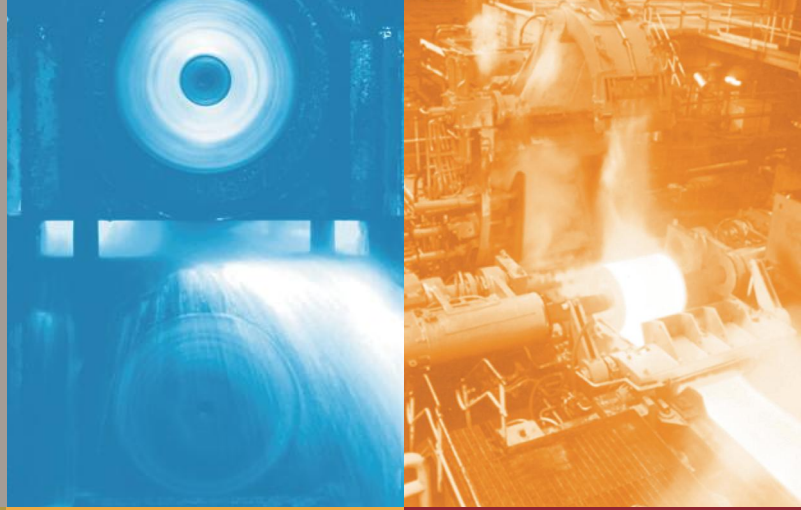


IN122-829A

P-I SERVO AMPLIFIER



The IN122-829A P-I Servo Amplifier 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 servo amplifier 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 servo valve.

Front panel trim pots, LED indicators and test points allow fast and easy setup and aid in trouble shooting. The servo amplifier is housed in a compact DIN rail mounting enclosure and requires a +24V DC supply.

SWITCH SELECTIONS

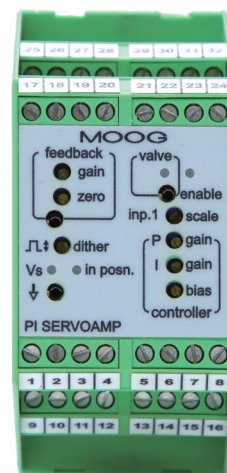
- Input 1, lag on or off
- Feedback input 4-20mA or ± 10 V
- Input 2, 4-20mA or ± 10 V
- Proportional control, integral control or both
- Integrator input from unity gain or amplified error signal
- Integrator limit
- Output \pm current, \pm voltage or 4-20mA
- Output current level
- Dither on or off

