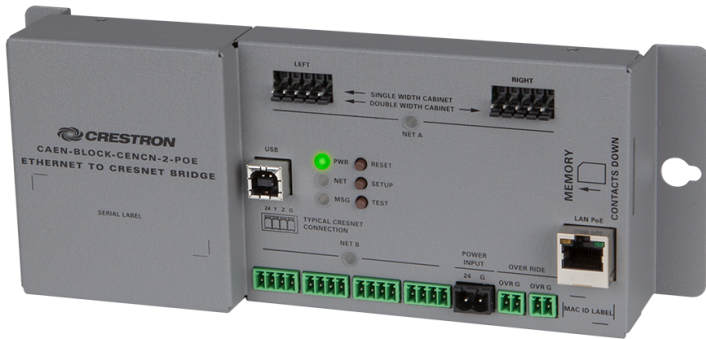# CAEN-BLOCK-CENCN-2-POE

Ethernet to Cresnet® Network Bridge for CAEN Automation Enclosures

- *Adds an Ethernet interface to a CAEN, CAEN-MLO, or CAENIB automation enclosure*
- *Maximizes Cresnet® network reliability and performance*
- *Enables Cresnet data communications over high-speed Ethernet*
- *Provides two isolated Cresnet subnets, one for lighting control modules and one for outboard devices*
- *Includes override signal connectivity for CLX series lighting control modules*
- *Supports 20 Cresnet devices per subnet*
- *Supports 1500 feet (457 m) aggregate cable length per subnet*
- *Powerable via PoE, PoE+, or Cresnet*
- *Includes intelligent power management for each subnet*
- *Features built-in network diagnostics tools*
- *Allows network wiring, power, and communications testing*
- *Allows detailed error analysis via software or web browser*
- *Allows real-time error reporting via the control system*
- *Allows Cresnet activity and error logging over time*

The CAEN-BLOCK-CENCN-2-POE is an Ethernet to Cresnet® Network Bridge that mounts at the bottom of a CAEN, CAEN-MLO, or CAENIB enclosure to provide a high-speed Ethernet interface between the enclosure and one or more outboard control systems. It includes Cresnet and Override connectivity for lighting control modules within the enclosure, and adds a separate isolated Cresnet subnet for outboard Cresnet keypads, thermostats, sensors, and other Cresnet devices. It also allows those Cresnet devices to be powered using a PoE, PoE+, or 24VDC power source.

The CAEN-BLOCK-CENCN-2-POE maximizes the reliability and robustness of the Cresnet network. It provides a more sophisticated solution than a Cresnet block or hub. In addition to enabling the distribution of Cresnet data over Ethernet, it also provides two isolated Cresnet subnets, one for lighting modules and one for all other Cresnet devices. Each subnet features sophisticated diagnostics and fault protection to maximize reliability and ease troubleshooting.

> **NOTE:** The CAEN-BLOCK-CENCN-2-POE is not compatible with Crestron 2-Series control systems or earlier.

The Cresnet Bus

Cresnet is the communications backbone for many Crestron keypads, lighting controls, shade motors, thermostats, sensors, and other devices that don't require the higher speed of Ethernet. It provides a dependable and flexible wiring solution, allowing multiple devices to be wired together in parallel using both home-run and daisy-chain topologies. The Cresnet bus distributes bidirectional data communication and 24VDC power to each device over a single 4-conductor cable.

Ethernet to Cresnet Bridge

For any Crestron lighting system with multiple CAEN enclosures, Ethernet offers an ideal, standards-based solution for networking them all together with a control system. The increased bandwidth afforded by Ethernet reduces latency for overall improved speed and performance. And, by leveraging existing LAN infrastructure, wiring distances can be extended easily while potentially reducing the overall wiring requirements. Multiple CAEN-BLOCK-CENCN-2-POE devices can be deployed on a single control system, and they can even be addressed by more than one control system, affording incredible flexibility in system design and functionality.

Dual Cresnet Subnets

The CAEN-BLOCK-CENCN-2-POE provides two isolated subnets, one for lighting modules (NET A) and one for all other Cresnet devices (NET B). Each subnet behaves as a Cresnet Server with its own unique address space. A maximum of 20 Cresnet devices is supported per subnet. NET B furnishes four Cresnet connectors for the termination of Cresnet wiring.[1]

Cresnet Power Distribution

The CAEN-BLOCK-CENCN-2-POE distributes Cresnet power using either PoE or 24VDC as the power source. 10W total Cresnet power is available using PoE, which can be increased to 20W using PoE+. Adding an external 24VDC Cresnet power supply enables up to 75W Cresnet power, and also allows the CAEN-BLOCK-CENCN-2-POE to operate without any PoE.

The CAEN-BLOCK-CENCN-2-POE configures itself automatically based on the power source(s) connected. Built-in protection intelligently monitors the load and wiring conditions on each subnet, and shuts down power to either subnet in case of an overload, wiring fault, or power supply failure. If such an error occurs, only the subnet with the error is shut down, leaving the other subnet fully operable.

Diagnostics Tools

Many lighting control system problems are caused by wiring faults, insufficient power, or too many devices. The latter is

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resolved by increasing bandwidth using Ethernet and limiting the number of devices that can be connected to each subnet.

For the other issues, the CAEN-BLOCK-CENCN-2-POE provides a full set of diagnostic tools to help identify and resolve them easily.

