

PRIME TECHNOLOGY

Prime Technology, LLC designs and manufactures electronic systems and provides engineering design services for measurement, display, communication and control equipment for various applications. Prime Technology has evolved from Tank Level Indication products into integrated systems with broad applications that combine our expertise in display, software and measurement technologies with our vertically integrated manufacturing capability.

Prime Technology, LLC has been servicing naval requirements for more than 40 years.



***Come visit us at the web....
Or have us visit you in person....***

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New Pressure Sensing Measurement and Display System

Prime Technology has developed a new, novel approach to tank level measurement through the use of absolute pressure sensors. Pressure sensing tank level systems have been readily available for many years. The novelty in this design, however, is the use of absolute sensors rather than differential sensors as the sensing elements. This system is robust and fully qualified to MIL application requirements.

The Absolute Pressure Tank Level Indicator System (APTLIS) reduces the required maintenance and complexity of the in-tank level sensor and thereby increases the system's Mean Time Between Failure (MTBF). The APTLIS is also modular in design to reduce the Mean Time To Repair (MTTR). The overall system accuracy is better than 1%.

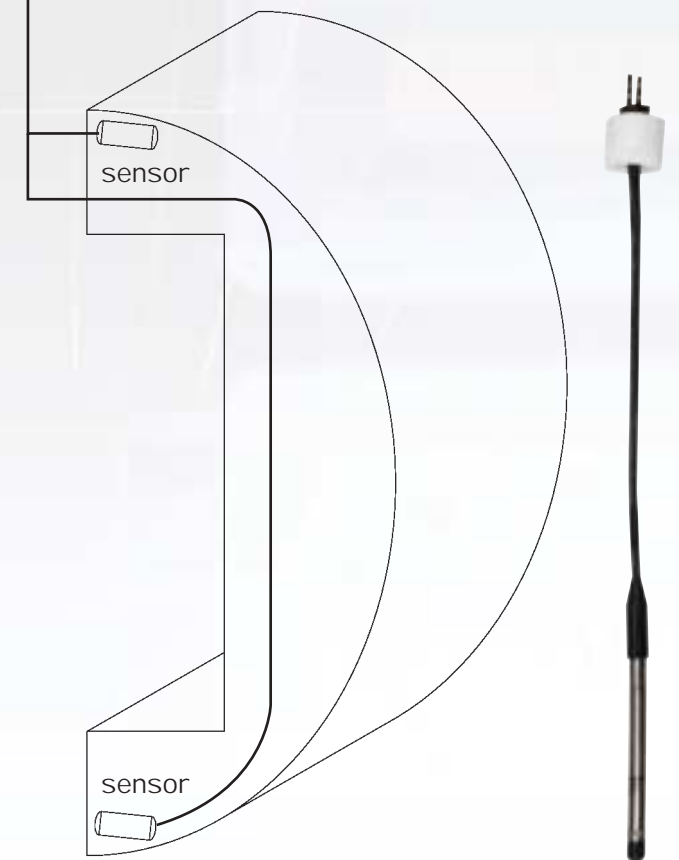
- Reduces overall "in-tank time" required for installation and maintenance.
- Allows for tank measuring at much higher and lower points in the tanks, which allows for more complete tank fills and drains. *There are no offset errors due to mechanical movement of parts within the tank.*
- Stocking of spares is minimized due to our patented cloning feature. A programmed instrument can download all setting information to an unprogrammed spare unit. This means interchangeability of display modules and power supplies anywhere aboard. (Patent Number 5,918,193)
- Requires no additional "hot work" in the tanks by utilization of existing mounting brackets.
- Reduces time to calibrate.
- The model 9227 indicator linearizes all user-supplied tank fill data to provide a clear, error-free and easily readable linear display. (Patent Number 5,751,611)

