

TMI-Orion

NanoVACQ Anemometer FullRadio

Anemometry
and temperature
data logger



Real time air flow and temperature measurement for accurate tuning of the drying process.

NanoVACQ Anemometer FullRadio is a data logger equipped with a remote airflow sensor and, depending on the models, a fixed or remote temperature sensor.

The simultaneous use of anemometry and temperature sensors in drying processes allows to measure anemometry and temperature inside dryers, or temperature in the product and ambient air flow speed.

NanoVACQ Anemometer FullRadio is equipped with a 2.4 GHz radio transceiver as the unique communication interface. In addition to its data logger functionalities, it is designed for remote set up and radio data transmission, in real time or after the process, through a TMI-Orion radio transceiver connected to a PC.

The PC is equipped with the Qlever software platform for logger setup and process data collection, management and display.

METROLOGY

		Operating range	Measurement range	Resolution and noise	Uncertainty*
NanoVACQ Ad	Temperature	from -30°C to +140°C (short exposure from -70°C to +150°C)	from 0°C to +140°C	0.04°C	± 0.1°C from 0°C to +140°C
	Anemometry	from 0 m/s to 20 m/s	from 0.5 to 20 m/s	0.01 m/s	5% FS (± 0.5 m/s from 0.5 to 20 m/s)

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

- Radio set up, start and reading of data,
- 2.4 GHz bidirectional radio communication,
- Radio transceiver set up: transmission duration and rate,
- Start set up: immediate or delayed,
- Memory set up: stop at maximum capacity or loop writing,
- Real time or after the fact radio data transmission,
- Time stamped measurement data,
- Battery level alert with Qlever software.

TECHNICAL SPECIFICATIONS

Material	Logger body: 316L Stainless steel	
Dimensions	Logger body : height 39 mm, diameter 31 mm	
Models	NanoVACQ Ad FullRadio	1 removable wing flow sensor
	NanoVACQ Ad-Tc FullRadio	1 removable wing flow sensor 1 single Pt1000 sensor at the end of a rigid probe D.3 mm (length upon request between 10 and 120 mm).
	NanoVACQ Ad-Td FullRadio	1 removable wing flow sensor 1 single Pt1000 sensor at the end of a rigid probe (D.3 mm and length upon request between 20 and 100 mm) located at the end of a flexible cable (D. max 5 mm x length upon request between 100 et 1000 mm).
Temperature sensor	Pt1000	
Anemometer	Wing flow sensor	
Memory capacity	48 000 acquisitions divided by number of measurement channels	
Memory capacity with BigMemory option	294 500 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	2.4 GHz bidirectional radio transceiver and embedded 2.4 GHz radio transceiver module	
Connectable antenna models for NanoVACQ Anemometer FullRadio (*)	Standard	length 49 mm, medium range - line of sight: 25 meters
	Short	length 25 mm, short range - line of sight: 15 meters
	Long	length 79 mm, long range - line of sight: 30 meters
	Remote	see catalog for accessories and options

(*) A preliminary test is recommended to validate the hertzian transmission in the user's application.



NanoVACQ Ad FullRadio



NanoVACQ Ad-Tc FullRadio



Wing flow sensor of the NanoVACQ Ad

EXAMPLES OF NANOACQ ANEMOMETER MODELS



RADIO-FREQUENCY COMMUNICATION

- 2.4 GHz ISM band (frequency range 2.405 GHz to 2.475 GHz) / Can be used without license / Universal band for industrial, scientific and medical devices with low radio transmission power / Maximum radiated power +5 dBm (3,2 mW).
- Radio transmission range depends on the environment.
- TMI-Orion 2.4 GHz bidirectional radio protocol, based on IEEE 802.15.4 standard / 14 RF channels for the user / Able to manage several pieces of equipment connected in star configuration in the same space.

AUTONOMY

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

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 Anemometer FullRadio is used with Qlever software platform.

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® 7/8/10/11. Data transmission and visualization are done after the industrial process.

- NanoVACQ Anemometer products family includes NanoVACQ Anemometer (wired).

DELIVERABLES

The NanoVACQ Anemometer solution usually includes the following items:

- The NanoVACQ Anemometer data logger with a battery pack
- The NanoVACQ Anemometer calibration certificate
- The NanoVACQ Anemometer configuration and calibration file
- Qlever software platform (to be ordered separately)
- A USB wired interface to the PC - (to be ordered separately)
- An opening wrench (optional - 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 documents available on our web site.

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