BluesSystem
Installation Manual

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Introduction

Congratulations on your purchase of BluesSystem products. The BluesSystem products are a range of low-voltage LEDs that provide dimmable running lights in a compact form factor.

This manual provides both BlueBeam and BlueDome LED installation instructions as well as instructions for the installation of BluesSystem power supplies.

Document Conventions

This document uses the following conventions to draw your attention to important information.

Note: *Notes are helpful hints and information that is supplemental to the main text.*

CAUTION: *A Caution statement indicates situations where there may be undefined or unwanted consequences of an action, potential for data loss or an equipment problem.*

WARNING: **A Warning statement indicates situations where damage may occur, people may be harmed, or there are serious or dangerous consequences of an action.**

WARNING: **RISK OF ELECTRIC SHOCK! This warning statement indicates situations where there is a risk of electric shock.**

All ETC documents are available for free download from our website: etcconnect.com.

Please email comments about this manual to: TechComm@etcconnect.com.

Help from ETC Technical Services

If you have questions that are not addressed by this document, try the ETC support website at support.etcconnect.com or the main ETC website at etcconnect.com. If none of these resources are sufficient, contact ETC Technical Services directly at one of the offices identified below. Emergency service is available from all ETC offices outside of normal business hours.

When calling for help, take these steps first:

- Prepare a detailed description of the problem
- Go near the equipment for troubleshooting
- Find your notification number if you have called in previously

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Safety

BluesSystem products are intended for professional use only. **Read the entire manual before using this equipment.**

Label Symbols

The BluesSystem products are labeled with relevant symbols for your safety. Refer to the product label to see which symbols apply to your product.

	General warning	Avertissement général
	This product should not be discarded as unsorted waste but must be sent to separate collection facilities for recovery and recycling.	Ce produit ne doit pas être jeté avec les déchets ménagers mais doit être déposé dans une collecte de déchets électroniques ou dans un point de collecte.

FCC Compliance

BluesSystem

(For any FCC matters):

Electronic Theatre Controls, Inc.
3031 Pleasant View Road
Middleton, WI 53562
+1 (608) 831-4116
etcconnect.com

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received; including interference that may cause undesired operation. Visit etcconnect.com/products for current and complete compliance information including FCC compliance.

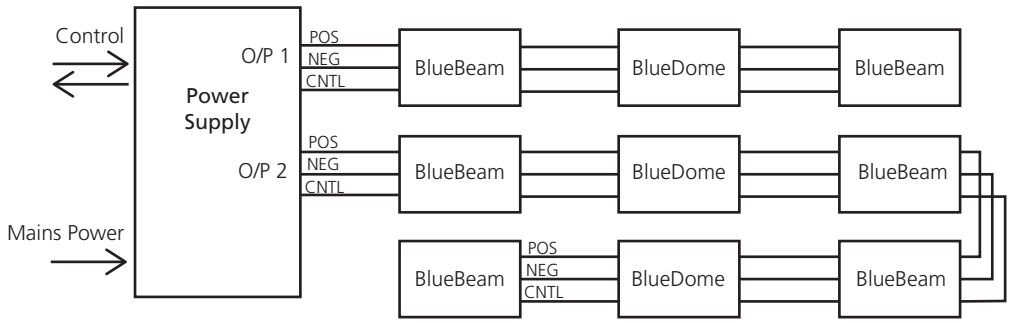
Note: *This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Any modifications or changes to this product not expressly approved by Electronic Theatre Controls, Inc. could void the user's authority to operate the product. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense.*

System Overview

BluesSystem includes BlueDome or BlueBeam fixtures and a one-zone or six-zone BluesSystem Low-Voltage Power Supply.

The fixtures mount directly to a junction box via an optional adapter plate and provide focused light for corridor, stairway, lobby, and backstage applications.

One-zone power supplies are available in Switched Control or DMX512 for wall-mount installation. Six-zone power supplies are available for wall-mount or rack-mount installation. Models are available with DMX512, Switched Control, or 0–10 VDC Control.

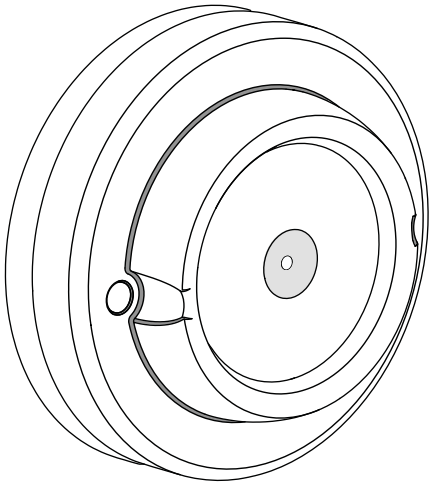


Each zone can support a maximum of 10 BluesSystem fixtures.

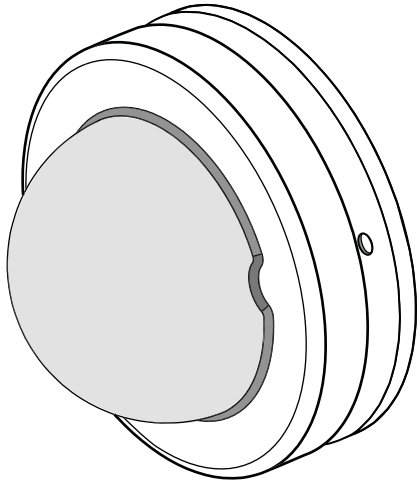
This chapter introduces you to each product and provides specification details for each BluesSystem product.

Fixtures

Both the BlueBeam and BlueDome low-voltage LED lighting fixtures provide dimmable running lights for tight spaces, such as catwalks, stairways, backstage areas and hallways, that require discrete, safe illumination during live productions.



BlueBeam Fixture



BlueDome Fixture

Mounting

BlueBeam and BlueDome LED lighting fixtures mount directly to a standard metal or plastic conduit junction box (either flush-mounted or surface-mounted is acceptable). A compatible junction box cover plate is available from ETC (contact ETC Customer Service for ordering information):

- 4" (102 mm) square plate
- 4" (102 mm) round plate
- 4" (102 mm) octagonal plate
- 1-gang (US) plate

The fixtures must be powered by a BluesSystem LV Series one-zone or six-zone power supply. For more information about power supplies, see *Power Supplies* on *page 7*.

Low-Voltage LED Fixture Electrical Specification

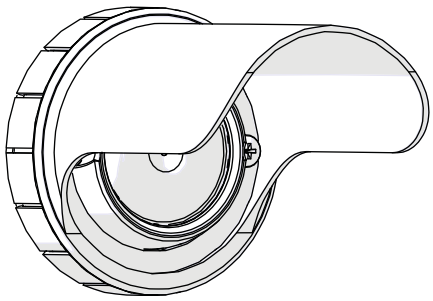
- Minimum operating voltage: 11 VDC
- Maximum operating voltage: 36 VDC
- Nominal input voltage: 24 VDC
- Nominal input power: 3.6 W
- Operating current: 100 mA @ 36 V
- Standby current: 8 mA

Accessories

The BlueBeam low-voltage LED lighting fixture provides directional blue light and is available in several variants:

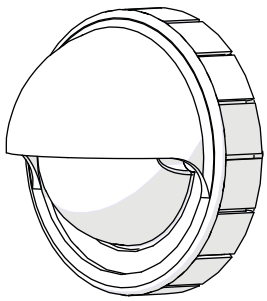
- Very narrow spot (VNSP)
- Narrow spot (NSP)
- Medium flood (MFL)
- Wide flood (WFL)

You can use a cowl accessory to mask a beam. Rotate the cowl accessory to mask a selected side of the beam.



Cowl Accessory

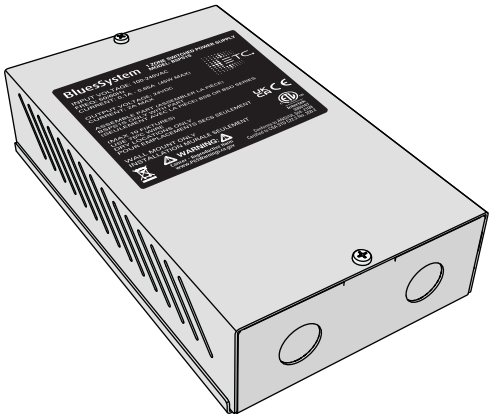
The BlueDome low-voltage LED lighting fixture provides omnidirectional blue light at low levels and is available in frosted or opaque variants. You can mask half of the BlueDome light output using the eyelid accessory. Rotate the eyelid accessory to mask the desired portion of the light.



