DigiNet
Wireless intelligent logging network

Digitron Systems

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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 µA
- Accuracy: ±0.5 %
- Loop impedance: 21 Ω
- Maximum load: 30 mA, 5.2 V

0 to 50 mV
- Range: 0 to 50 mV
- Resolution: 3 µV
- Accuracy: ±0.5 %
- Input impedance: 25 MΩ
- Maximum voltage: 5.2 V

0 to 1 V
- Range: 0 to 1 V
- Resolution: 200 µV
- Accuracy: ±0.5 %
- Input impedance: 25 MΩ
- Maximum voltage: 5.2 V

Temperature PT100 (2 wires)
- Range: -200 to 400 °C
- Resolution: 0.1 °C
- Accuracy:
  - -200 to -60 °C ±0.5 %
  - 60 to 400 °C ±0.5 %
  - -60 to 60 °C ±0.3 °C

Temperature Thermocouple J
- Range: -200 to 1,000 °C
- Resolution: 0.1 °C
- Accuracy:
  - -200 to -60 °C ±0.5 %
  - 60 to 1,000 °C ±0.5 %
  - -60 to 60 °C ±0.3 °C
- Cold junction compensation: ±0.3 °C

Temperature Thermocouple K
- Range: -200 to 1,000 °C
- Resolution: 0.1 °C
- Accuracy:
  - -200 to -60 °C ±0.5 %
  - 60 to 1,000 °C ±0.5 %
  - -60 to 60 °C ±0.5 %
- Cold junction compensation: ±0.3 °C

Temperature Thermocouple T
- Range: -200 to 400 °C
- Resolution: 0.1 °C
- Accuracy:
  - -200 to -60 °C ±0.5 %
  - 60 to 400 °C ±0.5 %
  - -60 to 60 °C ±0.3 °C
- Cold junction compensation ±0.3 °C

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 Ω

Frequency (input 4 only)
- Zero crossing detector
- Range: 20 Hz to 4 KHz
- Input signal: 0 to 4,000 Hz
- Input impedance: 470 Ω

Internal Temperature
- Type:
  - DNL 910: PT100
  - DNL 920: Digital
- Range: -20 to 50 °C
- Resolution: 0.1 °C
- Accuracy:
  - DNL 910: ±0.3 °C
  - DNL 920: ±0.5 °C

Internal Humidity
- Range: 5 to 95 %
- Resolution: 0.5 %
- Accuracy: ±3 % at 10-90 %

EXTERNAL SENSORS

PT100 Sensor
- Range: -70 to 400 °C
- Cable length: 2.5m/4m/6m
- Teflon cable range: -65 to 200 °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 Ω
- 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 °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® 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

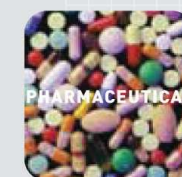|	
DNL 910	Internal Temp + four channels measuring mA, V, mV, TC/K, J, T, PT100, Frequency and Pulse
DNL 920	Internal RH & Temp + four channels measuring mA, V, mV, TC/K, J, T, PT100, Frequency and Pulse
DNR 900	Receiver/Repeater
DN-PCSUITE	PC suite including communication USB cable, manual
12753	PT100 sensor 2.5 m
12752	PT100 sensor 4 m
12751	PT100 sensor 6 m

