

Diligence EV Data Loggers

Comark's Diligence EV range of data loggers provides a complete solution for the measurement of temperature, humidity or mA current.

The loggers are stand-alone, lightweight and small enough to be used almost anywhere that regular monitoring is required, reducing the need for manual checks and improving the accuracy of your information.

Use with EV Software to program logger tasks, download and analyse data, keeping permanent records to meet the requirements of industry regulations.

Housed in a robust case and waterproof to IP67 standards, the Diligence EV range includes multi-sensor models, capable of simultaneously monitoring several temperature locations.

- **LCD display screen** allows instant checks of current readings and alarms.
- **Large memory capacity with wraparound** for continual real-time and historic data collection no forgotten readings, just log data and download
- **Alarm** indication lights instantly warn of potentially unsafe conditions allowing instant corrective action
- **Water and dustproof** sealed to IP67 standards for long life expectancy and accuracy
- **Lumberg connector** provides secure connection of a wide range of Comark probes-types K, T or thermistor (model dependant)
- **Battery life** up to five years enabling logging assignments over extended periods
- **Models with external probes** are ideal for monitoring fridges and freezers
- **Models with built in sensor** are suitable for chillers, storage and transport applications
- **Model measuring mA current** can be easily connected into the control loop and programmed to measure a wide range of parameters for process and building management checks such as pressure, pH, airflow, dissolved oxygen and many more
- **UKAS Calibration Certificates** available on most models
- **Software available** free of charge, download from product pages on www.comarkltd.com.

Comark uses BioCote®, the only antimicrobial solution to be awarded HACCP International Certification, to provide an important extra level of defence against cross-contamination.



Comark is the leading manufacturer and supplier of a wide range of electronic measurement instruments for temperature, humidity and pressure.



Temperature Measurement	
Sensor Type N2011, N2012, N2013 N2014	Thermistor Type K or Type T thermocouple
Connector	Lumberg
Measurement Range N2011, N2012 Internal sensor N2012 external sensor N2013 temperature humidity N2014 Type K Type T Thermistor N2015	-40°C to +70°C / -40°F to +158°F -40°C to +150°C / -40°F to +302°F -20°C to +60°C / -4°F to +140°F 0 to 97% RH non condensing -200°C to +1372°C / -392°F to +2500°F -200°C to +400°C / -392°F to +752°F -40°C to +70°C / -40°F to +158°F 4 to 20mA
Scales Temperature Humidity	°C, °F RH or DP
Displayed Resolution Temperature Humidity N2015 only	0.1° (1° below -100°C, -148°F and above +1000°C or °F) N2014 0.2° 0.1% RH 4 digits 1 decimal place (software allows 0 to 4 decimals in logged data)
System Accuracy Temperature N2011, N2012, N2013 -25°C to +50°C / -13°F to +122°F -40°C to +80°C / -40°F to +176°F -40°C to +150°C / -40°F to +302°F Humidity N2013 -20°C to +60°C / -4°F to +140°F	±0.5°C / 1°F ±1°C / 2°F ±2°C / 4°F (typical) ±3%
Instrument Accuracy at +20°C/+65°F ambient N2014 N2015	±0.5°C/±0.9°F + 0.3% of reading over the range of -80°C to +400°C / -112°F to +752°F ±0.3% of full scale
Memory 1 channel 2 channels 3 channels 4 channels 5 channels	32K 16000 samples 8000 samples 5300 samples 4000 samples 3200 samples
Logging Frequency	Programmable between 1 second and 99 hours, N2014 2 seconds to 99 hours
Communications	Via infrared interface
Download Time	3 minutes per 10,000 readings (typical)
Ambient Storage	-40°C to +70°C/-40°F to +158°F
Battery Type	1 x AA size 3.6V replaceable lithium battery
Battery Life	Up to 5 Years
Case Material	ABS
Environmental Protection	IP67, EN 60529, IEC 529

* Software selection of decimals will affect recorded values, e.g. selection of 0 decimals = 1 value of ±32000 and a selection of 4 decimals = a value of ±3.2000

Diligence Accessories	
EVSW	General use logger software
EVSWPRO	Professional version of logger software with security options to aid 21CFR part 11 compliance
N2000CRU	USB computer interface
N2000BOX	Multi-link box to connect up to four external sensors to N2012
N2000ADP/K	Adaptor cable to connect up to three type K probes to N2014
N2000ADP/T	Adaptor cable to connect up to three type T probes to N2014
ADP50	Adaptor cable to connect N2015 loggers to a sensor transmitter
A17476	Lithium battery with case seal



Technical Specification

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.

BIOCOTE®

Selected Comark thermometers, probes and data loggers have BioCote's silver technology incorporated into instrument cases and probe handles at the time of manufacture. The antimicrobial finish inhibits the growth of bacteria, reducing the risk of cross-contamination and infection in the environment. BioCote® has been officially recognised for its benefits within the food industry with HACCP International Certification. HACCP International Certification supports organisations that demonstrate food safety excellence in non-food products that are designed for, or are commonly used in, the food industry. BioCote® is the only antimicrobial solution to be awarded HACCP International Certification.

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