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FOURTEC TECHNOLOGIES

Wireless, multi-unit data acquisition, delivering 24/7 real-time monitoring for industrial environments



DataNet is an essential hardware and software solution that can empower any organization to monitor their environment using the ZigBee wireless network.

The DataNet comprehensive real-time data logging solution is directed by event-driven security policies. DataNet delivers a truly worthy data logging solution by leveraging the power of ZigBee wireless, 2.4 GHz telemetry protocol. Supporting up to 65,000 units per network, with fast, cable-free installation for instant setup.

- Wireless data logging for processing, transportation and storage
- Multiple network management from single workstation or via LAN for long range monitoring
- Internal sensors for site-specific humidity/temperature monitoring
- Multiple models measuring 4 to 20 mA, 0 to 1 V, Pulse Counter, PT100 2-wires, NTC, Thermocouple J, K and T, Contact inputs
- Fully reliable real-time wireless monitoring network
- Multiple alarms via SMS, email and external siren
- Worldwide license-free 2.4 GHz band
- Operating keypad and LCD display
- API for integrating DataNet hardware with proprietary systems

www.fourtec.com

INNOVATIVE MONITORING SOLUTIONS

DataNet Solution

WIRELESS INTELLIGENT LOGGING NETWORK



PHARMACEUTICAL
Monitoring environments in labs, fridges, freezers and culture rooms



WAREHOUSING
Chemical, industrial and perishables storage



COLD STORAGE
Optimizing temperature in refrigerated warehousing



HOSPITALS
Medical alert monitoring, sterilization, blood products storage and transport



COLD CHAIN
Ensuring quality products throughout the cold chain process



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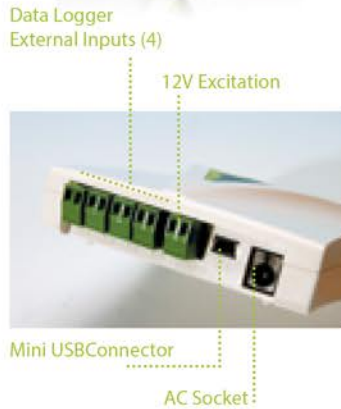
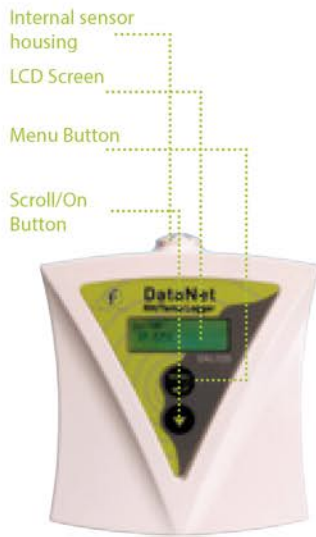
The DataNet solution comprises a range of loggers measuring a variety of inputs, including internal temperature and humidity sensors. From 5-6 input models down to the more cost-effective single or dual input Mini DataNet models, we offer a comprehensive solution for every application.

The DataNet multi-unit data acquisition solution is geared towards 24/7 real-time data logging for mission critical organizations. The DataNet's comprehensive online solution is directed by event-driven security policies.

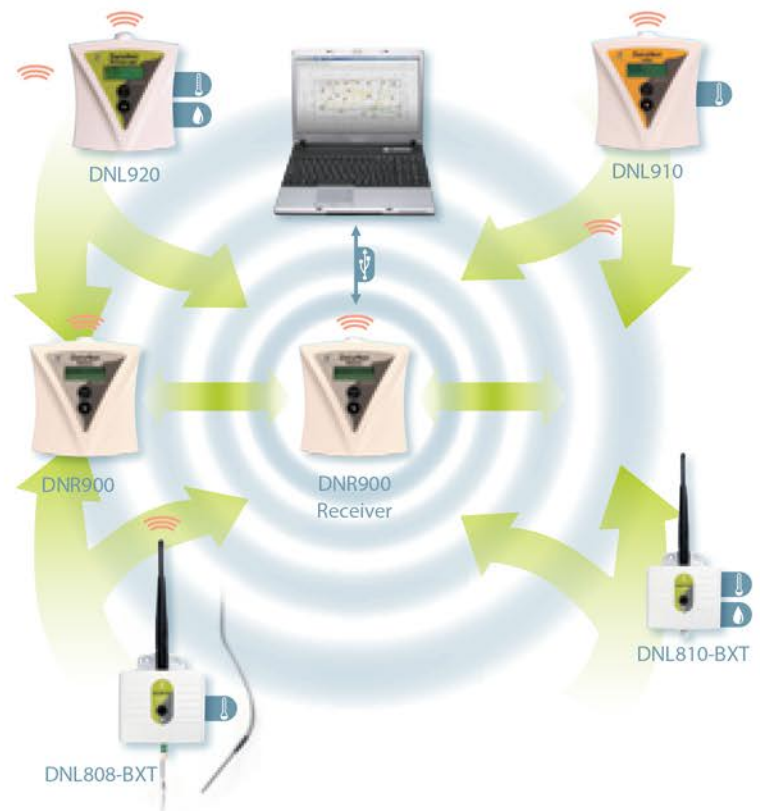
Logging units function in a wireless mesh network configuration, allowing for 65,000 units in each network. This enables real-time monitoring of multiple test points in a single operation.

