



8020B

- 17. Measure the local ac line voltage at a convenient output receptacle. The voltage should be displayed with 1 volt resolution.
- 18. If the 8020B has responded properly to this point, it is operational and ready for use.

1-13. ACCESSORIES

1-14 Table 1-2 lists the accessories available for use with the Model 8020B. Detailed information about each accessory is provided in brochures that are available at your local distributor.

1-15. SPECIFICATIONS

1-16. Table 1-3 lists the 8020B specifications. These specifications assume a 2 year calibration cycle and an operating temperature of 18°C to 28°C (64°F to 82°F) at a relative humidity of up to 90% unless otherwise noted.

Table 1-2. 8020B Accessories

ACCESSORY	DESCRIPTION
A81	Battery Eliminator
C25	Ruggedized Soft Case
C90	Vinyl Carrying Case
TL70	Right Angled Test Leads
80i-400	400 Amp Current Probe
80i-600	600 Amp Current Probe
80J-10	10 Amp Current Shunt
80K-6	6 kV High Voltage Probe
80K-40	40 kV High Voltage Probe
80TK	Thermocouple Module
80T-150	Temperature Probe
83RF	High Frequency Probe
85RF	High Frequency Probe
Y8100	AC/DC Current Probe
Y8101	15 Amp Current Probe
Y8105	Hard Case
Y8132	Safety Designed Test Lead Set
Y8134	Deluxe Test Lead Set
Y8140	Slim Test Lead Set

Table 1-3. 8020B Specifications

The following specifications assume a 2-year calibration cycle and an operating temperature of 18°C to 28°C (64°F to 82°F) at a relative humidity up to 90%, unless otherwise noted.

FUNCTIONS DC Volts, AC Volts, DC Current, AC Current, Resistance, Conductance, and Continuity.

Table 1-3. 8020B Specifications (cont)

DC VOLTS				
RANGE	RESOLUTION	ACCURACY FOR 2 YEARS		
±200 mV	100 μ V	±(0.1% of reading +1 digit)		
±2V	1 mV			
±20V	10 mV			
±200V	100 mV			
±1000V	1V			
<p>Overvoltage Protection 1000V dc or peak ac on all ranges.</p> <p>Input Impedance 10 MΩ, all ranges.</p> <p>Normal Mode Rejection Ratio >60 dB at 50 Hz and 60 Hz.</p> <p>Common Mode Rejection Ratio (1 kΩ unbalance) >100 dB at dc, 50 Hz and 60 Hz.</p> <p>Response Time Less than one second.</p>				
AC VOLTS (Average Sensing, RMS Calibrated For Sinewave)				
RANGE	RESOLUTION	ACCURACY		
		45 Hz to 1 kHz	1 kHz to 2 kHz	2 kHz to 5 kHz
200 mV	100 μ V	±(0.75% of reading +2 digits)	±(1.5% of reading +3 digits)	±(5% of reading +5 digits)
2V	1 mV			
20V	10 mV			
200V	0.1V			
750V	1V	±1% of reading +2 digits	Not specified	Not specified
<p>Overload Protection 750V rms or 1000V peak continuous, except 200 mV ac ranges (15 seconds maximum above 300V rms ac).</p> <p>Common Mode Rejection Ratio (1 kΩ unbalance) >60 dB at 50 Hz and 60 Hz.</p> <p>Volt-Hz Product 10⁷ max (200V @ 50 kHz).</p> <p>Input Impedance 10 MΩ in parallel with <100 pF.</p>				
DC CURRENT				
RANGE	RESOLUTION	ACCURACY FOR 2 YEARS	BURDEN VOLTAGE	
2 mA	1 μ A	±(0.75% of reading +1 digit)	0.3V max	
20 mA	10 μ A			
200 mA	100 μ A			
2000 mA	1 mA		0.9V max	
<p>Overload Protection 2A/250V fuse, in series with a 3A/600V fuse.</p>				

Table 1-3. 8020B Specifications (cont)

AC CURRENT

RANGE	RESOLUTION	ACCURACY FOR 2 YEARS		BURDEN VOLTAGE
		45 Hz to 450 Hz	450 Hz to 1 kHz	
2 mA	1 μ A	$\pm(3\% \text{ rdg} + 2 \text{ d})$	Not Specified	0.3V rms max
20 mA	10 μ A	$\pm(1.5\% \text{ of reading} + 2 \text{ digits})$		
200 mA	100 μ A			
2000 mA	1 mA			0.9V rms max

Overload Protection 2A/250V fuse, in series with a 3A/600V fuse.

