CAROTRON
Driven by Excellence
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Electronic M.O.P. Card

Model D10341-000

Model D10341-000 Electronic M.O.P. is an electronic replacement for a traditional motor operated potentiometer (M.O.P.). Through a combination of digital and analog circuits, Model D10341-000 provides a means to control a D.C. output voltage level via external contact closures for Increase, Decrease and Reset.

The Electronic M.O.P. Card controls a 12 bit counter that counts clock pulses and increases, decreases, holds or resets the output voltage. The clock rate is adjustable to control the rate of change in output voltage. The 12 bit counter counts 4,096 clock pulses to transition from minimum to maximum output voltage.

The output voltage can be controlled in the Unipolar or the Bipolar modes. Output ranges from 0.0 VDC to +10 VDC in Unipolar mode and from - 10 VDC and + 10 VDC in Bipolar mode. The range of the analog output can be controlled by two sources:

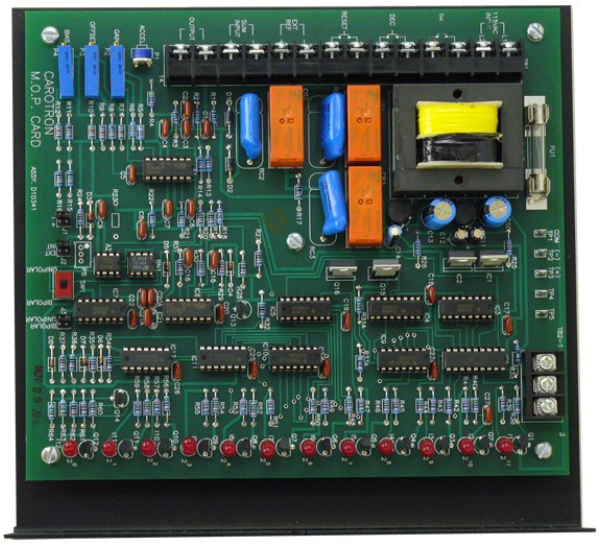
• +10 VDC fixed reference on the p.c. board.
• External fixed or variable voltage from -10 VDC to +10 VDC.

A 12 bit Digital to Analog converter is provided. The converter, a four quadrant multiplying type, allows the circuit to ratio the reference input and provide a percentage of the reference as output.

The output of the Digital to Analog converter is further modified by multi-turn potentiometers for Offset, Gain, and Bias. A Summing input is provided to allow an external voltage to be summed directly with the output. A selection is supplied to change the polarity of the Summing input if desirable.

Standard Features

• Electronic replacement for motor operated potentiometer
• Selectable reference source: internal +10 VDC, external 0 to ±10 VDC



• 12 bit four quadrant multiplying Digital to Analog converter for precise reference control
• 115 VAC relays for Increase, Decrease and Reset functions
• Selectable Unipolar or Bipolar output
• Adjustable Acceleration from 0 to full output 20 turn calibration potentiometers
• LED's to monitor status of Digital to Analog converter
• Non-isolated summing port, selectable for inverting or non-inverting, ±10 VDC max.
• Right angle mounting to limit panel space requirements
• Two adjustable cams to change counterclockwise (CCW) and (CW) limit settings

Specifications

A.C. INPUT
• 115 VAC, ±10%, 50/60 Hz., fused for 1 Amp

INCREASE, DECREASE, RESET INPUTS
• Contact closure, contacts must be rated for 115 VAC @ 75 mA
• External Reference Input Fixed or variable – 10 VDC to + 10 VDC

• Summing Input
Fixed or variable - 10 VDC to + 10 VDC with selectable inverter circuit for changing polarity on board

ACCELERATION RATE ADJUSTMENT
• Unipolar Mode
1 to 60 seconds from 0 to full output
• Bipolar Mode
0.5 to 30 seconds from 0 to full output

ADJUSTABLE GAIN RANGE
(With Offset set for 0.0 VDC and Bias set for 0.0 VDC)
• Unipolar Mode
Vout / Vin = .4 to 2.0 (12 VDC Max. output)
• Bipolar Mode
Vout / Vin = ±.4 to ±2.0 (±12 VDC Max. output)

MIN. AND MAX. COUNT OUTPUT
• Two open collector transistors each rated 100 mA for switching up to 120 VDC are provided to indicate Min, and Max. count on the Digital counter.

