RMS Voltage Accuracy[1]

±0.2% of range ±1% of reading or 0.5 V whichever is greater, DC or 45-450 Hz
Full scale ranges: 12.5 V, 25 V, 50 V, 125 V, 250 V, 333 V, 500 V, 1000 V

RMS Current Accuracy[1]

Refer to the 8800 PowerScope data sheet for specifications.

Impulse

Impulse capture: 8 bit data at 4 mega-samples per second
Full scale ranges: 100 V, 200 V, 400 V, 800 V, 1600 V, 3200 V, 6400 V
Minimum impulse trigger amplitude: 20 V

Harmonic Analysis

Fundamental frequency: 45-415 Hz
Maximum harmonic frequency: 2 kHz

General

Physical = 15 in x 15.3 in x 6 in (38 cm x 39 cm x 15 cm), 28 pounds (13 kg)
Power = 100-145 Vac/200-277 Vac/230-277 Vac, 60 Hz, 150 VA max.
100-125 Vac/200-255 Vac/230-277 Vac, 50 Hz, 150 VA max.
110-155 Vac/210-277 Vac/245-277 Vac, 400 Hz, 150 VA max.
11-16 Vdc (for external 12 V battery)
UPS: internal NiCad batteries, 15 minutes at maximum setting
Environment[2]
Operating Temperature: 5°C to 40°C Storage: -20°C to 60°C
Operating Humidity: 35% to 85% RH, noncondensing Storage: 5% to 90% RH, noncondensing

Input Characteristics

	Voltage	Current
Type	solid state differential DC coupled	BMI SmartProbe
Impedance	2 MΩ to ground <50 pF to ground	
Connectors	high-voltage safety	BMI SmartProbe

Notes:

1. Requires 8800 PowerScope firmware revision 2.0. Contact BMI Technical Support for availability.

2. Limited by printer operating range.

Specifications subject to change without notice.

11 Specifications

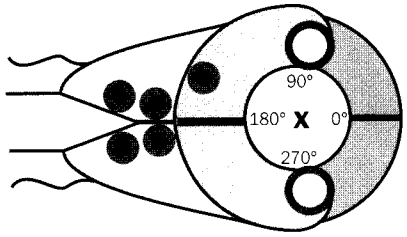
SmartProbe Accuracy

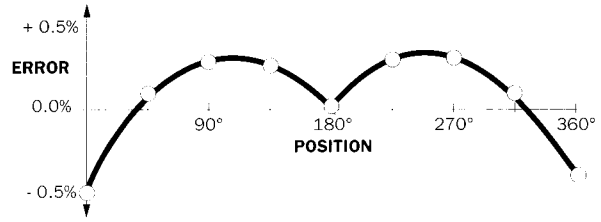
Sources of SmartProbe Current Errors

The principle sources of current measurement errors with A-116 and A-120 SmartProbes are conductor position, conductor angle, and mating of clamp-on jaw. The descriptions and figures contained here apply to the A-116, but the principles apply to all clamp-on current probes.

Conductor Position

The A-116 SmartProbe has its accuracy specified with the conductor positioned in the center of the jaws (position X in Figure 11-1). Figure 11-1 shows how the accuracy varies with conductor position for the A-116 600 amp SmartProbe.



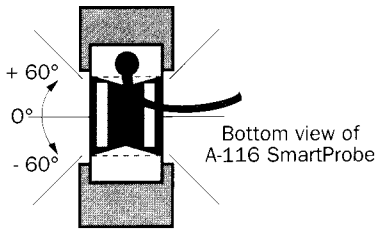


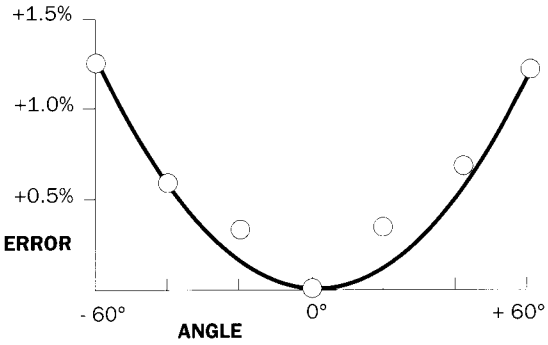
■ **Figure 11.1: Typical error vs. conductor position.** Based on the following test conditions:

- A-116 SmartProbe calibrated at 200 A, 60 Hz
- Error expressed as percent of reading
- Test at 16 A, 60 Hz
- Conductor perpendicular to plane of jaw
- Normalized to centered = 0.0%

Conductor Angle

The A-116 SmartProbe has its accuracy specified with the conductor positioned at 90° to the jaws. Figure 11-2 shows how the error varies with conductor angle.



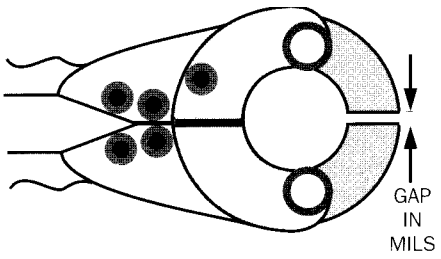


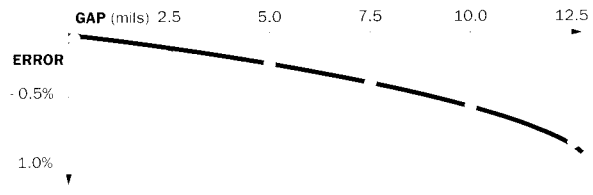
■ **Figure 11.2: Error vs. conductor angle**

- A-116 SmartProbe calibrated at 200 A, 60 Hz
- Error expressed as percent of reading
- Test at 20 A, 60 Hz
- Conductor passes through center point of jaw

Mating of Clamp-on Jaw

Errors will also be introduced if the jaws do not mate properly. Figure 11-3 shows how the error varies with the gap between the jaws of an A-116.





■ **Figure 11.3: Typical error vs. jaw gap**

- A-116 SmartProbe calibrated at 200 A, 60 Hz
- Error expressed as a percent of reading
- Test at 16 A, 60 Hz, normalized to 0.0% at 0 gap