

MOOG

N123-001 Series

Snap Trac

Proportional Solenoid Driver

SPECIFICATIONS

Input Voltage Range:

0 to 5VDC input across pins 2 & 3
0 to 10VDC input across pins 1 & 3
(jumper pins 4 to 5)

Supply Voltage:

12 to 15VDC regulated
at 2.5 Amps maximum

Output Current:

Average: 0 to 2.00 Amps
Minimum Dither Amplitude:
0.60 Amps

Temperature Range:

0°C to 70°C (32°F to 150°F)

Mating Connector:

PN G0041-110 (provided)
wire gauge range 12-24 AWG

Mounting Style:

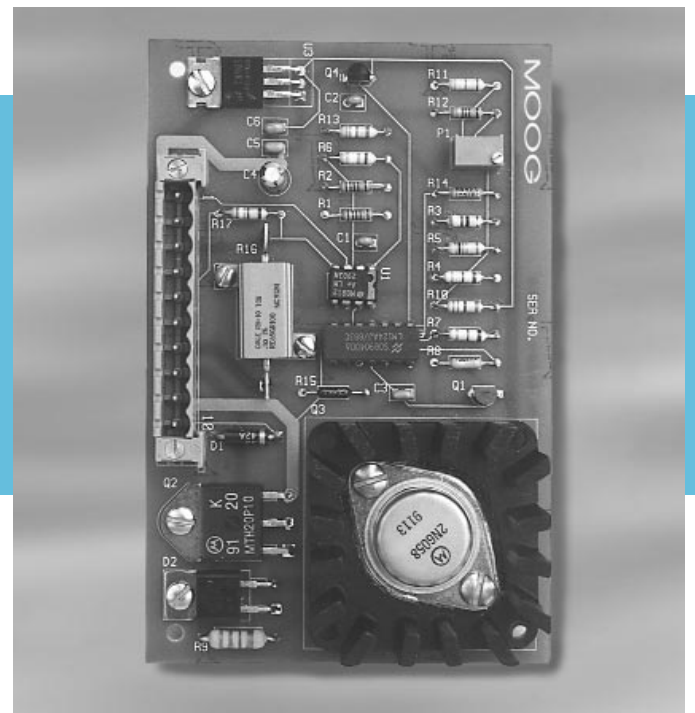
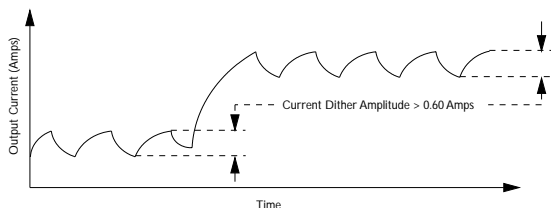
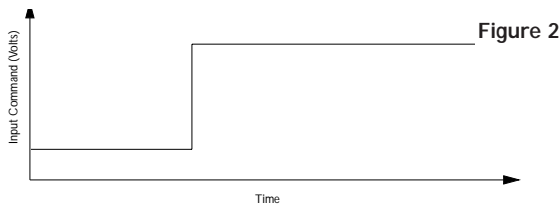
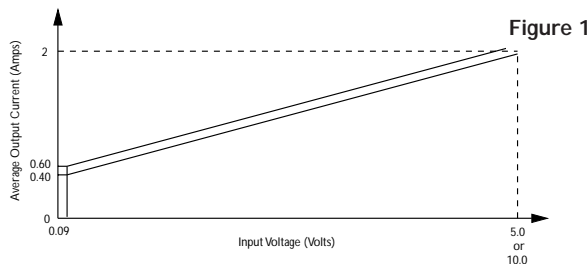
Curtiss Type TR-3, 5.00" PN 65419-1
supplied in 4 foot lengths, cut to suit

Weight:

0.31 lb (0.14 kg)

The N123-001 Snap Trac Card is designed to drive proportional solenoid valves by providing an average current proportional to the input command voltage (Figure 1). Dither is superimposed on the average current waveform (Figure 2) to virtually eliminate any effects of friction from the solenoid valve. The dither frequency depends on the electrical characteristics of the valve. The driver is designed to maintain the dither at a minimum amplitude of 0.60 Amps independent of the valve used.

In two-way proportional solenoid valves, sealing requirements at valve closure create dead-band in the control system. The N123-001 proportional solenoid driver reduces this deadband by providing an initial current offset.



ADJUSTMENTS

P1 Offset Adjustment: When the input command reaches 0.09VDC, the average current in the valve jumps to 0.55 Amps. This current can vary ± 0.05 Amps by adjusting P1.

