

Furnace Tracker[®]

for Slab Reheat

Built for the steel industry, the DATAPAQ[®] slab reheat system is used to measure the temperature of the slab at various points and depths as it travels through the furnace.

The system consists of 10 or 20 channel data loggers, which are protected by a special low height “phased evaporation” insulation system. This is designed to keep the data logger at a stable operating temperature, while the temperature in the furnace may reach 1300°C (2372°F).

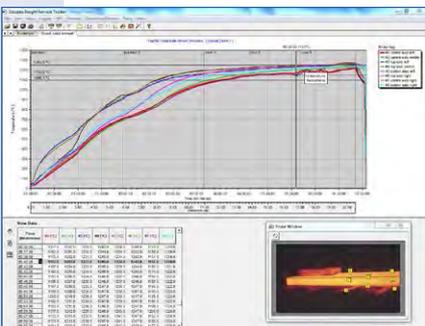
The powerful, yet easy-to-use Insight[™] analysis software quickly converts raw data into meaningful information. Detailed graphical information gives a complete picture of your furnace. Complex calculations are simplified, allowing quick and comprehensive analysis of the heat cycle.



DATAPAQ system in a walking beam furnace



Slab reheat system



DATAPAQ Insight software

SYSTEM BENEFITS

- One complete solution including data logger, thermal barrier, thermocouples and software, as well as detailed drawings and guides for setup and usage
- Ensures slab achieves correct drop out temperature throughout thickness
- Helps to optimize processes, reduce energy consumption, increase throughput and minimize scale
- Accurate results for verifying and updating mathematical furnace control models

SYSTEM FEATURES

- Dedicated 20 channel data logger designed for ease of use and rapid setup – front loaded 20 channel measurements
- Designed to travel through the furnace with the steel slab, no need for trailing thermocouples
- High accuracy data logger $\pm 0.3^{\circ}\text{C}$ ($\pm 0.5^{\circ}\text{F}$) with optional RF telemetry for real time data
- Starts automatically upon entering the furnace by user determined time or temperature trigger
- Easy to set up and use with replaceable insulation
- High thermal capacity barrier withstands delays during the trial, due to roll changes

TP3 RADIO TELEMTRY

- Improve efficiency of process optimization – use live data to view the effect of any process parameter changes on the temperature profile instantly
- Live real-time analysis of process data and review against process set-up (zones, temperature set-points, overlays)
- Powerful radio signal designed for operation even in noisiest environments

TECHNICAL SPECIFICATIONS



DATAPAQ TP3 data loggers



Tool free internal barrier



TB4284 reheat barrier

DATA LOGGER

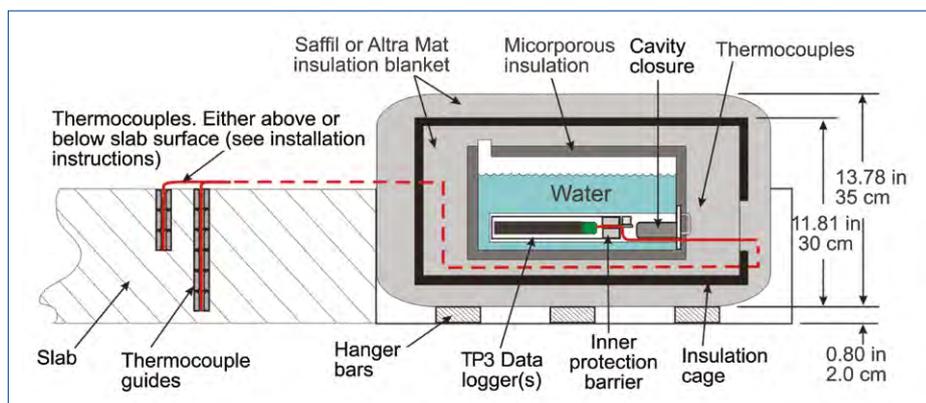
Model number	TP3116	TP3136
Temperature range	-100 °C to 1370 °C (-148 °F to 2498 °F)	
Connectivity	USB or Bluetooth®	
Max. operating temperature	110 °C (230 °F)	
Memory capacity	3.2 million data points*	3.6 million data points*
Number of channels	10	20
Sampling interval	0.3 sec – 50 min no telemetry 1 sec – 50 min RF telemetry	
Logger accuracy	±0.3 °C (±0.5 °F)	
Battery	Lithium AA replaceable	
Battery life	1 min sample interval 100 °C (212 °F) = 500 hours	1 min sample interval 100 °C (212 °F) = 450 hours
Thermocouple type	K (other types available)	

* Note that memory may be limited by battery life restrictions.

EVAPORATIVE THERMAL BARRIER

The thermal barrier contains various layers of insulation, which slow down the passage of heat and create a temperature gradient within the system. The first insulation layer consists of alumina fiber blanket, which has a maximum operating temperature of 1600 °C (2912 °F) and protects the evaporative thermal barrier. Inside the thermal barrier, water slowly boils off and creates an environment where the temperature does not exceed 100 °C (212 °F), the working temperature of the data loggers. The inner insulation layers contained in the evaporative water jacket are structured to significantly boost the thermal capacity of the overall system, ensuring optimum performance during the process. The evaporative thermal barrier features “floating plate” technology to minimize distortion at high temperatures.

Model number	TB4272	TB4284
Dimensions L×W×H	687 × 575 × 295 mm 27 × 22,6 × 11,8 in	687 × 575 × 295 mm 27 × 22,6 × 11,8 in
Thermal duration	9 hours at 1200 °C (2192 °F) Maximum temperature: 1300 °C (2372 °F)	9 hours at 1200 °C (2192 °F) Maximum temperature: 1300 °C (2372 °F)
Suitable data logger	TP3116 K type / TP3119 N type	TP3136 K type / TP3139 N type
Number of channels	1 or 2 × 10 channel loggers	1 × 20 channel logger



Slab system cross section

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Worldwide Service

Fluke Process Instruments offers services, including repair and calibration. For more information, contact your local office.

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