DATA SHEET

TMI-Orion

PicoVACQ Ex

ATEX COMPLIANT

Measurement of temperature, pressure, humidity in explosive environments with very small data loggers.

PicoVACQ is a family of data loggers measuring temperature, pressure and temperature, or humidity and temperature during thermal processes. Some models are ATEX compliant and are used in explosive environments, such as ethylene oxide sterilization validation.

Compliant with the following regulations:
EN 60079-0 and EN 60079-11

Marking: II 1G Ex ia IIC T6 Ga

METROLOGY

Model	Operating range		Measurement range	Resolution			Uncertainties *
	Battery pack 015M	Battery pack 015P**		Temperature	Pressure	Humidity	
PicoVACQ 1T Ex		From +10°C to +70°C	From +10°C to +70°C	<±0.02 °C			+/- 0.1°C from -30°C to +70°C(at 2σ)
PicoVACQ 1Tc Ex							
PicoVACQ PT Ex		De +10°C à +70°C **and** from 30 mbar to 15 bar or 30 bar absolute	From +10°C to +70°C **and** 30 mbar to 5 bar, 15 bar, or 30 bar absolute		<±0.7 mbar		± 0.1°C From 0°C to +70°C (at 2σ) (optional: ± 0.05°C) **and** +/-30 mbar (at 2σ) from 30 mbar to 15 bar, ± 100 mbar (at 2σ) at 30 bar
PicoVACQ HT Ex	From -40°C to +70°C **and** from 0% to 100% RH non condensed		From 0°C to +70°C **and** 3% to 98% RH			<±0.01 % RH	± 0.1°C from 0°C to +70°C (at 2σ) (optional: ± 0.05°C) **and** ± 3% HR (at 2σ)

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…*

T0/DS/120200.ed7

FUNCTIONS

- Start set up: immediate or delayed
- Memory set up: stop at maximum capacity/loop writing
- Time stamped measurement data
- Battery level alert with Qlever software

TECHNICAL SPECIFICATIONS

Model	Temperature sensor	Pressure sensor	Humidity sensor	Temperature probe type	Dimensions of the external temperature probe	Watertightness up to 15 bar
PicoVACQ 1T Ex	Pt 1000			Internal		●
PicoVACQ 1Tc Ex	Pt 100			Semi-rigid (SS 316L)	D. 3 mm L. 10, 15, 20 or 30 mm	●
PicoVACQ PT Ex	Pt 1000	Piezoresistive		Internal		●
PicoVACQ HT Ex	Pt 1000		Capacitive	Internal		

Material	Logger body: 316L Stainless steel		
	PicoVACQ 1T Ex	015P**	D.15 mm x H.22 mm
	PicoVACQ 1Tc Ex	015P**	D.15 mm x H.22 mm
	PicoVACQ PT Ex	015P**	SS 316L protection : D.17 mm x H.35 mm PEEK protection : D.16 mm x H.35 mm
	PicoVACQ HT Ex	015M	D.15 mm x H.59 mm
Memory capacity	PicoVACQ 1T Ex	16 000 acquisitions	
	PicoVACQ 1Tc Ex		
	PicoVACQ PT Ex	8 000 acquisitions	
	PicoVACQ HT Ex	8 000 acquisitions	
Acquisition rate	PicoVACQ 1T Ex	Programmable: minimum 1 second, maximum 59 minutes and 59 seconds	
	PicoVACQ 1Tc Ex		
	PicoVACQ PT Ex	Programmable: minimum 4 acquisitions per second, maximum 1 acquisition per 59 minutes and 59 seconds	
	PicoVACQ HT Ex	Programmable: minimum 1 second, 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		
Directives and norms	• Compliant with norms: EN 60079-0 (Explosive atmospheres - Part 0: material - General requirements) and EN 60079-11 (Explosive atmospheres - Part 11: protection of material by intrinsic security «i»). • Compliant with directives: Directive CEM 2014/30/UE, Directive ATEX 2014/34/UE. • The loggers are marked Ex II 1G Ex ia II C T6 Ga.		

(**) The battery life decreases significantly below ambient temperature and becomes very short close to 0°C. In applications below ambient temperature, we recommend that you use other battery models or check that the application is compatible with the battery type.

T0/DS/120200.ed7

AUTONOMY

The PicoVACQ Ex models are powered by a battery pack; their autonomy depends on environments and operational conditions of the application (temperatures at both ends of the mentionned operating range, data acquisition rate).

As a result of the variety of environments and operational conditions, TMI-Orion does not guarantee the battery lifetime and recommends that the user determine the battery lifetime according to his own process conditions and experience.

SOFTWARE AND RELATED PRODUCTS

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

DELIVERABLES

The PicoVACQ Ex models solution usually includes the following items:

- The PicoVACQ Ex model data logger with a battery pack
- The PicoVACQ Ex model calibration certificate
- The PicoVACQ Ex model configuration and calibration file
- Qlever software (To be ordered separately)
- A USB wired interface for PC - (to be ordered separately)
- A 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 in the documents available on our web site.

PicoVACQ 1Tc Ex

PicoVACQ PT Ex

PicoVACQ HT Ex

TMI-Orion S.A.
Parc Bellegarde - Bâtiment A
1, chemin de Borie
34170 Castelnau-le-Lez - France
T.: +33 (0)4 99 52 67 10 – F.: +33 (0)4 99 52 67 19

www.tmi-orion.com

USA : TMI-USA, Inc.
11491 Sunset Hills Road, Suite 310
Reston, VA 20190 - USA
T : +1 703 668 0114 – F : +1 703 668 0118

TO/DS/120200.ed7