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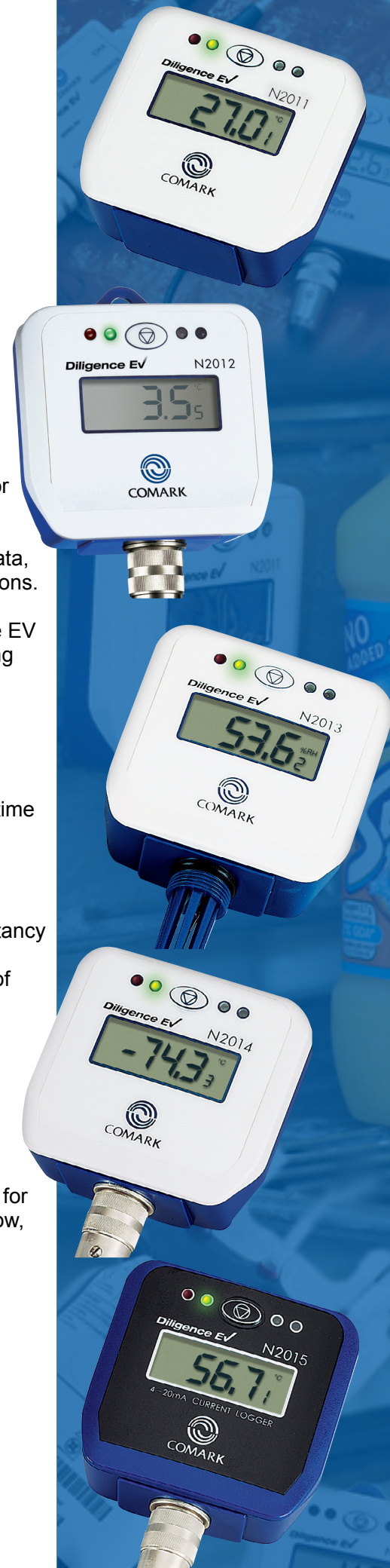
Housed in a robust case and waterproof to IP67 standards, the Diligence EV range includes multi-sensor models, capable of simultaneously monitoring several temperature locations.

- **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 avaliable** free of charge, download from product pages on www.comarkltd.com.

Comark is the only manufacturer to use BioCote® antimicrobial protection to provide an important extra level of defence against cross-contamination.

## COMARK
### A Fluke Company

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

WATERPROOF
IP67
DUSTPROOF

BioCote

2-Year Warranty

| Temperature Measurement | |
|---|---|
| Sensor Type<br>N2011, N2012, N2013<br>N2014 | Thermistor<br>Type K or Type T thermocouple |
| Connector | Lumberg |
| Measurement Range<br>N2011, N2012 Internal sensor<br>N2012 external sensor<br>N2013 temperature<br>     humidity<br>N2014<br>Type K<br>Type T<br>Thermistor<br>N2015 | <br>-40°C to +70°C / -40°F to +158°F<br>-40°C to +150°C / -40°F to +302°F<br>-20°C to +60°C / -4°F to +140°F<br>0 to 97% RH non condensing<br><br>-200°C to +1372°C / -392°F to +2500°F<br>-200°C to +400°C / -392°F to +752°F<br>-40°C to +70°C / -40°F to +158°F<br>4 to 20mA |
| Scales<br>    Temperature<br>    Humidity | <br>°C, °F<br>RH or DP |
| Displayed Resolution<br>    Temperature<br><br><br><br>    Humidity<br>    N2015 only | <br>0.1° (1° below -100°C,<br>-148°F and above +1000°C or °F)<br>N2014 0.2°<br><br>0.1% RH<br>4 digits 1 decimal place (software allows 0 to 4 decimals in logged data) |
| System Accuracy<br>Temperature N2011, N2012, N2013<br>-25°C to +50°C / -13°F to +122°F<br>-40°C to +80°C / -40°F to +176°F<br>-40°C to +150°C / -40°F to +302°F<br>Humidity N2013<br>-20°C to +60°C / -4°F to +140°F | <br><br>±0.5°C / 1°F<br>±1°C / 2°F<br>±2°C / 4°F (typical)<br><br>±3% |
| Instrument Accuracy at<br>+20°C/+65°F ambient<br>N2014<br>N2015 | <br><br>±0.5°C/±0.9°F +0.3% of reading<br>±0.3% of full scale |
| Memory<br>1 channel<br>2 channels<br>3 channels<br>4 channels<br>5 channels | 32K<br>16000 samples<br>8000 samples<br>5300 samples<br>4000 samples<br>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 |
| LED Indication | Red = Alarm<br>Green = Logger Active |

\* 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 continous 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 techology 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 and is becoming accepted within HACCP and due diligence procedures as an important extra level of defence.

Distributed by:

**C205/1/EN** © Comark Instruments

BSI

ISO 9001
CERTIFICATE No. FM29700

UKAS
CALIBRATION
0451

## COMARK
**A Fluke Company**

Click on **www.comarkltd.com** or **www.comarkusa.com** for more information