SPECIFICATIONS

DC Voltage (DC V)

● Ranges

Range	Sampling SLOW / MID2 / MID1		Sampling FAST		Input Resistance	Max. Input (Hi-Lo)
	Max. Reading	Resolution	Max. Reading	Resolution		
200 mV	199.999	1 µV	199.99	10 µV	>1 GΩ	±1000 V PEAK (10s) ± 500 V PEAK (continuously)
2000 mV	1999.99	10 µV	1999.9	100 µV		
20 V	19.9999	100 µV	19.999	1 mV	10MΩ ±1%	±1000V PEAK (continuously)
200 V	199.999	1 mV	199.99	10 mV		
1000 V	1000.00	10 mV	1000.0	100 mV		

● Accuracy (Sampling SLOW) : ±(% of reading + digits)

Range	24h, 23±1℃	90days, 23±5℃	1 year, 23±5℃	Temperature Coefficient (5 to 18, 2 to 40℃)
200 mV	0.0055+6(6)	0.009+8(6)	0.012+8(6)	0.0011+1 (0.4)
2000 mV	0.0045+3(5)	0.006+3(5)	0.009+3(5)	0.0009+0.5 (0.3)
20 V	0.007+4(6)	0.0012+4(6)	0.02+4(6)	0.0012+0.5 (0.3)
200 V	0.006+3(5)	0.011+3(5)	0.019+3(5)	0.0012+0.5 (0.3)
1000 V	0.008+3(5)	0.013+3(5)	0.021+3(5)	0.0015+0.5 (0.3)

* The 24 h, 23±1°C accuracy is the value with respect to the calibration standard.
* The NULL function is used.
* When sampling MID2 is used, 1 is added to the value of digits of SLOW.
* When sampling MID1 is used, 3 is added to the value of digits of SLOW.
* The number in parentheses is the value of digits in the case of sampling FAST.
* Common mode rejection ratio: 120 dB or better
  (Value at sampling SLOW/MID2/MID1, 50/60 Hz±0.1%, Rs = 1 kΩ)
* Normal mode rejection ratio: 60 dB or better
  (Value at sample SLOW/MID2/MID1, 50/60 Hz±0.1%)
* Maximum allowable voltage between Lo and the case: ±500 V PEAK

DC Current (DC A)

● Ranges

Range	Sampling SLOW / MID2 / MID1		Sampling FAST		Input Resistance
	Max. Reading	Resolution	Max. Reading	Resolution	
2000 µA	1999.99	10 nA	1999.9	100 nA	<11 Ω
20 mA	19.9999	100 nA	19.999	1 µA	<11 Ω
200 mA	199.999	1 µA	199.99	10 µA	<0.3 Ω
2000 mA	1999.99	10 µA	1999.9	100 µA	<0.3 Ω

● Accuracy (Sampling SLOW) : ±(% of reading + digits)

Range	1 year, 23±5℃
2000 µA	0.06 +100(100)
20 mA	0.06 + 20(20)
200 mA	0.12 + 80(20)
2000 mA	0.12 + 40(40)

* When sampling MID2 is used, 10 is added to the value of digits of SLOW.
* When sampling MID1 is used, 20 is added to the value of digits of SLOW.
* The number in parentheses is the value of digits in the case of sampling FAST.
* Temperature coefficient: ±(1/10 of measurement accuracy)/℃
* Allowable current: 2 A (built-in 2 A fuse)

● When current clamp (**751106**) is used

Range	Max. Reading	Resolution	Accuracy : ±(% of reading + digits)
200 V	199.9	100 mA	2 + 10 (≤150 A)
			2.5 + 10 (>150 A)

* The accuracy is the value over one year, at 23±5°C, after zero adjustment.
* Temperature coefficient: ±(1/10 of measurement accuracy)/℃

Resistance (OHM)

● Ranges

Range	Sampling SLOW / MID2 / MID1		Sampling FAST		Current Through Unknown
	Max. Reading	Resolution	Max. Reading	Resolution	
200 Ω	199.999	1 mΩ	199.99	10 mΩ	1 mA
2000 Ω	1999.99	10 mΩ	1999.9	100 mΩ	1 mA
20 kΩ	19.9999	100 mΩ	19.999	1 Ω	100 µA
200 kΩ	199.999	1 Ω	199.99	10 Ω	25 µA
2000 kΩ	1999.99	10 Ω	1999.9	100 Ω	2.5 µA
20 MΩ	19.9999	100 Ω	———	———	250 nA
200 MΩ	199.99	10 kΩ	———	———	25 nA