FEATURES

Input Ranges:

Selectable input voltage ranges of 0 to 5VDC or 0 to 10VDC.

Offset Adjustment:

Current offset varies ± 50 mA with use of a potentiometer.

Range of Supply Voltage:

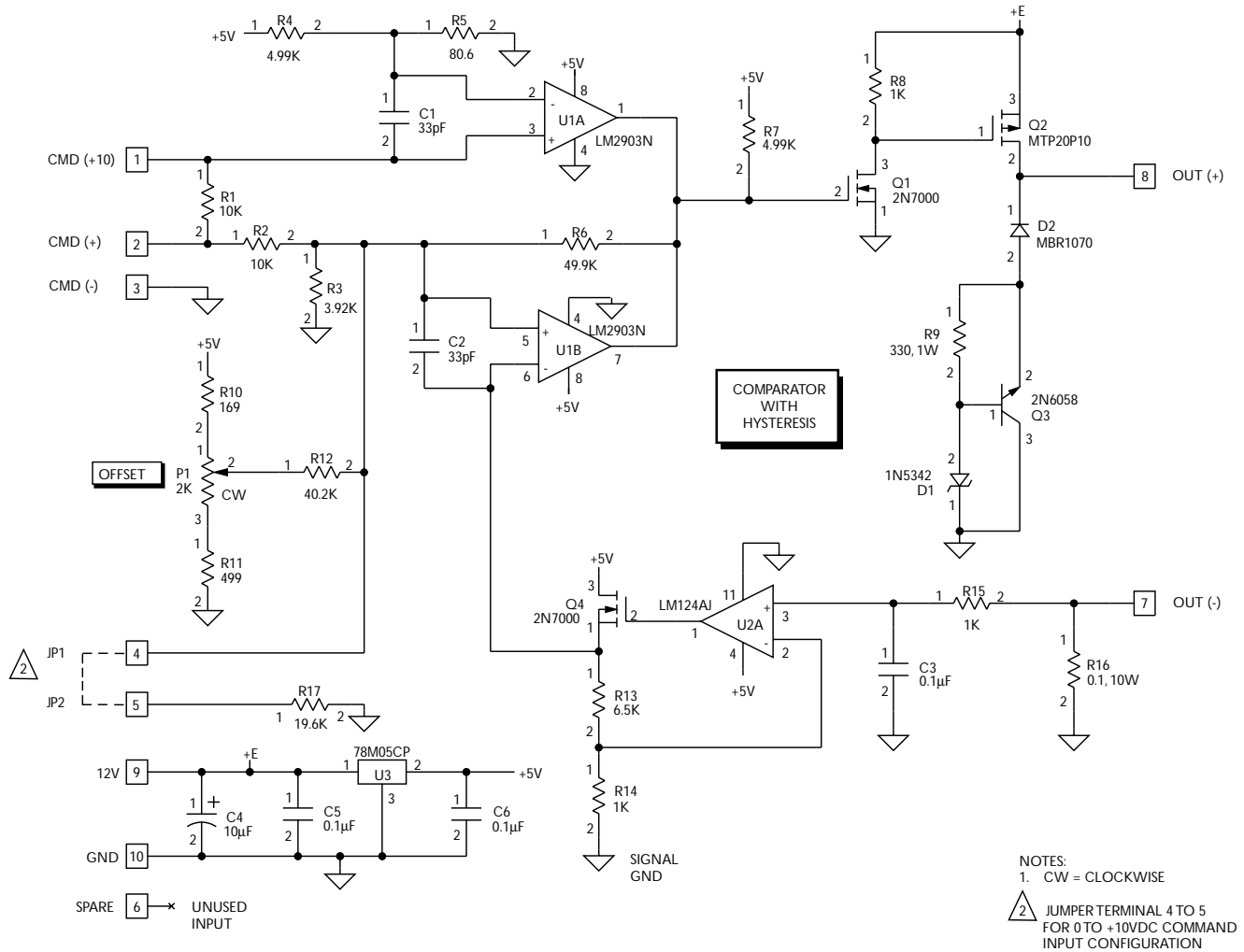
Supply voltage can vary from 12V to 15VDC.

