

TECHNICAL DATA

FOZMULA
INNOVATION IN SENSORS

L111 Tank Level Control System



The **Model L111** is a highly accurate tank level control system and display. The controller receives a signal denoting the contents level from a sophisticated hydrostatic pressure transducer and displays it on a large OLED display.

Designed to be used in large industrial fuel tanks, the controller can monitor the fuel level in real time and will automatically shut off the fuel delivery at a user determined level. The user can download data relating to fuel deliveries such as date, time, volume delivered and User ID via a USB port (to a memory stick).

Via another USB port, the user can also configure the permissible users and tank level reduction rate to trigger an in built theft alarm.

SPECIFICATION

Control Box

Dimensions

Enclosure size: 200 mm (w) x 120 mm (h) 80 mm (d)

Electrical

Supply voltage:

110/240 VAC 50-60 Hz.
(Optional 12/24 VDC #)

Input Power: 10 W plus pump output load

Pump output: 110/240 VAC Max. 250/500 W (2.9 A)

Flow rate input: Via flow meter pulse unit

(5 VDC, <1 mA)

Display: High visibility OLED

Audible Alarm: >90 dB @ 0.3 M

No. Key Fobs: Maximum 24

Internal Memory: 256 events †

Construction

Enclosure: ABS

Cable glands: Polyamide

Unit Weight 900 g

Environmental Ratings

Operating temp: -15 °C to +60 °C (5 °F to +140 °F)

IP Rating IP20

Setup

Via the USB port the user can configure the following parameters:

† Each key insertion, fuel delivery and key withdrawal constitutes 3 event.

*Overfill audible alarm threshold set at 95% (not user configurable).

Pressure Sensor



Liquid compatibility:

Liquids compatible with
Stainless Steel, Polyurethane & Viton

Sensor tube:

Polyurethane flexible tube

Tank depth: 750 mm to 4000 mm.

Sensor housing: 316 Stainless steel

Operating temp: -20 °C to +85 °C (-4 °F to +185 °F)

Seals:

Viton

Pressure Max.

Hydrostatic:

5 psi

Overall accuracy:

±3% of total Liquid depth

Options

Remote indication output: 0-5 V (maximum output load 10 mA source) or 4-20 mA (maximum output load 250 Ω).

Remote sounder output: 12 VDC, 10 mA maximum load.

Parameter	Description	Range	Default
Min. OP	Remote output level to indicate empty tank	0-5 V / 0-20 mA	0 V
Max. OP	Remote output level to indicate full tank	0-5 V / 0-20 mA	5 V
Alarm Lo	Level at which 'Low Fuel Level' LED flashes	0-50%	10%
Alarm Hi	Level at which 'High Fuel Level' LED flashes *	50-100%	90%
Pump c/o	Level at which power supply to the pump is turned off to prevent pump being run dry	0-50%	5%
P.P.L.	Pulses per litre rating of fuel flow meter	1-1000	89
UFD sens.	Change in level which indicates an unauthorised fuel extraction event	1-100%	2%
UFD window	Time interval over which change in level for an unauthorised fuel extract event is measured	1-100 minutes	1 minute
L111 ID	Unit identification, used as part of the file name for the data file	AA-ZZ case sensitive	AB
Pump Time	Maximum time for which the pump is energised after a valid key is inserted	1-10 minutes	10 minutes

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8.6/9 Rev 1

L111 Tank Level Control System**FEATURES**

- > Continuous high visibility percentage tank contents indication (optional Litres or Gallons indication #).
- > Adjustable for 750 – 4000 mm tank depths.
- > Secure operation via key fob ¼” enable plug:
 - o Pump run output is only enabled when a valid key is present.
 - o Keys can be enabled/disabled by end user
- > Enable key socket backlight for easy location in poor lighting conditions.
- > Visual warning of low fuel and overfill events. (Overfill also has Audible warning).
- > Operates from 110/230 AC (optional 12/24 VDC #).
- > Real time clock/date with back-up battery.
- > Fuel pump control relay with pump stop protection & time-out facility.
- > Continuously monitors fuel level and alarms when rate of fuel reduction exceeds a pre-set maximum (when valid key is not present).
- > Pulse flow meter input, to record volume of outgoing fuel deliveries.
- > USB connection to download stored information about fuel deliveries, data available includes:
 - o Date & time
 - o User ID
 - o Volume delivered (from pulse flow meter input)
 - o Tank level before and after fuel delivery
 - o (Data is also available for ‘Tank Fill’ and ‘Fuel Loss/Theft’ events)
- > Optional 4 to 20 mA or 0 to 5 V output to drive a remote level indicator.
- > Optional output to drive external sounder on overfill and fuel theft.

The standard device utilises a hydrostatic pressure transducer to measure the height of liquid. Other types of Fozmula level probes can be used with the L111, for example if tank depths of less than 750 mm are required

Please contact Fozmula for availability and further details.