SSI Technologies - Application Note DT-AN5
Digital Fluid – Trac™ (DFT – 110) Multi-Unit Drum Gauge Product Overview

Product Description

Digital Fluid-Trac™ Model DFT-110 multi unit drum level gauge is a cost competitive non-contact liquid level drum gauge. The DFT-110 drum gauge was designed for usage on ANSI MH2-2004 vertical drums (≤ 32 inch depths). The DFT-110 drum gauge allows the user to easily select between the following vertical drum settings:

- 15 gallon
- 30 gallon
- 55 gallon
- 57 liter
- 114 liter
- 208 liter

Product Features

- **Multiple Selectable Units:** 15, 30, 55 gallons or 57, 114, 208 liters
- **Display Resolution:** +/- 0.5 gallon or +/- 1 liter*
- **Accuracy:** +/-2.5% (1.5 gal. or 6 liters) of full scale volume (55 gal / 208 liter setting) *
- **Automatic Shutoff Prolonging Battery Life**
- **NEMA 4 Packaging**
- **Static Display Useful for Usage Consumption Calculations:** The static level reading can be used for manual rate calculations – i.e. daily or weekly consumption.
- **Low Level Warning Light**: A red LED will flash once every second when the volume is at 10% or below the maximum volume.
- **Easy to install:** Digital Fluid-Trac™ DFT-110 has no components to protrude into the drum.
- **Standard:** Fits 2” NPT or ¾” NPS opening
- **Dead Band:** 6” from top of barrel when using the optional ¾” adaptor
- **More Reliable:** No components to chemically corrode inside liquid media.
- **Chemical compatibility:** Digital Fluid-Trac™ DFT-110 drum gauge works with a wide variety of media such as water, waste water, motor oil, hydraulic fluid and diesel fuel.

* Outside of stated dead band.

The Digital Fluid-Trac™ is NOT intended for use with gasoline or other volatile liquids that produce a vapor pressure under normal operating temperature (0°C - 50°C).

SSI TECHNOLOGIES, INC.
Controls Technologies Division
3200 Palmer Dr.
Janesville, WI 53547-5011
Phone: (608)757-2000
www.ssitechnologies.com

SSI Technologies, Inc.
CONTROLS TECHNOLOGIES DIVISION

SSI Technologies - Application Note DT-AN5
Digital Fluid – Trac™ (DFT – 110) Multi-Unit Drum Gauge Product Overview

Measurement Technology

The Digital Fluid-Trac™ DFT-110 drum level gauge uses ultrasonic technology to generate a high-frequency sound wave and measures the time for the echo to reflect off the target fluid's surface and return. The distance from the Digital Fluid-Trac's sensor to the liquid is calculated based on the speed of sound.

The Digital Fluid-Trac™ DFT-110 has a LCD which displays the liquid level pictorially as well as in gallon (or liter) units. The display shows the level reading from the last time the Refresh/Select button was pressed.

When the Refresh/Select button is pressed and released, the DFT-110's back-light is illuminated and 8.8.8. is displayed for 4 seconds to indicate the unit is in test mode. The unit continuously monitors the media in the vertical drum for 7 seconds and then displays the liquid level. The level reading will remain static until the Refresh/Select button is depressed again.

20 seconds after the button was pressed, the unit will go into a battery saver mode where the back-light is shut off. The liquid level reading will be displayed for 5 minutes before the display turns off.
.
A low-level warning light (red LED located on the bottom left of the LCD display), will flash once every second when the liquid level is <= 10% the maximum volume. Note: This warning light does not operate once the unit has powered down in battery saver mode.

Electrical Interface

The Digital Fluid-Trac™ DFT-110 drum gauge is powered by two 9 volt batteries (not included). The unit can run on alkaline or lithium batteries.

If the battery life is low (voltage is below 14.2 volts), "LoB "will continuously flash to notify the user to replace the batteries.

Displaying the DFT-110 Setting

a) ***Press and hold the Refresh/Select button down for 7 seconds***. The drum size will be displayed. And the selected units (Liter or Gallon) will be flashing.

b) ***Release the Refresh/Select button*** and the unit will automatically go back into test mode (indicated by 8.8.8) in 20 seconds.

Selecting the Display Units

The Digital Fluid-Trac™ DFT-110 multi-unit drum gauge can set to display the level reading in one of six different configurations - gallons (15, 30, 55) or liters (57, 114, 208).

a) ***Enter the Select Mode***: Press and hold the Refresh/Select button down for 7 seconds to enter the Select Mode. The unit will display Liter and Gallon. One of the units will be flashing.