The DataNet product family supports onboard temperature and humidity sensors, as well as the following industry standard inputs: 4 external channels for 4 to 20 mA, 0 to 50 mV, 0 to 1 V, PT-100, Thermocouple, Contact, Pulse Counter and Frequency.

DataNet system offers a broad selection of logger models meeting a wide variety of industry applications needs.



- **DNR900 Receiver/Repeater** – the heart of the system controls and collects the data from the end units. Also suitable for extending the system range.
- **DNL910 and DNL920** – loggers with internal temperature and/or humidity. Supports four external inputs: 4 to 20 mA, 0 to 1 V, 0 to 50 mV, PT-100 2 wires, Thermocouples (J, K and T), Contact, Pulse Counter and Frequency
- **DNL808-BXT, DNL810-BXT** – cost-effective loggers supporting up to two inputs, measuring temperature and humidity. Includes up to four AA 3.6 V for 3-year battery life.



DataNet Solution

WIRELESS INTELLIGENT LOGGING NETWORK

DataSuite Software for DataNet

Supported Operating Systems:
Windows® XP SP3 / Vista / 7 (32 and 64 Bit)

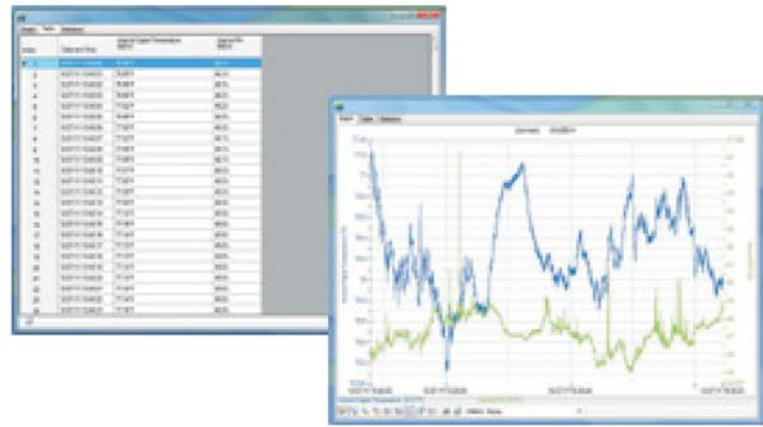
Minimum Hardware Requirements:
Pentium 4, 2 GHz Processor or better, 512 MB RAM, 250 MB available disk space



The DataSuite Software provides security for your products with online monitoring and control of multiple networks supporting the entire intelligent DataNet data logging solution via LAN.

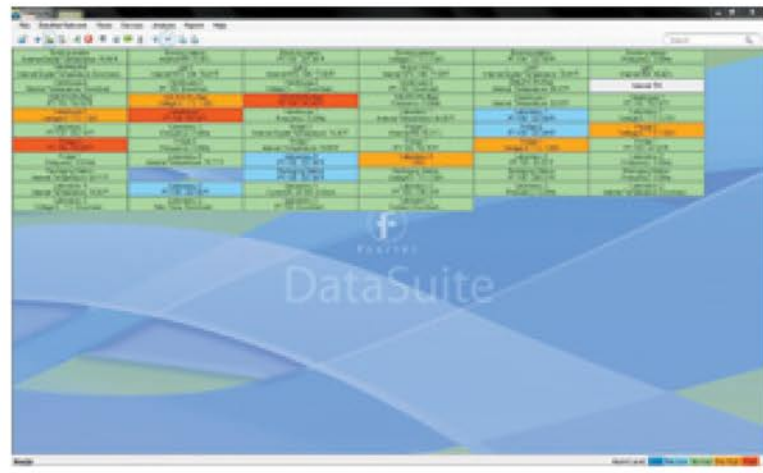
Data View Features

Real-time data in multiple displays (Graph, Table, Statistics)



