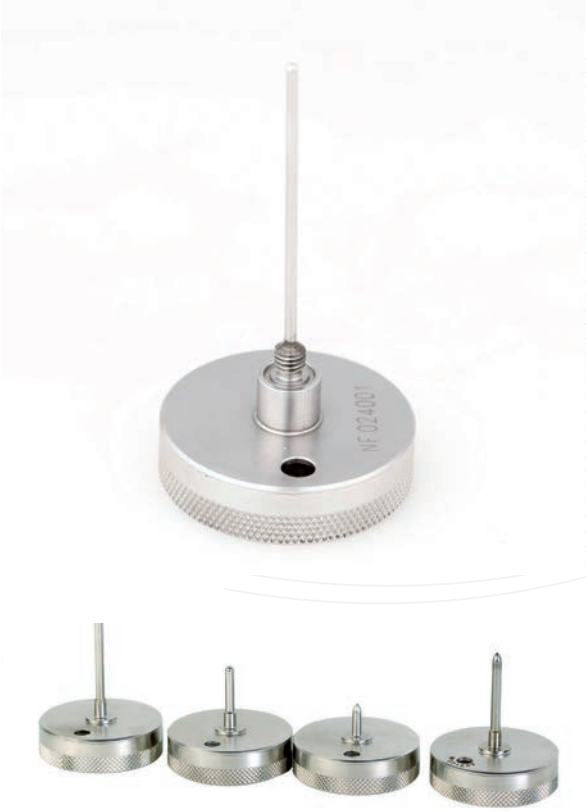
DATA SHEET

TMI-Orion

NanoVACQ Flat Temperature



Flat data logger for temperature validation inside cans, pouches, trays, containers, autoclaves, pasteurizators, ovens, dryers…

NanoVACQ Flat is a temperature data logger watertight under pressure up to 10 bar.

Its compact dimensions are an asset for temperature measurement inside small containers: the logger body remains outside, avoiding thermal mass.

The NanoVACQ Flat Needle model can be used with a temperature sheath and a thermowell (diameter 4 mm). This device is recommended for use in high pressure and for tight positioning in the container. The temperature sheath is placed inside the container before filling and sealing. A thread and an o-ring ensure positioning at the cold point and watertightness. After sealing, the logger is screwed into the sheath. This device can be adapted to various can dimensions and needle lengths by simply using spacers.

METROLOGY

	Operating range	Resolution	Internal reference channel calibration uncertainties*
NanoVACQ Flat	From 0°C to +140°C	*16 bit converter:* <±0.015 °C	± 0.1°C from 0°C to +140°C (± 0.05°C upon request)

Each logger can be calibrated and adjusted at the temperature points corresponding to the user's needs.

**The specified uncertainties correspond to two standard deviations. The uncertainties are calculated taking into account the various significant error sources, including the calibration probes, the equipment, the environmental conditions, the influence of the logger, repeatability, etc…*

FUNCTIONS

- Start set up: immediate or delayed
- Memory set up: stop at maximum capacity or loop writing
- Time stamped measurement data
- Battery level alert with Qlever software

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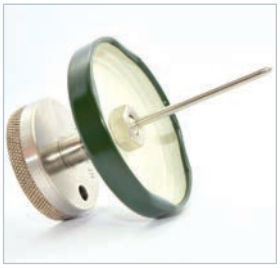
TECHNICAL SPECIFICATIONS

Model	Internal probe	Number of external channels	External Probe type	Probe dimensions
NanoVACQ Flat 1T	●			
NanoVACQ Flat 1Tc	●	1	Rigid (SS 316L)	D. 3 mm L. 10, 20,40, 75 or 100 mm (beyond 10 mm, the probe is reinforced at its basis: diameter 4 mm x 5 mm)
NanoVACQ Flat Needle	●	1	Rigid (SS 316L)	D. 2.4 mm reinforced by a thread L. between 20 and 60 mm

Material	Logger body: 316L Stainless steel
Dimensions of the body	D.40 mm x H.11 mm
Temperature sensor	Pt 1000
Memory capacity	16 000 acquisitions divided by number of measurement channels
Acquisition rate	Programmable: minimum 1 second, maximum 59 minutes and 59 seconds
Program duration	Programmable: days, hours, minutes
Recording	Programmable start: by date, hour, minute
Power	User replaceable battery pack
Connectivity	USB wired interface to the PC
Accessories for NanoVACQ Flat Needle (to be ordered separately)	• Temperature sheath kit (PROBE_PE_T) including a thermowell, a nut and a watertightness o-ring, • one or more metal or PEEK spacers

NanoVACQ Flat 1Tc with different probe sizes

NanoVACQ Flat Needle



Examples of NanoVACQ Flat Needle positioning in containers

Positioning kit for NanoVACQ Flat Needle: Temperature sheath kit and spacer

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AUTONOMY

The NanoVACQ Flat is powered by a battery pack; its autonomy depends on environment and operational conditions of the application (extreme temperatures, data acquisition rate).

As a result of the variety of environments and operational conditions, TMI-Orion does not guaranty the battery lifetime and recommends that the user determine the battery lifetime according to his own process conditions and experience.

SOFTWARE AND RELATED PRODUCTS

NanoVACQ Flat is used with Qlever software.

Qlever software platform: data acquisition, management and visualization of data from TMI-Orion data loggers. Qlever is installed on a PC and operates under Windows® Vista/7/8/10. Data transmission and visualization are done after the industrial process.

DELIVERABLES

The NanoVACQ Flat solution usually includes the following items:

- The NanoVACQ Flat data logger with a battery pack
- The NanoVACQ Flat calibration certificate
- The NanoVACQ Flat configuration and calibration file
- For model NanoVACQ Flat Needle: Temperature sheath kit (PROBE_PE_T) including a thermowell, a nut and a watertightness o-ring, and one or more metal or PEEK spacers (optional - to be ordered separately)
- Qlever software (to be ordered separately)
- A USB wired interface to the PC (to be ordered separately)
- A transport case (optional - to be ordered separately)

SERVICES

Maintenance: The NanoVACQ Flat is associated with an annual preventative maintenance service for the replacement of o-rings, functional checking, calibration and adjustment.

Accessories: The battery packs, engineered by TMI-Orion, are replaceable by the user and are referenced in the documentation available on our website.

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