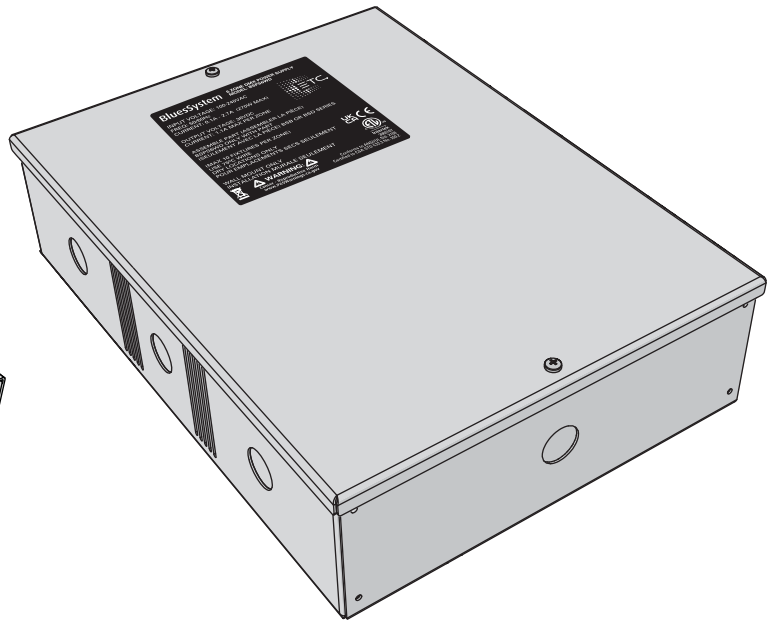
Eyelid Accessory

Both the cowl and eyelid accessories mount around the lens of the fixture using a simple push-and-twist motion to lock them in place.

Power Supplies



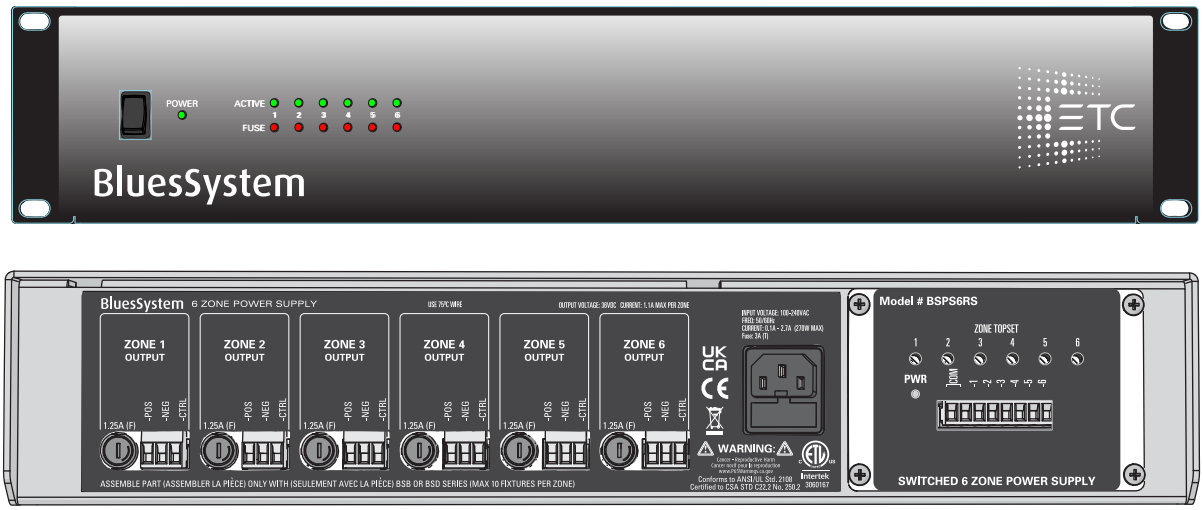
One-zone Wall-mount



Six-zone Wall-mount

The BluesSystem LV Series power supply provides power for the BlueDome and BlueBeam low-voltage LED lights. Power supplies are available in one-zone and six-zone variants.

The one-zone BluesSystem LV Power Supply provides power for up to 10 BluesSystem fixtures, is wall-mounted, and is available with DMX 512 or Switched Control, depending on control requirements.



Six-zone Rack-mount
(Front and Back Views)

The six-zone BluesSystem LV Power Supply provides power for up to 10 BluesSystem fixtures per zone. Six-zone power supplies are available in rack-mount and wall-mount variants, and offer DMX512, Switched Control, or 0–10 VDC Control.

Power Supply Electrical Specification

One-zone LV power supply

- Input voltage/frequency: 100–240 VAC / 50–60 Hz
- Maximum input current: 0.65 A
- Nominal output voltage: 24 VDC
- Maximum output current:1.6 A

Six-zone LV power supply

- Input voltage/frequency: 100–240 VAC / 50–60 Hz
- Maximum input current: 2.7 A
- Nominal output voltage: 36 VDC
- Maximum output current: 1.25 A per zone

Maximum load

- One-zone power supplies: 10 BluesSystem LED fixtures
- Six-zone power supplies: 60 BluesSystem LED fixtures
- Control output impedance: 10 Ω

Note: *All outputs are protected from overload and short circuits by a user replaceable fuse. See Fuse Replacement on page 29 for more information.*

System Installation

This chapter describes the installation and wire termination for each BluesSystem product.

Note: *Read the entire chapter before installing the system.*

WARNING: **RISK OF ELECTRIC SHOCK! A system without an accessible power disconnect device cannot be serviced or operated safely. Follow all local codes and restrictions.**

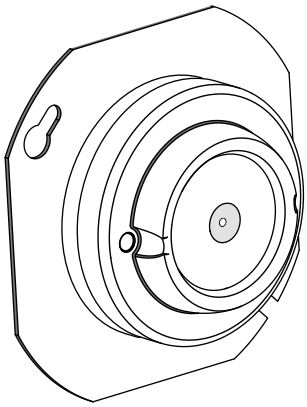
AVERTISSEMENT : **RISQUE DE CHOC ÉLECTRIQUE! Il est imprudent d'entretenir ou d'utiliser un système sans qu'un dispositif de déconnexion de l'alimentation soit accessible. Veuillez suivre tous les codes et restrictions locaux.**

WARNING: **RISK OF DEATH BY ELECTRIC SHOCK! Failure to disconnect all power to the system before installation, maintenance, cleaning or any other system modification, could result in serious injury or death.**

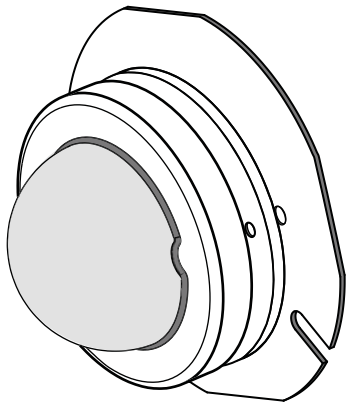
AVERTISSEMENT : **RISQUE D'ÉLECTROCUTION! Installer, entretenir, nettoyer ou modifier le système sans avoir débranché l'alimentation du système peut entraîner des blessures graves, voir mortelles.**

De-energize the main feed to BluesSystem and follow appropriate Lockout/Tagout procedures as described in NFPA Standard 70E. It is important to note that electrical equipment such as relay panels, can present an arc flash safety hazard if improperly serviced. This is due to available large short circuit currents on the feeders of the equipment. Any work on energized equipment must comply with OSHA Electrical Safe Working Practices.

Fixture Installation



BlueBeam Fixture with Octagonal Mounting Bracket



BlueDome Fixture with Round Mounting Bracket

BlueBeam and BlueDome LED lighting fixtures mount directly to a standard metal or plastic conduit junction box (either flush-mounted or surface-mounted is acceptable). They must be powered by a low-voltage power supply, such as a BluesSystem one-zone or six-zone power supply. For more information about power supplies, see *Power Supplies* on *page 15*.

