

DESTINE[®]

Distribution Energy Storage Total Integration Network Environment

Power Server



Model 86LEDDB
Power Distribution Box



LED Lighting IQ

29929 Lorain Rd. 2nd Floor

North Olmsted, OH 44070

855-433-7222 | www.ledlightingiq.com

© 2016 LED Lighting IQ. All rights reserved. This document and all information contained herein are the sole property of the LED Lighting IQ and cannot be reproduced or transmitted in whole or part without express written permission of the LED Lighting IQ.

Contents

Introduction	3
General Terms/Definitions	3
Cables Included	3
Recommended Components	3
Safety	4
General Information	5
Connections	6
Input Connections	6
Output Connections	7
Mounting Options	8
Operations	9
Normal Operation	9
Backup Operation	9
Local Disable Switch	9
Troubleshooting	10
Remote Control Option:	10
Warranty	11

List of Figures

Figure 1 – Definitions	3
Figure 2 – Product and Packaging Label	5
Figure 3 – System Diagram	6
Figure 4 – Input Connections	6
Figure 5 – Anderson® SB50 Connectors	7
Figure 6 – Output Connectors	7
Figure 7 – Voltage Drop per Cable Length	8
Figure 8 – Mounting Bracket (Part No. 33069-001)	8
Figure 9 – Dimensions (in inches)	9
Figure 10 – Local Disable Switch	9
Figure 11 – EnOcean® Relay Mounting	10
Figure 12 – EnOcean Relay Wiring	10

List of Tables

Table 1 – Included cables with connections	3
Table 2 – Specifications	5
Table 3 – Input Connections	6
Table 4 – Pin Assignments for RJ-45 Plug	7
Table 5 – Troubleshooting	10

Hazard Definitions

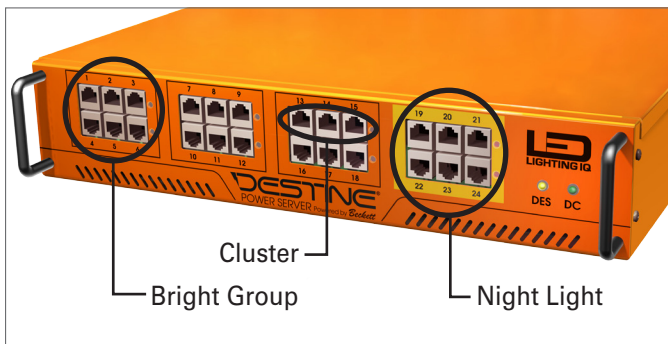
	Indicates a hazardous situation that, if not avoided, will result in death or serious injury .
	Indicates a hazardous situation that, if not avoided, could result in death or serious injury .
	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury .
	Used to address practices not related to physical injury.
	Safety instructions signs indicate specific safety-related instructions or procedures.

Introduction

General Terms/Definitions

- **DESTINE** = Distribution Energy Storage Total Integrated Network Environment
- **Channel** = 1 of 24 available DESTINE outputs in the form of a RJ45 modular jack.
- **Cluster** = 3 output channels electrically connected in parallel.
- **Bright Group** = 2 output clusters electrically connected in parallel but independently fused.
- **Night Light** = Uninterrupted bright group dedicated to remain active in the event of an AC power failure.
- **DES** = Distributed Energy Source, Beckett Energy System’s model 8124S stand alone 24Vdc energy system.

Figure 1 – Definitions



Cables Included

Table 1 – Included cables with connections

Part No.	Qty	Description
52440-001	2	Power cable from DC supply to DESTINE (Grey Connection)
52440-002	1	Power cable from charger to DESTINE (Black Connection)
52440-003	1	Power cable from DES to DESTINE (Yellow Connection)
52482-001	1	Control signal cable from DES to DESTINE Align pins per Figure 4 on page 6

Recommended Components

When assembling components into completed LED and Emergency Lighting solutions, recommended components include:

- **For DES Input:** Beckett Energy Systems® model 8124s Stand-Alone 24Vdc Energy System
- **For Charger Input:** IOTA® Engineering model DLS-27-15 Power Converter/Battery Charger
- **For DC Supply:** A quality DC supply not to exceed 60A, 30A per input.

