

# Recording and control in heat treatment processes

Obtaining a better picture of your heat treatment process



A complete view of your heat treatment process data at your fingertips

**Measurement made easy**

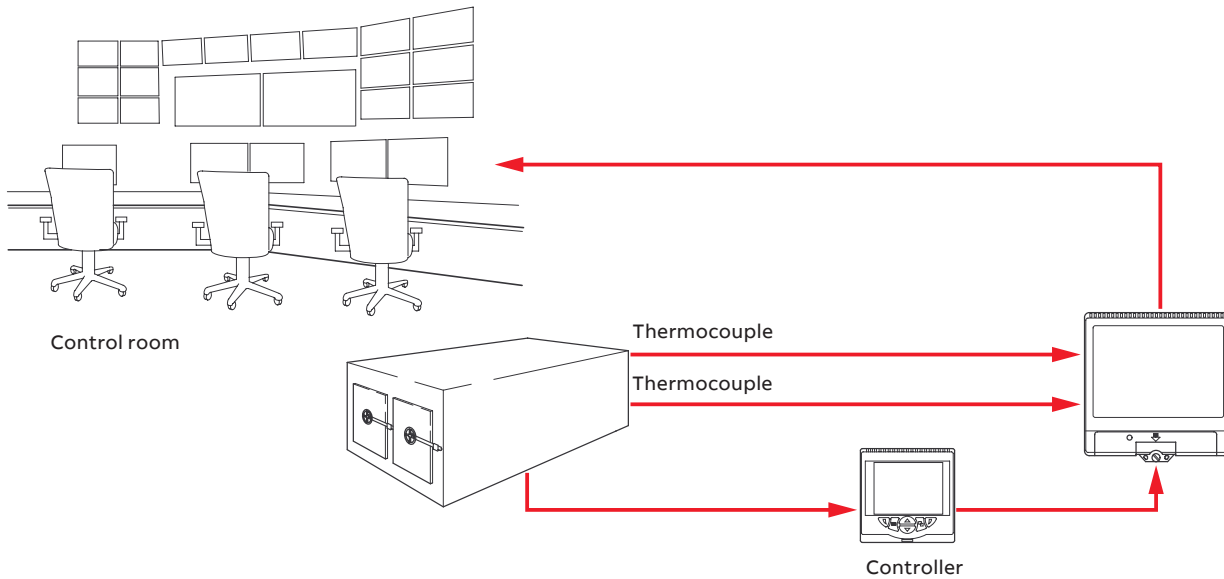
Heat  
treatment

## Introduction

Heat treatment is the controlled heating and cooling of metals to alter their physical and mechanical properties, without changing the product shape. Heat treatment is often associated with increasing the strength of material or relieving residual stresses. In order to change the hardness of a metal, the internal atomic structure is actually changed during the heating and cooling. The most common heat treatment techniques are annealing, normalizing, stress relieving, post weld, preheating, tempering, quenching and curing.

Accurate temperature measurement is fundamental to successful heat treatment practice. Heat treatment of metals for the aerospace, defence, automotive and general engineering industries (in particular the aerospace industry) must be rigorously controlled to ensure the reliability of the parts treated. ABB's RVG200 next generation paperless recorder offers a host of additional features and functions, including AMS2750 compliant inputs, making it ideal for data recording in heat treatment applications.

## The process



Heat treatment process overview

## RVG200 – overview

### High specification AMS2750 compliant

The industry standard AMS2750 details the accuracy requirements for temperature control and recording instrumentation in the aerospace industry. The RVG200's high specification analog inputs meet these requirements. Offering high accuracy, stability and 500V galvanic channel to channel isolation, the RVG200 delivers reliable thermocouple temperature measurement:

Overview Display				07/09/14 17:32:25	
Temp 1 13.9 °C	Temp 2 23.6 °C	Temp 3 56.8 °C	Temp 4 87.4 °C		
Temp 5 75.2 °C	Temp 6 13.0 °C	Temp 7 27.1 °C	Temp 8 64.5 °C		
Temp 9 48.6 °C	Temp 10 22.9 °C	Temp 11 71.5 °C	Temp 12 68.2 °C		
Temp 13 12.4 °C	Temp 14 65.2 °C	Temp 15 64.2 °C	Temp 16 62.8 °C		
Temp 17 66.5 °C	Temp 18 61.0 °C	Temp 19 68.3 °C	Temp 20 150 °C		
Temp 21 125.3 °C	Temp 22 69.5 °C	Temp 23 87.6 °C	Temp 24 54.6 °C		

ScreenMaster RVG200 Overview Display

### Logarithmic scales

To remove the potential for contamination and improve temperature uniformity, many precision heat treatment processes take place in a vacuum environment. The RVG200 can present vacuum signals on a logarithmic scale ensuring maximum accuracy and ease of use for the process operator.