WARNING:
- **Do not connect to a mains supply. The fixture requires 11–36 VDC only.**
- **Do not overtighten mounting screws.**
- **Always use the supplied gasket.**
- **Do not allow moisture into rear terminal area.**

When calculating cable sizes, each fixture consumes 130 mA at 24 VDC or 85 mA at 36 VDC.

Note: *All low voltage cables for the BlueBeam and BlueDome fixtures must be in separate containment from higher voltage (branch circuit) wires. Follow all local codes and restrictions.*

Supplies

The following supplies are included:

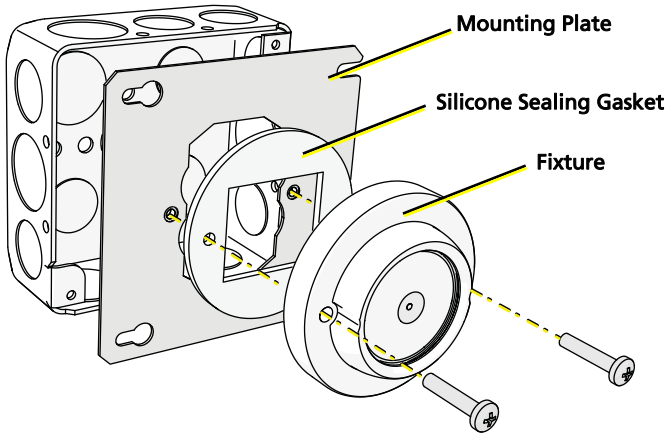
- Junction box cover plate (see *Mounting* on *page 5*)
- Two M4 screws for mounting the fixture to the junction box
- Silicone sealing gasket
- Wiring pigtail for power, common, and control

The following supplies are **not** included (provided by others):

- Conduit and conduit fittings
- Junction box

Mount the Fixture

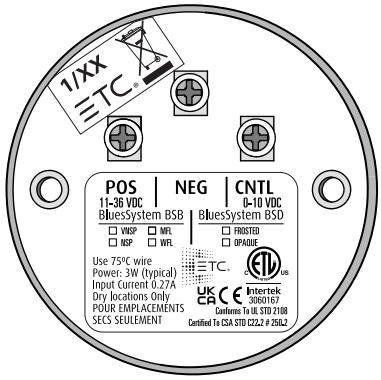
BlueBeam Fixture and Square Junction Box



1. Install grounded metal conduit between the BluesSystem power supply and the fixture installation location, following your installation wiring plan. It is acceptable to continue the wiring run up to 10 fixtures per zone on a power supply.
2. Run wiring to the fixture, leaving approximately 20 cm (8 in) of wiring in the box for future servicing as needed.
3. Align the mounting plate.
4. Align the provided silicone gasket to the back side of the fixture.
5. Pull wiring through the mounting plate and gasket.

Terminate Wiring

Terminate wires to the terminals located on the back side of the fixture (see image at right).

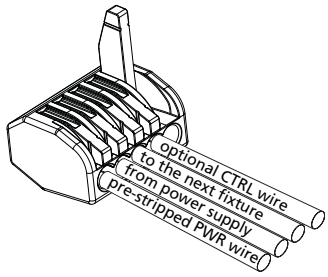


Note: *It is acceptable to continue the wiring run for up to 10 fixtures per zone on a power supply.*

CAUTION: *The terminal labeled NEG on the fixture is DC common and should not be connected to AC ground.*

1. Locate the provided fixture termination kit.
2. Connect common (NEG).
   a. Locate the pre-stripped black wire with spade terminal.
   b. Loosen but do not remove the common "NEG" terminal screw on the back of the fixture.
   c. Insert the spade terminal under the screw and tighten the screw firmly to secure.
   d. Locate a three-position WAGO® connector inside the termination kit and open all terminal levers.
   e. Insert the pre-stripped end of the pigtail into a terminal and close the lever.
   f. Strip 9–10 mm (3/8 in) from the end of the common "NEG" wire from the power supply, and then insert it into a terminal and close the lever.
   g. If continuing to another fixture in the run, strip 9–10 mm (3/8 in) from a wire, insert it into the third terminal on the common "NEG" WAGO connector, and close the lever.
   h. For double common wiring, see *Double Common Wiring* on *page 14*.

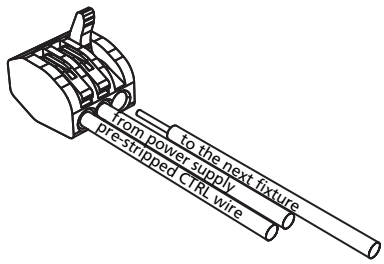
3. Connect power.



   a. Locate the pre-stripped red wire inside of the termination kit.
   b. Loosen but do not remove the power "POS" terminal screw on the back of the fixture.
   c. Insert the spade terminal under the screw and tighten the screw firmly to secure.
   d. Locate a five-position WAGO connector inside the termination kit and open all terminal levers.
   e. Insert the pre-stripped end of the pigtail into a terminal and close the lever.
   f. Strip 9–10 mm (3/8 in) from the end of the power wire from the power supply, and then insert it into a terminal on the power "POS" WAGO connector and close the lever.
   g. If continuing to another fixture in the run, strip 9–10 mm (3/8 in) from a wire, insert it into the third terminal, and close the lever.

Note: *If you want a fixture to always be lit, you can connect a power wire to the CNTL terminal. This forces the fixture to be lit whenever the power supply is on, making the control wire (see Connect control below) unnecessary for this individual fixture.*

4. Connect control.



   a. Locate the pre-stripped violet wire inside of the termination kit.
   b. Loosen but do not remove the control "CNTL" terminal screw on the back of the fixture.
   c. Insert the spade terminal under the screw and tighten the screw firmly to secure.
   d. Locate a three-position WAGO connector inside the termination kit and open all terminal levers.
   e. Insert the pre-stripped end of the pigtail into a terminal and close the lever.
   f. Strip 9–10 mm (3/8 in) from the end of the control wire from the power supply, and then insert it into a terminal and close the lever.
   g. If continuing to another fixture in the run, strip the wire 9–10 mm (3/8 in), insert it into the third terminal on the control "CNTL" WAGO connector, and close the lever.
5. Push all terminated wiring through to the junction box.
6. Install the BlueBeam or BlueDome LED fixture to the installed junction box using the provided hardware.

Maximum Cable Length Charts

One-zone BluesSystem LV Power Supply at 24 VDC

Wire Size	Max run	Max run with Double Common*
4.0 mm^2	150 m (480 ft)	300 m (960 ft)
2.5 mm^2	95 m (300 ft)	185 m (600 ft)
1.5 mm^2	55 m (180 ft)	110 m (360 ft)
1.0 mm^2	35 m (120 ft)	75 m (240 ft)
0.75 mm^2	30 m (90 ft)	60 m (180 ft)
0.5 mm^2	20 m (60 ft)	35 m (120 ft)
12 AWG	120 m (400 ft)	240 m (800 ft)
14 AWG	75 m (250 ft)	50 m (500 ft)
16 AWG	50 m (150 ft)	95 m (300 ft)
18 AWG	30 m (100 ft)	60 m (200 ft)

