

RF500

Applications include catering, foodservice, food manufacture, pharmaceutical healthcare, warehousing and retail.



Warehousing

Retail

Case History 1

Customer: A Healthcare Trust



across four hospital sites with six pathology labs, eight blood banks and a total of 180 monitoring points.

Solution: An RF500 system with 14 Gateway units has fulfilled all the customer's requirements. It allows data from all locations to be viewed locally and remotely by different people within the trust and includes an email alarm system for each separate Gateway, as well as visible alarms on each transmitter.

Monitoring points range from -80°C freezers, fridges, cold rooms and incubators, and the system provides almost permanent mapping for super-critical areas such as blood fridges. The robust RF signal has proved effective with no loss of data even across large busy labs fitted with state-of-the-art electronic equipment.

Requirement: To upgrade existing temperature monitoring methods.

Previous methods relied on a combination of equipment displays, data loggers, chart recorders and manual recording which, in terms of remote blood banks alone, was taking a member of staff 2 hours per day.

The new system needed to be fully automatic, capable of operating 24 hours per day, 365 days per year

Benefits:

- Compliance with MHRA and CPA requirements
- Peace of mind because all areas are alarmed
- No more manual readings, so no human error
- All data available to key people from their own office
- Choice of alarm methods for notification day or night

Case History 2

Customer: Food Manufacturer (Sauces)



and maintaining written records. The company also wanted to monitor temperatures in their chilled storage warehouse.

Solution: 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

Requirement: 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

Technical specifications

RF500A Gateway		Power Sources	RF500A and RF500AP: AC power adaptor, rechargeable NiMH battery
Number of Channels	Up to 256		RF500AP only: Power over Ethernet (PoE) capability. Compliant to IEEE 802.3af
Number of Transmitters	Up to 64		
Storage Capacity	Up to 10 years' storage		
RF Frequency	2.4 GHz using IEEE 802.15.4	Clock Accuracy	4ppm (2 minutes per year)
Battery Life	1 hour	Relay Outputs (SW1 & SW2)	Two individual 2.5mm jack sockets. Contacts: 24Vdc 500mA maximum
Operating Conditions		Power Consumption	12W typical
Temperature	0°C to +40°C / +32°F to +104°F	Dimensions	L 225mm x W 150mm x D 40mm
Humidity	10-90% RH non-condensing	Weight	1.3Kg
Power Adaptor	100-240VAC 310mA 50/60Hz		
Battery Backup	4.3Ah Ni-Mh Rechargeable Battery. Running time approximately 1 hour		

Transmitters – RF512, RF513, RF515 and RF516		Volts/Milliamps	
Temperature Measurement Range		0-10V	1mV
Internal Thermistor Sensor – RF512, RF516	-30°C to +70°C/-22°F to +158°F	0-1V	0.1mV
Integral Thermistor Sensor – RF513	-30°C to +70°C/-22°F to +158°F	4-20mA	1µA
External Sensor	-40°C to +125°C/-40°F to +257°F	Storage Temperature	-40°C to +85°C / -40°F to +185°F
External Pt100 Sensor	-200°C to +400°C/-328°F to +750°F	RF Frequency	2.4GHz using IEEE 802.15.4
Humidity Measurement Range	10 to 90% RH	Standard Antenna	External, removable, omni-directional with pivot. Length: 90mm from pivot.
System Accuracy with Standard Sensors		High-Gain Antenna (optional)	Length: 235mm from pivot.
Temperature		Radio Range*	Typically 50 metres indoors
External Thermistor -20°C to +70°C	±0.5°C/ ±0.9°F	Clock Accuracy**	20ppm (1 minute/month) at 25°C/ 77°F
External Thermistor – full range	±1°C/ ±2°F	Logging Memory	32000 records
Internal Thermistor -20°C to +70°C	±0.5°/ ±1.0°F	Logging Frequency	Programmable between 1 minute and 60 minutes
External Pt100 – over 50°C range between two calibration points	±0.1°C/ ±0.2°F (system including probe)	Monitoring Frequency	1 minute
Pt100 – full range	±0.05°C/ ±0.1°F plus probe	LEDs	Red – Warning Green – External Power
Humidity		Case Material	Over-moulded food safe clear Polycarbonate with BioCote® antimicrobial
10-90% RH	±3%	Environmental Protection Transmitters	Case enclosure designed to meet IP67 BS6059
Volts/Milliamps at 23°C	0.3% of reading	Battery Type	Replaceable Lithium 'C' Cell Saft LSH14 Light (Part No RFBATT)
Pt100 Connection Type	4-wire	Battery Life***	1 year
Pt100 Sensor Drive Current	400µA Nominal	Dimensions	L 170mm x W 83mm x D 34mm
Resolution		Weight	200g
Temperature			
Thermistor	0.1°C/ 0.2°F		
Pt100	0.015°C/ 0.03°F		
Door Sensor	7.5 seconds		
Humidity			
10 to 90% RH	±0.1%		

* Internal RF range cannot be guaranteed as it varies from building to building. Requirement for all hardware is always determined on site by a physical survey.

Transmitters will synchronise their clocks with the Gateway at midnight. *When used at 23°C room temperature and radio rate of 15 minutes.

Battery life is up to 3 years with a heavy duty battery. Contact Comark for details.

BIOCOTE

Selected Comark thermometers, probes and data loggers have an advanced BioCote® antimicrobial impregnated into the instrument cases and probe handles. This inhibits the growth of harmful organisms and is becoming accepted with HACCP and due diligence procedures as an important extra level of defence against cross contamination.

For further details visit the BioCote® website www.biocote.com



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WARRANTY

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

The Comark warranty covers manufacturing defects and component failures on all products returned to Comark premises and applies worldwide. The warranty does not affect your statutory rights. In line with our policy of continuous development we reserve the right to alter any product specifications without notice.

All products are covered by our Quality Management System which is compliant with BS EN ISO 9001:2008 for the design, manufacture, supply, service, repair and recalibration of electronic measuring instruments and equipment.

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