### Batch recording

The RVG200's batch recording option provides a simple means of recording when a particular batch is started or finished. This data can be reviewed using ABB's DataManagerPro analysis software. DataManagerPro provides a quick and simple way of retrieving batch data. Data can be retrieved by entering the batch number, searching by type or product or by specifying the time and date of processing.

### Barcode scanner

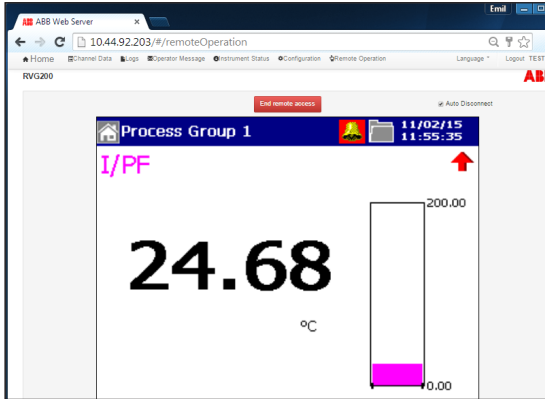
With the RVG200, you now have the option of connecting a barcode scanner into the device's front or rear USB, providing a fast and more accurate alternative to manually keying in batch information. Batch information can be scanned directly from product paperwork, eliminating the scope for human error.



Barcode scanner

### Real time remote operation – no additional software required

Through a web browser you can remotely configure, view and operate your RVG200 paperless recorder. Unlike other manufacturers who charges for this functionality, ABB includes this as a standard feature with RVG200 paperless recorder.

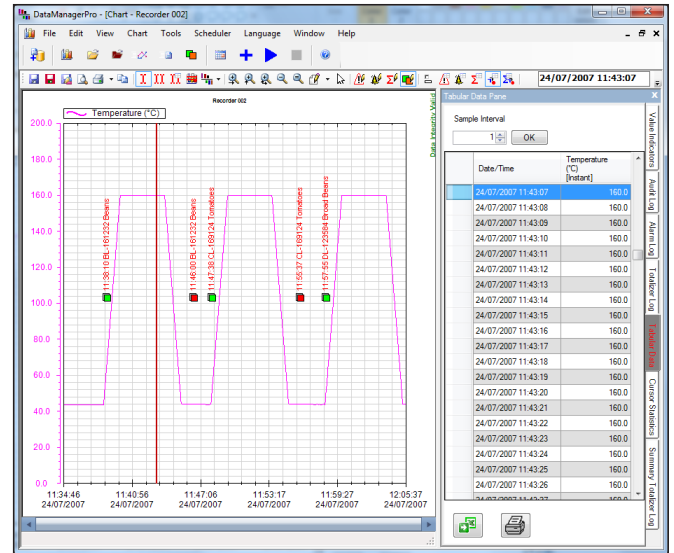


Remote configuration via web browser

## DataManager Pro

DataManagerPro is an advanced process data management and analysis application used to store and review data archived by ScreenMaster paperless recorders:

- functionality to annotate alarm, audit and totalizer logs on the chart enables quick and easy analysis
- temperature recorded in different processes can be combined on a single chart and analyzed side-by-side
- functionality to annotate alarms on the chart enables quick and easy analysis of alarm conditions
- data can be automatically collected from instruments located in remote location at regular intervals and can be viewed at the convenience of your office desk
- ability to export data and log information into Excel sheets



DataManagerPro – advanced process data management and analysis application

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**ABB Limited**  
**Measurement & Analytics**

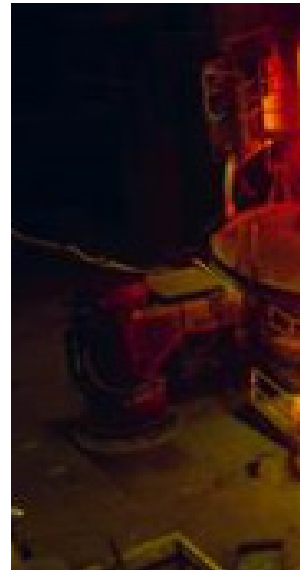
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