Six-zone BluesSystem LV Power Supply at 36 VDC

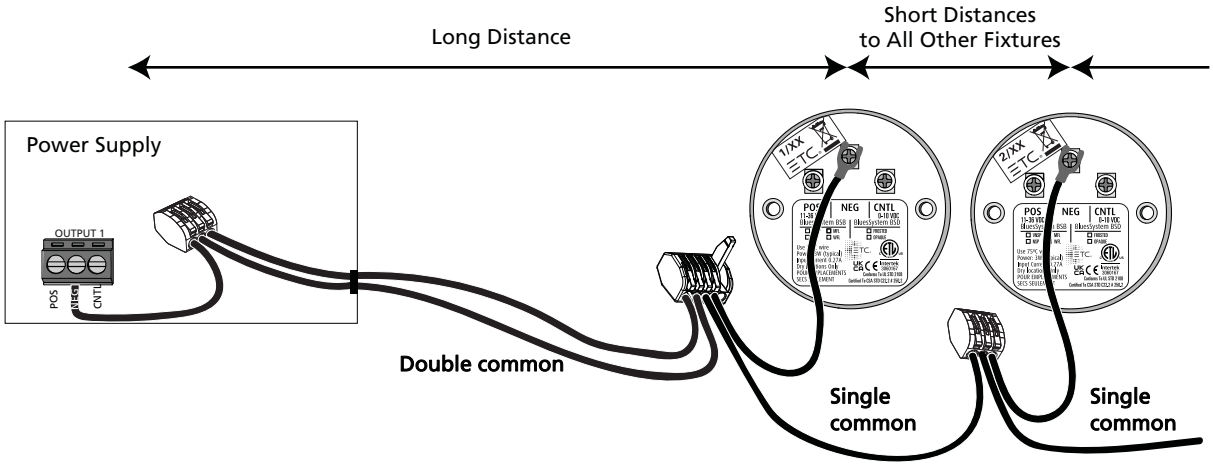
Wire Size	Max run	Max run with Double Common*
4.0 mm^2	225 m (720 ft)	440 m (1,440 ft)
2.5 mm^2	140 m (450 ft)	275 m (900 ft)
1.5 mm^2	85 m (270 ft)	165 m (540 ft)
1.0 mm^2	55 m (180 ft)	110 m (360 ft)
0.75 mm^2	40 m (135 ft)	80 m (270 ft)
0.5 mm^2	30 m (90 ft)	55 m (180 ft)
12 AWG	180 m (600 ft)	365 m (1,200 ft)
14 AWG	115 m (375 ft)	230 m (750 ft)
16 AWG	70 m (225 ft)	140 m (450 ft)
18 AWG	45 m (150 ft)	90 m (300 ft)

*See *Double Common Wiring* on *page 14*.

Double Common Wiring

For long runs, voltage drop between the power supply and fixtures or from fixture to fixture can result in reduced control voltage range. Control voltage range can be improved with double common wiring over long runs: between the power supply and the first fixture in a zone, and between sequential fixtures in a zone if they are spaced farther apart.

If the long run occurs between the power supply and the first fixture in a zone, and all fixtures in the zone are located close to each other, then double common wiring is only beneficial between the power supply and the first fixture. See the example riser below.



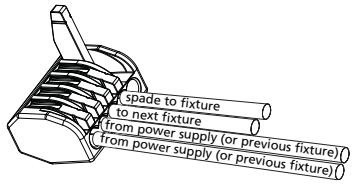
Example Riser: Double common on long run and single common on short runs

Double common wiring may require wire nuts or three-position and five-position lever-nut connectors in addition to the components provided in the fixture termination kit.

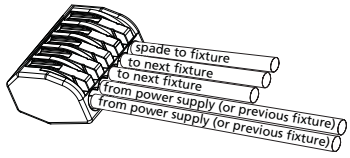
To install double common wiring:

1. Install a common wire pigtail connected to the output common "NEG" of the power supply.
2. Connect two common wires to the common wire pigtail in the power supply.
3. Terminate the two common wires at a five-position common WAGO connector with the black wire and spade terminal going to the first fixture.
4. Connect one or two common wires from the common WAGO connector at the first fixture to the common WAGO connector at the next fixture.
   a. For fixtures that are close together, a single common wire between the two fixtures is sufficient.
   b. For fixtures that are farther apart, two common wires between the fixtures may be desirable to prevent reduced control voltage range at the second fixture.
5. Repeat step 4 until the common connections are made to all fixtures in the zone.
6. Proceed with *Connect power* and *Connect control* for each fixture, as instructed in *Terminate Wiring* on *page 11*.

4a. Five-position WAGO connector with double common wiring to first fixture only

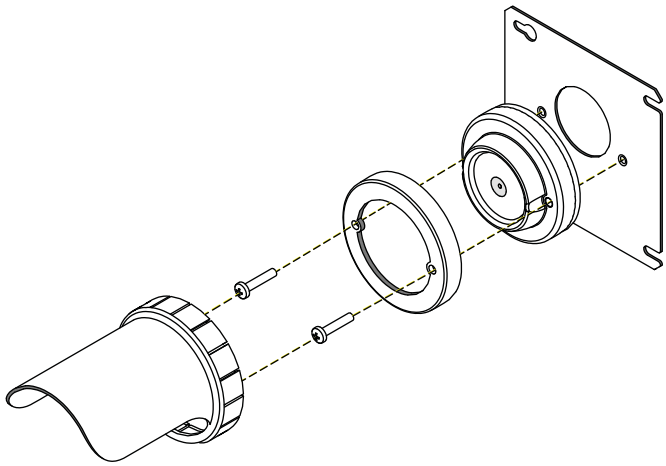


4b. Five-position WAGO connector with double common wiring to first fixture and to next fixture in zone



Accessory Installation

BluesSystem provides the cowl and the eyelid accessory options for masking unwanted light on the BlueBeam and the BlueDome low-voltage LED fixtures. Both accessories come with a provided plastic accessory ring that allows the cowl or eyelid to snap onto the fixture.



1. To install cowl and eyelid accessories, remove screws from the fixture.
2. Align the holes on the fixture with the holes on the provided plastic accessory ring and slide the ring down for an easy, secure fit.
3. Reinstall the original screws back into the fixture.
4. Snap the eyelid or cowl accessory over the plastic accessory ring.

Power Supplies

WARNING: **RISK OF ELECTRIC SHOCK! A system without an accessible power disconnect device cannot be serviced or operated safely. Follow all local codes and restrictions.**

AVERTISSEMENT : **RISQUE DE CHOC ÉLECTRIQUE! Il est imprudent d'entretenir ou d'utiliser un système sans qu'un dispositif de déconnexion de l'alimentation soit accessible. Veuillez suivre tous les codes et restrictions locaux.**

BluesSystem Power Supplies are available in a one-zone and a six-zone variant and provide low voltage 24 or 36 VDC power to connected BlueBeam and BlueDome lighting fixtures.

Model	Description	Notes
BS-PS1	One-zone power supply	Supports a maximum of 10 fixtures.
BS-PS6	Six-zone power supply	Each zone supports a maximum of ten fixtures. The six-zone power supply supports a maximum of 60 fixtures.

Control input terminations are made inside of the power supply for the one-zone and six-zone wall-mounted versions and are continued to the lighting fixtures.

Supplies

The following supplies are required, but not provided, for installation.

- Conduit and conduit fittings.
- Phillips screwdriver.
- Four each mounting bolts or screws and wall anchors as needed. Mounting hardware must hold at least 1.2 kg (2.6 lb) for the one-zone power supply and 3.9 kg (8.5 lb) for the six-zone wall-mounted power supply.

Wiring Requirements

Power

- Terminals accept 0.5 to 2.5 mm^2 (22 to 12 AWG)
- Maximum 0.5 Nm (0.37 ft-lb) screw tightening torque
- Wire strip length 7 mm (5/16 in)

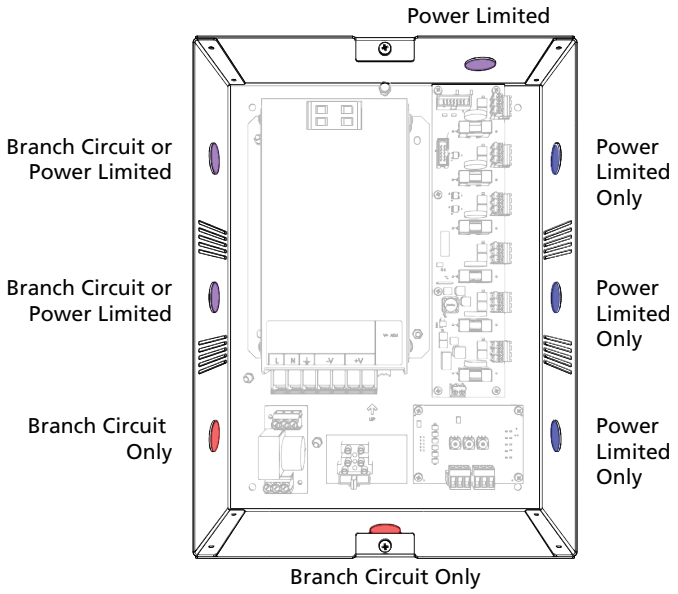
Control

Control Type	Wire Specification	Notes
DMX	Belden 9729 (or approved equal)	A 120 Ω resistor is required (but not provided) to terminate the last DMX device in a control run.
Switched	0.05 to 2.5 mm^2 (30 to 12 AWG)	
0–10 V	0.05 to 2.5 mm^2 (30 to 12 AWG)	

