

RATIO DALI Bus Power Supply PP-DALI-PSR

Installation and Operating Instruction for B.E.G. Controls - PP-DALI-PSR

1. Product information

- DALI bus power supply for use with RATIO architectural scene control components and DALI 2.0 or 1.0 compatible control gear devices (i.e. LED drivers, fluorescent ballasts)
- Integral 16A DALI addressable relay for switching lighting and other loads. Not suitable for plug receptacle load control
- Requires RATIO controls and DALI compatible devices. Supports up to 100 mA bus power
- A second PP-DALI-PSR can be wired in parallel to provide an additional 100 mA bus power (for 200 mA total). Do not connect more than two PP-DALI-PSR, or a PP-DALI-PSR with a different DALI bus power supply, to a single DALI bus. This could result in permanent damage to the connected RATIO and DALI devices
- Integral relay output is a maintained contact closure, normally open (N.O.)
- Relay opened and closed by recalling scene levels 100% or 0, or toggle on/off commands using RATIO controls. Configured via the RATIO Bluetooth Android or iOS smartphone app
- Mounts on a standard junction box through a ½ inch trade size knockout. Two lock nuts included.
- Plenum rated
- Status and fault LED for easy troubleshooting
- Integral short circuit and thermal protection
- 5 years limited warranty
- ROHS and REACH compliant

2. Operation

The PP-DALI-PSR is supplied with line voltage and outputs a DALI voltage of typically 16 VDC and 100 mA of available bus power. Up to 25 DALI light fixtures and 6 RATIO control devices (multi sensors or push button interfaces) can be connected to a single power supply. Wiring a second power supply in parallel increases the available bus power to 200 mA, allowing up to 50 DALI light fixtures and 12 RATIO control devices.

The integral DALI addressable 16A relay can switch a variety of loads on and off.

Operating information is displayed via LEDs. The device offers integrated temperature monitoring and short circuit recognition. RATIO is programmed via Bluetooth using a smartphone and the B.E.G. BLE app. The PP-DALI-PSR integral relay is recognized and configured via the RATIO app.

Please refer to the installation instruction/manual for a detailed description of functions and operation.

3. Safety advice

WARNING:
SHOCK HAZARD. MAY RESULT IN SERIOUS INJURY OR DEATH!
TURN POWER OFF AT THE CIRCUIT BREAKER BEFORE INSTALLING THE POWER SUPPLY!

POWER SUPPLY MUST BE INSTALLED AND USED IN ACCORDANCE WITH APPROPRIATE ELECTRICAL CODES AND REGULATIONS.

INSTALLATION BY A QUALIFIED PERSONAL OR ELECTRICIAN IS RECOMMENDED!

DO NOT WIRE HOT!!!!

4. Installation Overview PP-DALI-PSR

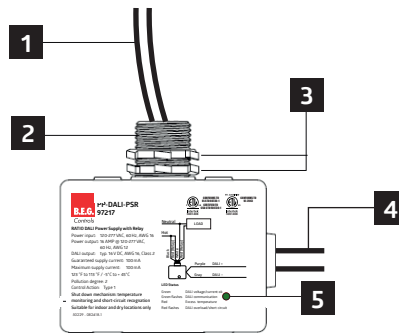
4a. Intended uses

- For indoor use and dry locations only
- DALI bus power supply with integral 16A relay for use with RATIO by B.E.G. Controls or other IEC 62386 DALI standard compliant devices.

4b. Needed for installation

- Power supply with relay must be installed according to state, local and national electrical codes and requirements
- Low voltage DALI wiring: at least 16-gauge. High voltage wiring: at least 14-gauge.
- For plenum return ceilings, use UL listed plenum-approved cables or wire.

5. Product Overview



- 1 Line voltage wires UL Class 1
- 2 1/2 inch threaded chase nipple
- 3 Two lock nuts
- 4 Low voltage DALI bus wires UL Class 2
- 5 LED status indicator

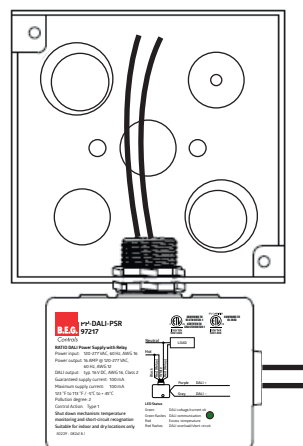
6. Mounting PP-DALI-PSR

6a. Mounting guidelines

- The power supply mounts to a junction box with 1/2 inch knockouts.

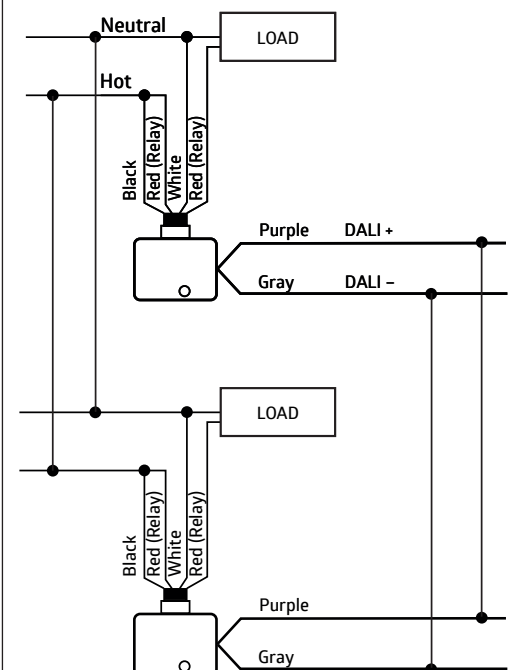
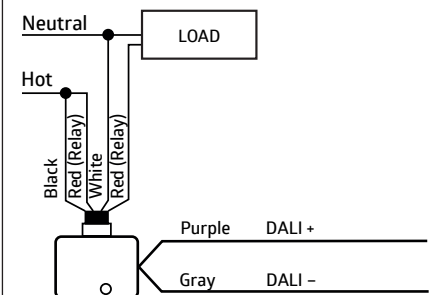
6b. Mounting instructions

