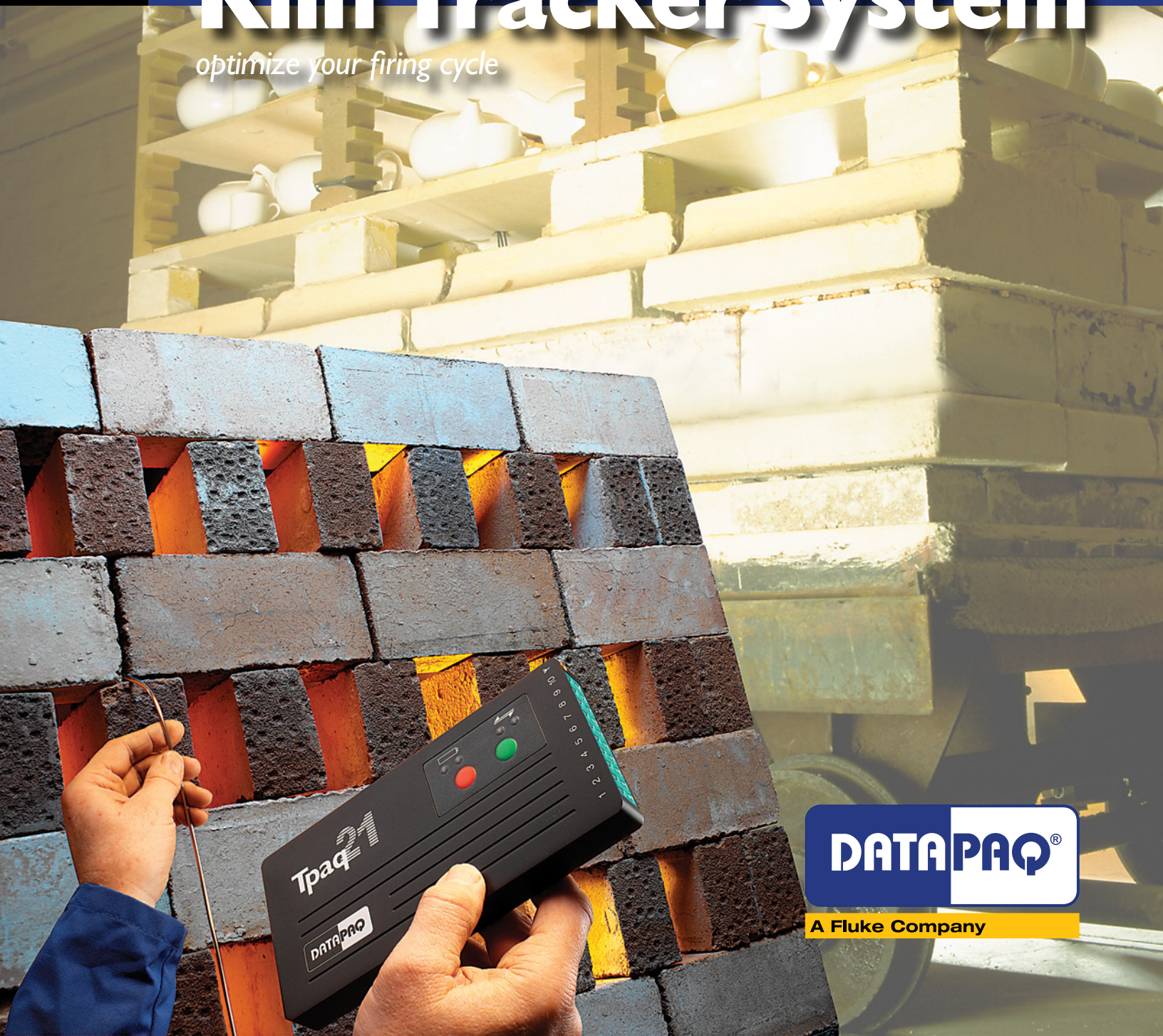


# DATAPAQ

## Kiln Tracker<sup>®</sup> System

*optimize your firing cycle*



A Fluke Company



# DATAPAQ

Monitoring your kiln is critical to achieving the product quality you require. For over twenty years, the Datapaq® name has stood for exceptional performance in temperature profiling equipment and analysis software. So, it's no surprise that the most recent Datapaq products meet and exceed the highest standards for technological advancement. These innovations – Tpaq21 data logger, Insight™ Software, and RF Telemetry – combine with the superior Datapaq thermal protection to add real-time monitoring to the industry's easiest, most cost effective method for profiling your firing processes.

