

1000 SERIES

EXTENDED SPECIFICATIONS



- 1000A ULTRA PORTABLE
 - 1000B COMPACT BENCH
- ### MULTI FUNCTION CALIBRATORS



Warm Up Time	Double the time since last used up to 20 minutes maximum	
Standard Interface	USB	
Temperature Performance	Storage : -5°C to +60°C Operation : 0°C to +50°C	
Relative Humidity	Operation : <80% to 30°C, <70% to 40°C, <40% to 50°C Storage : <95%, non-condensing	
Altitude	Operation : 3000m (10,000ft) Maximum Transit : 12000m (40,000ft) Maximum	
EMC & Safety	The calibrator line input plug must be earthed See D.O.C for full details	
Line Power	Line Voltage Selectable : 110V / 230V Line Frequency : 50Hz to 60Hz Line Voltage Variation : -6% +10%	
Connections	Voltage / 2 Wire Resistance Low Current (<=1A) High current (>1A) Adapter Interface Connection	1x Black : 1x Red 4mm Safety sockets 1x Blue 4mm Safety sockets 1x Yellow 4mm Safety sockets 1x Female 'D' type socket
Display Information	Type Viewing Area Resolution Backlight Type Brightness	Backlit blue on white STN Type 133mm * 39mm 240 x 64 dots LED 230 to 260 cd/m ²
Indicators	Voltage / Current / High Current Adapter Interface	Red LED Red LED (right of 'D' type connector)
Keyboard	Rubber key	
Dimensions & Weights	1000A 1000B	H=180 • W=447 • D=297 : Weight 9.2kg H=257 • W=432 • D=185 : Weight 9.5kg
Warranty Period	1 Year (Parts & Labour)	
Recommended Service Interval	1 Year	
Supplied Connections	1x USB Interface Connection 1x Adaptor Connection Lead (if at least one adaptor ordered)	1x Mains Lead
Optional Lead Set Kit	1x Voltage connection leadset 1x Low Current connection leadset 1x High current connection leadset 1x AC connection leadset 1 x Thermocouple Lead (per type supported)	
Rack Mounting	Model 1000M	
Case Colour	1000A : Black • 1000B : Cream (RAL 9002)	

Standard Interface

Range	Resolution	Max. Burden Current	Typical Output Resistance ¹	1 Year	
				ppm set	uV
0 to 104mV	1uV	100mA	0.5ohms	80 +	10
0.104 to 1.04V	10uV	100mA	0.5ohms	80 +	30
1.04V to 10.4V	100uV	100mA	0.5ohms	80 +	300
10.4V to 104V	1mV	12mA	1.5ohm	80 +	3000
104 to 1020V	10mV	12mA	1.5ohm	80 +	30000

DC Current

Range	Resolution	Max. Inductive	Compliance	1 Year Total	
				% Set	uA
0 to 104uA	1nA	10mH	6V	0.03 +	0.03
0.104 to 1.04mA	10nA	10mH	6V	0.03 +	0.1
1.04 to 10.4mA	100nA	10mH	6V	0.03 +	1
10.4 to 104mA	1uA	10mH	6V	0.03 +	10
104 to 1040mA	10uA	10mH	5V	0.03 +	150
1.04 to 10.2A	100uA	10mH	3V	0.05 +	2000

AC Voltage

Range	Frequency	Resolution	Max. Burden Current	Typical Output Resistance	1 Year Accuracy	
					% Set	mV
0 to 104mV	10Hz to 1.999kHz	1uV	100mA	0.5ohms	0.08 +	0.03
	2kHz to 20kHz	100uV	100mA	0.5ohms	0.15 +	7
10.4 to 104V	40Hz to 1kHz	1mV	12mA	1.5ohms	0.08 +	30
104V to 1020V	40Hz to 1kHz	10mV	12mA	1.5ohms	0.08 +	300

Specification applies for 10% to 100% of range only.

