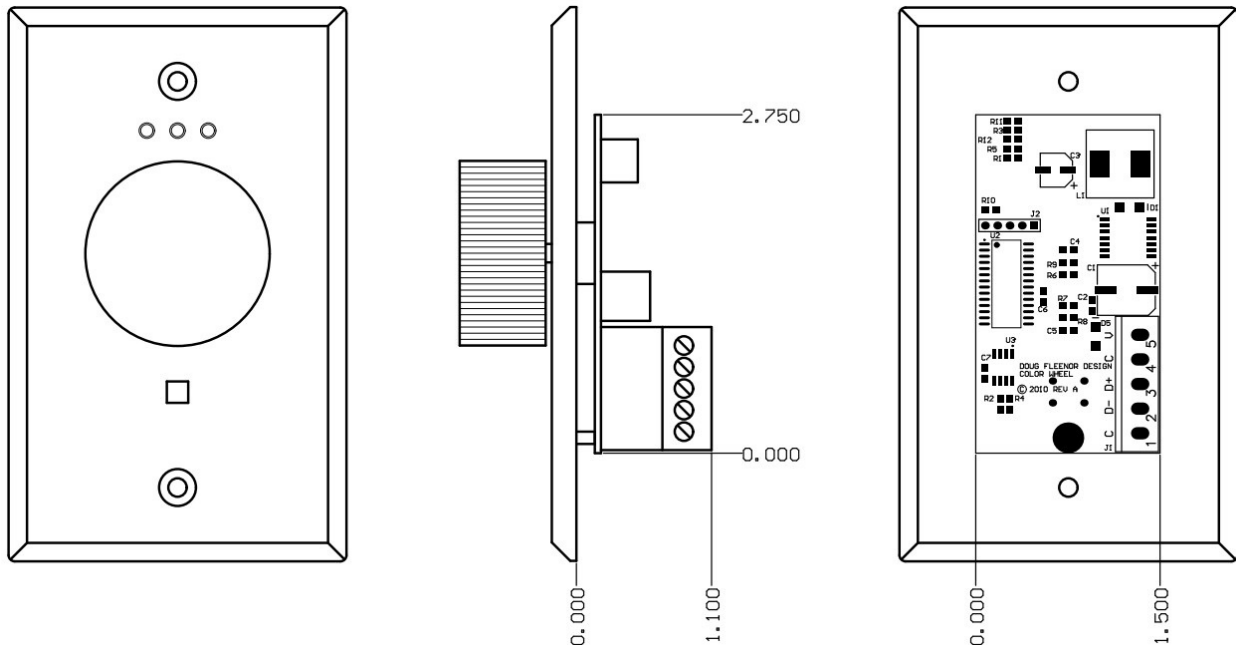


Color Wheel Installation and Operation

Overview

The Color Wheel is a simple wall-mounted device designed to operate DMX512 based LED lighting fixtures. It can be configured to operate 3, 4, or 5 channel fixtures. Each color can be adjusted individually or all active colors can be proportionally raised or lowered.



Electrical connections

All electrical connections to the Color Wheel are made through a pluggable 5 conductor terminal block on the back of the unit. This allows all connections to be made to the terminals without the Color Wheel unit present. The terminal block and wires can be pushed into the wall box while painting, etc. are taking place. The Color Wheel can then be plugged in and attached to the wall box when the installation is ready to be commissioned.

Power connection

The Color Wheel requires low voltage power to operate. This voltage must be in the range of 10 - 24 volts AC or DC at 70-30 mA respectively. If such a power source is not available, use Doug Fleenor Design's model XFMR power transformer.

Power should be connected to the top Color Wheel terminals labeled 'V' and 'C'. If low voltage AC power is used, the polarity does not matter. If low voltage DC power is being used, the positive wire should be connected to the 'V' terminal and the negative wire should be connected to the 'C' terminal.

Cabling from the power source to the Color Wheel should be sized appropriately for the distances involved. Typically, two #16 AWG wires are used for this purpose. The low voltage power cabling can be run in the same conduit with the DMX512 data cable.

DMX512 data connection

The Color Wheel produces standard DMX512 data. The DMX512 cable should be connected to the 'C', '-', and '+' terminals as shown in the table below.

