



AC (Alternating Current): 1. An electric current that reverses its direction at regular intervals. 2. A flow of electricity which reaches maximum in one direction, decreases to zero, then reverses itself and reaches maximum in the opposite direction. The cycle is repeated continuously. The number of such cycles per second is the frequency.

Alarm Condition: Condition that warns operator of a problem with system. An example would be a high water alarm which will activate horn and light.

Amps: The unit of measure of electrical current flow.

Alternator: Device designed for alternating the run cycle or duplexing of two motors automatically, which equalizes pump wear.

Circuit Breaker: A switch that protects an electrical circuit from overload by opening the circuit when the current flow exceeds a predetermined level. It serves the same purpose as a fuse and can be reset either manually or electrically after the overload is removed.

Closed Circuit: A circuit in which there is a complete current path from the voltage source, through the circuit, and back to the voltage source.

Conduit: Plastic or metal piping used to protect electrical conductors (wires) or cables.

Contactor: An electrical relay used to control the flow of power in a circuit.

Control Panel: An enclosure containing pump/motor control components and alarms. Examples of these components might be: contactor(s), relays, terminal strip, alarm components, etc.

Current: The flow of electrons through a circuit. Current flow is measured in amperes, but this unit may be too large for some applications, so milliamperes (thousandths of an amp) are also used for measurement.

Cycle: (Pump Term) The normal on-off operation of the pump to keep the liquid level at a set point.

DC (Direct Current): Electrical flow in one direction only (like a battery). It is the flow of charges in just one direction with a fixed polarity of applied voltage.

Direct Wire: Wiring a float switch directly to a pump or a control panel (without piggy-back plug).

Discharge Pipe: The pipe that passes the liquid out of the pit or sump. The outlet pipe opposite the suction side of the pump.

Double Pole, Double Throw: A six-terminal switch or relay contact arrangement that simultaneously connects one independent pair of terminals to either of two other independent pairs of terminals.

Duplex System: A double pump system where pumping time is alternated between two pumps. When one pump is running the second acts as a stand-by to handle overload or pump failure.



Electrical Contact: A physical contact that permits current flow between conducting parts.

External Weight: The weight secured to a float switch cable which serves as a pivot point.

Flasher: The device utilized in alarm systems that flashes the light on and off at regular intervals.

Float Switch: A commonly used term to describe a switch that is buoyant in liquid and tilted on an axis (pivot point).

Fuse: A circuit protective device. When the voltage or current becomes excessive, the fuse burns out and opens the circuit path.

Ground: A return path to the generator through the earth, or through a common connection.

Insulator: A material that will not readily conduct electricity.

Intrinsically Safe: Intrinsically safe barrier, which is designed to limit the energy (voltage and current) to the sensors in a classified hazardous location, under specified fault conditions.

Junction Box: Term applied to a PVC reinforced box used to contain and protect cable connections.

Lag Float: In a duplex system, the float switch that activates a secondary pump or alarm (lag pump) if the lead pump cannot handle the flow.

Lead Float: Float switch that starts the lead pump in a duplex pump system.

LED: (Light Emitting Diode) Warning light device with longer life than a light bulb.

Liquid Level Controls: Pump and valve controls used for maintaining pre-set liquid levels.

Mechanical Float Switch: A mechanically activated switch that is buoyant in liquid and tilted on an axis (pivot point).

Mercury Float Switch: A mercury activated switch that is buoyant in liquid and tilted on an axis (pivot point).

Motor: An electrical component that converts electricity to rotation.

Motor Contactor: An electro-mechanical power relay used to switch pump load.

Motor Starting Current: Amount of current needed to start a motor (starting amps or in rush).

NEMA: National Electrical Manufacturer's Association.

Normally Closed (NC): Reverse action switch, when the float is hanging down, the circuit is closed (continuity made).



Normally Open (NO): Contacts are open (no continuity between the poles) when the float is hanging down.

OHMS: A value-measure of electrical resistance in a conductor, element, resistor, etc.

Piggy-Back Plug: A molded plug configuration used on pump switches which when plugged into an AC power outlet, allows the molded plug of the pump to be plugged into it. This allows the switch to control the pump.

Pressure Activated Controls: Consists of the entire CSI product line that utilizes the pressure bell technology including: The Commander, PAC1, PAC2, RetroPAC 48, RetroPAC 240, and some of the Titan Series.

Pressure Bell: CSI's proprietary system that replaces all the floats in a basin with one bell. The system is activated by air pressure that builds up in the bell as the water level in the basin rises. It exceeds intrinsically safe standards because no electric from the level sensing device enters the basin. It is not affected by turbulent conditions. See page 9 for more information.

Pump Circuit: The circuit in line with the pump and incoming pump power that provides power, control and protection for the pump.

Pump Cycle: One complete normal on-off function of the pump.

Pump Chatter: Very rapidly starting and stopping a pump, relay, motor contacts, etc. which may cause overheating and damage. This is caused by the contact being opened and closed rapidly perhaps due to turbulence. A common problem with float switches.

Pumping Range: Difference between pump "on" level and pump "off" level.

Relay: An electrical-mechanical activated set of contacts used to make or break a circuit when it is electrically activated or deactivated.

Relay Contacts: The mechanical poles that make or break a circuit. These are housed in a relay, and activated by relay solenoid.

Resistor: An electrical component used for introducing resistance into a circuit to reduce the voltage.

Secondary Voltage: Generally the lowered (transformed) voltage on a control system.

Shock Hazards: Open conductors or terminals that could allow electrical current to pass through flesh to ground.

Simplex: A single pump control system.

Single Phase: Refers to a circuit energized by a single alternating electric force. Common voltage levels are 120V, 208V, or 240V.



Solenoids (Electro-Magnet): An inductor that serves as a magnetic force to close contacts on a relay, and also to shift a solenoid control valve.

Single Pole Double Throw (SPDT): Mechanically activated float switch that can be wired for normally open or normally closed operation.

Single Pole Single Throw (SPST): Contact configuration which makes or breaks a single circuit only. Opens and closes a single conductor only.

Starting Current: The high initial inrush current (amps) required to accelerate motors to operating speed.

Switch: A component that opens or closes a circuit path.

Terminal Block: A grouping of screw terminals used to join AC power circuits, pump circuits, and float switch circuits into a system.

Test Button: Push button switch on control panels to test devices (light and horn).

Three Phase: Energy consisting of three alternating electrical forces that differ in phase by one-third of a cycle or 120 degrees.

Transformer: Changes AC voltage to a higher or lower level.

Turbulence: Movement (splashing or inrush impact) of liquid which might affect float switch performance and cause pump chatter. A common problem with float switches.

U.L. Listing: (Underwriters Laboratories) offers formal recognition that the device or product meets specified standards.

Volts: A unit of measurement for the voltage rise or voltage drop in a circuit.

Warning Horn: Audible warning indicator.

Warning Light: Visual warning indicator.

Watts: The unit of measurement for electric power.

Wire Nuts: Screw connectors used to join conductors together.