VAISALA

DL1700 Thermocouple Data Logger

Designed for Controlled Environments

- Extreme temperatures
- Liquid nitrogen (LN_2)
- Ovens
- Sterilization chambers

The Vaisala DL1700 series data loggers provide highly accurate temperature data acquisition and are ideal for demanding environments. The DL1700 data loggers can be used with Vaisala software, either viewLinc or vLog, to download, display, and analyze environmental data.

Applications

- Ideal for extreme temperatures from -240 °C to +1760 °C
- Accepts type J, K, T, E, R and S thermocouples
- No programming or complicated equations required
- Highly accurate replacement for bulky data acquisition systems
- Traceable to SI units through national metrology institutes

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.

Easy to use with standard thermocouples, these compact data loggers can offer up to five channels of data in temperatures ranging from -240 °C to +1760 °C.

We offer models for both validated and non-validated applications. Choose the DL1700 VL series for GxP-compliant environments and the DL1700 SP series for non-validated applications.

DL1700 series data loggers include calibrations traceable to SI units through national metrology institutes. [1]

1) Measurement results are traceable to the international system of units (SI) through national metrology institutes (NIST USA, MIKES Finland, or equivalent) or ISO/IEC 17025 accredited calibration laboratories.

Technical Data

General

Interfaces	RS-232 serial, USB, Ethernet, WiFi network interface available
Internal clock	Accuracy: ±1 min./month at -25 ... +70 °C
Software	viewLinc for Monitoring, Alarming and Reporting vLogVL for Validation/ Mapping GxP environments vLogSP for graphing and reporting non-GxP environments OPC Server to add Vaisala loggers to any OPC-compatible monitoring system

Temperature Accuracy

	Temperature Measurement Range	Accuracy at Mid-range	Resolution at Mid-range
Type K	-220 ... +1370 °C (-364 ... +2498 °F)	±1.3 °C (±2.3 °F)	0.37 °C (0.67 °F)
Type J	-130 ... +900 °C (-202 ... +1652 °F)	±1.0 °C (±1.8 °F)	0.29 °C (0.52 °F)
Type T	-240 ... +350 °C (-400 ... +662 °F)	±1.2 °C (±2.2 °F)	0.34 °C (0.61 °F)
Type E	-110 ... +740 °C (-166 ... +1364 °F)	±0.70 °C (±1.3 °F)	0.20 °C (0.36 °F)
Type R	-50 ... +1760 °C (-58 ... +3200 °F)	±4.4 °C (±7.9 °F)	1.3 °C (2.3 °F)
Type S	-50 ... +1700 °C (-58 ... +3092 °F)	±5.1 °C (±9.2 °F)	1.5 °C (2.7 °F)

Operating Environment

Operating temperature	-40 ... +85 °C (-40 ... +185 °F)
Operating humidity	0 ... 100 %RH (non-condensing)
EMC compliance	FCC Part 15 and CE EN 50581:2012 EN 55032:2012/AC:2013 Class B EN 61326-1:2013
RoHS compliance	2011/65/EU

Mechanical Specifications

Dimensions	85 × 59 × 26 mm (3.4 × 2.1 × 1 in)
Weight	60 g (2.7 oz)
Mounting	3M Dual Lock™ fasteners
Power source	Internal 10-year lithium battery (Battery life specified with sample interval of 1 min. or longer)

Cold Junction Temperature Channel

Measurement range	-40 ... +85 °C (-40 ... +185 °F)
Accuracy	±0.25 °C over +20 ... +30 °C (±0.45 °F over +68 ... +86 °F) ±0.35 °C over -25 ... +70 °C (±0.63 °F over -13 ... +158 °F)

Data Logger Inputs

1700 Model	Number of Channels Enabled		
	Thermocouple	CJT	Total
170-54T	4	1	5

Note: One channel is designated for Cold Junction Temperature (CJT) reference using an on-board precision-tolerance thermistor.

Thermocouple Input Channels

Compatible Thermocouple Types: J, K, T, E, R, S

Initial Accuracy

Input range	-7.2 ... +55.4 mV
Resolution	0.016 mV
Initial Accuracy	±0.042 mV at +25 °C (+77 °F)

Input Impedance: 10M Ω

Input range	-7.2 ... +55.4 mV
Resolution	0.016 mV
1-Year Accuracy	±0.055 mV at +25 °C (+77 °F)

Additional Error

At 3 V/m RF field from 450 MHz ... 580 MHz	±0.350 mV
At 3 V conducted RF from 3 MHz ... 80 MHz	±1.0 mV

Memory

Memory type	Non-volatile EEPROM
Data sample capacity	135,165 12-bit samples
Memory modes	User-selectable wrap (FIFO) or stop when memory is full. User-selectable start time.
Sampling rates	User-selectable from once every 10 seconds to once a day. (Battery life specified with sample interval of 1 min. or longer)
Recording span	Recording span depends upon sample interval selected and number of channels enabled.

Spare Parts and Accessories

Thermocouple probe	EPT-22T-20T
Type	T
Conductors	Copper/Constantan
Operating range	-200 ... +200 °C (-328 ... +392 °F)
Length	6.096 m (20 ft)
Error	±1 °C ... ±1.5 %

CE