

SELECTION GUIDE

< Selection Symbols >

DC V DC Voltage	DC A DC Current	OHM-2W OHM 2-wire
OHM-4W OHM 4-wire	AC Vrms AC Voltage rms	AC Arms AC Current rms
SAMPLE 333 Sampling rate (333 times/s)	MATH Mathematical function	MEMO 1000 Internal memory (1,000 data)
IC Card IC memory card (8,000 data)	F/R Input-site change between front and rear panels	GP-IB GP-IB Interface
RS-232-C RS-232-C Interface		

<7560 Series >

- 6-1/2 digits
- 1,999,999
- DC V accuracy: $\pm 0.003\%$

7561			7562		
DC V	DC A	OHM-2W	DC V	DC A	OHM-2W
OHM-4W			OHM-4W	AC Vrms	AC Arms
SAMPLE 333	MATH	MEMO 1000	SAMPLE 333	MATH	MEMO 1000
IC Card	F/R	GP-IB	IC Card	F/R	GP-IB
RS-232-C			RS-232-C		

SPECIFICATIONS

■ GENERAL SPECIFICATIONS

Operating Principle: Feedback pulse width modulation.

Sample Mode: Auto/Single/N reading.

Sampling Interval: 3 ms to 60 min (7561 and 7562), (1 ms min., 1s at 3s or more)

Maximum Reading: 1,999,999

Overrange Information: — oL— sign display.

Data Memory: 1,000 data, measured data can be stored and recalled: (STORE/RECALL).

Ranging: AUTO, MANUAL, (remote control and programming possible).

Operating Temperature Range: 5 to 40°C (41 to 104°F).

Humidity Range: 20 to 80% relative humidity.

Warmup Time: Approx. 60 minutes to rated accuracy.

Power Requirements: 100 or 115, 200 or 230 V AC (must be specified), 50 or 60 Hz.

Power Consumption: 20 VA max.

Dimensions (Approx.): 213(W) × 88(H) × 330(D) mm, (8-3/8 × 3-1/2 × 13").

Weight (Approx.): 3 kg (6.6 lbs).

7561 & 7562

7560 Series (Common to 7561 and 7562)

DC VOLTAGE (DC V)

Ranges:

*16.7 ms shows 16.66

Range	Integrating Time (500/200 ms)		Integrating Time (100/20/16.7 ms)*		Integrating Time (2.5/1.2 ms)		Input Resistance	Max. Input
	Max. Reading	Resolution	Max. Reading	Resolution	Max. Reading	Resolution		
200 mV	199.9999	0.1 μ V	199.999	1 μ V	199.99	10 μ V	>1 G Ω	\pm 1,000 V pk (10s) \pm 600 V pk continuously between Hi and Lo
2,000 mV	1,999.999	1 μ V	1,999.99	10 μ V	1,999.9	100 μ V		
20 V	19.99999	10 μ V	19.9999	100 μ V	19.999	1 mV		
200 V	199.9999	100 μ V	199.999	1 mV	199.99	10 mV	10 M Ω \pm 1%	\pm 1,000 V pk continuously
1,000 V	1,100.000	1 mV	1,100.00	10 mV	1,100.0	100 mV		

Accuracy (Integrating Time 500 ms): \pm (% of reading + digits)

Range	24 hours, 23 \pm 1 $^{\circ}$ C	90 days, 23 \pm 5 $^{\circ}$ C	1 year, 23 \pm 5 $^{\circ}$ C	Temperature Coefficient (5 to 18, 28 to 40 $^{\circ}$ C)
200 mV	0.004 + 30(6) {4}	0.006 + 40(8) {4}	0.01 + 40(8) {4}	0.0007 + 5(.6) {.2}
2,000 mV	0.0025 + 10(3) {3}	0.0045 + 15(3) {3}	0.0075 + 15(3) {3}	0.00055 + 1(.2) {.1}
20 V	0.003 + 10(3) {3}	0.005 + 15(3) {3}	0.009 + 15(3) {3}	0.00065 + 1(.2) {.1}
200 V	0.0045 + 10(3) {3}	0.009 + 15(3) {3}	0.016 + 15(3) {3}	0.00075 + 1(.2) {.1}
1,000 V	0.005 + 10(3) {3}	0.01 + 20(3) {3}	0.017 + 20(3) {3}	0.0008 + 1(.2) {.1}

● Accuracy at 24 hours, 23 \pm 1 $^{\circ}$ C is the value for the calibration standard.

● Auto Zero ON, Null.

● **Integrating Time:** At 200 ms, 2 is added to the value (digits) in integrating time 500 ms.

● () indicates the value (digits) in integrating time 100 ms. For integrating time 20/16.7 ms, 2 is added to the value (digits) enclosed in the parentheses.