Sensor View

Real-time sensor-specific data view with alarm status

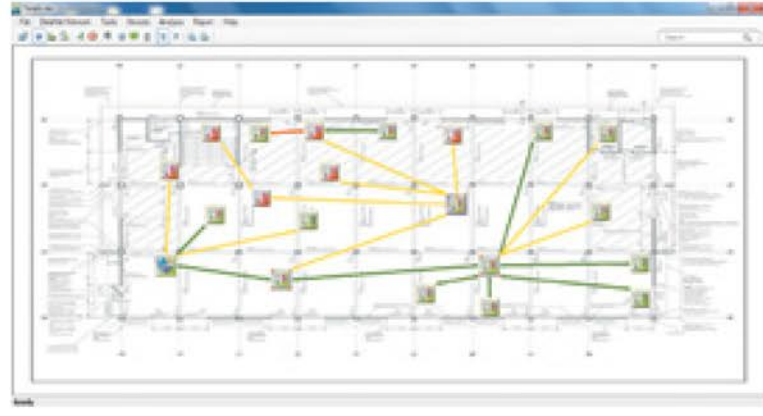


FDA Title 21 CFR Part 11 Compliant



Map View

- International date format
- Ability to rename every logger and external input
- Map View displaying unit location, signal path and signal strength to the PC

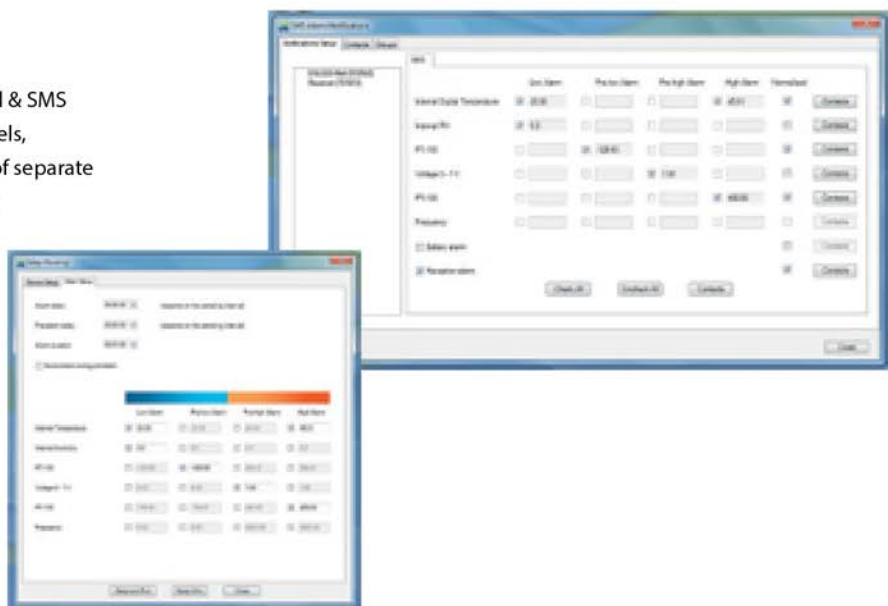


DatPass

DatPass is a user administration software which supports the assignment of passwords and operating privileges for all fourteen industry application software ensuring CFR compliancy. CFR is a Food and Drug Administration (FDA) issued regulation (Title 21 Code of Federal Regulations, Part 11).

