

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

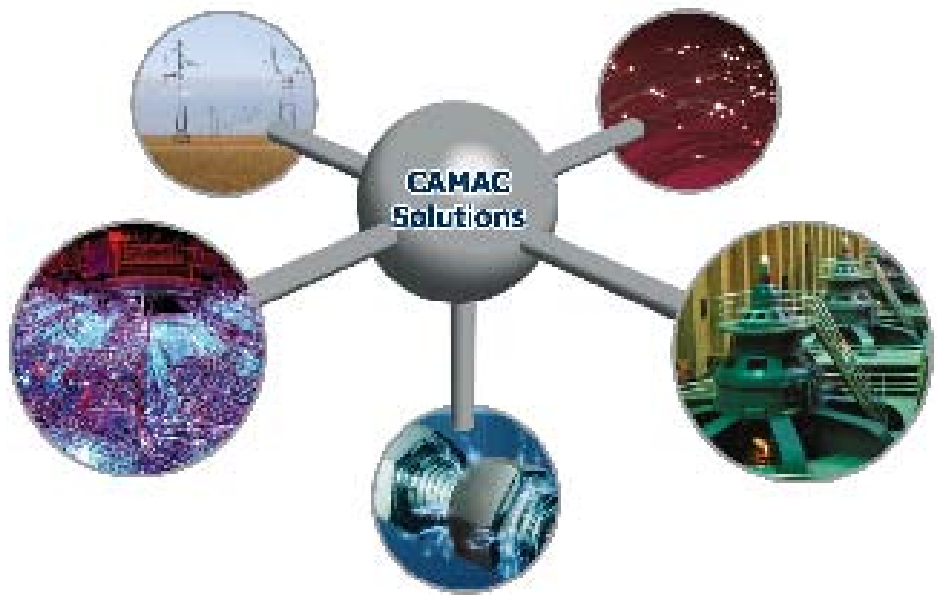
Isolated fiber optic highway for Serial Highway Drivers and Type L-2 serial crate controllers

Systems requiring excellent immunity from electromagnetic or electrostatic interference

Remote systems operating at a high potential difference

Systems requiring maximum Serial Highway data throughput

3939 Byte-serial, Fiber Optic U-Port Adapter



The Model 3939 is a single-width U-Port adapter module used in CAMAC Serial Highway systems operating in byte-serial mode to five megabytes per second.

FEATURES

- Fiber optic cable isolation of CAMAC Serial Highway
- Operates in byte-serial mode with a single fiber optic cable loop
- Options available for one kilometer and three kilometer maximum cable length
- Includes strap-selection for 5, 2.5, and 1 megabyte per second
- Unique clock restorer circuit allows five megabyte operation with up to 62 remote crates
- External batteries can be used for power-down backup



GENERAL DESCRIPTION

The Model 3939 is a single-width U-Port adapter module used in CAMAC Serial Highway systems operating in byte-serial mode to five megabytes per second. A unique clock restorer allows full five megabyte per second operation with up to 62 remote crates. U-Port adapter options allow a maximum fiber-optic cable length of one kilometer or three kilometers.

When the elements of a CAMAC Serial Highway system are operated in byte-serial for maximum data rate, the D-Out port from the serial driver (SD) or serial crate controller (SCC) provides one balanced pair for clock and eight pair for the associated data byte. The 3939 transmitter serializes each byte and transmits the data at ten times the SC clock rate over a single fiber optic cable. The downstream 3939 receiver converts this serial word to a clock and eight data bits for presentation to the SCC or SC D-In port.

The 3939 can be used with a Type L-2 serial crate controller (such as the Model 3952) or with a serial driver (such as the Model 3992 or 3994). The Model 1739 U-Port Adapter is used with the 2050- or 2160-Series Serial Highway Drivers.

