

G122-829A

P-I SERVO AMPLIFIER

The G122-829A P-I Servoamplifier is used in closed loop applications where a proportional and/or integral amplifier is needed. Selector switches inside the amplifier enable proportional, integral or both to be selected. Many aspects of the amplifier's characteristics can be selected with internal switches. This enables one amplifier to be used in many different applications. The configuration options provided are the result of many years of experience in designing and commissioning closed loop systems.

The Servoamplifier employs analog electronics. It accepts three input signals, one single ended and two differential.

These 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 requires a +24V DC supply.

SWITCH SELECTIONS

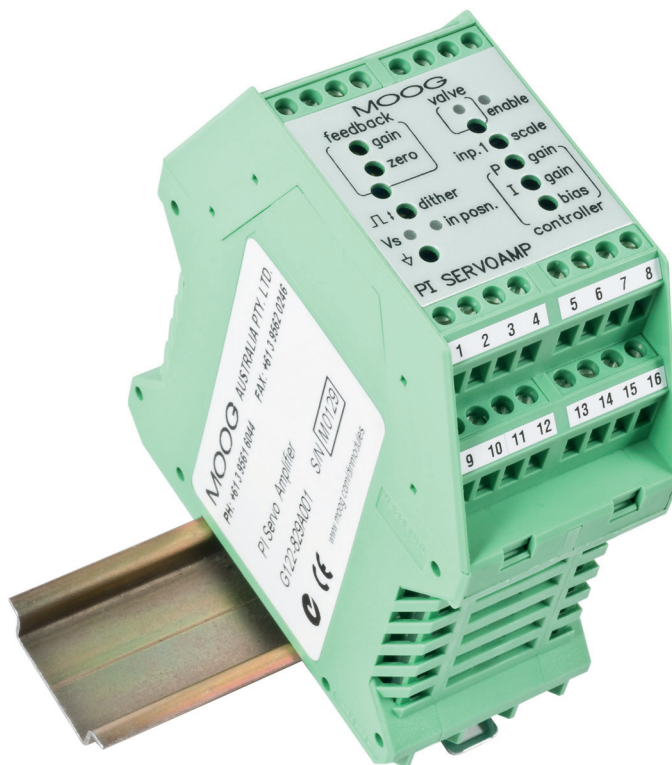
- Input 1, lag on or off
- Feedback input 4-20 mA or ± 10 V
- Input 2, 4-20 mA or ± 10 V
- Proportional control, integral control or both
- Integrator input from unity gain or amplified error signal
- Integrator limit
- Output \pm current, \pm voltage or 4-20 mA
- Output current level
- Dither on or off

PLUG-IN RESISTORS

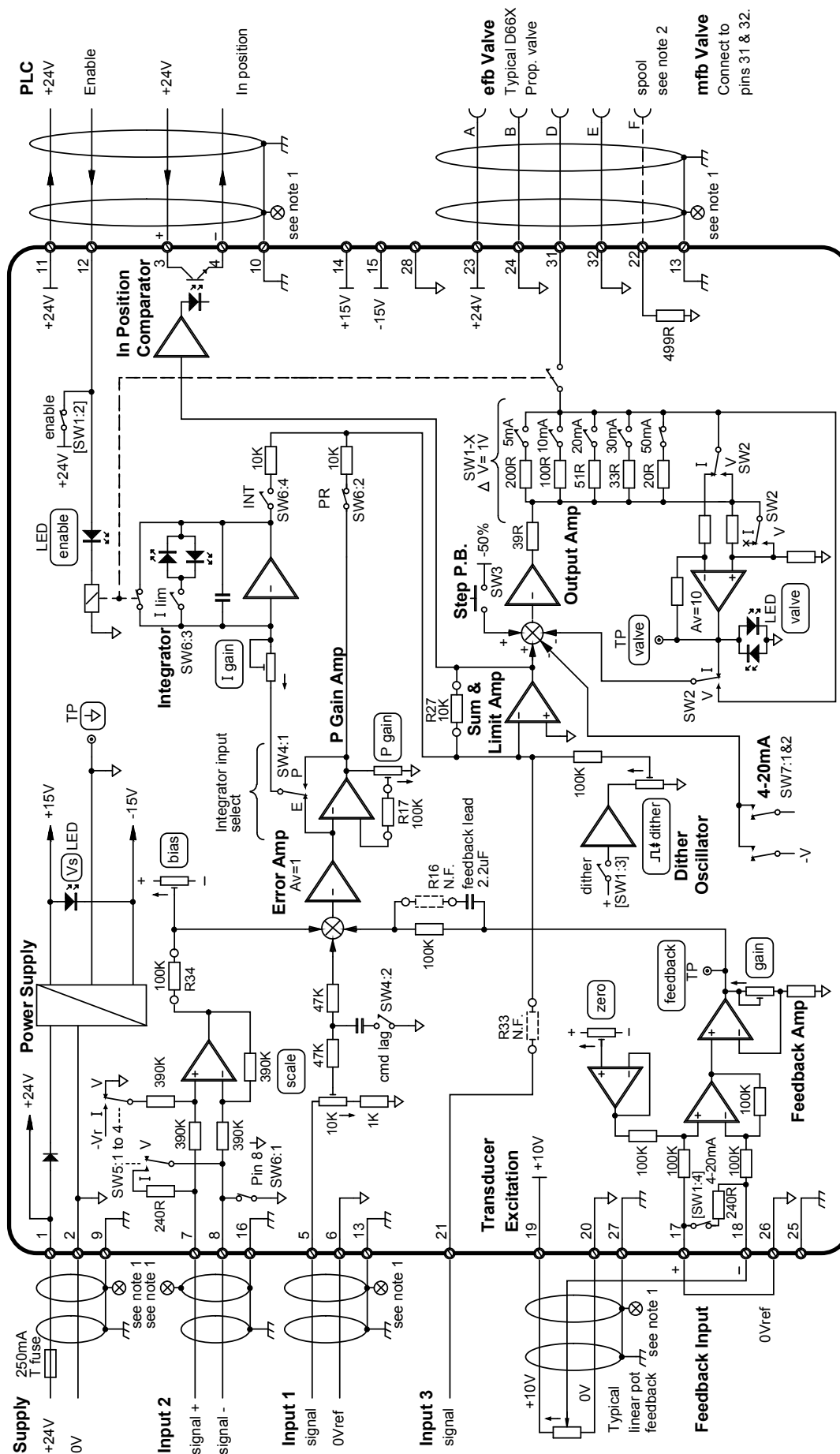
- Input 2 = 100k for ± 10 V
- Feedback derivative term = not loaded
- Proportional gain range = 100k for 1 to 20 range
- Input 3 direct to output amp = not loaded
- Sum & limit amp = 10k for unity gain

