COMARK

Temperature and Humidity Monitoring
Automated RF500 wireless monitoring with exceptional data integrity
Complete peace of mind

RF512

wireless Monitoring Solutions

COMARK

The Professionals' Choice

RF500 System

Provides effortless 24/7 monitoring of temperature, humidity door events and other parameters.

Key benefits include:

- Accurate records without compromise
- Secure multi-user access to data via the internet at any time
- Alarm notification via email, phone or SMS*
- Transmitters that are waterproof and accurate, and have a long battery life
- Compliant with legislative and regulatory requirements
- Plus, it's easy to use and maintain

*SMS able via email.

The RF500 System

The system achieves unprecedented levels of efficiency and reliability through its use of low-power RF technology with built-in mesh networking, and transmitters with bi-directional communications.

The RF500 Wireless Monitoring System is an accurate, reliable and flexible method of collecting real-time temperature, humidity and door event data. It uses a network of remote sensors and probes to collect and transmit information to a Gateway unit that manages the system and collects and stores the data. The result is efficient and versatile round-the-clock monitoring for just about any industry.

Advanced features include:

ADR – Automatic Data Retrieval. In the event of a power failure, data is stored in the RF500 transmitter then automatically transmitted to the Gateway as soon as the network is restored, resulting in continuous data.

Mesh Network – established through powered transmitters. This enables the system to automatically adjust to any changes in the environment, rerouting-signals as required to ensure that the data is always returned to the Gateway.

Manual checks on temperature and humidity are a thing of the past. The RF500 does it automatically, reducing labour costs, eliminating errors and ensuring complete records are maintained in accordance with regulatory requirements.

In the event of readings falling outside pre-set limits, alarm notification via screens, SMS*, email or voice allows immediate corrective action to be taken. This can make all the difference in terms of saving your product and protecting your reputation.

The RF500 answers market demands for a quick, reliable system which is easy to understand and operate but can just as easily be reconfigured or expanded in line with changing needs.

Instant alarm notification is via screens, SMS or email to your PC or mobile device.
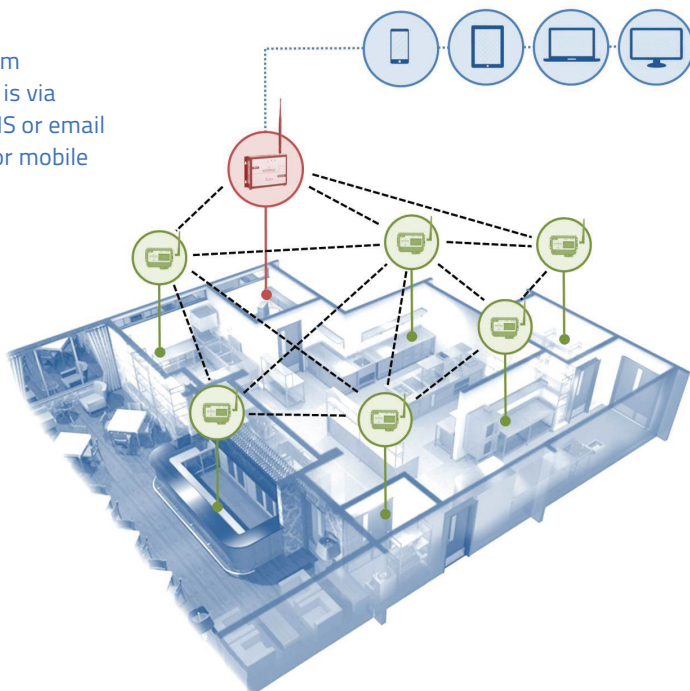
The above schematic shows an example of RF500 mesh network. In the event of signals being blocked to or from a specific route, RF500 Transmitters automatically seek an alternative route across the mesh network.

Viewing Data

The powerful RF500A Gateway unit requires no specialist PC software. This compact unit has solid state memory via two SD cards. In the event of failure, data is protected as information is backed-up automatically between the two. There is no hard drive and no fan so there are fewer components to wear out. The RF500A has low power consumption, an important consideration in any industry and the RF500AP provides the option of power over Ethernet or mains. The Gateway connects directly to the local area network, permitting 24/7 single or multi-user access via the internet.

Programming or data access is achieved via a PC, smart phone or tablet from any location. Multi-user access can be controlled via built-in safeguards configured to ensure that staff only have access to information relevant to their needs and can only make changes deemed appropriate by the system administrator. There are no hidden charges for licences and there is no limit on the number of users – you dictate how many or how few people have access.

