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Dancer Position Card

Model D10541-000

Model D10541-000 Dancer Position Card, also referred to as a P.I.D. control, is designed for applications where dancer positioning is used to maintain control of motorized operations. This card is also suitable for most any type of P.I.D. control application.

The electronic circuitry utilizes the Proportional, Integral, and Derivative functions to condition the output. Each function can be adjusted independently to control the amount of change in the output voltage.

The output of the proportional circuit is a voltage level proportional to the dancer and position inputs. The output of the integral is dependent upon the reference applied to a 12 bit digital analog converter. The converter allows the circuit to ratio the reference input and provide a percentage of the reference as output. An isolated scaling circuit allows optional external voltage scaling of the integral circuit to condition for diameter or velocity changes.

The derivative circuit adds to the output during changes in the dancer input. The response and level of the derivative function are independently adjustable to allow for flexible and stable operation.

The output of the proportional, integral, and derivative are summed together to formulate the final output. This output can be further modified by an output range potentiometer.

A summing input is provided to allow an external voltage to be summed directly with the output. A selection is supplied to change the function, addition or subtraction, of the summing input as required.

Positive, negative, and bipolar connection terminals are also available for use.

Standard Features

- Independent Proportional, Integral and Derivative functions for precise closed loop control



- Digital Integrator circuit provides 12 Bit accuracy and Integral Rate control
- Isolated Scaling circuit allows optional external voltage scaling of the Integral circuit to condition for diameter or velocity changes
- Adjustable Deadband to control sensitivity of Integral circuit
- Adjustable Derivative Response and Derivative Level for flexible and stable operation
- Voltage Output selectable at terminal strip for Bipolar, Positive or Negative signal polarity
- External Reset input to clamp control circuits for zero output
- Summing Input directly to output with no isolation, jumper selectable for inverting or non-inverting summing
- Two relay contact outputs rated for 125 VAC @ 1 Amp to indicate Minimum and Maximum count of digital integrator
- Internal Position potentiometer and terminal connections for optional external Position Input

Specifications

A.C. INPUT

- 115 VAC $\pm 10\%$, 50/60 Hz., Internally fused at 0.3 amps

ISOLATION VOLTAGE

- 2400 V PEAK at 1 second or 1500 VRMS max.

NOTE: The scaling input is the only input that is isolated from the output.

SCALING INPUT

D.C. Voltage Input	Input Impedance
0 - 25V	1M Ohms
0 - 50V	1M Ohms
0 - 100V	1M Ohms
0 - 200V	1M Ohms

POSITION POTENTIOMETER INPUT

- -15 VDC available to supply a 2K to 10K ohm potentiometer

DANCER POTENTIOMETER INPUT

- +15 VDC available to supply a 2K to 10K ohm potentiometer

SUMMING INPUT

- Fixed or variable -10 VDC to +10 VDC with a selection to change the function, addition or subtraction as required. Isolation is not maintained between this input and the output.

EXTERNAL RESET INPUT

- Contact closure required to reset internal control circuits.
- **Note:** This contact should be closed any time the dancer drive is disabled.

MIN. AND MAX. COUNT OUTPUT

- Minimum and maximum count on the digital to analog converter are each indicated by a normally open contact rated at 120VAC at 1 amp.

VOLTAGE OUTPUT

- Bipolar: This circuit allows the output to source up to ± 10 VDC into a min. resistance of 1K ohms.
- Positive: This circuit allows the output to source up to +10VDC into a min. resistance of 1K ohms.
- Negative: This circuit allows the output to source up to -10VDC into a min. resistance of 1K ohms.

