

# DATA SHEET

# TMI-Orion

# PicoVACQ Temperature



Temperature measurement in thermal processes from **-70°C to +140°C**

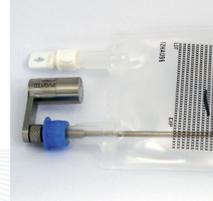
PicoVACQ Temperature is a very small data logger for temperature measurement. It can be equipped with one or two platinum sensors, at the end of rigid, semi rigid or flexible probes.

## METROLOGY

	Operating range	Batteries	Resolution	Uncertainty*
<b>PicoVACQ Temperature</b>	-45°C to +140°C	016PTA	< ± 0.02°C	± 0.1°C from -70°C to +140°C (+/- 0.05°C upon request) Except for the PicoVACQ 1Tdi: ± 0.5°C from -70°C to +140°C
	-45°C to +85°C	015PW 015PWV		
	-40°C to +140°C	016T		
	-40°C to +100°C	015M		
	0°C to +140°C	015P** 015PV**		
<b>PicoVACQ Long Temperature</b>	-70°C to +140°C	016PTA		
	-70°C to +85°C	015PW 015PWV		
	-40°C to +140°C	016T		
	-40°C to +100°C	015M		
	0°C to +140°C	015P** 015PV**		

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
- Time stamped measurement data
- Battery level alert with Qlever software

## TECHNICAL SPECIFICATIONS

Model	Number of channels	Probe type <sup>(1)</sup>	Probe dimensions	Water tightness <sup>(2)</sup>	ATEX compliant
<b>PicoVACQ 1T</b>	1	Internal		●	
<b>PicoVACQ 1T Ex</b>	1	Internal		●	●
<b>PicoVACQ 1Tc</b>	1	Rigid (SS 316L)	D. 3 mm L. 10 to 220 mm	●	
			D. 1.9 mm L. 10 to 220 mm	●	
			D. hybrid 3 > 1.9 mm L. 10 to 220 mm	●	
<b>PicoVACQ Long 1T</b>	1	Internal		●	
<b>PicoVACQ Long 1Tc</b>	1	Rigid (SS 316L)	D. 3 mm L. 10 to 220 mm	●	
			D. hybrid 3 > 1.9 mm L. 10 to 220 mm	●	
<b>PicoVACQ 1Tc Ex</b>	1	Rigid (SS 316L)	D. 3 mm L. 10 to 220 mm	●	●
<b>PicoVACQ Long 1Td</b>	1	Semi-rigid (SS 316L)	D. 2 mm L. from 60 to 1000 mm Or D. 3 mm L. from 220 to 1000 mm	●	
		1 rigid tip	D.3 or 3.4 mm L. from 30 to 100 mm	● <sup>(3)</sup>	
		at the end of a flexible probe (Teflon®)	D. from 2.2 to 5 mm L. from 100 to 1000 mm	● <sup>(3)</sup>	
<b>PicoVACQ Long 2Td</b>	2	Semi-rigid (SS 316L)	D. 2 mm L. from 60 to 1000 mm	●	
	2	2 rigid tips at the end of 2 flexible probes (Teflon®)	D.3 or 3.4 mm L. from 30 to 100 mm D. from 2.2 to 5 mm L. from 100 to 1000 mm	● <sup>(3)</sup>	
<b>PicoVACQ Long 1Tdi</b>	1	1 connector (Fischer Conneters®)	Technical specifications of the interchangeable probes according to customer request		
<b>PicoVACQ Long 1Tc-1Td</b>	2	1 rigid (SS 316L)	D. 3 mm, L. 10 to 220 mm Or D. hybrid 3 > 1.9 mm L. 10 to 220 mm	●	
		1 semi-rigid (SS 316L)	D. 2 mm, L. from 60 to 1000 mm		
<b>PicoVACQ microwave bullet</b>	1	Rigid (SS 316L)	D. 3 mm L. 10 mm	●	
<b>PicoVACQ microwave shield</b>	1	Rigid (SS 316L)	D. 3 mm L. 15 mm outside the thermal shield	●	

(1) The choice of the sensor depends on the application, ask our Sales department. (2) Non watertight models must not be immersed or used inside autoclaves. (3) The Teflon®/PFA flexible probes of the Td models are watertight. DO NOT immerse in oil or ethanol, it would deteriorate the probes and make them non watertight.



