KineticSystems

CAMAC Equipment

CAMAC, Computer Automated Measurement And Control, is an IEEE-standard (583), modular, high-performance, realtime data acquisition and control system concept.

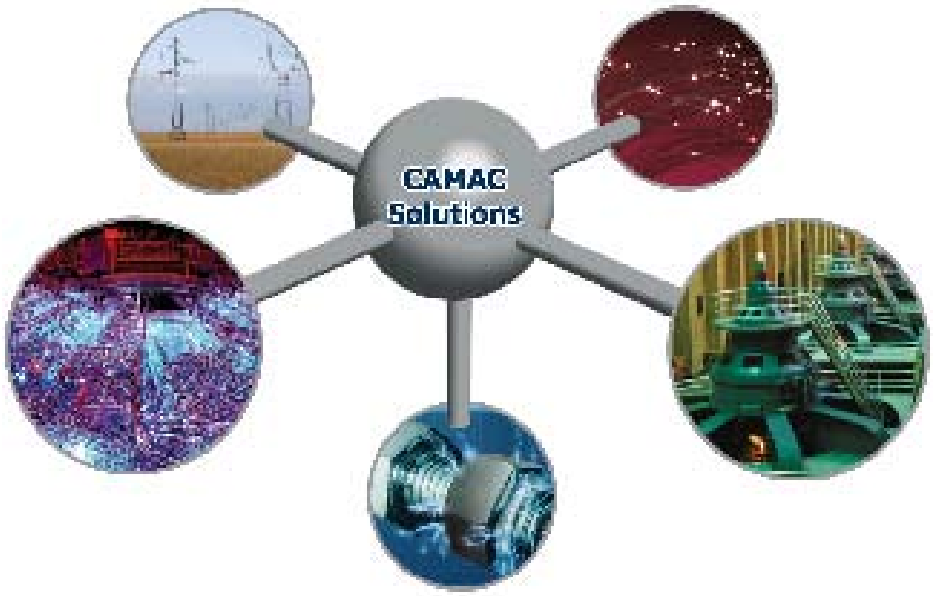
Since 1969, CAMAC has been used in many thousands of scientific, industrial, aerospace, and defense test systems around the world.

APPLICATIONS

Jet aircraft engine testing
Measurement of shaft speeds
Pulse train monitoring
Frequency measurement

3665

4-channel Frequency Counter



The Model 3665 is a single-width CAMAC module that provides four frequency measurement channels. This counter module can be used to monitor a variety of pulse sources.

FEATURES

- Four frequency counter channels
- Frequency range from 0.059 Hz to 50,000 Hz
- Selectable input ranges: 100 mV to 10 V (p-p) and 1 V to 20 V (p-p)
- Differential inputs for high noise immunity
- Selectable observation window from one millisecond to 1.024 seconds
- Precision time base (1 ppm, 50 to 120 F)

GENERAL DESCRIPTION

The Model 3665 is a single-width CAMAC module that provides four frequency measurement channels. This counter module can be used to monitor a variety of pulse sources. Moreover, its unique circuitry allows the monitoring of a wide range of frequency (0.059 Hz to 50,000 Hz) without changing any module settings. For example, the RPM of an aircraft engine shaft can be monitored at full speed as well as when it coasts to a stop. Differential input circuits are used to provide high noise immunity.

The input pulse stream for each channel is sampled during a user-selectable observation window. This window period is programmable from one millisecond to 1.024 seconds, and the selection is common to all channels. At the end of each window period, 24 bits of data representing the time base count from the master clock as well as 24 bits representing the number of whole periods observed, are stored in the current value table (CVT) for that channel. If the period of the input pulse stream is longer than the window period, the window remains "open" until one whole period of the input signal is observed. If enabled, a LAM may be generated when any of the time base counters overflow. The CVT "scratchpad" memory can be read at any time from the Dataway, with the data from the latest observation being read. The frequency is calculated by the host computer using the following formula:

Frequency = clock rate x whole input periods/time base counts

The clock rate for the module is programmable to provide a tic rate of 1 MHz or 10 MHz with a clock accuracy of 1 part per million (0.0001%) over a temperature range from 50 to 120 Fahrenheit. The availability of the two 24-bit values (whole input period count and time base count) allows the module to monitor a wide range of pulse rates without changing any of the programmable settings. The counting accuracy depends on the time base accuracy as well as the monitoring resolution. The longer the observation window, the higher the accuracy. A 10 mS observation window will result in an accuracy of approximately 0.01% with a 1 MHz clock and 0.001% with a 10 MHz clock. A 100 mS window will provide accuracies and order of magnitude better.

The differential input range is selectable on a channel-by-channel basis (100 millivolts to 10 volts, peak-to-peak, or 1 volt to 20 volts, peak-to-peak). Contact KineticSystems for other input voltage requirements.

A separate input connector is provided for a "health check" signal, if desired. The input circuitry can be switched under program control from each of the channels to that connector, providing a test of the operating characteristics of that channel.

ORDERING INFORMATION

MODEL	DESCRIPTION
3665-Z1A	4-channel Frequency Counter

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