● Accuracy (4-wire system, Sampling SLOW):±(% of reading + digits)

Range	24 h, 23±1℃	90 days, 23±5℃	1 year, 23±5℃	Temperature Coefficient (5 to 18, 28 to 40℃)
200 Ω	0.008+6(6)	0.015+7(6)	0.019+7(6)	0.0021+1(1.5)
2000 Ω	0.007+4(5)	0.012+6(5)	0.016+6(5)	0.0016+1(0.4)
20 kΩ	0.007+3(5)	0.012+5(5)	0.016+5(5)	0.0016+1(0.4)
200 kΩ	0.008+3(5)	0.013+5(5)	0.017+5(5)	0.0016+1(0.4)
2000 kΩ	0.03+15(20)	0.05+20(30)	0.05+20(30)	0.005+1(0.4)
20 MΩ	0.25+30	0.25+30	0.25+30	0.02+3
200 MΩ	2+20	2+20	2+20	0.05+5

* The 24 h, 23 ±1°C accuracy is the value with respect to the calibration standard.
* The NULL function is used.
* When sampling MID2 is used, 1 is added to the value of digits of SLOW.
* When sampling MID1 is used, 3 is added to the value of digits of SLOW.
* The number in parentheses is the value of digits in the case of sampling FAST.
* The accuracy in the case of the 2-wire method is the same as that of the 4-wire method. However, 4 mΩ/℃ is added to the temperature coefficient.
* Excludes the effect of the lead wires.
* Open temperature voltage: Max. 12.5 V
* Max. input: ±300 V PEAK (between Hi and Lo, between SENSE Hi and SENSE Lo)
* Response time: Until the reading falls within the specified accuracy
  2000 kΩ/20 MΩ range Within 0.4 seconds
  200 MΩ range Within 5 seconds

AC Voltage (AC V)

● Ranges

Range	Sampling SLOW / MID2 / MID1		Input Resistance	Max. Input (Hi-Lo)
	Max. Reading	Resolution		
200 mV	199.999	1 µV	1 MΩ±2% Approx. 150 pF	700 Vrms or ±1000 V PEAK less than 10^7 V·Hz
2000 mV	1999.99	10 µV		
20 V	19.9999	100 µV		
200 V	199.999	1 mV		
700 V	1000.00	10 mV		

● Accuracy (Sampling SLOW):±(% of reading + digits), 1 year, 23±5°C

Range	20 to 30 Hz	30 to 45 Hz	45 Hz to 10kHz	10 to 20 kHz	20 to 50 kHz	50 to 100 kHz
200 mV	0.9+250	0.5+250	0.4+250	0.5+300	0.8+500	2+500
2000 mV	0.8+100	0.4+100	0.2+100	0.4+200	0.6+500	2+500
20 V	0.8+100	0.4+100	0.2+100	0.4+200	0.6+500	2+500
200 V	1+100	0.4+100	0.3+100	0.4+200	0.8+500	3+500
700 V	1+100	0.4+100	0.4+100	0.6+300		

* When sampling MID2 is used, 10 is added to the value of digits of SLOW.
* When sampling MID1 is used, 20 is added to the value of digits of SLOW.
* AC coupling: True RMS value measurement method
* Input range: Sinusoidal waveform of between 5 and 100% of the range
* Response time: Until the reading falls within ±0.2% of the final value Within 400 ms
* Crest factor: 3 at full scale (For 700 V range: 2 at full scale)
* Temperature coefficient: ±(1/10 of the measurement accuracy)/℃
* Maximum allowable voltage between Lo and the case: ±500 V PEAK

AC Current (AC A)

● Ranges

Range	Sampling SLOW / MID2 / MID1		Input Resistance (50 Hz)
	Max. Reading	Resolution	
2000 µA	1999.99	10 nA	<11 Ω
20 mA	19.9999	100 nA	<11 Ω
200 mA	199.999	1 µA	<0.3 Ω
2000 mA	1999.99	10 µA	<0.3 Ω