With a full audit trail, electronic signatures and data protection to meet the requirements of 21CFR Part 11, RF500 is ideal for any high security application where protection of your products and good name is paramount. Rapid identification and notification of alarm conditions provides all the necessary assurances for due diligence and HACCP procedures.

Applications

The RF500 system is suitable for use in any industry where specific temperature or humidity levels need to be maintained and monitored so products are stored and systems are operated at optimum levels for safety and energy efficiency.

Ideal for monitoring:

- Fridges and freezers
- Coolers, chillers and cold stores
- Warehousing, distribution and transport
- Storage areas for drugs or vaccines
- Incubators and test chambers
- Perishable goods such as blood products and costly test reagents

Practical functionality allows you to:

- Stop and start logging
- View or program tasks
- View data as graphs or tables and toggle between the two
- View events for a selected day
- Filter data to produce audit trails
- Print reports in graphical or tabular formats
- Task and period data from individual transmitters can be exported for reports

RF500 Software

See at a glance how your wireless monitoring system is performing
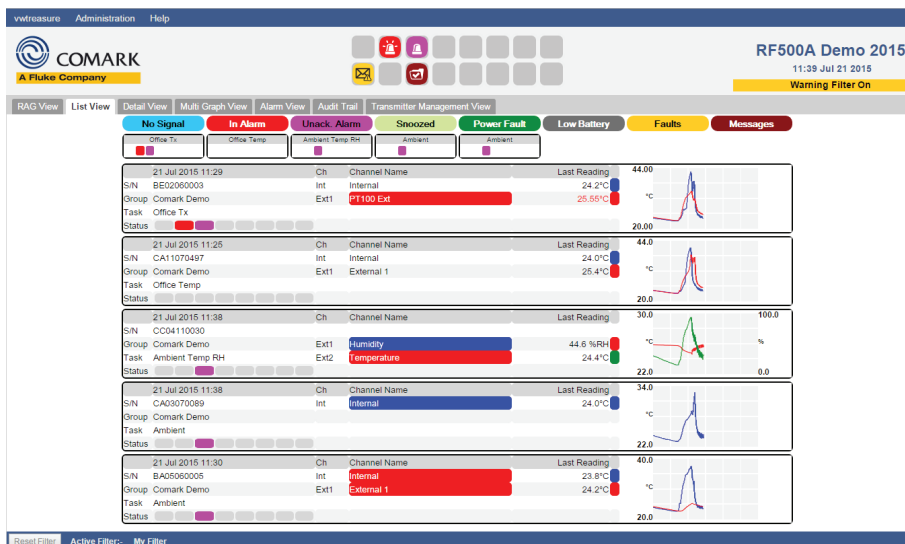## Monitor alarm events and easily produce graphs, reports and audit trials
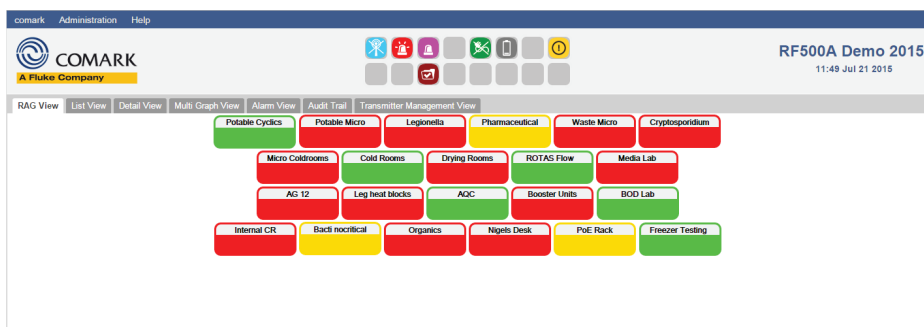
RAG Screen

