SECTION 1
GENERAL DESCRIPTION

1.1 INTRODUCTION

The Model 6610 Precision Phasemeter measures the phase angle between two waveforms of coincident frequency, over a range of 10Hz to 10MHz with a typical accuracy of 0.05° and 0.01° resolution. It will accept a wide range of input signal levels automatically without range switching from 10 millivolts to 320 volts rms, and input waveforms of sine, square, triangle, and pulses of >50ns. A 5 digit, LED display provides continuous direct read-out of phase angles between 0.00° and 360.00°. An analog output provides a dc voltage equal to 10mV/° for use with an external meter or recorder.

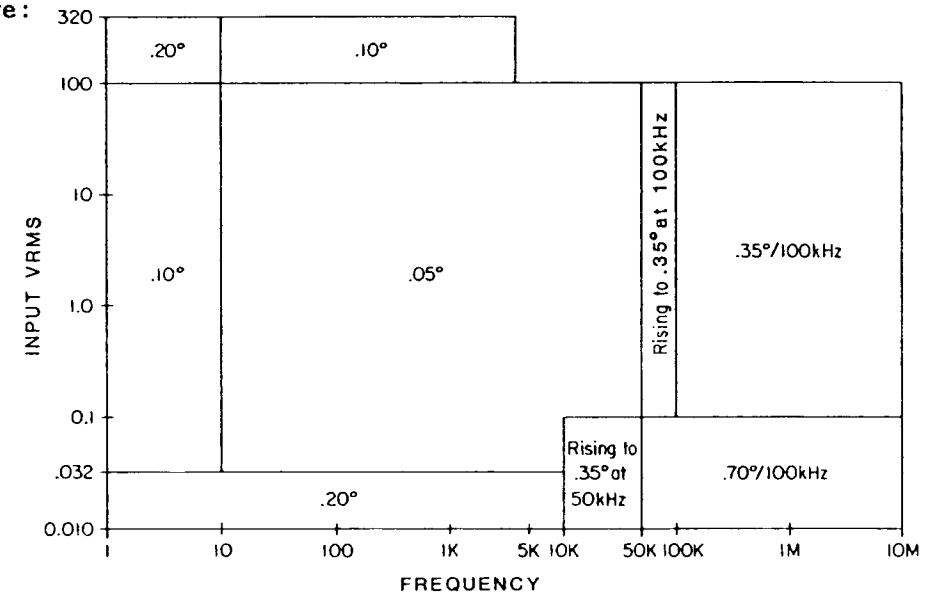
The 6610 also provides a RELATIVE measurement mode which allows the monitoring of phase deviations, front panel indicators to indicate a too low/high input voltage range.

The Model 6610 is carefully inspected, aged, and adjusted before shipment, and ready for operation when unpacked. If it has been damaged in shipment, make a claim with the carrier and notify Krohn-Hite immediately.

1.2 SPECIFICATIONS

FREQUENCY RANGE: 10Hz to 10MHz (1Hz Optional)
PHASE MODE: Absolute or Relative.
ACCURACY

Sine Wave:



Square Wave: Double the sine wave specification.

INPUT

Signal Amplitude: Auto ranging from 0.01V to 320Vrms.

Waveforms: Sine, triangle, square and >50ns pulse. (The phasemeter is triggered on the positive going transition of the input waveform. A sine-wave on the reference input and a square wave on the signal input is allowed).

Impedance: 1 Megohm in parallel with a 50pf.

MAXIMUM DC COMPONENT: ±200 volts.

RESPONSE

Time Constant: >10Hz, less than 500msec; <10Hz, less than 5sec.

Settling Time: To within specified accuracy, within 1 to 8 seconds, dependent on input amplitude and frequency (>10Hz).

DRIFT

Vs. Time: (30 days without CALIBRATE reset) Sine Wave, ±0.025° from 20Hz to 100kHz; ±0.1° at 10Hz; ±0.1° per 100kHz above 100kHz. Square Wave, ±0.025° from 10Hz to 5kHz; ±0.05° to 100kHz; ±0.1° per 100kHz above 100kHz.

Vs. Temperature: (Without CALIBRATE reset) ±0.01°/°C, 10Hz to 100kHz; ±0.05°/°C to 1MHz; ±0.05°/°C per MHz above 1MHz.

ANALOG OUTPUT: (for use with an external meter or recorder) 0-3.6 volts DC, 10mV DC/degree phase, impedance 50 ohms.

DISPLAY: 0.5", 7 segment, green LED.