## Datapaq Kiln Tracker®

The Industry's Most Durable Profiling Equipment

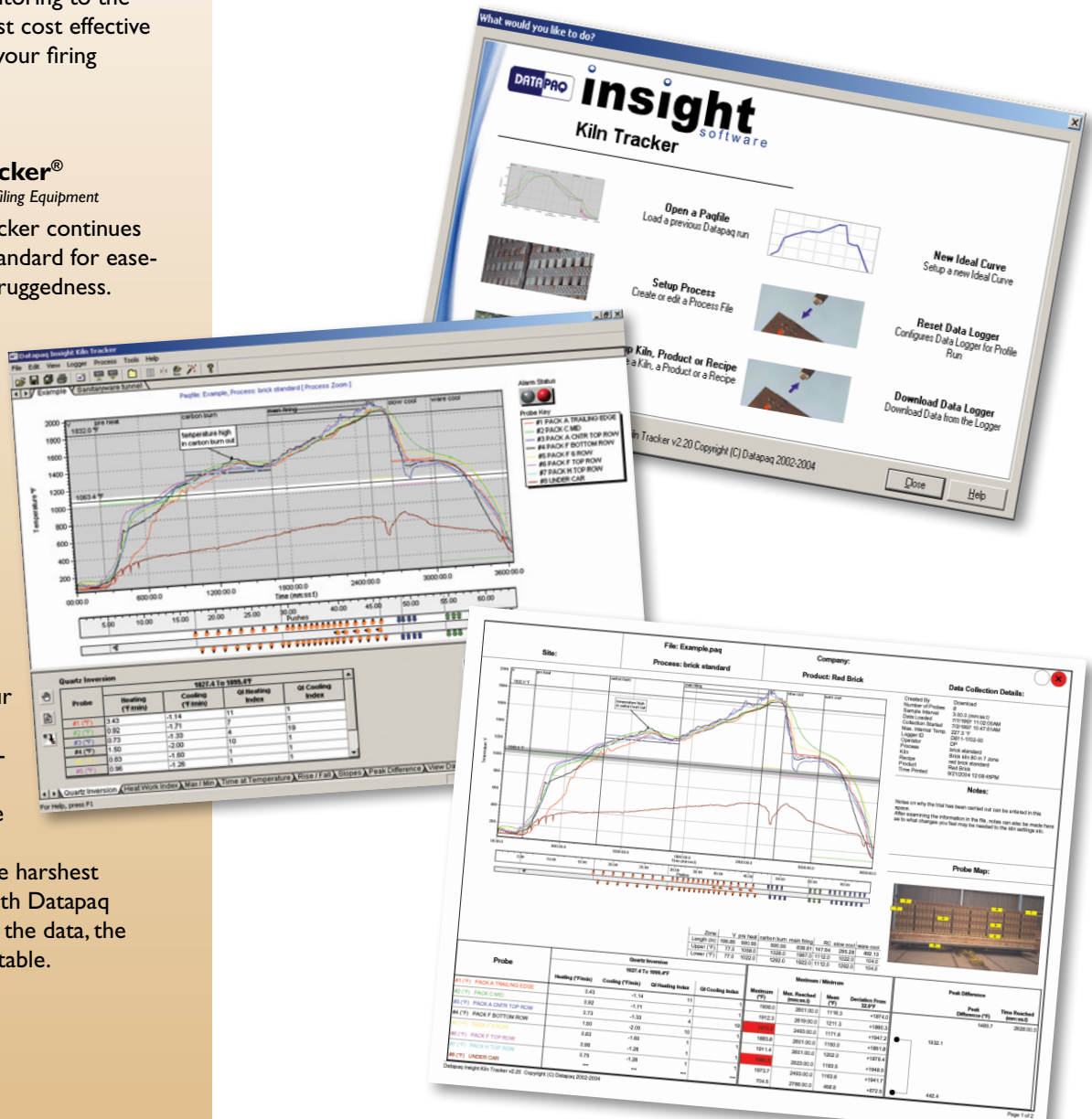
The Datapaq Kiln Tracker continues to set the industry standard for ease-of-use, reliability and ruggedness.

With up to 130,000 readings and unsurpassed accuracy, Datapaq data loggers perform without equal: measuring up to 1371°C (2500°F), with programmable triggers, a choice of batteries, and up to 20 channels. Combine a Datapaq logger with one of our wide range of rugged stainless steel phased-evaporative thermal barriers, and you have a complete system that will withstand the harshest environments. And with Datapaq software to interpret the data, the combination is unbeatable.

## Insight™ Software

The Datapaq® Insight™ software for the ceramic industry is so easy to use anyone can be in the profiling driver's seat. Detailed graphics give you complete analysis of your firing cycle. Insight software, compatible with previous software versions and most hardware, takes the data gathered by the data logger, quickly and easily interprets the information, and reports the analysis you need instantly.

