

# OPTICAL LIQUID-LEVEL SENSOR

## LV170 Series



LV171 shown larger than actual size.

Integral Pull



- ✓ Compact—Fits Interstitial Spaces
- ✓ Unaffected by Vapors, Even at High Concentrations
- ✓ Easily Removed, Cleaned, and Reinstalled
- ✓ No Moving Parts

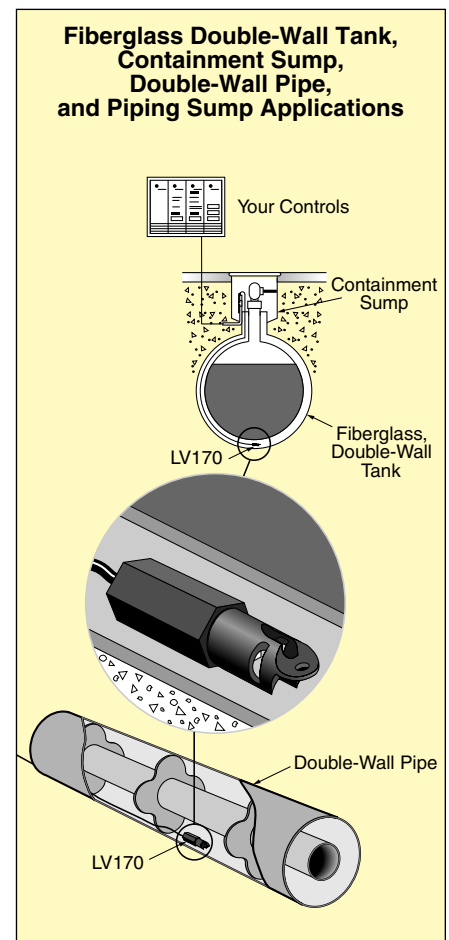
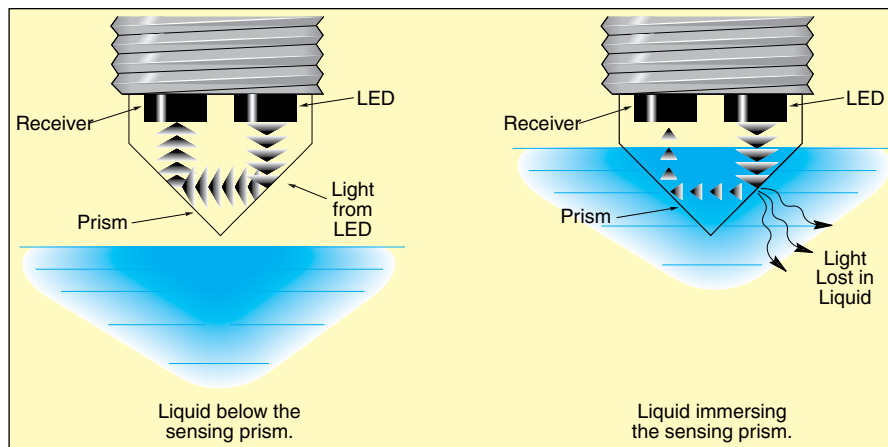
The LV170 optical liquid sensor accurately detects the presence of liquid in fiberglass double-wall tanks, containment sumps, and double-wall pipes. Built-in electronic switching ensures dependability throughout its long service life. This reusable sensor easily fits small, interstitial spaces and senses liquid hydrocarbons or water. The unit is unaffected by hydrocarbon vapors,

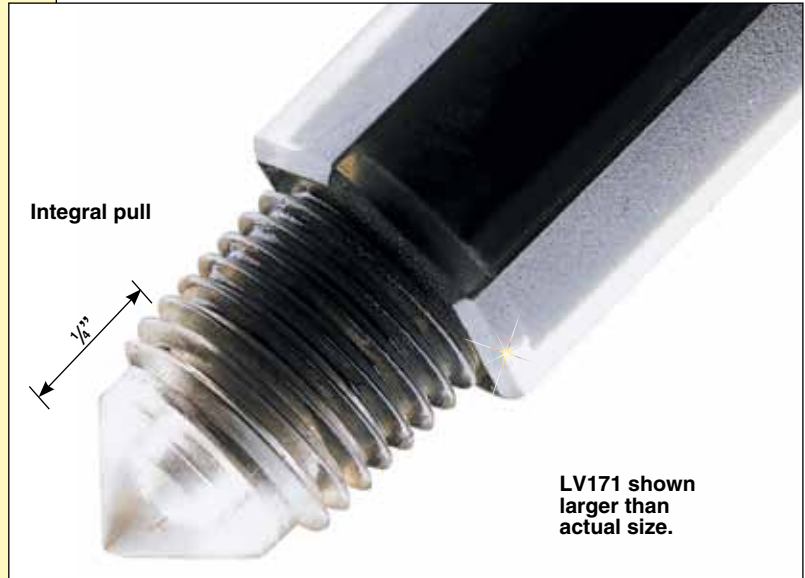
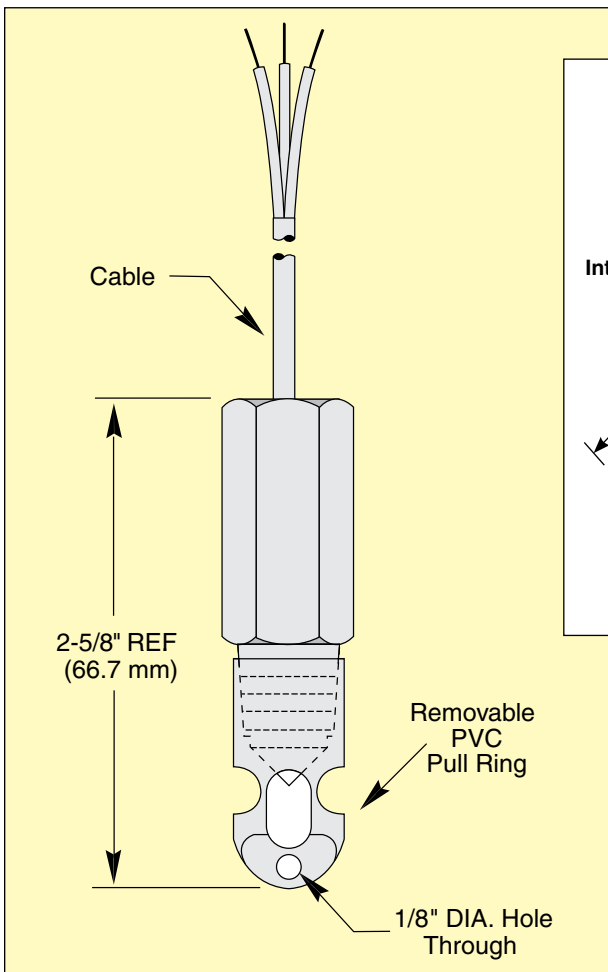
thereby greatly reducing the risk of false alarms. The LV170 sensor is easy to remove, clean, and reinstall after an alarm condition is triggered, or for maintenance.

