

**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 90 ~ 132 VAC
- 2 180 ~ 264 VAC
- 3 +5VDC (Isolated)
- 4 +24VDC (Isolated)

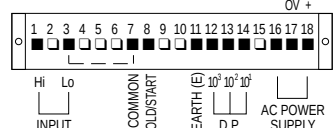
Range Code

- 11 ± 199.9mV
- 12 ± 1.999V
- 13 ± 19.99V
- 14 ± 199.9V
- 21 ± 199.9μA
- 22 ± 1.999mA
- 23 ± 19.99mA
- 24 ± 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 2Overrange: 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 Display Only (2.5/Sec)
- 2 BCD (2.5/Sec)
- 6 BCD (12.5/Sec 50Hz)
(15.0/Sec 60Hz)

Power

- 1 90 ~ 132 VAC
- 2 180 ~ 264 VAC
- 3 +5VDC (Isolated)

Range Code

- 10 ± 19.99mV
- 11 ± 199.9mV
- 12 ± 1.999V
- 13 ± 19.99V
- 14 ± 199.9V
- 21 ± 199.9μA
- 22 ± 1.999mA
- 23 ± 19.99mA
- 24 ± 199.9mA
- 25 ± 1.999A

Special Scaling also available

CONNECTION DIAGRAM
(Solder Connection)