Safety

All instructions in this document must be strictly adhered to in order to ensure safe and optimal use of the DESTINE Power Server.

WARNING

Do not power life safety or property protection equipment with the DESTINE Power Server. R.W. Beckett and LED Lighting IQ are not responsible for any damages that occur from such use.

CAUTION

Fire & Electrical Shock Hazard

For safe handling and operation:

- DO NOT short circuit the terminals.
- DO NOT reverse the polarity.
- DO NOT attempt to service.
- DO NOT operate beyond the voltage, current, temperature ratings listed in this manual.
- DO NOT connect to AC voltage.
- DO NOT store or expose to temperatures above 40°C (104°F) or below 0°C (32°F).
- DO NOT incinerate or expose to flames.
- DO NOT drop, crush, or puncture.
- DO NOT expose or immerse in water.

CAUTION

Electrical Shock Hazard

- DO NOT operate this product if the unit and/or power cords are damaged.
- DO NOT cut power cords.
- ONLY USE approved connectors rated for the voltage and amperage of the connector.

CAUTION

Drop Hazard

To prevent bodily injury when mounting or servicing this unit in a rack, securely connect to mounting rack

- Make sure rack is securely in place
- Connect unit securely to mounting rack using brackets provided.

CAUTION

Cutting Hazard

Be aware of sharp edges.

NOTICE

Intended Use Only.

- DO NOT use outdoors. This product is designed for indoor use only.
- DO NOT mount product near or in room containing flammable materials.
- DO NOT mount product in location where dust, debris and foreign material can easily enter the vents.

NOTICE

To avoid damaging power cords, always pull by the plug when disconnecting and not the cord.

