SC METROMAT SRL

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Data logger, NanoVACQ TH

Temperature logger

NanoVACQ Thermocouple



Measure temperature in your thermal processes up to 1300°C with a small thermocouple logger.

NanoVACQ TH is a cylindrical logger with one to three thermocouple channels. With its small diameter, its measurement range up to 1300°C and its operating range up to 140°C, it is a solution specially designed for thermal processes requiring temperature measurement in industrial environment and quick response time.
A thermal shield adapted to the application can be used for temperatures beyond 140°C up to 1300°C.

Among the most common applications:

- Bottle depyrogenation in pharmaceutical industry.
- Internal and external varnish polymerization of aluminum bottles and sprays in packaging industry.
- All tube manufacturing processes in metal industry like pipe spinning, annealing, hot piercing, coating, etc…



Operating range

- From -55°C to +140°C

For temperatures above 140°C, thermal protection necessary.

Metrology

- **Calibration uncertainty :** +/- 0.1°C from 0°C to +140°C

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…

- **Temperature resolution and noise:** 16 bit converter, resolution : < +/-0.1°C
- Each logger can be calibrated and checked at temperature points corresponding to the user's needs.
- Type K thermocouple (full scale 1300°C) or T type (full scale 400°C), other types available (J,N,…)

Available options

	Thermocouple		*Available options*				
	Connector type	*Thermocouple type*	*Radio*	*FullRadio*	*10Hz*	*Memory extension*	*Vibration battery*
NanoVACQ 1Th	Cylindrical	T, K	Yes	Yes	Yes	Yes	Yes
	Miniature	T, K, N,…					
NanoVACQ 2Th	Cylindrical	T, K	Yes	Yes	No		
NanoVACQ 3Th			No	No			

Temperature logger

NanoVACQ Thermocouple



Technical specifications

- **External materials:** 316 L stainless steel
- **Dimensions:**

NanoVACQ TH (including connector)	*Height*			*Diameter*
Thermocouple type	*T*	*K*	*T, K, N, ...*	31 mm
Connector type	*Cylindrical*		*Miniature*	
NanoVACQ without option, 10Hz option or Memory Extension	72 mm	74 mm	112 mm	
NanoVACQ Radio and FullRadio option or Vibration battery	78 mm	80 mm	118 mm	

Software operating conditions

- **Temperature sensors:** Up to 3 connected thermocouple elements and 1 Pt1000 platinum sensor for cold junction and internal temperature.
  Thermocouple according to specifications (K,T,N,...)
- **Memory capacity:** 65100 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.
- Battery replaceable by the user.
- **Battery life:** Varies with acquisition period and use conditions:
  - 700 hours for a 5-second rate
  - 340 hours for a 1-second rate
- Nonvolatile memory (EEPROM)

- Data transfer with a communication interface connected to the USB port.
- Operates in **Windows® XP (SP3)/VISTA/7/8.**
- TMI-ORION software (logger programming, registered data reading…)





NOTA :
A yearly checkup with our after-sale department is recommended: replacement of water tightness O-rings, overall operating checkup, metrological adjustment.

NanoVACQ Thermocouple

Radio Option



Real time data

NanoVACQ TH Radio are autonomous transmitters/recorders equipped with sensors.
They have been developped to enable two functions: real time radio transmission of the data measured by the sensors and recording of the transmitted data.



They are designed to support temperatures from -55°C to +140°C.

- The body of the NanoVACQ TH Radio is 31 mm in diameter, its height is 45 or 132 mm.
- The NanoVACQ TH Radio antenna is removable from the body, its length can vary from 30 mm to 110 mm according to application. It allows data transmission by hertzian channel.
- The NanoVACQ TH Radio can be set up by the user. The operation mode of the device may be selected during programming:
  - Radio transmission of data without recording in memory.
  - Radio transmission of data while recording 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 TH Radio loggers use 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 even using an Ethernet or Wifi connection.
- 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,
- For all applications, a preliminary test must be done to validate the hertzian transmission in the user's application.

NOTA: Aceasta fisa a fost realizata sub rezerva modificarilor ulterioare de ordin tehnic sau a erorilor de editare.

Fotografia are caracter informativ.

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