



ACCUBRIDGE® 6020Q QUANTUM HALL RATIO/RESISTANCE BRIDGE

Quantum Hall Ratio/Resistance Bridge



Featuring

- ▶ Range 0.1 Ω to 100 k Ω
- ▶ Best Accuracy < 0.015 $\mu\Omega/\Omega$
- ▶ NEW Current Algorithm following CCC methodology.
- ▶ NEW Zero-filter option
- ▶ NEW Microcontroller
- ▶ NEW Capacitive touchscreen and user interface
- ▶ Quantum Hall Applications Including Gallium Arsenide and Graphene Sample Measurements
- ▶ Vcr, Vxx, and Vxy Measurements
- ▶ Self-calibration of the Binary Wound Current Comparator (27-bit) plus Nanovolt
- ▶ Detector Reading
- ▶ Maximum Ratio 14:1
- ▶ Capacitive 7" Touchscreen
- ▶ IEEE-488.2 standard

Feature	Benefit
DCCT based.	Provides excellent stability and range linearity.
Vcr, Vxx and Vxy measurements.	Supports dissipation and contact resistance checks.
Accuracy < 0.015 $\mu\Omega/\Omega$	Allows sub-ppm high-stability measurements.
Maximum Ratio 14:1	Wide ratio range to cover laboratory standards and $R_K/2$
National lab continuity.	The only commercially available QHR resistance bridge used in primary or national laboratories worldwide.
Full DCC resistance range.	0.1 Ω to 100 k Ω .
Stable low currents.	1 μA to 200 mA ensures ultra-low noise measurements.



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Specifications: Rev 8

Resistance Measurement 0.1 Ω to 100 kΩ			
Range (1:1 Ratio)	Uncertainty (μΩ/Ω)	Range (1:10 Ratio)	Uncertainty (μΩ/Ω)
0.1 Ω to 0:1 Ω	0.15	0.1 Ω to 1 Ω	0.1
1 Ω to 1 Ω	0.015	1 Ω to 10 Ω	0.015
10 Ω to 10 Ω	0.015	10 Ω to 100 Ω	0.015
100 Ω to 100 Ω	0.015	100 Ω to 1 kΩ	0.015
1 kΩ to 1 kΩ	0.015	1 kΩ to 10 kΩ	0.015
10 kΩ to 10 kΩ	0.5	1 kΩ to 12.9 kΩ	0.015
		10 kΩ to 100 kΩ	0.05

- As a ratio device the accuracy specifications can be improved upon based on your standards and environmental conditions.
- Ratio bridge where the ratio accuracies can be verified at anytime using the interchange technique method for 1:1 ratio measurements with the following equation $r_e = (R_a - 1/R_b)/2$
- Uncertainties follow GUM at 2 sigma level (95%) along with the degrees of freedom

Measurement Mode	4-wire
Linearity	< 0.005 x 10 ⁻⁶ of full-scale
Operating Conditions	10 °C to 35 °C, 10 % to 90 % RH non-condensing
Test Current Range	1 μA to 200 mA
Test Current Resolution	18-bit
Interface	IEEE-488
Display	Touchscreen display (no external keyboard), resolution 0.001 x 10 ⁻⁶

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

Weight:
19 kg

Shipping Weight:
23 kg

Mains Power:

100 V_{ac} / 120 V_{ac} / 220 V_{ac} / 240 V_{ac}
50/60 Hz
200 VA (maximum)

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