



3204 Rocky River Road, Heath Springs, SC 29058  
 Phone: 803-286-8614 Fax: 803-286-6063

## Master Reference Unit

Model D10096-000

Model D10096-000 Master Reference Unit is designed to handle a variety of applications in which signal conditioning and multiple outputs are required while maintaining input to output circuit isolation. Each Model D10096-000 can supply four separate outputs that are each isolated from the master reference signal and also from each of the other outputs. If more than four outputs are required, two or more units may be ganged together.

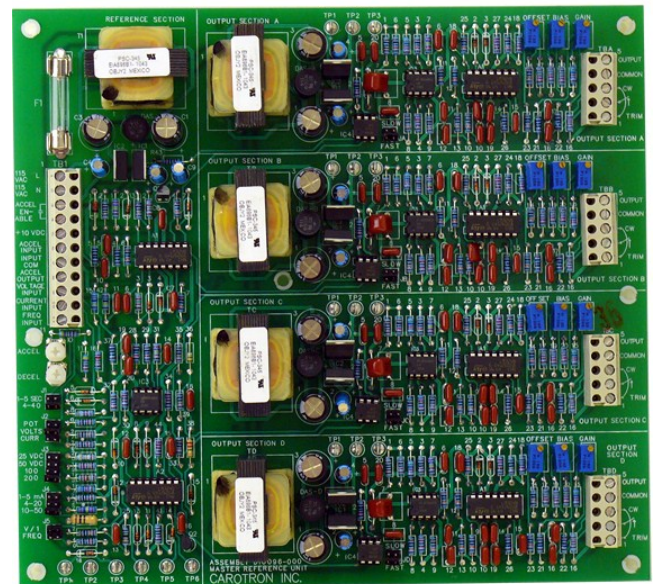
A variety of outputs are acceptable as sources for the master reference signal. A +10 VDC voltage is available to allow the master signal to be sourced from a 2,000 to 10,000 Ohm, 2 Watt potentiometer. The potentiometer signal is supplied through a linear acceleration/deceleration circuit with two selectable ranges. A customer-supplied contact closure enables the acceleration/deceleration circuit and allows the reference to accelerate to a level set by the input potentiometer. The deceleration circuit operates whenever the reference is lowered.

When the enable contact opens, the reference is zeroed immediately. Four selectable voltage ranges may also be used as master signals. The input impedance is greater than 1,000,000 Ohms for each voltage range. The available input ranges are 0 to 25 VDC, 0 to 50 VDC, 0 to 100 VDC and 0 to 200 VDC.

Three selectable current ranges are available to handle various process control signals. The approximate input impedance for each range is listed in the chart below.

Input Range	Impedance
1 to 5 mA	1,000 Ohms
4 to 40 mA	270 Ohms
10 to 50 mA	100 Ohms

The final input is for a sine or square wave with a frequency range from 0 to 2,000 Hz. A buffer circuit with an input impedance of approximately 100,000 Ohms is supplied to limit loading on the



frequency source. The circuit switches at a threshold level of approximately 0.5 VDC.

Four identical output circuits are sourced from the master signal. Each output has separate OFFSET, GAIN, and BIAS adjustments to tailor the output signal. An optional Trim potentiometer input is also provided to allow the output to be remotely ratioed.

### Specifications

#### A.C. Input

115 VAC  $\pm 10\%$ , 50/60 Hz, internally fused at 1 Amp

#### Reference Inputs

##### • Pot. Input

+10 VDC,  $\pm 10\%$  available to source 2,000 to 10,000 Ohm, 2 Watt pot.

##### • Voltage Input

4 selectable ranges, greater than 1,000,000 Ohms input impedance, max. output voltage approximately 12 VDC.

Input Range	Vout/ Vin Range
0 to 25 VDC	0.2 to 1.0

0 to 50 VDC	0.1 to 0.5
0 to 100 VDC	0.05 to 0.25
0 to 200 VDC	0.025 to 0.125

**• Current Input**

3 selectable ranges, typical output range is adjustable at 5 to 10 VDC with maximum input.

Input Range	Input Impedance
1 to 5 mA	1000 Ohms
4 to 20 mA	270 Ohms
10 to 50 mA	100 Ohms

**• Frequency Input**

Accepts a sine or square wave with a peak of 1 to 20 volts, input impedance=100,000 Ohms, Vout/Fin Range=.0028 to .014, max. output approx. 12 VDC. Max. input frequency = 2,000 Hz.

