

DataNet

Wireless intelligent logging network



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Specifications

INPUTS

- 4 channel inputs
- Selectable type for each input: 4 to 20 mA, 0 to 50 mV, 0 to 1 V, PT-100, Thermocouple, Pulse counter (Input 4 only), Channel 4 - frequency (Input 4 only) and user defined sensors

INPUT TYPES

- 4 to 20 mA**
- Range: 4 to 20 mA
 - Resolution: 0.47 μ A
 - Accuracy: $\pm 0.5\%$
 - Loop impedance: 21 Ω
 - Maximum load: 30 mA, 5.2 V

- 0 to 50 mV**
- Range: 0 to 50 mV
 - Resolution: 3 μ V
 - Accuracy: $\pm 0.5\%$
 - Input impedance: 25 M Ω
 - Maximum voltage: 5.2 V

- 0 to 1 V**
- Range: 0 to 1 V
 - Resolution: 200 μ V
 - Accuracy: $\pm 0.5\%$
 - Input impedance: 25 M Ω
 - Maximum voltage: 5.2 V

- Temperature PT100 (2 wires)**
- Range: -200 to 400 $^{\circ}$ C
 - Resolution: 0.1 $^{\circ}$ C (7 m Ω)
 - Accuracy: -200 to 60 $^{\circ}$ C $\pm 0.5\%$
60 to 400 $^{\circ}$ C $\pm 0.5\%$
-60 to 60 $^{\circ}$ C $\pm 0.3\%$

- Temperature Thermocouple J**
- Range: -200 to 1,000 $^{\circ}$ C
 - Resolution: 0.1 $^{\circ}$ C (1 μ V)
 - Accuracy: -200 to 60 $^{\circ}$ C $\pm 0.5\%$
60 to 1,000 $^{\circ}$ C $\pm 0.5\%$
-60 to 60 $^{\circ}$ C $\pm 0.3\%$
 - Cold junction compensation: $\pm 0.3\%$

- Temperature Thermocouple K**
- Range: -250 to 1,000 $^{\circ}$ C
 - Resolution: 0.1 $^{\circ}$ C (1 μ V)
 - Accuracy: -250 to 60 $^{\circ}$ C $\pm 0.5\%$
60 to 1,000 $^{\circ}$ C $\pm 0.5\%$
-60 to 60 $^{\circ}$ C $\pm 0.5\%$
 - Cold junction compensation: $\pm 0.3\%$

- Temperature Thermocouple T**
- Range: -200 to 400 $^{\circ}$ C
 - Resolution: 0.1 $^{\circ}$ C (1 μ V)
 - Accuracy: -200 to 60 $^{\circ}$ C $\pm 0.5\%$
60 to 400 $^{\circ}$ C $\pm 0.5\%$
-60 to 60 $^{\circ}$ C $\pm 0.3\%$
 - Cold junction compensation: $\pm 0.3\%$

- Pulse Counter (input 4 only)**
- Zero crossing detector
 - Range: 1 to 64,000 counts
 - Resolution: 1 count
 - Frequency range: 0 to 50 KHz
 - Input signal: 0 to 5 V
 - Input impedance: 470 Ω

Frequency (input 4 only)

- Zero crossing detector
- Range: 20 to 30 KHz
- Input signal: 0 to 5 V
- Input impedance: 470 Ω

Internal Temperature

- Type: NTC resistor
- Range: -20 to 50 $^{\circ}$ C
- Resolution: 0.1 $^{\circ}$ C (1 μ V)
- Accuracy: $\pm 0.3\%$

Internal Humidity

- Range: 5 to 95 %
- Resolution: 0.5%
- Accuracy: 3%

External Sensors

- PT100 Sensor: 3 cable length options
2.5m/4m/6m
- Teflon cable range: -65 to 200 $^{\circ}$ C
- Probe: Diameter 6mm, length 81mm

OUTPUT

External Power Excitation (transducers usage)

- 12 VDC @ 2 A

Alarm Output (output 1)

- Open collector
- Close position resistance: 50 Ω
- Max. Load: 50 mA, 5 V DC
- Overload protection
- 50mA reset fuse

PC Communication

- USB 2.0 compliance

Type of USB Cable

- Mini USB type B

RF Network Communication

- Frequency: 2.4 GHz
- Network units: 65,000
- Data rate: 250 Kbps
- Full mesh network architecture supported
- 128-bit network security inscription
- Worldwide free license
- RF Transmission range boost mode 100 m (line of sight)
- RF Transmission range power amplifier 800 m (line of sight)

Sampling Features

- Memory capacity: 60,000 samples
- Sampling rate: Variable, 1 sample per sec to 1 sample per 2 hours
- Sampling resolution: 16 bits
- Channel separation 80 dB

Man Machine Interface

- Full keyboard operation

Display

- 2 row LCD
- 16 characters display

Power Supply

- Internal rechargeable 4.8 V NiMH battery
- Built-in battery charger
- External 12 V DC input

