

Crestron **DIN-BLOCK**
DIN Rail Cresnet[®] Distribution Block

Operations & Installation Guide



This document was prepared and written by the Technical Documentation department at:



Regulatory Compliance

This product is Listed to applicable UL Standards and requirements by Underwriters Laboratories Inc.



As of the date of manufacture, the DIN-BLOCK has been tested and found to comply with specifications for CE marking and standards per EMC and Radiocommunications Compliance Labelling.



The specific patents that cover Crestron products are listed at patents.crestron.com.

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DIN Rail Cresnet® Distribution Block: DIN-BLOCK

Introduction

The DIN-BLOCK is a DIN rail mounted Cresnet® distribution block designed to facilitate the termination of Cresnet wiring at a head end or distribution point. DIN rail mounting enables modular installation alongside Crestron® DIN Rail lighting and automation control modules and other third party DIN rail mountable devices.

Features and Functions

- 12 port Cresnet® distribution block
- Detachable screw terminal blocks for easy termination and troubleshooting
- Split power bus for flexible 24V power distribution
- Diagnostic LEDs for network power and data
- Passive device – no programming required
- 6M wide DIN rail mounting

Cresnet Distribution

Cresnet is the communications backbone for Crestron lighting modules, wall box dimmers, shade controllers, thermostats, keypads, touch screens and many other devices. This flexible 4-wire bus allows for combinations of home run and daisy chain wiring and the DIN-BLOCK provides a

simple means for connecting up to 12 separate Cresnet cables in parallel as part of any sized network.

Cresnet Power Distribution

In addition to data, Cresnet carries 24 Volts DC for powering the devices connected to it. The Cresnet ports on the DIN-BLOCK are arranged into two separate power groups, providing an easy way to manage the distribution of power for a complete Cresnet network. A separate power supply may be dedicated to each group or a single supply can be connected to both groups as needed. Each group supports up to 75 Watts.