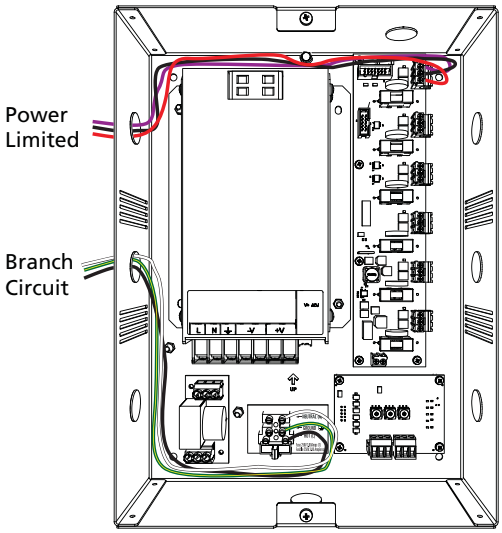
Wall-mount Installation

When planning the installation, prepare separate conduit entries for power limited wiring and branch circuit wiring. (Power limited wiring is defined as circuits that are SELV/LPS [Safety Extra Low Voltage/Limited Power Source] or Class 2 levels.) Route the wiring so that power limited wiring and branch circuit wiring remain separate.

The image at right shows the conduit knockouts that can be used for either power limited wiring or branch circuit wiring.



The image below shows a sample configuration of power limited wiring and branch circuit wiring.



Note: *Separate conduit entries are required for power limited wiring and branch circuit wiring. Route the wiring so that power limited wiring and branch circuit wiring remain separate.*

Four mounting holes are provided on the rear panel of the power supply and provide for easy mounting options. The power supply can be mounted to a wall or other smooth, supported, vertical surface.

1. Each non-vented edge of the power supply offers conduit knockouts. Knock out the required holes based on your installation wire plan.
2. Using a Phillips screwdriver, remove the two screws that secure the cover to the power supply tray. Set screws aside for later re-installation. The cover is grounded to the power supply enclosure by a tether.
3. Align the power supply in its desired installation location and mark, and then pre-drill the four mounting holes.
4. Install wall anchors (as needed) and the mounting hardware. Leave approximately 19 mm (3/4 in) of the mounting hardware exposed to mount the power supply.
5. Install the power supply to the mounting hardware and tighten the hardware for a secure fit.

Rack-mount Installation

The BluesSystem six-zone rack-mount power supply includes rack-mounted brackets for installation into a standard 483 mm (19 in) equipment rack.

Terminate Power Supply Wiring

WARNING: **RISK OF DEATH BY ELECTRIC SHOCK! Failure to disconnect all power to the system before installation, maintenance, cleaning or any other system modification, could result in serious injury or death.**

AVERTISSEMENT : **RISQUE D'ÉLECTROCUTION! Installer, entretenir, nettoyer ou modifier le système sans avoir débranché l'alimentation du système peut entraîner des blessures graves, voir mortelles.**

De-energize the main feed to BluesSystem and follow appropriate Lockout/Tagout procedures as described in NFPA Standard 70E. It is important to note that electrical equipment such as relay panels, can present an arc flash safety hazard if improperly serviced. This is due to available large short circuit currents on the feeders of the equipment. Any work on energized equipment must comply with OSHA Electrical Safe Working Practices.

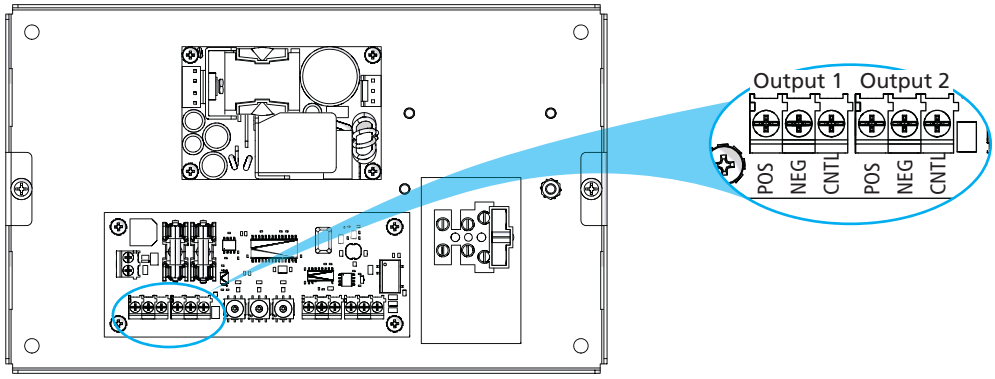
Mains Input Power for Wall-mounted Units

1. Make sure power is off at the main breaker.
2. Loosen the three screw terminals for ground, neutral, and line connections.
3. Strip each wire 8 mm (5/16 in). Typical wire colors are shown in the table below.
4. Terminate the incoming ground wire into the "GROUND" terminal and tighten the screw firmly onto the wire.
5. Terminate the neutral wire into the "NEUTRAL (N)" terminal and tighten the screw firmly onto the wire.
6. Terminate the line (hot) wire into the "HOT (L)" terminal and tighten the screw firmly onto the wire.

Wire Type	Region	Color
Ground	US	Green/Yellow
	EU	
Neutral	US	White
	EU	Blue
Line/Live	US	Black
	EU	Brown

Low Voltage Outputs

Power supply outputs can control a maximum of 10 BluesSystem fixtures installed in a single wire run.



One-Zone, DMX

Cable Specification

Output Terminals	Wire	Torque	Notes
Positive Negative (Common) Control	.05 to 2.5 mm^2 (30 to 12 AWG) solid or .2 to 2.5 mm^2 (24 to 14 AWG) stranded)	0.5 Nm (0.37 ft-lb)	Supports up to 10 fixtures per output. For convenience, the one-zone power supply features two output terminals, allowing fixtures to be split into two circuits on the same zone.

CAUTION: *The terminals labeled NEG on the power supply outputs are DC common and should not be connected to AC ground.*

To connect the installed fixture (or fixtures) to the power supply output terminals:

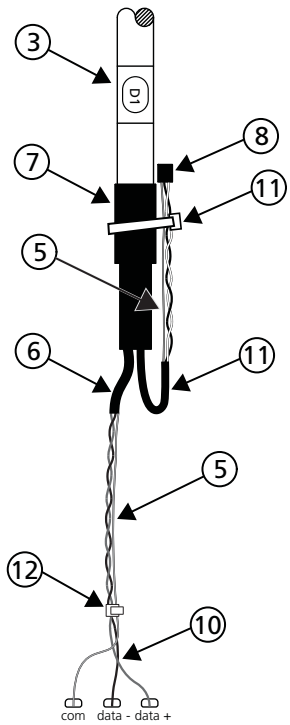
1. Loosen the three "Output" screw terminals.
2. Strip each wire to 7 mm (5/16 in) and label them according to the system installation wiring plan:
   - GND (common) typically uses black
   - PWR typically uses red
   - CTRL when used is typically violet
3. Terminate common "NEG".
   a. Terminate into the output common "NEG" terminal.
   b. Tighten the screw firmly onto the wire.
4. Terminate the power wire (typically red) into the "POS" terminal and tighten the screw firmly onto the wire.
5. Terminate the control wire (typically violet) into the "CNTL" terminal and tighten the screw firmly onto the wire. When control is not required from the power supply, do not terminate.
6. See *Terminate Wiring* on *page 11* for instructions to terminate wiring at the fixture.

Connect Control Wiring

Power Supplies are available in DMX, 0–10 VDC control, or Switched control models.

