CAROTRON
Driven by Excellence
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Frequency to Voltage Converter Card

Model C10330-000

Model C10330-000 Frequency to Voltage Converter Card uses Carotron's innovative design techniques to convert digital pulse tachometer frequency signals to analog voltage suitable for tachometer feedback control or speed reference in motor control systems.

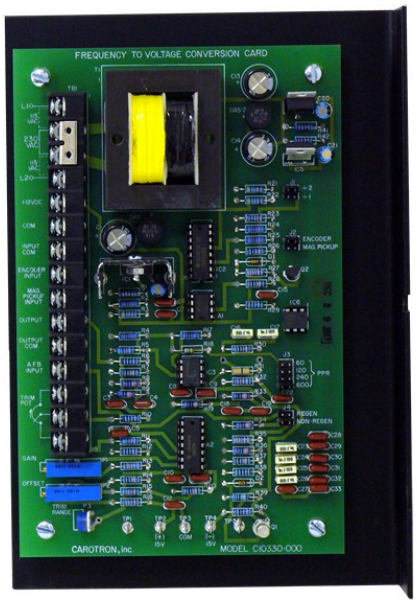
Features such as sine or square wave signal input, optically isolated frequency signal, and multi-turn potentiometers for precise output adjustment help you get the most out of your Carotron motor control. Sine wave signals of 1 to 20 volts peak at up to 10,000 Hz or square wave signals of 10 to 12 volts peak at up to 20,000 Hz may be used as an input. The frequency signal is optically isolated from the output circuitry so that the signal may be used with digital instrumentation which may be grounded.

An isolated +12 VDC power supply rated at 100mA maximum supplies encoders or magneto-resistor sensors. Input ranges of 60, 120, 240 and 600 pulses per revolution on 1750 base speed motors provide a nominal output range of 0 to 10 VDC. Multi-turn OFFSET and GAIN potentiometers allow precise adjustment for the desired output.

Designed for use with Carotron non-regenerative and regenerative motor controls, Model C10330-000 may also be used with drives from other manufacturers if the feedback can be scaled to work with the nominal 10 VDC output.

Standard Features

- Frequency input: sine or square wave
- Signal input: 1 to 20 volt sine or 10 to 12 volt square wave
- Output: -10 to +10 VDC
- Input to output isolation: 460 VAC RMS
- Linearity: ±0.2% of 10 VDC span
- Power supply: +12 VDC, 100mA max.
- Accepts broad range of input frequencies
- Operates from 115/230 VAC power source
- Optically isolated frequency signal
- Multi-turn OFFSET and GAIN potentiometers for precise adjustment of desired output



- Optional external TRIM potentiometer for manual or dancer control
- Single-turn TRIM RANGE potentiometer
- Jumper selections for a broad range of frequency inputs
- May be used for speed feedback or speed follower

Specifications

A.C. INPUT
- 115/230 VAC ±10%, 50/60 Hz, 9.2 VA max.

ISOLATED VOLTAGE
- 460 VAC RMS, 1500 V PEAK

LINEARITY
- ±0.2% of span with output range of 0 to 10 VDC with a 100,000 Ohm load

SIGNAL INPUTS
- Square wave: 10 to 12 V PEAK at 20,000 Hz max.
- Sine wave: 1 to 20 V PEAK at 10,000 Hz max.
- Buffered armature:

0 to +10 VDC for positive output
0 to -10 VDC for negative output

TRIM POTENTIOMETER
An external 10,000 Ohm, 2 Watt pot. allows the output to be trimmed. A TRIM RANGE pot. on the C10330-000 unit controls the TRIM POT. Range from a maximum of 0 to 100% to a minimum of 80 to 100%.

OUTPUT
• Typical output is 0 to +10 VDC for non-regen operation and -10 to +10 VDC for regen operation.
• The GAIN adjustment range, Jumper J3 and Jumper J1 allow a broad range of input frequencies to be used.
• The following table shows the relationship for Vout/Fin with the noted jumper settings:

Input Type	Jumper J1	Jumper J3	Vout/Fin Range
Sine/Square	÷1	60 PPR	.004 to .020
Square	÷2	60 PPR	.002 to .010
Sine/Square	÷1	120 PPR	.002 to .010
Square	÷2	120 PPR	.001 to .005
Sine/Square	÷1	240 PPR	.001 to .005
Square	÷2	240 PPR	.0005 to .0025
Square	÷1	600 PPR	.0008 to .0040
Square	÷2	600 PPR	.0004 to .0020

Note: Encoder inputs are typically square wave. Magnetic pickup inputs are typically sine wave.