PLUG-IN RESISTORS

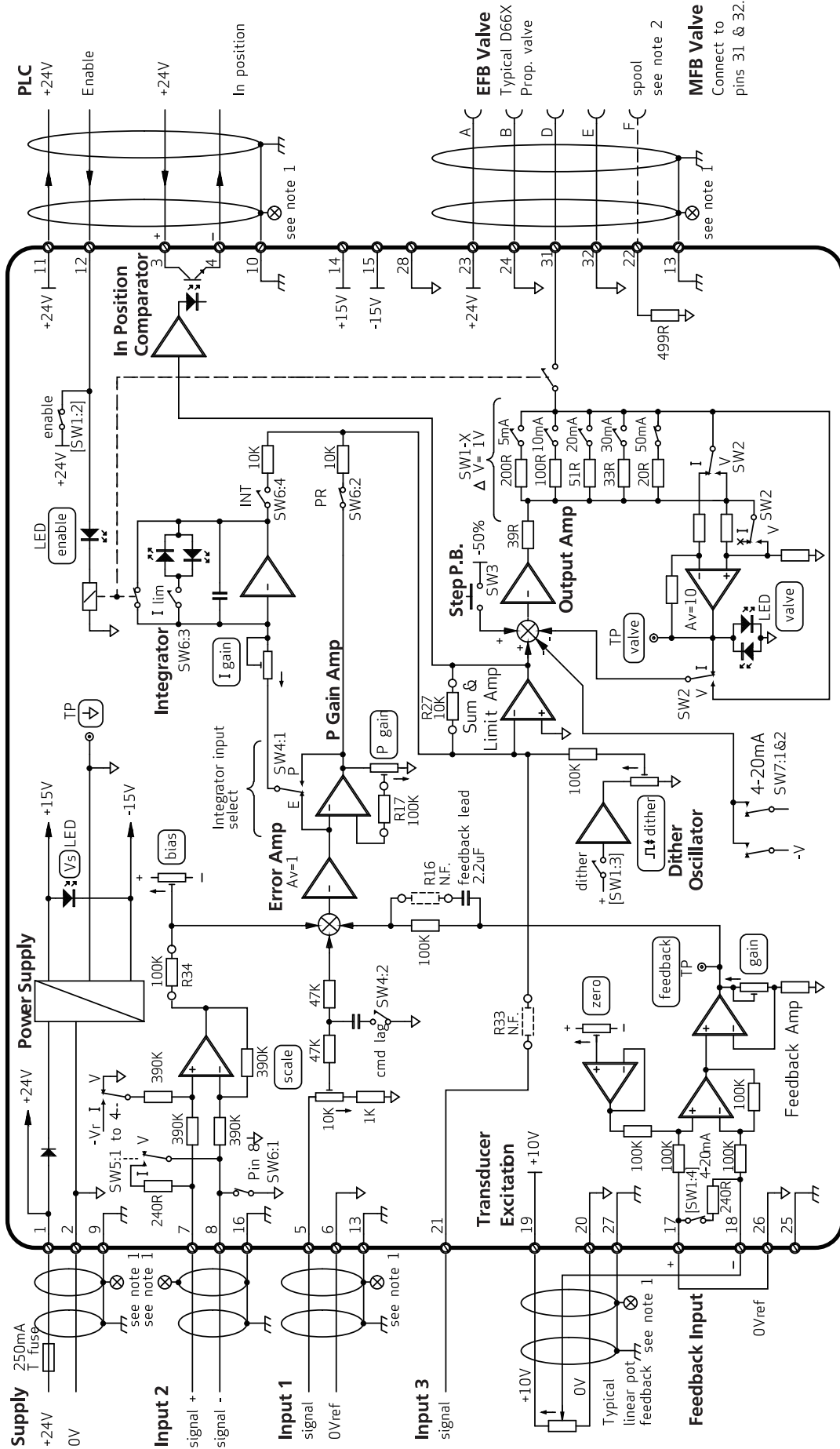
- Input 2 = 100k for ± 10 V
- Feedback derivative term = not loaded
- Proportional gain range = 100k for 1 to 20 range
- Input 3 direct to output amp = not loaded
- Sum & limit amp = 10k for unity gain

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 IN122-829.
 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 ±10V, switch selectable. Connects to error amp via R34. ±15V max. Rin = 390k - ±10V. Rin = 240R - 4-20mA. R34 is plug-in, 100K (default).
Input 3:	Connects to summing amp via R33. R33 plug-in. ±10V gives ±100% valve drive when R33 = 10k Ohm, ±10% when R33 = 100k Ohm.
Feedback input:	Differential 4-20mA or ±10V, switch selectable. ±15V max. Rin 100k - ±10V. Rin 240R - 4-20mA.
Feedback amp:	Zero, ±10V. Gain, 1 to 10. Derivative (velocity) feedback via Oplug-in resistor R16 and fixed capacitor.
Transducer excitation:	+10V @10mA max.
Error amp:	Unity gain. Bias ±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. ±10V, minimum load = 200 Ohm. I. ±5, 10, 20, 30, 50mA to a maximum of ±100mA. $\text{max load} = \left(\frac{11V}{I (\text{Amp})} - 39 \right) \text{Ohm}$ <ul style="list-style-type: none"> 4-20mA. Max load 500R.

Step push button:	-50% valve drive disturbance.
Valve supply:	Terminal 23, 300mA max.
In position:	±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 ±10V (regardless of output signal selection) Feedback amplifier output signal 0V
Front panel trim pots: (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. ±10% valve drive. Switch selectable on/off
Supply:	Terminal 1, 24V nominal, 22 to 28V, 200mA max.
±15V output:	Terminals 14 and 15, ± (110mA - 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 IEC127-2sheet 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:	IEC61000-6-4 emission IEC61000-6-2 immunity
RoHS:	Compliant

ORDERING INFORMATION

Part Number	Description	Equivalent to old model
IN122-829A001	PI Amplifier with in-position signal	G122-829A001
IN122-829A011	PI Amplifier with cable break detection	G122-829A011

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