Red, amber and green indicator screen helps you to immediately see where temperatures are within set limits and also those requiring attention or in alarm.
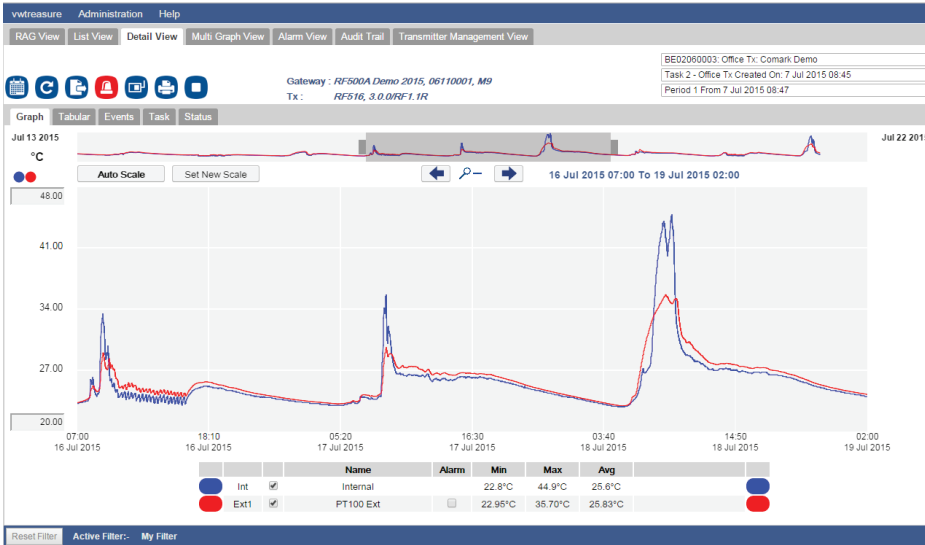
Alarm View

Further investigation of alarm groups can be undertaken using the alarm view to get a breakdown by transmitter to pin-point where remedial action should be focussed.

List View

See each transmitter listed and get an overview of maximum and minimum temperatures plus a mini graph showing performance.
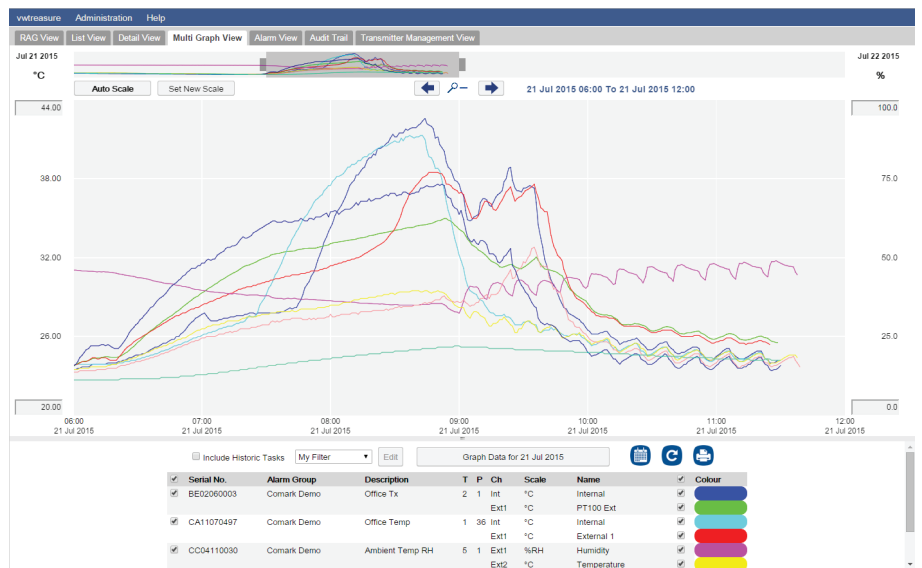
Detail View

Using detail view allows you to study the temperature or humidity readings of a particular transmitter over a set period of time

Multi-Graph

The multi-graph function saves the set-up for future graphing.

These can be created for specific days, weeks, months or years so data from several areas can be compared and monitored.

Tabular Report

Produce tabular reports to print.

RF500 in Action
Case studies from our industry partners

Case Study: Healthcare

NHS Scotland Teaching Hospital

900-bed hospital
Service solution: RF500A Wireless Temperature Monitoring
Project size: 120 Transmitters

Solution

After reviewing its options, the hospital installed Comark's RF500A solution across its temperature-critical points, including laboratories, refrigerators, freezers, deep freezers, cabinets, appliances, rooms, incubators and other areas. The RF500A wireless monitoring system automatically and continuously monitors both temperature and humidity readings. It is highly flexible and can be configured to meet the needs of a multi-fixture, multi-site organisation right down to one freezer. When the system identifies a predetermined change in those levels, it alerts key staff in real time via email, text message, or voice to computers, smart phones, and other mobile devices.

