

DATA SHEET

TMI-Orion

NanoVACQ Pressure and Temperature



Simultaneous pressure and temperature measurement.

NanoVACQ Pressure and Temperature is a data logger equipped with 1 pressure sensor and up to 2 temperature sensors on the same logger, answering the needs of many industrial processes.

Various NanoVACQ Pressure and Temperature models are described below and can vary by probe shape and length, operating range and capacity of the battery pack.

METROLOGY

Pressure operating range	Temperature operating range	Batteries	Resolution	Temperature calibration uncertainty*	Pressure calibration uncertainty*
From 30 mbar to 5 bar, 15 bar or 30 bar from -55°C to 140°C Possibility of higher pressure	From -55°C to +85°C	ROUTINE-HE	Temperature $< \pm 0.04^{\circ}\text{C}$ Pressure 0.8 mbar (5 bar) 2.6 mbar (15 bar)	Temperature $\pm 0.1^{\circ}\text{C}$ from -55°C to +140°C ($\pm 0.05^{\circ}\text{C}$ upon request)	<ul style="list-style-type: none"> ± 10 mbar from 0°C to 140°C and from 30 mbar to 5 bar (1Hz or 10Hz mode) ± 12 mbar from 0°C to 140°C and from 30 mbar to 15 bar (1Hz mode) ± 17 mbar from 0°C to 140°C and from 30 mbar to 15 bar (10Hz mode) Unspecified from -30°C to 0°C Not functional from -55°C to -30°C
		014ZFL			
	From 0°C to +125°C	ROUTINE-HE			
		014Z			
	From -55°C to +140°C	ROUTINE-HE			

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

TECHNICAL SPECIFICATIONS

Model	Number of external channels	Internal temperature probe*	Pressure probe type	External temperature probe type	Temperature probe dimensions	Water tightness	ATEX compliant	10 Hz Version available
NanoVACQ PT	1	●	1 piezoresistive			●		●
NanoVACQ PT Ex	1	●	1 piezoresistive			●	●	
NanoVACQ PT-Tc	2	●	1 piezoresistive	Rigid (316L SS)	D. 3 mm, L. up to 200 mm	●		●
					Hybrid diameter 3 mm >1,9 mm L. 30 mm			●
NanoVACQ PT-Tc Ex	2	●	1 piezoresistive	Rigid (316L SS)	D. 3 mm, L. up to 120 mm	●	●	
NanoVACQ PT-Td	2	●	1 piezoresistive	Semi-rigid (316L SS)	D. 2 mm, L. from 100 mm to 1000 mm	●		●
				1 rigid tip at the end of 1 flexible deport (Teflon®)	D.3 mm, L. from 30 to 100 mm D.2.2 à 5 mm, L. from 100 to 1000 mm	●		●
				1 rigid tip at the end of 1 flexible deport (Viton®)	D.3 mm, L. from 20 to 100 mm D.5 mm, L. from 100 to 1000 mm			●

* Internal platinum temperature sensor for pressure sensor compensation



TECHNICAL SPECIFICATIONS

Material	Logger body: 316L Stainless steel	
Dimensions of the body	With 014Z battery pack	D.31 mm x H.31 mm
	With ROUTINE-HE battery pack	D.31 mm x H.39 mm
	With 014ZFL battery pack	D.31 mm x H.125 mm
Pressure	Piezoresistive	
Temperature sensor	Pt 1000 or Pt 100	
Memory capacity	48 000 acquisitions divided by number of measurement channels	
Memory capacity with BigMemory	294 500 acquisitions divided by number of measurement channels	
Acquisition rate	1 Hz	Programmable: minimum 1 second, maximum 59 minutes and 59 seconds
	10 Hz	Programmable: minimum 100 ms, maximum 59 minutes and 59 seconds
Program duration	Programmable: days, hours, minutes	
Recording	Programmable start: by date, hour, minute or on temperature threshold	
Power	User replaceable battery pack	
Connectivity	USB wired interface to the PC	
ATEX compliance	Please refer to specific documentation on our website	



NanoVACQ PT



NanoVACQ PT-Tc with hybrid probe



Examples of NanoVACQ Pressure and Temperature models.



AUTONOMY

The NanoVACQ Pressure 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 Pressure 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 Pressure and Temperature FullRadio for full wireless data logging real time monitoring.

DELIVERABLES

The NanoVACQ Pressure and Temperature solution usually includes the following items:

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

- The NanoVACQ Pressure and Temperature configuration and calibration file
- Qlever software (To be ordered separately)
- A wired interface to the PC (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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