OPTION SUMMARY

Model	Wavelength	Fiber Optic Cable		Maximum Distance
		Model	Core Diameter	
3939-Z1A	820 nanometers	5802-Cxyz	100 micrometers	1 kilometer
3939-Z2A	820 nanometers	(Note 4)	(Note 4)	1 kilometer
3939-Z1C	1300 nanometers	5802-Exyz	50 micrometers	3 kilometers

Notes:

1. Because of the different wavelength used, the Z1C version of the 3939 is not compatible with the Z1A or Z2A versions. Contact the factory for methods of combining them on the same highway.
2. The 5802-Cxyz cable can be used with the 3939-Z1C provided that the length is one kilometer or less.
3. A full 5-megabyte per second operating rate can be used to the maximum distance shown.
4. The 3939-Z2A can be used with 50, 62.5, 85, and 100 micrometer core cable. Refer to the 1730-Series UPA and 5800-Series Cable Assemblies data sheets for additional information and limitations.

A 3939 U-Port system can generally operate at full speed with D-Port SCC clusters using 3952s, provided that all crates in a cluster are in the same rack or equipment bay. A system using the transformer-isolated Model 2958 Byte-serial U-Port Adapter can be extended with 3939s (with one or more high-voltage-isolated satellite crates, for example). The highway is configured using a 3939 associated with each fiber optic-isolated crate (or cluster), with a combination of a 3958 and a 3939 at the junction of the main cable highway and fiber optic "branch."

With power applied to the 3939, it can function as a highway repeater, controlled by the front-panel BYPASS switch or the bypass bit from an L-2 SCC. The BYPASS switch can isolate the D-Port cabling and SCCs from the highway. If power is lost to an L-2 SCC, the SCC asserts its bypass bit to the 3939. If battery backup is provided, highway integrity is maintained.

The 3939 contains a 36-contact rear PC connector for connections from an external power source. Plus six volts and minus six volts are required with a tolerance of ±5%. The external supply must be capable of providing the operating current noted under Power Requirements. The 3939 provides an open-collector POWER STATUS signal on the rear I/O connector.

The 3939 normally operates at five megabytes per second. Strap-selection is provided for 2.5 and 1 megabyte per second operation. These speeds may be required in mixed systems where the "twisted-pair" portion of the highway limits the maximum speed.

A NO SYNC LED on the front-panel aids in identifying highway problems. This LED signal, extended by a one-shot, indicates that a no-sync condition exists (even momentarily) in the fiber optic Serial Highway stream. When in the no-sync state, the 3939 disables its fiber optic transmitter to prevent false crate controller operation in a downstream crate.

Two D-Port cable assemblies included with each 3939 connect to a 3992/3994 Serial Highway Driver or 3952 Serial Crate Controller. Each cable assembly contains a DB25P connector at one end and a DB25S connector at the other end and is 0.25 meters long (Model 5852-F25K). For applications where more than one SCC is used with a single 3939 (crate cluster) or mixed systems with 2958 UPAs, please contact the factory for information of the appropriate cables.

POWER REQUIREMENTS

+ 6 volts — 1100 mA
 -6 volts — 800 mA

WEIGHT

.70 kg. (1 lb. 8 oz.)



ACCESSORIES

Fiber Optic Highway Cables — refer to OPTION SUMMARY on this data sheet

- | | |
|----------------|--|
| Model 5960-Z1B | 36-contact Edge Connector
(needed if battery backup is provided) |
| Model 1739-Z1A | U-Port Adapter for 2050-Series Serial Highway Driver
(for 3939-Z1A, -Z2A) |
| Model 1739-Z1B | U-Port Adapter for 2160-Series Serial Highway Driver
(for 3939-Z1A, -Z2A) |
| Model 1739-Z1C | U-Port Adapter for 2160-Series Serial Highway Driver
(for 3939-Z1C) |

ORDERING INFORMATION

MODEL	DESCRIPTION
3939-Z2A	Byte-serial, Fiber Optic U-Port Adapter — 820 nm Operation
3939-Z1C	Byte-serial, Fiber Optic U-Port Adapter — 1300 nm Operation

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