

Crestron **CNHBLOCK**  
Multi-Type Network Distribution Block

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Operations & Installation Guide

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# Multi-Type Network Distribution Block: CNHBLOCK

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## Description

### Functional Description

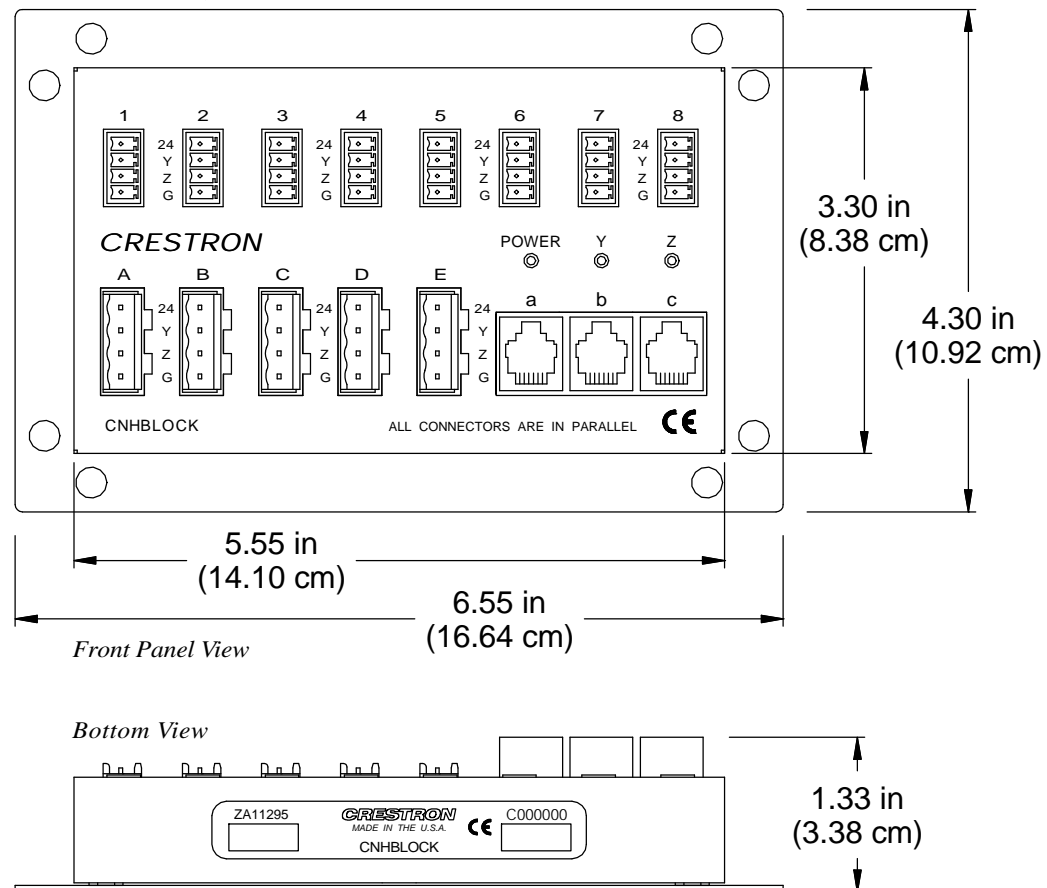
The CNHBLOCK is a Crestron control network (Cresnet) multiple connector type, network distribution block that provides wiring for up to 15 devices and/or peripherals. The CNHBLOCK provides 24 volts direct-current (VDC), Cresnet **Y** and **Z** data signals, and ground through three different types of Cresnet connectors. Using any one of the connectors as an input source, the remaining connectors may be used as outputs to other equipment. The CNHBLOCK contains light-emitting diode (LED) indicators that monitor the input power and input data signals.

### Physical Description

The CNHBLOCK, shown on the next page, is housed in a black enclosure with silk-screened labels. The front panel contains 16 connectors that are used to input power and Cresnet data signals to the CNHBLOCK and output the same to Cresnet devices. All connectors are internally wired together in parallel. Although not shown, all connectors used to attach the Cresnet wiring to the CNHBLOCK are supplied but Crestron modular cables are not.

Also on the front panel of the CNHBLOCK are three LEDs. The LED labeled **POWER** illuminates when 24VDC is attached to one connector and is available at the remaining connectors. The **Y** and **Z** data signal LEDs are used to diagnose wiring problems of the data signal input to the CNHBLOCK. Refer to “Y and Z LED Illumination” on page 7 for further information.