- Wizards guide you step-by-step through the profiling process, reducing training and set-up time.
- The measurement axis measures progress through the kiln by kiln cars, pushes, or distances.
- An alarm feature lets you take action before damage occurs.
- Index tabs bring in-depth analysis of any parameter to the screen in a click.
- Monitor rates of heating and cooling across the Quartz Inversion Point
- Heat Work Index, a mathematical pyrometric cone
- Variable timings for drying and firing runs



## Data Loggers

### Tpaq21

The Datapaq Tpaq21 data logger boasts 130,000 data readings over 10 selectable channels, accuracy of  $\pm 0.3^{\circ}\text{C}$  ( $\pm 0.5^{\circ}\text{F}$ ), a high speed sampling rate and incomparable stability with excellent resistance to electrical noise.

And now you can easily vary the timing of the readings to get maximum details on up to eight different critical segments of a run; ideal for Quartz Inversion.

For added value, a built-in transmitter lets you see process results in real time with full analysis functions and alarms that alert you if your process is out of specification.



## Thermal Barriers

### Ultimate Protection and Versatility

Datapaq offers the widest range of thermal barriers for a variety of kilns and applications. Specifically engineered barriers are available for floor, roof, and wall tiles, heavy clay, sanitary ware and tableware. Barriers are small enough to fit beneath the kiln car, and have sufficient thermal capacity to withstand high heat for the duration of the process.

### Phased Evaporative Thermal Barriers

#### High Thermal Capacity

Graduated layers of insulation, around a water jacket and within a thermal barrier, control the rate of evaporation into distinct phases, keeping the logger at a safe operating temperature.

#### TB6100

Can withstand long duration processes of 115 hours at  $204^{\circ}\text{C}$  ( $400^{\circ}\text{F}$ ) below the kiln car

#### TB6200

For standard duration processes of 78 hours at  $204^{\circ}\text{C}$  ( $400^{\circ}\text{F}$ )

#### TB6400

Designed for a very limited kiln car clearance (less than 127 mm/5 inches) and processes up to 40 hours



## Thermal Barriers for Roller Hearth Kilns

Proven technology from Datapaq uses a uniquely designed water tank surrounded by a blanket of ceramic fiber insulation contained in a frame to keep the Tpaq21 data logger at a safe temperature of  $100^{\circ}\text{C}$  ( $212^{\circ}\text{F}$ ).

These thermal protection systems range from 66 mm (2.6 in) high, which can protect a logger for up to 1 hour at  $704^{\circ}\text{C}$  ( $1300^{\circ}\text{F}$ ), to a sanitaryware system, which is 300 mm (11.8 in) high and protects for 10 hours at  $898^{\circ}\text{C}$  ( $1650^{\circ}\text{F}$ ).

## Real-Time Kiln Profiling

### Telemetry

#### Immediate Feedback for Setup and Problem Solving

Real time monitoring affords instant information for vital problem solving and lets you assess the effects of changing kiln settings, as the process progresses. Telemetry lets you compare actual product temperatures to specification during the process. The ability to monitor temperature profiles in real-time is especially useful to brick manufacturers that experience firing problems with a particular batch. Kiln cars can be carefully monitored using a conventional kiln profiling system, but the problem is that a batch of bricks has completed its firing cycle by the time the data can be analyzed. The next similar batch of bricks may not be fired for weeks or months. It would not be possible to determine specific setting changes that would correct the problem. With telemetry, you can make the changes in real time that will minimize the problem in the following cars!



### Second System

#### Evaluate changes during the same batch

In long duration processes, a first Datapaq Telemetry System is positioned in one of the first kiln cars to collect temperature data at the start of the run. As a result of the information collected in real time, immediate changes can be made to the kiln settings. A second trailing Datapaq Telemetry System can then be positioned five or six kiln cars behind to evaluate the effects of the changes, verifying the correction. Many companies have proven this model to be very cost effective.