Application Example

Electronic M.O.P. Compendator

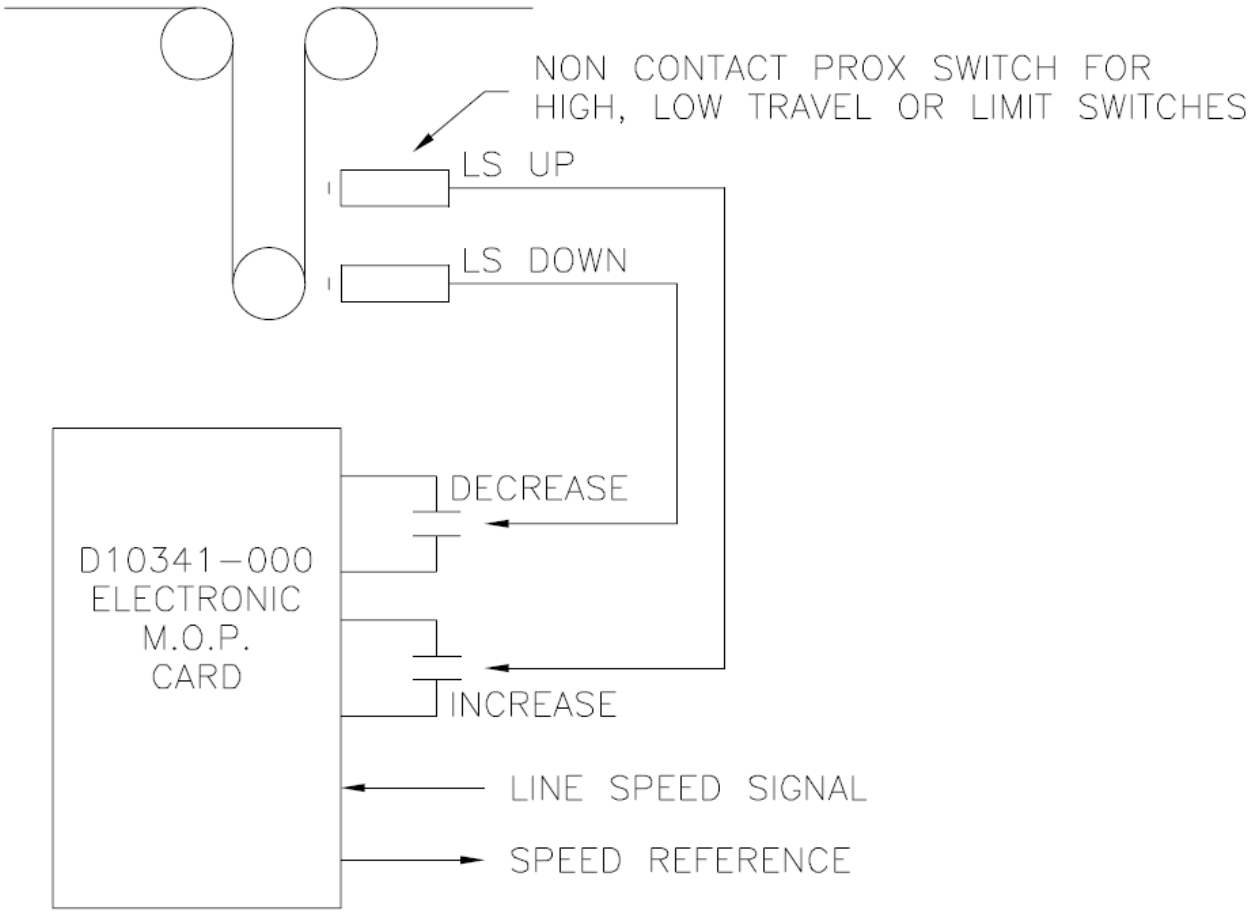


Fig. C.14

Dimensions

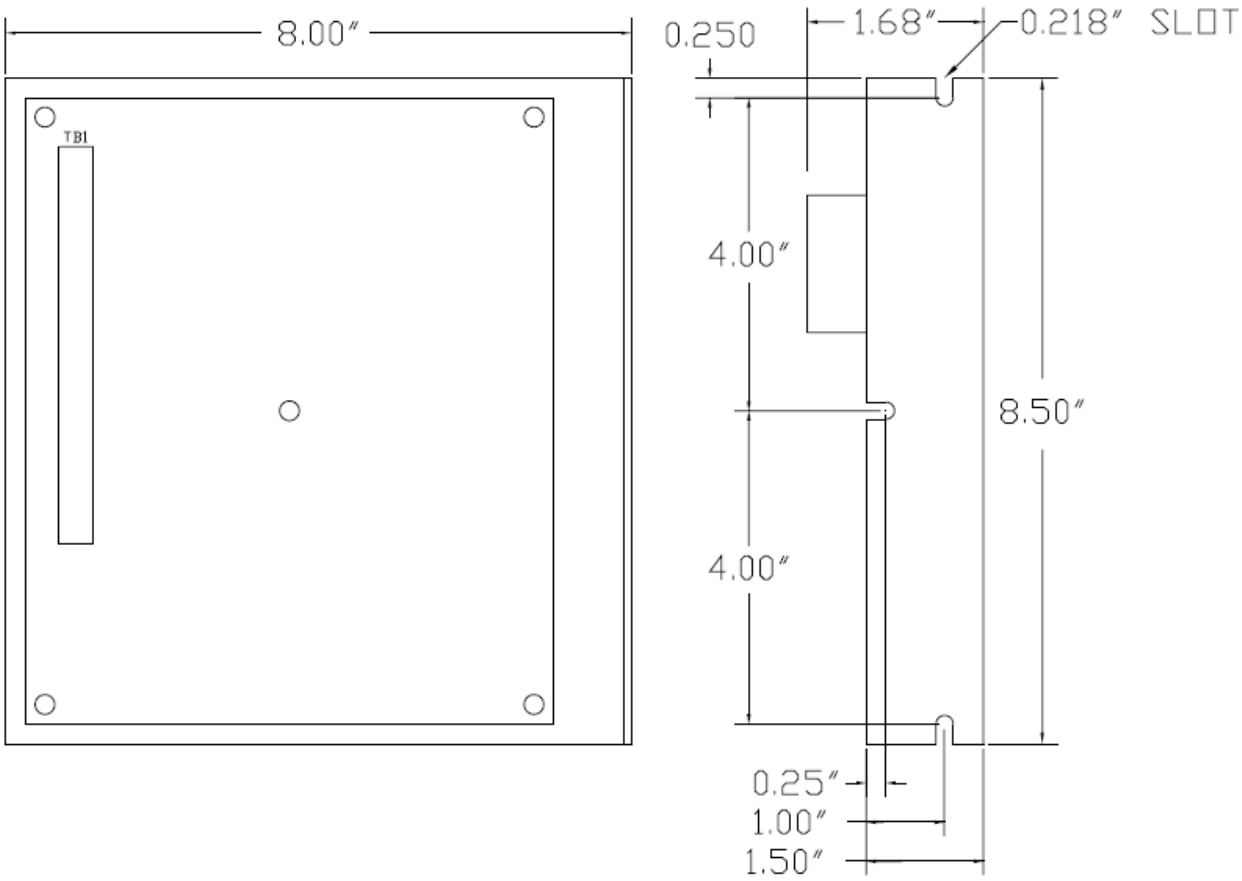


Fig. C.15

Connections

