

## **Metritape™** Level Sensor Type LA-AF

### **Features:**

- All electric resistance-tape sensor for stable output; no moving parts to stick or break
- Tank top mounted for easy installation
- Virtually maintenance-free; just a five-minute filter change every 24 to 48 months
- Intrinsically safe; combined level and temperature capability
- Teflon and glass-filled polypropylene wetted parts; highest operating temperature of all the resistance-tape level sensors

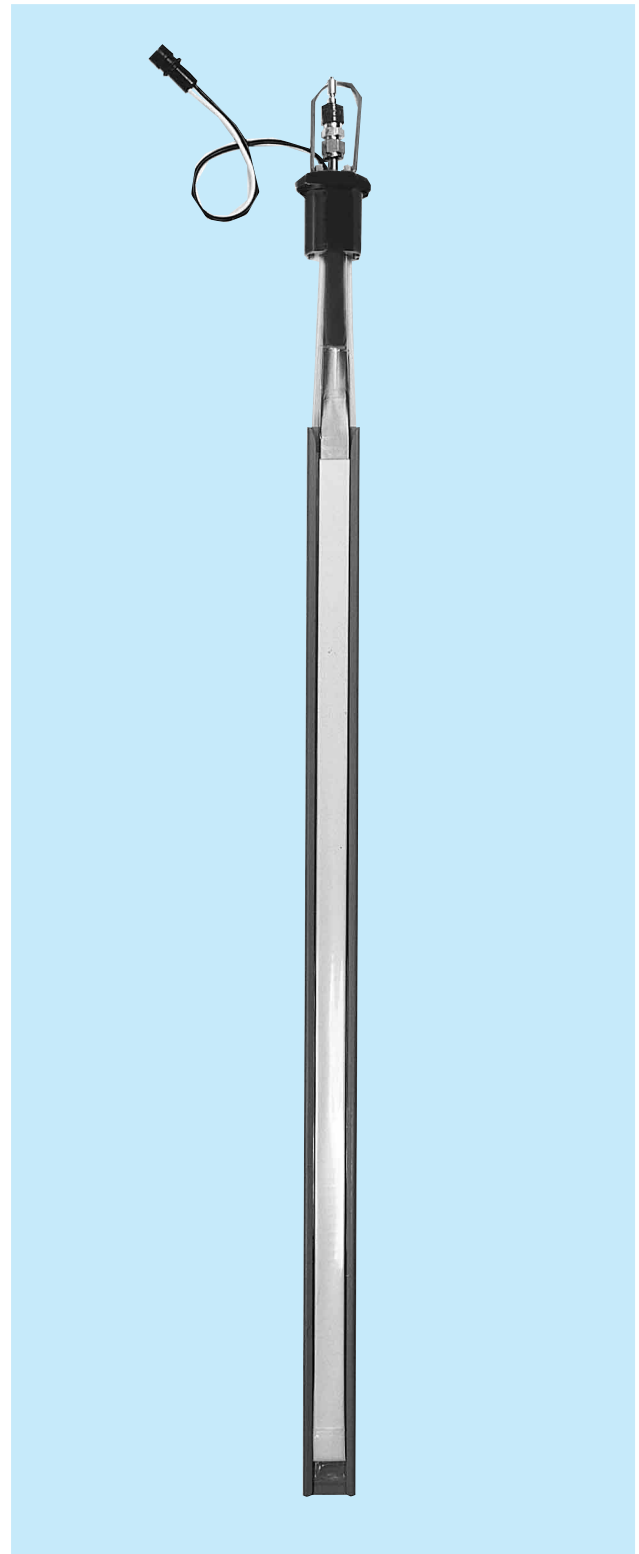
### **Description:**

The LA-AF level sensor is used to gauge a wide range of chemicals and solvents with temperatures up to 225° F (107°C). Gauged products include most organic and inorganic chemicals, aggressive solvents and petrochemicals.

The LA-AF is available in lengths of 3 to 100 feet (1 to 30 meters). The sensor has a high resolution helix and gold-on-gold electric contacts for 1/4" turns resolution and long-term contact stability. It is enclosed in a FEP sheath providing an all fluorocarbon sensor with monel screws, exposed in vapor space. The sensor filter protects it from moisture and contaminants and provides pressure equalization.

Temperature detection can be provided as an option with up to three (3) RTDs mounted within the sensor envelope at specified locations along the sensor back. Detectors are 2-wire 1000Ω platinum (TP).