General Information

Figure 2—Product and Packaging Label

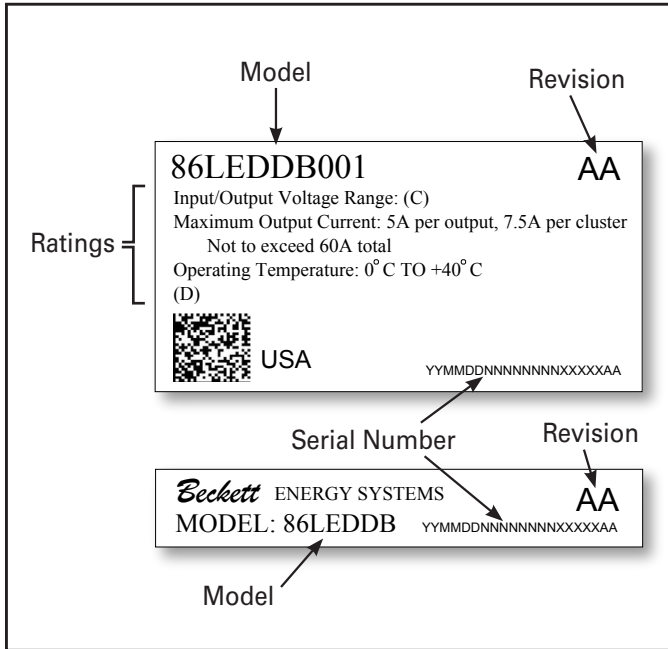
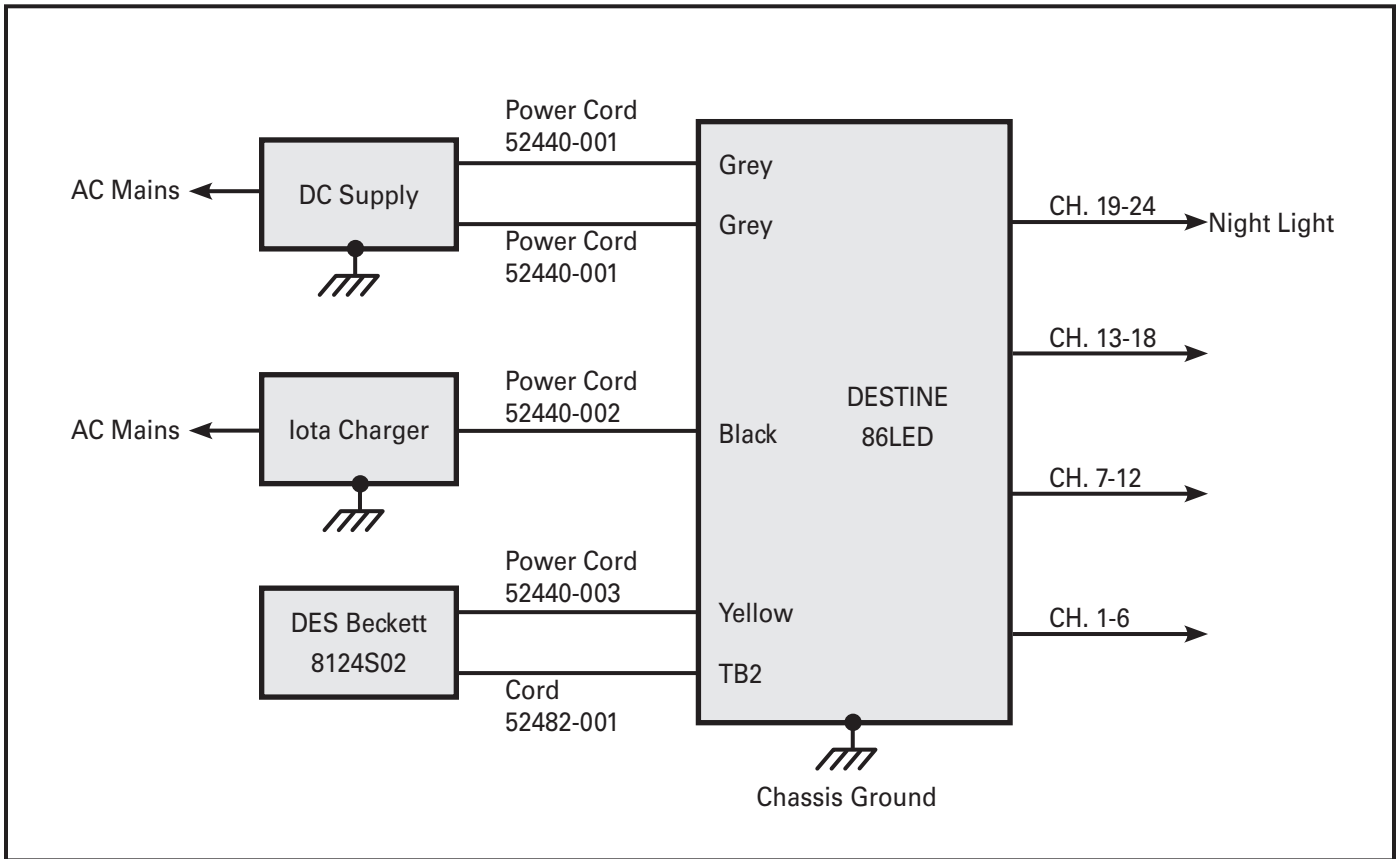


Table 2—Specifications

Specification	Value
DC Power Supply Voltage Input	26.5 VDC – 27.5 VDC
DC Power Supply Current Input	30 ADC maximum per input
DC Charger Input Voltage	21.0 VDC – 28.4 VDC
DC Charger Input Current	15 ADC maximum
DES Input Voltage	21.0 VDC – 28.4 VDC
DES Input Current	30 ADC maximum
Output Voltage	21.0 VDC – 28.4 VDC
Output Current	5.0 A maximum per RJ-45 jack
	7.5 A maximum per cluster
	15.0 A maximum per bright group
	60.0 A maximum per DESTINE Power Server
Dimensions (W x H x D)	16.85in x 3.35in x 24.6in
Weight	Approximately 20 lbs.
Operating Temperature	0°C (32°F) to +40°C (104°F)
Storage Temperature	0°C (32°F) to +40°C (104°F)

