

## Dual PWM Amplifier G123-814

### Description

The G123-814-001 Dual PWM Amplifier is used to drive both coils of a three position 24V solenoid operated proportional valve. It is specifically intended for use in low end closed loop applications. It allows a very low cost proportional valve to be used where normally a much more expensive servovalve would be needed. Coupling it with its companion servoamplifier, the G122-824, and a proportional valve, produces an economical closed loop solution.

An amplifier input signal of  $\pm 10V$  is converted to proportional pulse width modulated (PWM) output currents. An input of 0 to +10V delivers a proportional 0 to 1 Amp current to coil A and a 0 to -10V input delivers a proportional 0 to 1 Amp current to coil B.

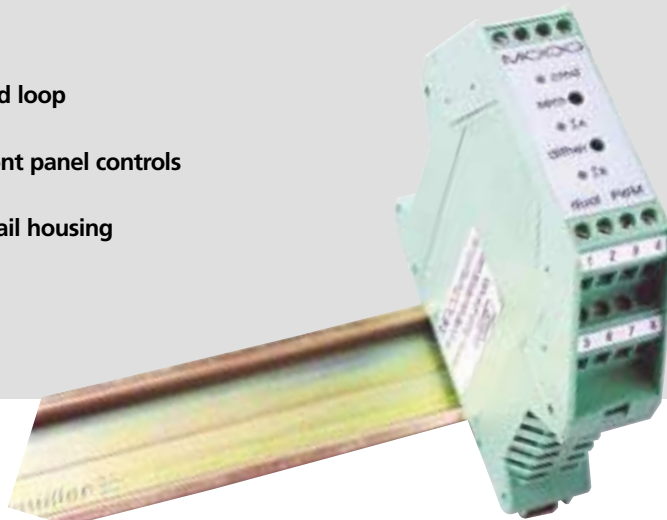
A fixed deadband compensation circuit compensates for spool overlap, making the amplifier suitable for closed loop applications. Adjustable dither level and output current zero adjustment are provided.

The user friendly front panel provides trimpots for dither and zero level adjustment. A dual colour LED indicates the magnitude and polarity of the command signal and two single colour LEDs indicate the magnitude of each of the coil currents. Two unused screw terminals on the housing double as test points for the coil current. 0 to -10V indicates 0 to 100% coil current.

The amplifier is housed in a compact DIN rail mounting enclosure and requires a +24V power supply.

### Features

- Drives two solenoids of a three position valve
- PLC and servoamplifier compatible  $\pm 10V$  input
- Deadband compensation, fixed
- Zero and dither adjustments
- Enable input
- Suited to closed loop applications
- Convenient front panel controls and indicators
- Compact DIN rail housing
- CE marked