## Technical Specifications

### Data Logger

### TPaq21 - High Operating Temp

| Part Number                   | TP2186  | TP2116 | TP2116-TM | TP2185  | TP2115 | TP2115-TM |
|-------------------------------|---|--------|-----------|---|--------|-----------|
| Number of Channels            | 8   | 10     | 10        | 8   | 10     | 10        |
| Thermocouple Type*            | K   | K      | K         | S   | S      | S         |
| Temperature Range             | -190°C to 1370°C (-310°F to 2498°F)               |        |           | -40°C to 1760°C (-40° to 3200°F)                  |        |           |
| Memory                        | 130,000 datapoints                                |        |           | 130,000 datapoints                                |        |           |
| Telemetry Ready               | -   | -      | Yes       | -   | -      | Yes       |
| Sampling Interval**           | 0.1 sec to 50 min                                 |        |           | 0.1 sec to 50 min                                 |        |           |
| Accuracy                      | ±0.3°C (±0.5°F)                                   |        |           | ±0.3°C (±0.5°F)                                   |        |           |
| Resolution                    | 0.1°C (0.2°F)                                     |        |           | 0.1°C (0.2°F)                                     |        |           |
| Data Collection Start         | Start button, time, rising or falling temperature |        |           | Start button, time, rising or falling temperature |        |           |
| Battery Type                  | VHT Lithium (BP0021)                              |        |           | VHT Lithium (BP0021)                              |        |           |
| Battery Life***               | 250 hours   |        |           | 250 hours   |        |           |
| Maximum Operating Temperature | 110°C (230°F)                                     |        |           | 110°C (230°F)                                     |        |           |
| Number of LED's               | 4   |        |           | 4   |        |           |
| Dimensions (H x W x L)        | 20 mm x 98 mm x 200 mm (0.8 in x 3.9 in x 7.9in)  |        |           | 20 mm x 98 mm x 200 mm (0.8 in x 3.9 in x 7.9in)  |        |           |
| Weight                        | 0.5 kg (1.1 lbs)                                  |        |           | 0.5 kg (1.1 lbs)                                  |        |           |

\* Model number shown is for Type K and S, thermocouples only, other types (R, N, and J) have different model numbers.

\*\* Sampling interval dependent on number of channels selected, and use of telemetry.

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

### Thermal Barriers

|               | Height          | Width            | Length           | Weight        |              | Time at Temperature |                |                |                 |
|---------------|-----------------|------------------|------------------|---------------|--------------|---------------------|----------------|----------------|-----------------|
|               |                 |                  |                  | empty         | filled       | @150°C (300°F)      | @200°C (400°F) | @400°C (750°F) | @700°C (1300°F) |
| <b>TB6100</b> | 180 mm (7.1 in) | 350 mm (13.8 in) | 480 mm (18.9 in) | 20 kg (44 lb) | 27kg (60 lb) | 250 hr              | 115 hr         | 35 hr          | -               |
| <b>TB6200</b> | 154 mm (6.1 in) | 279 mm (11 in)   | 429 mm (16.9 in) | 14 kg (30 lb) | 18kg (41 lb) | 150 hr              | 78 hr          | 25 hr          | -               |
| <b>TB6400</b> | 120 mm (4.7 in) | 200 mm (7.9 in)  | 370 mm (14.6 in) | 7 kg (16 lb)  | 9kg (21 lb)  | 98 hr               | 48 hr          | 12 hr          | -               |

Over 30 standard thermal barriers available. Datapaq has produced over 200 different styles of barriers. Special barriers can be ordered.

### Thermal Barriers for Roller Hearth Kilns

| Part number   | Height           | Width            | Length           | Weight (full)    | Thermal duration @ average 150°C (302°F) | Maximum operating temp | Industry     |
|---------------|------------------|------------------|------------------|------------------|--|------------------------|--------------|
| <b>TB3031</b> | 150 mm (5.9 in)  | 382 mm (15 in)   | 610 mm (24 in)   | 28 kg (61 lb)    | 4 hrs                                    | 1200°C (392°F)         | Roof tiles   |
| <b>TB3036</b> | 200 mm (7.8 in)  | 432 mm (17 in)   | 660 mm (25.9 in) | 32 kg (70.5 lb)  | 5.5 hrs                                  | 1200°C (392°F)         | Tableware    |
| <b>TB3038</b> | 300 mm (11.8 in) | 512 mm (20.1 in) | 735 mm (28.9 in) | 51 kg (112.4 lb) | 12 hrs                                   | 1200°C (392°F)         | Saintaryware |

Datapaq makes over 100 thermal barriers. Contact us with your process details to select the barrier specific to your application.

### TM21 RF Telemetry System

|                     |        |
|---------------------|--------|
| Transmitter         | TX1401 |
| Primary Receiver:   | RX4X00 |
| Secondary Receiver: | RX4X01 |

See TM21 datasheet for full specification information

### Minimum computer specifications

- Microsoft Windows® 2000 or above recommended.
- 500 MHz processor
- 128 MB RAM
- Monitor resolution 1024 x 768, 256 colors
- 50 MB free hard disk space
- USB port for logger communication
- DVD Drive



### Kiln Tracker System

Comprised of a data logger, thermal barrier, thermocouples, computer software, interface cable, carrying case and manuals.

### Telemetry System

Comprised of a data logger, thermal barrier, telemetry transmitter, telemetry receiver, thermocouples, computer interface cable, software, carrying case and manuals

### THE DATAPAQ GUARANTEE

Each Datapaq system is supported with a full one year warranty. Complementing the warranty, we offer a yearly service and re-calibration contract, which includes free software updates and loan equipment for guaranteed peace of mind.\*

\* Dependent on country.

## The Worldwide Leader in Temperature Profiling

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