**NOTE:** Jumpers JA, JB, JC, and JD select the filtering for each of the output sections. The Slow position is recommended for the Frequency Input mode to limit the output ripple voltage when operating below 300 Hz input. The Fast position

may be used for the Frequency mode if system tracking is more critical than ripple content.

**Accel/Decel Range**

Independently adjustable, linear operation, 2 selectable ranges: 1 to 5 sec. or 4 to 40 sec.

**Note:** The Accel/Decel circuit only functions with the potentiometer input.

**Accel Output**

A maximum +10 VDC @ 1 mA signal is available from the Accel/Decel circuit to allow multiple Master Reference Units to be ganged together.

**Output**

4 independent sections with a typical range of 0 to +12 VDC @ 5 mA max.

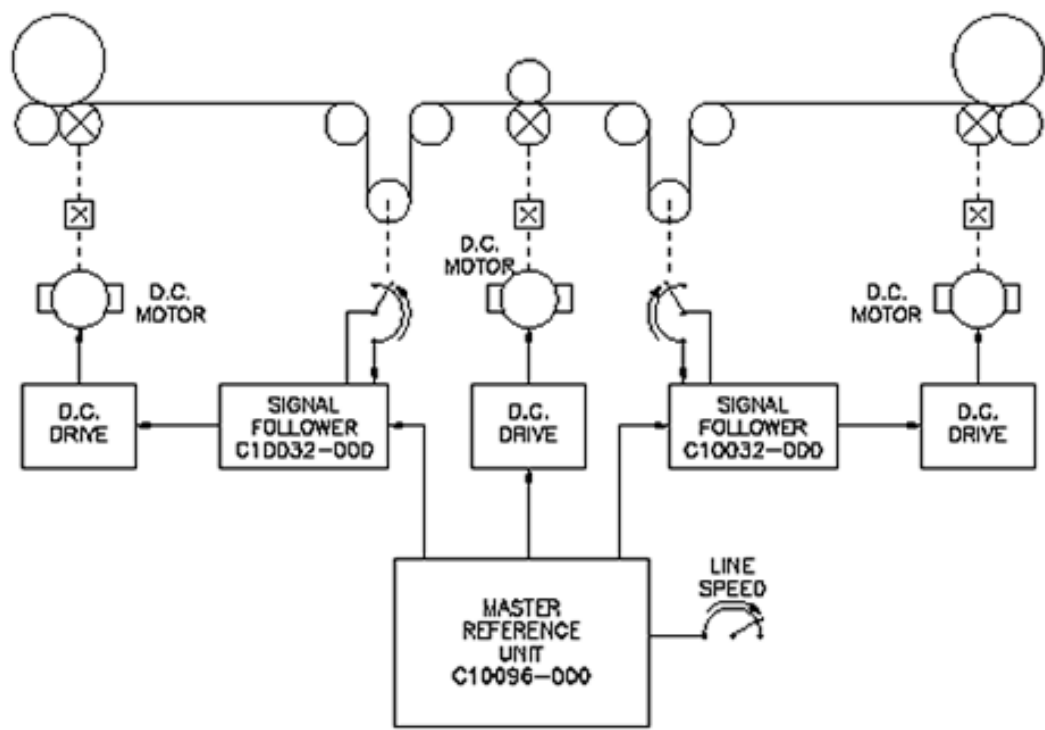
**Trim Pot.**

Each output section accepts an external 10,000 Ohm, 2 W pot. which allows the master signal to be trimmed from 0 to 100%.

