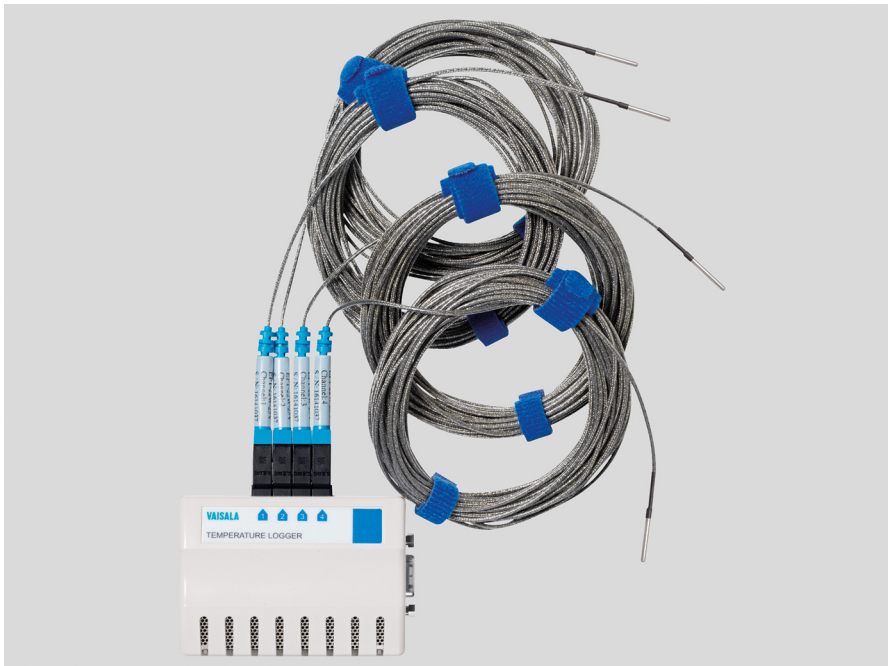




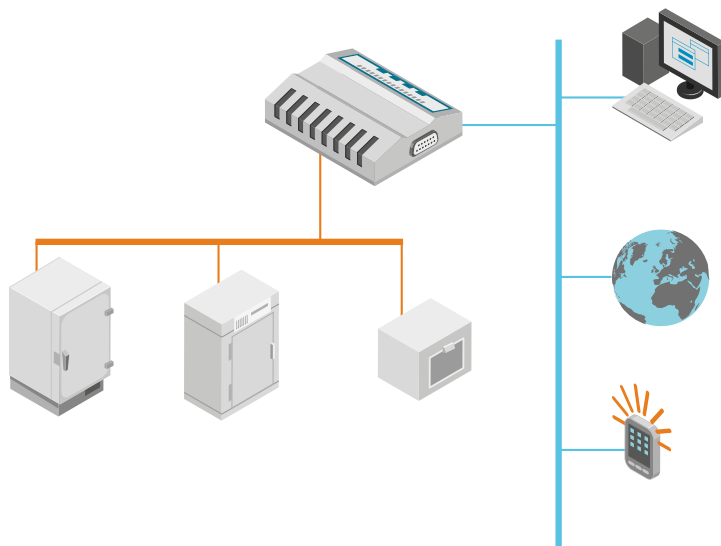
# DL1016-1416 Multi-application Temperature Data Logger



## Features

- Industry-leading precision and accuracy
- Real-time monitoring & alarming with viewLinc software
- Reliable validation/mapping with vLog software
- Easy connectivity to your existing network – wired or wireless
- Validation and continuous monitoring with the same data logger
- Superior alternative to chart recorders and hard-wired systems
- Traceable to SI units through national metrology institutes

Vaisala's multi-application temperature data loggers monitor temperatures in up to four applications with one logger – ultra-low temperature freezers, freezer/refrigerators and incubators.



DL1016-1416 data loggers include calibrations traceable to SI units through national metrology institutes.<sup>1)</sup>

Choose the DL1016-1416 VL series data logger for GxP-compliant environments and the DL1016-1416 SP series for non-GxP applications.

## Model numbers and channels

- VL-1016-22V: Two external channels for validatable applications
- VL-1416-44V: Four external channels for validatable applications
- SP-1016-22V: Two external channels
- SP-1416-44V: Four external channels

DL1016-1416 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.