DMX Cable Preparation

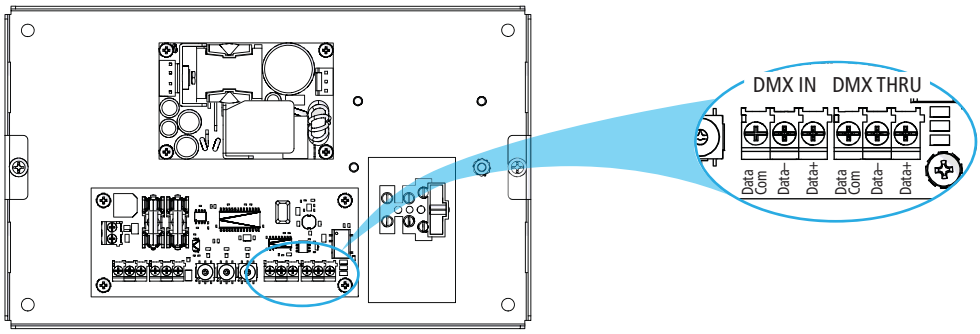
This instruction assumes preparation of Belden 9729 (or equivalent) cable for termination to the three-position screw terminal connector provided.



1. Leave approximately 20 cm (8 in) of wiring to allow slack for future service needs.
2. Strip 18 cm (7 in) off the outer jacket.
3. Label the cable with the data type and run designation (DMX1, DMX2, etc.).
4. Strip the foil shielding from each wire set to within 6 mm (1/4 in) of the outer jacket.
5. Untwist the shield wire from each pair and apply a piece of 1.6 mm (1/16 in) clear heat shrink to each shield wire.
6. Twist each shield wire back onto its data pair, and then apply a 4 cm (1.5 in) piece of 0.5 cm (3/16 in) heat shrink all the way down each 3-wire set. Make sure to capture the foil shielding at the base.
7. Apply the 5 cm (2 in) piece of the 1 cm (3/8 in) heat shrink, centered on the end of the cable jacket and the bases of all the wires in the cable.
8. Cap the ends of the unused pair of wires with a 2.5 cm (1 in) piece of 0.5 cm (3/16 in) heat shrink centered over the end of the wires.
9. Strip 6 mm (1/4 in) of insulation from all of the wires to be used.
10. Maintain the wire pair twist as close to the screw terminal connector as possible and terminate the wires.
    - Insert the data - wire (typically black) into the terminal labeled "DMX -" and secure.
    - Insert the data + wire (typically red or white) into the terminal labeled "DMX +" and secure.
    - Insert the common (shield) wire into the terminal labeled "DMX" and secure.
11. Bend back the unused set of wires and secure them to the cable with a wire tie.
12. Secure the terminated wire sets together with a wire tie 5 cm (2 in) from the connector.

Terminate DMX In

1. Insert the Ground (Common) wire into the "Data Com" terminal on the "DMX In" connector and tighten the screw firmly onto the wire.
2. Insert the Data - wire into the "Data -" terminal on the "DMX In" connector and tighten the screw firmly onto the wire.
3. Insert the Data + wire into the "Data +" terminal on the "DMX In" connector and tighten the screw firmly onto the wire.



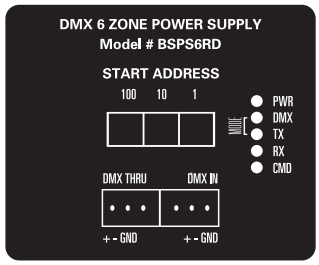
One-Zone, DMX

Note: *Use a 120 Ω resistor (not provided) to terminate the last DMX device in a control run.*

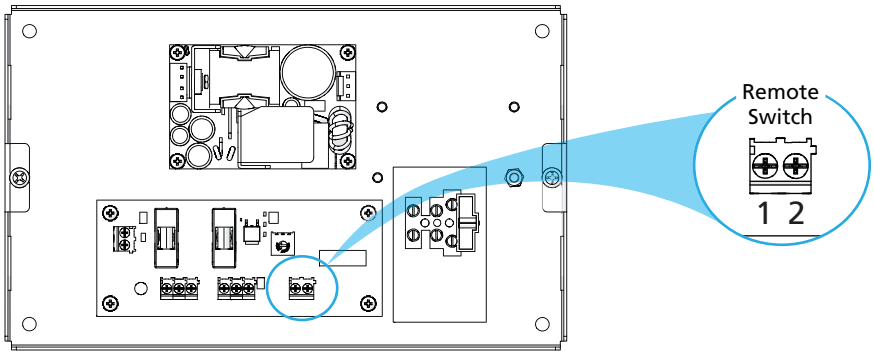
Terminate DMX Thru

1. Insert the Common wire into the "Data Com" terminal on the "DMX Thru" connector and tighten the screw firmly onto the wire.
2. Insert the Data - wire into the "Data -" terminal on the "DMX Thru" connector and tighten the screw firmly onto the wire.
3. Insert the Data + wire into the "Data +" terminal on the "DMX Thru" connector and tighten the screw firmly onto the wire.

Label is mounted on inside cover of the six-zone wall-mounted power supply



Terminate Remote Switch Wiring



One-Zone, Switched

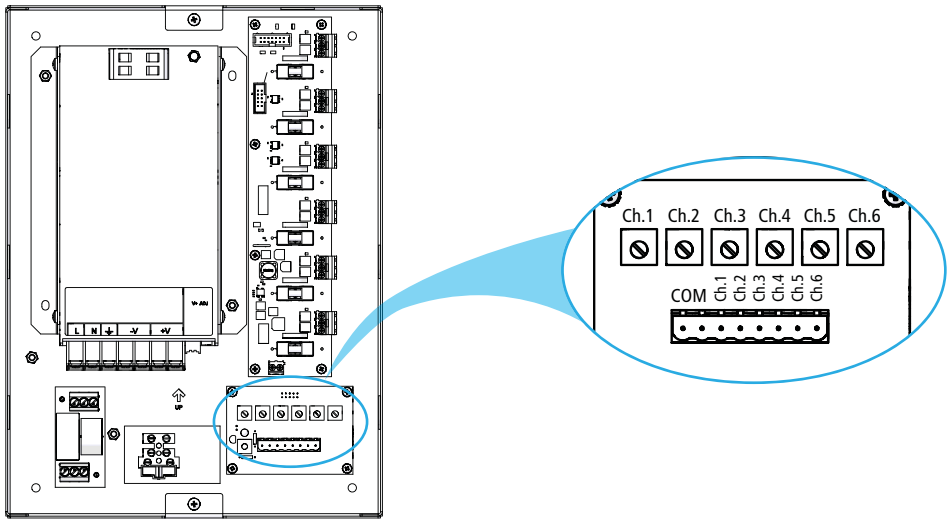
Note: *Switched connection requires a dry contact such as a switch or relay. Wires with voltage present should not be landed here.*

One-Zone LV Power Supply

1. Insert the wire from one side of the dry contact into terminal 1 and tighten the screw firmly onto the wire.
2. Insert the wire from the other side of the dry contact into terminal 2 and tighten the screw firmly onto the wire.

Six-Zone LV Power Supply

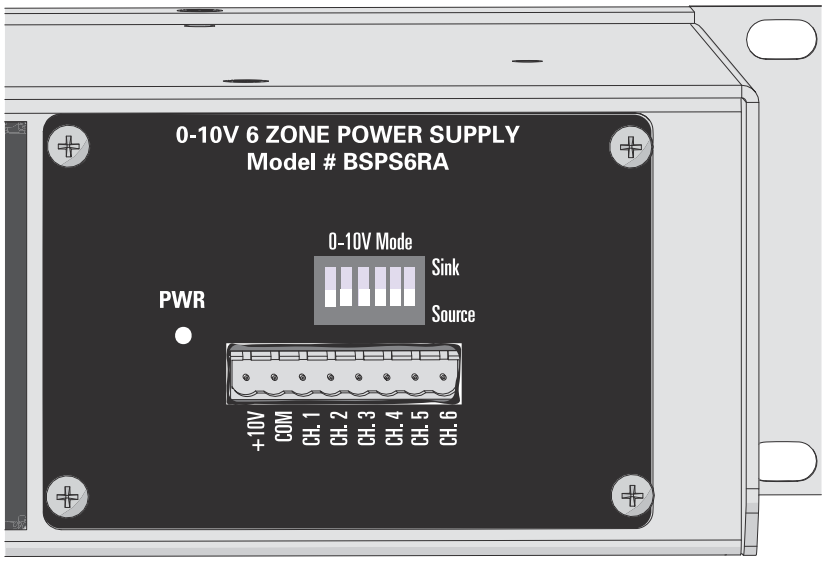
1. Remove the connector from the unit.
2. Insert the wire from one side of the dry contact into the removable connector at Ch.1 and tighten the screw firmly onto the wire.
3. Insert the wire from the other side of the dry contact into the removable connector at COM and tighten the screw firmly onto the wire.
4. Repeat Steps 1–2 for all of the dry contacts.
5. Install the connector into the unit.