RESISTANCE

RANGE	RESOLUTION	ACCURACY FOR 2 YEARS	FULL-SCALE VOLTAGE	MAXIMUM TEST CURRENT
200 Ω	0.1 Ω	$\pm(0.2\% \text{ of reading} + 3 \text{ digits})$	<0.25V	.35 mA
2 k Ω \rightarrow	1 Ω	$\pm(0.1\% \text{ of reading} + 1 \text{ digit})$	>1.0V	1.1 mA
20 k Ω	10 Ω		<0.25V	13 μ A
200 k Ω	100 Ω		>0.7V	13 μ A
2000 k Ω	1 k Ω	$\pm(2\% \text{ of reading} + 1 \text{ digit})$	<0.25V	0.13 μ A
20 M Ω	10 k Ω		>.7V	0.13 μ A

Overload Protection 500V dc rms ac on all ranges. 15 seconds maximum above 300 volts.

Open Circuit Voltage Less than 1.5V on all ranges except 2 k Ω range is less than 3.5V.

Diode Test (Hi-Lo Ohms) ... 2 k Ω , 200 k Ω , and 20 M Ω ranges supply enough voltage to turn on junctions allowing a "Diode Test". The 2 k Ω range is preferred and is marked with a diode symbol. 200 Ω , 20 k Ω , and 2000 k Ω ranges can make in-circuit measurements without turning on silicon junctions.

CONDUCTANCE

RANGE	ACCURACY
2 mS	$\pm(0.2\% \text{ of reading} + 1 \text{ digit})$
200 nS	$\pm(2.0\% \text{ of reading} + 10 \text{ digits})$

Overload Protection 500V dc/rms ac on all ranges.

Open Circuit Voltage 2 mS <3.5V
200 nS <1.5V

Diode Test Both ranges will forward bias a typical PN junction.

Table 1-3. 8020B Specifications (cont)

CONTINUITY (for Passive Circuit Testing)*	
Ranges	All resistance ranges. (2 k Ω range recommended for lowest resistance threshold)
Indication	
CONTINUITY	Audible tone
OPEN CIRCUIT	No audible tone
Response Time	50 μ s (Minimum duration of continuity or open to toggle audible tone) on 2 k Ω range. Pulse stretcher holds tone on or off for approximately 200 ms.
Overload Protection	500V dc/rms ac on all ranges.
GENERAL	
Protection Class 2	Relates solely to insulation or grounding properties defined in IEC 348.
Maximum Common Mode	
Voltage	500V dc/rms ac.
Power Requirements	Single 9V battery, NEDA 1604.
BATTERY LIFE	
Alkaline	200 hours typical.
Zinc Carbon	100 hours typical.
BATTERY INDICATOR	"BT" on display illuminates when approximately 20% of battery life remains.
Display	3½ digit LCD (2,000 count), autozero, autopolarity.
Size	L x W x H: 18.0 cm x 8.6 cm x 4.5 cm (7.1 in x 3.4 in x 1.8 in)
Weight	0.37 kg. (13 oz)
ENVIRONMENTAL	
Temperature	0°C to 50°C (32°F to 122°F) operating. -35°C to +60°C (-31°F to 140°F) storage.
Relative Humidity	0 to 80%, 0°C to 35°C (32-95°F) on 2M Ω , 20 M Ω , and 200 nS ranges. 0-90%, 0°C to 35°C (32-95°F) on all other ranges. 0 to 70%, 35°C to 50°C (95-122°F)
Temperature Coefficient	<0.1 times the applicable accuracy specification per °C for 0°C to 18°C and 28°C to 50°C (32°F to 64.4°F and 50.4°F to 122°F).