ADVANTAGES

- P, I or P & I control
- User friendly front panel with LEDs and test points
- Input options, two differential and one single ended
- Selectable valve drive signals
- Step push button for tuning
- Optional feedback derivative term
- "In position" output
- Dither
- Enable input
- Compact DIN rail housing
- CE marked



BLOCK WIRING DIAGRAM



Note: 1. Connect cable screen to enclosure cable gland or chassis ground terminal on G122-829

Note: 2. Connect spool (pin F) to terminal 22, only if the spool signal is a current.

Note: 3. Switches shown in default shipping mode.

Note: 4. [] indicates bottom board.

SPECIFICATIONS

Function	P, I, or P & I, switch selectable
Input 1	Connects to error amp via 94k Scaled to 95V max with switch selectable lag of 55mS
Input 2	Differential 4-20mA or $\pm 10V$, switch selectable Connects to error amp via R34 $\pm 15V$ max $R_{in} = 390k - \pm 10V$ $R_{in} = 240R - 4-20mA$ R34 is plug-in, 100K (default)
Input 3	Connects to summing amp via R33 R33 plug-in $\pm 10V$ gives $\pm 100\%$ valve drive when R33 = 10k Ohm, $\pm 10\%$ when R33 = 100k Ohm
Feedback input	Differential 4-20mA or $\pm 10V$, switch selectable $\pm 15V$ max $R_{in} 100k - \pm 10V$ $R_{in} 240R - 4-20mA$
Feedback amp	Zero, $\pm 10V$ Gain, 1 to 10 Derivative (velocity) feedback via 0plug-in resistor R16 and fixed capacitor
Transducer excitation	+10V @ 10mA max
Error amp	Unity gain Bias $\pm 1.5V$ -3dB @ 723Hz
Proportional amp gain	1 to 20 with R17 = 100k (default) Max gain 2000 with R17 = 10M
Integrator gain	1 to 45 per second
Integrator input	Switch selectable from output of unity gain error amp or proportional gain amp
Enable	Relay, +24V @ 8mA, 17 to 32V
Output amp	Switch selectable voltage, current or 4-20mA, single ended output, return to ground <ul style="list-style-type: none"> V. $\pm 10V$, minimum load = 200 Ohm I. $\pm 5, 10, 20, 30, 50mA$ to a maximum of $\pm 100mA$ $\text{max load} = \left(\frac{11V}{I \text{ (Amp)}} - 39 \right) \text{ Ohm}$ 4-20mA. Max load 500R

Step push button	-50% valve drive disturbance
Valve supply	Terminal 23, 300mA max
In position	$\pm 10\%$ of valve drive 20mA and 40V max output to PLC
Front panel indicators	Vs, internal supply – green Valve drive positive – red negative – green Enable – yellow In position – green
Front panel test points	Valve $\pm 10V$ (regardless of output signal selection) Feedback amplifier output signal 0V
Front panel trimpots (15 turns)	Input 1 scale Error amp bias P gain I gain Dither level Feedback amp gain Feedback amp zero
Dither	200 Hz fixed frequency $\pm 10\%$ valve drive Switch selectable on/off
Supply	Terminal 1, 24V nominal, 22 to 28V, 200mA max
$\pm 15V$ output	Terminals 14 and 15, $\pm (110mA - \text{max valve current})$
Wire size range	0.2mm ² to 2.5mm ² (24AWG to 12AWG)
Recommended supply protection	M205, 250mA T (slow blow) fuse compliant to IEC127-2 sheet 3 If terminal 23 is used to power a proportional valve, the fuse should be increased to cater for the extra current
Mounting	DIN rail IP 20
Temperature	0 to +40°C
Dimensions	100W x 108H x 45D
Weight	180g
CE mark	EU 2011/65/EU RoHS EU 2014/30/EU EMC EN61000-6-4 : 2007 emission EN61000-6-2 : 2005 immunity
RCM	EN61000-6-4 : 2007 emission

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DIN P-I Servo Amplifier
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ORDERING INFORMATION

P-I Servo Amplifier G122-829A001

Delivery includes P-I Servo Amp, DIN fuse holder,
2 x M205 250 mA T fuses and a 6 page application note.

This technical data is based on current available information and is subject to change at any time by Moog. Specifications for specific systems or applications may vary.

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