Operating Temperature Range

- -20 to 50 $^{\circ}$ C

Casing

- Plastic ABS box
- Dimensions: 10 x 9.5 x 3 cm
- Weight: 200 gr

Standards Compliance

- CE, FCC

- Internal battery specs: 4.8 V 800 mAh NiMH battery (2 batteries in series)
- External voltage specs: DC 12 V @ 300 mA 3.6 VA

DATANET SOFTWARE

Main Features

- Windows[®] based software
- Data displayed in numeric or graphical display of all inputs
- On-line retrieval and display of the collected data in real-time
- Definition of new sensors
- Ability to read the defined sensor's units on the logger's display
- Full calibration of the loggers via the software
- Documentation and filing
- Alarm levels on graphs
- Export to spreadsheets
- Analytical functions, for professional analysis of the collected data
- Manual backup of calibration settings
- Over-the-air firmware update

Ordering Information

DNL 910	Four channel mA, V, TC/K, J, T, PT100
DNL 920	Internal RH and Temp + Four channel mA, V, TC/K, J, T, PT100
DNR 900	Receiver/Repeater
DN-PCSUITE	PC suite including communication USB cable, manual
12753	PT100 sensor 2.5 m
12752	PT100 sensor 4 m
12751	PT100 sensor 6 m



Key DataNet Benefits

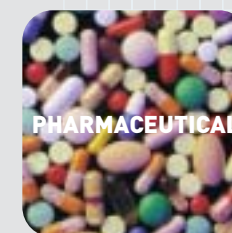
- **Wireless data logging**
- **Internal RH/Temp sensors**
- **4 recording inputs: 4-20 mA, 0-1 V, Pulse counter, PT100 2-wires, NTC, Thermocouple J, K and T**
- **Fully reliable monitoring network**
- **Cost effective system**
- **Multiple alarms including SMS to any location**
- **Long range monitoring**
- **Up to 65,000 network units**
- **License-free RF band worldwide**
- **Operating keypad and large LCD display**

DataNet: High-End Wireless Data Acquisition System

The DataNet is a 16-bit data logging system with 4 inputs for direct measurement and recording of PT-100, thermocouple, voltage, 4-20 mA, frequency and pulse. Data transmission from units to the central computer utilizes the brand new ZigBee wireless telemetry protocol.

ZigBee wireless protocol uses a 2.4 GHz license-free frequency RF Band. Each DataNet unit also serves as a transmission repeater to neighboring units, forming a reliable mesh network of up to 65,000 units. The ZigBee key features include:

- Reliable transmission ensuring no data loss
- Transmission range can be constantly expanded by adding additional network units
- Minimal costs thanks to wire-free infrastructure
- Portable units facilitating easy deployment in various environments



PHARMACEUTICAL

Monitoring environments in labs, fridges, freezers and culture rooms



WAREHOUSING

Chemical, industrial and perishables storage



HOSPITALS

Medical alert monitoring, sterilization, blood products storage and transport

For more information visit www.fouriersystems.com or Contact info@fouriersystems.com

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DataNet Laboratory Application