The LV170 electro-optical sensor contains an infrared LED and a light receiver. Continuous light from the LED is directed into a prism that forms the tip of the sensor.

If no liquid is present, light from the LED is reflected within the prism to the receiver. When rising liquid immerses the prism, the light is refracted out into the liquid, leaving little or no light to reach the receiver. Sensing this change, the receiver actuates electronic switching within the unit to operate an external alarm or control circuit.

**Note:** The LV170 sensor is a non-voltage-producing device and does not contain energy storing components. However, because primary use is in hazardous locations, an appropriate intrinsically safe interface device is required for its use.





### Electrical Parameters Entity Parameters for 10 to 28 Vdc Input

Terminal	V <sub>MAX</sub>	I <sub>MAX</sub>	C <sub>i</sub>	L <sub>i</sub>
Red/Black	38V	150 mA	0.052 µf	0
White/Black	38V	150 mA	0.052 µf	0

$V_{MAX} \geq V_{OC}$  (Barrier)  
 $I_{MAX} \geq I_{SC}$  (Barrier)  
 $C_i + C_{cable} \leq C$  (Barrier)  
 $L_i + L_{cable} \leq L$  (Barrier)

#### Definitions:

$V_{OC}$  = Maximum Open Circuit Voltage  
 $I_{SC}$  = Maximum Short Circuit Current  
 $C_i$  = Internal Capacitance  
 $L_i$  = Internal Inductance

## SPECIFICATIONS

### Wetted Materials:

Polysulfone, PVC, epoxy

### Operating Temperature:

-17.8 to 80°C (0 to 176°F)

### Current Consumption:

Approximately 18 mA

### Output: TTL/CMOS compatible;

may sink up to 40 mA

### Cable: 3-conductor PVC jacketed

[7.6 m (25')] extended]

### Approvals: UL for Class I,

Group D Hazardous Locations

### Weight: 340 g (0.75 lb)

### Maximum Pressure: 150 psig

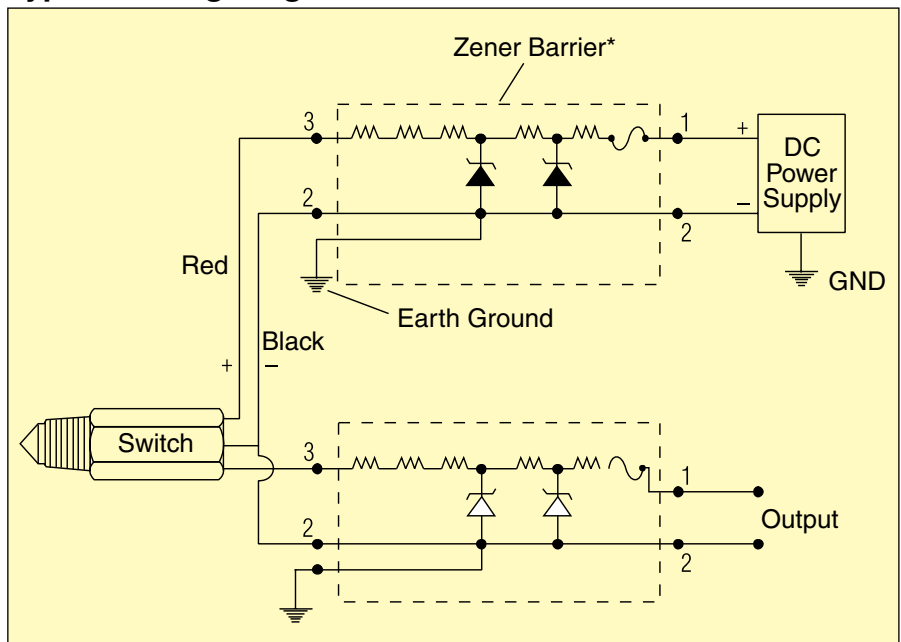
## To Order

Model No.	Output Conditions
LV171	Wet probe =current sink
LV172	Dry probe =current sink

Comes complete with 7.6 m (25'), 3-conductor PVC jacketed cable and operator's manual.

**Ordering Example:** LV171, wet probe sensor.

## Typical Wiring Diagram



\* Source voltage not greater than 250 Vac. Zener barriers must be installed in accordance with barrier manufacturer's instructions.