# CERTIFICATE OF CALIBRATION

**ISSUED BY ROTRONIC INSTRUMENTS (UK) LTD**

**DATE OF ISSUE:** 23rd June 2017 **CERTIFICATE NUMBER:** 30342

UKAS CALIBRATION 0766

rotronic
MEASUREMENT SOLUTIONS

Calibrated by: P Image / C Aicken

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Dates Measurements Performed:
21st to 23rd June 2017

| | |
|---|---|
| Customer Details | : Signatrol Limited, Unit E2, Green Lane Business Park, Tewksbury, GL20 8SJ |
| Customer's Order Number | : 45383 |
| Rotronic Ref Number | : 30342 |
| Instrument Description | : Humidity & Temperature Probe |
| Manufacturer | : Rotronic AG |
| Model Type (s) | : HC2-S |
| Serial Number (s) | : 60785 619 |

## Humidity Procedure RUKP20

The hygrometer was calibrated using ROTRONIC non-saturated salt relative humidity (RH) standards, certified as traceable to National Standards. The probe was subjected to the relative humidity generated by the RH standard inside a calibration chamber, and the values taken from HW4. The calibration was conducted in controlled laboratory conditions 23 °C ± 2 °C.

**AS-FOUND RESULTS**

| Applied Relative Humidity (%rh) | Calibration Uncertainty ** (%rh) | Indicated Relative Humidity (%rh) | Instrument Error (%rh) | Indicated Temperature (°C) * | Ambient Temperature (°C) * |
|---|---|---|---|---|---|
| 11.1 | ±0.5 | 10.0 | -1.1 | 21.7 | 21.4 |
| 49.6 | ±1.1 | 48.7 | -0.9 | 21.6 | 21.3 |
| 75.1 | ±1.3 | 74.2 | -0.9 | 21.6 | 21.2 |

**POST-ADJUSTMENT RESULTS**

| Applied Relative Humidity (%rh) | Calibration Uncertainty ** (%rh) | Indicated Relative Humidity (%rh) | Instrument Error (%rh) | Indicated Temperature (°C) * | Ambient Temperature (°C) * |
|---|---|---|---|---|---|
| 11.2 | ±0.5 | 11.2 | 0.0 | 22.0 | 21.8 |
| 49.7 | ±1.1 | 49.8 | +0.1 | 21.9 | 21.5 |
| 75.1 | ±1.3 | 75.3 | +0.2 | 21.6 | 21.3 |

## Temperature Procedure RUKP2

The probe was calibrated by comparison with platinum resistance thermometers, which are traceable to national standards, and the values taken from the HW4. The calibration was conducted in a temperature chamber in controlled laboratory conditions 23 °C ± 2 °C. The probe under calibration was fully immersed in the chamber. The temperature scale used is ITS-90.

| Applied Temperature (°C) | Indicated Temperature (°C) | Instrument Error (°C) | Calibration Uncertainty (°C)** |
|---|---|---|---|
| -0.12 | 0.02 | +0.14 | ±0.26 |
| 40.04 | 40.02 | -0.02 | ±0.17 |

* Not included within the scope of the UKAS accreditation

**The uncertainties quoted apply only to values obtained during the calibration and are not indicative of long-term stability of the instrument under calibration.

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.