Terminal Label	Function	Wire
'C'	Common	Shield
'-'	DMX data minus	typically white/blue
'+'	DMX data plus	typically blue/white

For reliable operation, a suitable DMX512 cable must be used. Examples include Belden 9829, Belden 9729, and Alpha 9817.

DMX512 cabling must be wired in a daisy chain fashion. The last device on the line must be fitted with a terminating resistor. If you are not familiar with DMX512 wiring practices, we suggest that you consult with your dealer.

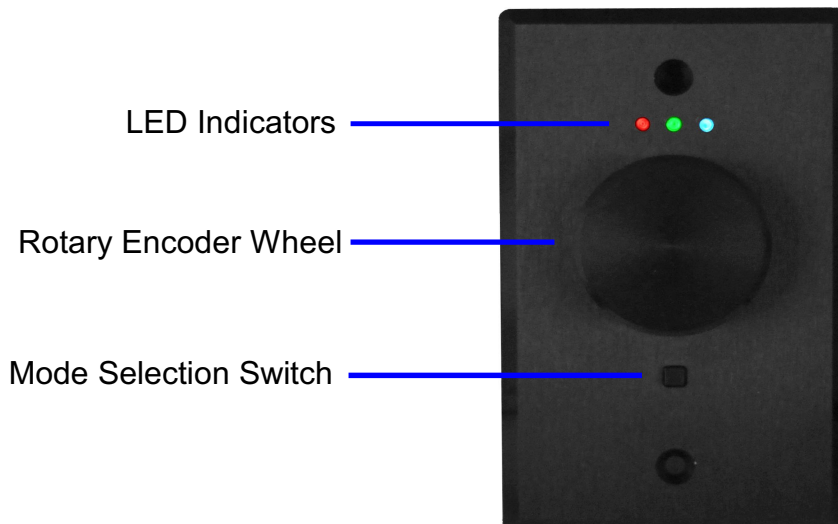
Installation

The Color Wheel can be installed in any standard single gang wall box with a depth of at least 1.5 inches. Examples of acceptable wall boxes include Raco models 420, 611, 650, 660, and 674.

After making the electrical connections, screw the Color Wheel to the wall box using the supplied screws.

Power Up and Configuration

The Color Wheel has three LED indicators, a rotary encoder with a push button feature, and a square mode selection switch. The left LED is red. The center LED is a tri-color device (red, green, blue), and the right LED is blue. This allows the Color Wheel to display many color and control combinations.



Power up sequence

When power is applied, the center blue LED will blink to show the number of channels for which the unit is configured. The Color Wheel ships from the factory configured for 3 channels of control. After the center LED blinks to show its configuration, there will be a quick test of all LEDs in sequence. The Color Wheel will then set all channels to 50% and the Color Wheel will be in its master level setting mode.

Changing the number of channels

If you need to control fixtures with 4 or 5 channels, perform the following procedure

- Remove power from the Color Wheel.
- Push and hold the square mode button.
- While continuing to hold the mode button, apply power to the Color Wheel.
- The center LED will flash to show the number of channels it is configured for.
- If the number of flashes is correct, configuration is complete. If not, perform this procedure again to select a different number of channels. This procedure will cycle the Color Wheel through 3, 4, and 5 channel modes.
- The channel number selection is held in non-volatile memory so it only needs to be configured once. The Color Wheel will retain this configuration if power is lost.