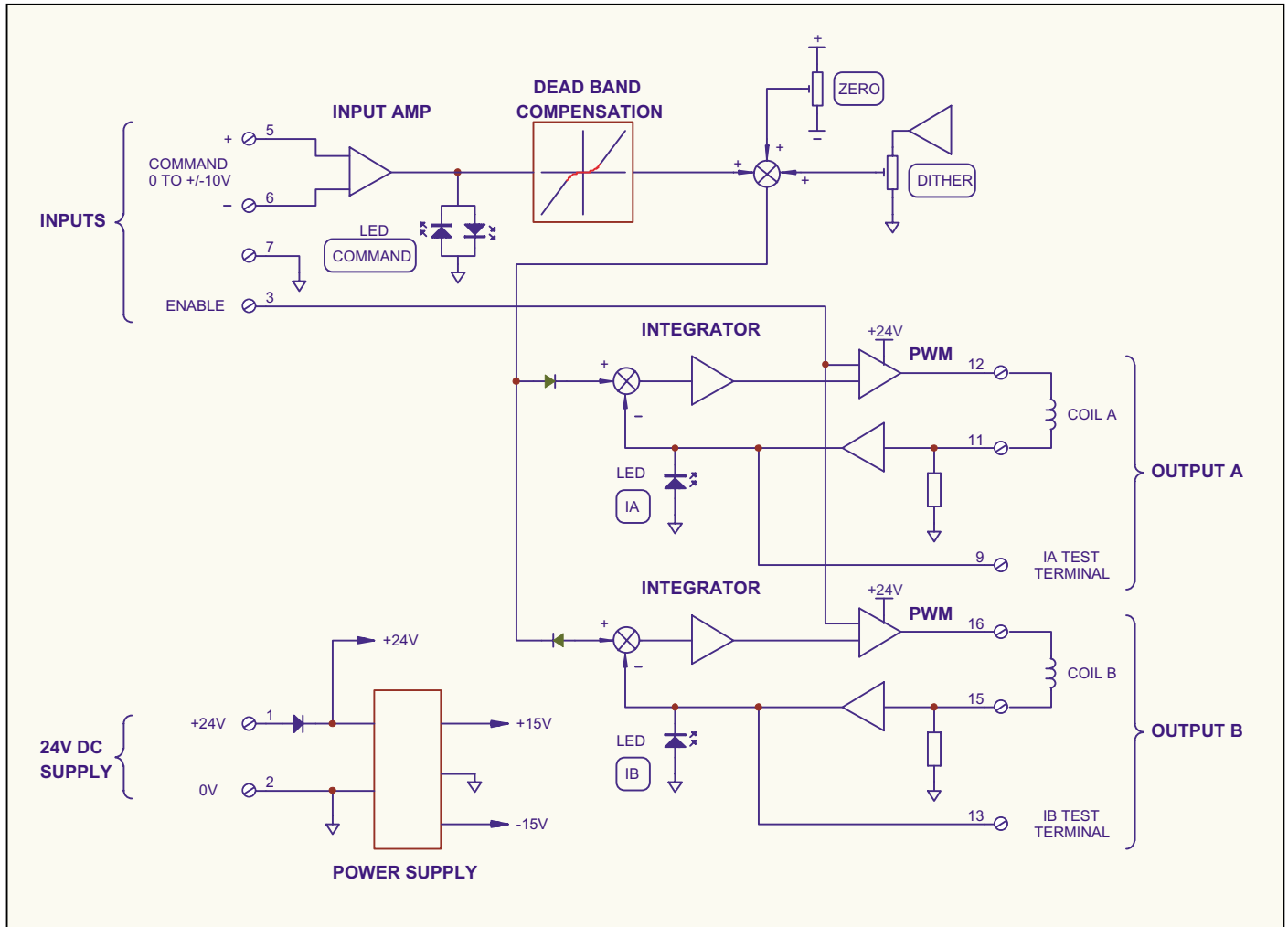


### Specifications

<b>Input:</b>	Differential 0 to $\pm 10V$ 100 kOhm input resistance
<b>Enable:</b>	+10V to +24V 2mA @ 24V
<b>Outputs:</b>	Dual PWM @ 24kHz 1.0A $\pm 0.1A$
<b>Maximum coil resistance:</b>	22 Ohm
<b>Coil current test terminals:</b>	0 to -10V for 0 to 1A current
<b>Deadband compensation:</b>	$\pm 12\%$ nominal, not user adjustable
<b>Dither:</b>	100 Hz 0 to 0.1A
<b>Zero:</b>	0 to $\pm 0.15A$
<b>Front panel indicators:</b>	Command – positive = red negative = green  I(A) = red I(B) = green

<b>Supply:</b>	24V nominal, 22 to 28V 45mA @ 24V, no load
<b>Mounting:</b>	DIN rail IP 20
<b>Temperature:</b>	0 to +40°C
<b>Dimensions:</b>	100W x 108H x 22.5D
<b>Weight:</b>	130g
<b>CE mark:</b>	EN50081.1 emission EN50082.2 immunity
<b>C tick:</b>	AS4251.1 emission

# Operating Details



## Applicability

The G123-814-001 has been structured to operate in a closed loop and optimised with a Hydrolux WP series proportional valve. The important specifications considered were the coils, which are 24V @ 800mA, and the spool overlap, which is 12%. Output current is 25% higher than nominal to ensure maximum flow is not overly compromised by valve production tolerances and spool Benoulli forces. The deadband compensation circuit, that cancels the spool overlap, has been optimised on a flow stand and during field applications. The dead band compensation is not user adjustable. Applying this amplifier to other valves with the same specifications will produce the same performance as achieved with the Hydrolux valve.

The G123-814 is not suitable for traditional open loop proportional valve applications. Because the deadband compensation circuit cancels the spool overlap, it is highly unlikely that a zero flow condition will result from zero coil current.

## Ordering Information

### Dual PWM Amplifier G123-814-001

Special configurations can be provided.

Consult your Moog sales office to discuss details.

## Internet Data

For a detailed Application Manual and the latest version of this Data Sheet please refer to the Moog website under "DIN Modules" at [www.moog.com/imc/product/cont](http://www.moog.com/imc/product/cont)

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