

wellcare[®] information for you about Well Components: Pressure Switches

Pressure switches monitor your water system to electrically “start” or “stop” your pump at pre-set water system pressures. Pressure switches are used on submersible, reciprocating and jet pump systems.

In a well system, pumps are used to bring water from the well and to pressurize the piping system in the home. Water is pumped into a well tank to compress the air that provides water under pressure when the pump is not running. When the desired pressure (known as the “cut-out” pressure) is reached, the pressure switch shuts the pump off.

When there is a demand for water at any of the fixtures, the pressure in the well tank drops. When the lowest desired pressure (known as the “cut-in” pressure) is reached, the switch starts the pump and pressurizes the system.

Choosing a Pressure Switch

Pressure switches can be either electro-mechanical or electrical/solid state. When choosing a pressure switch, you need to know your pump’s “cut-in” and “cut-out” pressure (the low number is the “cut-in” pressure, and the high number is the “cut-out” pressure), tank precharge pressure and the pressure connection size (usually 1/4”NPT or 3/8” NPT). Look for a pressure switch that is:

- tested by a Nationally Recognized Testing Laboratory (NRTL);
- quick to install (see “Caution” note below); and
- easily adjusted to your pump’s “cut-in” and “cut-out” pressure.

The difference between the “cut-in” and “cut-out” pressure is called the “differential.” Typically, pressure switches have a range of pressure up to 100 psig and “differentials” of 10-40 psig. Pressure switches are set at the factory with a 20 psig differential pressure and can be adjusted at installation as desired. Refer to the manufacturer’s instructions.



CAUTION: *Electrical equipment should only be serviced by qualified electrical maintenance personnel. Follow all manufacturers recommended installation instructions and all state and local electrical codes.*

Additional information on your well pump and well tank can be found in the wellcare[®] information sheets on those topics, available on WSC’s website.

Pressure Switch Location

The pressure switch is to be piped near the tank to ensure maximum tank drawdown at a given pressure differential.

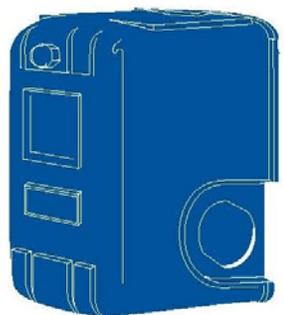
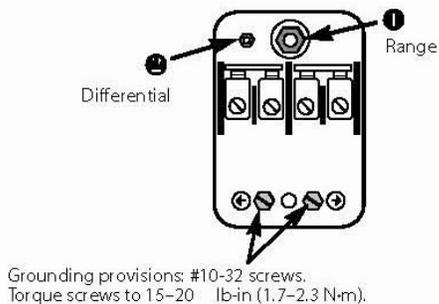
Additional Features

Electrical/Mechanical Design: Some pressure switches include additional features, such as a low pressure cut-off which will turn the pump off if pressure drops 10 psig below the cut-in pressure. This feature protects the pump from running dry, or loss of prime. ***Please contact your well professional if the switch chatters, continually trips the low water level or will not maintain pressure.*** Special additional features are available. Consult the manufacturer.



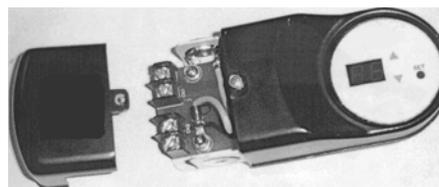
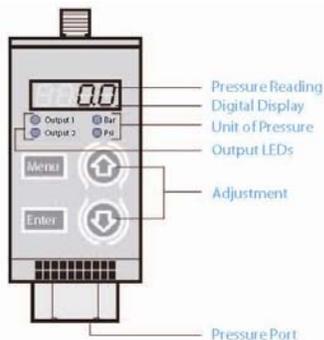
Caution:
Follow the manufacturer’s instructions for your safety and proper pump/tank operation. Improper adjustments may result in mechanical damage to the system and/or risk of personal injury.

Below is an example of a typical, standard electrical/mechanical pressure switch.



The pressure pump range and differential are set by adjusting the nuts shown and following the instructions on the inside of the cover. Only a qualified well professional should make these adjustments.

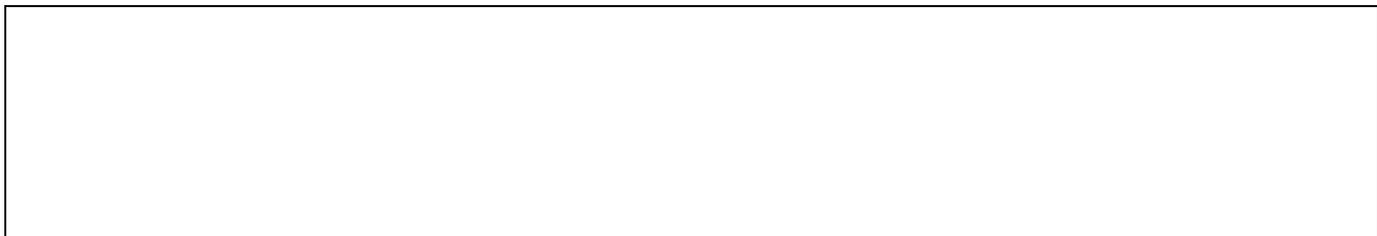
Electronic/Solid State Design: Electronic/solid state pressure switches have no contacts and pump cut-in and cut-out pressures are adjusted by pressing an up or down arrow button. Additional features are diagnostic tools that detect rapid cycling, supply voltage, pressure transients (low pressure, peaks, water hammer), differential ranges to ± 5 psi, or other methods for troubleshooting system operation. Below are examples of electronic/solid state pressure switches.



Because of the electronic technology, these products can have multiple functions. For example, they can be configured to work as a digital gauge with 2-4 digit displays, or to create a narrow differential control down to <10 psig.

For more information about wells and other wellcare® publications

wellcare® is a program of the **Water Systems Council (WSC)**. WSC is a national nonprofit organization dedicated to promoting the wider use of wells as modern and affordable safe drinking water systems and to protecting ground water resources nationwide. This publication is one in a series of wellcare® information sheets. They can be downloaded FREE from the WSC website at www.watersystemscouncil.org. Well owners and others with questions about wells or ground water can also contact the wellcare® hotline at **888-395-1033** or visit www.wellcarehotline.org



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