● { } indicates the value (digits) in integrating time 2.5 ms. For integrating time 1.2 ms, 2 is added to the value (digits) enclosed in the brackets.

● At Auto Zero OFF, temperature coefficient of \pm (0.0015% of range + 25 μ V)/ $^{\circ}$ C is added (at 5 to 40 $^{\circ}$ C).

● **Common Mode Rejection:** 120 dB or more.

Integrating time 500/200/100/20/16.7 ms, RS = 1 k Ω , 50/60 Hz \pm 0.1%

● **Normal Mode Rejection:** 60 dB or more.

Integrating time 500/200/100/20/16.7 ms, 50/60 Hz \pm 0.1%

● **Maximum Allowable Voltage:** \pm 500 V peak between Lo and case.

DC CURRENT (DC A)

Ranges:

Range	Integrating Time (500/200/100/20/16.7 ms)		Integrating Time (2.5/1.2 ms)		Input Resistance
	Max. Reading	Resolution	Max. Reading	Resolution	
2 mA	1.99999	10 nA	1.9999	100 nA	< 110 Ω
20 mA	19.9999	100 nA	19.999	1 μ A	< 11 Ω
200 mA	199.999	1 μ A	199.99	10 μ A	< 1.2 Ω
2,000 mA	1,999.99	10 μ A	1,999.9	100 μ A	< 0.3 Ω

● Auto Zero ON.

● **Integrating Time:** At 200/100/20/16.7 ms, 20 is added to the value (digits) in integrating time 500 ms.

● **Temperature Coefficient:** \pm (1/10 of measurement accuracy)/ $^{\circ}$ C.

● **Allowable Current:** 2 A (2 A fuse installed).

Accuracy (Integrating Time 500 ms): \pm (% of reading + digits)

Range	1 year, 23 \pm 5 $^{\circ}$ C
2 mA	0.05 + 100
20 mA	0.05 + 20
200 mA	0.05 + 20
2,000 mA	0.1 + 40

RESISTANCE (OHM)

Ranges:

Range	Integrating Time (500/200 ms)		Integrating Time (100/20/16.7 ms)		Integrating Time (2.5/1.2 ms)		Current through Unknown
	Max. Reading	Resolution	Max. Reading	Resolution	Max. Reading	Resolution	
200 Ω	199.9999	100 μΩ	199.999	1 mΩ	199.99	10 mΩ	1 mA
2,000 Ω	1,999.999	1 mΩ	1,999.99	10 mΩ	1,999.9	100 mΩ	1 mA
20 kΩ	19.99999	10 mΩ	19.9999	100 mΩ	19.999	1 Ω	100 μA
200 kΩ	199.9999	100 mΩ	199.999	1 Ω	199.99	10 Ω	10 μA
2,000 kΩ	1,999.999	1 Ω	1,999.99	10 Ω	1,999.9	100 Ω	1 μA
20 MΩ	19.9999	100 Ω	19.9999	100 Ω	19.999	1 kΩ	100 nA
200 MΩ	199.999	1 kΩ	199.999	1 kΩ	199.99	10 kΩ	50 nA

Accuracy (4-wire System, Integrating Time 500 ms): ±(% of reading + digits)

Range	24 hours, 23±1°C	90 days, 23±5°C	1 year, 23±5°C	Temperature Coefficient (5 to 18, 28 to 40°C)
200 Ω	0.007 + 40(6) {4}	0.012 + 50(7) {4}	0.016 + 50 (7) {4}	0.0012 + 10(2) {.5}
2,000 Ω	0.005 + 25(4) {3}	0.01 + 35(6) {3}	0.014 + 35(6) {3}	0.001 + 2(.5) {.1}
20 kΩ	0.005 + 20(3) {3}	0.01 + 30(5) {3}	0.014 + 30(5) {3}	0.001 + 2(.5) {.1}
200 kΩ	0.007 + 20(3) {3}	0.011 + 30(5) {3}	0.015 + 30(5) {3}	0.001 + 2(.5) {.1}
2,000 kΩ	0.02 + 135(15) {20}	0.03 + 150(20) {30}	0.05 + 150(20) {30}	0.004 + 2(.5){.1}
20 MΩ	0.2 + 30(30)	0.2 + 30(30)	0.2 + 30(30)	0.02 + 1(1)
200 MΩ	2 + 200(200)	2 + 200(200)	2 + 200(200)	0.05 + 2(2)

AC VOLTAGE (AC V) (7562 only)

Ranges:

Range	Integrating Time (500/200/100/20/16.7 ms)		Integrating Time (2.5/1.2 ms)		Input Resistance	Max. Input
	Max. Reading	Resolution	Max. Reading	Resolution		
200 mV	199.999	1 μV	199.99	10 μV	1 MΩ ±2% approx. 150 pF	700 V rms or ±1,000 V pk between Hi and Lo
2,000 mV	1,999.99	10 μV	1,999.9	100 μV		
20 V	19.9999	100 μV	19.999	1 mV		
200 V	199.999	1 mV	199.99	10 mV		
700 V	700.00	10 mV	700.0	100 mV		