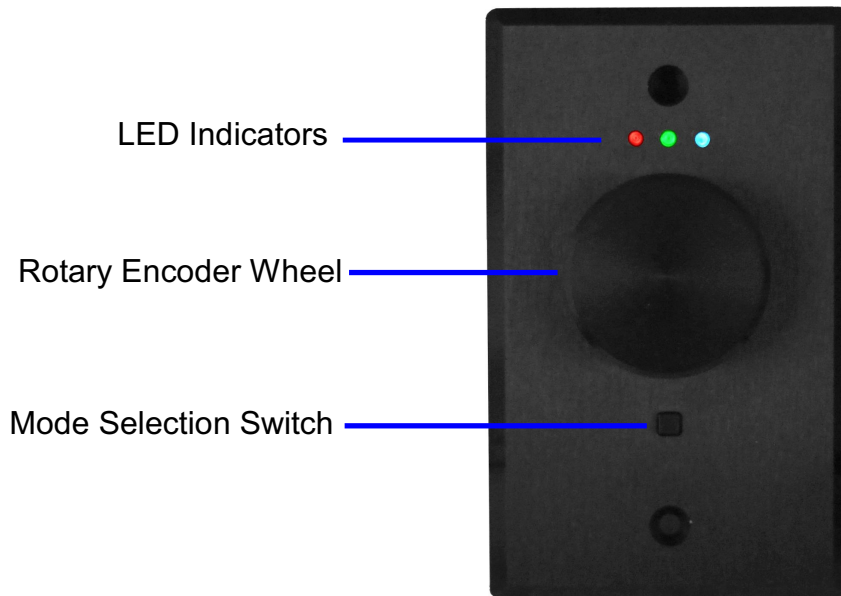
Other technical details

The Color Wheel sends 512 channels of data in its DMX packet. If the Color Wheel is configured for three channel operation, the three channels are repeated until 512 channels of DMX data have been sent. For example, DMX channels 4, 5, and 6 will contain the same levels as channels 1, 2, and 3. The same pattern occurs for 4 and 5 channel operation.

When the Color Wheel is turned off using the encoder wheel push button the DMX line is left "floating". This allows another DMX device to drive the line if desired. For example, you might use the color wheel to set a color and record those settings into a preset in a Doug Fleenor Design Preset 10 wall station. When the Color Wheel is turned off, the Preset 10 can be used to recall up to 10 different recorded color settings.

Operation

The Color Wheel has three LED indicators, a rotary encoder with a push button action, and a square mode selection switch below the encoder wheel. The LED indicators show which color is being controlled. The encoder wheel is used to set the level. Pushing on the encoder wheel turns the Color Wheel on and off. The square mode select button is used to select which colors are under control of the encoder wheel.



Basic Operation

When the station is first turned on, all three LEDs will light and the encoder wheel will act as a master control fading the current look up and down proportionally. When any color reaches either full or zero intensity, the appropriate colored LED on the Color Wheel will flash rapidly for about half a second.

By tapping the square mode button, you can select an individual color to control. The Color Wheel will cycle between red, green, blue, and the master mode. By selecting the individual colors and setting different levels, you can achieve millions of color combinations. If the Color Wheel is configured for four or five channel operation, the mode button will cycle through the color channels available. The center tri-color LED on the Color Wheel can display amber and white to show control of those channels.

Pushing the encoder wheel turns the Color Wheel on and off. If the station is on, pushing the encoder will cause the lights to fade out in about two seconds. The Color Wheel's LED indicators will flash slowly while the fade is taking place and they will turn off when the fade is complete. About two seconds after the fade is complete, the Color Wheel will stop sending DMX data.

Pushing the encoder wheel, spinning the encoder wheel, or pushing the square mode button while the station is off will turn it on again. Upon turning on, the Color Wheel will fade the lights up in the last color set. The encoder will be set to its mastering mode.

Advanced Operation

The Color Wheel has some simple fade effects built in. To activate these effects, turn on the station and then push and hold the square mode button. After about three seconds, the center LED on the Color Wheel will turn blue and a simple fade effect will begin (red, green, blue, red, etc.). The encoder wheel now controls the speed of the fade. Turn the encoder clockwise to speed up the fade and counter-clockwise to slow it down. The station can be turned on and off in this mode using the encoder wheel button.

While in the fade mode described above, you can push and hold the square mode button for about three seconds again. The center LED on the Color Wheel will turn red and a two color fade effect will begin. In this effect, two of the three colors will be on at all times. The encoder wheel will control the speed of the fade just as it did in the single color fade effect above.

Pushing and holding the square mode button for three second once more will return the Color Wheel to its normal operating mode.

Limited Manufacturer's Warranty

Products manufactured by Doug Fleenor Design (DFD) carry a five-year parts and labor warranty against manufacturing defects. It is the customer's responsibility to return the product to DFD at the customer's expense. If covered under warranty, DFD will repair the unit and pay for return ground shipping. If a trip is necessary to the customer's site to solve a problem, the expenses of the trip must be paid by the customer.

This warranty covers manufacturing defects. It does not cover damage due to abuse, misuse, negligence, accident, alteration, or repair by other than by Doug Fleenor Design.

Most non-warranty repairs are made for a fixed \$50.00 fee, plus shipping.

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