

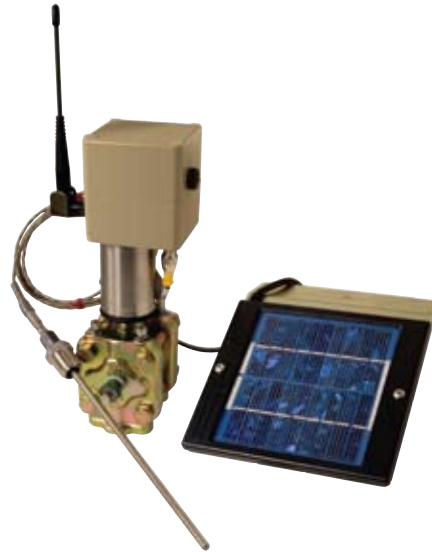
iNodes™ Electronic Flow Monitor (EFM)



**FERGUSON
BEAUREGARD™**
New Intelligence In Problem Solving™

iNodes™ Electronic Flow Meter (EFM)

The iNodes Electronic Flow Meter (EFM) is a multi-variable (static and differential pressure and RTD temperature) electronic flow meter that provides accurate, economical on-site flow calculations deliverable to your office. The EFM 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 EFM provides both remote data reporting and API 21.1 compliant internal logging for convenient trending and allocation. Alarm cry-outs are provided for user-settable pressure, temperature and flow conditions as alerts to problems or lost production. The EFM is field configurable and easy to calibrate.



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	
Temperature	<ul style="list-style-type: none">• Sensor: 100 platinum RTD• Range: -50°C to +100°C (-58°F to +212°F)• Accuracy: +/- 1°C
Differential Pressure	<ul style="list-style-type: none">• Upper Range Limit (URL): 400" H₂O• Accuracy: +/-0.25% of URL, +/- .075% optional• Stability: +/- 0.32" H₂O per year, +/- 0.25" H₂O optional
Static Pressure	<ul style="list-style-type: none">• Upper Range Limit (URL): 1,500 psia• Accuracy: +/-0.25% of URL, +/- .075% optional• Stability (at reference conditions): +/- 1.5 psi per year, +/- .12 psi optional
Flow	<ul style="list-style-type: none">• Measurement: Per API 21.1• Supercompressibility: Per AGA8-1992• Flow verification: Verified by the Colorado Engineering Experiment Station Inc. (CEESI) to meet API 21.1
Alarms	
Flow Rate	User-settable low / high setpoint
Static Pressure	User-settable low / high setpoint
Differential Pressure	User-settable low / high setpoint
Temperature	User-settable low / high setpoint
Alarm Holdoff	User-settable, 0 to 1,440 minutes (1 day)

Features

- Very low power consumption, solar powered with rechargeable battery 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
- Intrinsically safe (UL Class 1, Div. 1, Groups C and D Temperature Code T4)
- Rugged enclosure (IP65)
- Daily or Hourly Quantity Transaction Record (DQTRs, HQTRs) logging and reporting per API 21.1 locally, DTQRs or HQTRs can be reported via wide area network to office
- User-configurable flow, temperature, and pressure alarms
 - Alarm notification via telephone or email (requires optional alarm service)
 - Alarm holdoff prevents multiple alarm notification, minimizing notification cost
- Data can be secured with cypher encryption

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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

Logging Quantity Transaction Record (QTR) reporting per API 21.1

Quantity Transaction Record (QTR) reporting per API 21.1

Daily (DQTR) log depth Up to 30 months

Hourly (HQTR) log depth Up to 78 days

Audit trail logging depth Up to 470 events

Communications

Protocol iMonitoring proprietary Frequency Hopping Spread Spectrum (FHSS)

Certifications FCC Part 15.247, CFR 47 Part 15

Service Half-Duplex

Frequency 902 - 928 MHz

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

Power

Source 1-watt solar panel with cable and mounting hardware

Storage

Battery:

- Type: Rechargeable 3.6VDC lithium-ion
- Life: > 5 years (typical)

Mechanical

Enclosure

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

Mounting Bracket with 2-inch U-bolts

Regulatory Approvals

Safety UL and c-UL Class I, Division 1, Groups C and D, temperature code T4 (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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