Connections

Figure 3 – System Diagram



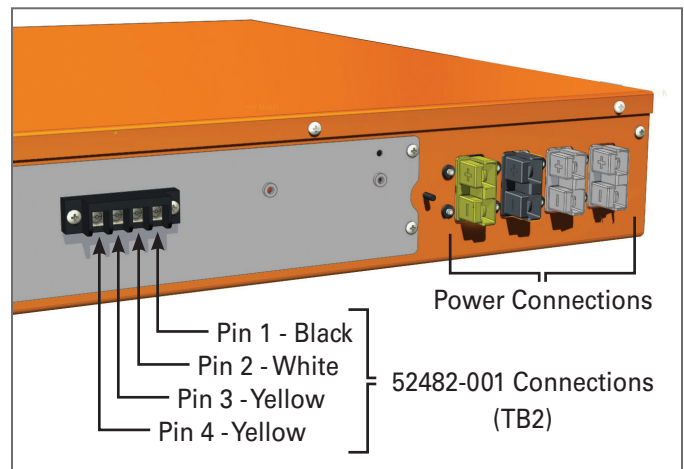
Input Connections

There are four (4) input power connections located on the back of the DESTINE Power Server as shown in **Figure 4**.

Table 3 – Input Connections

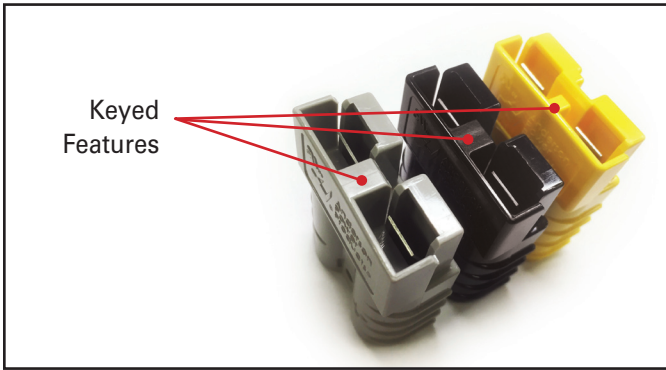
Input	Color Coded	Electrical Requirements	Function
DES Input	Yellow	21.0 VDC – 28.4 VDC 30 ADC max	DES will provide power to critical loads (night lights) for backup power consideration
Charger Input	Black	21.0 VDC – 28.4 VDC 15ADC max	Connection for Charger power pass through
DC Power Supply (Two channels)	Grey	26.5 VDC – 27.5 VDC 30 ADC max each channel	Primary power Vdc source for distribution; likely connected to the AC Mains

Figure 4 – Input Connections



Connect power supplies to matching Anderson Power Products® SB50 Series connectors (refer to **Figure 4** and **Figure 5**), and rated for the voltage and amperage of **Table 3**. The connectors are keyed so that polarity cannot be reversed and that they can only be connected to the appropriate receptacle.

Figure 5—Anderson® SB50 Connectors



CAUTION

Fire Hazard

Input circuits are not internally fused. Only use recommended batteries, chargers, and power supplies.

CAUTION

Electrical Shock Hazard

Do not exceed recommended voltage and current inputs for this unit.

- DC Power Supply Input (Grey connectors) – 27.5Vdc and 30A maximum.
- DC Charger Input (Black connector) – 28.4Vdc and 15A maximum.
- DES Input (Yellow connector) – 28.4Vdc and 30A maximum.
- Only use approved connectors rated for the voltage and amperage of the connection.

