

TECHNICAL DATA

FOZMULA
INNOVATION IN SENSORS

T/LL136 & T/LL137 Race Fuel Level Sensor



The **T/LL136 & T/LL137** series are designed for use in the more aggressive fuels found in race/rally car tanks and provide a factory set variable resistive or voltage output suitable for driving industry standard fuel gauges or connecting into PLCs.

These sensors have no moving parts and can be mounted at any angle above horizontal* as long as it covers the whole depth of the tank. An external endcap reduces the risk of flexible tank damage. A manual calibration feature is included.

SPECIFICATION

Liquid Types

Liquids compatible with the construction materials, typically diesel, kerosene, petrol, water.
Suitable for fuels that contain Toluene or Ethanol.

Dimensions

Probe Length: Min. 200 mm, Max. 600 mm.
Threads: ½" BSPT, 1" BSPT, ½" NPT.
Optional Flange: Fozmula **F/T1** SAE 5 Hole.

Performance

Accuracy: ±2% of depth @ 20 °C.

Materials

Enclosure: 30% glass filled nylon. **Internal Spacers:** Polypropylene.
Internal Electrode: PTFE. **End plug:** Nylon 66.
Sensor Tube: 316 stainless steel. **Wetted Seals:** Viton (FKM).

Environmental Ratings

Sealing: IP67 with mating connector. **Shock:** 50 g, 6.3 ms
Max Pressure: 1 bar. **Vibration:** 15.3 Grms
BS EN 60068-2-64:1993.
Operating Temp: -20 °C to +85 °C. **Weight:** 250 g (300 mm long sensor).

Electrical

Supply Voltage: 9-34 VDC.
Supply Current: 30 mA.
Supply Protection: Over-voltage 80 VDC for 2 minutes.
Reverse polarity.
Signal Output: Resistance range; 0-250 Ω or 250-0 Ω, 2 Ω steps, 0.4 W max.
Voltage source range; 0-5 V or 5-0 V, 20 mV steps, 10 mA max.
Alarm Output: Switch to ground. Max 100 mA. High or low level.
Default setting is 12.5% of full level.
Minimum 30 mm from sensor end.
Connections: 4 Way Delphi Packard Metri-Pack 150 Series.
Mating Connector: Fozmula **C/K1** (Delphi Packard Metri-Pack 150).
To fit 0.8-1.0 mm² conductor, Ø1.6-2.15 mm sleeve.

Calibration Instructions

Units will be supplied calibrated for diesel. They can be recalibrated for alternative fuels:

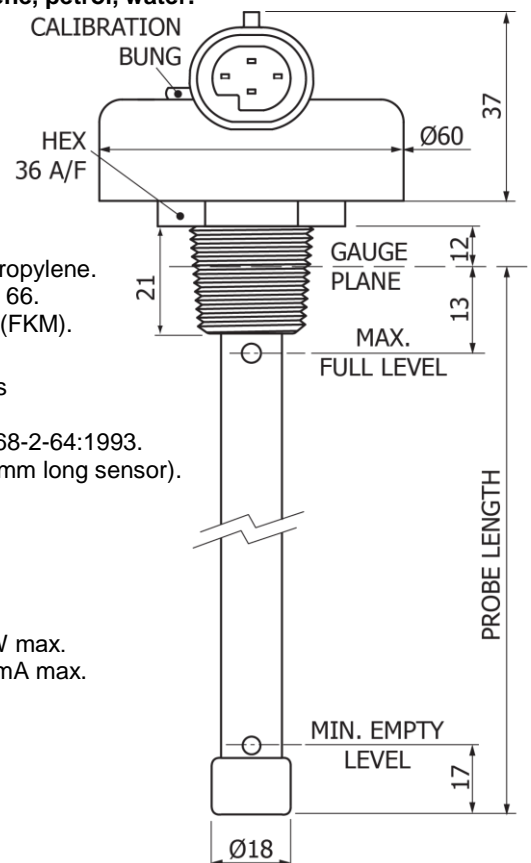
Full Point:

1. Install sensor in the tank or flask and power on.
2. Fill tank to required full level with required fuel.
3. Remove calibration bung from sensor and use a suitable tool to depress PCB mounted calibration button. Hold for 5 seconds to set full point. Release button.
4. Check full point and refit bung.

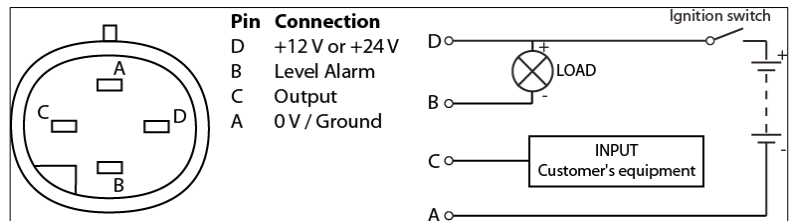
Empty Point (if required):

1. Fill tank to required level or, for Min. Empty Level, remove from tank and shake to remove excess liquid.
2. Disconnect power.
3. Remove calibration bung from sensor and use a suitable tool to depress PCB mounted calibration button then reconnect power whilst depressing calibration button. Continue to depress for a further 5 seconds to set empty point. Release button.
4. Check empty point and refit bung.

*These sensors cannot be installed inverted.



Model	Output
T/LL136	Resistive
T/LL137	Voltage



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