Alarm Features

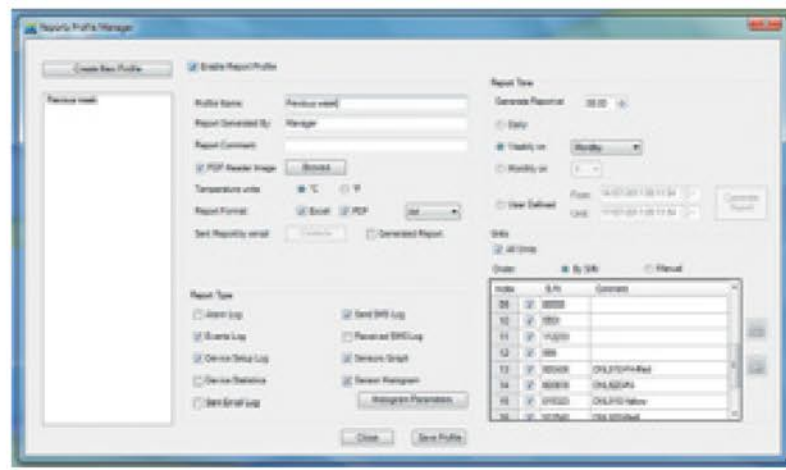
Alarm level setup with email & SMS notifications. Four alarm levels, allowing for programming of separate parameters, including alarm delay and duration



DatPass Audit Trail

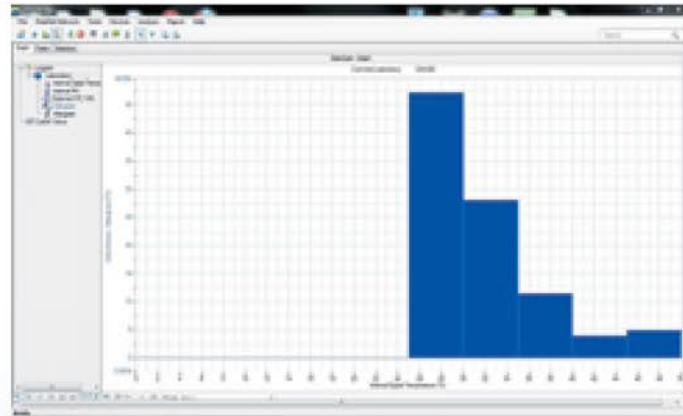
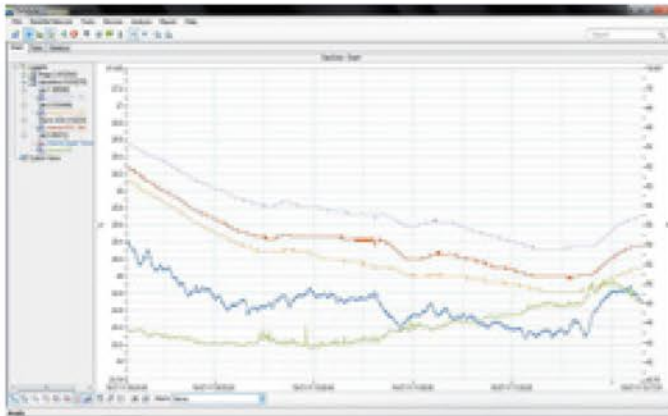
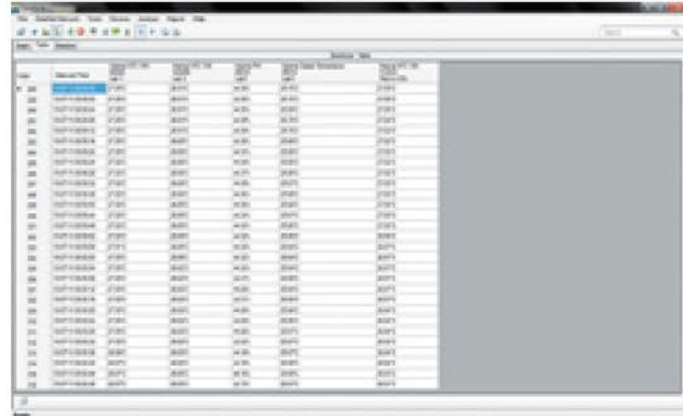
Report Module

The Report module provides the DataSuite user with an intuitive interface for creating and generating reports which have many parameters garnered from the DataNet units and software. Each report can be emailed to a selected distribution list, at pre-defined time intervals, in PDF and Excel format



Analysis Features

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



Application Example – Medical Center



Specifications

Length and Temperature specifications are provided in Metric and Celsius units

INPUT TYPES

DNL910, DNL920

4 to 20 mA

- Range: 4 to 20 mA
- Resolution: 4.76 μ A
- Accuracy: ± 0.5 %
- Loop impedance: 21 Ω