A mounting plate is attached to the CNHBLOCK and allows the CNHBLOCK to be installed into any location that is convenient for Cresnet wiring. The mounting plate can be removed to install the CNHBLOCK onto the CNXRMAK Rack Mount Kit (not supplied). The CNXRMAK is then installed into a 19-inch rack. Refer to “Rack Installation” on page 4 for details.

*CNHBLOCK Physical Views***CNHBLOCK Ports**

The CNHBLOCK contains three types of ports that are connected in parallel. The eight 3.5mm, 4-pin connectors (labeled 1, 2, 3, 4, 5, 6, 7 and 8) and the five 5mm, 4-pin connectors (labeled A, B, C, D and E) are used to connect the CNHBLOCK to other Cresnet four-wire devices. The three 6-pin, 6-position RJ11 modular ports (labeled a, b and c) are used to connect the CNHBLOCK to modular devices in the Cresnet system. Only one port (any of the three types) is used as an input source and the remaining ports are used as outputs.

**CAUTION:** Do not connect or daisy-chain more than one power input (power pack or power supply) to the CNHBLOCK. Multiple power inputs may damage one or more power packs and/or power supplies.

**NOTE:** When using the CNHBLOCK to output power to other devices, do not exceed the maximum capacity of the power pack or power supply. Calculate and add the total power requirements for all devices drawing power from the CNHBLOCK. If necessary, use additional CNHBLOCKS and power packs or power supplies.

**CNHBLOCK Indicators**

There are three LED indicators located on the CNHBLOCK front panel. The LEDs are described in the paragraphs on the next page.

**POWER**

This LED (green) is **brightly illuminated** when Cresnet 24VDC power is supplied to the CNHBLOCK and available at the remaining connectors.

**Y**

During normal operation, this LED (red) is **brightly illuminated** when the CNHBLOCK receives the correct Cresnet **Y** data signal. If this LED is anything other than brightly illuminated, refer to “Y and Z LED Illumination” on page 7 for further information.

**Z**

During normal operation, this LED (red) is **dimly illuminated** when the CNHBLOCK receives the correct Cresnet **Z** data signal. If this LED is anything other than dimly illuminated, refer to “Y and Z LED Illumination” on page 7 for further information.

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## Leading Specifications

The table below provides a summary of leading specifications for the CNHBLOCK. Dimensions and weight are rounded to the nearest hundredth unit.

*Leading Specifications of the CNHBLOCK*

SPECIFICATION	DETAILS
Dimensions & Weight	Height: 1.27 in (3.23 cm)
	Width: 5.55 in (14.10 cm)
	Depth: 3.30 in (8.38 cm)
	Weight: 0.68 lb (0.31 kg) *

\* The weight listed is for the CNHBLOCK, mounting plate, and all supplied 4-pin connectors.

As of the date of manufacture, this unit has been tested and found to comply with specifications for CE marking.




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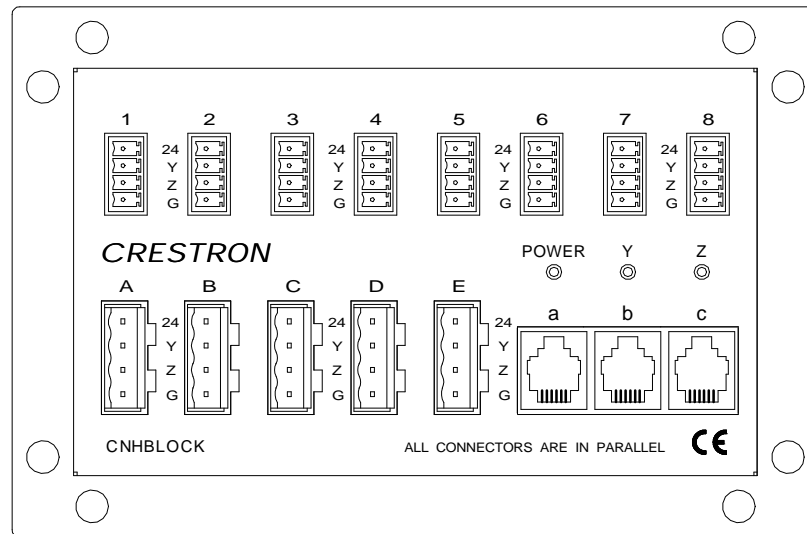
## Installation and Wiring

**Installation**

The CNHBLOCK may be installed into any convenient location using the supplied mounting plate or into a 19-inch rack by using a CNXRMAK Rack Mount Kit (not supplied). To install the CNHBLOCK with the supplied mounting plate or into a rack, refer to the appropriate following section.