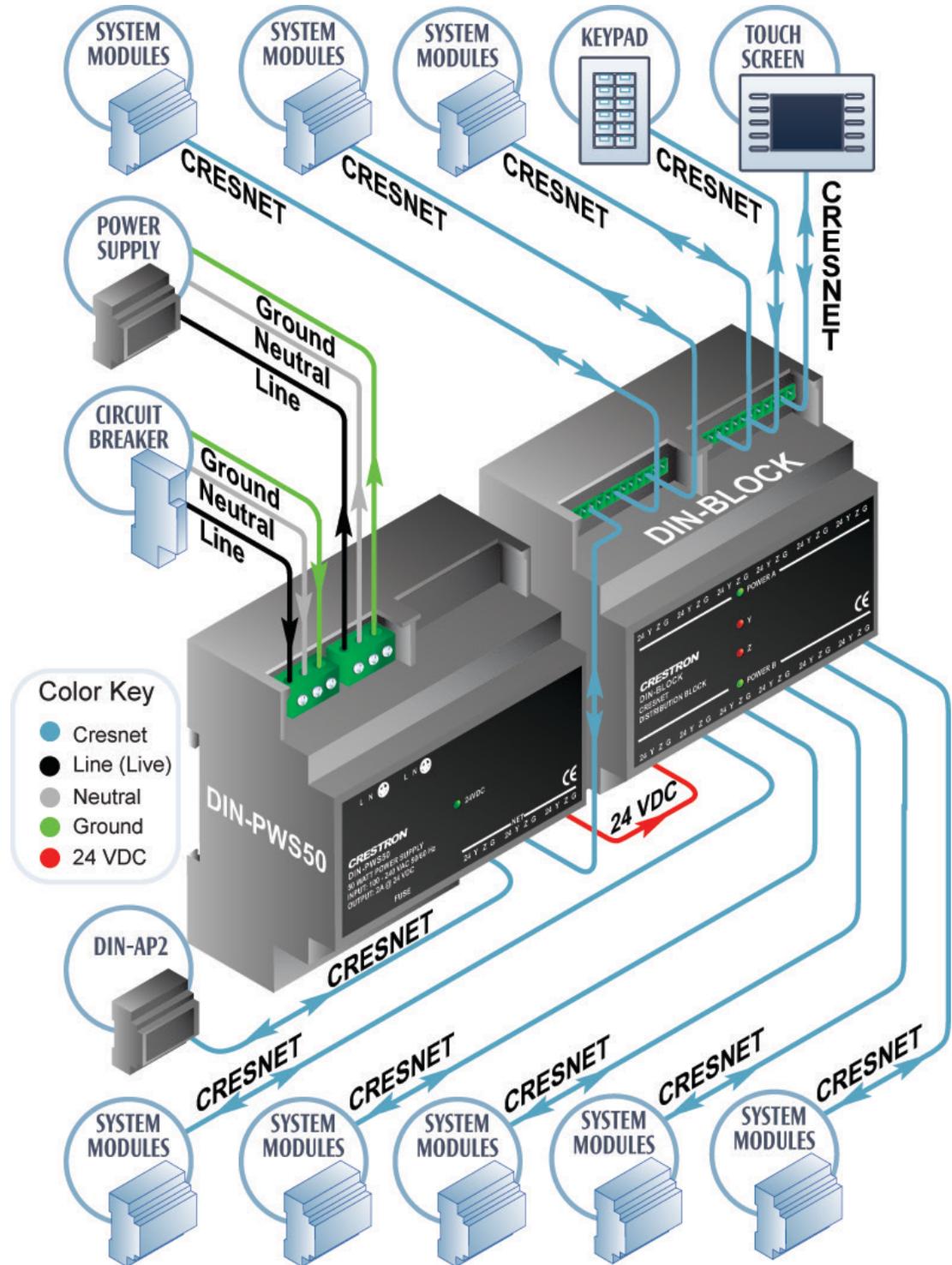
DIN Rail Installation

The DIN-BLOCK is designed to snap onto a standard DIN rail for installation in a wall mount enclosure or mounted on a wall panel. Wiring connections are made using detachable screw terminals positioned along the top and bottom, clearly accessible from the front for easy installation and servicing. Diagnostic indicators are positioned on the center front panel. When installed in an enclosure utilizing 45 mm cutouts, the DIN-BLOCK's front panel stays visible while the connections are concealed.

Applications

The following diagram shows a DIN-BLOCK in a typical application.

DIN-BLOCK in a Typical Application



Specifications

Specifications for the DIN-BLOCK are listed in the following table.