Accuracy (Integrating Time 500 ms): ±(% of reading + digits), 1 year, 23±5°C

Range	20 to 30 Hz	30 to 45 Hz	45 Hz to 10 kHz	10 to 20 kHz	20 to 50 kHz	50 to 100 kHz
200 mV	0.9 + 200	0.5 + 200	0.3 + 200	0.3 + 300	0.7 + 500	2 + 500
2,000 mV	0.8 + 100	0.4 + 100	0.15 + 100	0.3 + 200	0.5 + 500	2 + 500
20 V	0.8 + 100	0.4 + 100	0.15 + 100	0.3 + 200	0.5 + 500	2 + 500
200 V	1 + 100	0.4 + 100	0.3 + 100	0.3 + 200	0.7 + 500	3 + 500
700 V	1 + 100	0.4 + 100	0.3 + 100	0.3 + 300	—	—

AC CURRENT (AC A) (7562 only)

Ranges:

Range	Integrating Time (500/200/100/20/16.7 ms)		Integrating Time (2.5/1.2 ms)		Input Resistance (50 Hz)
	Max. Reading	Resolution	Max. Reading	Resolution	
2 mA	1.99999	10 nA	1.9999	100 nA	< 110 Ω
20 mA	19.9999	100 nA	19.999	1 μA	< 11 Ω
200 mA	199.999	1 μA	199.99	10 μA	< 1.2 Ω
2,000 mA	1,999.99	10 μA	1,999.9	100 μA	< 0.3 Ω

Accuracy (Integrating Time 500 ms): ±(% of reading + digits), 1 year, 23±5°C

Range	20 to 30 Hz	30 to 45 Hz	45 Hz to 2 kHz	2 to 5 kHz
2 mA	1.4 + 350	0.8 + 250	0.5 + 250	0.8 + 300
20 mA	1.2 + 300	0.8 + 200	0.5 + 200	0.8 + 200
200 mA	1.2 + 300	0.8 + 200	0.5 + 200	0.8 + 200
2,000 mA	1.5 + 300	1.5 + 200	1.0 + 200	1.5 + 200

- Accuracy at 24 hours, 23±1°C is the value for the calibration standard.
- Auto Zero ON, Null.
- **Integrating Time:** At 200 ms, 2 is added to the value (digits) in integrating time 500 ms.
- () indicates the value (digits) in integrating time 100 ms. For integrating time 20/16.7 ms, 2 is added to the value (digits) enclosed in the parentheses.
- { } indicates the value (digits) in integrating time 2.5 ms. For integrating time 1.2 ms, 2 is added to the value (digits) enclosed in the brackets.
- For 20 and 200 MΩ at sampling interval 400 ms or more. Accuracy is not prescribed in integrating time 1.2/2.5 ms.
- At Auto Zero OFF, temperature coefficient on 200 Ω ranges is ±(0.013% of range)/°C, on other ranges ±(0.003% of range)/°C is added (at 5 to 40°C).
- For 2-wire system, 2 mΩ/°C is added.
- Excluding the influence of leadwires.
- **Open Circuit Voltage:** Max 10 V (12.5 V max. on 200 MΩ range).
- **Maximum Input Voltage:** ±300V peak or 300 V rms (between Hi and Lo).
- **Response Time:** 0.4 s or less on 2,000 kΩ/20 MΩ ranges, 5 s or less on 200 MΩ range.

- Auto Zero ON.
- **Integrating Time:** At 200/100/20/16.7 ms, 20 is added to the value (digits) in integrating time 500 ms.
- **AC Coupling:** True rms value.
- Input Voltage: 5 to 100% of range (sine wave).
- **Response Time:** 400 ms or less (to reading within ±0.2% of final value).
- **Crest Factor:** Up to 3 (at full scale, up to 2 at full scale on 700 V range).
- **Temperature Coefficient:** ±(1/10 of measurement accuracy)/°C.

- Auto Zero ON.
- **Integrating Time:** At 200/100/20/16.7 ms, 20 is added to the value (digits) in integrating time 500 ms.
- **AC Coupling:** True rms value.
- Input Current: 5 to 100% of range (sine wave).
- **Response Time:** 400 ms or less (to reading within ±0.2% of final value).
- **Crest Factor:** Up to 3.
- **Temperature Coefficient:** ±(1/10 of measurement accuracy)/°C.
- **Allowable Current:** 2 A (2 A fuse installed).

