



## AP-101 3 1/2 DIGIT, DC PANEL METER

### DC Voltage Measurement

Model	Range	Input Impedance	Input Protection
AP-101-11	±199.9mV	100M Ω	±250V
AP-101-12	±1.999V	100M Ω	±250V
AP-101-13	±19.99V	10M Ω	±250V
AP-101-14	±199.9V	10M Ω	±500V

Accuracy: ±0.1% rdg ± 1 digit (23°C ±5°C),

### DC Current Measurement

Model	Range	Internal Resistance	Input Protection
AP-101-21	±199.9μA	1K Ω	±10mA
AP-101-22	±1.999mA	100 Ω	±50mA
AP-101-23	±19.99mA	10 Ω	±150mA
AP-101-24	±199.9mA	1 Ω	±500mA
AP-101-25	±1.999A	0.1 Ω	±3A

Accuracy: ±0.2% rdg ±1 digit (23°C ±5°C) (±0.3% rdg ±1 digit only for AP-101-25)

### Specifications

**Input Configuration:** Single ended  
**Input Bias Current:** 50PA (Typ.)  
**Conversion Rate:** 2.5/sec  
**Normal Mode Rejection:** Typ. 40dB (50/60Hz)  
**Zero Stability:** Automatic Zero Adjustment  
**Display:** 3 1/2 digit, LED, 14.2mm (.56")  
**Polarity:** A "-" is displayed automatically  
**Decimal Point:** Settable to any digit position  
**Overrange Indication:** 1999 or -1999 flashes  
**External Control:** Hold/Start and decimal points  
**Power Supply:** 90 ~ 132VAC, 180 ~ 264VAC (Typ.)  
 5VDC ±5% 90mA (Typ.)  
 24VDC ±20% 20mA (Typ.)  
**Operating Temperature:** 0 ~ 50°C  
**Power Consumption:** 1.5VA  
**Weight:** 150g, 5.25 oz. (AC), 85g, 2.98 oz. (DC)  
**Dielectric Strength:**  
**AC Type:** Between input (Lo) terminal and earth 500VDC  
 Between power supply terminal and input terminal,  
 earth, common, case, 1500VAC/1 min.  
**DC Type:** Between input (Lo) and power supply (0V), ±500VDC  
**Insulation Resistance:** 500VDC 100MΩ at above terminals  
**Size:** 48mm (H) x 96mm (W) x 73mm (D)  
 1.89" (H) x 3.78" (W) x 2.87" (D)  
**Accessories:** Connector and manual included.

### ORDERING GUIDE

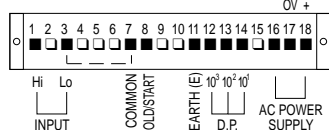
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Power	1	2	3	4
	90 ~ 132 VAC	180 ~ 264 VAC	+5VDC (Isolated)	+24VDC (Isolated)
Range Code	11	12	13	14
	± 199.9mV	± 1.999V	± 19.99V	± 199.9V
	21	22	23	24
	± 199.9μA	± 1.999mA	± 19.99mA	± 199.9mA
	25			± 1.999A

Special Scaling also available

### CONNECTION DIAGRAM

(Solder Connection)



## AP-102 3 1/2 DIGIT, DC PANEL METER

### DC Voltage Measurement

Model	Range	Input Impedance	Input Protection
AP-102-10	±19.99mV	100M Ω	±250V
AP-102-11	±199.9mV	100M Ω	±250V
AP-102-12	±1.999V	100M Ω	±250V
AP-102-13	±19.99V	10M Ω	±250V
AP-102-14	±199.9V	10M Ω	±500V

Accuracy: ±0.1% rdg ± 1 digit (23°C ±5°C)

### DC Current Measurement

Model	Range	Internal Resistance	Input Protection
AP-102-21	±199.9μA	1K Ω	±10mA
AP-102-22	±1.999mA	100 Ω	±50mA
AP-102-23	±19.99mA	10 Ω	±150mA
AP-102-24	±199.9mA	1 Ω	±500mA
AP-102-25	±1.999A	0.1 Ω	±3A

Accuracy: ±0.2% rdg ±1 digit (23°C ±5°C)  
 ±0.3% rdg ±1 digit only for AP-102-25

### Specifications

**Input Configuration:** Single ended  
**Input Bias Current:** 50PA (Typ.)  
**Conversion Rate:** 2.5/sec or 12.5/sec (50Hz), 15/sec (60Hz)  
**Normal Mode Rejection:** More than 40dB (50/60Hz)  
**Zero Stability:** Automatic Zero Adjustment  
**Display:** 3 1/2 digit, LED, 14.2mm (.56")  
**Polarity:** A "-" is displayed automatically  
**Decimal Point:** Settable to any digit position  
**Overrange Indication:** 1999 or -1999 flashes  
**External Control:** Hold/Start and decimal points  
**Power Supply:** 90 ~ 132VAC, 180 ~ 264VAC, 5VDC ±5%  
**Operating Temperature:** 0 ~ 50°C  
**Power Consumption:** 1.5VA  
**Weight:** 150g, 5.25 oz. (AC), 85g, 2.98 oz. (DC)  
**Dielectric Strength:**  
**AC Type:** Between input (Lo) terminal and earth 500VDC  
 Between power supply terminal and input terminal,  
 earth, common, case, 1500VAC/1 min.  
**DC Type:** Between input (Lo) and power supply (0V), ±500VDC  
**Insulation Resistance:** 500VDC 100MΩ at above terminals  
**Output:**  
**Data:** Isolated parallel BCD 1-2-4-8 (positive logic)  
**Polarity:** Logic "1" for positive (+) input voltage,  
 TTL level fan out 2  
**Print Command:** 1ms width positive pulse when measurement  
 is finished, TTL level fan out 2  
**Overrange:** Logic "1" when indication is over 1999 due to  
 overrange input, TTL level fan out 2  
**Size:** 48mm (H) x 96mm (W) x 73mm (D)  
 1.89" (H) x 3.78" (W) x 2.87" (D)  
**Accessories:** 2 Connectors and manual included.

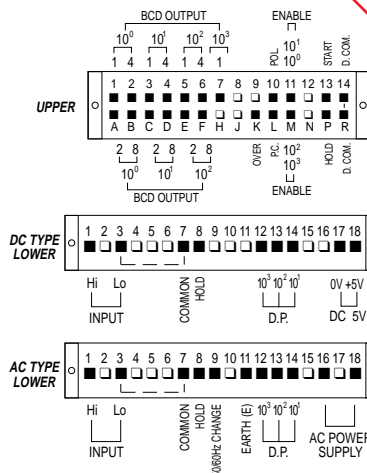
### ORDERING GUIDE

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Output	1	2	6
	Display Only (2.5/Sec)	BCD (2.5/Sec)	BCD (12.5/Sec 50Hz) (15.0/Sec 60Hz)
Power	1	2	3
	90 ~ 132 VAC	180 ~ 264 VAC	+5VDC (Isolated)
Range Code	10	11	12
	± 19.99mV	± 199.9mV	± 1.999V
	13	14	21
	± 19.99V	± 199.9V	± 199.9μA
	22	23	24
	± 19.99mA	± 199.9mA	± 1.999A
	25		

### CONNECTION DIAGRAM

(Solder Connection)



Special Scaling also available