0 to 50 mV

- Range: 0 to 50 mV
- Resolution: 3 μ V
- Accuracy: ± 0.5 %
- Input impedance: 25 M Ω
- Maximum voltage: 3.2 V

0 to 1 V

- Range: 0 to 1 V
- Resolution: 200 μ V
- Accuracy: ± 0.5 %
- Input impedance: 25 M Ω
- Maximum voltage: 3.2 V

Temperature PT-100 (2-wires)

- Range: -200 to 400 $^{\circ}$ C
- Resolution: 0.1 $^{\circ}$ C
- Accuracy: -200 to -60 $^{\circ}$ C ± 0.5 %
60 to 400 $^{\circ}$ C ± 0.5 %
-60 to 60 $^{\circ}$ C ± 0.3 %

Temperature Thermocouple J

- Range: -200 to 1,000 $^{\circ}$ C
- Resolution: 0.1 $^{\circ}$ C
- Accuracy: -200 to -60 $^{\circ}$ C ± 0.5 %
60 to 1,000 $^{\circ}$ C ± 0.5 %
-60 to 60 $^{\circ}$ C ± 0.5 %
- Cold junction compensation error: ± 0.3 $^{\circ}$ C

Temperature Thermocouple K

- Range: -200 to 1,000 $^{\circ}$ C
- Resolution: 0.1 $^{\circ}$ C
- Accuracy: -200 to -60 $^{\circ}$ C ± 0.5 %
60 to 1,000 $^{\circ}$ C ± 0.5 %
-60 to 60 $^{\circ}$ C ± 0.5 %
- Cold junction compensation error: ± 0.3 $^{\circ}$ C

Temperature Thermocouple T

- Range: -200 to 400 $^{\circ}$ C
- Resolution: 0.1 $^{\circ}$ C
- Accuracy: -200 to -60 $^{\circ}$ C ± 0.5 %
60 to 400 $^{\circ}$ C ± 0.5 %
-60 to 60 $^{\circ}$ C ± 0.5 %
- Cold junction compensation error: ± 0.3 $^{\circ}$ C

Contact (for Switch/Door Position)

- Range: Open/Closed

Pulse Counter (input 4 only)

- Optocoupler input
- 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)

- Optocoupler input
- Range: 20 Hz to 4 KHz
- Input signal: 0 to 5 V
- Input impedance: 470 Ω

Internal Temperature

- Type: DNL910: PT-100
DNL920: Digital
- Range: -20 to 50 $^{\circ}$ C
- Resolution: 0.1 $^{\circ}$ C
- Accuracy: DNL910: ± 0.3 $^{\circ}$ C
DNL920: ± 0.5 $^{\circ}$ C

Internal Humidity (for DNL920)

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

DNL808-BXT and DNL810-BXT

DNL808-BXT External Temperature Sensor

- Range: -50 to 150 $^{\circ}$ C
- Resolution: 0.06 $^{\circ}$ C
- Accuracy: -50 to 60 $^{\circ}$ C ± 0.3 %
60 to 150 $^{\circ}$ C ± 0.5 %

DNL810-BXT Internal RH/Temperature Sensors

- Temp range: -20 to 50 $^{\circ}$ C
- Temp resolution: 0.04 $^{\circ}$ C
- Temp accuracy: ± 0.4 $^{\circ}$ C
- Humidity range: 5 to 95 %
- Humidity resolution: 0.5 %
- Humidity accuracy: ± 3 %

OUTPUTS

DNR900, DNL910, DNL920

External Power Excitation (transducers usage)

- 12 V DC @ 2 A
- Reset fuse overload

Dry Contact Alarm Output

- Open collector
- Close position resistance: 50 Ω
- Max. Load: 50 mA, 3 V DC

DATANET LOGGER SAMPLING FEATURES

- Memory capacity: ~59,000 samples
- Sampling rate: Once every second to once every 18 hours
- Sampling resolution: 16-bit
- Channel separation: 80 dB

DATANET RF NETWORK COMMUNICATION

- Frequency: 2.4 GHz
- Units per network: 65,000
- Data rate: 250 Kbps
- Full mesh network architecture supported
- 128-bit network security encryption
- Worldwide license-free
- RF Transmission:
DNL8xx and DNL9xx: 4 dbm
DNR900: 17 dbm

