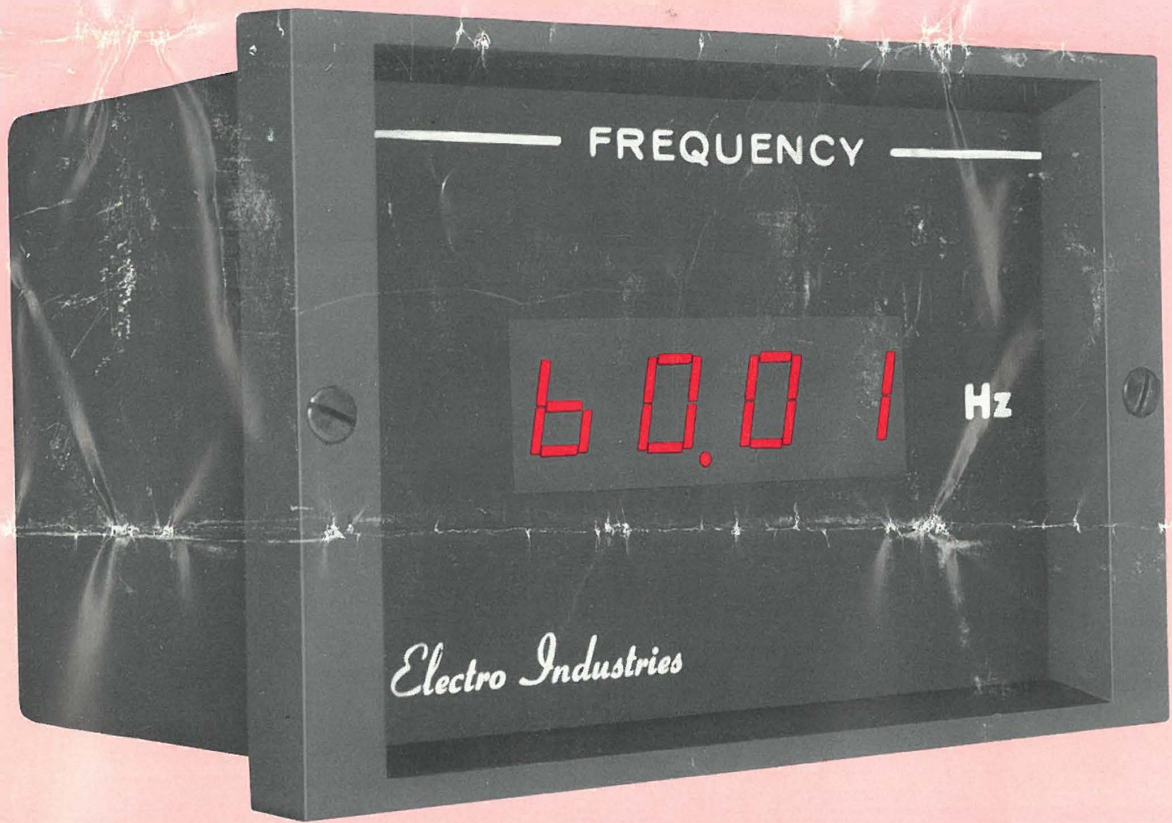


SOLID STATE DIGITAL FREQUENCY MONITOR



- Digital Display
- High Accuracy, High Resolution, Crystal Control
- Fast-Up-Date

The Solid State Digital Frequency Monitor was designed to satisfy the requirements for high resolution and fast updating when measuring low frequency.

The fast updating feature is achieved through a unique phase lock loop scheme. In addition, this technique allows the unit to reject noise on the incoming signal. The accuracy of

this unit is controlled by a crystal with maximum aging factor of 20PPM.

This feature enables the unit to be free from calibration requirements.

The Frequency Monitor is ideally suited for use in monitoring Power Line frequencies and for general low frequency monitoring.

**SOLID STATE DIGITAL
FREQUENCY MONITOR HANDBOOK
MODELS LF60, LF60-8, LF400, LF1000**

STATEMENT OF WARRANTY

Electro Industries takes many steps to assure reliable performance of its products. All products manufactured by Electro Industries/Gauge Tech are warranted against defects in material and workmanship for a period of one full year from the date of delivery. Electro Industries/Gauge Tech will correct or replace at no cost any defect or defective material, returned freight pre-paid, that occurs under proper use and normal operation. There will be no charge for this repair provided that there is no evidence that the equipment has been mishandled or abused. Electro Industries' liability is limited to repair or replacement as defined above.

1.0 GENERAL DESCRIPTION

The Solid State Digital Frequency Monitor, models LF60, LF60-8, LF400, and LF1000 were designed for systems which require high accuracy and relatively fast updating. The fast updating is achieved through a unique phase lock loop scheme which differs substantially from the zero crossing counting scheme of most conventional digital frequency meters. The internal time base is crystal-controlled for maximum accuracy and lowest drift. This feature also enables the meter to be free from calibration requirements. LED displays are utilized for extreme reliability as well as ease in viewing. Digital outputs are available as an option.

The same voltage can be applied to the power input and the monitored input in parallel, or two different voltages can be applied separately (see installation instructions). Best performance is obtained when one voltage is applied to both inputs in parallel.

All models of the Digital Frequency Monitor update their display once every second. This means that for small variations in frequency, the maximum time before a change in frequency is displayed is one second. However, because of the nature of a phase lock loop, it can take a few seconds for large variations in frequency to be accurately displayed. In general, the lower the frequency and the larger the step change, the longer it will take for the display to be accurate. For example, a step change in frequency of 20 Hz. or greater may take up to five seconds to be displayed.

NOTE: The LF60-8 meter is an auto range meter; that is, it automatically changes range (from 5.0 to 99.99 Hz. to 50.0 to 999.9 Hz.) upon reaching 99.99 Hz.