Output Connections

There are 24 output connections – channels available from the DESTINE Power Server. Each channel is an RJ-45 jack of 21.0 VDC – 28.4 VDC and 5.0 A maximum. Three channels are placed parallel into a cluster, each with an LED indicator. A bright group is two output clusters electrically connected in parallel but independently fused.

There are four bright groups total, three of which are for non-critical loads (channels 1-6, 7-12, 13-18). One bright group, designated by the yellow frame, is a night light (channels 19-24) of uninterrupted power for critical loads. Refer to **Figure 6**.

The mating connectors which plug into the RJ-45 jack, supplied externally, are to be rated for appropriate voltage and amperage. This output is not intended to transmit data, and the recommended maximum length of wire per **Figure 7**. The pin assignments of the RJ-45 jack are listed in **Table 4**.

Figure 6—Output Connectors



Table 4—Pin Assignments for RJ-45 Plug

Pin	Signal
1	+DC
2	+DC
3	+DC
4	+DC
5	-DC
6	-DC
7	-DC
8	-DC

RJ45 Pinout

(Colors for reference only)

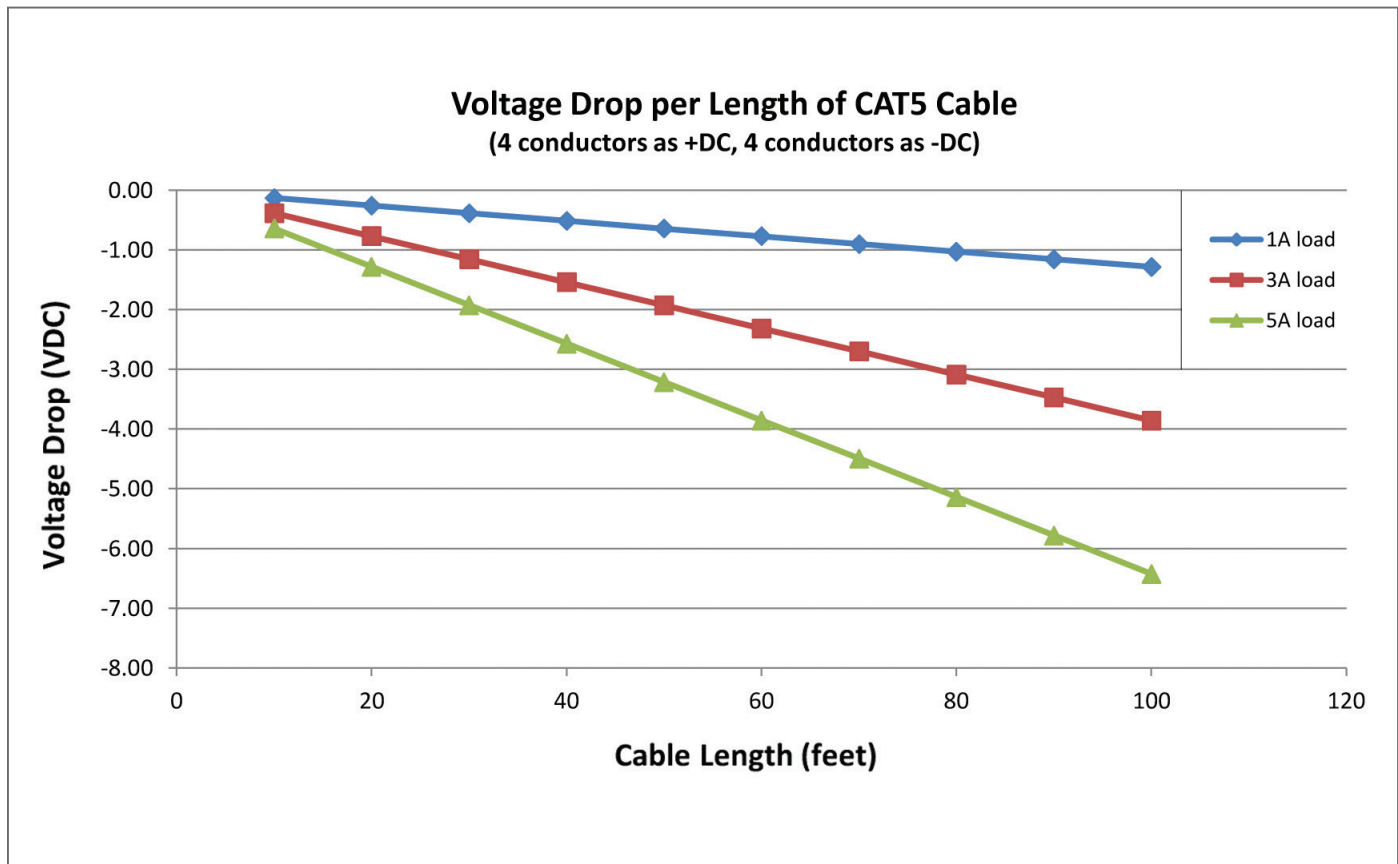
CAUTION

Electrical Shock Hazard

Do not exceed recommended voltage and current inputs for this unit

- Each RJ-45 jack — 28.4Vdc and 5A maximum, not to exceed 7.5A per cluster.
- Use UL approved connectors rated for the voltage and amperage of the connection.

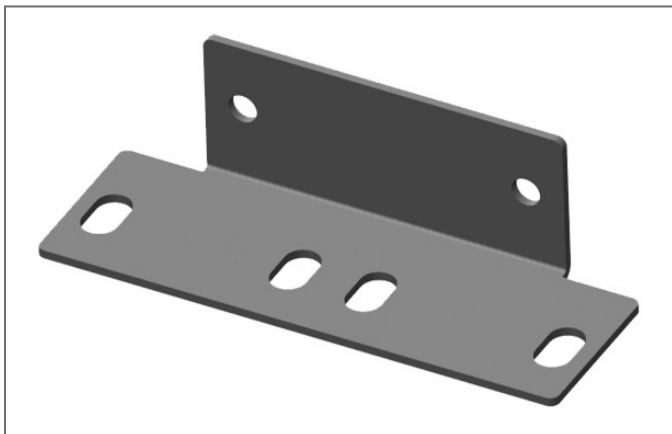
Figure 7—Voltage Drop per Cable Length



Mounting Options

The DESTINE Power Server can be mounted to standard 19 inch rack mounting equipment using the two (2) provided mounting brackets (see **Figure 8**). Please make sure to mount securely. Additionally, the DESTINE Power Server has the flexibility to be placed on shelves or in drawers.

Figure 8—Mounting Bracket (Part No. 33069-001)



CAUTION

Drop Hazard

To prevent bodily injury when mounting or servicing this unit in a rack, securely connect to mounting rack

