



Data sheet

VME-VK22-5723

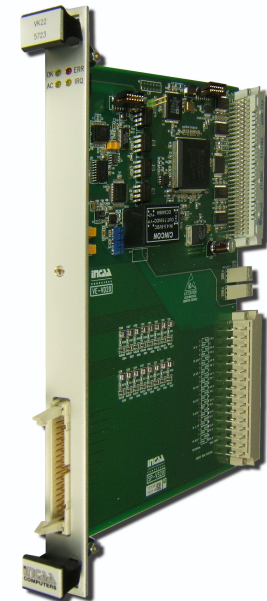
VME board level product

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16/8 Channel ADC module for VME

Features

- Multiplexing ADC with isolated frontend
- 16 bit resolution, no missing codes at 15 bit
- Programmable high speed sample rate and high stability
- Autonomous measurement or under VME software control
- Interrupt after conversion cycle complete
- Bipolar input range ± 10 V; other ranges on request
- Max. 16 channel single ended or max. 8 channel differential inputs, software programmable/channel
- Autonomous digital filtering, calibration, drift correction, diagnostics, etc.
- Diagnostic LEDs on frontpanel
- DC power requirement: 5 V only
- VMEbus standard compatible (Rev. C.1)



Description

The VME-VK22-5723 is a multiplexing 16 channel single ended or 8 channel differential analog to digital converter module for the VMEbus standard. The analog inputs are opto isolated from the VMEbus.

The maximum voltage input range is from -10 V to $+10$ V and is converted with 16 bit resolution. The AD-converter operates as a sampling successive approximation converter and converts continuously with a programmable sample rate or takes single samples under software control.

Input channels can be programmed to single ended, differential or can be switched off to increase the maximum sample speed. All channels can be measured twice and averaged for better stability.

Each channel can be filtered with a moving average filter of which the coefficients can be programmed by VME. Samples are stored in dual port memory and can be read by VME at any time. The module is capable of generating an IRQ to VME if all active channels are converted. This feature reduces any polling overhead to a minimum.

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Technical Specifications

VME INTERFACE

- A24/D16 slave
- VME interrupter

ANALOG INPUTS

- Voltage range : bipolar ± 10 V; other ranges on request
- Number of channels : max. 16 single ended or max. 8 differential, software programmable
- Full Scale Range (FSR) : 20 V
- Input impedance : $>10^8 \Omega$
- Input voltage damage limit : ± 30 V referred to analog ground (power on)

TRANSFER CHARACTERISTICS

- Resolution : 16 bit
- Full scale input : factory set within 1 LSB at $+25^\circ\text{C}$
- Offset : factory set within 1 LSB at $+25^\circ\text{C}$
- Integral non linearity : max. ± 3 LSB (optional ± 1.5)
- Differential non linearity : max. +3, -2 LSB (optional +1.5, -2)
- Missing codes : none at 15 bit
- Crosstalk between channels : <30 ppm of FSR

STABILITY

- Full scale total drift : autocalibrating, typ. ± 2 ppm of FSR/ $^\circ\text{C}$ (optional max. ± 2 ppm)
- Power supply sensitivity : <10 ppm of FSR/% supply voltage variation
- Warming up time : <1 second

TIMING

- Conversion time including offset and gain correction : 16 channel : 800 μs
8 channel : 500 μs
1 channel : 200 μs

ISOLATION

- Isolation from VMEbus : 1500 V peak to guardline

POWER SUPPLY REQUIREMENTS

- DC power (VMEbus) : +5 V (+5 %, -3 %), 600 mA

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ENVIRONMENTAL REQUIREMENTS

- Temperature range : 0 to +50 °C operating (for listed accuracy)
-20 to +60 °C storage
- Max. operating rel. humidity : 90%, no condensation

MECHANICAL CHARACTERISTICS

- Board dimensions : 233.4 x 160 mm Eurocard
- Analog input connector : 34 pin connector 3-828184-4 AMP™

HARDWARE/SOFTWARE INTERFACE

- Analog inputs : differential or single ended, programmable/channel
- Data path measuring results : via two port memory
- Active input channels : selection by command
- Sampling timer : autonomous or under VME software control
- Autonomous sampling time : from 200 µs to 1.6 s.;
interrupt after all selected channels converted
- Diagnostic data : accessible in two port memory
- Filter methods : - measurement twice each channel and average;
selection no or all channels
- moving average filter;
coefficient programmable/channel
- Module identification : 64 characters
- Other functionality : on request

WARRANTY

: 1 year

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