

Model 5211 CAMAC Byte-Serial Optical Link

- 100% electrical isolation of Serial Highway
- One fiberoptic cable between crates
- 40 Mb/sec data rate
- Battery backup
- 62 crate system at full speed
- Up to 500 m between crates
- EMI RFI immune
- No electromagnetic radiation

The LeCroy Model 5211 Optical Link is a fiberoptic receiver/driver designed for use in CAMAC Serial Highway systems. Operating in the byte serial mode, it provides data transfer rates of up to 5 MB/sec or 40 Mb/sec. By connecting the Model 5211 to the D-Ports of the Serial Highway Driver and L2 Crate Controllers, the control loop is converted to fiberoptics. Up to 62 crates can be interconnected.

LeCroy's exclusive Automatic Threshold Control makes direct coupling of all circuitry possible. As a consequence, a uniquely simple encoding scheme is employed. It operates at less than a 10^{-12} bit error rate. A bypass mode further enhances system data reliability by automatically providing battery backup during a power down condition in the crate. This feature is activated within 10 msec of a loss of CAMAC power.

During power down operation, a self-contained normally charging battery pack is automatically connected to the fiberoptic transmitter and receiver within the Model 5211. A data bypass path is established between the transmitter and receiver, enabling them to operate as a repeater.

Interconnection of Model 5211 Optical Links is performed with strengthened, 50μ graded index, optical fiber. To permit maximum performance, a fiber with a bandwidth of 200 MHz·km or greater and a numerical aperture of 0.2 or greater is required. The fiber should be terminated with an Amphenol type 906 SMA connector or equivalent.

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SPECIFICATIONS

Model 5211

BYTE-SERIAL CAMAC OPTICAL LINK

Electrical Input/Output:	Standard D connectors pin-for-pin compatible with the Serial Highway. Used in conjunction with the L2 crate controller or the Serial Highway Driver. Levels and impedance specified by RS422 (CCITT Recommendation V.11 (X.27)).
Optical Input/Output:	Front panel connectors to mate with the Amphenol 906 series or equivalent. Byte clock and data via a single fiber.
Data Rate:	0-5 MB/sec, as determined by the CAMAC system clock.
Data Integrity:	$<10^{-12}$ bit error rate for up to 500 m with recommended fiber.
Recommended Fiber:	50 μ graded index fiber with an attenuation of <6 dB/km, a numerical aperture of 0.2 and a bandwidth of 200 MHz \cdot km.
Data Encoding:	Byte clock and data via one fiber. Transmitted at 60M Baud. Data rates to 5 MB/sec (40 Mb/sec).
Battery Backup:	Within 10 msec of loss of CAMAC power, causes electrical shunt of fiberoptic input to output without regeneration. Powered by rechargeable NiCad batteries. Up to two crates in a row can lose power and the rest of the loop integrity is maintained. Battery capacity 30 minutes. Recharge time 30 minutes per minute of operation.
Battery/Bypass Switch:	Front panel switch. In the OFF position, battery backup is defeated. Used for storage of the Model 5211. In the BYPASS position, the Model 5211 serves only as a repeater with battery backup. In the BATTERY mode, normal operation with battery backup is provided.
Power Requirements:	800 mA at +6 V 2.5 A at -6 V 25 mA at +24 V 25 mA at -24 V
Packaging:	In conformance with CAMAC standard for nuclear modules ESONE Committee Report EUR4100 or IEEE Report 583. RF-shielded CAMAC #1 module.

SPECIFICATIONS SUBJECT TO CHANGE