DATAPAQ®

A Fluke Company

Tpaq21

8 and 10 channel – high accuracy data logger

130,000 data readings over 10 selectable channels make the Tpaq21 the most powerful, accurate and in-depth analysis tool available.

Variable sampling intervals and multiple event programming provides detailed analysis where heat treatment processes are followed by fast moving sections of the product temperature profile, such as gas or water quenches.

The Tpaq21 is equally at home in ceramics processes, such as brick and sanitaryware firing, where long duration runs at high ambient temperatures call for high memory capacity and rugged electronics.

Combined with a built in RF transmitter to see these processes in real time, this is an ideal data logger for all applications.

- Ten thermocouple channels for maximum data collection on each run
- Huge memory capacity: 130,000 data points for detailed process analysis
- Sampling intervals down to 0.1 seconds to collect maximum data in minimum time
- High accuracy: ±0.2°C (±0.4°F) for compliance to tight specifications
- Hot data protected by non-volatile memory or software warning, if reset is attempted before download
- USB and RS232 communication for rapid data download to laptops
- Radio Frequency (RF) telemetry or hard wired data acquisition for monitoring in real time with full analysis functions and alarms to alert, if the process is out of specification
- Four status LED's to show the exact logger activity after disconnecting from the computer
- Push start/stop buttons for easy user control
- Two battery types for operation in normal and high ambient temperatures
- Rugged industrial case and electronics allows operation in harsh furnace and kiln environments where dust, pressure or vacuum conditions occur
- 'Multiple events' allows sampling interval change during the run – ideal for water and gas quench processes
- Reset by start button after download for speed and simplicity

Confirm your furnace is in compliance with AMS 2750E NADCAP

The Datapaq® Insight™ Survey Software for Furnace Tracker® confirms compliance to all required specifications, plus additional features to make conformity easy.

AMS 2750E Requirements

- **Wizard-driven Setup Logger Connection Factors –** Set up factors and save them for easy application to future surveys. Prompts direct you to perform this required step.
- **Calculate Stability –** Over-shoot alarm and three selectable alerts tell you when stability is reached.
- **Correction Factors –** Software confirms both data logger and thermocouple corrections have been applied.
- **Complete AMS 2750E documentation –** One-click full report saves time while maintaining consistency.
- **Password Protection –** Meets required security requirement
- **Import from Clipboard –** Easily import control thermocouple data into survey paqfile.
- **Full Audit Trail –** Guaranteed traceability of data

TECHNICAL SPECIFICATIONS

SPECIFIC THERMOCOUPLE TYPES

	Measuring Range	Accuracy	Resolution	Socket Color
Type K	-100°C* to 1370°C (-148°F to 2498°F)	±0.3°C (±0.5°F)**	0.1°C (0.2°F)	Green
Type N	-100°C* to 1300°C (-148°F to 2372°F)	±0.4°C (±0.7°F)**	0.1°C (0.2°F)	Pink
Type R	0°C to 1760°C (32°F to 3200°F)	±1.0°C(±1.8°F) @ 200°C (392°F) ±0.8°C(±1.4°F) @ 1000°C (1832°F)	0.1°C (0.2°F)	Orange
Type S	0°C to 1760°C (32°F to 3200°F)	±1.0°C(±1.8°F) @ 200°C (392°F) ±0.8°C(±1.4°F) @ 1000°C (1832°F)	0.1°C (0.2°F)	Orange
Type B	55°C to 1815°C (131°F to 3299°F)	±3.0°C (±5.4°F) @ 400°C (752°F) ±1.0°C (±1.8°F) @ 1500°C(2732 °F)	0.1°C (0.2°F)	Grey
Type J	0°C to 800°C (32°F to 1472°F)	±0.2°C (±0.4°F)	0.1°C (0.2°F)	Black

*Using sampling interval >0.8 seconds over range shown

** Contact Datapaq for accuracy at -100°C to -190°C (-148°F to -310°F)

SPECIFIC LOGGER TYPES

Operating Temperatures	**Normal**		**High**	
Model Number*	**TP2086**	**TP2016**	**TP2186**	**TP2116**
Number of Channels	8	10	8	10
Memory (data points)	130,000			
Maximum Operating	70°C (158°F)		110°C (230°F)	
Battery Type	NiMH rechargeable		VHT Lithium	
Maximum Battery Life**	340 hours between charges		250 hours	
Sampling Interval:				
No Telemetry	0.1 sec - 50 mins	0.1 sec - 50 mins	0.1 sec - 50 mins	0.1 sec - 50 mins
Hardwired Telemetry	1 sec - 50 mins	1 sec - 50 mins	1 sec - 50 mins	1 sec - 50 mins
RF Telemetry	n/a	2 secs - 50 mins	n/a	3 secs - 50 mins
Maximum Operating Pressure at 20°C (68°F)	20 bar/290 psi			
Minimum Operating Pressure at 20°C (68°F)	10^{-5} millibar			

*Model number shown is for type K thermocouples only, other types have different model numbers.

** Maximum battery life depends on sampling interval, operating temperature and use of RF telemetry.

Case Size (all loggers)

Length: 200 mm (7.8 in)
Width: 98 mm (3.8 in)
Height: 20 mm (0.7 in)

General Information

Logger Start By: Manual (button), temperature (rising or failing) or time

Programmable Events: Up to 8 sampling interval changes possible per run, trigger by rising or falling temperature after first event

Hot Data Protection: By non-volatile memory, and software warning if reset attempted before download

Communication: Via USB or serial port for laptop computers

Logger Reset: Possible after download by start button (uses same run parameters)

The Worldwide Leader in Temperature Profiling

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