Comark's RF500A solution exceeds the requirements of regulatory bodies, reduces errors, provides an audit trail and ensures complete records are maintained. Its robust, feature-rich software also enables instant access to data that takes new standards and regulations into account.
And because it's a web-based system, the hospital no longer had to worry about the performance of one computer. If the user has authorised rights, temperature data can now be accessed from any computer within the hospital and remotely to view live data and temperature events.

Benefits

- The hospital now operates with more confidence over its temperature-monitoring system.
- The Comark solution sends an alert, for example, when the temperature in a refrigerator begins to rise because the door is not closed properly so staff respond in a timely manner that follows the hospital's own set of processes and protocol.
- Comark's ability to calibrate the temperature-monitoring probes has proved to be a crucial business benefit to the hospital.
- Protection of temperature sensitive stock and laboratory samples. The hospital had previously lost stock when a large refrigerator malfunctioned as they could not guarantee the safety of stored products.

Case Study: Food

Food Manufacturing Company

Sauce Production Line
Service solution: RF500 Wireless Temperature Monitoring

Solution

The company needed to be able to prove to the British Retail Consortium (BRC) that its cooking cycles had been completed correctly.

Historically, this was done by manually recording temperatures from chart recorders or other devices and maintaining written records. The company also wanted to monitor temperatures in their chilled storage warehouse.

The RF500 system supplied can be programmed to provide independently variable logging rates for each individual transmitter, in line with the task being carried out. The single coordinated system has answered all the customer's needs, including compliance with the company's criteria which required 100% reliability in terms of logging rates and accuracy. The customer is also satisfied that all the data captured will stand up to scrutiny.

Benefits

- The ability to show that products have been cooked in accordance with customer's instructions.
- Meets all data requirements for BRC auditing
- Automated and consistent record-keeping with little risk of human error

SPECIFICATIONS

RF500A Gateway

Channels	Up to 256
Transmitters	Up to 64
Storage capacity	Up to 10 years of storage
RF frequency	2.4 GHz using IEEE 802.15.4
Battery life	1 hour back up in the event of mains failure
Power sources	110-240V adaptor, rechargeable Ni-Mh battery
Clock accuracy	4ppm (2 minutes per year)
Dimensions	L 259mm x W 189mm x H 92mm
Weight	1.3kg

Transmitters – RF512, RF513, RF516, RF542

Channels	Up to 256
Temperature measurement range	
Internal thermistor sensor RF512, RF516	-30° to 70°C
Integral thermistor sensor RF513	-30° to 70°C
External thermistor sensor RF512, RF513, RF516, RF542	-40° to 125°C
External Pt100 sensor RF516	-200° to 400°C
System accuracy with standard sensors:	
Temperature	
External thermistor	-20°C to +70°C ±0.5°C
External thermistor	full range ±1°C
Internal thermistor	-20°C to +70°C ±0.5°C
PT100	full range ±0.05°C plus probe
Humidity	10 to 90% RH ±3% RH
Logging memory	32,000 records
Logging frequency	Programmable between 1 and 60 minutes
Monitoring frequency	1 minute
Battery type	Replaceable Lithium 'C' Cell (Part No RFBATT)
Battery life	Up to 2 years when used at 23°C/73°F (room temperature)
Clock accuracy	4ppm (2 minutes per year)
Dimensions	L 259mm x W 189mm x H 92mm
Weight	1.3kg

For a list of suitable probes and accessories, please see www.comarkinstruments.com

Contact Us

We understand there are times when our customers may need guidance on the best solution for their requirements. If you would like further information or to discuss your temperature monitoring application, please contact our customer service department who will be pleased to assist.

We are here to help so please contact us on:

Telephone:
+44 (0) 207 942 0712

Email:
sales@comarkinstruments.com

Website:
www.comarkinstruments.com

Support Service

With our team of experts, we are proud to offer a nationwide personal onsite installation and calibration service.

We understand there are times when our customers may need guidance, help or support with their RF500. As well as providing information on the Comark website, our dedicated technical support team can be reached on the phone or by email.

Warranty Statement

All Comark instruments have a minimum one year warranty unless otherwise stated. The warranty for temperature probes is six months and all other probes are unwarranted because the conditions of use are beyond our control.

The Comark Warranty covers manufacturing defects and component failure and applies worldwide. In line with our policy of continuous development, we reserve the right to alter any product specification without notice.

Comark has an accredited UKAS (NIST equivalent) calibration laboratory for temperature and humidity measurement and offers full service and recalibration facilities

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