



## Model 2010A Watt Meter

*TDM Technology  
Uncertainty < 50 ppm  
Full Power Factor Range  
Distorted Waveforms  
Manual and Auto Range  
Over Range Protection  
Range Extension to 2000 Amps*

### General Description:

The model 2010A is a primary watt meter developed as a self contained, portable wattmeter standard. Based on Time Division Multiplier (TDM) technology, the model 2010A provides reliable, accurate traceability to NRCC and other National Laboratories around the world. Versatile measurement ranges insure the 2010A is operated at full scale with accuracies of less than 50 PPM. Measurements can be made quickly, accurately and automatically, regardless of distorted waveforms or low power factor conditions.

The 2010A provides a single set of current and voltage inputs. The current input to the 2010A is a compensated current transformer and as a result, the burden reflected into the Measurements International model 7020 Range Extender is zero for all current ranges. The 2010A offers both automatic and manual ranging of the current and voltages inputs. The TDM wattmeter has two voltage ranges of 120 and 240 and 10 current ranges from 5 mA to 5 amps. Measurements International's Model 7020H can be used to extend the current range to 2000 amperes. For Voltage extension the Model 2501A can be used up to 2400 volts. The model 2500A can be used to extend the range to 100 kV.

Three outputs are provided on the rear of the 2010A. Two of the outputs simulate the input voltage and current waveforms for output to waveform analyzers. The third output comes directly from the TDM Amplifier (10 Volts DC full scale) and may be fed directly into a DMM.

A large vacuum florescent display indicates voltage, current and power simultaneously. The displayed output of the model 2010A is expressed as  $VI \cos\phi$ . The measurement accuracy's are <50 PPM for all power factors. The relative conversion error of the output is linear and does not depend on the magnitude or distortion of the input signals.

# Model 2010A

## Specifications:

|                                     |   |
|-------------------------------------|---|
| Frequency Range                     | 40-1000 Hz (Uncertainties at 50/60 Hz)  |
| Voltage Inputs 120 & 240            | 0-120 VAC RMS Max 135<br>Input Impedance - 500K Ohms<br>120 – 240 VAC RMS Max 270<br>Input Impedance - 1M Ohms  |
| Current Inputs                      | .005, .01, .02, .05, 0.1, 0.2, 0.5, 1, 2, 5,<br>Amps AC RMS, Compensated<br>Maximum Input - 1.2 x Range<br>Input Impedance - 0.1 Ohms/Range<br>Isolation - 600V P-P |
| Display                             | Watts: $\pm 50$ ppm<br>Volts: $\pm 0.1\%$<br>Current: $\pm 0.1\%$   |
| Outputs – Watts<br>Volts<br>Current | 0-10 VDC $\pm 50$ ppm<br>0-2 VAC RMS @ 5mA Max $\pm 500$ ppm<br>0-2 VAC RMS @ 5mA Max $\pm 500$ ppm   |
| Linearity                           | $<20$ ppm of Full Scale   |
| Temperature Coefficient             | 10 ppm/ $^{\circ}$ C  |
| Operating Environment               | 18 to 34 $^{\circ}$ C, 10 to 80% RH   |
| Warranty                            | 1 Year Parts & Labor  |

**Dimensions:**

175 x 440 x 380 mm

**Weight:**

15 kg

**Shipping Weight:**

20 kg

**Accessories:**7020H Current Transformer  
2501A High Voltage Divider**Operating Power:**

100, 120, 220, 240V - 50/60 Hz

**Distributed By:****How to Order:**

Model: 2010A - TDM Wattmeter

*Data Subject to Change*

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