Application Example

Dancer Control of Center Driven Winder

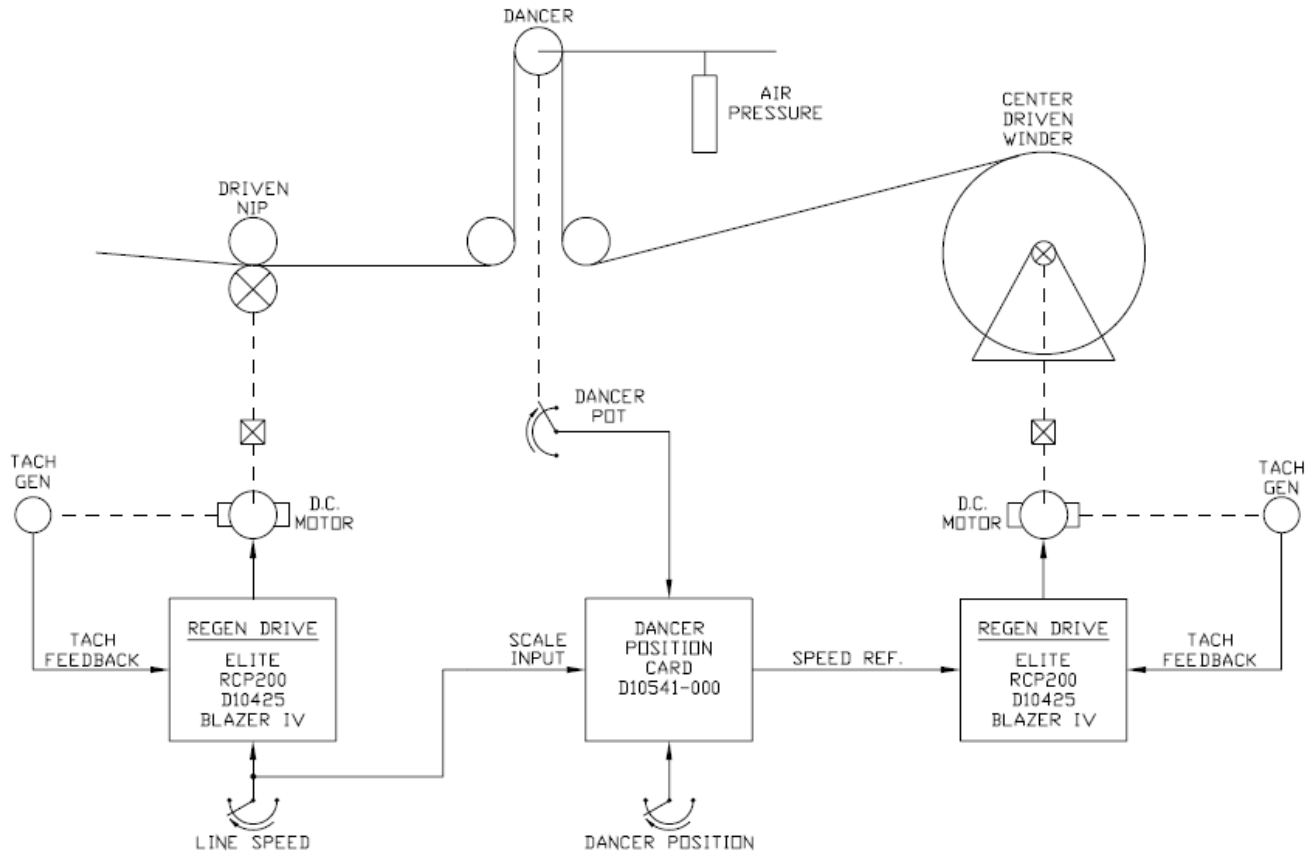


Fig. C.11

Dimensions

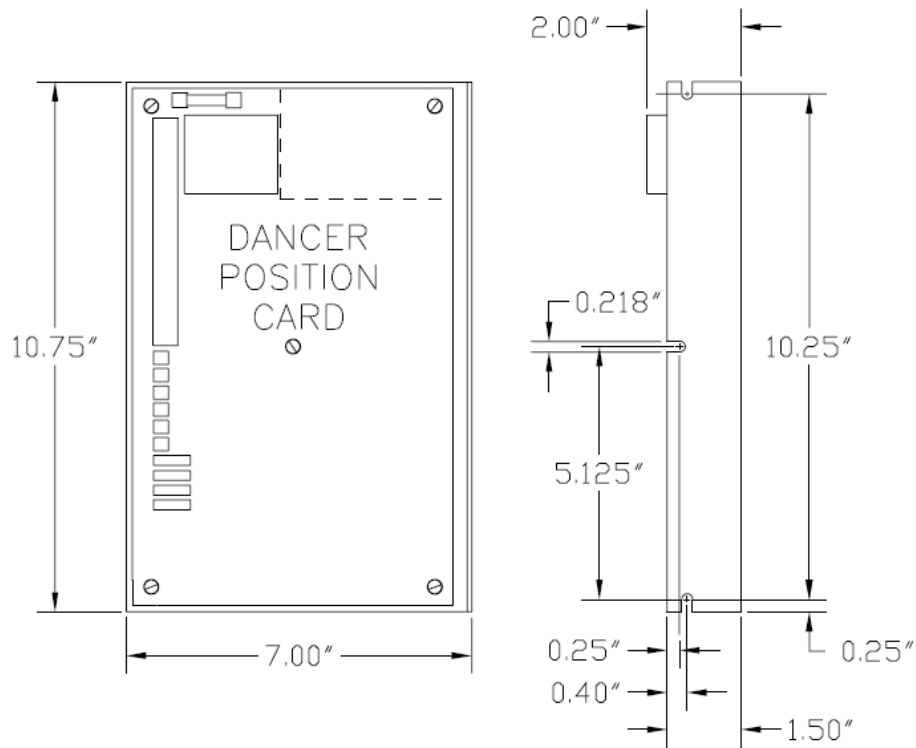


Fig. C.12

Connections

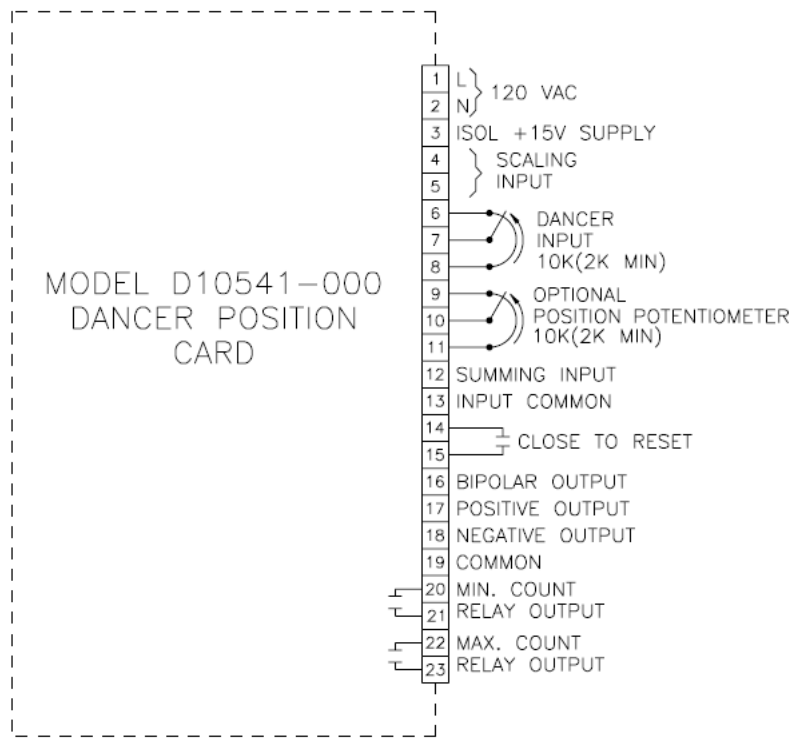


Fig. C.13

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View or download the complete D10541-000 Instruction Manual (MAN 1020-00) from www.carotron.com .



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