Note: If you release the button too soon, the DFT-110 will be in test mode.

SSI TECHNOLOGIES, INC.
Controls Technologies Division
3200 Palmer Dr.
Janesville, WI 53547-5011
Phone: (608)757-2000
www.ssitechnologies.com

SSI Technologies, Inc.
CONTROLS TECHNOLOGIES DIVISION

b) ***Switch the Desired Units:*** Press and release the Refresh/Select button to switch between the units.

c) ***Select the Desired Units:*** When the units (Liter or Gallon) desired is flashing, press and hold the Refresh/Select button for 7 seconds to select the units. The units will stop flashing and the drum size will start flashing.

d) ***Switch the Desired Drum Size***: Press and release the Refresh/Select button to switch between the drum sizes.

e) ***Select the Desired Drum Size:*** When the drum size desired is flashing, press and hold the Refresh/Select button for 7 seconds to select the drum size. The drum size will stop flashing.

f) ***Return to Test Mode:*** Press and hold the button until 8.8.8. is displayed – this indicates test mode.

Testing With the DFT-110

a) After you have selected the proper units and drum size for your application, ***Press and release the Refresh/Select button.***

b) The DFT-110's back-light is illuminated and 8.8.8. is displayed for 4 seconds to indicate the unit is in ***test mode.***

c) The DFT-110 continuously monitors the media in the vertical drum for 7 seconds and then displays this liquid level.

d) ***Battery Saver Mode:*** 20 seconds after the button was pressed, the back-light is shut off. The static liquid level reading will be displayed for 5 minutes before the display turns off.

Note: This liquid level displayed is a static value. You must depress the Refresh/Select button to update the liquid level reading.

e) A ***low-level warning light*** (red LED located on the bottom left of the LCD display), will flash once every second when the liquid level is <= 10% the maximum volume.

Note: This warning light does not operate once the unit has powered down in battery saver mode.

SSI TECHNOLOGIES, INC.
Controls Technologies Division
3200 Palmer Dr.
Janesville, WI 53547-5011
Phone: (608)757-2000
www.ssitechnologies.com

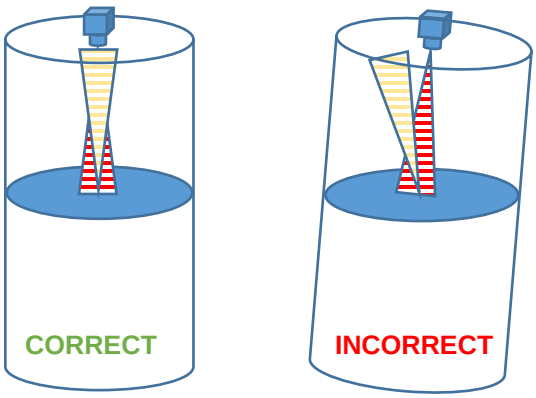
SSI Technologies, Inc.
—CONTROLS TECHNOLOGIES DIVISION—

SSI Technologies - Application Note DT-AN5
Digital Fluid – Trac™ (DFT – 110) Multi-Unit Drum Gauge Product Overview

Mounting

Digital Fluid-Trac™ works well on ANSI MH2 standard 55 gallon drums as it mates with closed-head standardized bunghole arrangements. The 55 gallon drum gauge mounts on top of the drum with a standard 2" NPT thread connector. A ¾ inch NPS threaded adapter is included with each Digital Fluid-Trac™ Model DFT-110 so either bung opening can be used on the drums.

When using the Digital Fluid-Trac™, it is important to keep the mounting perpendicular to the liquid level by storing the drums in an upright position.



Electrical Specifications

Resolution (Gallons) **	0.5 gallons
Resolution (Liters) **	1 Liter
Operating Temperature	0°C to 50°C
Battery Life*	6 months (Alkaline) 1 year (Lithium)
Low Level Warning Activation (Red LED)	<= 10 % Max Volume
Low Battery Level (Lob)	<= 14.2 Volts combined

* Battery Life will vary dependant on operator's usage. Battery specification is based on two level readings per day.

** Outside of stated dead band

Material Specifications

Description	Material
Display housing / threaded adaptor (blue plastic)	PBT (Polybutylene terephthalate), 15% glass filled
Transducer housing (black plastic inside threaded adaptor)	HDPE (High Density Polyethylene)

SSI TECHNOLOGIES, INC.
Controls Technologies Division
3200 Palmer Dr.
Janesville, WI 53547-5011
Phone: (608)757-2000
www.ssitechnologies.com

SSI Technologies, Inc.
CONTROLS TECHNOLOGIES DIVISION

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Amphenol:
DFT-110