Diligence EV
Data Loggers

COMARK
A Fluke Company





Five Data Loggers make up the Comark Diligence EV range.

High specification for the toughest of applications

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.

Features:

- **LCD screen** allows instant local checks on 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
- **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 all models

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

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

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TECHNICAL SPECIFICATIONS

Sensor Type	
N2011, N2012, N2013	Thermistor
N2014	Type K or Type T Thermocouple
Measurement Range	
N2011, N2012 internal sensor	-40ºC to +70ºC / -40ºF to +158ºF
N2012 external sensor	-40ºC to +150ºC / -40ºF to +302ºF
N2103	
Temperature	-20ºC to +60ºC / -4ºF to +140ºF
Humidity	0 to 97% RH non condensing
N2014	
Type K	-200ºC to +1372ºC / -392ºF to +2500ºF
Type T	-200ºC to +400ºC / -392ºF to +752ºF
Thermistor	-40ºC to +70ºC / -40ºF to +158ºF
N2015	4 to 20mA
Scales	
Temperature	ºC/ºF
Humidity	RH or DP
Display Resolution	
Temperature	0.1º (N2014 only, 1º below -100ºC/-148ºF and above +1000ºC or ºF)
Humidity	0.1% RH
N2015 only	4 digits 1 decimal place (software allows 0 to 4 decimals in logged data*)
System Accuracy	
Temperature N2011, N2012, N2103	
-25ºC to +50ºC / -13ºF to +122ºF	±0.5ºC/1ºF
-40ºC to +80ºC / -40ºF to +176ºF	±1ºC/2ºF
-40ºC to +150ºC / -40ºF to +302ºF	±2ºC/4ºF (typical)
Humidity N2013	
-20ºC to +60ºC / -4ºF to +140ºF	±3%
Instrument Accuracy	
At +20ºC/+68ºF ambient	
N2014	±0.5ºC/±0.9ºF +0.3% of reading
N2015	±0.3% of full scale
Memory	32K
1 channel	16000 samples
2 channels	8000 samples
3 channels	5300 samples
4 channels	4000 samples
5 channels	3200 samples
Logging Frequency	Programmable between 1 second and 99 hours
Communications	Via infrared interface

Download Time	3 minutes per 10,000 readings (typical)
Ambient Storage	-40ºC to +70ºC / -40ºF to +158ºF
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, Green = Logger Active

*Software selection of decimals will affect recorded values, e.g. selection of 0 decimals = a 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
SSF2	Stainless steel filter for N2013
A17476	Lithium battery with case seal

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 9001:2000 for the design, manufacture, supply, service, repair and recalibration of electronic measuring instruments and equipment.

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