

iNodes™ Tank Level Monitor 3 (TLM3)



**FERGUSON
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New Intelligence In Problem Solving™

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The iNodes Tank Level Monitor 3 (TLM3) is a float-based level measurement device that provides an accurate, economical method for remote measurement and alarming in storage tanks. The TLM3 is a self-contained battery powered, solar charged system for Class I, Division 1 hazardous locations which utilizes a permit free radio system for data communications. The TLM provides both remote data reporting and internal logging for convenient trending. Alarm cry-outs are provided for user-settable level conditions as alerts to problems or lost production. The TLM is field configurable and easy to calibrate.



Features

- Very low power consumption, solar powered with rechargeable battery energy storage
- Small, integrated package includes power supply, data storage, processing and communications
- Field configuration, software upgrade and local data retrieval by any iMonitoring-enabled PC, including laptop PCs and PDAs
- Rugged enclosure (IP65)
- Low cost
- Reliable, accurate floatbased level sensing technology available for one or two product tanks
- Easy installation
- Intrinsically safe (UL Class 1, Div. 1, Groups C and D)
- User configurable alarm detection and notification system.
 - High and low level alarms
 - Unique level drop alarm with alarm window notifies the customer if oil is thieved during non-production times
 - Alarm notification via telephone or email (with optional alarm service)
 - Alarm holdoff feature prevents multiple alarm notifications for the same alarm, minimizing notification cost
- Data can be secured with cypher encryption

Technical Specifications

Environmental	
Operating Temperature	-40°C to +60°C (-40°F to +140°F)
Storage Temperature	-40°C to +70°C (-40°F to +158°F)
Humidity	5 to 95% R.H., non-condensing
Measurement	
Technology	Active RFID-based float position detection
Level Measurement	Calibrated level, one or two phase (top and/or water)
Depth	0.5 to 31 feet (0.3 to 9.5 m)
Number of Floats	Single float standard (oil or water), dual float optional (oil and water)
Minimum Float Separation	< 3 inches (< 15 cm)
Accuracy	± 0.5 inch (± 0.25 cm)
Resolution	± 0.01 inch (± 0.025 cm)
Alarms	
Top/Water Level	User-settable low / high setpoint
Level Drop	User-settable drop and time span
Alarm Holdoff	User-settable, 0 to 1,440 minutes (1 day)
Logging	
Log Intervals	Every one minute or every five minutes (configurable)
Maximum Log Depth	<ul style="list-style-type: none"> • 20 days in one minute mode • 100 days in five minute mode
Data Reported and Logged	<ul style="list-style-type: none"> • Entry date/time • Top and water (interface) level • Top drop • Top time span • RSSI

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The iNodes™ Suite of Products Include:

- Tank Level Monitor
- Wireless Data Switch
- Electronic Flow Monitor
- Wireless Pressure/Temperature Monitor
- Concentration & Communications Unit
- Concentration & Communications Unit – Remote Terminal Unit
- Compact Flash Radio
- Universal Serial Bus Radio

Communications

RF Protocol Proprietary FB iMonitoring Frequency Hopping Spread Spectrum (FHSS)
• *Certifications:* FCC Part 15.247, CFR 47 Part 15
• *Service:* Half-Duplex
• *Frequency:* 902 - 928MHz

Antenna Standard 1/2 wave omni or optional 6 dBd Yagi

Range
• *To CCU:*
• 1,500 feet typical line of sight
• Up to 5,000 feet (with optional high gain antennas)
• *To iMonitoring-enabled PC or PDA:* 500 feet

Data Protocol Proprietary FB iMonitoring MicroEnergy Channel Hopping (iMECH)
• *Rate:* 4800 baud

Mechanical

Sensor Enclosure
• *Ingress protection:* Meets IEC IP65 (dust and blowing rain)
• *Enclosure venting:* GORE™ protected vent

Mounting Screw mount 2-inch NPT-M fitting. Requires 3-inch NPT opening for float and tubing installation and 3- to 2-inch NPT bushing for final screw in mounting.

Probe Tubing
• 1.075 inch dia. fiberglass tubing with threaded connection
• *Lengths:* 2.5 and 7.5 foot (0.75 and 2.3 m) lengths

Float 3.0 inch diameter nitrophenyl®

Chemical Resistance Probe tubing and float materials resist all commonly used oil and gas field compounds found in storage tanks

Power

Source 1-watt solar panel with cable and mounting hardware

Storage Rechargeable lithium-ion battery
Battery life > 5 years typical

Regulatory Approvals

Safety UL and c-UL Class I, Division 1, Groups C and D (Intrinsically safe)

Communications Meets FCC Part 15.247 and Code of Federal Regulations (CFR) 47, Part 15

Contact us today to learn how iNodes Technology can help improve your production performance. Visit our web site—or email us at: Automation@FergusonBeauregard.com



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