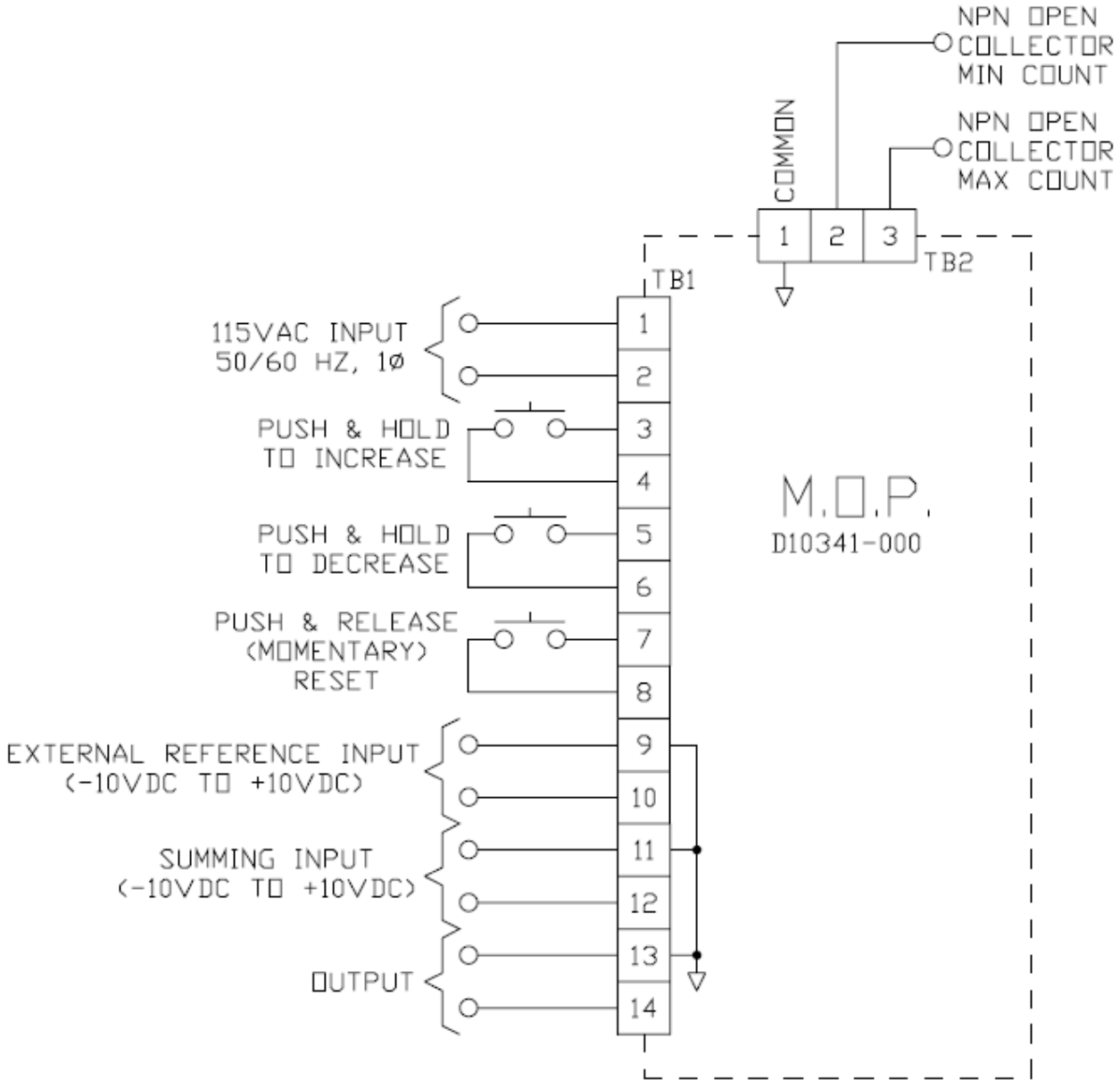


Fig. C.16

Electronic M.O.P. Card

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View or download the complete D10341-000 Instruction Manual (MAN 1021-00) from www.carotron.com .

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SOLID STATE STARTERS, SYSTEM INTERFACE
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