- Remove the top lock nut from the 1/2" chase nipple.
- Place line voltage wires and 1/2" chase nipple through 1/2" knockout.
- Reinstall the lock nut and tighten.



7. Wiring PP-DALI-PSR

- Before installing the power supply, make sure that power has been disconnected at the breaker and check that there is no voltage present with a volt meter.
- It is recommended to install the power supply last. Before connecting the power supply, test the integrity of the DALI control wires with a multimeter. Check the resistance from each DALI control wire to ground. You should always read "open." Check the resistance across the two DALI control wires. You should read "open" or a very high resistance. Shorts, even slight, will disrupt bus communication. Check that there is no AC line voltage present across each pair of DALI control wires. AC line voltage on the DALI inputs will normally damage or destroy DALI devices that do not have high voltage protection.
- After the power supply is installed, verify wiring is correct to avoid damage to the power pack, lighting, and control devices before energizing.



8. LED function indicators

Function/Condition	LED Indication
Power off or possibly defective	Off/No color
DALI power supply/bus normal	GREEN
Active data traffic on DALI bus	Blinking GREEN
Overtemperature condition	RED
Overcurrent, short across DALI wires, or short to ground, bus error	Blinking RED

9. Description/Part No / Accessory

Typ	
Power Supply w/16 A Relay PP-DALI-PSR	97217

10. Technical data

Power supply:	120-277 VAC, 60 Hz	Housing:	UV- and shock resistant 5VA material
Relay Switching Power:	16.0 A @ 120-277 VAC	Protection:	Suitable for indoor use and dry locations only, Non-Condensing
Power consumption:	3.3 W	Pollution degree:	2
DALI Output voltage:	typ. 16 V DC (UL Class II Low Voltage)	Control Action:	Type 1
Maximum supply current:	100 mA	Dimensions:	3.35 x 3.27 x 1.5 inch / 86 x 83 x 38mm
Operating temperature:	-13 °F to 122 °F/ -25 °C to +50 °C	Compliances:	ETL listed for the U.S. and Canada (UL STD 60730-1 and CSA STD E60730-1). UL 2043 plenum rated.

11. Trouble shooting

Problem	Solutions
The LED is Off/will not illuminate, and controls and lights do not respond	Verify that line voltage 120-277V AC power is present at the power supply and the circuit breaker.
	Verify that all line voltage connections are correct.
	If all of the above is correct, replace the power supply.
The LED is steady RED, and controls and lights do not respond	Relocate the power supply if in a sealed enclosure and/or in a high ambient temperature environment with poor air circulation.
	Relocate the power supply if next to a heat source or subjected to hot air from HVAC heat.
	If all the above does not resolve the problem, replace the power supply.
The LED is blinking RED, and controls and lights do not respond: Overcurrent	Verify that no more than two power supplies are connected to the RATIO bus. Never connect a DALI device that supplies its own bus power.
The LED is blinking RED, and controls and lights do not respond: Short across DALI wires	Verify that the two DALI bus wires are not shorted together somewhere along the DALI bus between or at the power supply and devices
The LED is blinking RED, and controls and lights do not respond: DALI wires shorted to ground	Verify that the DALI bus wires are not shorted to ground somewhere along the DALI bus between or at the power supply and devices. Check for pinched or cut insulation of the DALI wires.
The LED is blinking RED, and controls and lights do not respond: Bus error	Verify that the DALI bus wiring follows all recommendations. Use minimum 16 AWG copper wire, total bus wire run length does not exceed 985 feet/300 meters, do not use "ring" or "mesh" wiring topology, only use RATIO controls (DALILINK sensors and push button modules).
	Verify that the connected mA draw of RATIO controls and DALI devices does not exceed the available DALI bus power. If it does, add a second power supply and/or remove excess devices. If 2 power supplies are connected check the connections and verify that both are functional.
	Verify the polarity of the DALI wires. Some DALI devices require that polarity be maintained throughout the bus. It is always recommended to maintain polarity throughout the bus since it assists in troubleshooting should a problem arise.
	Verify that each of the RATIO controls and DALI devices are functioning properly. Remove and reconnect one device at a time to see if it clears the bus error (LED turns GREEN). If doing this clears the bus error, replace the device.
The LED is blinking RED, and controls and lights do not respond: All	If all of the above does not resolve the problem, replace the power supply.
The integral relay does not switch on and off, or the connected load does not respond.	Verify the basic relay operation by using the „On“ and „Off“ function in Scene Control in the RATIO app. If RATIO has never been programmed, you can also push a button on a button station to turn on and off. If the relay responds, check that the Group and Scene settings in the app are correctly programmed to work with the desired push button and/or sensor.
	If the relay is functioning and the programming is correct, verify that the load being switched by the relay is functioning normally.
	If all the above does not resolve the problem, replace the power supply.