Ubi_Prop_01

C-SIGMA

Digital Multi Feedback Proportional Amplifier

mm
L x W x H
67 x 67 x 28

Baseplate
86 x 72 x 3

For the control of Proportional Valves and complete Hydraulic Power Units.

Digital Multi Feedback Microprocessor Control.

SMD Tecnology, Rugged Execution Fully Encapsuletd in Epoxy.

NO Electrolytics: for Higher Reliability only Self-Healing Film Capacitors are used.

All Digital and Analog INPUTS feature Galvanic Isolation.

Up to 4 PhotoMOS™ OUTPUTS.

DESCRIPTION

Ubi_Prop_01 is a rugged proportional amplifier ideally suited for commanding Proportional Valves and Hydraulic Power Units in mobile and railway applications. Ubi_Prop_01 features two filtered, and properly conditioned, auxiliary outputs for the supply of conventional 4-20 mA sensors or transducers. The transducers output signals are then used for the closed loop control of the desired system variables.

A galvanically isolated 4-20 mA setpoint input allows "clean" operation even in the most noisy (from an electric disturbances point of view) environments. The output current (max 1.2A) is proportional to said 4-20 mA setpoint. For the CAN Bus version the setpoint is received over the data bus, so that said 4-20 mA setpoint input can instead be used as a third 4-20 mA sensor input.

SAFETY

Ubi_Prop_01 features a special safety function, very useful in railway electro-hydraulic brake applications, allowing the control of the output pressure even in the event of an interruption of the cable to the pressure transducer. Standard Amplifier Cards would in such case command full pressure (while trying to read to no avail the signal from the pressure transducer). Thanks to this special safety feature, Ubi_Prop_01 is instead capable of allowing brakes application even with a broken cable to the pressure transducer, as the output pressure can still be controlled, albeit in a less accurate way. In such a condition the output current would still be proportional to the setpoint command (thanks to the inner current control loop still operating in close loop configuration) and the output pressure would then be defined by the valve's P(I) characteristic.

Contact: info@c-sigma.it

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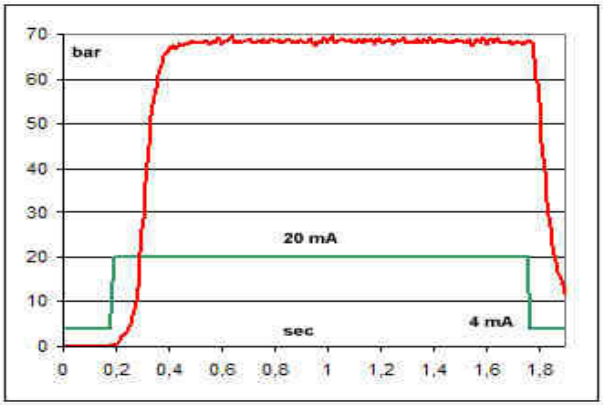
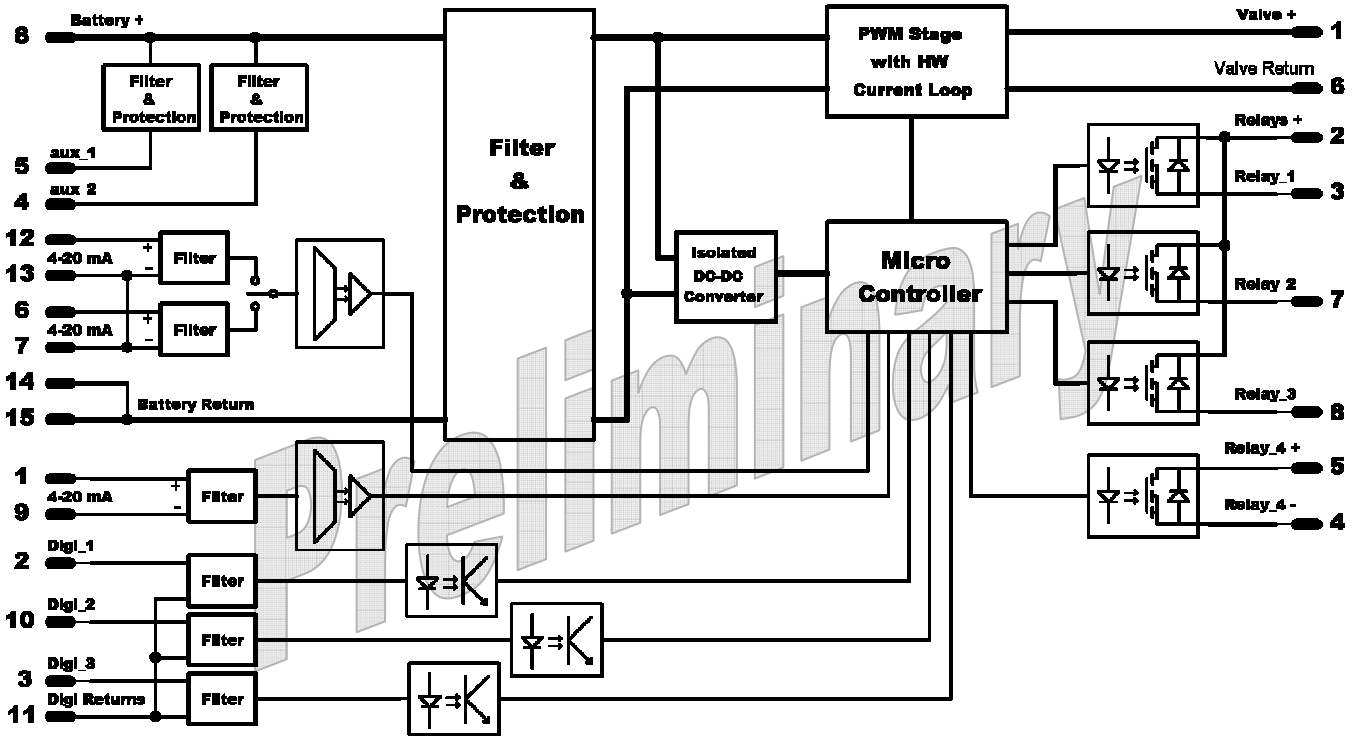
RATINGS

- 12V to 36V supply voltage (other on request)
- Up to 1.2A output current (with HW limit)
- 4-20 mA input setpoint (isolated)
- 2 MUXed 4-20 mA sensor inputs (isolated)
- -25°C to 85°C with no derating
- Adjustable Offset Current
- Inner PWM frequency: 120kHz
- Dither modulation frequency: 80-400 Hz
- Dither modulation amplitude: 0-20%
- Dither waveform: triangular



Example of step response in an actual electro-hydraulic brake application

FUNCTIONAL BLOCK DIAGRAM



- **Designed and tested (vibrations, EMC, env.) according to EN 50155.**
- **Inner current loop provides constancy of commanded output current, regardless of changes in input voltage or coil resistance.**
- **Protected against output short-circuits and accidental supply reversal.**
- **Optional CAN Bus Interface.**

CE

C-SIGMA S.R.L.

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