exclusive design from

**PRIME
TECHNOLOGY**



model 9299



simulation of non-linear tank
redundancy of bottom sensing available

Features

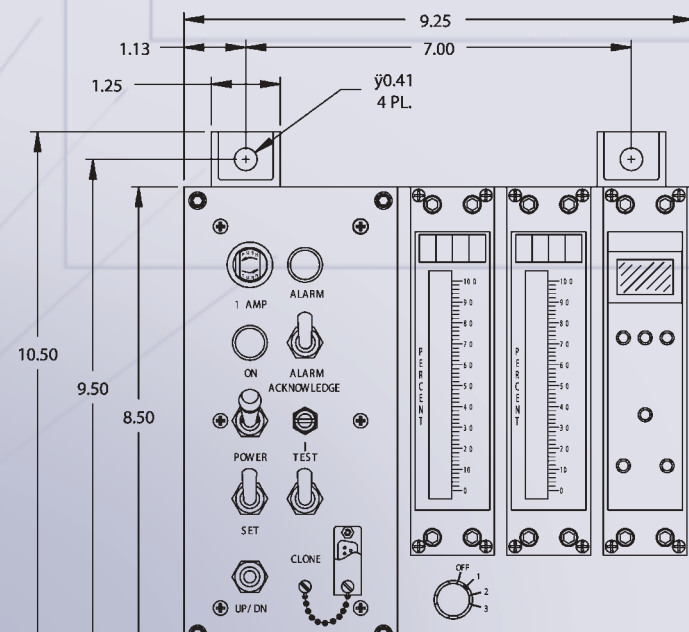
- Overall System Accuracy better than 1%
- MIL SPEC Designed, Tested and Qualified
- Compatability with Absolute and Legacy Differential Pressure Systems
- Sensor 500,000 hrs. Mean Time Between Failure
- Built in Test includes Sensor Monitoring and Fault Indication
- Applicable to Pressurized Systems
- Reduces component and component maintenance costs by eliminating multiple float columns and connections.

Prime Technology System Consists of:

- Model 9227 "Smart Indicators"
- Modular Power Supply
- Bulkhead Mount Chassis
- Pressure Sensors

Description

- **System Modularity for Maintainability and Logistic Support**
- **Flash Processor; Field Upgradeable**
- **Patented Cloning and Curve Fitting Technology** – any indicator module (model 9227) can be field uploaded with multiple tank fill data from any operating "smart indicator" (model 9227) by connecting the indicator module into the cloning port (refer to drawing below). (Patent Number 5,918,193) The newly installed indicator module will contain curve correction and parameter data. (Patent Number 5,751,611)
- **Display Dimming Capability; Analog or TTL PWM Control**
- **Field Programmable Tank Level Alarms and Level Fail Alarm Outputs**
- **Sensor Status Indicator LED's**
- **Redundant Tank Level Sensor Architecture for high reliability**
- **Sensor Selection A/B switch** – allows switching of sensors in the event of a sensor failure
- **Analog and/or Digital Retransmission of processed data**
 - > Analog Sensor Inputs converted to Digital Data
 - > Remote Replication of ALL Indicator Parameters including Alarms retransmission
 - > Serial Communication for Digital Data Transfer (RS232/422/485 Bi directional)
 - > Analog Retransmission configurable as; 4-20mA, 0-200uA, 0-10VDC, +/- 10VDC
- **Stored and Reprogrammable Tank Field Data**
- **Isolated Discrete Alarm Outputs**
- **Flashing Display Alarm Indication**
- **Fault codes displayed on 4 digit display for ease of system trouble shooting**
- **System fail alarm outputs**
- **Continuous system "built-in test" capability**



model **9299**

Pressure Sensing Measurement and Display System

Technical Specifications

■ GENERAL

Ambient Temperature Range

Storage	-40°C - 85°C
Operating	-25°C - 60°C

Input Power

Voltage	115 VAC
Frequency	60 HZ
Current	600 ma. (max.)

Display Characteristics

DIGITS	
Color	Red ($\lambda = 660\text{nm}$)
Segments	4 - (7) Segments LED
BAR GRAPH	
Color	Red ($\lambda = 660\text{nm}$)
Segments	101 Segments LED

DIMMABLE

Analog
Pulse Width Modulation Control

Analog Input	Impedance
4-20 DCmA	124 Ω ($\pm 0.1\%$)
0-10 VDC	1M Ω ($\pm 0.1\%$)

Digital I/O

RS232/422/485
Serial data transceiver

Alarm Outputs

(4) Independently Configurable

■ PERFORMANCE

System Accuracy	better than 1%
Resolution	15 binary bits
Sensor (MTBF)	500,000 hours

■ PHYSICAL

Weight 25 lbs. (max.)

Overall Dimensions

10.50" L x 9.25" W x 8.50" D
(74mm L x 45mm W x 102mm D)

Qualified to MIL Standards:

• EMI	MIL-STD-461
• Shock	MIL-S-901
• Vibration	MIL-STD-167
• Drip-Proof	MIL-STD-108
• Salt Spray	MIL-STD-202
• DC Magnetic Field	MIL-STD-1399, Part 70

Dimensions

