

CERTIFICATE OF CALIBRATION

ISSUED BY The Roxspur Measurement & Control
Calibration Laboratory



0043

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Approved Signatory

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Date of Issue: 26 October 2011

Certificate No: U42743T Issue 2

Customer **Signatrol Limited**
105 Church Street
Tewksbury
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GL20 5AB

Date Received 10 October 2011
Calibration Date See Page 2

Order Ref 43862
Our Ref **L211631**

Equipment Tested Digital Thermometer & PRT Probe

Description Manufacturer: Gallenkamp, Model: Autotherm
Indicator Serial No: **CE09/JN/10104-1**
Pt100 resistance thermometer, 4 wire construction
Probe length: 330 mm; probe diameter: 6 mm
Probe Serial No: **004606** in channel A only
Range/Scale: -50 °C to 200 °C with 0.01 °C and 0.001 °C resolution

Measurements The digital thermometer & platinum resistance thermometer was calibrated at the following points: -50 °C, -20 °C, 0 °C, 4 °C, 20 °C, 80 °C, 130 °C and 200 °C.

Procedure The thermometer under test was allowed to equilibrate within a controlled, stable environment, the temperature of which was measured using traceable reference Platinum Resistance Thermometers. The following results indicate the measured test thermometer temperature against the measured temperature at the time of calibration. The measurement uncertainty was calculated in accordance with M3003 (Edition 2 - January 2007) and as such takes into account such factors as the calibration and drift of the reference standards, gradients of the temperature sources, stability, repeatability and resolution of reference instruments and that of the unit under test.

The results are valid at the time of calibration only. The temperature scale used was ITS-90. All measurements are traceable to National Standards. Calibrated "As Found" [i.e. No Adjustments Made].

Notes The ambient temperature at the time of calibration was 21 °C ± 2 °C.
Previous Calibration Details: Lab No: 0043, Certificate No: U40620T,
Date: 13 October 2010.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the Nati

- M.Donnelly
- J.Fowler
- W.Smith
- J.Watson
- R.Stephenson

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UKAS ACCREDITED CALIBRATION LABORATORY No.0043

The probe was immersed to a minimum immersion depth of 200 mm.

"As Found" Results

Reference Temperature °C	Indicator on 0.01 °C resolution Temperature °C	Indicator on 0.001 °C resolution Temperature °C	Measured Errors °C 0.01 °C	Measured Errors °C 0.001 °C	Calibration Date
0.006	0.01	0.006	0.00	0.000	14/10/2011
-49.984	-49.97	-49.971	0.01	0.013	14/10/2011
-20.076	-20.07	-20.068	0.01	0.008	14/10/2011
0.006	0.01	0.004	0.00	-0.002	14/10/2011
3.976	3.99	3.989	0.01	0.013	14/10/2011
20.055	20.08	20.076	0.02	0.021	14/10/2011
80.037	80.07	80.071	0.03	0.034	14/10/2011
130.015	129.99	129.982	-0.03	-0.033	24/10/2011
199.938	199.95	199.951	0.01	0.013	24/10/2011
-0.001	0.02	0.021	0.02	0.021	24/10/2011

Measurement Uncertainty: ± 0.05 °C

Calibrated by : S Boldy + G Barfield

-End-

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.