DIMENSIONS

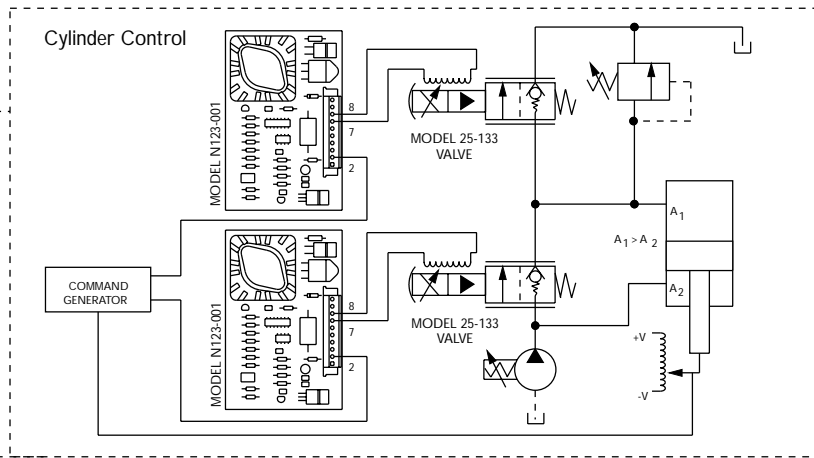
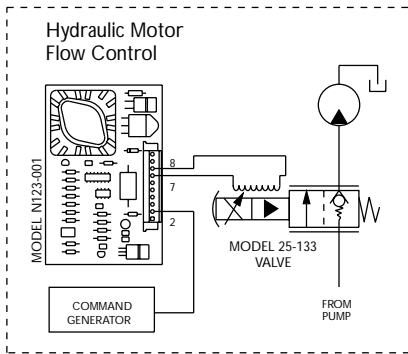
Driver: 3.25 in x 5.00 in long

Maximum Component Height: 3.00 in

N123-001 PROPORTIONAL SOLENOID DRIVER SCHEMATIC



TYPICAL APPLICATIONS

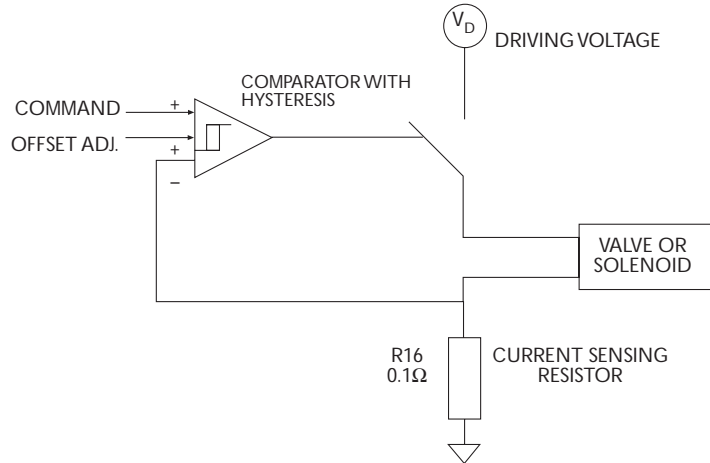


The products described herein are subject to change at any time without notice, including, but not limited to, product features, specifications, and designs.

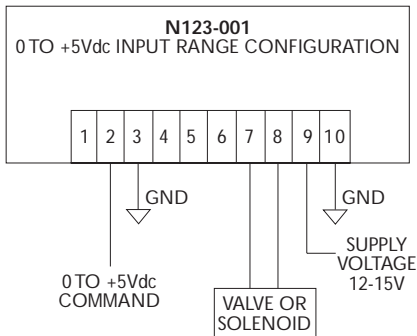
CIRCUITRY

The Proportional Valve Driver card is a 'current mode' PWM driver. The driver is configured to provide 0 to 2 Amps of 'average' current and accept the Input Commands of 0 to +5VDC or 0 to +10VDC. Input Command of 0 to +10VDC requires installation of Jumper across Terminals 4 & 5.

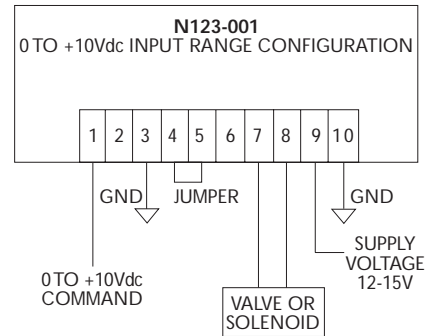
A functional diagram of the Proportional Valve Driver is shown at right. It uses a 'comparator' with hysteresis to pulse a switch - MOSFET transistor. This results in a constant amplitude PWM current signal through the valve. A 0.1Ω sensing resistor (R16) is used to provide the necessary feedback information. The amplifiers are limited to single ended drive voltage.



INTERCONNECT DIAGRAM OPTIONS:



+5 Volt Input Range Configuration



+10 Volt Input Range Configuration

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