Key DigiNet 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**

DigiNet : High-End Wireless Data Acquisition System

The **DigiNet** 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

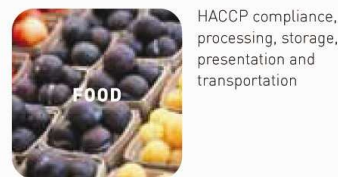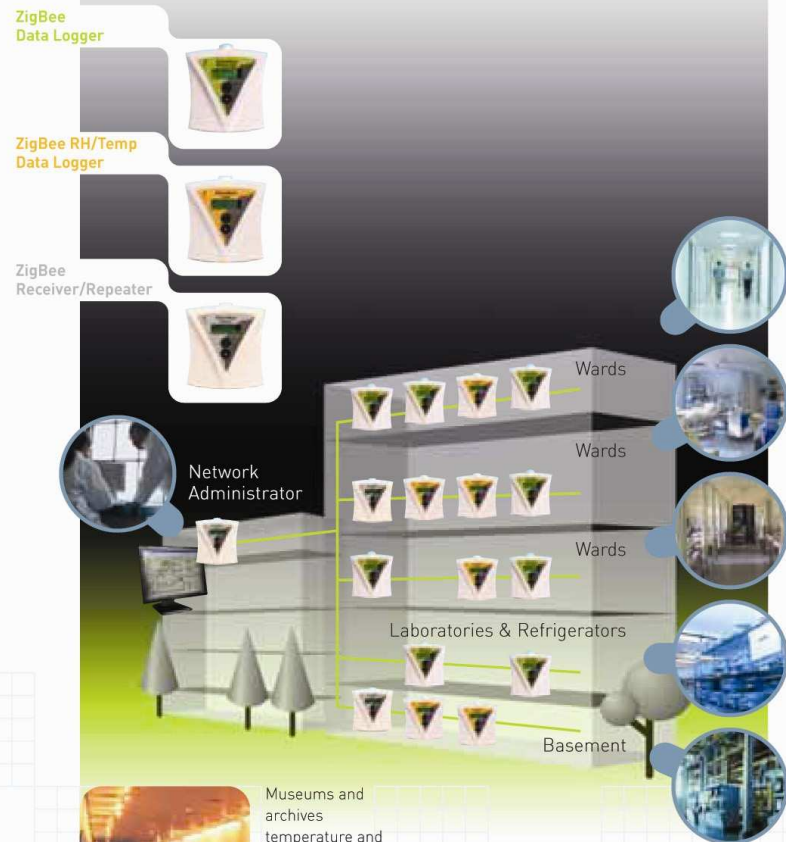For more information Contact **info@digitron-italia.it**

DigiNet

Wireless intelligent logging network

DigiNet 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 **DigiNet** Internal Temperature and humidity (Digital).
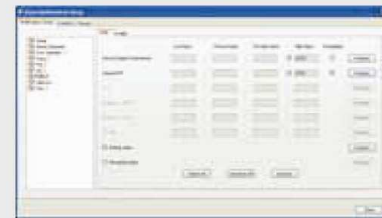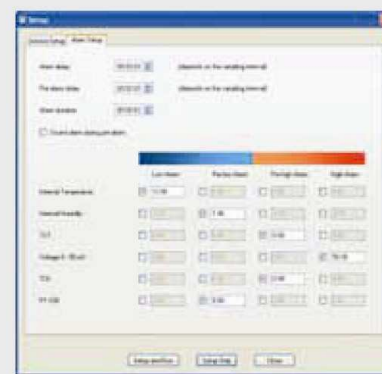- DNL808 Mini **DigiNet** External 10KΩ NTC.

DigiNet Infrastructure Network

ZigBee Data Logger

ZigBee RH/Temp Data Logger

ZigBee Receiver/Repeater

Network Administrator

Wards

Wards

Wards

Laboratories & Refrigerators

Basement

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

COLD STORAGE

Optimizing temperature in refrigerated warehousing

FOOD

HACCP compliance, processing, storage, presentation and transportation

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

Alarm Features

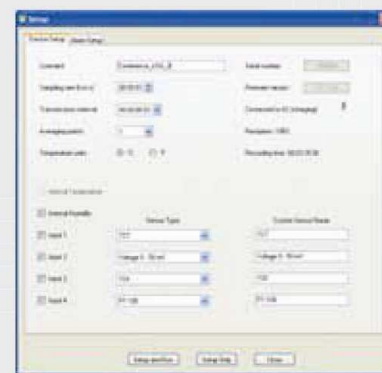Alarm level setup with email & SMS notifications

