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Vaisala Temperature and RH Data Logger Series 2000

Features/Benefits

- Industry-leading temperature and relative humidity measurement precision
- High accuracy, adjustable time-based digital recording
- Printed reports for any time period
- 10-year battery
- Ability to perform validation and continuous monitoring with the same model
- NIST-traceable, ISO 17025 accredited calibration
- Superior alternative to chart recorders and hard-wired systems
- Integrated high-accuracy RH sensor

Vaisala's 2000 series of data loggers are designed to provide high accuracy measurements for temperature, relative humidity and an analog sensor of your choice. The 2000 logger combines internal temperature and RH sensors with optional external channels for either current or voltage inputs for recording parameters such as differential pressure, CO_2, level, particles, or conductivity. The 2000 logger can also include a Boolean channel for door switches or alarm contacts.

Ideal for use in standalone or networked applications, the 2000 data logger connects directly to a PC with USB, or installs to an existing network via Ethernet, Power over Ethernet, or WiFi. Each data logger contains a 10-year battery and onboard memory for recording at the point of measurement. With autonomous power and recording capacity, data is immune to network and power interruptions.

The DL2000 data loggers can be used with Vaisala software, either viewLinc or vLog, to download, display, and analyze environmental data. The viewLinc monitoring system provides 24/7 multi-stage alarm notification, remote, real-time monitoring and gap-free data. The vLog software is a simple solution for validation/mapping applications. All reports are customizable and can be exported to spreadsheets and PDF to provide records that meet the requirements of 21 CFR Part 11 and Annex 11.

Technical Data

General

Size	85 x 59 x 26mm (3.4 x 2.3 x 1") 76g (2.7 oz.)
Interfaces	RS-232 serial, USB, WiFi, Ethernet and Power over Ethernet (vNet)
Mounting	Magnetic strips; 3M Dual Lock™ fasteners
PC Software	viewLinc for Monitoring, Alarming, Reporting vLog for Validation/Mapping GxP Environments Spectrum for non-GxP Environments OPC Server to add loggers to an existing OPC-compatible monitoring system.
Internal Clock	Accuracy ± 1 min./month@ -25 °C to +70 °C (-13 °F to +158 °F)
Electromagnetic Compatibility	FCC Part 15 and CE, EN 55022:2006, EN 61000-4-2:2001, EN 61000-4-3:2006
Power Source	Internal 10-year lithium battery (Battery life specified with sample interval of 1 min. or longer)

Memory

Sample Capacity	122,197 12-bit samples
Memory Type	Non-volatile EEROM
Memory Modes	User-selectable wrap (FIFO) or stop when memory is full. User-selectable start and stop times.
Sampling Rates	User-selectable from once every 10 seconds to once a day.

Internal Sensors

INTERNAL TEMPERATURE SENSOR	
Calibrated Measurement Range[1]	-25 °C to +70 °C (-13 °F to +158 °F)
Operating Range	-35 °C to +85 °C (-31 °F to +185 °F)
Initial Accuracy[2]	
	± 0.10° C over +20 °C to +30 °C (± 0.18° F over +68 °F to +86 °F)
	± 0.15° C over -25 °C to +70 °C (± 0.27 °F over -13 °F to +158 °F)
One Year Accuracy[3]	
	± 0.15 °C over +20 °C to +30 °C (± 0.27 °F over +68 °F to +86 °F)
	± 0.25 °C over -25 °C to +70 °C (± 0.45 °F over -13 °F to +158 °F)
Resolution	0.02 °C at +25 °C (0.04 ° F at +77 °F)

INTERNAL RH SENSOR	
Calibrated Measurement Range[1]	45 %RH at +10 °C (+50 °F) 10 %RH to 80 %RH at +25 °C (+77 °F) 45 %RH at +45 °C (+113 °F)
Operating Range	0 %RH to 100 %RH (non-condensing)
Initial Accuracy[2]	± 1 %RH over 10 %RH to 80 %RH at +20 °C to +30 °C (+68 °F to +86 °F) ± 1.5 %RH over 80 %RH to 90 %RH at +20 °C to +30 °C (+68 °F to +86 °F) ± 2 %RH over 10 %RH to 90 %RH at -20 °C to +70 °C (-4 °F to +158 °F)
One Year Accuracy[3]	± 2 %RH over 10 %RH to 90 %RH at +20 °C to +30° C (+68 °F to +86 °F) ± 3 %RH over 10 %RH to 90 %RH at -20 °C to +70 °C (-4 °F to +158 °F)
Resolution	0.05 %RH

[1] Custom calibration points available upon request including full ICH coverage.

[2] Initial accuracy includes all known influence quantities present at the time of calibration including calibration uncertainty, mathematical fit, data logger resolution, hysteresis and reproducibility.

[3] One Year Accuracy includes all known influence quantities present during the operation of a data logger over the course of one year including Initial Accuracy and Long Term Drift. Not included is any drift related to atypical contamination or misuse.

Current Loop and Voltage Inputs

INPUT TYPE	CURRENT LOOP	ANALOG VOLTAGE
Available Ranges	0 to 22 mA	0 to 5 VDC, 0 to 10 VDC
Resolution	5.5 µA	0.025 % F.S.
Accuracy	±0.15 % F.S. at +25 °C (+77 °F)	±0.15 % F.S. at +25 °C (+77 °F)
Input Impedances	75 Ohms[4]	>1 MOhm
Isolation	One common per logger	One common per logger
Overload Protection	40 mA max. (reverse-polarity protected)	±24 VDC max. (reverse-polarity protected)

Channel Configuration and Recording Span

	CHANNEL TYPES			
MODEL NUMBER	CH 1	CH 2	CH 3	CH 4
2000-20R	Temperature	Relative Humidity		
2000-3CR	Temperature	Relative Humidity	Current 4 to 20 mA	
2000-35R	Temperature	Relative Humidity	Voltage 0 to 5 VDC	
2000-3AR	Temperature	Relative Humidity	Voltage 0 to 10 VDC	
2000-4BR	Temperature	Relative Humidity	Boolean	Boolean

	NUMBER OF CHANNELS ENABLED[5]			
SAMPLE INTERVAL	1	2	3	4
10 Seconds	14.1 Days	7.1 Days	4.7 Days	3.5 Days
1 Minute	2.8 Months	1.4 Months	23.8 Days	21.2 Days
5 Minutes	1.2 Years	7.1 Months	4.7 Months	3.5 Months
15 Minutes	3.5 Years	1.7 Years	1.2 Years	10.6 Months
1 Hour	13.9 Years	7.0 Years	4.6 Years	3.5 Years

[4] Termination resistance plus approximately 0.4 volt drop through a protection diode.

[5] Temperature channel must be enabled when the RH channel is enabled.

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www.vaisala.com/requestinfo

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