

Proportional Amplifier / - Controller

PV1

Characteristics:

- Control current max. 6A /<40VDC
- PI controller additional integrated
- Signal amplifier additional integrated
- 250Hz or 5 kHz PWM frequency
- Output current from 0...100% adjustable
- PI amplifying from 0...100% adjustable
- OFFSET from 0...20% adjustable
- Status display for controller enable
- Supply 20-40VDC
- Mountable on 35mm cap rail TS35
- Clear terminal labeling
- Narrow design
- Shape 17,5mm
- High reliability, 5 years warranty



Description:

The devices of the proportional amplifier series PV1 have been developed for controlling valves, clutches, brakes and similar inductive loads. For the special application the output clock frequency has to be preset first, 250Hz or 5 kHz. The control takes place with standard signals. There is the choice between two basic operating modes: The devices can be used as a **proportional amplifier** or as a **proportional controller**.

Amplifier:

If the device is used as an amplifier, the integrated controller is deactivated and the output current follows the applied set value (cl.3).The maximum current is adjustable with a potentiometer (V).Also with a potentiometer (0) the zero point is shift able from 0...20%.

Controller:

The integrated PI controller is activated by a controller enable (cl.9). Set- and actual value (cl. 1 + 2) are injected as norm signals (10V or 20mA) with opposite polarity (set value is positive and actual value negative).If necessary the input (cl.3) can be used as a set value pilot control. The control stroke adjustment is effected by a potentiometer (R1). An integrated universal amplifier (R2) can be used for conditioning of set- or actual value, an inverting (cl.5) is also possible. A LED signals the controller enable.

Application:

250Hz controlling of proportional valves
5 kHz controlling of hysteresis brakes, hysteresis clutches
All kinds of inductive loads

Technical Data

Auxiliary power:

Supply voltage	:	19, 2...40VDC
Power consumption	:	< 1,5VA + load

Load output:

Voltage output	:	U _{cc} – 2V	(cl. 7 + cl. 8)
Current output	:	1A / 3A / 6A depending on type	
Kind of load	:	Inductive load	
Clock frequency	:	250 Hz/ 5kHz depending on type	

Inputs:

Controller enable	:	16, 2...30VDC, 6...12mA	(cl.9)
P-amplifier	:	0...10V / 100kΩ	(cl.3)
Variant voltage			
Controller voltage	:	0...±10V / 100kΩ / overload max. 50V	(cl.1 +cl.2)
Signal amplifier	:	0...±10V / 95kΩ	(cl.4)
Variant current			
P-amplifier	:	0(4)...20mA / load resistor 100Ω	(cl.3)
Controller current	:	0(4)...20mA / load resistor 100Ω / overload max. 100mA	(cl.1 +cl.2)
Signal amplifier	:	0...±10V / 95kΩ	(cl.4)

Outputs:

Signal amplifier	:	0...±10V / max. 10mA, amplifying 0, 5...2, 5-times	(cl.5 + cl.6)
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Adjustment:

Output current	:	Fine adjustable 0...100%	potentiometer V
Zero point	:	Fine adjustable 0...20%	potentiometer O
Control stroke	:	Fine adjustable 0...100%	potentiometer R1
Universal amplifier	:	+/-40%	

General data:

Operating temperature	:	0...50°C
Storage temperature	:	-25...+85°C, condensation before putting into operation is not allowed
CE conformity	:	EN 61326-1, EN 61000-4-2/3*/4/5/6*, EN 61000-6-4
		* during measurements are small deviations possible

Body:

Dimension	:	See drawing, 17,5mm adjoin body, 17,5x114,5x104,5mm (with terminals)
Material	:	PA / V0
Protection category	:	IP20
Connection	:	M3-screw-type terminal 0, 14 - 2,5mm ² , flexible or inflexible
Fixing	:	Snap-on mounting for norm rail TS35
Weight	:	118g

Note on safety:



Disconnect the power supply before attempting to open the unit.

During the operation of this module it is possible that parts of the module, even there is extra-low voltage, (for example shunt measurement) are under dangerous voltage! Therefore a non-observance of this caution may cause damage of property or physical injury.

Only trained qualified personnel should install or operate the unit. Before installation the qualified personnel should read the documentation and should familiarize themselves with the unit.

If there is visible damage to the body of the unit it should be immediately replaced and not put into operation.



Please ensure that there is a sufficient prevention against electrostatic discharge during installation of the unit.

Installation Information:

Pay attention and make sure the unit is far away from mounted sources that may disturb the device such as magnetic coils, transformers, frequency converters etc.

Wiring advice:

Use only shielded cables. The shield is to be connected extensively to ground. Do not mix power- and signal-wires/cables in the same cable tray.

Limited warranty:

The LEG Industrie-Elektronik GmbH warranted that the product does not have any material or processing defects in a period of 5 years after date of delivery.

It is up to the choice of LEG to repair or to exchange an inoperative unit.

Subsequent damages or any claim for indemnification above the functionality of the unit are excluded.

This limited warranty is only valid if ...

1. the product was installed and put into operation according to the LEG operation documentation;
2. the technical configuration of the power supply was abided;
3. the product was not used for unintended purposes;
4. there were no unauthorized modifications or manipulations, misuse or repairs without previous agreement from LEG .

Our Terms of Trade are based on the "General Conditions for the supply of products and services of the Electrical and Electronics Industry" including the "Complementary Clause: Extended Reservation of Property" of the ZVEI e.V. (German Association of Electrical Manufacturers).

Miscellaneous:

We expressly reserve the right, without previous notice, to correct errors contained in any data of this information brochure, and to make alterations to the program and technical modifications.