

## TECHNICAL DATA

**FOZMULA**  
INNOVATION IN SENSORS

### T/LL350 Liquid Level Sensor



The **T/LL350** series is a range of highly advanced sensors for continuously measuring the contents of a tank. The unique feature of the T/LL350 is that it auto compensates when a liquid with a different dielectric constant is used. For example, if it is used in a tank of conventional diesel, then the user can refill with bio-diesel and the sensor will correct the output level automatically.

Options include a high/low level alarm point, fitment of any suitable connector and compensation for non-linear shaped tanks.

## SPECIFICATION

### Liquid Types

Diesel, biodiesel, kerosene, petrol, water or any liquid which is compatible with the materials of construction.

### Construction

**Housing:** Die cast aluminium & stainless steel  
**Sensor tube:** Anodised aluminium  
**Wetted Materials:** PTFE, polypropylene, Viton, aluminium & stainless steel

### Dimensions

**Probe length:** Min 150 mm  
Max 2000 mm static applications & 1000 mm on mobile applications

### Electrical

**Supply voltage:** 9-32 VDC with 80 V over voltage protection  
**Supply current:** 15 mA@12 VDC + output load  
**Connections:** 430 mm long 18 AWG XLPE flying leads#

### Outputs

**Resistive:** Any values between 3-500  $\Omega$  or 500-3  $\Omega$  (3  $\Omega$  Steps)  
**Resolution:** 3  $\Omega$   
**Max dissipation:** 250 mW  
**Current:** 0-20 mA, 4-20 mA  
**Resolution:** 20  $\mu$ A  
**Max load:** 250  $\Omega$  (Including interconnecting cable resistance)  
**Voltage:**  
**12 VDC system:** Any values between 0-5 V/5-0 V  
**24 VDC system:** Any values between 0-10 V/10-0 V  
**Resolution:** 10 mV  
**Max Load:** 10 mA source (dependent on minimum supply voltage)  
**Accuracy:**  $\pm 2.0\%$  of probe length @ 20  $^{\circ}$ C (+68  $^{\circ}$ F) in diesel (For probes lengths 300 mm and above)

### Environmental Ratings

**Operating Temperature:** -20  $^{\circ}$ C to +85  $^{\circ}$ C (-4  $^{\circ}$ F to +185  $^{\circ}$ F)  
**Sealing:** IP67  
**Weight:** 300 g (10 oz) (1000 mm long unit)  
**Max tank pressure:** 0.75 bar (10 psi)  
**EMC:** Type approval in accordance with EN ISO 13766:2006  
**Vibration:** 500 mm sensor type tested to 1.88 grms to BS EN 60068-2-64:1993\*  
**Shock:** 500 ms<sup>-2</sup>, 11 ms to BS EN 60068-2-27:1993

### Options

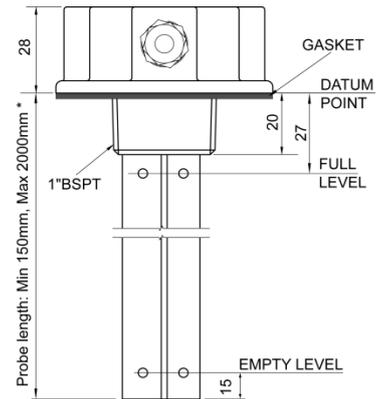
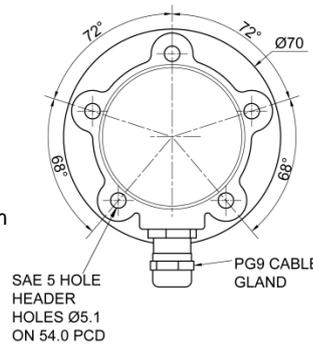
**Alarm:** One position at either high level (switch to ground above level) or low level (switch to ground below level). Switch point can be set between 7% and 90% of measuring range (hysteresis 5%). **Max load:** 100 mA.

**Custom empty/full points:** Specific empty and full levels can be provided within the allowable measurement range of the probe.

**Non-linear Tanks:** Compensation for non-linear tank shapes available.

**# Connections:** Any suitable customer specified connector can be fitted. Terminated wire ends should be fitted with suitably sealed connectors to maintain specified IP rating.

**F:** Due to 3  $\Omega$  resolution, accuracy of resistive output variants is specified accuracy  $\pm 3 \Omega$ .



\* Up to 1000mm in mobile applications or up to 2000mm in static applications.

### Model Variant Table

Model No	Output
T/LL350	Resistive
T/LL351	Voltage
T/LL352	Current
T/LL353	Resistive + alarm
T/LL354	Voltage + alarm
T/LL355	Current + alarm

### \* Vibration Testing

Frequency	G2/Hz
10	0.005
150	0.020
220	0.010
350	0.002

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