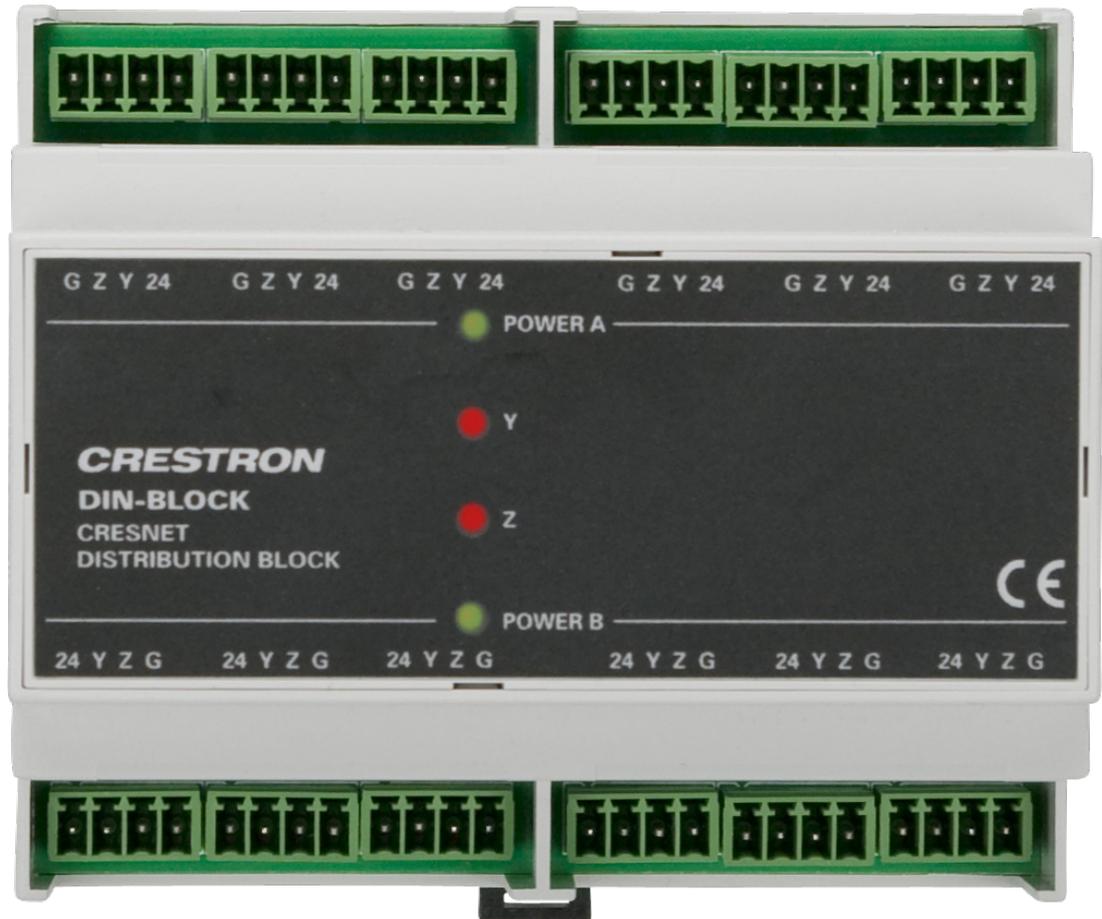
DIN-BLOCK Specifications

SPECIFICATION	DETAILS
Power Requirements Cresnet Power Usage	0.3 Watts (0.01 Amp @ 24 Volts DC)
Environmental Temperature Humidity Heat Dissipation	0° to 40° C (32° to 104° F) 10% to 90% RH (non-condensing) 1 BTU/Hr
Enclosure	Light gray polycarbonate housing with polycarbonate label overlay, UL94 V-0 rated, 35 mm DIN EN 60715 rail mount, DIN 43880 form factor for enclosures with 45 mm front panel cutout, occupies 6 DIN module spaces (108 mm)
Dimensions Height Width Depth	95 mm (3.71 in) 106 mm (4.18 in) 58 mm (2.29 in)
Weight	170 g (6 oz)

