# 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.

4024/4054
32 to 64-channel Recording Datalogger
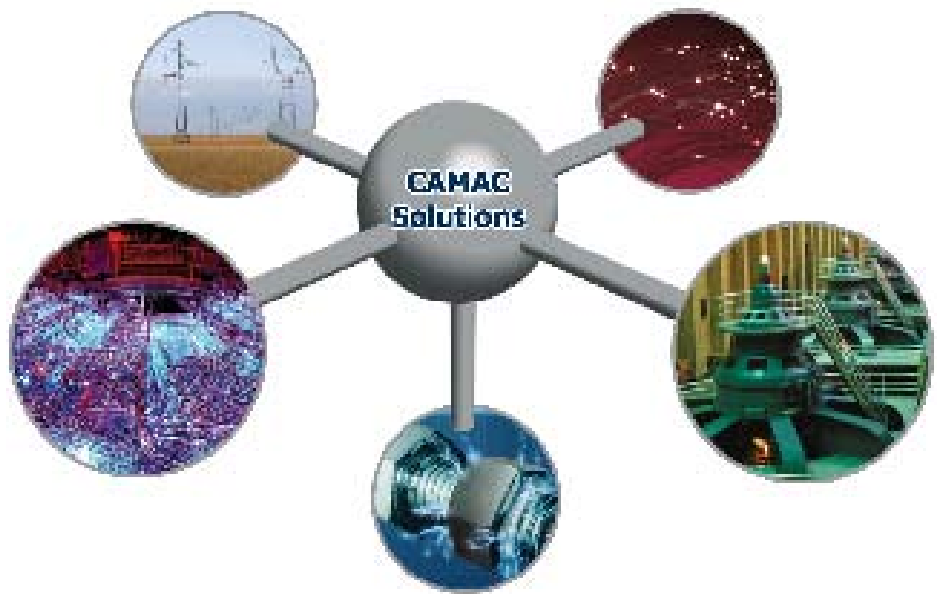
The Models 4024 and 4054 are each single-width CAMAC modules. The 4024 is a 32-channel datalogging digitizer containing a 12-bit ADC, a track/hold amplifier, and a 32-channel multiplexer. The datalogger can be expanded to 64 channels by using two 4024s.

FEATURES

- Twelve-bit resolution with excellent dynamic accuracy
- Sample rates to five kilosamples per second (four active channels)
- 32 input channels, expandable to 64 with two 4024s
- Active channels are programmable from the Dataway
- Differential input for common-mode rejection
- Memory expandable to four megasamples (four 4054 modules)
- Active memory size is programmable down to two kilosamples
- Memory readout at full Dataway speed
- Direct readout for "present value" monitoring
- Programmable selection of internal clock or external clock

GENERAL DESCRIPTION

The Models 4024 and 4054 are each single-width CAMAC modules. The 4024 is a 32-channel datalogging digitizer containing a 12-bit ADC, a track/hold amplifier, and a 32-channel multiplexer. The datalogger can be expanded to 64 channels by using two 4024s.

When a single 4024 is used, the number of active channels is programmable from the Dataway. This affects the maximum sample rate for each channel as shown here:

Active Channels	Maximum Sampling Rates
4	5 KHz
8	2.5 KHz
16	1 KHz
32	500 KHz

When two 4024s are used (64 channels), all channels must be active. Since each 4024 contains an ADC, the maximum channel sample rate for 64 active channels is 500 Hertz.

The 4054 is a high-capacity memory module with memory size options of one, two, or four megasamples. Up to four 4054s can be connected to one datalogging recorder, giving a total memory capacity of sixteen megasamples. When more than one 4054 module is used, each must have four megasample capacity. The available memory per channel is the total memory divided by the number of active channels. For smaller memory requirements, a 4050 memory module may be substituted for the 4054. However, 4050 and 4054 modules may not be used together in a system.

The input signal for all channels is received on two 34-contact ribbon connectors. Sample rate is controlled by a programmable internal clock that is selectable from 0.1 hertz to 5 kilohertz or by an external TTL-level clock. A clock-out signal is provided for driving another recording datalogger.

The samples for each channel can be read out contiguously by an F(2)•A(0)command [preceded by an F(17)•A(0) channel command]. The readout can also occur in a streaming fashion (channel data interleaved) by using the F(2)•A(1)command. Both single-channel and streaming readout can be at full Dataway speed.

As an aid in system setup, the ADC can be read directly: "present value monitoring" Read commands are included. Each 4024 contains a 32-word memory, readable from the Dataway with an F(1)•A(0) for single-channel or an F(1)•A(1) for reading all 32 channels. The F(17)•A(1) command is used to select the starting channel (1-32). This feature is also useful for applications where a 4054 memory module is not needed. The 4024 can then sample 4, 8, 16, or 32 channels once, and store the conversions in the 32-word memory.

SPECIFICATIONS

Item	Specifications
Inputs:	32 per 4024, 64 maximum, differential type; ten megohm minimum impedance
Full-scale Range	±5 volts, ±10 volts, strap-selectable
Conversion Rate	DC to 5 kilosamples per second. Refer to GENERAL DESCRIPTION for detailed information
Internal Clock	Crystal-controlled with programmable rates from 0.1 hertz to 5 kilohertz in 1, 2.5, 5
Resolution	12 bits (1 part in 4096)
Output Code	Offset binary or two's complement, strap-selectable
Accuracy	±1 LSB maximum error from best fit over entire range

POWER REQUIREMENTS

Model 4024-S1A	+6 volts — 1.4 A
	+24 volts — 120 mA
	24 volts— 120 mA
Model 4054	+6 volts — 2.0
	A (-Z1B) 2.1
	A (-Z2B) 2.6
	A (-Z3B)

WEIGHT:
.62 kg. (1 lb. 6 oz.)

ACCESSORIES
Model 5845-w000 Front Memory Bus

4054 Memory Modules	2	3	4
Suffix (-w000)	A	B	C

Model 5846-w000 Rear Data Bus

Total 4024 + 4054	2	3	4	5	6
Suffix (-w000)	A	B	C	D	E

KineticSystems Company, LLC

900 N. State St.
Lockport, IL 60441-2200

Toll-Free (US and Canada):
phone 1-800-DATA NOW
        1-800-328-2669

Direct:
phone +1-815-838-0005
fax +1-815-838-4424

Email:
mkt-info@kscorp.com

To find your local sales representative
or distributor or to learn more about
KineticSystems' products visit:

www.kscorp.com

ORDERING INFORMATION

MODEL	DESCRIPTION
4024-S1A	12-bit, 32-channel Recording Datalogger
4054-Z1B	Transient Memory, One megasample x 12-bitcapacity
4054-Z2B	Transient Memory, Two megasample x 12-bitcapacity
4054-Z3B	Transient Memory, Four megasample x 12-bitcapacity

Updated June 6th, 2005