



## PROVEN PANEL METER FOR SIGNAL CONDITIONING OF FREQUENCY PICKUPS AND SENSORS - COMBINES TRANSDUCER SIGNAL CONDITIONER (3140A) WITH DISPLAY (3240A) & LIMIT CONTROL (3340A)

The Models **3140A**, **3240A**, and **3340A** Frequency Measuring Instruments accept any type of AC or pulse input signal, single-ended or differential, irrespective of waveform. Each instrument produces one standard 5-V output (see Specifications), each precisely proportional to the frequency of the source. These conditioners are useful for measuring rpm, flow, and other phenomena that can be sensed by frequency generating devices like magnetic pickups or turbine flowmeters.

The Model **3140A** Frequency Conditioner is the basic Form 1 instrument. The Model **3240A** Frequency Conditioner/Indicator is the Form 2 instrument, providing vivid frontpanel digital indication of measured values, scalable in desired engineering units. The Model **3340A** Frequency Conditioner/Indicator/Controller is the Form 3 instrument, and includes HI/LO limit detection. This feature is useful in various control and safety alarm functions (e.g., shaft overspeed, low oil flow, etc.).

A wide selection of frequency ranges accommodates virtually any mechanical measurement requirement. Input sensitivity level is continuously adjustable via front-panel control. A simple procedure, using an internal crystal reference oscillator and adjustable span controls, allows precise calibration in terms of frequency, rpm, gallons per hour, or any other appropriate unit. An auxiliary excitation supply of -9 V-DC is available on the rear connector.

3000 Series options applying to the frequency instruments include:

- Analog Peak Capture (Models 3240A and 3340A)
- 4-20 mA Current Output (Models 3140A and 3240A)
- 0-10 V-DC Dual Galvanic Isolated Outputs (Models 3140A and 3240A)
- Internal Electromechanical Relays (Model 3340A)
- Internal Solid-State Relays (Model 3340A)
- 12 V-DC Battery-Powered Operation or Nominal 230 V-AC Operation (Models 3140A, 3240A, and 3340A)

# 3140A/3240A/3340A

FREQUENCY PANEL  
INSTRUMENT [3000 SERIES]

## SPECIFICATIONS

**Input Type:** Any AC or unipolar pulse signal, floating or grounded, irrespective of waveform

**Input Threshold Level:** Automatic triggering at 75% and 25% of the input amplitude

**Input Ranges** (full-scale): Switch-selectable 0 to 100, 200, 500, 1000, 2000, 5000, 10000, 20000, or 50000 Hz

**Sensitivity** (full-scale): Continuously adjustable from 0.1 to 200 V\*

**Excitation Supplied:** -9 V-DC auxiliary supply available on rear connector

**Analog Output:** One output,  $\pm 5$  V full-scale with 50% overrange, 5 mA max.; low-pass corner frequency of 2 Hz for 100, 200, and 500 Hz ranges; 10 Hz for all other ranges

**Output Ripple and Noise:** Less than 0.1% of full scale from 20 to 100% of the selected range

**Step-Function Response Time** (to 99% of final full-scale value): 1.8 sec for 100-, 200-, and 500-Hz ranges; 350 msec for all other ranges

**Accuracy** (typical, following calibration): 0.05% of full scale

**Display Resolution** (Models 3240A and 3340A): 0.02% of full scale

### Physical / Environmental

**Case:** Each unit is housed in a single piece of heavy gage aluminum (1.7" H x 4.41" W x 7.0" D); a simple reassembly procedure allows mounting in the user's precut panel; the Model 3004 Rackmount Adaptor permits secure mounting of up to four units in a standard 19-inch rack

**Operating Temperature Range:** 0° F to +130° F (-18°C to +55° C); assumes dry, noncondensing ambient atmosphere

**Weight: Instrument:** approximately 2.0 lb (0.9 kg) maximum;  
Shipping: approximately 3.5 lb (1.6 kg) maximum

**Power Voltage:** 105-135 V-AC; 210-260 V-AC optional (add suffix "F" to model number); any model not employing the solid-state relay ("S") option may be powered by battery (11.5-15 V-DC, 500 mA max.; add suffix "B" to model number)

**Frequency:** 50-400 Hz

**Consumption:** 5 W max. (for Form 1 instruments), 8 W max. (for Form 2 instruments), or 9 W max. (for Form 3 instruments) Display (Form 2 and Form 3 instruments only)

**Display:** Orange LED's, six digits with polarity sign, 0.4" (1.0 cm) height; Most Significant Digit of display is either unlit or reads "1," and in either case contains polarity sign; Least Significant Digit is a dummy zero which may be lit or unlit, as desired

**Scaling:** Selectable at rear panel; full-scale values of  $\pm 5000$  counted by "1's,"  $\pm 10000$  counted by "2's," or  $\pm 20000$  counted by "5's," with selectable decimalpoint locations (along with dummy zero) to give decade multiplier factors of 10, 1.0, 0.1, 0.01, 0.001, or 0.0001

**Display Sampling Update Rate:** 3 samples per second

**Limit Logic Outputs** (Form 3 instruments only) Both true and complement available for each limit condition (LOW, OK, HIGH); TTL-compatible, wire-ORable; 10-mA sink, 0.5-mA source (max.); normally nonlatching, but latching outputs are also available

\* Input sensitivity decreases above 10 kHz by 0.01 V/kHz (to 0.5 V at 50 kHz).