Electronic Sensors, Inc.

9230 Short Stack: Two-Channel Cellular Monitor

DESCRIPTION

The Model 9230 Short Stack is a modern, low-cost, wireless remote monitoring transmitter unit ("RTU") for monitoring commercial and industrial sensors via the cellular telecom network. The Model 9230 remote-monitoring features include:

- Multiple Scheduled Automatic Reports
- Multiple High/Low-Level Alarm Reports
- Sudden-Change Reporting
- Ambient Temperature Reporting
- Accommodation for two industrial sensors
- Works on any cellular telecom network

Any common industrial sensor (dry-contact switch, zero-to-5-volt, 4-20 mA, Cyl-Tel, or Tank-Tel) may be connected to the 9230. ESI offers a large assortment of sensors for the 9230.

OPERATION

In normal use, the 9230 monitors parameter(s) of the user's choice, and transmits the data, through a cellular tower, to the Internet, for user monitoring via computer, tablet, or any phone.

The monitoring of the measured parameter may be used to trigger low- or high-limit notifications, sudden parameter changes, and a new feature called "pseudo real time reporting" (PRT).

With PRT, the unit transmits to the ESI Data Center every time the measured parameter changes more than a user-specified percent from the last time it sent a report. If the change-reporting threshold is set to "5% of full-scale," then a report will be sent, via the Internet, each time the level changes more than 5%. PRT can post multiple reports several times a day, depending upon activity.

Once data is received by the ESI Data Center, other text notifications may be sent from the Data Center to: cell phone, faxes, emails, or telephone voice alerts. Many notifications, to many people, can be generated from a single data report initiated by the 9230.

ESI also offers custom interfaces between ESI's Data Center and the client's server. Customized message formats (HTTP, FTP, XML and others) may be configured for your needs.

SPECIFICATIONS (subject to change without notice)

Parameter	Value
Sensor inputs	Any combination of one or two 0–5 volt, 1–5 volt, 4-20 ma, Cyl-Tel or Tank-Tel sensor, and/or dry contact switch (plus onboard temperature sensor)
Power	Battery, rechargeable (with AC wall transformer or solar panel), or replaceable battery
Temperature range	-40ºF to 140ºF (-40ºC to 60ºC)
Sensor Interface	3 screw terminals per sensor, inside unit; wired through unit bottom and/or side.

9230 DESIGN

The 9230 is a rugged, reliable, remote transmit unit (RTU), capable of sending a measured signal (such as a switch-position change, pressure reading, object position, or tank liquid level) to the end user. The RTU is housed in a compact plastic case that fits where other RTUs cannot.


5.8"

2.7"

Model 9230 Short Stack

1.2"

2.7" *

sensor base

(optional)

2" NPT

* (typical)
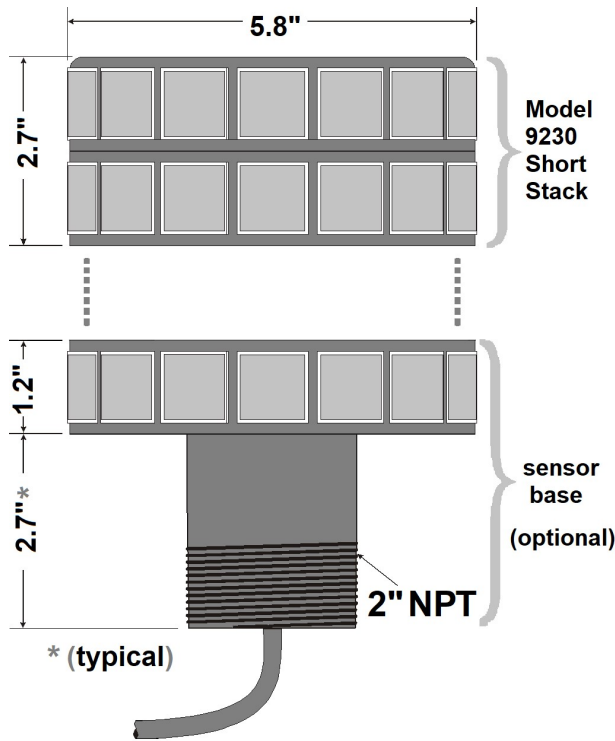
9230 SPECIFICATIONS

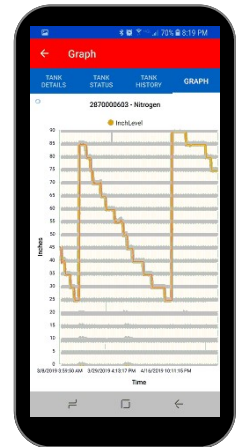| Parameter	Value
Internal monitoring sensors	Temperature, and (optional) GPS position.
Case Size	5.8 inch diam. x 2.7 inches (plus optional sensor base)
Case Material	PVC, UV stabilized
Alarms	10 programmable set points: Low or high limits
Large-Percent Change Detection (user-defined)	Programmable auto-send upon a user-defined percent change ("load detection")
PRT- Pseudo Real Time Reporting	Programmable. 2% minimum
Sensor Excitation	5 Volts
Resolution	4095 counts (12-bits)
LED indicators	Red, Green and Yellow LEDs on PCB, to signal unit status, White LED for radio status.
Control Switch	1 Push-button switch on PCB
Cellular mode	4G/LTE Cat M1
Warranty	1 year (not including battery) See ESI standard warranty statement

NOTES:
Cel-Tel and Tank-Tel are registered trade names of Chart/MVE.

Specifications subject to change without notice

INDICATION
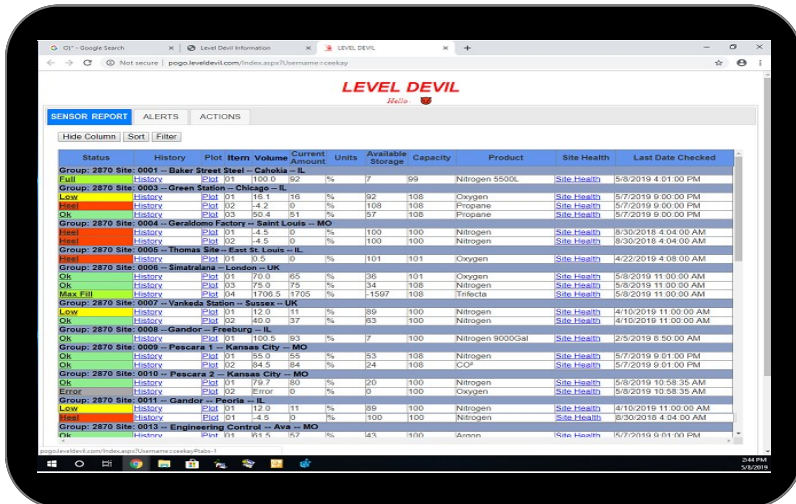
- Secure web screens visible by authorized client from any computer or smart phone.
- Client can allow selective password access by others.
- Smart phone app available.
- Automated voice phone calls.
- History data and graphs.
- High/Low Alarms/Indications.
- Sudden-Change Notification.
- User-defined configuration and settings.
- Sort and/or Filter data by Item, Date, Status, etc.

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