● Accuracy (Sampling SLOW): ±(% of reading + digits), 1 year, 23±5°C

Range	20 to 30Hz	30 to 45Hz	45Hz to 2kHz	2 to 5kHz
2000 µA	1.5+350	0.8+300	0.5+300	0.8+300
20 mA	1.3+300	0.8+200	0.5+200	0.8+200
200 mA	1.3+300	0.8+300	0.5+300	0.8+300
2000 mA	1.5+300	1.5+200	1+200	1.5+200

* When sampling MID2 is used, 10 is added to the value of digits of SLOW.
* When sampling MID1 is used, 20 is added to the value of digits of SLOW.
* AC coupling: True RMS value measurement method
* Input: Sinusoidal waveform of between 5 and 100% of the range
* Response time: Until the reading falls within ±0.2% of the final value Within 400 ms
* Crest factor: 3 at full scale
* Temperature coefficient: ±(1/10 of the measurement accuracy)/°C
* Maximum allowable current: 2 A (built-in 2 A fuse)

◆ When current clamp (**751106**) is used.

Range	Max. Reading	Resolution	Accuracy : ±(% of reading + digits)
150 V	150.0	100 mA	2 + 10

* The accuracy is the value over one year, at 23±5°C, after zero adjustment.
* 40 to 500 Hz
* Temperature coefficient: ±(1/10 of measurement accuracy)/°C

Communication Functions

* RS-232-C interface (standard provision)

Transmission method: Start-stop synchronization
Transmission speed: 75, 150, 300, 600, 1200, 2400, 4800, 9600 bits/s
Handshake mode, baud rate, number of bits, and header can be set to ON or OFF.

* GP-IB interface (option)

Electrical and mechanical specifications:
Conforms to IEEE ST'd 488-1978
(Conforms to IEEE ST'd 488.2-1987)
Functional specifications: SH1, AH1, T5, L4, SR1, RL1, PP0, DC1, DT1, C0C
Address mode, address, and header can be set to ON or OFF.

Sampling

	Sampling Speed	Integrating Time
SLOW	2/s	200 ms
MID2	4/s	100 ms
MID1	20/s	20 or 16.67 ms
FAST	50/s (125/s)	2 ms

* When MID1 is used, 20 ms (50 Hz) or 16.66 ms (60 Hz) is automatically selected according to the supply voltage frequency.
* In the case of AC voltage and AC current measurement, MID1 is activated when FAST is selected.
* In the 20 M and 200 MΩ range, MID2 is activated when FAST or MID1 is selected.

General Specifications

Operating principle:	feedback pulse width modulation method
Sample mode:	Auto/Single
Sampling rate:	Four modes of SLOW, MID2, MID1, and FAST are available.
Maximum reading:	199999
Over-range information:	-oL- sign display
Data memory:	Up to 2000 items of measurement data and also 10 kinds of setup information can be saved.
Operating temperature:	5 to 40°C
Humidity:	20 to 80% RH
Power requirements:	100 V AC (90 to 110 V AC), 120 V AC (108 to 132 V AC) 230 V AC (207 to 253 V AC) 50 or 60 Hz
Storage temperature:	-5 to 50°C
Power consumption:	20 VA max.
Warmup Time:	Approx. 60 minutes (until all specifications are satisfied)
Dimensions:	Approx. 213 (W) × 88 (H) × 350 (D) mm
Weight:	Approx. 3 kg

Optional Specifications

GP-IB:	See Communications Functions above.
Simple scanner:	8 ch, 2-wire (Available for DC voltage measurement only)
Maximum tolerable voltage:	30 V between Hi and Lo terminals, 30 V between channels, 250 V peak between Hi/Lo terminals and the housing Channel number is displayed on the front panel.
Accuracy:	Add 20 to the digits value given as the accuracy for the DC voltage measurement when the range is 2000 mV or less. Add (0.02% of reading + 20 digits) to the value given as the accuracy for the DC voltage measurement when the range is 20 V or more.
BCD output:	Data output: BCD parallel output Output data: measurement data, decimal point, unit, polarity, over-range Connector: 50-pin (equivalent to Amphenol 57-40500)
DA output	Output voltage range: -1 V to + 1 V / F.S. Corresponding reading: any three contiguous digits (or 3 1/2-digits in the case of "1999") of the displayed data

Standard operating condition
Humidity: 50 ±10% RH
Power supply voltage 100 V AC ±1%

Standard Accessories

Power supply cord : 1 piece
Measurement lead : 1 piece
Fuse 2A (FAST) : 1 piece
Remote connector : 1 piece
Instruction manual : 1 copy