

# 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  $\mu$ A
  - Accuracy:  $\pm 0.5\%$
  - Loop impedance: 21  $\Omega$
  - Maximum load: 30 mA, 5.2 V

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

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

- Temperature PT100 (2 wires)**
- Range: -200 to 400  $^{\circ}$ C
  - Resolution: 0.1  $^{\circ}$ C
  - 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
  - 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: -200 to 1,000  $^{\circ}$ C
  - Resolution: 0.1  $^{\circ}$ C
  - Accuracy: -200 to -60  $^{\circ}$ C  $\pm 0.5\%$   
60 to 1,000  $^{\circ}$ C  $\pm 0.5\%$   
-60 to 60  $^{\circ}$ C  $\pm 0.5\%$
  - Cold junction compensation:  $\pm 0.3\%$

- Temperature Thermocouple T**
- Range: -200 to 400  $^{\circ}$ C
  - Resolution: 0.1  $^{\circ}$ C
  - 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 65,536 counts
  - Resolution: 1 count
  - Frequency range: 0 to 4,000 Hz
  - Input signal: 0 to 5 V
  - Input impedance: 470  $\Omega$

### Frequency (input 4 only)

- Zero crossing detector
- Range: 20 Hz to 4 KHz
- Input signal: 0 to 4,000 Hz
- Input impedance: 470  $\Omega$

### Internal Temperature

- Type: DNL 910: PT100  
DNL 920: Digital
- Range: -20 to 50  $^{\circ}$ C
- Resolution: 0.1  $^{\circ}$ C
- Accuracy: DNL 910:  $\pm 0.3\%$   
DNL 920:  $\pm 0.5\%$

### Internal Humidity

- Range: 5 to 95 %
- Resolution: 0.5 %
- Accuracy:  $\pm 3\%$  at 10-90 %

### EXTERNAL SENSORS

#### PT100 Sensor

- Range: -70 to 400  $^{\circ}$ C
- Cable length: 2.5m/4m/6m
- Teflon cable range: -65 to 200  $^{\circ}$ C
- Probe: Diameter 6mm, Length 81mm

(see Ordering Information section)

### CONNECTIVITY

- External Power Excitation (transducers usage)**
- 12 VDC @ 2 A

#### Alarm Output (output 1)

- Open collector
- Close position resistance: 50  $\Omega$
- Max. Load: 50 mA, 3 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 encryption
- Worldwide license-free
- RF Transmission range boost mode 80 m (line of sight)
- RF Transmission range power amplifier 800 m (line of sight)

#### Sampling Features

- Memory capacity: 59,000 samples
- Sampling rate: 1 per sec to 1 per every 2 hours
- (For PT100 or Thermocouple sensors: Max Sampling rate with more than two sensors connected 1 sample per 2 secs)
- Sampling resolution: 16 bit
- 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: 97 x 93 x 27 mm
- 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<sup>®</sup> 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	Internal Temp + four channels measuring mA, V, mV, TC/K, J, T, PT100, Frequency and Pulse
DNL 920	Internal RH & Temp + four channels measuring mA, V, mV, TC/K, J, T, PT100, Frequency and Pulse
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 LCD display**

## DataNet: High-End Wireless Data Acquisition System

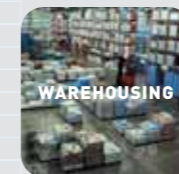
The DataNet is a 16-bit data logging system with 4 inputs for direct measurement and recording of PT-100, thermocouple thermistor, voltage, 4-20 mA, frequency and pulse. Data transmission from units to the central computer utilizes the brand new ZigBee wireless telemetry protocol.

