

## SECTION 1

### GENERAL DESCRIPTION

#### 1.1 INTRODUCTION

The Krohn-Hite Model 6200B measures the difference in phase angle between two sine waves or two square waves of coincident frequency, over a range of 10Hz to 1MHz, and provides a direct readout of the phase angle, in degrees, with 0.1° resolution. The 6200 provides a basic accuracy of 0.5°, and accepts input signal levels between 0.1 volts and 120 volts RMS. A 3-1/2 digit, planar gas discharge display provides the direct readout of the phase angle for leading or lagging angles, between  $\pm 180.0^\circ$ .

The 6200 is designed for virtual “hands-off” operation. The wide input voltage range provides a continuous dynamic range of better than 60dB between the two input signals. The exceptional stability of the 6200 (better than 0.2°/month) eliminates the need for daily readjustment of zero and full scale calibration. An auto-sensing circuit in the 6200 determines the correct polarity sign to be displayed, for leading or lagging angles.

Additional features of the Model 6200 include an analog output, equal to 10mV per degree of phase, for use with an external meter or strip chart recorder, plus an optional BCD output.

The instrument is carefully inspected, aged and adjusted before shipment, and should be ready for operation when it is unpacked. If it appears to have been damaged in shipment, make a claim with the carrier and notify Krohn-Hite immediately.

#### 1.2 SPECIFICATIONS

##### Frequency Range

10Hz to 1MHz.

##### Accuracy

Sine Waves: 0.5°, 10Hz to 1KHz; rising to 1° at 50kHz; 1.5°/50kHz above 50kHz.

Square Waves: 1.5°, 10Hz to 50kHz; 1.5°/50kHz above 50kHz.

##### Input Signal Amplitude

0.1 volts RMS to 120 volts RMS. (Derate accuracy specifications by a factor of 2 for input levels between 0.1 volts and 1.0 volts RMS and between 20 volts and 120 volts RMS on either input).

##### Input Waveforms

Sine waves or square waves.

##### Input Impedance

Greater than 100k ohms in parallel with 50pf.

##### Maximum DC Component

$\pm 200$  volts.

**Response**

Time Constant: Approximately 1 second.

Settling Time (to within 1° of reading): Between 1 and 10 seconds, dependent upon change in input.

**Display**

0.55°, 7-segment, planar gas discharge. Continuous, -180.0° to +180.0°.

**Resolution**

0.1°

**Repeatability**

±1 digit

**Drift**

±0.2°/30 days

**Temperature Coefficient**

±0.03°/°C.

**Ambient Temperature Range**

0°C to 55°C.

**Analog Output**

(For use with an external meter or strip chart recorder): 0 to +1.8 volts DC, 10mV/degree phase, 600 ohms output impedance. Separate +/- polarity output line to indicate leading or lagging phase.

+ angle:  $V_{oh} = 2.4V$ ,  $I_{source} = -1mA$

- angle:  $V_{ol} = 0.4V$ ,  $I_{sink} = 20mA$

**BCD Output (Optional)**

Provides 13 lines of parallel BCD output, equivalent to phase angle reading, plus 1 polarity output and 4 separate 3-state control lines. Compatible with DTL, RTL and TTL logic.

(May be externally connected for serial operations; all output lines are 3-state, i.e. "high", "low" and "high Z" to permit serial, multiplex, etc. operation. Consult Factory for details).

**BCD and +/- Output Levels:**

$V_{oh} = 2.5V$ ,  $I_{source} = -4.2mA$

$V_{ol} = 0.4V$ ,  $I_{sink} = 2.1mA$

**3-State Output Leakage Current**

±7.5 uAdc, max.

**Disable Input Levels:**

$V_{oh} \geq 3.5V$

;  
 $V_{ol} \geq 1.5V$  ;  $R_{load} = 47K\ ohms$

**Terminals**

Front Panel: REF (BNC), SIG (BNC).

Rear Panel: REF (BNC), SIG (BNC), AC power receptacle.

**Power Requirements**

105-125 volts, or 210-250 volts, single phase, 50-60 Hz, 10 watts.

**Dimensions and Weights**

3-1/2" high, 8-5/8" wide, 11" deep, 6 lbs./3 kgs net, 8 lbs./4 kgs shipping.

Specifications apply at 25°C,  $\pm 5^\circ\text{C}$  unless otherwise noted.

**Optional Rack-Mounting Kit**

Part No. RK-38; permits installation of 6200 into a standard 19" rack spacing.

*Specifications are subject to change without notice.*