# Introduction

The Blacet WC2700 Window Comparator analyses an input and provides a digital output based on the Level and Width settings of the module. Level is the voltage at which the the input signal "trips" the output and width is the size of the "window" where the output is active.

Normal, Inverted and Trigger outputs are available.

The Input is normalled to an internal ramp generator which has voltage controlled speed as well as a gate input. This allows stand alone functions such as delayed gate and timing. The ramp also has a separate output for use by itself.
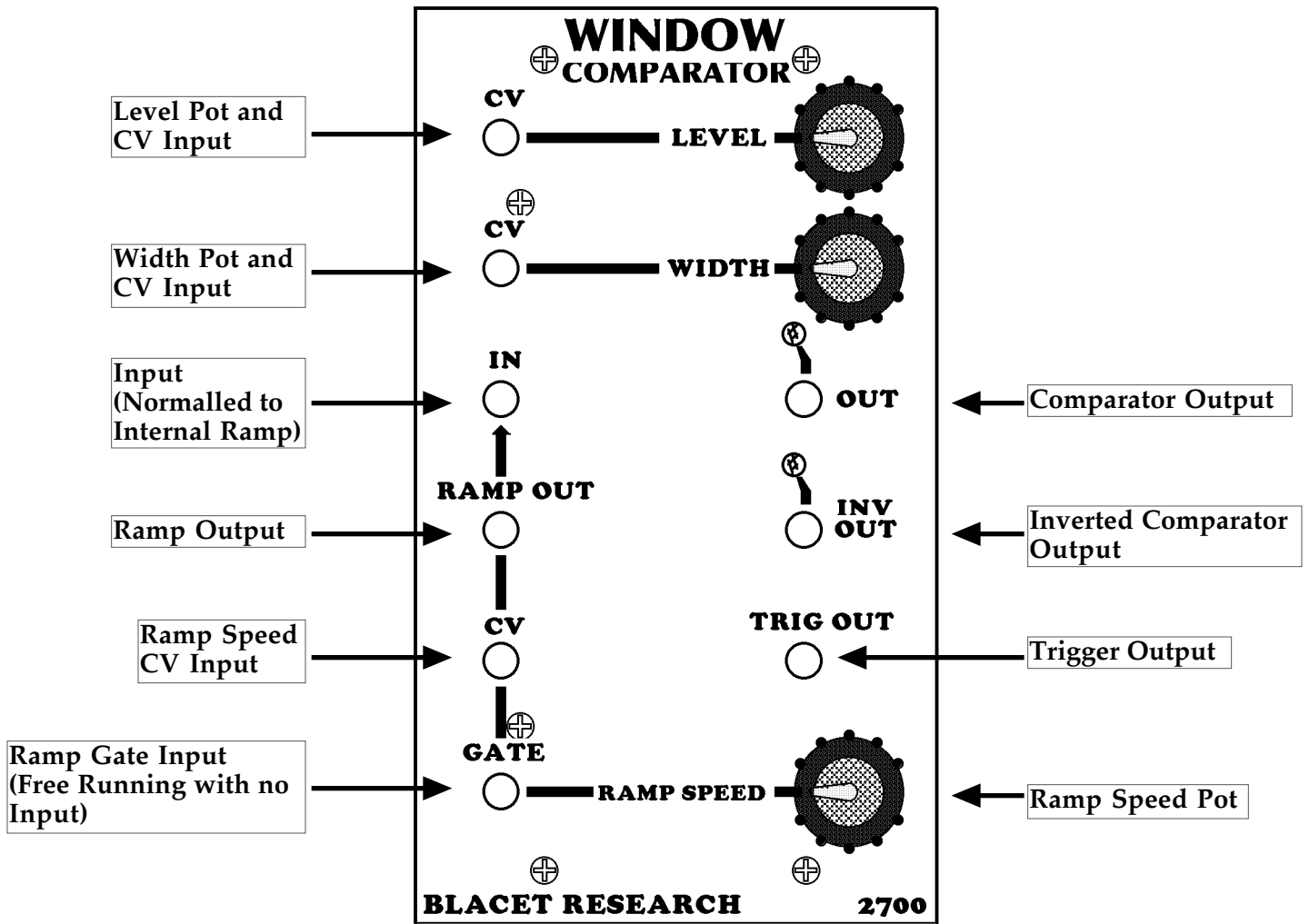
Controls and Operation

Level and Width Pots and CV Inputs: The first illustration below helps show what happens at the outputs using the internal 0-5V ramp as input. The Level control or CV sets the trip point further up on the ramp as the control is turned CW. The Width control or CV widens the trip point **downwards** on the ramp as shown in the third and last example.

The controls are designed for optimal effect on inputs that range between -5V and +10V, these being the typical voltages in a Blacet system. It is possible to adjust the controls so there is no output. It may be helpful to set the width first (assuming that you have enough room via the level control) and then fine tune the level setting. In any case some experimentation is necessary to get a feel for the controls.

You can use the WC as a trigger or gate delay. For example, connect an EG1 ADSR and the WC to a common gate. Use the EG1 output to control a filter connected to a VCO and the WC output to control the VCO octave switch. Set a slow attack on the EG1 and adjust the level, width and ramp speed on the WC. As you gate the system, you will hear the VCO jump up an octave at some point in the attack phase. Depending on the settings, you may also hear the jump in the decay and release phases.

Using the module for audio processing will result in a variety of pulse width modulation effects and will also cause some frequency doubling as shown in the second illustration below. With a triangle input, the comparator triggers on both the rising and falling edges of the waveform. As the width control is adjusted, the two pulses finally merge into one, resulting in half as many pulses or half the frequency.

A Mini Wave is a rich source of waveforms with many interesting results when processed by the Window Comparator.

In: The signal to be processed is inserted here. With nothing plugged in, the internal ramp is normalled to this input.

Output, Inverted Output and Trigger Output: These are the internal comparator signals, squared up and limited to 0-10V.

Ramp Speed Pot, Gate Input, CV Input and Ramp Out: These control the internal 0-5V ramp. With nothing plugged into the Gate, the ramp free runs. The CV In controls the ramp speed along with the pot. The Ramp Out can be used by itself and is not effected by use or non use of the module input jack.