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 bi-directional 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
- Receiver recognizes up to 8 end units and 16 Repeaters
- Repeaters recognize up to 24 end units and 16 Repeaters (simultaneously)



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



fourier



fourier

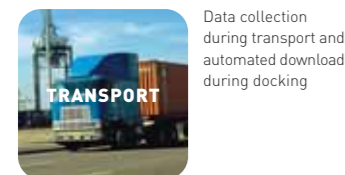
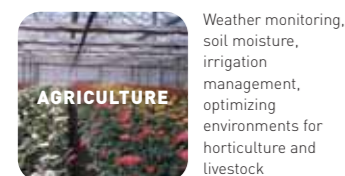
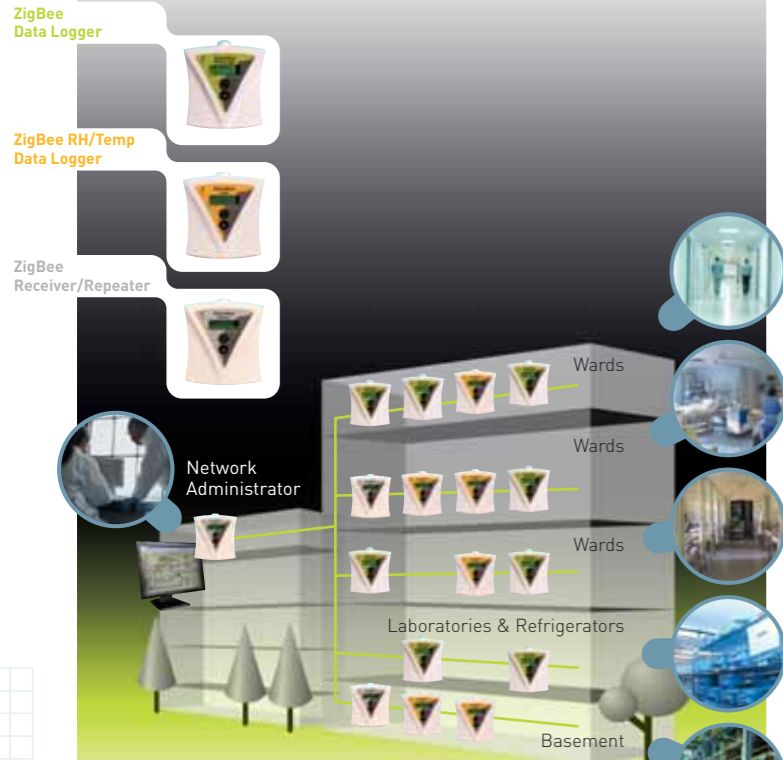
# DataNet

## Wireless intelligent logging network

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

- DNL910 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.
- DNL920 RH/Temperature logger also has 4 external inputs as well as built-in temperature and humidity sensors.
- DNL810 Mini DataNet Internal Temperature and humidity (Digital).
- DNL808 Mini DataNet External 10KΩ NTC.

### DataNet Infrastructure Network



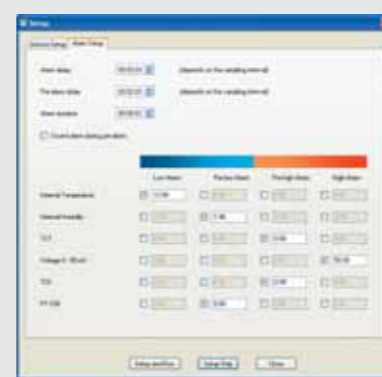
The DataNet PC Suite Software provides security for your products with online monitoring and control of up to 65,000 units.

### Alarm Features

Alarm level setup with email & SMS notifications

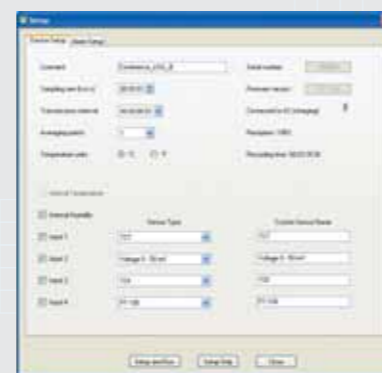


Four alarm levels, allowing for programming of 4 separate parameters, with alarm delay and duration

