ITS-RTD is a new and special type of a complete high precision temperature measurement system with integrated data logging and graphical functions for the direct connection to any PC/laptop via the USB port.

This ISAscale® product is based on a technical PRT in connection with the high precision data acquisition system ISA-ASIC from ISABELLENHÜTTE.

Different types of high precision Pt100 sensors according to EN 60751 and ITS-90 are used. The sensor and the measuring system are an inseparable and calibrationable unit.

The signal, which is determined in a true ohm 4 wire measurement process, is measured with the offset-free, low-noise ISA-ASIC measurement system at a 16 to 20 bit resolution. The absolute resolution and noise is better than 1 mΩ or 0.004 K (4 mK) in the stated temperature range.

The ITS-RTD is calibrated as a unit including sensor and electronic circuit. The accuracy is better than 0.05 K in the full temperature range.

The system works on the USB bus, i.e. the circuit is powered via the bus, and it communicates with any PC or laptop based on Windows® 2000/XP/Vista™ (32 bit). Each sensor has an individual address allowing the parallel operation of several units with one PC/laptop.
The ITS-RTD is supplied with a complete Windows® software for easy temperature measurement and control. Functions like selection of displayed temperature measurement results in °C, °F or K, a data storage function as well as a graphical display of the results are also included in the package. Optionally, an Aktiv X DLL or a LabView® driver are available.

Features of this highly flexible system are:
- Single or continuous measurements with averaging and data compression
- Logger function with data storage on PC for later evaluation with many software packages like Excel®, MathCAD®, etc.
- Integrated graphical display of measurement data over time (CRT-like functions)

The complete unit can be DKD-calibrated by ISABELLENHÜTTE if necessary.

Deviation of DCR over range

Temperature (DCR) over time in ice water (0 °C)

<table>
<thead>
<tr>
<th></th>
<th>ITS-RTD 300</th>
<th>ITS-RTD 400</th>
<th>ITS-RTD 600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement principle</td>
<td>True ohm 4 wire resistance measurement. Linearization of the used sensor. Calibration of the complete system.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature range</td>
<td>-30 to +300 °C</td>
<td>-30 to +400 °C</td>
<td>-100 to +600 °C</td>
</tr>
<tr>
<td>Sampling rate</td>
<td>1 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>≤ 1 mOhm (≤ 0.004 K)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>≤ 0.1 K</td>
<td>≤ 0.1 K</td>
<td>≤ 0.05 K*</td>
</tr>
<tr>
<td>Working temperature range for electr. circuit</td>
<td></td>
<td>-30 to +60 °C</td>
<td></td>
</tr>
<tr>
<td>Operating system</td>
<td>Windows® 2000/XP/Vista™ (32 bit)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* in delivery status and considering the stated working temperature range for electric circuit

Member of
German Calibration Service
DKD

Cooperation with
German Commission for Electrical, Electronic & Information Technologies of DIN and VDE®

ISABELLENHÜTTE Heusler GmbH & Co. KG
Eibacher Weg 3 - 5 · D-35683 Dillenburg
P. O. Box 14 53 · D-35664 Dillenburg
Phone +49 27 71/934-250 · Fax +49 27 71/23030
www.isabellenhutte.de · isascale@isabellenhutte.de


Member of
AMA

Issue 04/2008