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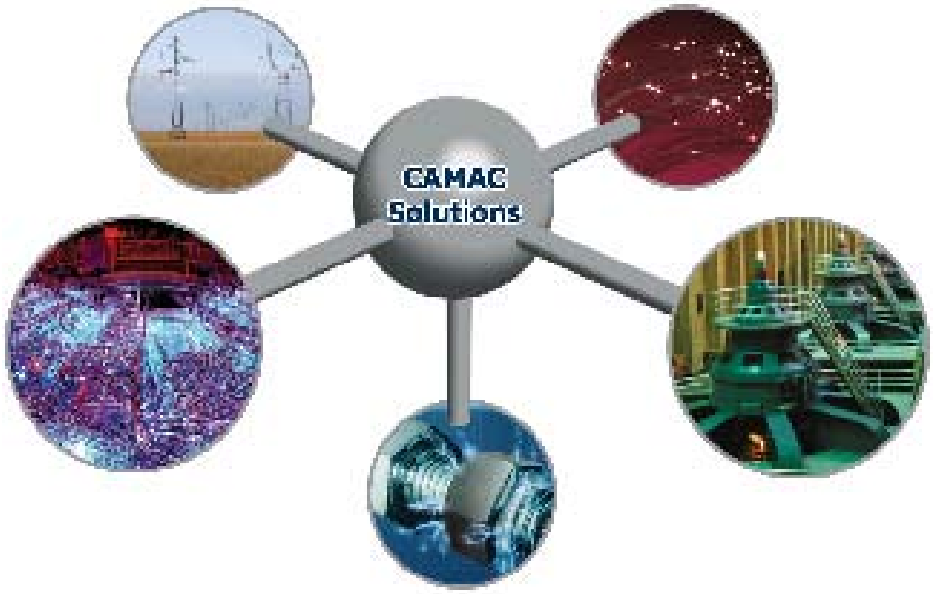
## CAMAC Equipment

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.

# 3952

## Enhanced Type L-2 Serial Crate Controller




The Model 3952 is a double-width Type L-2 serial crate controller (SCC) providing the interface between the CAMAC Serial Highway and the Dataway in a CAMAC crate.

### FEATURES

- Capable of "enhanced" data throughput to three megabytes per second
- Can be used as an auxiliary crate controller for redundant highways
- Available with option for use in high magnetic fields
- Complies with IEEE Standards 583 and 595
- Supports auxiliary crate controllers
- Strap-selectable for bit-serial and byte-serial operation with clock rates to 5 MHZ
- Address selection allows up to 62 crates on a single highway
- Provides galvanic isolation of the Serial Highway with a companion U-Port adapter
- Supports enhanced list-mode operation when used with the 3830 LSM

**GENERAL DESCRIPTION**
The Model 3952 is a double-width Type L-2 serial crate controller (SCC) providing the interface between the CAMAC Serial Highway and the Dataway in a CAMAC crate. It fully complies with IEEE Standards 583 and 595. The standard Serial Highway (SH) protocol provides for one Dataway operation associated with each message. KineticSystems Corporation has developed enhanced block modes to the SH protocol for applications where an extremely high data throughput is needed. The enhanced 3952 supports this block protocol. A CAMAC Serial Highway system consists of a Serial Highway driver (such as the 2160) interfaced to the host computer, the Serial Highway itself, and up to 62 Type L-2 serial crate controllers.

The 3952 enhanced L-2 SCC provides all features set forth in IEEE Standard 583 for crate controllers and IEEE-595 for Type L-2 SCCs. When a Serial Highway driver (such as the 2160) transmits a multi-CAMAC-word command message, an addressed enhanced SCC switches to block mode to interpret the message and perform the Dataway operations. Regular and enhanced SCCs operate in the same system as long as enhanced block-mode messages are not sent to the regular SCCs.

