Air flow and temperature data logger

NanoVACQ Ad

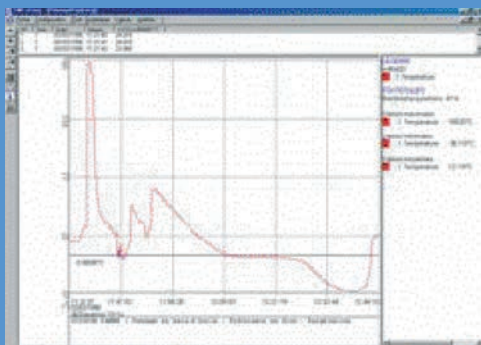## Measure of air flow and temperature for drying processes

For quick and accurate tuning of the drying process.
NanoVACQ Ad enables the simultaneous measurement of temperature and air flow in dryers, or also the temperature inside the product and the environing air flow.

NanoVACQ Ad
- 1 removable wing flow sensor

NanoVACQ Ad-Tc
- 1 removable wing flow sensor + one single Pt1000 sensor at the end of a rigid probe D.3>1.9 mm (hybrid) or D.3mm (length upon request between 10 and120 mm).

NanoVACQ Ad-Td
- 1 removable wing flow sensor + one 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).

Metrology

- **Operation range**
  - Temperature.......... from -30°C to 140°C (short exposure from -70°C to 150°C)
  - Air flow.................. from 0 m/s to 20 m/s (40 m/s possible upon request)
- **Measurement range**
  - Temperature.......... from 0°C to 140°C
  - Air flow.................. from 0.5 to 20 m/s (Standard)
- **Uncertainty**
  - Temperature.......... +/- 0.1°C from 0°C to 140°C
  - Air flow.................. 5% FS (+/- 0,5 m/s de 0,5 à 20 m/s)
  - *The uncertainty corresponds to 2 standard deviations.*
- **Resolution and noise**
  - Temperature.......... 0.04°C
  - Air flow.................. 0.01 m/s
- Each logger can be calibrated and checked at the temperature points corresponding to the users' needs.

Technical specifications

- **Material of the logger body:** 316 L stainless steel
- **Dimensions of the body:** height 39 mm, diameter 31 mm.
- **Temperature sensor:** Pt1000
- **Air flow sensor:** wing flow sensor.
- **Memory capacity:** 48 000 acquisitions divided by the number of measurement channels.
- **Memory capacity with BigMemory option:** 294 500 acquisitions, divided by number of measurement channels.
- **Programmable acquisition rate:** minimum 1 second, maximum 59 minutes and 59 seconds.
- Programmable acquisition duration
- Programmable recording start by date, hour, minute
- User replaceable high temperature battery
- Non volatile memory (EEPROM)

Software operating conditions

- Data transfer with a communication interface connected to the USB port.
- Operates under **Windows® XP(SP3)/VISTA/7/8**

NOTA:
A yearly maintenance is advised for O-rings replacement, recalibration and adjustment.

NanoVACQ Ad

Radio Option

Real time data

NanoVACQ Radio are autonomous transmitters/recorders equipped with sensors.
They have been developed to enable two functions: real time radio transmission of the data measured by the sensors and recording of the transmitted data.
All NanoVACQ Ad are available with optional 2.4 GHz radio transmission.

They are designed to support temperatures from –30°C to +140°C.

- The body of the NanoVACQ Ad Radio is 31 mm in diameter, its height is 52.2.
- The NanoVACQ Ad Radio antenna is removable from the body, its length can vary between 25 mm and 80 mm, according to the application.
  It allows data transmission by hertzian channel.
- The NanoVACQ Radio can be set up by the user. The operation mode of the device may be selected during set up:
  - Radio transmission of data without recording them in memory.
  - Radio transmission of data while recording them in the memory.

Radio transmission

- The frequency used by the radio transmitter is within ISM 2.4 GHz bandwidth (industrial, scientific or medical devices).
  This bandwidth can be used without licence.
- NanoVACQ Radio uses the technology based on the IEEE 802.15.4 standard, which enables to manage various loggers in the same space with more frequent sampling.
- The receiving base station can be connected either directly by USB or using a long distance connection RS485 type, or an Ethernet connection or a wifi signal.
- Various types of receiving antennas can be connected to the radio receiver according to loggers use.

Reach between transmitter and receiver

- 25 meters in clear field, may vary according to the application environment.

NanoVACQ Ad

FullRadio Option

Real time data: wireless and contactless communication

NanoVACQ Ad FullRadio loggers are entirely autonomous. They are equipped with sensors and do not require any wire connection.

They offer the following functionalities:
- wireless and contactless remote setup, starting and reading of data,
- radio recording and transmitting of data during measurement,
- starting and stopping the recording (or radio transmission) on a date or a temperature threshold.

NanoVACQ Ad FullRadio loggers use the technology based on the IEEE 802.15.4 standard, which enables the management of numerous loggers.

All NanoVACQ Ad are available with FullRadio option.

Operating range
- from -30°C to +140°C (and more with thermal shield)
- Battery Radio-HE : diameter : 31 mm - height 52,2 mm

Radio transmission
- Connectable antenna models for NanoVACQ:
  - Standard antenna: length 49 mm, medium range (25 meters in clear field).
  - Short antenna: length 25 mm, short range (15 meters in clear field).
  - Long antenna: length 79 mm, long range (30 meters in clear field).

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

- ZigBeeBase transmitter with connectable antenna. Optional remote antenna.

- Connection of the ZigBeeBase radio transmitter with one of the following:
  - USB,
  - RS485 long distance,
  - Ethernet connection.

- Frequency: ISM 2.4 GHz (2.405 GHz to 2.475 GHz) bandwidth. This bandwidth can be used without license (industrial, scientific or medical devices).
- Output power: maximum 5 dBm (3.2 mW)
- NanoVACQ FullRadio option is compliant with the following regulations: R&TTE Directive 1999/5/CE (EU), FCC Part 15.247 (USA), RSS-210 (Canada), ARIB TELEC (Japan), KCC RWA 58-2 (Korea).

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