Mobile P-I Servoamplifier
G122-826

Description

The G122-826-001 is a general purpose, user configurable P-I servoamplifier with a power supply input filter suitable for automotive use. It can also be used in industrial applications, where its unique features make it particularly useful. Selector switches inside the amplifier enable proportional control, integral control or both to be selected. Many aspects of the amplifier's characteristics can be adjusted with front panel trimpots or selected with internal switches. This enables one amplifier to be used in many different applications.

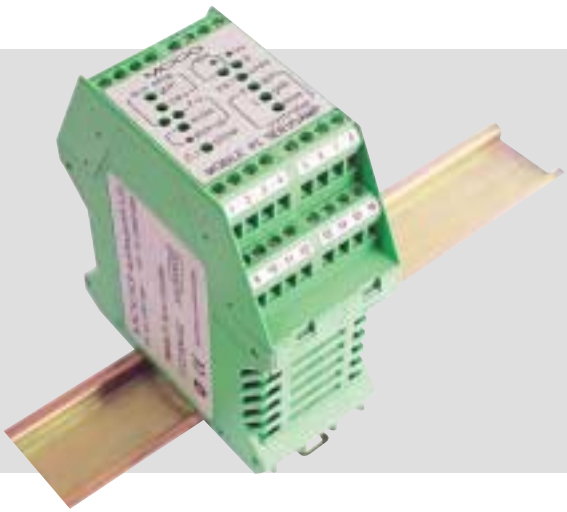
The servoamplifier employs analog electronics. It accepts three single ended input signals. A frequency to voltage converter and a differential analogue auxiliary amplifier enable signals to be pre-conditioned before being connected to the servo-amplifier inputs.

The three servoamplifier input signals are summed to produce an error signal which is then amplified proportionally and also integrated. The proportional and integral signals are switched together and output as a current or voltage to drive a servovalve.

Front panel trim pots, LED indicators and test points allow fast and easy setup and aid in trouble shooting. The servoamplifier is housed in a compact DIN rail mounting enclosure and operates from an automotive supply of 9V to 32V DC.

Features

- **P, I or P & I control**
- **User friendly front panel with LEDs and test points**
- **Three single ended inputs, one scalable**
- **Differential input auxiliary amplifier with zero and gain**
- **Frequency to voltage converter**
- **Optional non-linear block**
- **Optional dual gain amplifier**
- **Optional feedback derivative term**
- **Dither**
- **Step push button**
- **Automotive supply**
- **Compact DIN rail housing**
- **CE marked**



Specifications

Function: P, I or P & I, switch selectable

Input 1: Scaled to 100V max with switch selectable lag of 55ms

Input 2: Plug-in resistor, 100k Ohms nominal, ±10V

Input 3: Fixed 100k Ohms, ±10V
Derivative (velocity) feedback via plug-in resistor and fixed capacitor

Input 4: Direct to output amp, ±10V gives ±100% valve drive
Rin – 10k Ohms

Auxiliary amp: Differential 4-20mA or ±10V, switch selectable,
±15V max input
Rin – 100k Ohms, ±10V
Rin – 240 Ohms, 4-20mA
Zero – ±10V
Gain – 1 to 10

F to V: TTL or open collector input, switch selectable
Input threshold – 2.3V
TTL input resistance – 10k Ohms
OC pull up – 10k Ohms to +15V
Full scale output – 8.0V
Full scale ranges – 380 and 1600Hz

Variable supply: ±12V @ ±20mA max

±15V output: ±10mA max

Error amp: Unity gain
Bias – ±15% valve drive

Proportional amp gain: 1 to 20

Integrator gain: 1 to 45 per second

Output amp: Switch selectable voltage or current, single ended output, return to ground
V. ±10V, minimum load = 200 Ohms
I. ±5, 10, 20, 30mA to a maximum of ±50mA

$$\text{Max load} = \left(\frac{11V}{I\ (Amp)} - 39\right)\ \text{Ohms}$$

Step push button: –50% valve drive

Valve supply: Pin 14, 300mA max

Front Panel Indicators: Vs, internal supply – green
Valve drive positive – red
negative – green
F–V pick up – yellow