Relay contacts are provided for controlling external U-Port adapters such as KSC Model 3936 and 3939. Contacts have one side to the module common and the other side to the Serial Highway connectors. The bypass contact is closed for BYPASS = TRUE, and the loop collapse contact is open for LOOP COLLAPSE = TRUE. Reed relays are used in the 3952-Z1G. When high-intensity magnetic fields up to 150 gauss are anticipated, the 3952-Z1H should be used. These controllers contain specially shielded relays.

The 3952 SCC receives a clock and data signal from the SHD or an "upstream" SCC. The clock rate can range from arbitrarily slow to five megahertz. This clock rate is set within the SHD and must take into consideration the transmission medium and other external devices such as U-Port adapters and modems. The SCC is strap-selectable for bit-serial (with clock and one data pair) or byte-serial operation (with clock and eight data pair). Choose byte-serial operation when a higher throughput is required. The clock and data signals follow the RS-422 balanced-line specification and are received at the D-IN connector on the SCC.

**AUXILIARY OPERATION**
The SCC can be changed in the field to perform as an auxiliary crate controller. This provides a redundant highway when used with another L-2 SCC as the main crate controller. Certain operating restrictions apply. Contact KineticSystems Corporation for additional information.

**SGL-ENCODER CONNECTOR**
The rear-panel, 52-contact "D" SGL connector contains the 24 individual LAM lines, the signals for producing the SGLE (encoded LAM) bits, the Demand control signals, and the binary N lines. Demand generation can be provided by direct patching, a 2010 SGL Adapter or a 3924 LAM Encoder module.

**U-PORT ADAPTERS**
A Serial Highway can be configured to use twisted-pair or fiber optic cable. If the 12-volt common-mode limit for D-Port operation is likely to be exceeded or if the highway is long, U-Port adapters are recommended. A U-Port Adapter is used in conjunction with the Serial Highway driver and the remote Type L-2serial crate controllers. For bit-serial operation, the 3926 provides galvanic isolation and transformer coupling, while the 3938 uses fiber optic cable. When high throughput is required, the 3939 provides excellent performance in byte-serial mode using fiber optic cable.

**LIST SEQUENCER MODULE**
Enhanced versions of the 3952 support block-mode, single-NAF transfers for reading a transient recorder memory, etc. A Model 3830 List Sequencer module (LSM) can be used with the 3952 to support random-NAF transfers at full enhanced block-mode speed.

**THROUGHPUT PERFORMANCE**
When block-mode messages are being received in byte-serial mode, the 3952-Z1Gand -Z1H support transfer rates up to three megabytes per second (one Dataway operation every microsecond); in bit-serial mode, the rates are up to 300kilobytes per second (one Dataway operation every ten microseconds). **Caution:** *The actual maximum block rate depends upon the computer interface, Serial Highway Driver, and clock rate used. Consult KineticSystems Corporation for performance details on your particular system.*

**POWER REQUIREMENTS**
+6 volts — 3000 mA

**WEIGHT**
1.2 kg (2 lb. 9 oz.)


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**ACCESSORIES**

| | |
|---|---|
| Models 5932-Z1A, 5933-Z1A, 5940-Z1A, 5942-Z1A | Mating Connectors |
| Model 5800-Axyz or 5800-Bxyz | Bit-serial Highway Cables |
| Model 5801-Axyz | Byte-serial Highway Cable |
| Model 5843-Series | ACB Cable Assemblies |
| Model 5860-R000 | SGL Cable for 3924 |
| Model 2010-Z1A | SGL Adapter |
| Model 3933 to 3939 | U-Port Adapters |

## ORDERING INFORMATION

| MODEL | DESCRIPTION |
|---|---|
| 3952-Z1G | Enhanced Type L-2 Serial Crate Controller with Standard Relays (replaced the Model 3952-Z1E) |
| 3952-Z1H | Enhanced Type L-2 Serial Crate Controller with High-gauss Relays (replaces the Model 3952-Z1F) |

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