DATANET HARDWARE SPECIFICATIONS

DNR900, DNL910, DNL920

Display

- 2-row LCD
- 16 character 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 for all models
- Water and dust proof: IP54

DNR900 PC Communication

- USB 2.0 compliance
- Mini USB type B cable

Casing

- Plastic ABS box
- Dimensions: 97 x 93 x 27 mm
- Weight: 200 gr
- Table and wall mounting

DNL808-BXT, DNL810-BXT

Power Supply

- Removable battery pack supporting up to 4 x AA 3.6 V lithium batteries
- Battery life: Up to 3 years depending on sampling rate

Casing

Dimensions

- DNL810-BXT: 10.2 x 8.8 x 5.3 cm (without the external antenna)
- DNL808-BXT: 9 x 8.8 x 5.3 cm (without the external antenna and strain relief add-on)

Weight:

- 137 g not including batteries
- 218 g including four batteries
- External Antenna: 17.5 g
- Wall mounting

Operating Temperature Range

- -30 to 75 $^{\circ}$ C for all models (operating at temperature close to or below zero may affect battery life)
- Water and dust proof: IP54

GENERAL SPECIFICATIONS

Man Machine Interface

- 2-button keypad

Standards Compliance

- CE, FCC, IC Canada
- Quad Band: GSM-850/EGSM-900/DCS-1800 PCS-1900 MHz
- Supports Open AT[®] software platform
- Internal Expansion Socket (AES) interface
- RS232 Serial Interface
- 12 V DC external power supply

DATASUITE SOFTWARE FOR DATANET

- Windows[®] based software
- Data displayed in numeric or graphical display of all inputs
- Online retrieval and display of the collected data in real-time
- Definition of custom sensors
- Full logger calibration
- Documentation and filing
- Offline Receiver alarm indication
- 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
- Software integration with range of fourtec data loggers

Ordering Information

Part Number (PN)	Product Description
DATANET DEVICES	
DNR900A	Receiver/Repeater + universal power supply
DNL910A	Temperature RF logger with 4 external inputs + universal power supply + calibration certificate
DNL920A	Temperature & Humidity RF logger with 4 external inputs + universal power supply + calibration certificate
DNL808A-BXT	External NTC 10KΩ RF logger(-50 to 150 °C) + NTC temperature probe (2.5 m cable) + external antenna + extended battery pack
DNL810A-BXT	Temperature and Humidity RF logger + external antenna + extended battery pack
SENSORS	
12753	PT-100 (-70 to 400 °C) 2-wire temperature sensor (2.5 m cable)
12752	PT-100 (-70 to 400 °C) 2-wire temperature sensor (4 m cable)
12751	PT-100 (-70 to 400 °C) 2-wire temperature sensor (6 m cable)
50116	PT-100 (-200 to 400 °C) 2-wire temperature sensor (2.5 m cable)
50165	Thermocouple Type K sensor, 500 mm cable with flat pin connector
DT043	Temperature (-40 to 60 C) and Humidity probe (3 m cable)
DT332	Replacement NTC 10KΩ (-50 to 150 °C) temperature probe (2.5 m cable) for DNL808
ACCESSORIES & SOFTWARE	
13825	External Siren + Strobe for DataSuite alarm notifications
13750	USB over IP Ethernet adapter
13129	Replacement standard external antenna for Mini DataNet units
13416	External 2.5 m antenna with magnet connector
13330	Mini USB communication cable for DNR900 (3 m cable)
11304	Internal battery pack for DNL9XX loggers
13806	AA 3.6 battery for Mini DataNet External Battery Pack
AD001	Replacement universal 110V/220V power supply
DataSuite-DN	DataSuite Installation CD + mini USB 3m cable + single user license
DS-CFR-DN	DatPass for DataSuite meeting 21 CFR Part 11 Compliancy. With DataSuite CFR and DatPass software +mini USB 3m cable + user licenses

About fourtec

fourtec – Fourier Technologies Ltd. is a recognized leader in data-logging and monitoring solutions for controlled industrial environments, such as food, pharmaceutical, medical, storage and transportation industries.

Our solutions enable our customers to deliver higher quality products, ensure consumer safety, comply with regulatory requirements and increase profitability. Innovation, expertise and a commitment to quality are the values that drive the development and production of our products.