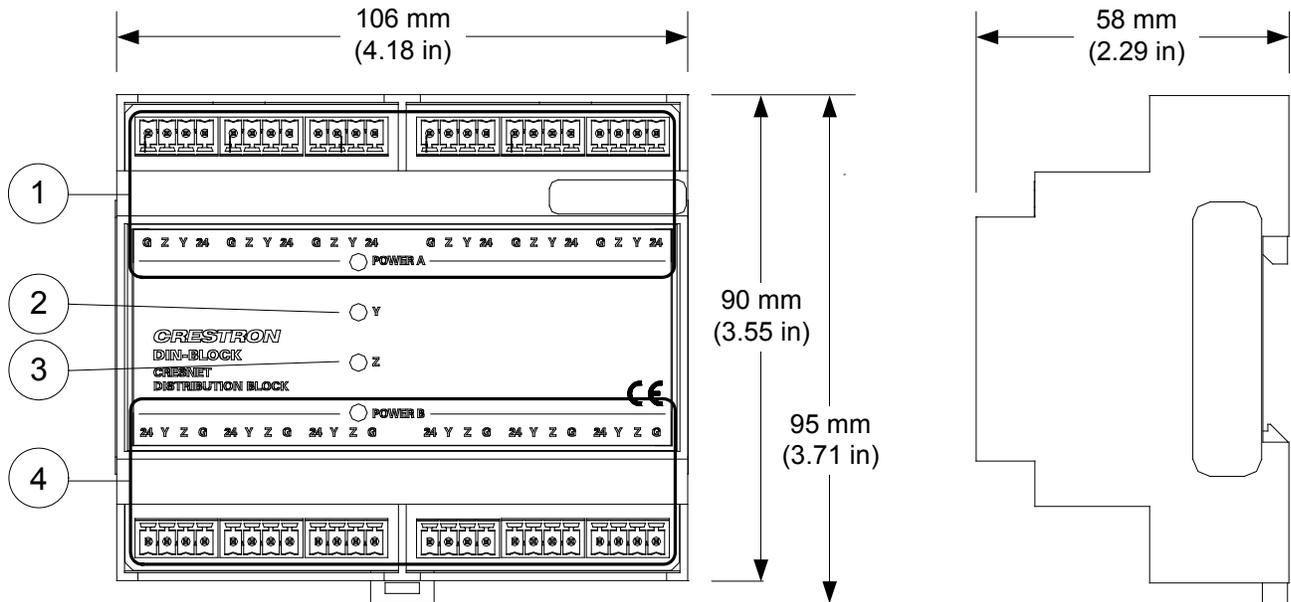
Physical Description

This section provides information on the connections, controls and indicators available on the DIN-BLOCK.

DIN-BLOCK Physical View



DIN-BLOCK Overall Dimensions



Connectors, Controls & Indicators

#	CONNECTORS ¹ , CONTROLS & INDICATORS	DESCRIPTION
1	<p>POWER A²</p>	<p>(6) 4-pin 3.5 mm detachable terminal blocks, paralleled Power Group A Cresnet distribution ports; Maximum load: 75 Watts (3.13 Amps @ 24 Volts DC); Connects to Cresnet control network;</p> <p>24: Power (24 Volts DC) Y: Data Z: Data G: Ground</p> <p>(1) Green LED indicates Cresnet power present at any NET port in group</p>
2	<p>Y</p>	<p>(1) Red LED indicates Cresnet Y data activity at any NET port</p>

(Continued on following page)

Connectors, Controls & Indicators (Continued)

#	CONNECTORS ¹ , CONTROLS & INDICATORS	DESCRIPTION
3	Z	(1) Red LED indicates Cresnet Z data activity at any NET port
4	<p style="text-align: center;">POWER B²</p> <p style="text-align: center;">○ POWER B</p> <p style="text-align: center;">24 Y Z G 24 Y Z G 24 Y Z G 24 Y Z G 24 Y Z G</p> 	<p>(6) 4-pin 3.5 mm detachable terminal blocks, paralleled Power Group B Cresnet distribution ports; Maximum load: 75 Watts (3.13 Amps @ 24 Volts DC); Connects to Cresnet control network;</p> <p style="margin-left: 40px;">24: Power (24 Volts DC) Y: Data Z: Data G: Ground</p> <p>(1) Green LED indicates Cresnet power present at any NET port in group</p>

1. Interface connectors for **NET** ports are provided with the unit.
2. **Y**, **Z** and **G** terminals are paralleled between power groups.

Setup

Network Wiring

When wiring the Cresnet network, consider the following:

- Use Crestron Certified Wire.

NOTE: Cresnet HP cannot be used.

- Use Crestron power supplies for Crestron equipment.
- Provide sufficient power to the system.

CAUTION: Insufficient power can lead to unpredictable results or damage to the equipment. Use the Crestron Power Calculator to help calculate how much power is needed for the system (www.crestron.com/calculators).

- Use of a Cresnet hub/repeater (DIN-HUB) is advised whenever the number of Cresnet devices on a network exceeds 20 or when the combined total length of Cresnet cable exceeds 914 meters (3000 feet).

For more details, refer to “Check Network Wiring” on page 12.

