

Radcal



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Model 90M9/90M9-AG Non-invasive mAs Sensor for the Accu-series

DESCRIPTION:

The mAs sensor connects to the connector labeled **mAs** of the Accu-series instruments with the supplied cable. The mAs sensor connects to the x-ray generator with safety-shrouded banana jacks that are permanently attached to the front panel of the sensor. It is intended to be inserted in series with the x-ray generator return. Spacing and isolation rated to withstand

1500 vac rms is provided between the generator and the Accu-series instrument. The sensor measures mA as the voltage across a 1 ohm resistor. These values are digitized with 20 bits of resolution (2A full-scale) and transferred to the Accu-series processor. The values are corrected for zero level, and then their absolute values recorded as a waveform with the same resolution as the kV waveform. The value of mAs is computed by summing mA values during the part of the kV waveform (requires kV sensor in beam) defined by the same thresholds that are applied to determine its width. Average mA is mAs divided by this width.

FEATURES:

- Automatic power control extends battery lifetime. Annual replacement is usually sufficient.
- Automatic zero.
- Measurement synchronized to kV waveform.
- 0.001 to 9999 mAs and 10 μ A to 2A dynamic range with no range switching.
- Measures absolute value (no rectifier drop and optimum noise rejection).
- mA-waveform available directly with Accu-Gold or to an external PC using a spreadsheet.
- 2.33-kHz -3-dB bandwidth.

SPECIFICATIONS:

- Full-scale: 2000 mA or 9999 mAs
- mA accuracy: 0.2% of reading at dc plus resolution of +/-0.015 mA or 3-4 digits
- mA accuracy (1-s pulse): 5 μ As or 0.2% of reading; resolution of 0.001 mAs.
- Display time resolution: 102.4 μ s (Accu-Gold), 76.8 μ s (Accu-Pro and Accu-kV)
- Input impedance: Fixed, resistive, 1.7 - 2.7 ohms. 1 ohm sense resistor plus fuse and wiring.
- Input protection: 2-A fuse. Over-voltage protection using 22-J varistor before the fuse and 17-V Zener diodes after the fuse.
- Absolute value of bi-polar 720 Hz waveform accurate to 2.5%.
- Bandwidth: 2.33 kHz, -3 dB.
- ON/OFF (Green light) controlled from the Accu-series control unit. (ON only when a kV function is active.)
- Power supplied by replaceable 9V battery. (Replace battery when green light doesn't come on.)
- Stand alone measurements possible with Accu-Gold or triggered using AGMS sensor. Requires 40X-type kV sensors in beam with Accu-Pro and Accu-kV.

USED WITH:

Models Accu-Gold Touch (AGT-x-AG, AGT-x-RG), Accu-Gold, Rapid-Gold, Accu-Gold+, Rapid-Gold+, Accu-Pro, Accu-kV, 9095, 4085, 4086

The model 90M9 conforms to ISO/IEC 17050 and EN 45014.

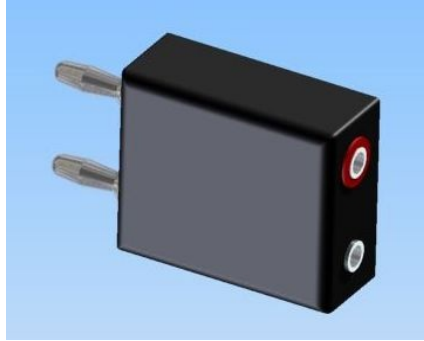
The 90M9 meets the requirements of the 2002/06/EC (WEEE) Directive. Contact Radcal for recycling information.

REF: 90M9 and 90M9-AG are identical except for the interconnect cable required.

Accessories

**Model 90M9-BR
90M9 mAs Sensor Bridge add-on**

DESCRIPTION:



The 90M9/90M9-AG was designed to measure DC current. On older single-phase generators where the mA tap is placed before the rectifier circuit, the current will be AC. The 90M9 cannot measure AC current, thus leading to low (false) mA readings. Therefore, one should use a full-wave bridge rectifier like the 90M9-BR to rectify the generator current and then plug the 90M9 into the bridge.

If you have any questions, please contact Radcal Customer Support – email cust_sup@radcal.com or telephone 626-357-7921 Extension 123.