SAMPLING INTERVAL

Integrating Time	Measurement Intervals (in Auto Zero OFF)	Measurement Intervals (In Auto Zero ON)
* 1.2 ms	3 ms (333/s)	7 ms (143/s)
2.5 ms	8 ms (125/s)	15 ms (66.7/s)
16.7 ms	25 ms (40/s)	45 ms (22.2/s)
20 ms	30 ms (33.3/s)	55 ms (18.2/s)
100 ms	110 ms (9.1/s)	215 ms (4.7/s)
* 200 ms	210 ms (4.8/s)	415 ms (2.4/s)
* 500 ms	510 ms (2/s)	1015 ms (1/s)

- *Sampling mode is AUTO, NULL: off, AVG: off, MATH: off, function: DC V in a fixed range, without communication function, using buffer memory.
- Data of sampling interval shows min. value (fastest sample rate). Measurement intervals can be settable more than the value of left table.

INTERFACE

GP-IB Interface

Electrical & Mechanical Specifications: Conforms to IEEE St'd 488-1978.

Interface Function & Identification: SH1, AH1, T5, L4, SR1, RL1, PP0, DC1, DT1, C0.

Address Mode, address and header ON/OFF can be settable.

RS-232-C Interface

Transmission System: Start-stop system.

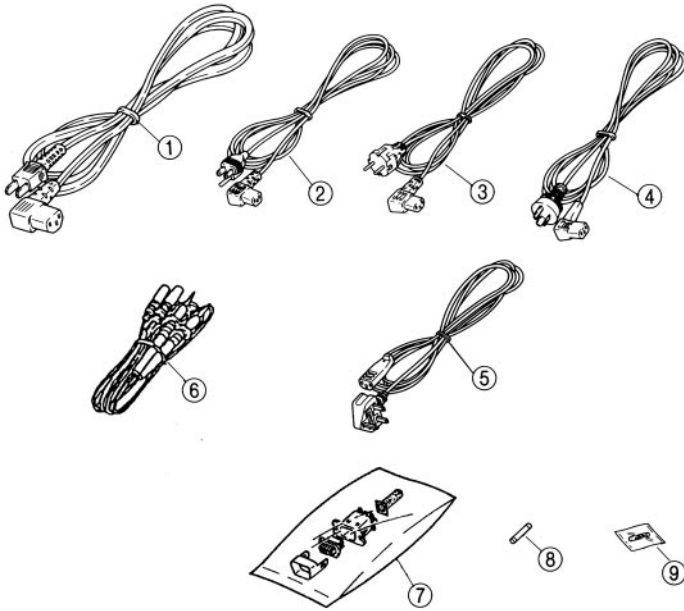
Data Transfer Rates: 75, 150, 300, 600, 1,200, 2,400, 4,800, 9,600 bps.

Hand Shake Mode, bps rate, number of bits and header ON/OFF can be settable.

STANDARD ACCESSORIES

No.	Name	Part No.	Description	Q'ty
1.	Power supply cord*	A1007WD	100 V series (JIS standard)	1
2.		A1006WD	115 V series (UL standard)	1
3.		A1009WD	200 V series (VDE standard)	1
4.		A1013WD	230 V series (SAA standard)	1
5.		A1023WD	BS standard	1
6.	Measurement lead	B9280TZ	—	1
7.	Remote connector	A1003JD	—	1
8.	Fuse*	A1105EF	0.2 A 100 V	1
		A1103EF	0.1 A 200 V	1
9.	Fuse	A1092EF	—	1
—	Instruction manual	—	—	1

* Specified one.



AVAILABLE MODELS

Model	Suffix Codes	Description
756101	6.5 digits DC V, DC A, OHM, (GP-IB)
756102	
756201	
756202	
Version	-C	Always C
Power Requirements	-1	100 V AC (50 or 60 Hz)
	-3	115 V AC (50 or 60 Hz)
	-5	200 V AC (50 or 60 Hz)
	-7	230 V AC (50 or 60 Hz)
Power Cord	/B	JIS standard
	/D	UL standard
	/F	VDE standard
	/G	SAA standard
Optional Feature	/DA	D/A converter output

OPTIONAL ACCESSORIES

No.	Name	Code	Description	Order Q'ty
10.	Memory card (8 k bytes)	378901	Setting & measured data	1 unit (1 pc./unit)
	Memory card (16 k bytes)	378902	Setting & measured data	
	Memory card (64 k bytes)	378903	Setting & measured data	
—	Dummy card	B9586NG	Dust cap for memory card slot	2 units (1 pc./unit)
—	Rack mounting kit	751501	EIA (single mounting)	1 unit (1 pc./unit)
		751502	EIA (double mounting)	
		751503	JIS (single mounting)	
		751504	JIS (double mounting)	
11.	4-wire resistance measuring lead	751510	0.6 m	
12.	Input terminal adapter	751512	—	