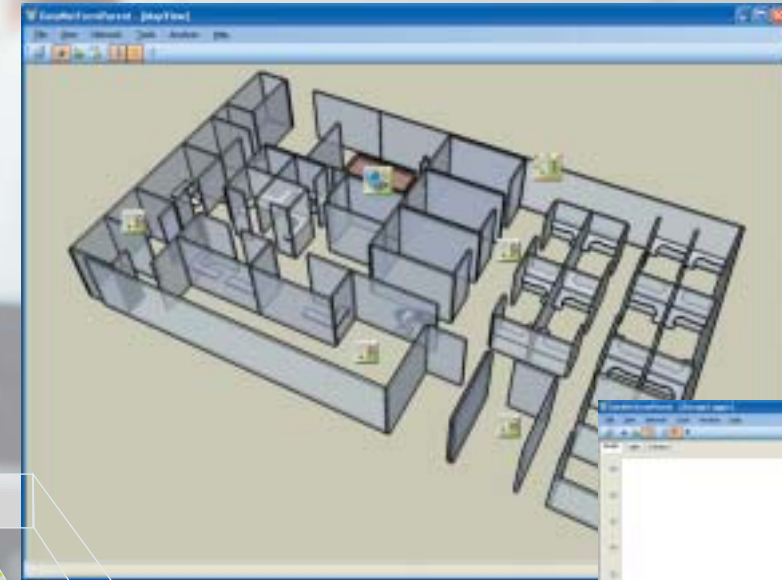
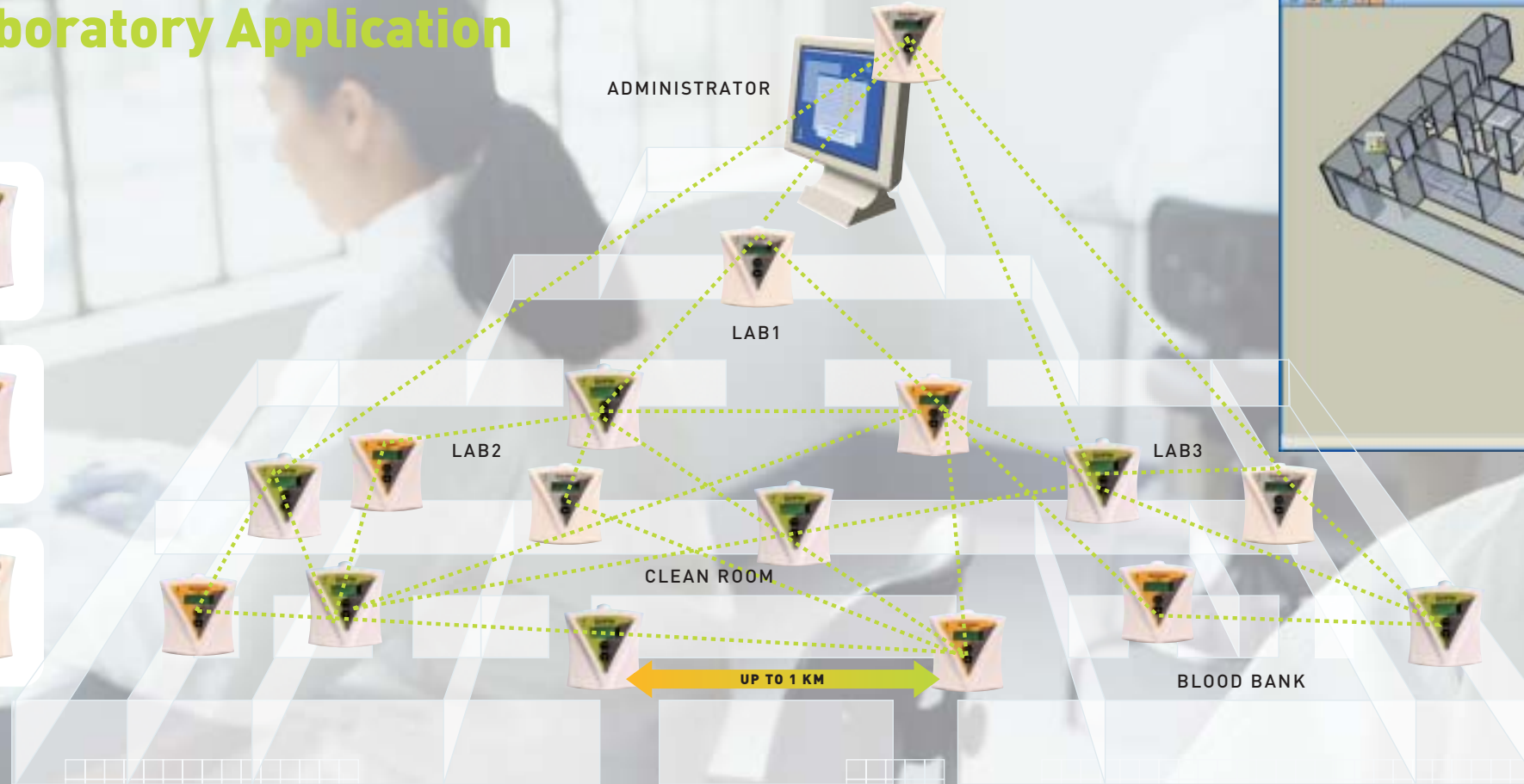
ZigBee Data Logger



ZigBee RH/Temp Data Logger



ZigBee Repeater/Receiver



Secured Data Monitoring

DataNet system comprises of two models meeting a wide range of industry applications:

- DataNet logger with 4 external sensor inputs for 4 to 20 mA, 0 to 1 V, Pulse Counter, PT100 2-wires, Thermocouple J, K and T.
- DataNet RH/Temperature logger also has 4 external inputs as well as built-in temperature and humidity sensors.

DataNet PC Suite

DataNet Software provides security for your products with online monitoring and control.

- Graphical analysis Windows® based software
- Fast data download
- Data display in numeric or graphical forms
- On-line retrieval and display of data in real-time
- Setup wizard
- Automatic definition of new sensors
- Ability to read defined sensor units on the LCD display
- Full calibration of DataNet via software
- Alarm levels on graphs
- Export and import to and from spreadsheets
- Analytical functions for collected data
- Manual backup of DataNet calibration settings
- Over-the-air firmware updates

System Requirements

Software

- Compatible with Windows 2000 SP3, Windows 2003, Windows XP SP2, Windows Vista
- Internet Explorer 5.01 or later is required

Hardware

- Pentium 800 MHz or higher
- 256 MB RAM
- 250 MB available disk space

To start logging in any application:

All you need is DataNet Software, DataNet Receiver and DataNet Loggers



COLD STORAGE

Optimizing temperature in refrigerated warehousing



MUSEUMS

Museums and archives temperature and humidity control



AGRICULTURE

Weather monitoring, soil moisture, irrigation management, optimizing environments for horticulture and livestock



HEAVY INDUSTRY

Monitoring industrial, chemical, oil and gas processes



TRANSPORT

Data collection during transport and automated download during docking



FOOD

HACCP compliance, processing, storage, presentation and transportation