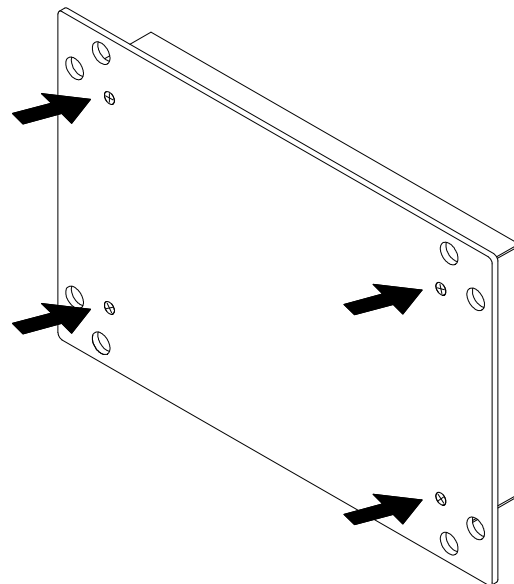
***Installation with Supplied Mounting Plate***

Refer to the diagram on the next page. To install the CNHBLOCK using the supplied mounting plate, attach the mounting plate to a convenient location through at least one hole in each corner (mounting screws are not supplied). It is recommended to install the CNHBLOCK in an area where the connectors are accessible and LEDs are visible.

*CNHBLOCK With Mounting Plate***Rack Installation**

The CNHBLOCK may also be installed into a rack by using a CNXRMAK (not supplied). Perform the following steps to install the CNHBLOCK into a rack. The only tool required for this procedure is a #2 Phillips screwdriver.

1. Using a #2 Phillips screwdriver, remove the four mounting screws (shown below) that secure the mounting plate to the CNHBLOCK and remove the plate.

*Detach Mounting Plate*

2. For further instructions, refer to the latest revision of the CNXRMAK Installation Guide (Doc. 8156). This document can be obtained from the Downloads page (MANUAL Library) of Crestron's website ([www.crestron.com](http://www.crestron.com)). Search for CNXRMAK.PDF. New users are required to register in order to obtain access to the FTP site

## Network Wiring

When calculating the wire gauge for a particular Cresnet run, the length of the run and the load factor of each network unit to be connected must be taken into consideration. If Cresnet units are to be daisy-chained on the run, the load factor of each unit to be daisy-chained must be added together to determine the load factor of the entire chain. If the unit is a home-run from a Crestron system power supply network port, the load factor of that unit is the load factor of the entire run. The length of the run in feet and the load factor of the run should be used in the following resistance equation to calculate the value on the right side of the equation.

### Resistance Equation

$$R < \frac{40,000}{L \times LF}$$

Where: R = Resistance (refer to next table).  
L = Length of run (or chain) in feet.  
LF = Load factor of entire run (or chain).

The required wire gauge should be chosen such that the resistance value is less than the value calculated in the resistance equation. Refer to the table below.

### Wire Gauge Values

RESISTANCE (R)	WIRE GAUGE
4	16
6	18
10	20
15	22
13	24 (Double-CAT 5)

**NOTE:** All Cresnet wiring must consist of two twisted-pairs. One twisted pair is the +24V conductor and the GND conductor and the other twisted pair is the Y conductor and the Z conductor.

**NOTE:** When daisy-chaining Cresnet units, always twist the ends of the incoming wire and outgoing wire which share a pin on the network connector. After twisting the ends, tin the twisted connection with solder. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. After tinning the twisted ends, insert the tinned connection into the Cresnet connector and tighten the retaining screw. Repeat the procedure for the other three conductors.

## Connecting the CNHBLOCK to Cresnet Devices

**CAUTION:** Do not connect or daisy-chain more than one power input (power pack or power supply) to the CNHBLOCK. Multiple power inputs may damage one or more power packs and/or power supplies.

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**NOTE:** When using the CNHBLOCK to output power to other devices, do not exceed the maximum capacity of the power pack or power supply. Calculate and add the total power requirements for all devices drawing power from the CNHBLOCK. If necessary, use additional CNHBLOCKS and power packs or power supplies.

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If making four-wire connections to Cresnet devices, review the latest revision of the network interconnection drawing (Doc. 5411). The document can be obtained from the Downloads page (CABLES and MANUAL Libraries) of Crestron's website ([www.crestron.com](http://www.crestron.com)). Search for CRESNET.PDF. New users are required to register in order to obtain access to the FTP site.

