

# DATA SHEET

# TMI-Orion

# NanoVACQ Humidity and Temperature



**Measurement of relative humidity and temperature inside processes**

NanoVACQ Humidity and Temperature is a data logger equipped with one relative humidity sensor and up to two temperature sensors on the same logger.

The various NanoVACQ Humidity and Temperature models are described below and can vary by number and type of probes, operating range and battery pack capacity.

## METROLOGY

Humidity operating range	Temperature operating range	Batteries	Resolution	Temperature uncertainty*	Humidity uncertainty*
From 0 to 100 % RH non condensed	From -55°C to +140°C	Routine HE	Temperature 0.008°C	Temperature ± 0.1°C from 0°C to +140°C (± 0.05°C upon request)	± 3.5 % RH from 10 % to 98 % RH (optional: ± 2% RH)
	From -60°C to +85°C	014ZFL	Humidity 0.06 % RH	Except for NanoVACQ with Tdi probe: +/- 0.2°C after adjustment**	

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...*

*(\*\*) +/- 0.5 before adjustment.*



## 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

## TECHNICAL SPECIFICATIONS

Model	Number of external channels	Internal temperature sensor*	Humidity sensor type	External temperature probe type	Temperature Probe dimensions	Water tightness**	ATEX compliant
<b>NanoVACQ HT</b>	1	1 Pt 1000	1 capacitive				
<b>NanoVACQ HT Ex</b>	1	1 Pt 1000	1 capacitive				●
<b>NanoVACQ HT-Tc</b>	2	1 Pt 1000	1 capacitive	Rigid (316L SS)	D. 3 mm, L. 30 mm (or from 10 mm to 120 mm upon request)		
					Hybrid diameter 3 mm >1,9 mm L. 30 mm (or from 10 mm to 120 mm upon request)		
<b>NanoVACQ HT-Td</b>	2	1 Pt 1000	1 capacitive	1 rigid tip at the end of	D. 3 mm L. from 20 to 100 mm		
				1 flexible deport (Viton®)	D. 5 mm L. from 100 mm to 1000 mm		
				1 rigid tip at the end of	D. 3 mm L. from 30 to 100 mm		
				1 flexible deport (Teflon®)	D. 2.2 to 5 mm L. from 100 mm to 1000 mm		
				1 semi-rigid (316L SS)	D. 2 mm L. from 100 mm to 1000 mm		
<b>NanoVACQ HTdi-Tdi</b>	2	1 Pt 1000	1 capacitive connectable probe	1 connector (Fischer Connectors®)	Specifications of connectable probes according to customer request		

\* Internal platinum temperature sensor for humidity sensor compensation

\*\*This data logger is not watertight



## TECHNICAL SPECIFICATIONS

<b>Material</b>	Logger body: 316L Stainless steel	
<b>Dimensions of the body</b>	With Routine HE battery pack	D.31 mm x H.39 mm
	With 014ZFL battery pack	D.31 mm x H.125 mm
<b>Humidity sensor</b>	Capacitive	
<b>Temperature sensor</b>	Pt 1000	
<b>Memory capacity</b>	48 000 acquisitions divided by number of measurement channels	
<b>Memory capacity with BigMemory</b>	294 500 acquisitions divided by number of measurement channels	
<b>Acquisition rate</b>	Programmable: minimum 1 second, maximum 59 minutes and 59 seconds	
<b>Program duration</b>	Programmable: days, hours, minutes	
<b>Recording</b>	Programmable start: by date, hour, minute or on temperature threshold	
<b>Power</b>	User replaceable battery pack	
<b>Connectivity</b>	USB wired interface to the PC	
<b>ATEX compliance</b>	Please refer to specific documentation on our website	



**NanoVACQ HT**



**NanoVACQ HT-Tc**

**Examples of NanoVACQ Humidity and Temperature models.**





## AUTONOMY

The NanoVACQ Humidity and Temperature 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 Humidity and Temperature 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.

- NanoVACQ products family includes NanoVACQ Humidity and Temperature FullRadio for full wireless data logging and real time monitoring.

## DELIVERABLES

**The NanoVACQ Humidity and Temperature solution usually includes the following items:**

- The NanoVACQ Humidity and Temperature data logger with a battery pack
- The NanoVACQ Humidity and Temperature calibration certificate

- The NanoVACQ Humidity and Temperature configuration and calibration file
- A USB wired interface for PC - (to be ordered separately)
- Qlever software (to be ordered separately)
- A transport case (optional-to be ordered separately)

## SERVICES

**Maintenance:** TMI-Orion recommends annual preventative maintenance and calibration 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 web site.

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