to a visual strobe alarm. This circuit is completed by bringing AC common (*neutral*) back to an ACC terminal, and returning ground (*where applicable*) to a GND terminal.

Do not locate the multitone strobe alarm within 15' of a person's ear. The sound pressure levels that the MAX 120dBa permitted by ADA & OSHA can result in damage to hearing.





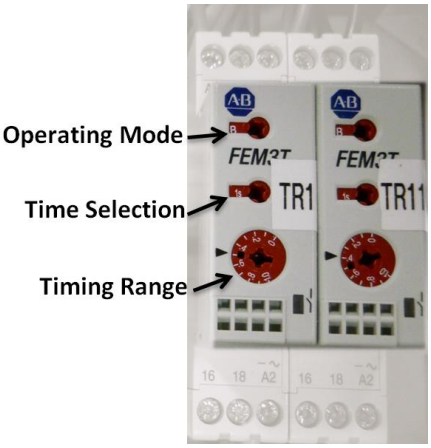
AUDIBLE ALARM WIRING

Terminal "H1" provides 120VAC to an audible alarm after the float energizes the circuit. This circuit is completed by bringing AC common (*neutral*) back to an ACC terminal, and returning ground (*where applicable*) to a GND terminal.

TIMER SETTINGS

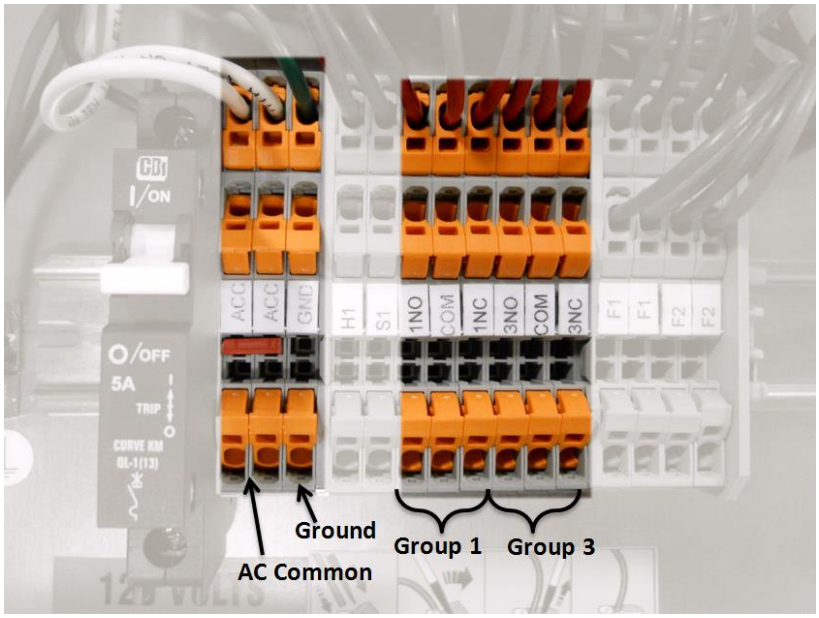
The timer delay can be set in seconds, minutes or hours depending on the specific application. Operating mode must be set to B, while the timing range may be specified from .1 seconds to 10 hours. Time Selection provides the option for 1s, 10a (*seconds*), 1m, 10m (*minutes*), 1h, or 10hr (*hours*). Timing range selection spans from 0 to 1.0 with .1 intervals. To set a time, time selection would first be chosen, followed by timing range, multiply the two and that would be the delay.

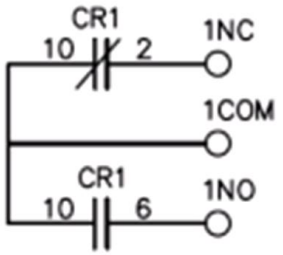
To set a time for 5 seconds, the time selection would be set to 10s, and timing range would be set at .5

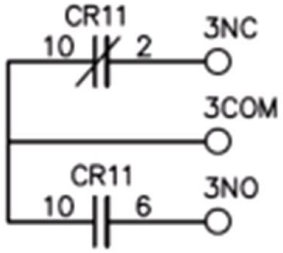


AUXILIARY WIRING

Terminals 1NO, COM, 1NC and 3NO, COM, 3NC are provided so optional motors or valves may be controlled by the float sensors. The COM terminals are the source connection for the NO (*normally open*) and NC (*normally closed*) terminals. The voltage provided on the COM terminal will be available on the NC terminal until the float sensor activates the circuit. The COM terminal provides the same voltage to the NO terminal, only after the float sensor has activated the circuit. There are many options for wiring auxiliary connections since these are isolated circuits.







AUXILIARY WIRING Cont'd

Auxiliary connections may be used to signal when a pump should turn on or off. In this case, a source voltage needs to be supplied to the COM terminal. When high level is reached, the source voltage will be switched from the NC terminal block to the NO terminal block and can be used as a signal to start a variable frequency drive or to energize the coil of a motor contactor.

In the same manner, valve control can also be obtained. By supplying the COM terminal with the electric valve's appropriate voltage, the NC terminal will signal the valve to close while the NO terminal block will signal it to open. If an air actuated valve is used, the NO terminal can be used to operate the valve's air actuator.

An example of typical auxiliary connections may include the control of motor pumps and valves, until the fluid level reaches each float sensor. In this scenario, 120VAC would be connected to a COM terminal where it would return to a motor starter through the corresponding NC terminal so the pump can operate until the float sensor activates the circuit. This may also be wired in tandem with valves, wired to the corresponding NO terminal, that would close when the float sensor activates the circuit to prevent any flow back.

In addition to being able to sense when the tank is full, the M.E.I. Double High Float box may also sense when the tank is almost empty, and prevent running a dry pump. When installing the float sensor to sense a low level in the tank, the float sensor needs to be installed with the "NC" side facing up (*shown right*). In this case the wiring would remain the same to the "F1" or "F2" terminals, while the relay contacts will control the pump motor, and valves the same.

Other potential scenarios may include: (*but not limited to*)

- Sensing fluid levels in two different tanks
- Sensing the level of different fluids filling a tank separately - i.e. filling a tank half full with fluid 1 and continuing with fluid 2 after the first float sensor energizes its appropriate circuit.
- Float sensors may be mounted close to each other towards the top of the tank, when the first sensor energizes its circuit, it can send a signal to the motor starter to slow down the pump motor, while the high float energizes the circuit that tells the motor starter to stop the pump motor.
- In a similar scenario, the first float may energize a pump through a motor starter that would begin to inject an additive into the fluid until the high level float is reached.