## TECHNICAL SPECIFICATIONS

Material		Logger body: 316L Stainless steel Shield inside the PicoVACQ microwave shield: PEEK				
Material	Models		Battery pack	Dimensions	Operating range	
	PicoVACQ	PicoVACQ 1T and PicoVACQ 1Tc		016PTA	D.16 mm x H.70 mm	From -45°C to +140°C
			015PW	D.15 mm x H.47 mm	From -45°C to +85°C	
			015PWW <i>(battery with thread)</i>	D.15 mm x H.50 mm		
			016T	D.16 mm x H.44.5 mm	From -40°C to +140°C	
			015M	D.15 mm x H.39.5 mm	From -40°C to +100°C	
			015P**	D.15 mm x H.22 mm	From 0°C to +140°C	
			015PV** <i>(battery with thread)</i>	D.15 mm x H.25 mm		
PicoVACQ microwave bullet		015P**	D.15 mm x H.32 mm			
		PicoVACQ microwave shield	015P	D.18 mm x H.51 mm		
PicoVACQ Long*		PicoVACQ Long 1T and PicoVACQ Long 1Tc		016PTA	D.16 mm x H.79 mm	From -70°C to +140°C
				015PW	D.15 mm x H.56 mm	From -70°C to +85°C
				015PWW <i>(battery with thread)</i>	D.15 mm x H.59 mm	
		PicoVACQ Long 1Td		016PTA	D.16 mm x H.79 mm	From -70°C to +140°C
				015PW	D.15 mm x H.56 mm	From -70°C to +85°C
			015PWW <i>(battery with thread)</i>	D.15 mm x H.59 mm		
			016T	D.16 mm x H.53.5 mm	From -40°C to +140°C	
			015M	D.15 mm x H.48 mm	From -40°C to +100°C	
			015P**	D.15 mm x H.32 mm	From 0°C to +140°C	
			015PV** <i>(battery with thread)</i>	D.15 mm x H.35 mm		
	PicoVACQ Long 1Tdi		016PTA	D.16 mm x H.99 mm	From -70°C to +140°C	
			015PW	D.15 mm x H.77 mm	From -70°C to +85°C	
			015PWW <i>(battery with thread)</i>	D.15 mm x H.80 mm		
			016T	D.16 mm x H.74.5 mm	From -40°C to +140°C	
		015M	D.15 mm x H.68 mm	From -40°C to +100°C		
		015P**	D.15 mm x H.51.5 mm	From 0°C to +140°C		
		015PV** <i>(battery with thread)</i>	D.15 mm x H.54.5 mm			

*(\*) Models allowing switching batteries for a use in a different temperature range, according to calibration range.*

*(\*\*) 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.*



## TECHNICAL SPECIFICATIONS

<b>Temperature sensor</b>	Pt 1000 or Pt 100
<b>Memory capacity</b>	16 000 acquisitions divided by number of measurement channels
<b>Acquisition rate</b>	Programmable: minimum 1 second, maximum 59 minutes and 59 seconds
<b>Program duration</b>	Programmable: days, hours, minutes
<b>Recording</b>	Programmable start: by date or on temperature threshold
<b>Power</b>	User replaceable battery pack
<b>Connectivity</b>	USB wired interface to the PC
<b>ATEX compliance</b>	See specific documentation on our web site

### Examples of PicoVACQ Temperature models



**PicoVACQ 1T**



**PicoVACQ 1Tc with different probes**



**PicoVACQ 1Tc with a thread and an O-ring**



**PicoVACQ Tc-Td with a semi-rigid probe**



**PicoVACQ 1Td with a threaded semi-rigid probe**



**PicoVACQ 1Td with a rigid parallel probe**



**PicoVACQ Long 2Td with Teflon® PFA probes**



**PicoVACQ 1Tdi with an interchangeable Teflon PFA flexible probe**



**PicoVACQ microwave shield**



**PicoVACQ microwave bullet**



**PicoVACQ 1Tc, battery with a thread**



## AUTONOMY

The PicoVACQ Temperature is powered by a battery pack; its autonomy depends on the environment and the operational conditions of the application (temperatures at both ends of the mentioned operating range, data acquisition rate).

Please contact our sales department to optimize the choice of the battery pack according to the temperature of your application.

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 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.

## DELIVERABLES

**The PicoVACQ Temperature solution usually includes the following items:**

- The PicoVACQ Temperature data logger with a battery pack
- The PicoVACQ Temperature calibration certificate

- The PicoVACQ Temperature configuration and calibration file
- Qlever software platform (to be ordered separately)
- A USB 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 specific datasheet on our website.

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