From the unit's front panel, an installer can press the TEST button and observe the LED indicators to see if there are any error codes. This allows wiring problems to be identified before ever powering up the control system. More complete details can be viewed and analyzed using a web browser or Crestron Toolbox™ software.

In a functioning system, sporadically occurring errors caused by cut or faulty wires, disconnected devices, or failed power supplies can be reported to the control system in real-time to provide error notifications via a touch screen, mobile device, email, or text message. For commercial enterprise applications, SNMP, and Crestron Fusion® Cloud applications are also supported. Insertion of an SD memory card (not included) enables logging of Cresnet activity and errors over time, making it easier to diagnose intermittent issues that can't be duplicated on demand.

Power over Ethernet

Using PoE+ technology, the CAEN-BLOCK-CENCN-2-POE gets its operating power through the LAN wiring from a PoE or PoE+ power source (Crestron PWE-4803RU, CEN-SW-POE-5, or CEN-SWPOE-16 sold separately). Alternately, the unit can be powered by 24VDC Cresnet power. Refer to the "Power" section of the specifications for more details.

CAEN Mounting

The CAEN-BLOCK-CENCN-2-POE is designed to mount inside a CAEN, CAEN-MLO, or CAENIB enclosure, positioned at the bottom below the lighting control modules. Front facing connectors and controls afford optimal visibility and serviceability to facilitate installation and troubleshooting.

Specifications

Communications

Ethernet	100 Mbps, autoswitching, autonegotiating, autodiscovery, full/half duplex, DHCP, web server, IEEE 802.3at compliant
Cresnet	Cresnet server mode with two separate subnets
USB	Supports computer console via front panel USB 2.0 device port

Connectors & Card Slots

USB	(1) USB Type-B female; USB 2.0 computer console port; For setup only
LAN PoE	(1) 8-pin RJ-45, female; 100BASE-TX Ethernet port; PoE+ PD port (refer to the product description and "Power" specifications)
Memory Card	(1) SD memory card slot; Accepts one SD or SDHC card for log file storage
NET A LEFT/RIGHT	(2) 5-pin 0.156 in. headers; Cresnet/Override interconnect ports for Crestron CLX-series lighting control modules (interconnect cables included)
NET B	(4) 4-pin 3.5 mm detachable terminal blocks, paralleled; Subnet 2 Cresnet server ports
POWER INPUT	(1) 2-pin 3.5 mm detachable terminal block; 24VDC power input (refer to the product description and "Power" specifications)
OVERRIDE	(2) 2-pin 3.5 mm detachable terminal blocks; Contact closure inputs, used to trigger the preset Override state in each connected CLX-series module; The left OVERRIDE input passes through to the NET A LEFT interconnect port; The right OVERRIDE input passes through to the NET A RIGHT interconnect port

Controls & Indicators

PWR	(1) Bi-color green/amber LED, indicates operating power supplied from PoE or Cresnet, turns amber while booting and green when operating
NET	(1) Bi-color green/red LED, indicates connection (green) or no connection (red) to a control system via Ethernet
MSG	(1) Bi-color green/red LED, indicates error codes for communication and power

RESET	(1) Recessed pushbutton, initiates hardware reset
SETUP	(1) Recessed pushbutton, initiates Ethernet autodiscovery
TEST	(1) Recessed pushbutton, initiates a hardware test
NET A – B	(2) Bi-color amber/red LEDs, each indicates data communication (amber) and wiring error codes (red blinking patterns) for the corresponding subnet
LAN	(2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity

Power

Power over Ethernet	IEEE 802.3at Type 2 PoE+ Powered Device (refer to table below)
Cresnet Power	24VDC (refer to table below)

Power over Ethernet at LAN PoE port	Cresnet Power Usage at POWER INPUT	Available Cresnet Power at NET B ports
None	2W	None
PoE Class 0 (12.95 W) using an 802.3at Type 1 (or 802.3af) PSE	None	10W total across all NET B ports
PoE+ Class 4 (25.5 W) using an 802.3at Type 2 PSE	None	20W total across all NET B ports
PoE Class 0 (12.95 W), PoE+ Class 4 (25.5 W), or none	75W maximum	75W total across all NET B ports

NOTES:

- The unit may be powered by either PoE/PoE+ or 24VDC Cresnet power, or both simultaneously.
- The use of a Cresnet power supply with less than 75W available will reduce the available Cresnet power respectively.

Environmental

Temperature	32° to 104°F (0° to 40°C)
Humidity	10% to 95% RH (noncondensing)

Construction

Chassis	Metal, gray, surface mount module with (2) integral mounting flanges

Mounting	Installs in a Crestron CAEN, CAEN-MLO, or CAENIB enclosure

Dimensions

Height	3.61 in. (92 mm)
Width	9.30 in. (237 mm)
Depth	2.00 in. (51 mm)

Weight

9.6 oz (273 g)

Model

CAEN-BLOCK-CENCN-2-POE
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Available Accessories

For a list of available accessories, visit the CAEN-BLOCK-CENCN-2-POE product page.

Note:

1. Crestron recommends a maximum aggregate cable length of 1500 feet (457 meters) per subnet.

9.30 in.
(236.22 mm)

3.61 in.
(91.69 mm)

3.48 in.
(88.39 mm)

2.00 in.
(50.80 mm)