Application Example

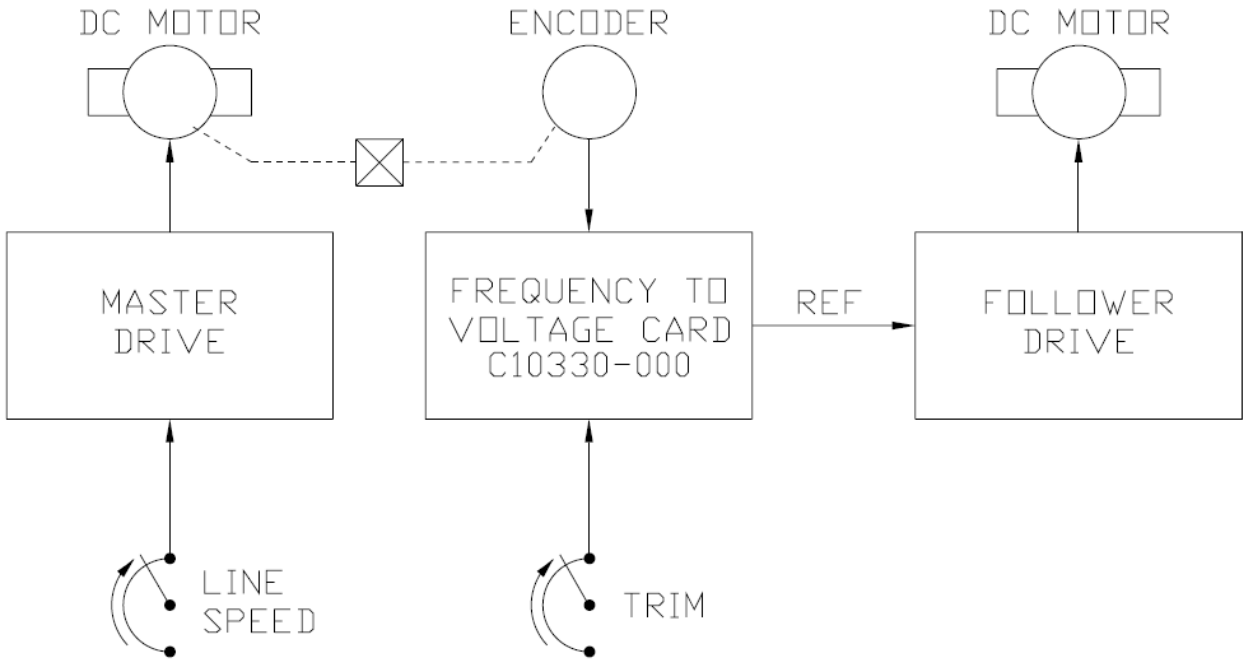


Fig. A.13

Dimensions

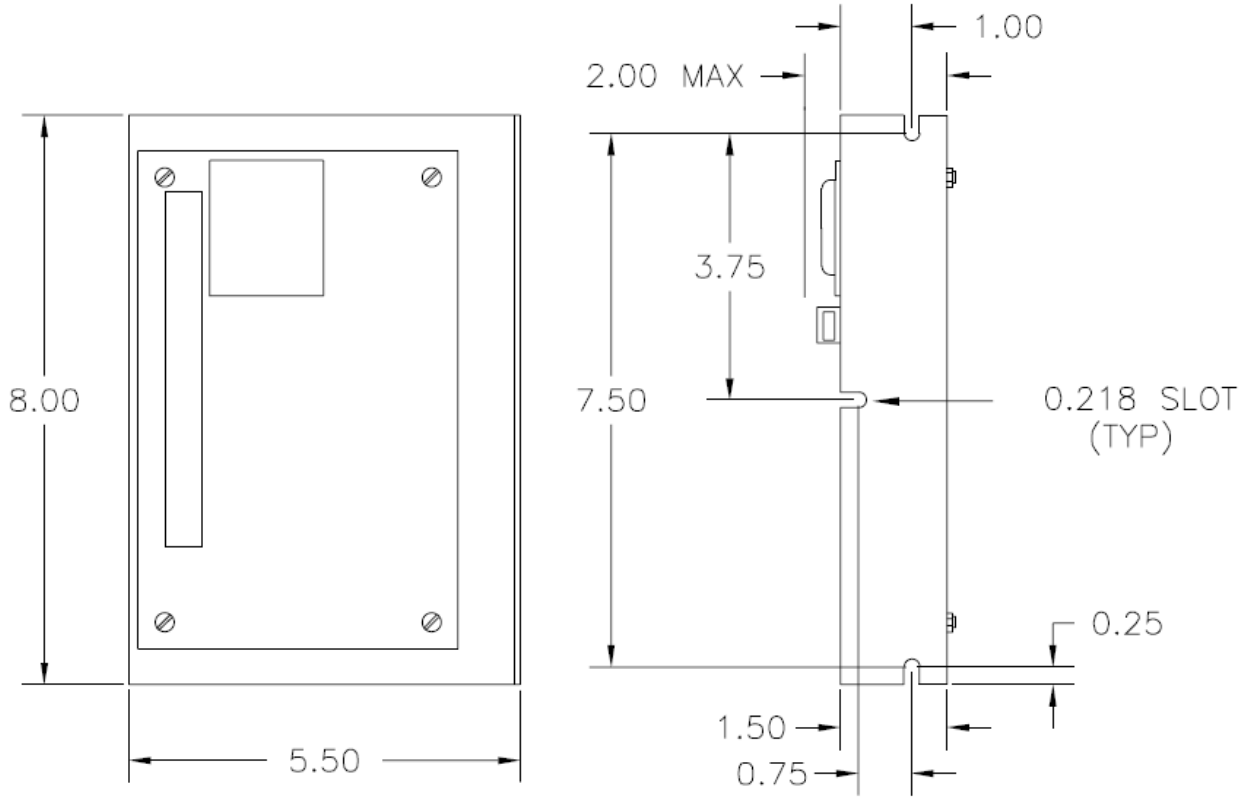


Fig. A.14

Connections

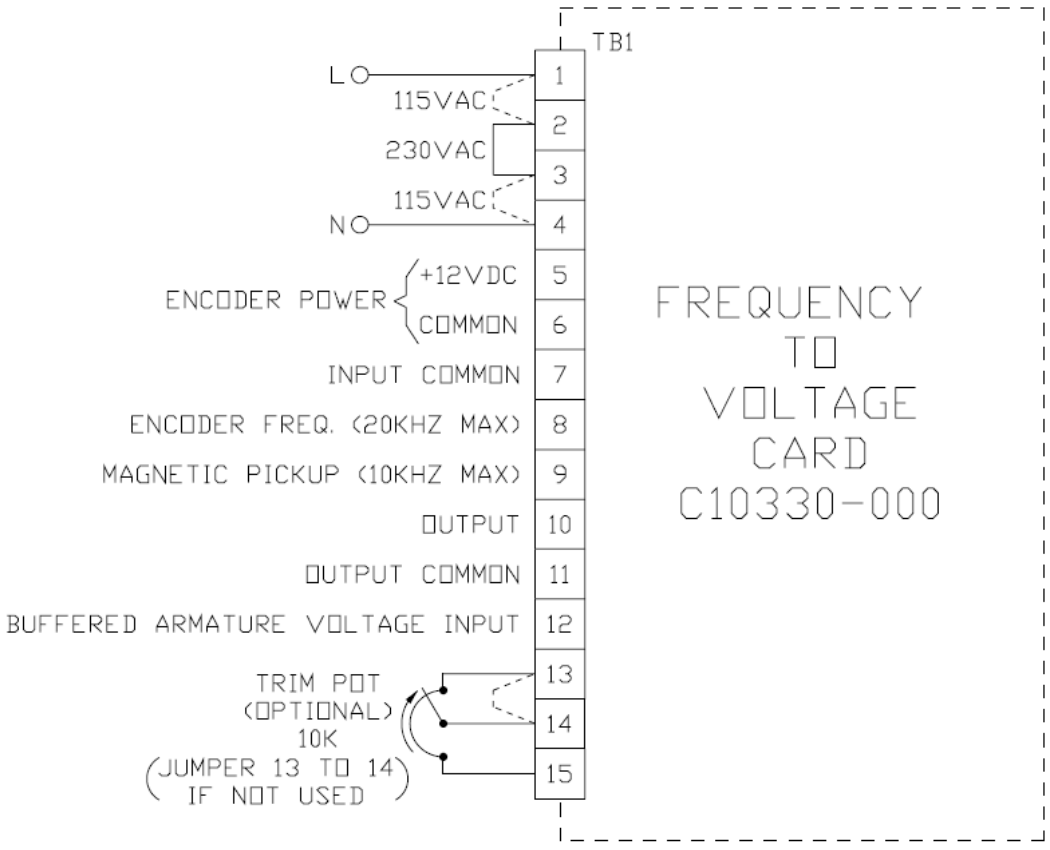


Fig. A.15

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View or download the complete C10330-000 Instruction Manual (MAN 1017-00) from www.carotron.com .

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