



# Measurements International

*Metrology is Our Science, Accuracy is Our Business™*

## ACCUBRIDGE® 6020T AUTOMATED THERMOMETRY BRIDGE



### Featuring

- ▶ Multiple Display Modes Including:
  - ▶ Temperature (°C, K, °F)
  - ▶ Resistance,  $\Omega$
  - ▶ Ratio
- ▶ ADCC Technology
- ▶ Accu-T-Cal™ Software (NMI Designed)
- ▶ New Microcontroller
- ▶ New User Interface
- ▶ Two Models to select from

### Overview

The **AccuBridge® 6020T** Thermometry Bridge is the metrologist's choice for primary lab level thermometry measurements. With its innovative technology, the 6020T's speed, measurement accuracy, and data handling capabilities make it the preferred primary thermometry measurement system in National Measurement Institutes (NMIs) and other primary labs worldwide. The 6020T was designed for flexibility and ease of use. The 6020T features increased

ampere-turn (AT) sensitivity with more turns on both the master and slave windings and a voltage feedback circuit to improve the linearity error of the nanovolt amplifier. Also improved is the ratio from the previous 1.5:1 ratio to the new ratio range covering from 0.1 up to a maximum ratio of 14 allowing customers to meet all of their requirements. MI customers now have unmatched features and functionality to support 6020T's world-class measurement uncertainty capability.

| Feature                                                                                                                | Benefit                                                                                   |
|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Best accuracy $\pm 0.015$ ppm from 1 $\Omega$ to 10 k $\Omega$ (equivalent accuracy of 0.004 mK at TPW <sup>1</sup> ). | Highest level of accuracy achievable in a commercial DCC bridge.                          |
| 0.1 $\Omega$ to 100 k $\Omega$ range.                                                                                  | Widest range providing customers one bridge solution.                                     |
| 2-channel front panel scanner with keep warm currents.                                                                 | Customers do not need to purchase an additional scanner.                                  |
| Quick measure mode                                                                                                     | Provides you with the ultimate response time for first measurement, less than 20 seconds. |
| Current reversal rate as low as 2 seconds.                                                                             | Gives you world's quickest DC bridge current reversal time of 2 seconds.                  |
| Store calibration coefficients for up to 5 thermometers without software aide.                                         | Allows internal memory storage for quick front-panel measurements.                        |
| NEW 6020T-P-LEMO model with Lemo connectors for RT and Rs connections (Optional)                                       | Improves confidence in removal of errors due to thermals, drafts, external noise.         |



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### Specifications: Rev 14

| Model                        | 6020T - Premium/6020T-P-LEMO             |       |
|------------------------------|------------------------------------------|-------|
| Current Reversal Minimum (s) | 2                                        |       |
| Sample Rate Minimum (s)      | 0.1                                      |       |
| R <sub>s</sub> value (Ω)     | Accuracy of Ratio* (x 10 <sup>-6</sup> ) |       |
|                              | 1:1                                      | 14:1  |
| 0.1 to < 1                   | 0.015                                    | 0.015 |
| 1 to < 10                    | 0.015                                    | 0.015 |
| 10 to < 100                  | 0.015                                    | 0.015 |
| 100 to < 1 k                 | 0.015                                    | 0.015 |
| 1 k to 10 k                  | 0.015                                    | 0.015 |
| 10 k to < 100 k              | N/A                                      | 0.2   |

  

| Model                        | 6020T - Standard                         |      |
|------------------------------|------------------------------------------|------|
| Current Reversal Minimum (s) | 2                                        |      |
| Sample Rate Minimum (s)      | 0.1                                      |      |
| R <sub>s</sub> value (Ω)     | Accuracy of Ratio* (x 10 <sup>-6</sup> ) |      |
|                              | 1:1                                      | 14:1 |
| 0.1 to < 1                   | 0.07                                     | 0.07 |
| 1 to < 10                    | 0.07                                     | 0.07 |
| 10 to < 100                  | 0.07                                     | 0.07 |
| 100 to < 1 k                 | 0.07                                     | 0.07 |
| 1 k to < 10 k                | 0.07                                     | 0.07 |
| 10 k to < 100 k              | N/A                                      | 0.2  |

\*Ratio define as (R<sub>PRT</sub> / R<sub>s</sub>)

| Based on a 25.5 Ω SPRT Using a 25 Ω Reference Resistor |          |          | Measurement Mode        | 4-wire                                                                           |
|--------------------------------------------------------|----------|----------|-------------------------|----------------------------------------------------------------------------------|
| Temperature                                            | Premium  | Standard | Linearity               | < 0.005 x 10 <sup>-6</sup> of full-scale                                         |
| TPAr                                                   | 0.001 mK | 0.003 mK | Operating Conditions    | 10 °C to 35 °C, 10 % to 90 % RH non-condensing                                   |
| TPW                                                    | 0.004 mK | 0.017 mK | Test Current Range      | 1 μA to 200 mA                                                                   |
| FPSn                                                   | 0.008 mK | 0.035 mK | Test Current Resolution | 18-bit                                                                           |
|                                                        |          |          | Interface               | IEEE-488                                                                         |
|                                                        |          |          | Display                 | Touch-screen display (no external keyboard), resolution 0.001 x 10 <sup>-6</sup> |

**Dimensions (L × W × H):**  
438 × 406 × 267 (mm)

**Weight:**  
21 kg

**Shipping Weight:**  
30 kg

**Mains Power:**  
100 V<sub>ac</sub> / 120 V<sub>ac</sub> / 220 V<sub>ac</sub> / 240 V<sub>ac</sub>  
50/60 Hz

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