ECO Spot™ CEI Changer Guide

This is a supplemental user manual for ECO Spot CEI changer wheel controls.

Description

CEI projectors can switch between specific gobo slots or follow a determined rotation order. Once set, they remain in memory, even after loss of power.

Changer positions can be manually set, switched by an external contact or sensor or can triggered via a 0–10V control signal.

Each projector incorporates a controller. It has two buttons: **M (mode)** and **S (speed).**

The Mode button allows for selection of presets in static and switch contact modes. The Speed button sets the hold time for each position; in other words, how long each image is shown.

The controller accepts two inputs:

- **Input 1: dry contact switch (e.g. toggle, button, relay)**
- **Input 2: 0–10VDC digital signal**

⚠ WARNING: Applying voltage to the switch contact input will damage the control module. Only the 0–10VDC input is configured for variable voltage.

Default Preset (Mode 1)

Mode 1 defines the position preset that appears when the projector is powered on with open contacts on both the switch and VDC inputs.

Set **Mode 1** by repeatedly pressing the **Mode Button** until the desired changer appearance is reached, and it will remain in memory. If no further automation is desired, configuration is done.

Switch Mode: After selecting the default preset (Mode 1), select **Mode 2** by holding the **Speed button** and cycling with the **Mode button**.

Automation Modes

Control modules, such as motion and light sensors, enable the automation of gobo-changing behavior. For instance, the relay output of a motion detector can switch a yield sign to a hazard sign as a vehicle approaches. Such sensors are wired to the **Switch input (Input 1)**:

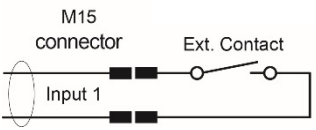
Switch Input 1
Depending on the sensor state, there are two modes:

- Switch **open: Mode 1**
- Switch **closed: Mode 2**

Variable voltage (Input 2) enables the projector to change between color presets based on the input DC voltage connected to **Input 2.**

If Input 1 and Input 2 are connected, the 0-10V signal on Input 2 overrides the Switch Input 1

Switch Input 1



Variable Voltage Input 2

Input 1 – Switch		Input 2 – Variable voltage
Mode 1: open contact		Mode 1: 0-1V
Mode 2: closed contact (dead short)		Gobo slot 1: 1-2V
Cycle mode 1 position: single press M button		Gobo slot 2: 2-3V
Cycle mode 2 position: single press M button while holding S button		Gobo slot 3: 3-4V
		Gobo slot 4: 4-5V
1: Slot 1	8: Slots 1 > 4 > 3 > 2	Slots 1 > 2: 5-6V
2: Slot 2	9: OFF	Slots 1 > 2 > 3: 6-7V
3: Slot 3	⟳ *Order repeats*	Slots 1 > 2 > 3 > 4: 7-8V
4: Slot 4		Slots 1 > 4 > 3 > 2: 8-9V
5: Slots 1 > 2		OFF: 9-10V
6: Slots 1 > 2 > 3		
7: Slots 1 > 2 > 3 > 4		***See following flowchart for additional details on controller logic.***

Controller Logic Flowchart

Comments:

1. Set the static & open switch mode profile
2. Set the closed switch mode profile
3. Set the hold time of the changer
4. Check for variable voltage signal first and set corresponding profile
5. If there is no 0-10V signal, check for dry contact on switch input
6. If there is no contact, use static profile as configured