If making category 5 connections, refer to the latest revision of the Cresnet Mini Network CAT 5 Interconnect Drawing (Doc. 5819). This document can be obtained from the Downloads page (CABLES and MANUAL Libraries) of Crestron's website ([www.crestron.com](http://www.crestron.com)). Search for CAT5.PDF.

If making modular connections to devices in the Cresnet system, review the latest revision of the Network Modular Cable Requirements (Doc. 5682). This document can be obtained from the Downloads page (CABLES and MANUAL Libraries) of Crestron's website ([www.crestron.com](http://www.crestron.com)). Search for MODULAR.PDF.

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**CAUTION:** Crestron modular cables are rated for a maximum of **two (2)** amperes. Do not exceed this current capacity for any modular device. If more current is required, connect an appropriate external power pack to the modular device.

**NOTE:** Use only Crestron modular cables when making connections to the CNHBLOCK modular ports. **DO NOT** use standard, modular 6-conductor telephone cables. Most telephone cables are wired in a crisscross fashion and are not compatible with Crestron equipment.

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## Problem Solving

### General Troubleshooting

The table below provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron technical support representative.

#### *CNHBLOCK General Troubleshooting*

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
POWER LED does not illuminate.	CNHBLOCK is not receiving power.	Confirm that power is supplied to the CNHBLOCK.
Y data LED not <b>brightly</b> illuminated.	Y and Z data wires incorrect.	Refer to the "Y and Z LED Illumination" section on the next page.
Z data LED not <b>dimly</b> illuminated.		



## Y and Z LED Illumination

The combination of the **Y** and **Z** data LEDs, and their brightness of illumination (bright, dim, and off), indicate whether the input data signals to the CNHBLOCK are correct. Refer to the table on the next page for LED illuminations and the associated data signal conditions.

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**NOTE:** The **Y** and **Z** data LEDs are provided to denote errors with the data signal *inputs* to the CNHBLOCK. The LEDs *do not* indicate problems that exist in the *output* wiring from the CNHBLOCK to other devices.

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### *CNHBLOCK Data Signal LED Troubleshooting*

<b>Y</b>	<b>Z</b>	<b>DATA SIGNAL CONDITIONS</b>
<b>Bright</b>	<b>Dim</b>	<b>Both Y and Z data signals present.</b>
Off	Bright	Both data signals missing.
Bright	Bright	Y data signal is present, Z is missing.
Off	Dim	Z data signal is present, Y is missing.
Dim	Bright	Y and Z data signals reversed.

## Further Inquiries

If after reviewing this Operation & Installation Guide, you cannot locate specific information or have questions, please take advantage of Crestron's award winning technical support team by calling:

- In the US and Canada, call Crestron's corporate headquarters at 1-888-Crestron [1-888-273-7876] or 1-201-767-3400.
- In Europe, call Crestron International at +32-15-50-99-50.
- In Asia, call Crestron Asia at +852-2341-016.
- In Latin America, call Crestron Latin America at +525-574-15-90.

For local support from exclusive Crestron factory-trained personnel call:

- In Australia, call Soundcorp at +613-9488-1555.
- In New Zealand, call Amber Technologies at +649-410-8382.

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## Return and Warranty Policies

### Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange, or service without prior authorization from Crestron. To obtain warranty service for Crestron products, contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number, and return address.
2. Products may be returned for credit, exchange, or service with a Crestron Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to Crestron, Cresskill, N.J., or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. Crestron reserves the right in its sole and absolute discretion to charge a 15% restocking fee, plus shipping costs, on any products returned with an RMA.
3. Return freight charges following repair of items under warranty shall be paid by Crestron, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

### Crestron Limited Warranty

Crestron ELECTRONICS, Inc. warrants its Cresnet products, denoted by a "CN" prefix model number, to be free from manufacturing defects in materials and workmanship for a period of three (3) years from the date of shipment to purchaser. Disk drives and any other moving or rotating mechanical parts are covered for a period of one (1) year. Crestron warrants all its other products for a period of one year from the defects mentioned above, excluding touchscreen display components which are covered for 90 days. Incandescent lamps are completely excluded from Crestron's Limited Warranty. Crestron shall, at its option, repair or replace any product found defective without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Crestron shall not be liable to honor warranty terms if the product has been used in any application other than that for which it was intended, or if it has been subjected to misuse, accidental damage, modification, or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced, or removed.

This warranty shall be the sole and exclusive remedy to the purchaser. In no event shall Crestron be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. Crestron makes no other warranties nor authorizes any other party to offer any warranty, expressed or implied, including warranties of merchantability for this product. This warranty statement supersedes all previous warranties.

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