Section 3

Specifications

APPLICATION

Lead-acid and nickel-cadmium cells of less than 250 Ah capacity.

Tests on most battery systems require the standard clamp-on current sensor (CT) with a 2-in. opening. An optional current sensor (CT) with a 0.5 in. opening is available.

Maximum total voltage at MBITE current source connections is 250 V dc (larger battery systems can be sectioned to accommodate this specification).

ELECTRICAL

Supply voltage (base measurement unit):
120 V ac, 60 Hz, 100 VA max (Cat. No. 246005)
220 V ac, 50 Hz, 100 VA max (Cat. No. 246005-47)
IEC 1010-1 installation category II.

Nominal source output current: 1 A for 50/60 Hz operation

Maximum battery test voltage: 250 V dc (IEC 1010-1 installation category I)

Electrical noise: Bandpass filters are installed to center receiver frequency at 60 Hz for Catalog No. 246005 and 50 Hz for Catalog No. 246005-47. Filter attenuation is -20 dB per octave minimum.

Accuracy:

Function	Accuracy	Resolution
DC VOLTS	±(1% of reading +2 LSD)	2.5 V dc range, 1 mV 25 V dc range, 10 mV
mΩ	±(5% of reading +2 LSD)	1.0 mΩ range, 1 μΩ 10 mΩ range, 10 μΩ 100 mΩ range, 100 μΩ

Fuses:

Function	Location	Type
Primary (Cat. No. 246005)	J1, Conn. Panel	T, 1 A, 250 V time delay
Primary (Cat. No. 246005-47)	J1, Conn. Panel	T, 500 mA, 250 V time delay
Secondary	Internal	MDX, 2 A, 250 V slo blo

MECHANICAL

Dimensions (base measurement unit): 11 x 7.5 x 8.2 in. (280 x 190 x 210 mm)
Weight (base measurement unit): 10 lb (4.53 kg)

Display: Digital LCD meter, 256 x 128 pixel with a viewing area of 5 x 2.75 in. (127 x 70 mm), displays measured parameters in dark numbers on an electroluminescent background. Commercial temperature and humidity ranges for the LCD will limit the useful measurement environment.

Printer: The integrally installed printer has a 4.25 in. (110 mm) printing width. Thermal paper for the printer, as currently stocked by AVO International, is listed in the Replaceable Parts List, Section 7. The following information is available in English for all versions as shown.

Battery Analysis Report

Notes:.....
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01/04/94

TST	Zb mΩ	Rs mΩ	VOLTS DC	TIME
001	1.025	0.258	2.155	12:58
002	1.036	0.265	2.145	12:59
003	1.054	0.365	2.225	13:02
004	1.024	0.555	2.215	13:04
005	1.006	0.235	2.135	13:09
006	1.059	0.365	2.228	13:15
007	1.074	0.258	2.226	13:18
008	1.036	0.158	2.245	13:25
009	2.56	0.104	2.225	13:27

Key: * Low Current

Cell Impedance Summary

Minimum	Average	Maximum
1.006	1.208	2.56

Where:

TST =	TEST NUMBER
Zb =	BATTERY CELL IMPEDANCE IN mΩ
Rs =	STRAP OR INTERCONNECT RESISTANCE
VOLTS DC=	DC VOLTAGE AT TIME OF IMPEDANCE READING
TIME =	RECORDED AT TIME OF IMPEDANCE READING
Key: * =	INDICATES LOW MEASUREMENT CURRENT DURING TEST
Minimum =	LOWEST VALUE CELL IMPEDANCE CURRENTLY STORED
Average =	AVERAGE VALUE CELL IMPEDANCE CURRENTLY STORED
Maximum =	MAXIMUM VALUE CELL IMPEDANCE CURRENTLY STORED

ENVIRONMENTAL

Operating temperature range: 32 to 104°F (0 to 40°C)

Storage temperature range: -4 to 131°F (-20 to 55°C)

Humidity: 20 to 90% relative humidity, noncondensing.

ACCESSORIES SUPPLIED

- Current source leads (base measurement unit to battery): two 18 AWG stranded copper leads with acid resistant insulation.

Wire rating:	600 V dc
Length:	10 ft (3.0 m)
Termination (base measurement unit):	7-pin, shrouded
Termination (battery):	Bulldog-type Mueller clips rated 15 A

- Potential probes: two helical spring point leads with data send switch.

Wire rating:	300 V dc (sheathed)
Length:	8 ft (2.4 m)
Termination (base measurement unit):	Nonmetallic twist-loc 12 pin
Termination (battery):	Helical spring point

- Current sensor: clamp-on CT with 2-in. opening. See Figure 3.

Wire rating:	600 V dc
CT ratio:	1000:1, 4% accuracy
Length:	5 ft (1.5 m)
Termination (base measurement unit):	Nonmetallic push loc 7 pin
Termination (CT):	Direct connection

- Extension cable: for either clamp-on current sensor (CT).

Wire rating:	300 V
Length:	6 ft (1.8 m)
Termination:	Nonmetallic push loc 7 pin

- Canvas carrying case: for leads.
- ac line cord: 8 ft (2.4 m).
- Instruction Manual AVTM246005J.

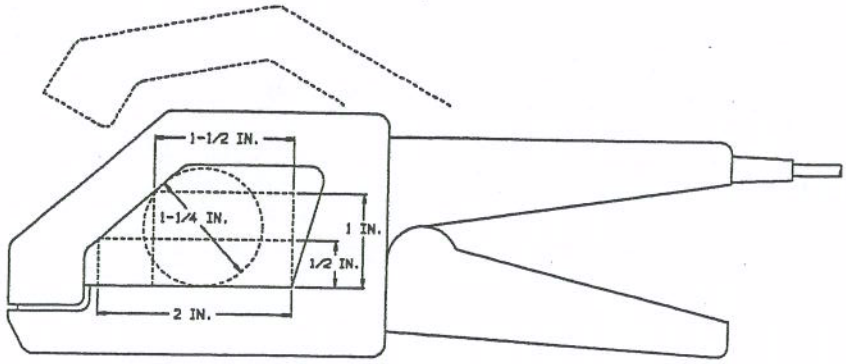

Figure 3: Clamp-On Current Sensor

OPTIONAL EQUIPMENT

To accommodate the testing requirements of various battery installation configurations, AVO International offers the following optional equipment. Custom designs may be possible if kept within strict safety guidelines and within the operating specifications of the instrument.

- Current sensor: clamp-on CT with 0.5-in. (12.7-mm) opening for use in small subscriber line cabinets (SLCs). This current sensor has shrouded banana-jack connections and includes a 2.5 ft (0.76 m) lead.

- Dual-point probes (factory probes): for testing single cell/modules in factory quality control and emergency lighting applications. Other applications include tests on cells arriving from battery vendors or being stored in shipping cartons, awaiting installation. Similar to the standard potential probes, these probes have an additional helical spring point on each probe. The additional probe point carries the measurement current to the cell under test and allows for a four-point measurement.

- Bar-code wand: for use with the serial port connection as a means of providing cell, location, and operator identification. This option includes a wand and prompt sheets with alphanumeric characters for discreet entry. Software for producing bar-code labels using a personal computer and printer is included.

- Source leads: 20, 30, and 40 ft (6, 9.1, and 12.2 m).

- Extension cable: 20 ft (6 m) for clamp-on current sensor.

- Canvas carrying case: for instrument.