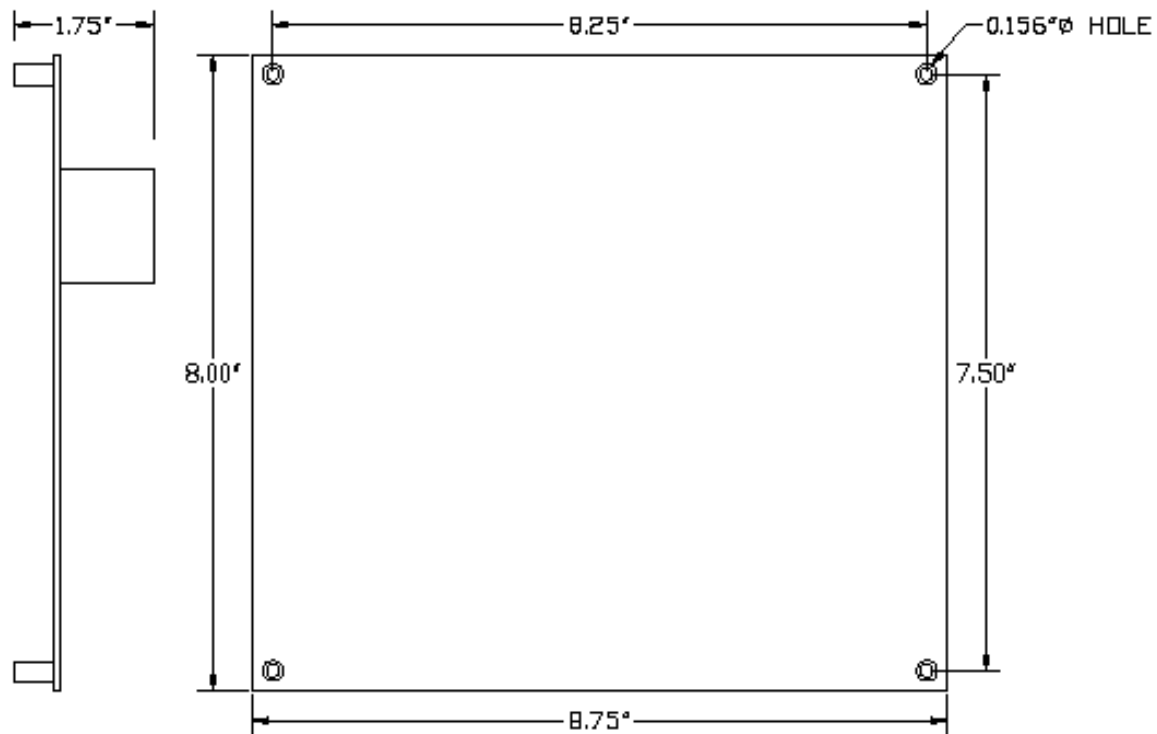
**Linearity**

±0.5% of 10 VDC span with 100K load.

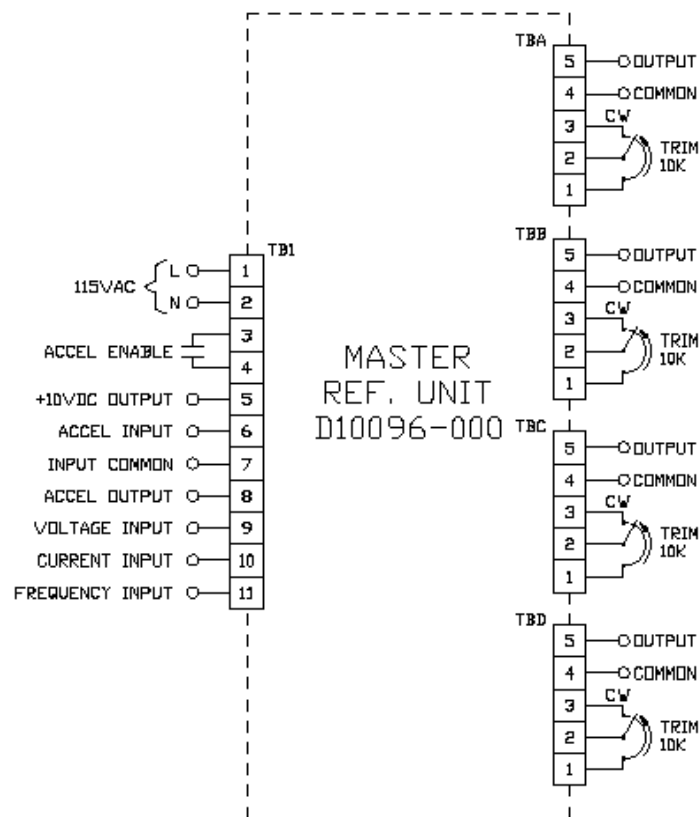
**Application Example**



**Dimensions**

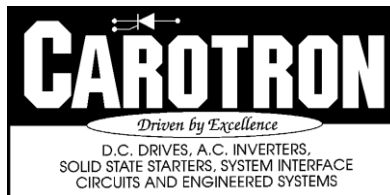


## Connections



**Master Reference Unit  
Model D10096-000**

View or download the complete D10096-000 Instruction Manual (MAN 1015-00) from [www.carotron.com](http://www.carotron.com) .



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Phone: (803) 286-8614 Fax: (803) 286-6063  
Email: [saleserv@carotron.com](mailto:saleserv@carotron.com) Web: [www.carotron.com](http://www.carotron.com)  
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