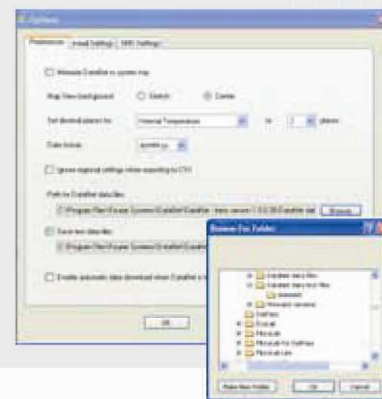Four alarm levels, allowing for programming of 4 separate parameters, with alarm delay and duration
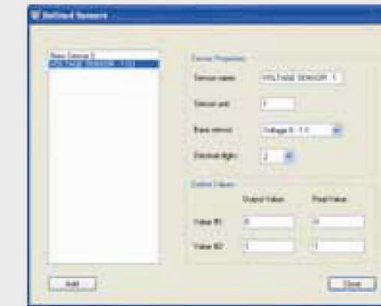
Programming Features

Logger programming with Celsius or Fahrenheit view

Automatic storage location of data, with additional text format option

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Defining milliamp or voltage inputs to view engineering units

Hardware Communication Features

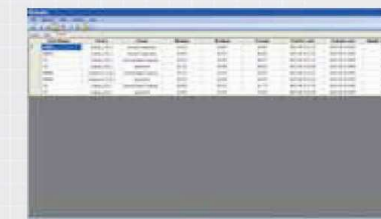Over-the-air firmware updates and calibration

Unit ID enabling the software and units to call each other
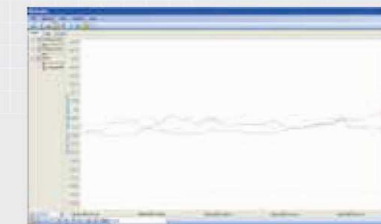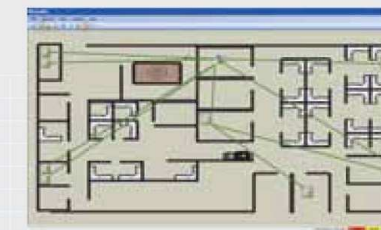
View Features

Real-time data in multiple displays (show table, graph, Excel)
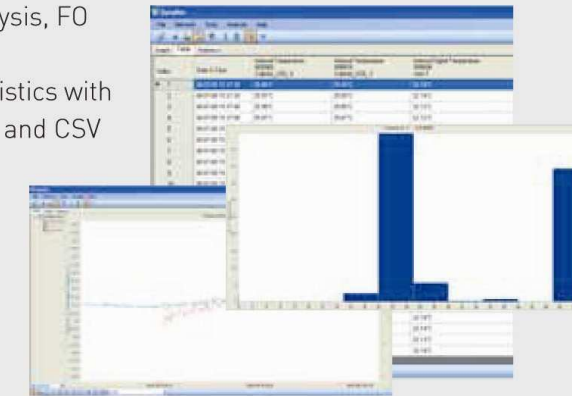
Selecting international date format

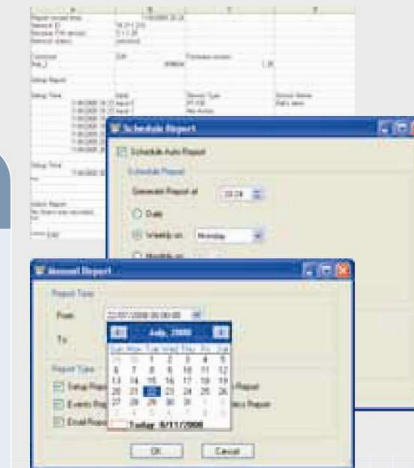Ability to rename every logger and external input

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 DigiNet Specifications

DNL810	Accuracy	Resolution	Range
Internal Temperature (Digital)	±0.4°	0.04 °C	-20 to 50 °C
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

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

Power Supply
- Battery life - over 10 months @ transmission every 5 min

- 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

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 **DigiNet** Internal Temperature and Humidity (Digital)
DNL808 External 10KΩ NTC