



# Operation Manual

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## Introduction

RVL-1 CV Display / Utility combines versatile displays for analysis of up to eight CV signals with a number of useful CV operations. Its displays remain visible when it's collapsed, and its layout and appearance customization options mirror those of [FRONT-8 Graphical CV Router](#), making them perfect companions. For beginners, RVL-1 elucidates the more esoteric aspects of CV routing. For advanced users, RVL-1 brings clarity and organization to complex CV setups.

This document presents a feature-by-feature overview of RVL-1.

Questions, comments, and other feedback are welcome. Please send them to: [REsupport@pepinhazan.com](mailto:REsupport@pepinhazan.com)

Thank you for your interest in this device!  
Pepin

# Front



## Display Section



**Display** - Click the display to switch between 8 modes (see Display Modes section for details). Displays remain visible and clickable when the device is collapsed. Note: You cannot click to switch modes if the displays are off.

**Label** - Double click the label to change it. Labels are mirrored on the back of the device. They're also mirrored on the displays if the Label button is enabled in the Style section.

**Scale (X)** - If an input is connected, use the scale knob to scale it by a value from -2 to 2. If no input is connected, use the scale knob to scale the constant entered via the Const controls.

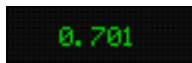
**Steps** (see Back section for info on the step outputs):

**Num** - the number of steps for the display

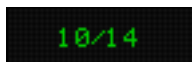
**Level** - enables Level Mode for the display's step outputs

**Bias/Const** - If an input is connected, use these controls to offset the input signal by a constant. If no input is connected, use these controls to generate a constant CV signal.

## Display Modes



1. **Value (text)** - Displays a decimal representation of the CV signal



2. **Step (text)** - Displays the step corresponding to the CV signal / total number of steps



3. **Note (text)** - Displays the note name corresponding to the CV signal



4. **Expansion (graphical)** - Size of visualization reflects the CV input (largest at  $\geq 1$  and  $\leq -1$ )



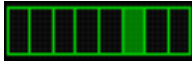
5. **Pulse (graphical)** - Color of visualization reflects the CV input (fully text color at  $\geq 1$  and  $\leq -1$ )



6. **Unipolar Meter (graphical)** - Meter representation of CV in  $[0,1]$

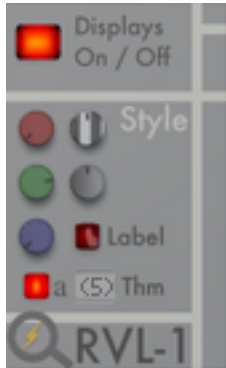


7. **Bipolar Meter (graphical)** - Meter representation of CV in [-1,1]



8. **Stepped Meter (graphical)** - Displays the active step output(s) for the display

## Power / Style Section



**Power Button** - Disable the power button to turn off the displays, which can free up CPU in a pinch. All other features of the device continue to function.

**Label Button** - When the label button is enabled, labels are mirrored on the displays.

**Theme Menu** - Click the theme menu to select a theme for the device. Note that the first four themes are lower contrast than the last four, so they're better suited for the graphical display modes than the text modes. Select theme (5) Custom to style the displays yourself.

**Style Text (a)** - The Style Text button determines whether the custom theme knobs affect the text color (enabled) or the background color (disabled). Note that separate knob settings for both text color and background color are saved.

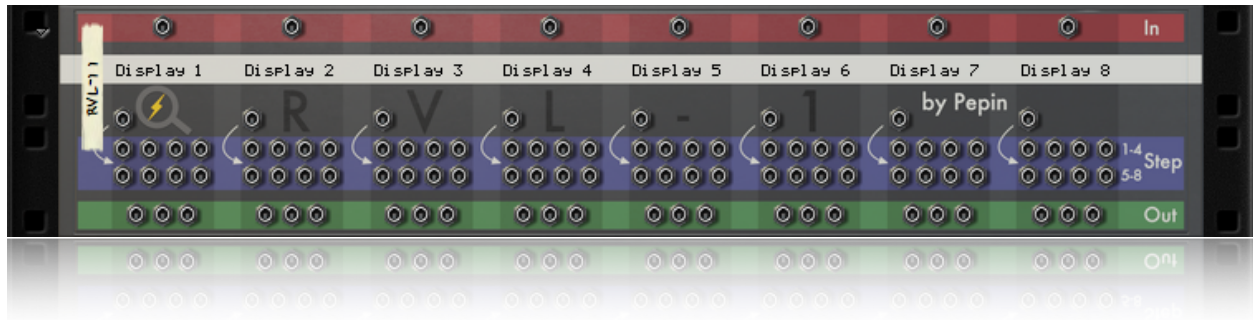
### Custom Theme Knobs (these apply only to theme (5) Custom):