Six-Zone, Wall-Mount, Switched

Terminate 0–10 VDC Wiring

CAUTION: *Control wires are polarity dependent. Crossing the + and – wires while combining drivers will result in improper performance.*



Six-Zone, Rack-Mount, 0–10 V

For Sink Control

Note: *Sink control refers to control voltage being provided by the BluesSystem LV Power Supply to the 0–10 VDC controller to set the light output.*

1. Insert the wire from one side of the 0–10 VDC controller into the COM terminal on the BluesSystem power supply and tighten the screw firmly onto the wire.
2. Insert the wire from the other side of the 0–10 VDC controller into the CH.1 terminal on the BlueSystem power supply and tighten the screw firmly onto the wire.
3. Repeat Steps 1 and 2 for all 0–10 VDC connections
4. Set all corresponding dip switches to Sink.

For Source Control

Note: *Source control refers to control voltage being sent from the 0–10 VDC controller to the BluesSystem LV Power Supply to set the light output.*

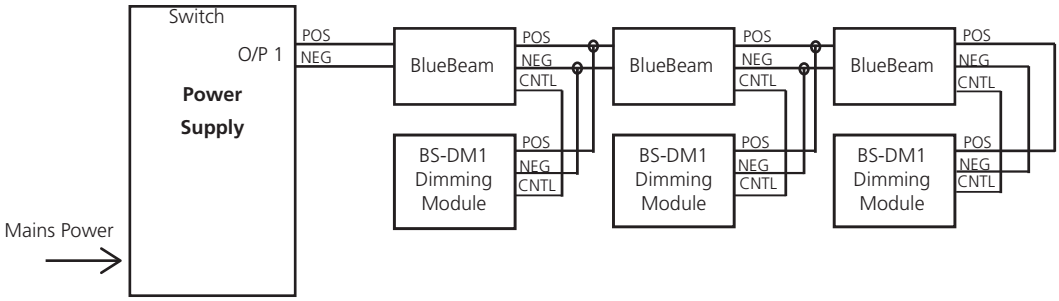
1. Insert the wire from one side of the 0–10 VDC controller into the COM terminal on the BluesSystem power supply and tighten the screw firmly onto the wire.
2. Insert the wire from the other side of the 0–10 VDC controller into the CH.1 terminal on the BluesSystem power supply and tighten the screw firmly onto the wire.
3. Repeat Steps 1 and 2 for all 0–10 VDC connections
4. Set all corresponding dip switches to Source.

Dimming Module

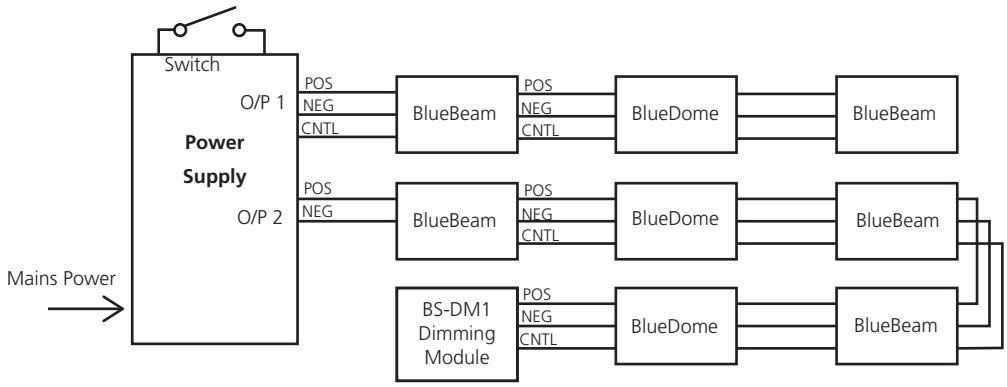
The BS-DM1 Dimmer Module is designed to allow intensity control of the BlueDome or BlueBeam light Fittings. The Dimmer Module can be fitted anywhere in series with the BlueDome or BlueBeam fixtures. Simply connect the Dimming Module as you would connect another Beam or Dome to the system.

Connection Examples

The schematic below shows the use of three BS-DM1 modules on a single power supply. This allows individual control of each fitting.



This schematic below shows that by connecting a BS-DM1 and removing the CTRL line from the power supply, the second set of fittings can be dimmed using the BS-DM1. These will not be affected by the switch on the BS-PS1.



System Power Up and Configuration

This chapter provides details for system power up and configuration.

Note: *Read this chapter in full before powering up the system.*

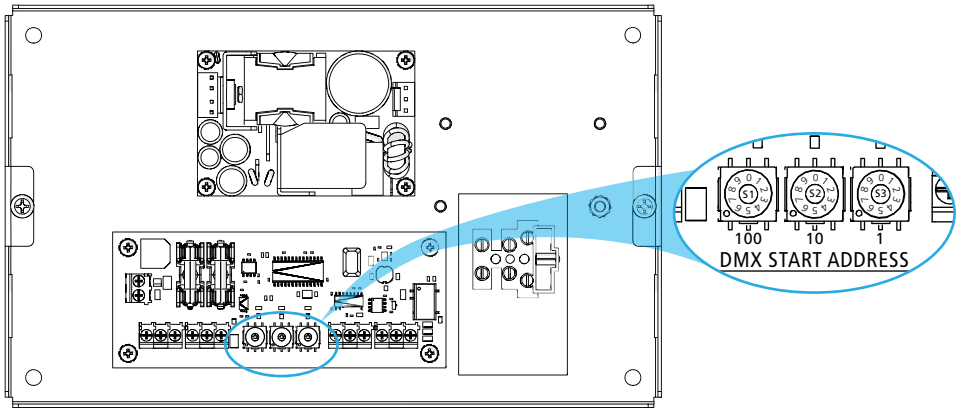
WARNING: **RISK OF ELECTRIC SHOCK! A system without an accessible power disconnect device cannot be serviced or operated safely. Follow all local codes and restrictions.**

AVERTISSEMENT : **RISQUE DE CHOC ÉLECTRIQUE! Il est imprudent d'entretenir ou d'utiliser un système sans qu'un dispositif de déconnexion de l'alimentation soit accessible. Veuillez suivre tous les codes et restrictions locaux.**

Configure DMX

Set the DMX Start Address

Set the DMX start address using the rotary encoders on the power supply board labeled DMX Start Address.

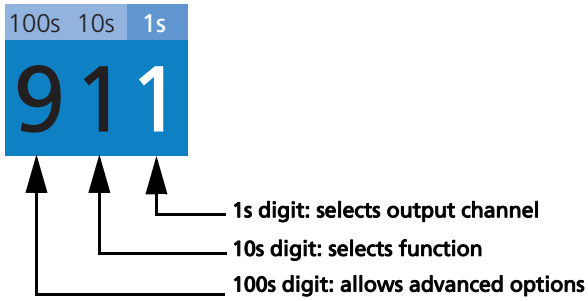


One-Zone, DMX

The valid range is between 001 and 512 for the one-zone power supply and between 001 and 506 for the six-zone power supply.

Advanced Options

To configure DMX loss behavior or set minimum output level, set the 100s digit of the DMX address to 9. The 10s digit sets the type of DMX loss behavior or puts the power supply in Minimum Level Capture mode. The 1s digit controls which output channel will be configured. Setting the 1s digit to 7 will configure the behavior of all channels.



DMX Loss Behavior

The DMX power supply has three options that can be set to change the behavior of the output upon loss of DMX. These can be set and stored in the unit at any time during installation or commissioning.

1. To set any of the DMX loss behavior options, ensure the power is switched to Off and that a DMX source is connected to the unit.
2. Using the rotary encoders, set the DMX address corresponding to the desired function. The table below contains examples.

