



9820 Programmable Low Ohm Resistance

Time Electronics

Calibration, Test & Measurement

- **0.1 ohm to 100K ohm**
- **0.01% Basic Accuracy**
- **Platinum Resistance Thermometer Simulation**
- **GPIB/SERIAL interface**



The **9820** has been designed for applications where programmable low value resistance is required, e.g. platinum resistance thermometry.

Each decade is brought out on separate terminals allowing the resistance to be separated into decades and can be used independently if required and precision ratio dividers set up.

The full local control is particularly useful at system design stage and for checking and troubleshooting.

Construction is standard 19" 3U Euro-frame with plug-in modules which allow easy access and improved servicing/maintenance. The unit can be rack mounted or housed in a free standing case.

Programming

The resistance value is set by sending up to 6 numeric digits via the remote interface, either GPIB or RS232 Serial. The least significant digit sets the lowest decade and the most significant digit sets the highest decade. Less than 6 digits can be sent if it is not required to set all decades.

The unit can be sent into local control mode via the remote interface. The setting of the front panel digits switches can then be read back over the bus. The Group Execute Trigger Command (GET) is also supported.

9820 Technical Specifications

RESISTANCE SPECIFICATION

Resistance Range: 0.1 ohm to 100K ohm

Resistance Output Output is on 6 pairs of rear panel 4 mm terminals which divide the resistance into 6 independent decades

Accuracy:

0.1 ohm	± 5%
1 ohm	± 0.5%
10 ohm	±0.05%
100 ohm	± 0.01%
1K ohm	± 0.01%
10K ohms	± 0.01%

General Specification

<p>Residual Resistance: < 10 milliohm / decade</p> <p>Temp. Coefficient: less than 50 ppm/°C</p> <p>Power Rating: 1 watt max per decade</p> <p>Maximum Current: 1 Amp (1 watt max)</p> <p>Maximum Voltage: 100 Volts</p> <p>Operation Time: 50 ms</p> <p>Operating Life: 30 million operations</p> <p>Thermal Emfs: <2uV. The internally generated emfs have been kept to a minimum using special techniques.</p>	<p>Relay Contacts: Special attention has been given to the problem of reliability. Double pole gold contacts have been used.</p> <p>Remote Interface: GPIB (IEEE488) or RS232</p> <p>Device Address: Rear panel switch 0 – 31</p> <p>Bus Connection: Standard 24 pin GPIB connector and standard serial 9 pin DIN.</p> <p>Power: 110V/120V/220V/240V AC 50/60 Hz</p> <p>Operating Temperature: 0 – 40 °C</p>
<p>Dimensions: 480 x 374 x 154 mm Rack Mount Version 520 x 170 x 315 mm Bench Version</p> <p>Weight: 6 kg Rack Mount Version 11 kg Bench Version</p> <p>Optional Extras: Bench Case N.P.L. Traceable Calibration Certificate UKAS Calibration Certificate</p>	

Ordering Information

Code	Description
9820	Low Ohm Resistance 0.1 ohm to 100K ohm
9047	Bench Case
9163	N.P.L. Traceable Calibration Certificate
9120	UKAS Calibration Certificate

Due to continuous development Time Electronics reserves the right to change specifications without prior notice.

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