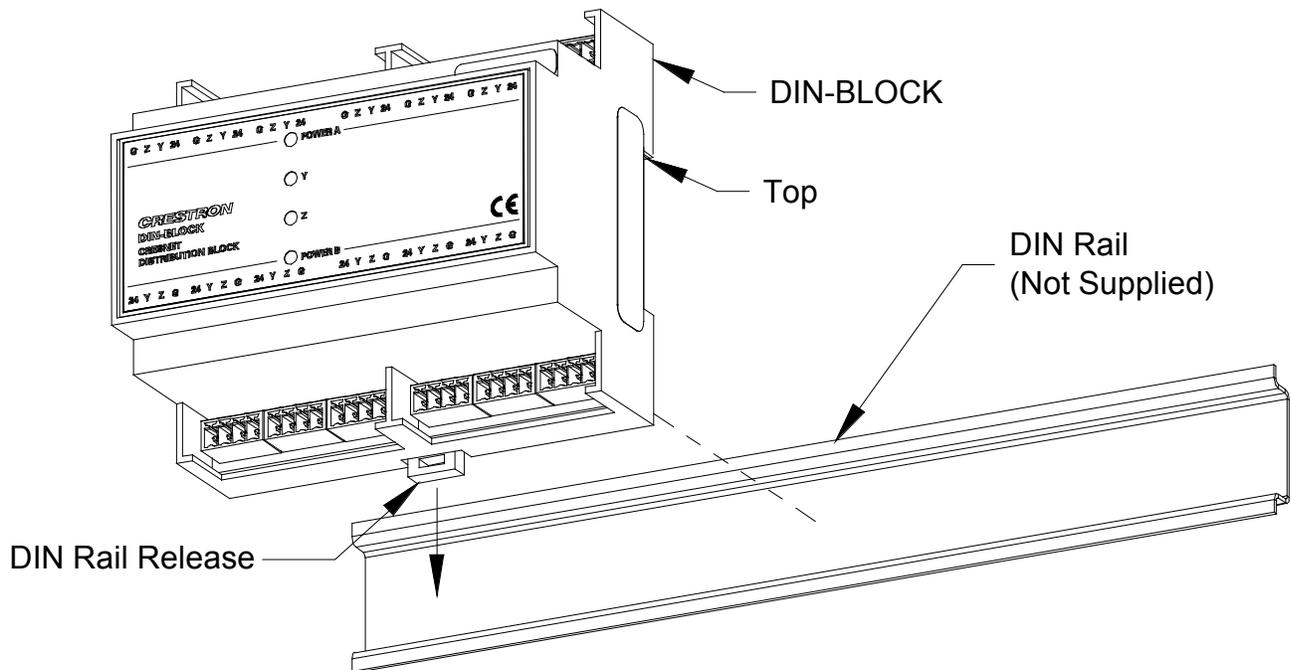
Installation

The DIN-BLOCK must be installed by a licensed electrician, in accordance with all national and local codes.

CAUTION: This equipment is for indoor use only. Mount in a well ventilated area. The ambient temperature must be 0° to 40° C (32° to 104° F). The relative humidity must be 10% – 90% (non-condensing).

The DIN-BLOCK is designed for installation on a DIN rail. Refer to the following diagram when installing.

Installing the DIN-BLOCK



1. Place the top of the DIN-BLOCK's rail mount over the top of the DIN rail.
2. Tilt the bottom of the DIN-BLOCK toward the DIN rail until it snaps into place.

NOTE: When mounting DIN rail products, it may be necessary to use a flat-head screwdriver to pull the DIN rail release tab while snapping the device onto the DIN rail.

To remove the DIN-BLOCK from the DIN rail, use a small, flat object (i.e., a flat-head screwdriver) to pull the DIN rail release and tilt the bottom of the DIN-BLOCK away from the DIN rail.

NOTE: Certain third party DIN cabinets provide space for an informational label between each DIN rail row. Crestron's Engraver software (version 4.0 or later) can generate appropriate labels for all Crestron DIN rail products.