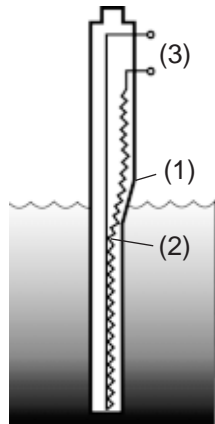
The LA-AF is not suited for use in halogen acids (including hydrochloric), in high vapor-pressure materials (such as ammonia and freon), or under cryogenic or high-level nuclear radiation conditions.



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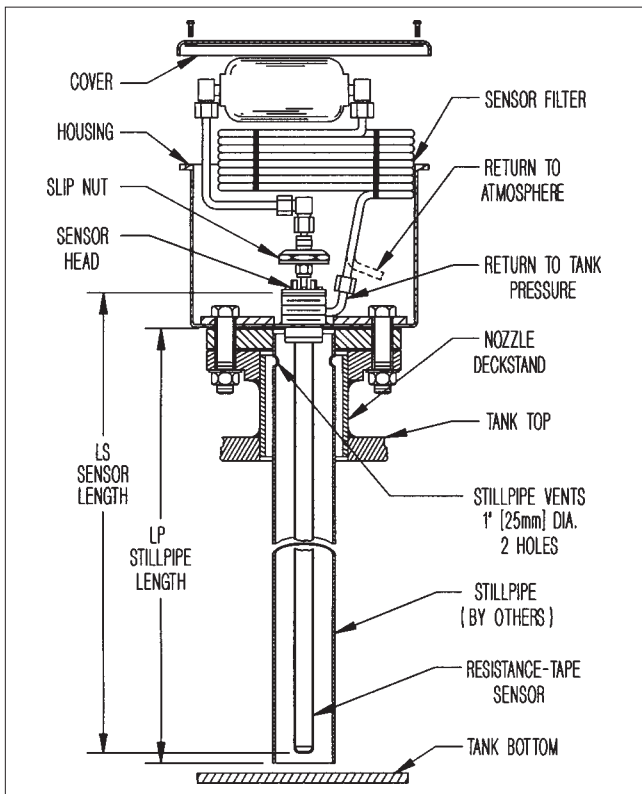
## Operation Principle:

The resistance-tape sensor's outer envelope jacket (1), is compressed by hydrostatic pressure causing the gold plated nichrome wire helix to contact the stainless steel base strip (2). The resulting resistance (3) indicates the length of active or uncontacted helix, and the distance from sensor top to liquid surface.



## Installation:

The LA-AF sensor is installed into a customer supplied, vented still pipe with a minimum diameter of 1.5 inches. Specific still pipe construction may vary with application. **To Specify Length** - (1) Select still pipe in feet or meters; (2) Specify LA-AF sensor of same length as still pipe; (3) LS = LP and still pipe will extend beyond sensor by 1 3/4 inches, the height of close nipple.



### Disclaimer:

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## Specifications:

**Sensor Length:** 3 to 100 feet or 1 to 30 meters.

**Temperature Range:** -20° to 225°F (-30° to 107°C).

**Wetted Materials:** FEP Teflon, Glass-filled Polypropylene. Slip nut is stainless steel.

**Active Helix:** Starts 9.09 in (230mm) from sensor zero, extends to approx. 2.75 in (70mm) from sensor bottom.

**Helix Resolution:** 1/4 inch (5mm).

**Actuation Depth:** Nominal 5 inch (125mm) head of water, offset at calibration.

**Specific Gravity Effect:** 1% increase in SG causes nominal 1.0mm increase in indicated level, (can be calibrated).

**Resistance Gradient:** 305Ω / ft. (1000Ω / m), ± 1%.

**Helix Temperature Coefficient:** 40 ppm / °C.

**Frequency Response:** 0 to 0.1 Hz at 1 m amplitude.

**Sensor Filter:** Filter life of 24 to 48 months, varies with level cycle activity.

**Pressure Equalization:** Direct equalization ± 1 atm.

**Temperature Detectors:** Up to three RTDs per sensor, 2-wire Platinum (TP). Located 2.0' (.6m) from bottom, 9.8' (3m) from sensor top, and at 50% of sensor length.

**Approvals:** When used with approved zener barrier, qualifies for intrinsic safety ratings: FM: Class 1, Division 1, Groups C, D.

**Sensor Weight:** 5.5 lb. (2.5 kg.), plus .15 lb/ft (.24kg/m).

**Sensor Shipment/Storage:** Generally coiled on paper-board reel and packed in corrugated box 42 x 42 x 3 in. (107 x 107 x 8cm). Packing adds 8 lbs. (3.63 kg.) to sensor weight.



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