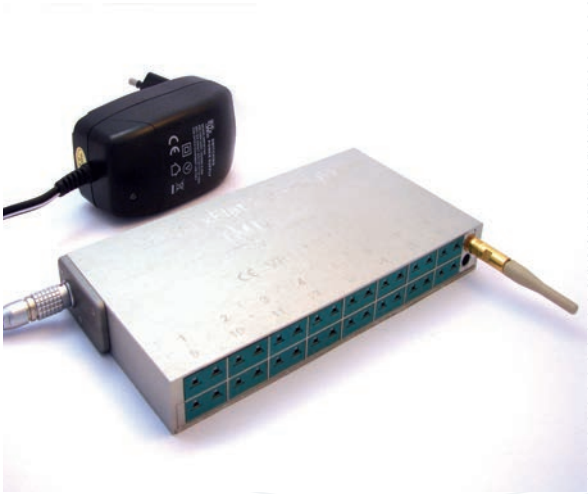
DATA SHEET

TMI-Orion

VACQ xFlat 2.8 Radio and VACQ xFlat 4.8 Radio



Real time temperature measurement at various points for thermal process control.

The VACQ xFlat 2.8 Radio is an autonomous data logger equipped with 16 thermocouple connectors.
The VACQ xFlat 4.8 Radio is an autonomous data logger equipped with 32 thermocouple connectors.

The use of the logger with power adapter frees the user from battery lifetime concerns. When required by the application, it is possible to switch to battery mode so the logger is fully autonomous and offers a greater operating range in temperature. It must be protected by a thermal shield when the temperature exceeds +140°C.

The Radio function allows real time visualization and/or recording of data.

METROLOGY

Number of thermocouple channels	Operating range		Measurement range	Resolution	Internal reference channel calibration uncertainties*
16 (2 rows of 8)	With AC adapter	0°C to +60°C	Depending on the thermocouple: Type K : 0°C to +1300°C and -200°C to +1300°C Type T : 0°C to +400°C and -230°C to +400°C Type N : 0°C to +1300°C and -150°C to +1300°C Type J : 0°C to +760°C and -200°C to +760°C Type B : +600°C to +1820°C Type E : 0°C to +690°C Type S : 0°C to +1660 °C Type R : 0°C to +1760°C Other measurement range upon request.	<± 0.1°C	± 0.2°C from 0°C to +140°C
	With batteries	-55°C to +140°C			
32 (4 rows of 8)	With AC adapter	0°C to +60°C	Type T: -230°C to +400°C Other types upon request: K, N, ...	<± 0.1°C	± 0.2°C from 0°C to +140°C
	With batteries	-55°C to +140°C			

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…*

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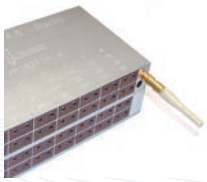

FUNCTIONS

- 2.4 GHz radio communication
- Start set up: immediate or delayed
- Real time or after the process radio data transmission
- Time stamped measurement data
- Battery level alert with Qlever software
- Interchangeable power supply

TECHNICAL SPECIFICATIONS

Material	Anodized aluminum		
Dimensions of the logger body	16	L. 150 mm x H.20 mm x W. 80 mm	
	32	L.150 mm x H.40 mm x W.80 mm	
Number of channels	16	2x8 connected thermocouple elements, 3 internal reference channels	
	32	4x8 connected thermocouple elements, 6 internal reference channels	
Thermocouple connectors	16	Universal, K or T (other upon request)	
	32	Type T (other upon request)	
Temperature sensor	16	With universal connectors	Type K, T, N, J, B, E, S or R thermocouples
		With type K connectors	Type K thermocouples
		With type T connectors	Type T thermocouples
	32	With type T connectors	Type T thermocouples
Memory capacity	16	Acquisitions are stored in a non-volatile memory (EEPROM) 13 700 acquisitions per thermocouple channel	
	32	Acquisitions are stored in a non-volatile memory (EEPROM) 13 443 acquisitions per thermocouple channel	
Watertightness	This logger is not watertight		
Acquisition rate	Programmable: minimum 1 second, maximum 59 minutes and 59 seconds		
Program duration	Programmable: days, hours, minutes		
Recording	Programmable start: by day, hour, minute		
Power	Interchangeable power supply to be used according to the application : AC adapter (+ backup battery pack) / two user replaceable 015S batteries (user replaceable batteries)		
Connectivity	2.4 GHz radio transceiver / USB wired interface to the PC		
Connectable antenna model for VACQ xFlat Radio (*)	Standard	length 49 mm, medium range - line of sight: 25 meters	
	Remote	see our web site for accessories and options	

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

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VACQ xFlat 2.8 Radio with AC adapter

VACQ xFlat 2.8 Radio with batteries

VACQ xFlat 4.8 Radio with AC adapter

VACQ xFlat 4.8 Radio with batteries

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 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

VACQ xFlat 2.8 Radio and VACQ xFlat 4.8 Radio are powered by an AC adapter or by two 015S batteries. With the batteries the autonomy depends on the environment and operational conditions of the application (extreme temperatures, radio range, electromagnetic disturbances, data acquisition and transmission 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.

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SOFTWARE AND RELATED PRODUCTS

VACQ xFlat 2.8 Radio and VACQ xFlat 4.8 Radio are used with Qlever software platform and a TMI-Orion radio transceiver.

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. Depending on the use of VACQ xFlat 2.8 Radio and VACQ xFlat 4.8 Radio, data transmission and visualization is done in real time or after the process.

TMI-Orion radio transceiver: this transmitting device connects to the PC in order to ensure radio link with the VACQ xFlat 2.8 Radio and VACQ xFlat 4.8 Radio. Several antennas are available to optimize radio communications in the operational environment.

VACQ xFlat family of products also includes loggers with non interchangeable power supply modes:

- VACQ xFlat FullRadio, for remote real time wireless set up and reading of data.
- VACQ xFlat (wired)

DELIVERABLES

The VACQ xFlat 2.8 Radio and VACQ xFlat 4.8 Radio solution usually includes the following items:

- The VACQ xFlat 2.8 Radio or VACQ xFlat 4.8 Radio data logger with battery pack and/or AC block + AC adapter,
- The VACQ xFlat 2.8 Radio or VACQ xFlat 4.8 Radio calibration certificate
- The VACQ xFlat 2.8 Radio or VACQ xFlat 4.8 Radio configuration and calibration file
- A TMI-Orion radio transceiver (to be ordered separately)
- Qlever software platform (to be ordered separately)
- A transport case (optional – to be ordered separately)

SERVICES

Maintenance: TMI-Orion recommends annual preventative maintenance and calibration service for functional checking, calibration and adjustment.

Accessories: The battery packs, engineered by TMI-Orion, are replaceable by the user and are referenced in the documentation available on our web site.

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