Phase Meter
Model 6000A

- 0.020º Accuracy
- 0.001º Resolution
- 80 dB Harmonic Rejection
- 5Hz to 1MHz
  Frequency Response
- Hi Resolution Color Display
- Isolated Inputs
- IEEE-488, USB, LAN (optional)

HIGHEST PERFORMANCE

The Model 6000A Phase Meter replaces the very popular Model 6000. Using the latest digital techniques and optimally designed analog front end, the Model 6000A out-performs any other phase meter on the market today. It also does this at a remarkably low cost. The unit automatically selects the proper range for both amplitude and phase and is waveshape independent. The user only needs to connect the two input cables to the phase meter to obtain a phase reading. Voltage Overrange or Under-range is indicated whenever either of the two input signals is too large or too small. An OFFSET toggle on the front panel allows the user to make differential phase measurements without the need of subtracting large numbers. The Model 6000A is galvanically isolated from ground and from channel to channel.

IEEE-488 AND USB INTERFACE STANDARD

The Model 6000A Phase Meter has an IEEE-488 and USB as standard features and an optional LAN interface. Via these interfaces the user can read the display, change the phase range, and check for input signal overrange or under-range, front panel selected offset and phase range.

TWO PHASE RANGES

The Model 6000A Phase Meter has two phase ranges: The 0º to 360º range and the ±180º range.

NOISE AND HARMONIC IMMUNITY

The Model 6000A, unlike previous generation phase meters, does not use “zero-cross-over” techniques to measure phase. The instrument uses a sophisticated Fourier Transform approach to derive the fundamental component of the input signals. Harmonics and noise are effectively “filtered out”. This technique reduces errors significantly.

WAVESHAPE INDEPENDENT

The high accuracy of the Model 6000A Phase Meter is maintained not only for sinewaves but also for distorted and noisy waves. Typical harmonic rejection is 80 db or better. Unique DFT circuitry produces waveform independent phase readings; hence, the user does not have to activate any front panel waveform selection switches. Two different waveforms of the same frequency may be applied to the Phase Meter simultaneously.

HIGH VOLTAGE INPUT RATIOS

Specified accuracies are maintained not only with equal amplitude signals in both channels but also with amplitude ratios over the entire dynamic voltage input range.

ROBUST INPUT PROTECTION

Unique input protection circuitry allows for the sudden application of high input voltages without fear of damage to the Model 6000A Phase Meter. There is no need to slowly increase the levels of input voltages.

FLOATING INPUTS

Neither input of the Model 6000A Phase Meter is connected to chassis ground nor connected to each other; hence measurements may be made on networks with "earth ground" connections without creating ground loops with their resultant phase errors. Very high common mode rejection is also achieved via fully galvanically isolated front ends.

OPTIONAL DC OUTPUT

This option provides a ±DC output which is directly proportional to phase. The sensitivity is 1 volt /degree

Specifications

Resolution	0.001º	
Accuracy	5Hz to 2 KHz	0.02º
	>2KHz to 5KHz	0.03º
	>5KHz to 10KHz	0.04º
	>10KHz to 50KHz	0.05º
	>50KHz to 1MHz	f (in KHz) X 0.001º
Frequency Response	5Hz to 1MHz	
Phase Ranges	0º to 360º or ±180º user selectable	
Amplitude Range	10mV to 630VRMS	
Input Impedance	1MΩ in parallel with 100pf	
Response Time	Less than 6 sec. to specified accuracy	
Optional DC output	+1.80V to -3.60V DC	
Display	High Resolution TFT Color	
Front Panel Controls	Phase OFFSET, LOCAL, Phase RANGE	
Digital Interface	IEEE-488.2, USB, LAN (option -03)	
Temperature Range	0º TO 40ºC Operating 23ºC±5º within specification	
Input Power	90 to 264 VAC, 47 to 63Hz, 20VA	
Dimensions	17.3” W X 3.5” H X 13” D	

Options:

01: DC output (order as Model 6000A-01)
02: Add rear inputs (order as Model 6000A-02)
03: Add LAN interface (order as Model 6000A-03)

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COMMUNICATION RESEARCH CORP.
manufacturer of precision test and measurement equipment
3243 RT. 112 STE Medford, NY 11763 USA