**Red, Green, Blue Knobs** - Use these to adjust the background or text color.

**Stripe Knob** - Turn the stripe knob right to lighten the even numbered displays. Turn it left to darken the even numbered displays. Note: If the gradient knob is set to a non-zero value, the stripe knob instead controls the direction of the gradient.

**Gradient Knob** - Turn the gradient knob right to create a gradient that starts at the color set with the RGB knobs and gets lighter. Turn it left to create a gradient that starts at the color set with the RGB knobs and gets darker. Use the stripe knob to change the direction of the gradient.

# Back



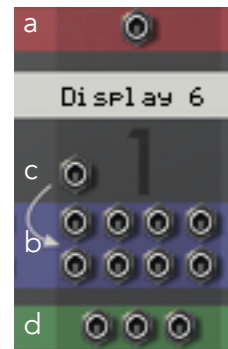
The following CV connections are provided for each display:

## a. In Section:

This section contains the main CV input for the display.

## b. Step Section:

These sockets output either 0 or 1 based on the current step for the display. The current step is calculated by dividing the ranges from 0 to 1 and 0 to -1 into equally sized segments according to the total number of steps.



If Level Mode is enabled, then all steps through the current step output 1.

If Level Mode is disabled, then only the current step outputs 1.

At least one step is always active. A CV input of 0 corresponds to step 1. CV inputs above 1 or below -1 correspond to the highest step.

If there are more than 8 total steps, then output socket activation will loop. For instance, if there are 12 total steps and an input signal rises from 0 to 1, then all eight sockets will activate once, and then the first four will activate again. The identical behavior will occur if a CV input signal lowers from 0 to -1. Note: The maximum number of steps is 200, which results in 25 activations of each socket over the range [0,1].

## c. Step Forwarding Input:

If the display's step forwarding input is connected, active steps will output the forwarding input's current value instead of 1.

## d. Out Section:

This section contains the main CV outputs for the display. The display's CV signal is split into three identical outputs.

If an input is connected, the outputs are calculated as follows:

$$\text{OUTPUT} = (\text{INPUT} * \text{SCALE}) + \text{BIAS}$$

If no input is connected, the outputs are calculated as follows:

$$\text{OUTPUT} = \text{CONSTANT} * \text{SCALE}$$

# MIDI / Remote Implementation

Parameter	MIDI CC	Remote Identifier
Background Red Amount	4	Background Red Amount
Background Green Amount	5	Background Green Amount
Background Blue Amount	7	Background Blue Amount
Background Stripe Amount	8	Background Stripe Amount
Background Gradient Amount	10	Background Gradient Amount
Text Red Amount	12	Text Red Amount
Text Green Amount	13	Text Green Amount
Text Blue Amount	14	Text Blue Amount
Text Stripe Amount	15	Text Stripe Amount
Text Gradient Amount	16	Text Gradient Amount
Display 1 Scale	17	Display 1 Scale
Display 2 Scale	18	Display 2 Scale
Display 3 Scale	19	Display 3 Scale
Display 4 Scale	20	Display 4 Scale
Display 5 Scale	21	Display 5 Scale
Display 6 Scale	22	Display 6 Scale
Display 7 Scale	23	Display 7 Scale
Display 8 Scale	24	Display 8 Scale
Display 1 Step Count	25	Display 1 Step Count
Display 2 Step Count	26	Display 2 Step Count
Display 3 Step Count	27	Display 3 Step Count
Display 4 Step Count	28	Display 4 Step Count
Display 5 Step Count	29	Display 5 Step Count
Display 6 Step Count	30	Display 6 Step Count
Display 7 Step Count	31	Display 7 Step Count
Display 8 Step Count	33	Display 8 Step Count
Display 1 Level Mode Enabled	34	Display 1 Level Mode Enabled
Display 2 Level Mode Enabled	35	Display 2 Level Mode Enabled
Display 3 Level Mode Enabled	36	Display 3 Level Mode Enabled
Display 4 Level Mode Enabled	37	Display 4 Level Mode Enabled
Display 5 Level Mode Enabled	39	Display 5 Level Mode Enabled
Display 6 Level Mode Enabled	40	Display 6 Level Mode Enabled
Display 7 Level Mode Enabled	41	Display 7 Level Mode Enabled
Display 8 Level Mode Enabled	42	Display 8 Level Mode Enabled
Display 1 Thousands	43	Display 1 Thousands
Display 2 Thousands	44	Display 2 Thousands
Display 3 Thousands	45	Display 3 Thousands
Display 4 Thousands	46	Display 4 Thousands
Display 5 Thousands	47	Display 5 Thousands
Display 6 Thousands	48	Display 6 Thousands
Display 7 Thousands	49	Display 7 Thousands
Display 8 Thousands	50	Display 8 Thousands
Display 1 Hundreds	51	Display 1 Hundreds
Display 2 Hundreds	52	Display 2 Hundreds
Display 3 Hundreds	53	Display 3 Hundreds
Display 4 Hundreds	54	Display 4 Hundreds
Display 5 Hundreds	55	Display 5 Hundreds
Display 6 Hundreds	56	Display 6 Hundreds
Display 7 Hundreds	57	Display 7 Hundreds
Display 8 Hundreds	58	Display 8 Hundreds
Display 1 Tens	59	Display 1 Tens
Display 2 Tens	60	Display 2 Tens
Display 3 Tens	61	Display 3 Tens
Display 4 Tens	62	Display 4 Tens
Display 5 Tens	63	Display 5 Tens
Display 6 Tens	65	Display 6 Tens
Display 7 Tens	66	Display 7 Tens
Display 8 Tens	67	Display 8 Tens
Display 1 Ones	68	Display 1 Ones
Display 2 Ones	69	Display 2 Ones
Display 3 Ones	70	Display 3 Ones
Display 4 Ones	71	Display 4 Ones
Display 5 Ones	72	Display 5 Ones
Display 6 Ones	73	Display 6 Ones
Display 7 Ones	74	Display 7 Ones
Display 8 Ones	75	Display 8 Ones

Display 1 Tenths	76	Display 1 Tenths
Display 2 Tenths	77	Display 2 Tenths
Display 3 Tenths	78	Display 3 Tenths
Display 4 Tenths	79	Display 4 Tenths
Display 5 Tenths	80	Display 5 Tenths
Display 6 Tenths	81	Display 6 Tenths
Display 7 Tenths	82	Display 7 Tenths
Display 8 Tenths	83	Display 8 Tenths
Display 1 Hundredths	84	Display 1 Hundredths
Display 2 Hundredths	85	Display 2 Hundredths
Display 3 Hundredths	86	Display 3 Hundredths
Display 4 Hundredths	87	Display 4 Hundredths
Display 5 Hundredths	88	Display 5 Hundredths
Display 6 Hundredths	89	Display 6 Hundredths
Display 7 Hundredths	90	Display 7 Hundredths
Display 8 Hundredths	91	Display 8 Hundredths
Display 1 Thousandths	92	Display 1 Thousandths
Display 2 Thousandths	93	Display 2 Thousandths
Display 3 Thousandths	94	Display 3 Thousandths
Display 4 Thousandths	95	Display 4 Thousandths
Display 5 Thousandths	102	Display 5 Thousandths
Display 6 Thousandths	103	Display 6 Thousandths
Display 7 Thousandths	104	Display 7 Thousandths
Display 8 Thousandths	105	Display 8 Thousandths
Display 1 Negative	106	Display 1 Negative
Display 2 Negative	107	Display 2 Negative
Display 3 Negative	108	Display 3 Negative
Display 4 Negative	109	Display 4 Negative
Display 5 Negative	110	Display 5 Negative
Display 6 Negative	111	Display 6 Negative
Display 7 Negative	112	Display 7 Negative
Display 8 Negative	113	Display 8 Negative
Display 1 Mode	-	Display 1 Mode
Display 2 Mode	-	Display 2 Mode
Display 3 Mode	-	Display 3 Mode
Display 4 Mode	-	Display 4 Mode
Display 5 Mode	-	Display 5 Mode
Display 6 Mode	-	Display 6 Mode
Display 7 Mode	-	Display 7 Mode
Display 8 Mode	-	Display 8 Mode
Displays Power	-	Displays Power
Show Labels	-	Show Labels
Theme	-	Theme
Style Test	-	Style Text