Address	Function
901	Channel 1 hold last look (default) on DMX loss
912	Channel 2 to full on DMX loss
923	Channel 3 fades down to 0% on DMX loss
917	All six channels to full on DMX loss

   - The 10s digit determines the type of DMX loss behavior. 0 for hold last look (default), 1 for full, 2 for fade down to 0%.
   - The 1s digit of the DMX address is the channel number.
   - Set the 1s digit to 7 to modify the DMX loss behavior for all six channels of a six-zone LV power supply.
3. Switch the power on. The DMX power supply will store the new DMX loss behavior operating mode in memory.
4. Turn the power off and set the DMX start address for power supply operation. See *Set the DMX Start Address*.

Set Minimum Level

The DMX power supply has the ability to set the minimum output level, which stops the DMX signal from switching the outputs completely off.

1. To set the minimum output level of the DMX power supply, ensure the power is switched to Off and you have a DMX source connected to the unit.
2. Using the rotary encoders, set the DMX address corresponding to the desired function. The table below contains examples.

Address	Function
931	Minimum Level Capture mode for channel 1
932	Minimum Level Capture mode for channel 2
937	Minimum Level Capture mode for all channels

   - The 1s digit of the DMX address is the channel number.
   - Set the 1s digit to 7 to set minimum levels for all six channels of a six-zone LV power supply.
3. Set your DMX source to output 0% on DMX channel 1.
4. Switch the power on. While the DMX power supply is in Minimum Level Capture mode, it will respond to DMX channel 1 and output this level to the fixtures.
   - Channel 1 controls the level for any Minimum Level Capture operation.
5. Slowly increase the DMX control level until you see the desired level.
   - If a minimum level of 0% is required, leave the DMX source at 0% output on channel 1.
6. Turn the power supply off for five seconds and then turn it on again. It will now capture the level and store this as the new minimum level on the DMX channel specified in step 2.
7. Turn the power off and set the DMX start address for power supply operation. See *Set the DMX Start Address*.

System Power Up

Power Up the Power Supply

Apply power to the power supply from the main breaker. Depending on the power supply type, the connected fixtures will respond accordingly:

- DMX power supply will turn loads on if the DMX control level is greater than 0.
- Switched power supply will turn loads on if the switch is closed.

Configure Switched Output Level

Set Output Level

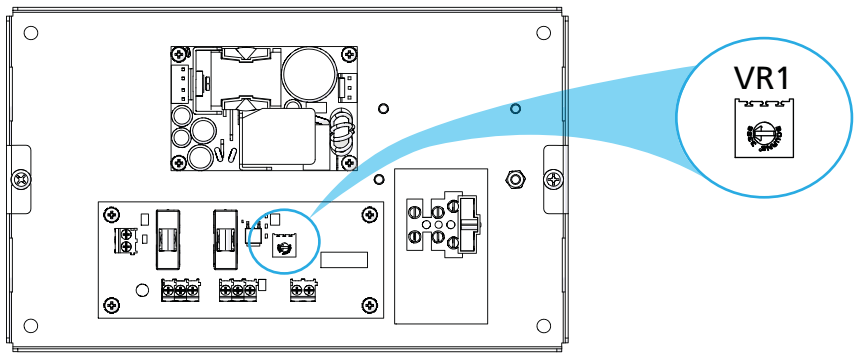
A rotary potentiometer is provided on Switched power supplies to set the intensity level for connected BlueBeam and BlueDome fixtures when the unit is switched to On.

WARNING: **RISK OF ELECTRIC SHOCK! Mains voltage is present inside the power supply during this procedure.**

AVERTISSEMENT : **RISQUE DE CHOC ÉLECTRIQUE! Travailler à l'intérieur du lorsqu'il est alimenté vous expose à la possibilité de courants et de tensions dangereux.**

It is important to note that electrical equipment can present an arc flash safety hazard if improperly serviced. Any work on energized equipment must comply with OSHA Electrical Safe Working Practices.

Note: *To effectively use this feature, you will need to have line of sight between power supply and the connected fixtures.*



One-Zone, Switched

1. To set the output level, power the BlueBeam and BlueDome fixtures and switch the fixtures to On.
2. Use a precision screwdriver to change the rotary potentiometer (labeled VR1) until the desired intensity level on the fixtures is reached.

Fuse Replacement

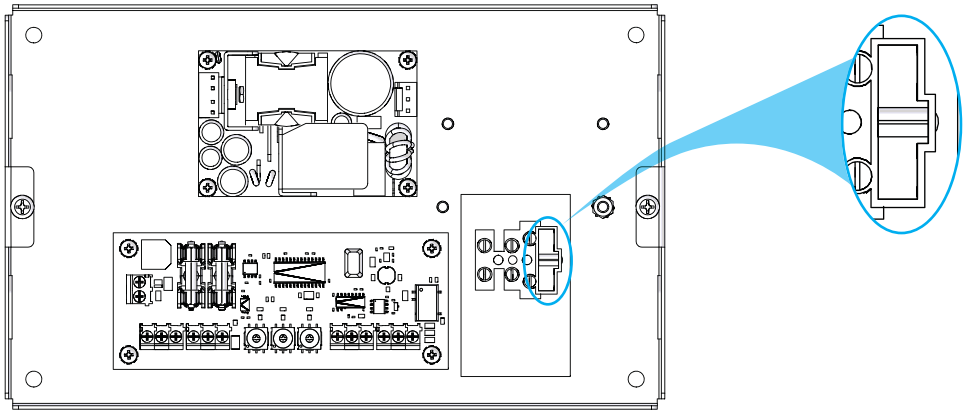
WARNING: RISK OF DEATH BY ELECTRIC SHOCK! Failure to disconnect all power to the system before installation, maintenance, cleaning or any other system modification, could result in serious injury or death.

AVERTISSEMENT : RISQUE D'ÉLECTROCUTION! Installer, entretenir, nettoyer ou modifier le système sans avoir débranché l'alimentation du système peut entraîner des blessures graves, voir mortelles.

Replace Input Power Fuse

The input power circuit is protected from overload and short circuits by a user-replaceable fuse.

- Replace the one-zone LV power supply input fuse with a 5 x 20 mm 1.25 A, 250 V time-delay fuse. Contact ETC (see *Help from ETC Technical Services* on *page 2*) and request part number F206-F.
- Replace the six-zone LV power supply input fuse with a 5 x 20 mm 3 A, 250 V time-delay fuse. Contact ETC (see *Help from ETC Technical Services* on *page 2*) and request part number F178-F.

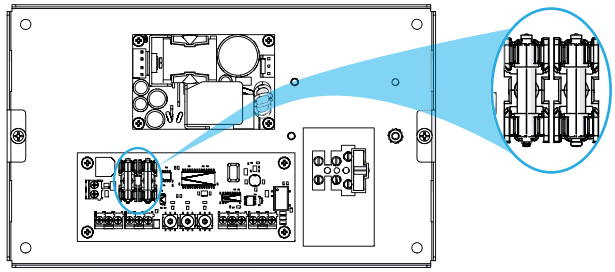


One-Zone, DMX

Replace Output Fuse

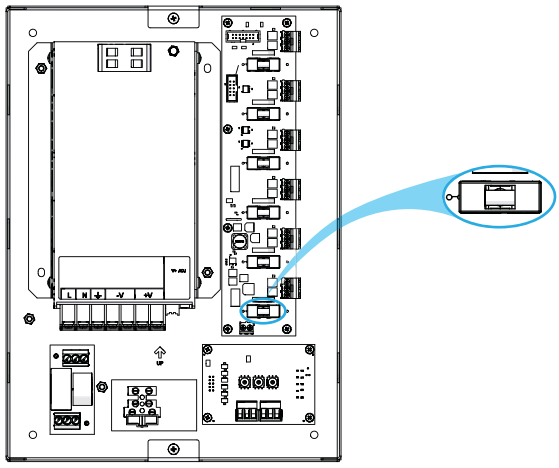
All outputs are protected from overload and short circuits by a user-replaceable fuse.

- Replace the one-zone LV power supply output fuse with a 1.6 A, 250 V fuse. Contact ETC (see *Help from ETC Technical Services* on *page 2*) and request part number F386.



One-Zone, DMX

- Replace the six-zone LV power supply output fuse with a 1.25 A, 250 V fuse. Contact ETC (see *Help from ETC Technical Services* on *page 2*) and request part number F385.)



Six-Zone, Wall-Mount, DMX

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