DISPLAY RANGES: 0.00° to 360.00° or ±180.00°.

RESOLUTION: 0.01°.

REPEATABILITY: Better than 0.01°.

POWER CABLE: 7 feet, removable.

DIMENSIONS: 3.5"/(9cm) high, 16.5"/(41.9cm) wide, 16"/(40.6cm) deep.

WEIGHTS: Net 15 lbs/(6.75kg), Shipping 18 lbs/(8.1kg).

AMBIENT TEMPERATURE RANGE: 0°C to 50°C.

FRONT PANEL CONTROLS: POWER, METER RANGE Reference Waveform, Signal Waveform, REL PHASE, CALIBRATE, phase adjust (0°, 180° and 360°).

POWER REQUIREMENTS: 90-132V or 198-264V, single phase, 50-400Hz, 40W.

OPTIONS

RK-316: Rack Mount Kit for a standard 19" rack spacing.
Option 001: BCD Output.
Option 002: 1Hz operation.
Option 003: Rear panel BNC connectors for REFERENCE and SIGNAL inputs.

Specifications are subject to change without notice.

1.3 TYPICAL PERFORMANCE

Typical performance of the Model 6610 is shown in Figure 1.1 with matched inputs. The graph with interrupted lines is the specified response with unmatched inputs over the input range of 0.1 to 100V.

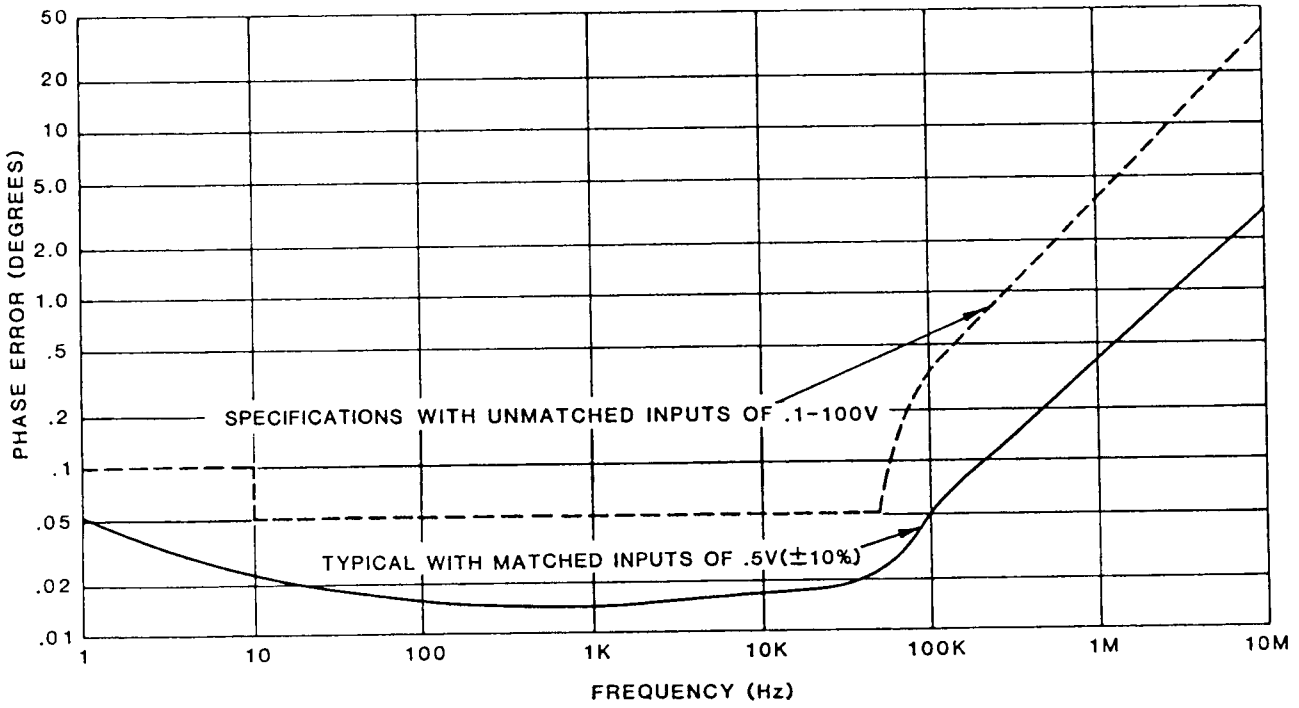


Figure 1.1 Typical Performance