



PhoenixTM
Phoenix Temperature Measurement

HTS06 Systems

For aluminium heat treatment processes



...where experience counts!

PhoenixTM HTS06 Systems for Aluminium Processes

Data Logger

PhoenixTM data loggers are designed for use in harsh industrial environments. The electronics are protected by a robust, water resistant, machined aluminum case. Cold junction compensation with feedback error detection and noise reduction ensures accurate and reliable data. Optional two way RF telemetry is available, allowing real time data analysis and for the data logger to be reset and downloaded remotely. All loggers are shipped with a factory calibration certificate traceable to national standards. Optional certification to UKAS (UK) or DKD (Germany) can be supplied if required. For convenience and future reference, a copy of the original calibration certificate and the calibration data are stored within the data logger and can be accessed as required

| | |
|---------------------------|--|
| Type | PTM1-206HT, PTM1-210HT, PTM1-220HT |
| No. of channels | 6,10 or 20 |
| Thermocouple type | K or N |
| Measurement range | Type K: -100°C - +1370°C Type N: -100°C - +1300°C |
| Accuracy | +/- 0.3°C |
| Resolution | 0.1°C |
| Max operating temperature | 110°C |
| Battery type | 2 x replaceable Lithium (AA) |
| Sampling rate | Adjustable from 0.2 second to 1 hour |
| Memory | Up to 3.8 M data points,non-volatile memory |
| Start trigger | Time, temperature, start button or software |
| PC connection | Hard wire or Bluetooth |
| Dimensions | 20 x 98 x 200mm (h x w x l) |



Two way radio transmission as an option



Robust and waterproof housing for reliable use in hostile environments



Up to 1000 hours measurement time



Bluetooth PC connection



What is temperature profiling?

All industrial ovens or furnaces use thermocouples to control the zone temperatures. However these thermocouples measure only atmosphere temperature in their respective zones and do not indicate the true temperature of the product, which is vital to ensure the heat treatment specification is adhered to.

PhoenixTM can provide a solution:

Our monitoring system travels through the furnace with the product, logging temperatures from up to 20 thermocouples connected to the product or distributed in the load to get an accurate thermal 'balance'. The system is easily placed on the line with the product causing less disruption and gives a more accurate picture of true product or load temperature. At the end of the profile run a powerful software package analyses the logged data to determine whether the specification has been met.

The profiling trials can be quickly carried out allowing you to resolve any furnace problems quickly, and to provide your customers with an assurance of a consistent process control.



TS06 Thermal Barriers

Built for solution treatment and age hardening where high temperatures and water quenching are part of the process. These Thermal Barriers use the principle of evaporating water to keep the Data Logger cool in the furnace, and can re-fill in the quench to allow it to undergo a further heating period as is normal in these processes. During the quench a water tight seal is maintained by using heavy duty gaskets and stainless steel compression glands around the thermocouples, this affords maximum protection to the data logger.



Standard TS06 range performance:

| Type | TS06-210 | TS06-215 | TS06-310 |
|-------------|-------------|-------------|-------------|
| 500°C / h | 9.5 | 13.0 | 24.0 |
| 550°C / h | 8.0 | 11.0 | 20.0 |
| 600°C / h | 7.2 | 9.0 | 16.0 |
| Height / mm | 210 | 215 | 310 |
| Width / mm | 400 | 472 | 472 |
| Length / mm | 520 | 640 | 640 |
| Weight / kg | 18.0 / 25.0 | 25.5 / 38.5 | 30.0 / 59.0 |

"Easy fit" insulation frame for quick system assembly.



Integral logger tray provides quick and easy data logger installation.



Stainless steel fittings protect against water and provide stress relief for the thermocouples.



Following a water quench a further 10 hours duration is possible in an age hardening furnace at 200°C

Need a thermal barrier to suit your application? Tell us your requirements and if it's possible we'll design and manufacture it for you! We are constantly developing and looking forward to any new challenge.

Thermocouples

For temperatures from 250°C to more than 1000°C mineral insulated thermocouples are generally the first choice. The thermocouples wires are insulated by magnesium oxide and protected by a high grade alloy sheath. For special applications we can supply thermocouples with other insulation materials.

Thermocouples can be mechanically held, or retained in holes to record temperatures at critical points.



Type K or N mineral insulated thermocouples in 1.5 and 2.0mm diameter.



Thermal View Plus

The easy way to get a perfect result!