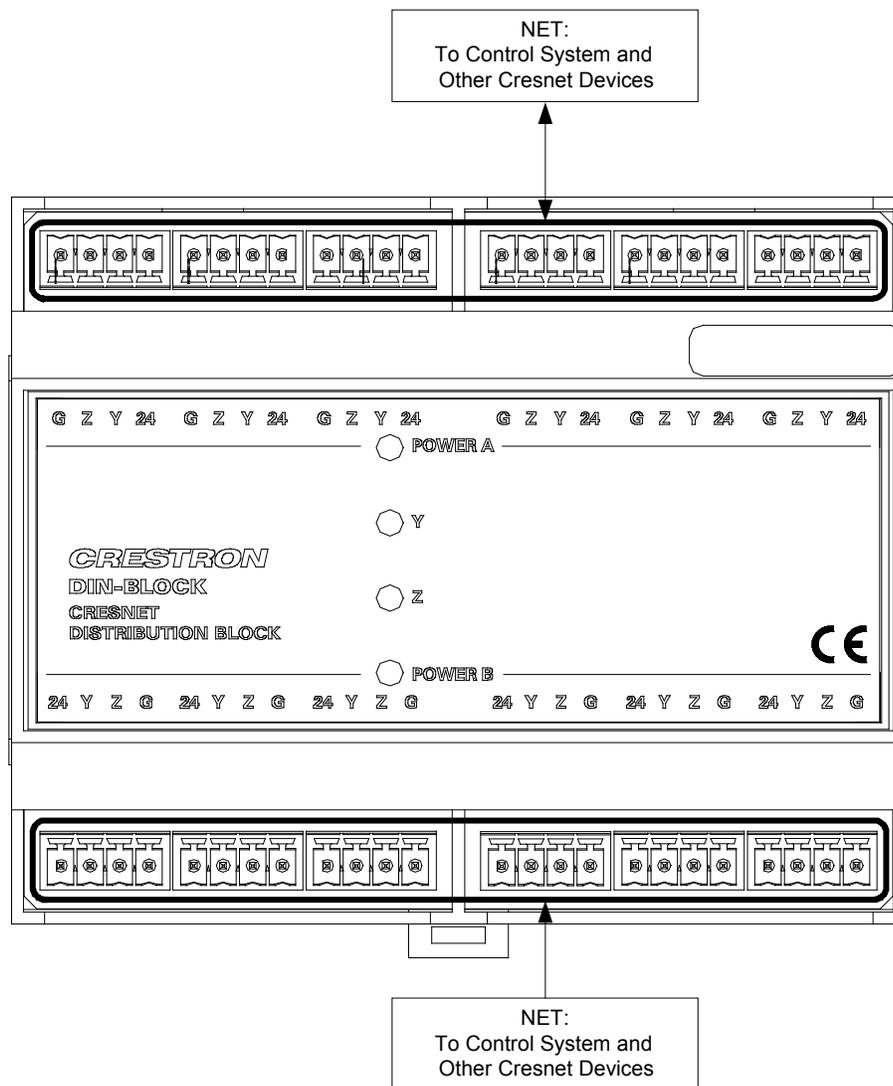
Hardware Hookup

Make the necessary connections as called out in the illustration that follows this paragraph. Refer to “Network Wiring” on page 8 before attaching the 4-position terminal block connector. Apply power after all connections have been made.

NOTE: Power must be supplied separately to **POWER A** group and **POWER B** group.

When making network connections to the DIN-BLOCK, use a Crestron power supply.

Hardware Connections for the DIN-BLOCK



Problem Solving

Troubleshooting

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

DIN-BLOCK Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
POWER A and/or POWER B LEDs do not illuminate.	POWER A group and/or POWER B group is not receiving power.	Verify the DIN-BLOCK is connected to a Crestron power supply.
	Device is not receiving power from a Crestron power source.	Use a Crestron power source. Verify connections.
	Power supply is overloaded.	Use the Crestron Power Calculator to help calculate how much power is needed for the system.
Y or Z LEDs do not illuminate.	Network wiring problem.	Verify wiring connections.

Y and Z LED Illumination

The combination of the **Y** and **Z** LEDs and their brightness levels (bright, dim and off) indicate whether the input data signals to the DIN-BLOCK are correct. Refer to the following table for LED illuminations and associated data signal conditions.