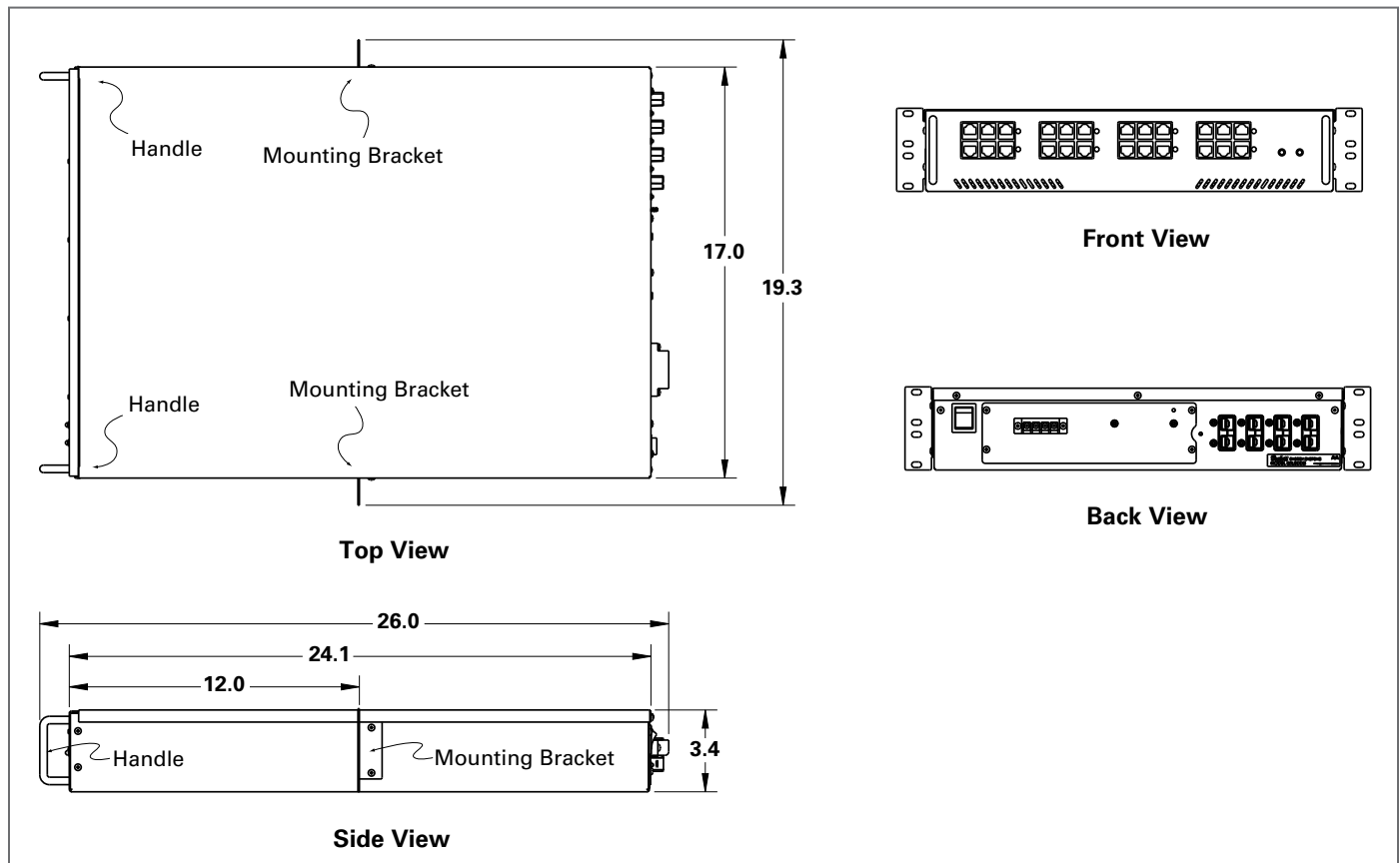
- Make sure rack is securely in place
- Connect unit securely to mounting rack using brackets provided.

CAUTION

Cutting Hazard

Be aware of sharp edges.

Figure 9—Dimensions (in inches)



Operations

The DESTINE Power Server has two modes of operation, normal and backup mode.

Normal Operation

Normal operation occurs when the DESTINE Power Server is connected to the DC Supply (Grey Terminals). The DC LED will be illuminated. All 24 channels are enabled and available to power loads and each cluster's LED will be illuminated.

Backup Operation

Backup operation occurs automatically if a DES input (yellow) is connected and DC Supply power becomes unavailable. In this condition, only channels 19-24 - the Night Light bright group is available to power loads. The DES LED will be illuminated in yellow.



WARNING

Do not power life safety or property protection equipment with the DESTINE Power Server. R.W. Beckett and LED Lighting IQ are not responsible for any damages that occur from such use.



CAUTION Electrical Shock Hazard

Do not exceed recommended voltage and current inputs for this unit

- Each RJ-45 jack — 28.4Vdc and 5A maximum not to exceed 7.5A per cluster.
- Only use approved connectors rated for the voltage and amperage of the connection.

Local Disable Switch

A local disable is located on the back of the DESTINE Power Server. When this switch is off, all 24 output channels, including the night lights, are disabled.