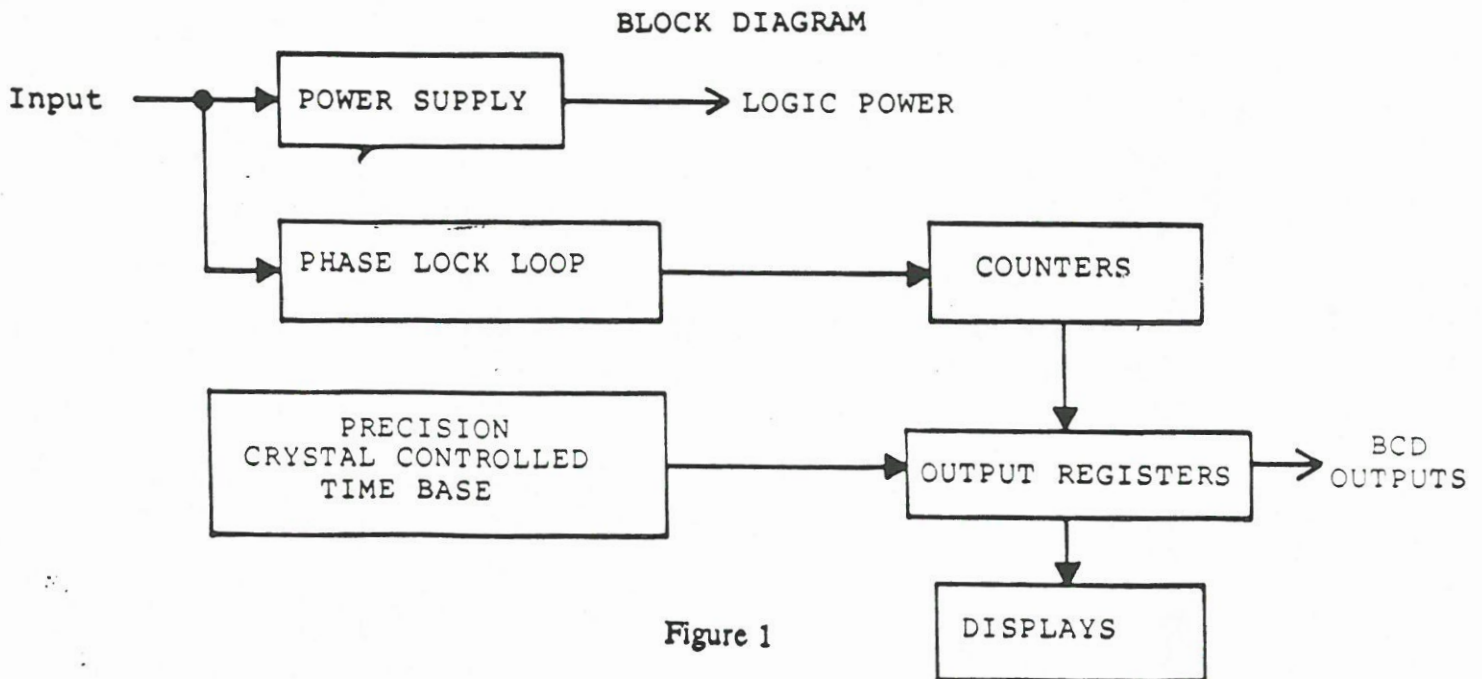


Figure 1

2.0 INSTALLATION

2.2 ELECTRICAL INSTALLATION

All input connections are made at the rear panel terminal strip. There are two ways to connect the LF series monitor:

- Power input in parallel with monitored input, as shown in Figure 3.
- Power input separate from monitored input, as shown in Figure 4.

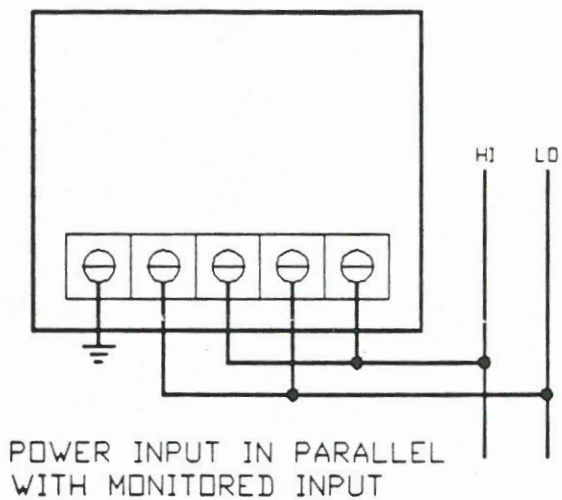


FIG. 3

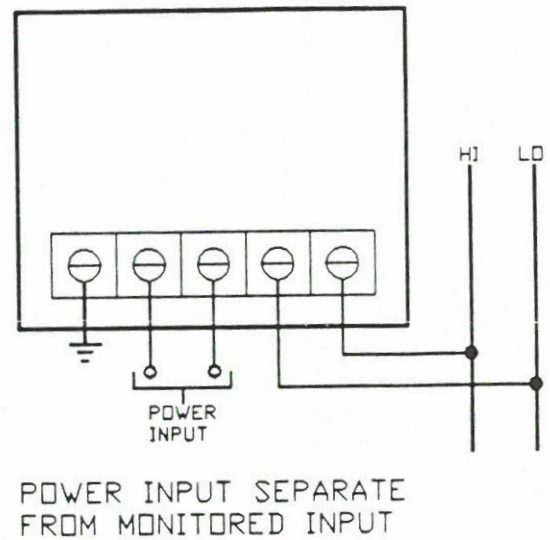


FIG. 4