PhoenixTM
Phoenix Temperature Measurement

New Profile : Datalogger Settings

Start Run

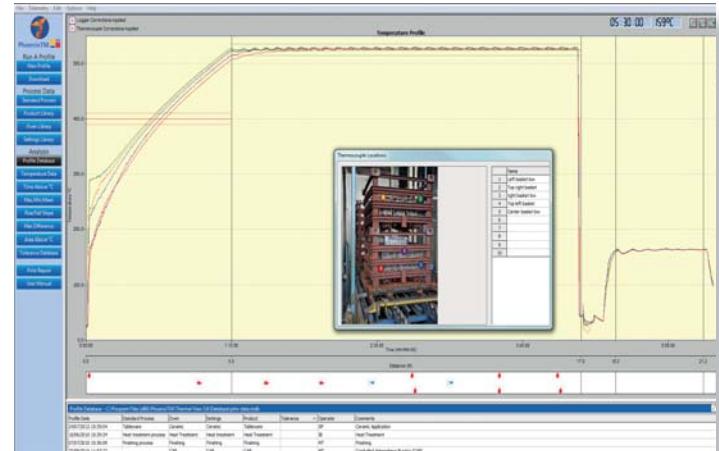
Stop Run

Sample Rate

Datalogger Information

| Enable | Name |
|-------------------------------------|------------|
| <input checked="" type="checkbox"/> | Channel 1 |
| <input checked="" type="checkbox"/> | Channel 2 |
| <input checked="" type="checkbox"/> | Channel 3 |
| <input checked="" type="checkbox"/> | Channel 4 |
| <input checked="" type="checkbox"/> | Channel 5 |
| <input checked="" type="checkbox"/> | Channel 6 |
| <input checked="" type="checkbox"/> | Channel 7 |
| <input checked="" type="checkbox"/> | Channel 8 |
| <input checked="" type="checkbox"/> | Channel 9 |
| <input checked="" type="checkbox"/> | Channel 10 |
| <input checked="" type="checkbox"/> | Channel 11 |
| <input checked="" type="checkbox"/> | Channel 12 |
| <input checked="" type="checkbox"/> | Channel 13 |
| <input checked="" type="checkbox"/> | Channel 14 |
| <input checked="" type="checkbox"/> | Channel 15 |
| <input checked="" type="checkbox"/> | Channel 16 |
| <input checked="" type="checkbox"/> | Channel 17 |
| <input checked="" type="checkbox"/> | Channel 18 |
| <input checked="" type="checkbox"/> | Channel 19 |
| <input type="checkbox"/> | Channel 20 |

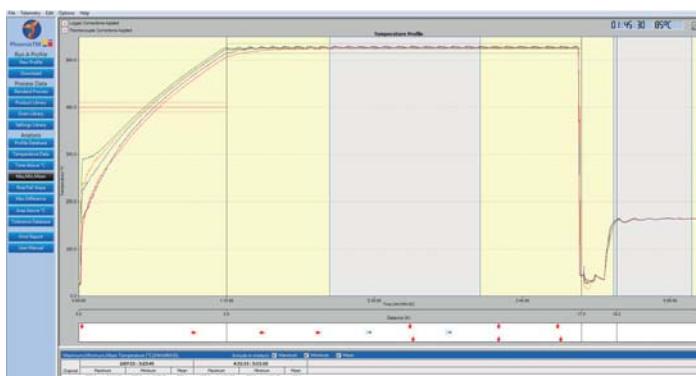
Run Duration: 33:05:55 (HH:MM:SS)
Battery Level: 2.95 V
Calibration Date: 18/11/2010
Internal Temperature: 22.0 °C



Simply enter:

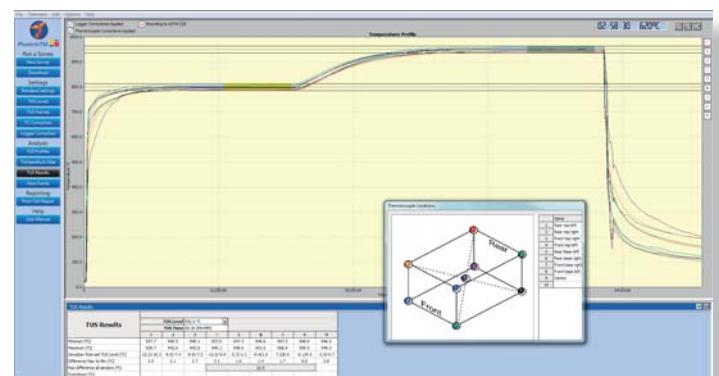
- How to start the data logger
- The rate at which data is to be collected
- The number of thermocouples to be used.

For regular measurements these can be set with one mouse click or pressing the data logger start button.



Comprehensive analysis tools are located on the left side of the screen for single click analysis and report generation. Data import and export in both .csv and PhoenixTM formats are available allowing electronic transfer of process data.

The temperature profile is displayed in the graphics window of the Thermal View software. Thermocouple profiles can be switched on or off individually and you can zoom in for more detailed analysis.



A separate software package, "Thermal View Survey" is available for surveying furnaces to AMS2750 requirements. Featuring thermocouple and data logger correction factors, user defined TUS levels and tolerances, View Frame analysis, overshoot search, data import / export, printed AMS2750 report. Contact us for a demo version!



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