<sup>1)</sup> 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 specifications

Interfaces	<ul style="list-style-type: none"> <li>Internal: RS-232 serial</li> <li>With additional connectors/devices: USB, Ethernet, Wi-Fi, PoE</li> </ul>
Software	<ul style="list-style-type: none"> <li>vLog software for graphing and reporting</li> <li>viewLinc Enterprise Server software for continuous monitoring and alarming</li> <li>OPC Server to add Vaisala recorders to any OPC-compatible monitoring system</li> </ul>
Internal clock accuracy	±1 min/month 0 ... +50 °C (+32 ... +122 °F)
Power source	Lithium battery with typical lifetime of 10 years <sup>1)</sup>

<sup>1)</sup> Typical battery life specified with sample interval of 1 min or longer.

## Measurement performance

Sensor	"V" Range External Probe
Calibrated measurement range	-90 ... +50 °C (-130 ... +122 °F)
Operating range	-95 ... +70 °C (-139 ... +158 °F)
Initial accuracy <sup>1)</sup>	±0.25 °C over -90 ... +50 °C (±0.45 °F over -130 ... +122 °F)
One year accuracy <sup>1)</sup>	±0.35 °C over -90 ... +50 °C (±0.63 °F over -130 ... +122 °F)
Resolution	0.01 °C at +25 °C (0.02 °F at +77 °F)

<sup>1)</sup> Specification for external channels is for a probe calibrated to the specified channel of the data logger, with the logger at 0 °C to +50 °C (+32 °F to +77 °F).

## Memory

1016 Series	68 600 16-bit samples
1416 Series	101 375 16-bit samples
Memory type	Non-volatile EEPROM
Memory modes and sampling rates	User-selectable rates from once every 10 seconds to once per day (with sample interval of ≥1 min)

## Operating environment

Operating temperature	0 ... +50 °C (+32 ... +122 °F)
Operating humidity	0 ... 100 %RH non-condensing
Storage temperature	-40 ... +85 °C (-40 ... +185 °F)
Storage humidity	0 ... 100 %RH non-condensing

## Recording span: 1016-22V

Sample interval	Number of channels enabled	
	1	2
1 minute	1.5 months	23.8 days
5 minutes	7.6 months	3.8 months
15 minutes	1.9 years	11.5 months
1 hour	7.8 years	3.9 years

## Recording span: 1416-44V

Sample interval	Number of channels enabled			
	1	2	3	4
1 minute	2.3 months	1.1 months	23.5 days	17.6 days
5 minutes	11.3 months	5.6 months	3.7 months	2.8 months
15 minutes	2.8 years	1.4 years	11.3 months	8.5 months
1 hour	11.5 years	5.7 years	3.8 years	2.8 years

## Thermistor probes

Sensor	"V" range external probe
Operating temperature	-95 ... +70 °C (-139 ... +158 °F)
Connector color code	Blue
Probe length	3 m (10 ft) and 7.6 m (25 ft) lengths available
Cable construction	2 mm (0.07 in) diameter, Teflon coated cable

### Stainless steel sensor tip

Diameter	3.2 mm (1/8 in)
Length	38 mm (1.5 in)

### Sealed Teflon sensor tip

Diameter	3 mm (0.12 in)
Length	28 mm (1.1 in)

## Mechanical specifications

Dimensions	85 × 59 × 26 mm (3.4 × 2.3 × 1 in)
Weight	76 g (2.7 oz)
Mounting	3M Dual Lock™ fasteners Snap-in connector locks provide secure probe connections

## Compliance

EU directives	EMC Directive (2014/30/EU) RoHS Directive (2011/65/EU) amended by 2015/863
EMC compatibility	EN 61326-1, industrial environment
EMC emissions	EN 55032:2012/AC:2013 Class B
Compliance marks	CE, FCC Part 15

## Spare parts and accessories

### Immersion/Dry probes

Thermistor V range probe 25 ft	235139SP
Thermistor V range probe 10 ft	235218SP
Thermistor immersion V range probe 25 ft	235140SP
Thermistor immersion V range probe 10 ft	235217SP

### Temperature probe accessories

Thermal dampening block, for use in refrigerators and freezers. The block simulates a glycol bottle to reduce alarms generated by opening and closing a door.	EPT-TDB-2
---------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------