Front panel test points:
Valve – ±10V
(regardless of output signal selection)
Auxiliary amplifier output
F–V output
Signal 0V

Front panel trimpots:
Input 1 scale
Error amp bias
P gain
I gain
Dither level
Auxiliary amp gain
Auxiliary amp zero
F–V scale

Dither: 200Hz fixed frequency
0 to ±10% valve drive
Switch selectable on/off

Supply: 9V to 32V DC
173mA @ 13.8V and 50mA valve drive

Mounting: DIN rail
IP 20

Temperature: 0 to +40°C

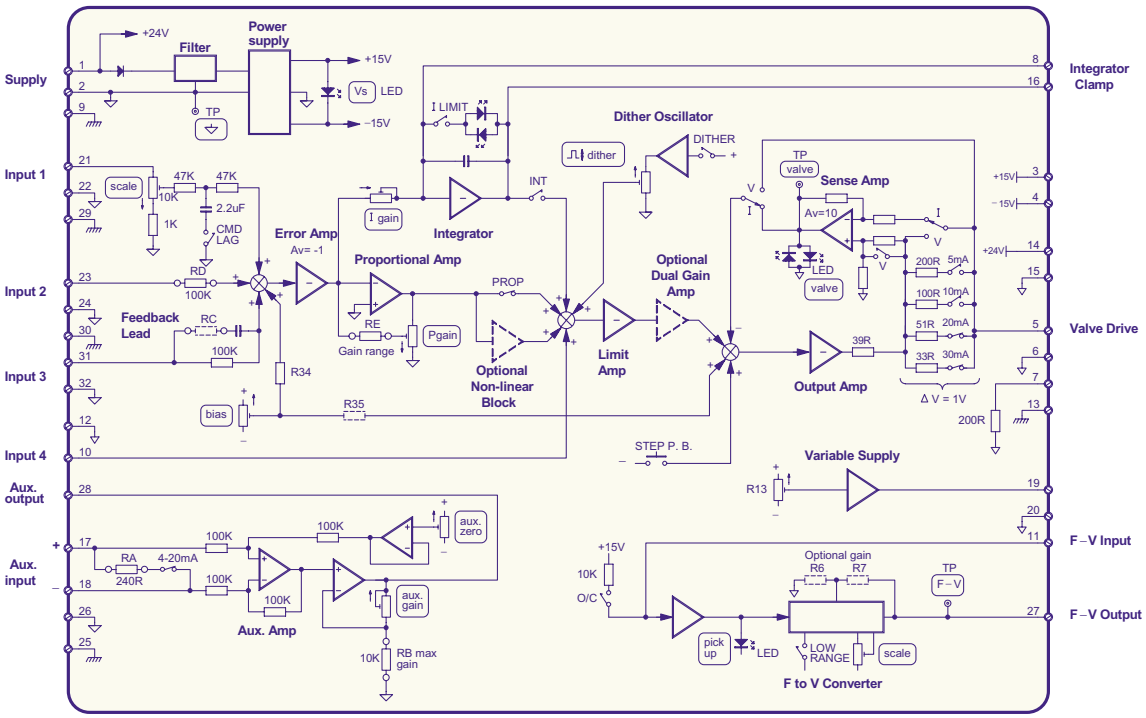
Dimensions: 100W x 108H x 45D

Weight: 240gm

CE mark: EN61000-6-3 emission
EN61000-6-2 immunity

C tick: EN61000-6-3 emission

Operating Details



Notes 1. = plug-in resistor 2. = optional or not loaded components 3. = front panel component

Switch selections

- Input 1 lag on or off
- Auxiliary amp input 4-20mA or ±10V
- F to V converter range
- Proportional control, integral control or both
- Integrator limit
- Output current or voltage
- Output current level
- Dither on or off

Plug-in resistors

- Input 2 RD = 100k for ±10V
- Feedback derivative term RC = not loaded
- Proportional gain range RE = 100k for 1 to 20 range
- Auxiliary amp gain range RB = 10k for 1 to 10 range
- Auxiliary amp 4-20mA RA = 240R

Internet Data

For detailed Application Notes and the latest version of this Data Sheet please refer to the Moog website www.moog.com/dinmodules

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