AC Current

Range	Frequency	Resolution	Maximum Burden Voltage (Peak)	1 year Accuracy	
				%Set	uA
10.4 to 104uA	10Hz to 2kHz	1nA	6V	0.10 +	0.4
0.104 to 1.0mA	10Hz to 2kHz	10nA	6V	0.10 +	0.8
1.04 to 10.4mA	10Hz to 2kHz	100nA	6V	0.10 +	8
10.4 to 104mA	10Hz to 2kHz	1uA	6V	0.10 +	80
104 to 1040mA	10Hz to 2kHz	10uA	6V	0.10 +	800
1.04 to 10.4A	10Hz to 2kHz	100uA	6V	0.10 +	15000

Specification applies for 10% to 100% of range only.

Frequency

Range	Resolution	1 year ppm
10Hz to 100kHz	1Hz	20

Simulated Resistance

Range	Display Resolution	Meas. I (Max.)	1 year	
			% (Rng)	Zero
0R to 10R	1m Ω	320mA	0.02	50m Ω
10R to 50R	10m Ω	320mA	0.02	50m Ω
50R to 100R	10m Ω	30mA	0.02	50m Ω
101R to 1kR	100m Ω	3mA	0.02	50m Ω
1.01kR to 10kR	1 Ω	300uA	0.02	50m Ω
10.1kR to 100kR	10 Ω	40uA	0.02	50m Ω
101kR to 1MR	100 Ω	4uA	0.02	50m Ω
1.01MR to 10MR	1k Ω	0.4uA	0.05	50m Ω

Passive Resistance

Range	Maximum Current	Maximum Voltage	Display Resolution	1 Year	
				% set	Ohms
10 Ω	0.3A	-	100u Ω	0.05	+ 0.05
100 Ω	0.1A	-	1m Ω	0.05	+ 0.05
1k Ω	-	10V	10m Ω	0.02	+ 0.05
10k Ω	-	50V	100m Ω	0.02	+ 0.4
100k Ω	-	100V	1 Ω	0.02	+ 4
1M Ω	-	100V	10 Ω	0.05	+ 40
10M Ω	-	100V	100 Ω	0.10	+ 400
100M Ω	-	100V	1k Ω	0.20	+ 4000

Capacitance

Range	Maximum Voltage	Display Resolution	1 year %
10nF	50V	0.1pF	0.8
100nF	50V	1pF	0.8
1uF	50V	100pF	0.8

Thermocouple Simulation

Thermocouple Type	Range	1 Year ¹ Rel. (°C)	1 Year ¹ Inc. CJC (°C)
J	-210°C to -100°C	0.46	1.16
	-100°C to 150°C	0.22	0.92
	150°C to 760°C	0.28	0.98
	760°C to 1200°C	0.38	1.08
K	-200°C to -100°C	0.54	1.24
	-100°C to 120°C	0.30	1.00
	120°C to -1370°C	0.52	1.22
T	-250°C to -150°C	1.20	1.90
	-150°C to 400°C	0.22	0.92
R	0°C to 250°C	1.60	2.30
	250°C to 1760°C	1.02	1.72
S	0°C to 250°C	1.60	2.30
	250°C to 1760°C	1.02	1.72
B	600°C to 1820°C	1.50	2.20
N	-200°C to -100°C	0.84	1.54
	-100°C to 410°C	0.40	1.10
	410°C to 1300°C	0.48	1.18
E	-250°C to -100°C	1.00	1.70
	-100°C to 650°C	0.24	0.94
	650°C to 1000°C	0.30	1.00
L	-200°C to 900°C	0.68	1.38
U	-200°C to 600°C	0.8	1.54
C	0°C to 1000°C	0.6	1.34
	1800°C to 2310°C	1.4	2.06

Cold Junction $\pm 0.7^{\circ}\text{C}$ **PRT**

Simulated PRT	Range	1 Year ¹ Rel. (°C)	DMM Range
R0 = 100ohms	-200°C to 0°C	0.3	100R range
	0°C to 800°C	0.5	1k range

INSULATION

Function	Range	1 Year ¹ %
Resistance	1MR to 1GR	0.8

Notes

Specifications apply between 18 to 28°C. TC must be applied outside this temperature range.