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

DIN-BLOCK Data Signal LED Troubleshooting

Y	Z	DATA SIGNAL CONDITIONS
Bright	Dim	Both Y and Z data signals present
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

Check Network Wiring**Use the
Right Wire**

In order to ensure optimum performance over the full range of the installation topology, Crestron Certified Wire and only Crestron Certified Wire may be used. Failure to do so may incur additional charges if support is required to identify performance deficiencies because of using improper wire.

**Calculate
Power**

CAUTION: Use only Crestron power supplies for Crestron equipment. Failure to do so could cause equipment damage or void the Crestron warranty.

CAUTION: Provide sufficient power to the system. Insufficient power can lead to unpredictable results or damage to the equipment. Please use the Crestron Power Calculator to help calculate how much power is needed for the system (www.crestron.com/calculators).

When calculating the length of wire for a particular Cresnet run, the wire gauge and the Cresnet power usage of each network unit to be connected must be taken into consideration. Use Crestron Certified Wire only. If Cresnet units are to be daisy chained on the run, the Cresnet power usage of each network unit to be daisy chained must be added together to determine the Cresnet power usage of the entire chain. If the unit is home-run from a Crestron system power supply network port, the Cresnet power usage of that unit is the Cresnet power usage of the entire run. The wire gauge and the Cresnet power usage of the run should be used in the following equation to calculate the cable length value on the equation's left side.

Cable Length Equation

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

Where:

L = Length of run (or chain) in feet

R = 6 Ohms (Crestron Certified Wire: 0.75 MM²(18 AWG))

P = Cresnet power usage of entire run (or chain)

Make sure the cable length value is less than the value calculated on the right side of the equation. For example, a Cresnet run using 0.75 mm² (18 AWG) Crestron Certified Wire and drawing 20 watts should not have a length of run more than 101 meters (333 feet). Cresnet HP cannot be used.

NOTE: All Crestron certified 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.

Strip and Tin Wire

When daisy chaining Cresnet units, strip the ends of the wires carefully to avoid nicking the conductors. Twist together the ends of the wires that share a pin on the network connector and tin the twisted connection. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. Insert the tinned connection into the Cresnet connector and tighten the retaining screw. Repeat the procedure for the other three conductors.

Add Hubs

Use of a Cresnet hub/repeater (DIN-HUB) is advised whenever the number of Cresnet devices on a network exceeds 20 or when the combined total length of Cresnet cable exceeds 914 meters (3000 feet).

Further Inquiries

To locate specific information or resolve questions after reviewing this guide, contact Crestron's True Blue Support at 1-888-CRESTRON [1-888-273-7876] or refer to the listing of Crestron worldwide offices on the Crestron Web site (www.crestron.com/offices) for assistance within a particular geographic region.

To post a question about Crestron products, log onto the Online Help section of the Crestron Web site (www.crestron.com/onlinehelp). First-time users must establish a user account to fully benefit from all available features.

Future Updates

As Crestron improves functions, adds new features and extends the capabilities of the DIN-BLOCK, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron Web site periodically for manual update availability and its relevance. Updates are identified as an “Addendum” in the Download column.

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 an authorized Crestron dealer. Only authorized Crestron dealers may 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, 6 Volvo Drive, Rockleigh, 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 products to be free from manufacturing defects in materials and workmanship under normal use for a period of three (3) years from the date of purchase from Crestron, with the following exceptions: disk drives and any other moving or rotating mechanical parts, pan/tilt heads and power supplies are covered for a period of one (1) year; touch screen display and overlay components are covered for 90 days; batteries and incandescent lamps are not covered.

This warranty extends to products purchased directly from Crestron or an authorized Crestron dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

Crestron shall not be liable to honor the terms of this warranty 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 original 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 is not liable for any claim made by a third party or made by the purchaser for a third party.

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.

Except as expressly set forth in this warranty, Crestron makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supersedes all previous warranties.



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change without notice.