Figure 10—Local Disable Switch



Remote Control Option:

If DESTINE Power Server is equipped with optional remote control capability, then activating this switch will allow remote disabling of the first three bright groups – channels 1-18, while allowing the Night Light bright group to remain operational, provided it is connected to a DES input (yellow).

Figure 11— EnOcean® Relay Mounting

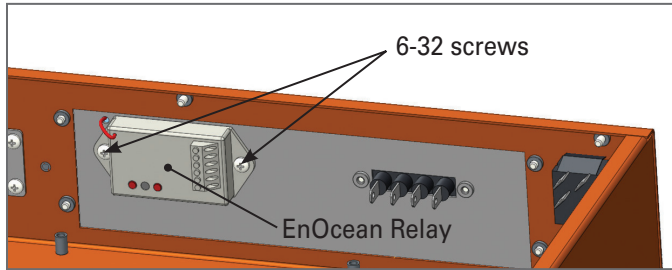
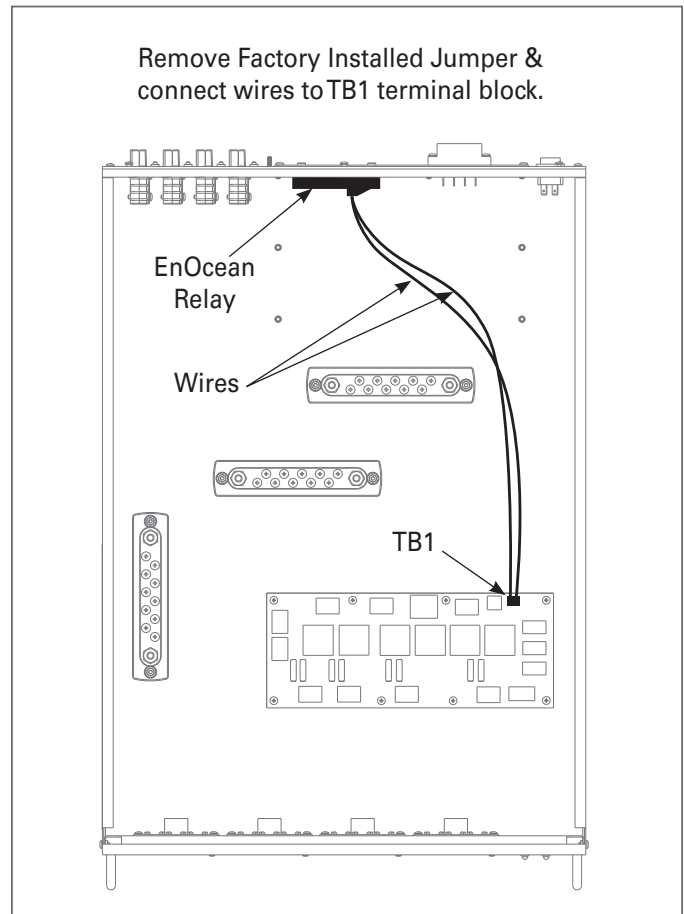


Figure 12— EnOcean Relay Wiring



Troubleshooting

Table 5— Troubleshooting

Issue	Possible Causes	Action
DC or DES LED is illuminated, but one or more cluster LED's are not illuminated	Output fuse for that channel is blown	Move output connections to a channel in different cluster. Contact LED Lighting IQ for service
	Disable switch activated	Deactivate local and/or remote disable switch
	Incorrect input connections	Review and make sure input connections are secure
	DC source is unavailable and DES is awaiting charge	Check output voltage of both DC supply and DES
Cluster LED is not illuminated	Output fuse is blown	Contact LED Lighting IQ for service
DES LED is illuminated red	DES source failure	Contact LED Lighting IQ for service

Warranty

Please Contact LED Lighting IQ for
warranty information



LED Lighting IQ

29929 Lorain Rd. 2nd Floor
North Olmsted, OH 44070
855-433-7222 | www.ledlightingiq.com