

Ultrasonic Switches Monitor the Toughest Applications

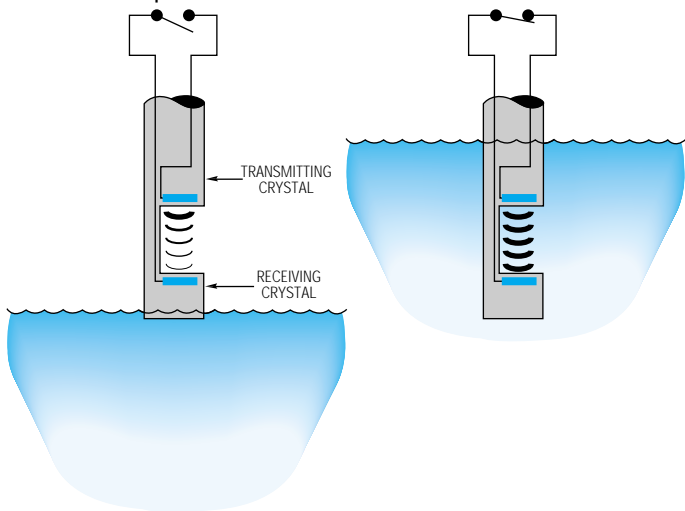
LEVEL SWITCHES

- ▶ Operates in a wide variety of liquids
- ▶ Handles pressures to 1000 psi
- ▶ Unaffected by foam, vapors, particulate or turbulence
- ▶ Lengths to 121 inches (307.3 cm)
- ▶ Can be side, top or bottom mounted

GEMS ULS Series of ultrasonic switches are designed for a broad spectrum of viscous to light liquids; including some of the most challenging liquids you may deal with: acids, freon, paints, lacquers, etc. They're built to withstand high temperatures and pressures with welded stainless steel sensor probes that have no seals to leak and no moving parts to wear out. ULS Series switches are unaffected by variation in temperature, pressure, density or type of liquid. In most cases, electronics are housed in cast aluminum, NEMA 4/NEMA 7 explosion proof and water tight enclosures.

General Operating Principle

ULS Series switches operate using ultrasonic sound wave propagation. Ultrasonic sound waves are greatly attenuated when transmitted through air. Conversely, when liquid is present, transmission of the sound waves is greatly enhanced. The electronic control unit generates electrical signals that are converted to bursts of ultrasonic energy at the sensor. The ultrasonic bursts are transmitted across the liquid sensing gap. Upon receipt of a valid signal, the solid-state electronics generate a **data enable** condition, indicating liquid is present. This signal energizes a relay and provides an output condition.



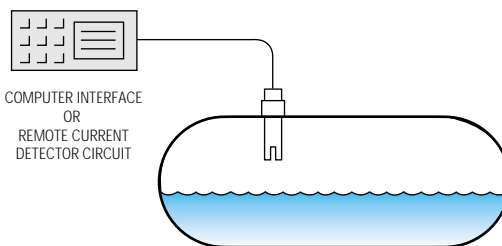
Typical Installation

1. Drill a suitable hole in the vessel or pipe wall and tap for 3/4" NPT. In thin walled vessel or material not suitable for threading, weld or braze a bushing to accept the sensor.
2. Screw the sensor in the threaded section and make sure that there is a good seal. Use a pipe compound or sealing tape to avoid excessive tightening. Do not overtighten.
3. Run the power and control wiring cables to the electronics control unit.

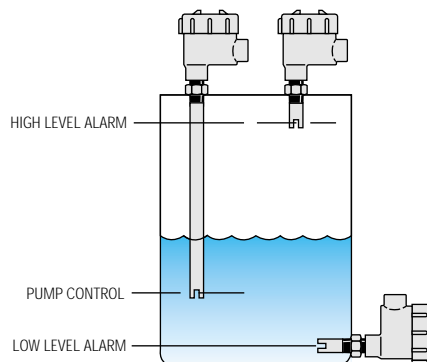


Advantages of GEMS 2-Wire Output Switches— ULS-400/ULS-500, ULS-200 and ULS-10

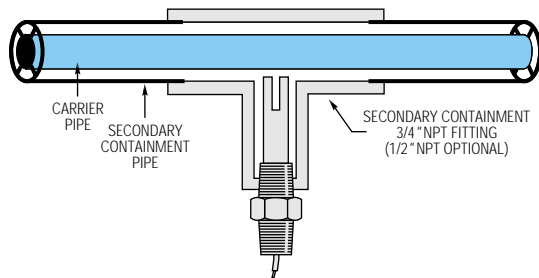
1. No A.C. Power
2. No Coaxial Cable Required
3. Up to 1000 ft. or Longer Distance
4. Reduces Installation Cost



Vertical or Horizontal Mounting



Secondary Containment Tanks and Piping Systems



Maintenance

Electronics are constructed with solid-state components and epoxy-potted. Periodically, check and clean the sensor when used with liquids which cause a coating build-up on the sensor. No other maintenance is required.

If the pipe or vessel to which the unit is mounted is to be steam-cleaned or cleaned with abrasive detergents, remove the entire unit before cleaning by:

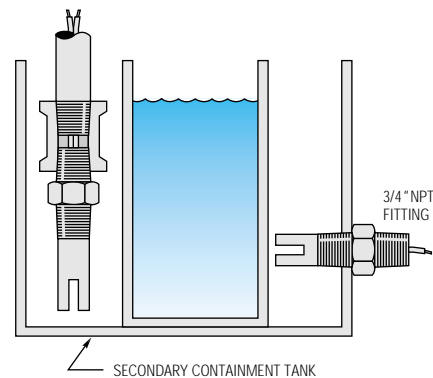
- (1) Disconnecting the power at source.
- (2) Opening the housing cover.
- (3) Removing power and control wiring cables.
- (4) Unthreading the sensor.

To reinstall, follow installation procedures.

Specifying and Ordering GEMS Custom Ultrasonic Switches

Our OrderIt! Forms make it quick and easy.

1. To specify this product, start by photocopying the appropriate OrderIt! PRODUCT CHECK LIST located at the back of this catalog; Page Z-14.
2. Next, using the product information supplied in this section, check off the boxes and fill in the blanks of the OrderIt! Check List to specify your desired product configuration. Accurate answers to each question will assure correct fit and function of your custom built product. Note: Use a separate Check List for each unique configuration.
3. To obtain a priced quotation, Fax your completed OrderIt! Check List to Gems at 860-747-4244 or fax it to the Sales Office or Representative nearest you. All of our offices, along with their fax numbers, are conveniently located at the end of this catalog. Or, if you choose, mail it to us...We'll do the rest!
4. To order your CUSTOM product, either place your order over the phone with one of our representatives, or use the OrderIt! method. Just photocopy the OrderIt! ORDER SHEET found at the back of this catalog. Accurately complete all of the purchasing information that we'll need to process your order and fax it along with your OrderIt! PRODUCT CHECK LISTS. When using the Fax or mail method, the ORDER SHEET must be accompanied by the PRODUCT CHECK LISTS to expedite your order. These forms will provide us with the shipping and billing information we need, along with any prices or delivery dates quoted.



Don't hesitate to call a GEMS representative with questions, or for any clarification.

1-800-321-6070

(Outside of Continental U.S., 860-747-3000)