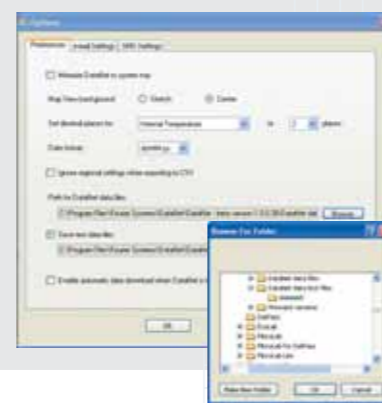


### Programming Features

Logger programming with Celsius or Fahrenheit view



Automatic storage location of data, with additional text format option



Defining milliamp or voltage inputs to view engineering units



### Hardware Communication Features

Over-the-air firmware updates and calibration

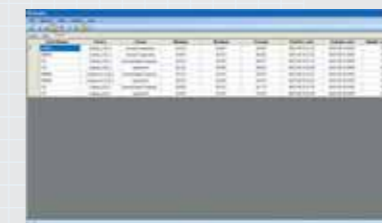


Unit ID enabling the software and units to call each other



### View Features

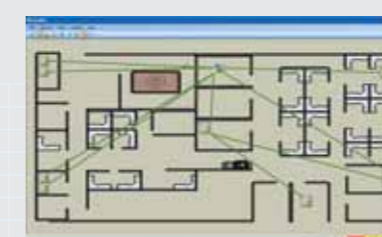
Real-time data in multiple displays (show table, graph, Excel)



Selecting international date format



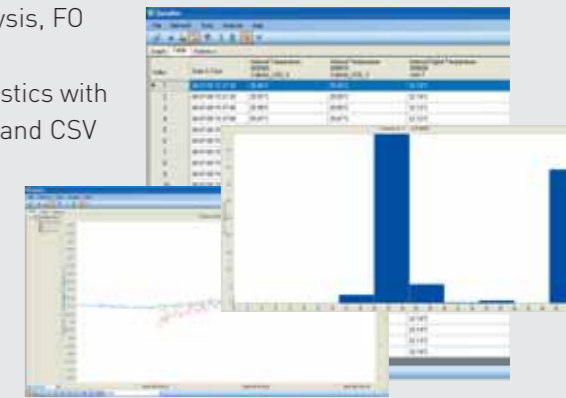
Ability to rename every logger and external input



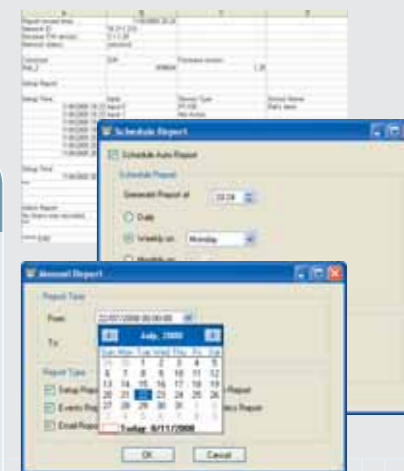
Map View displaying unit location, signal path and signal strength to the PC

### Analysis Features

Dew point analysis, FO Pasteurization, histogram, statistics with export to Excel and CSV files



Weekly reports



### Mini DataNet Specifications



	Accuracy	Resolution	Range
DNL810 Internal Temperature (Digital)	±0.4°	0.04 °C	-20 to 50 °C
DNL810 Internal Humidity (Digital)	±3 %	0.5%	5 to 95 %
DNL808 External 10KΩ NTC	±0.5 °C	0.1 °C	-50 to 150 °C

#### Sampling features

- > Memory capacity 59,851
- > Sampling rate - 1/S to 1/two hours
- > A/D resolution - 16 bit

- > Power - Internal 2/3 AA lithium battery
- > Battery voltage range - 2V-3.6V

#### Casing

- > Dimensions - 68x68.6x26.5 mm (without the cradle and the external antenna)
- > Weight - Logger: 53 gr; Cradle: 10 gr; External Antenna: 17.5 gr

#### Radio Frequency

- > Frequency band - 2.4GHz (Worldwide License free)
- > Data bandwidth - 250K bit/s
- > Transmission rate - 1 per sec to 1 every two hours
- > Max number of units per Network - 65536 units per network

#### Ambient Conditions

- > Temperature range -30 to 75 °C
- > Water and dust proof - IP54

#### Mounting

- > Table and wall mounting

#### Compliance

- > CE, FCC

#### Ordering Information:

DNL810 Mini DataNet Internal Temperature and Humidity (Digital)  
DNL808 External 10KΩ NTC