



**MODEL 8120 & MODEL 8100**  
 Energy Meter Pulse Counter • Comparator  
 When used as an accessory to the Model 8100, the Model 8120 enables simultaneous testing of up to 6 energy meters.



**MODEL 8140 & MODEL 8100**  
 200A Current Amplifier  
 When used as an accessory to the Model 8100, the 400W Model 8140 extends the maximum current output to 220A.



**8100-USIT**  
 Automatic Meter Calibration Software  
 The 8100-USIT Software configures and controls the Model 8100 to automate testing and calibration of voltage, current, energy, and power meters.



**MODEL MSB100 & MODEL 8100**  
 Primary Power/Energy Reference Standard  
 When used in conjunction with the Model 8100, the Model MSB100 will allow power calibrations with an accuracy of up to 0.005%.



**MODEL 8100, THREE PHASE**  
 Three Phase Model 8100 configuration  
 Three Model 8100 Calibrators may be configured as a three phase test system or used independently as three single phase calibrators.

RANGES OF OPERATION	
Voltage	1 – 700 Volts
Current	0.001 – 55A 0.001 – 220A with Model 8140
Apparent Power	0.001 – 38,500W 0.001 – 154,000W with Model 8140
Phase Angle	±180°
Fundamental Frequency	16 – 1000Hz
Digital Input/Output	2 Channels 6 Channels with Model 8120
OPTIMAL SPECIFICATIONS	
Voltage	0.010% of Voltage Setting
Current	0.010% of Current Setting
Power	0.010% of VA Setting
OPTIONS AND ACCESSORIES	
Model 8120	Energy Meter Pulse Counter • Comparator
Model 8140	200A, 400W High Current Amplifier
Model MSB100	Primary Power/Energy Reference Standard
8100-USIT	Automatic Meter Calibration Software
8100-RM	Rack Mount Ears
8100-OPT	Optical Disk Rotation Detector
8100-OPA	Optical Port Adapter
GENERAL	
Power:	500 Watts at Nominal Line Voltage
Line Voltage:	90 – 132V, 198 – 264V
Line Frequency:	45 – 65Hz
Width:	430mm (17")
Height:	180mm (7")
Depth:	480mm (19")
Weight:	23Kg (50lbs)

**ROTEK®**



M O D E L 8 1 0 0

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## THE ROTEK MODEL 8100

*is a precision source of AC voltage, current and phase angle used in the calibration and test of a wide range of electrical metering instrumentation. It has been designed to be nothing less than the ultimate electrical power calibration standard in both accuracy and flexibility. This single instrument replaces the complicated combinations of individual voltage sources, current sources and phase angle meters required to calibrate power, power quality, and energy meters.*

The Model 8100 makes use of sophisticated high-speed Digital Signal Processing (DSP) technology to generate extremely accurate outputs for a wide range of real world loads. The internal circuits of the Model 8100 use Rotek's patented digital feedback technology to monitor and verify the accuracy of the voltage and current outputs simultaneously at over 10,000 times per second. Its dual 50W high-power output amplifiers provide levels of burden and compliance required to drive even the most difficult loads.

The Model 8100 provides voltages from 1 to 700V and standard current outputs from 1mA to 55A. Optional 400W current amplifiers can provide maximum currents of 50, 100 or 220A with compliance of up to 8V. The phase angle of the current output relative

to the voltage output may be adjusted from +180° to -180°. Output frequency may be selected from 16 to 1000Hz.

The Model 8100 may be configured as a 2 or 3 phase system by simply connecting multiple Model 8100 Calibrators together using a standard Rotek synchronization and control cable. Front panel menus are used to set each unit as phase A, B or C. All voltage and current outputs are isolated providing complete flexibility in making connections to the UUT.

The Model 8100 provides the functions required to fully test power quality meters. Harmonics and interharmonics may be added to both the voltage and the current outputs. In addition, all outputs may be configured to reproduce sags, swells and interruptions. Other power quality related phenomena such as flicker and notching may also be simulated.

The Model 8100 facilitates the testing of all types of energy meters by delivering precise, user defined quantities of energy to the meter under test. The Model 8100 is also able to accept a pulse input for testing meters equipped with this type of output. The Option 8100-OPT Optical Rotation Detector may be used to measure the rotation of an electro-mechanical energy

standard. Alternatively, the Option 8100-OPA, Optical Port Adapter, may be used to access an energy meter's optical communications port. The Model 8100 may be used with the Model 8120 six channel counter/comparator to test up to six energy meters simultaneously. When used in the external energy reference mode, all UUT's may be simultaneously calibrated against a single external energy standard.

A menu-driven front panel and simple intuitive controls make the Model 8100 extremely easy to use. Output settings and menus are displayed on a large color LCD display. Power settings may be expressed in units of Volt-Amperes, Watts or VARs. Similarly the phase angle may be expressed as either degrees or power factor. Such flexibility allows the Model 8100 to be configured to meet the specific requirements of any user. A compact rugged design makes the Model 8100 ideally suited to a wide range of operating environments from the laboratory to the factory floor.

Unequaled performance, simplicity of operation, and flexible system configuration make the Model 8100 today's standard for power and energy calibration.

*0.010% Power Accuracy  
Voltages to 700V  
Currents to 220A  
Phase Angles from -180° to +180°  
Frequency from 16 to 1000Hz  
Single and Poly Phase configurations available  
Up to six channels of energy meter pulse inputs  
Complete Power Quality Test Functions  
Accuracy Traceable to N.I.S.T.*



**ROTEK®**