

The 6048 is a four-channel input module for use with tachometers, flowmeters and other transducers that have frequency outputs. It can also measure the period between events and count or totalize events. Digital measurement of frequency provides the highest accuracy. Much better, for example, than-voltage-to frequency converters.

The 6048 has optic isolated trigger, pause and reset inputs and may be triggered by input waveforms from 100mV to 100 Volts at zero crossings. It can measure frequency to 500 kHz, period down to 100 uS and count events to over 4 billion.

The 6048 has numerous programmable operating modes available, which include frequency measurement, period measurement, and pulse counting. Other programmable features incorporated in the Model 6048 are time base, number of measurement periods, and counter reset mode. The frequency, period, and pulse count measurements can be from either optic isolated digital inputs or a zero crossing detector. The counters can be reset by external inputs or automatically after each reading. Power is provided for transducers requiring 12V or for using the optic isolated inputs with external contacts.

Using digital measurement techniques, the 6048 does not have analog outputs. An analog voltage proportional to frequency can be obtained by using the 6042 DSP to scale the 6048 measurement and convert it to analog using digital-to-analog converters. This provides the accuracy of a digital measurement with the analog output of a frequency to voltage converter.



FEATURES

- Four independent 32-bit channels
- Digital or zero crossing triggers
- Optic isolated inputs
- Noise reduction input filters
- Programmable time base
- 12 Volt isolated power for inputs
- Companion Calibration Relay Matrix

SPECIFICATIONS

DIGITAL INPUTS (OPTIC ISOLATED)

Level.....Requires 5 Volts at 8 mA to trigger the optic coupled input. Inputs are protected to ± 50 Volts.

Isolation.....300 Volt.

Frequency.....DC to 500 kHz.

ANALOG INPUTS (ZERO CROSSING DETECTOR)

Type.....Differential.

Level.....100 mV minimum to 100 Volts maximum.

Filter.....Terminals for single pole, user installed filter.

Impedance.....100K Ohms.

Frequency.....DC to 100 kHz.

OUTPUT

Resolution.....32-bits

Format.....Output as two 16-bit data words .

RANGE

Frequency.....0.1 Hz to 500 kHz.

Period.....100 μ S to over 11 million hours.

Count.....0 to 2^{32}

ACCURACY

Frequency.....0.01%, ± 1 count

Period.....0.01% down to 1 mS, 0.1% down to 100 μ S.

Count..... ± 1 count.

TIME BASE

Selection.....0.1 Hz, 1 Hz, 10 Hz, 100 Hz, 1 kHz, 10 kHz, 100 kHz, 1 MHz, 10 MHz.

Accuracy..... $\pm 0.01\%$.

Periods.....1 or 10.

ISOLATED POWER

Voltage.....12 Volts, 1 Amp maximum.

GENERAL

Mounting.....Occupies one slot in Series 6000 enclosures.

Connector.....50-pin, Type D, mating connector supplied.

Temperature...0°C to +50°C

6043 CALIBRATION RELAY MATRIX

The 6043 is a 16-channel, 3-wire, general purpose relay switching module that, among other applications, can be used to switch system signal inputs to a calibration source. Enabling the channel switch disconnects the transducer from the system input and connects it to the calibration source input. Each channel is independently controlled to apply the signal from the calibration source to the input of individual or multiple system channels.

SIGNAL INPUTS

Number16

Configuration..Two-wire with shield.

SIGNAL OUTPUTS

Number16

Configuration..Two-wire with shield.

CALIBRATION INPUT

Configuration..Two-wire. Signal inputs may be switched individually to the calibration input by program instruction.

RELAY PERFORMANCE

Capacity.....1 Amp, 30 VDC or 0.5 Amp, 125 VAC (resistive load).

Op Time.....3 milliseconds.

GENERAL

Mounting.....Occupies one slot in Series 6000 enclosures.

Connectors.....50-pin type D connector for inputs and 50-socket type D connector for outputs. Mating connectors supplied.
The calibration input is provided on both connectors

Temperature...0°C to +50°C.

Humidity.....Up to 95% without condensation.

ORDERING INFORMATION

6048.....4-Channel, 32-bit Frequency/Period/Counter.

6043.....16-Channel DPDT Calibration Selector