SVP... PROPORTIONAL AMPLIFIER
FOR MOTORS AND PUMPS CONTROL

SVP...	
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Phase out product

The SVP electronic amplifier with current feedback current is designed to control a pump with variable flow rate or two pumps for open circuit or two motors.
The amplifier has two proportional outputs with current feedback and a single power output without current feedback. Each proportional output is controlled by an analogue input; it is therefore possible to control two proportional outputs independently (independent control for the proportional outputs, option I in the ordering code).
Through the selection of a switch positioned on the card, it is possible to control both proportional outputs with only one analogue input (symmetrical control for the proportional outputs, option S in the ordering code).
The symmetrical control is used for hydrostatic pumps in closed-circuit with two solenoids control. In the independent control mode, the two proportional outputs are mutually independent and it is possible to control separately two open-circuit pumps with single solenoid control or two motors. The card also has an output for brake release control: this is ON when the output current of the two proportional channels is at the minimum value. As the output current of one of the channels exceeds an adjustable percentage above the minimum current, the brake output state changes to OFF.

MAIN FEATURES
- External control signal for enabling card operation (it is possible to by-pass this function).
- Linear and independent output current rise and drop ramps on both proportional outputs.
- Control of the card is possible via potentiometer, voltage signal (±5V) from an external source or current signal from an external source (±20mA).
- Differential analogue inputs logic.
- Adjustment of brake control output current value.
- Adjustment of the control parameters from digital interface panel built in on the card.
- Two digital outputs (power 0.5A) to signal card failure or anomaly.
- Short-circuit protection for the two proportional outputs.
- Protection for input power polarity inversion.
- Over voltage protection system.

ADDITIONAL FEATURES
- When ordering it is possible to select the external control signal version (standard) with separate controls to enable the two proportional outputs (upon request).
- Third analogue input (±5v or ±20mA) for pressure or position transducer (upon request).
- Digital Input (12V or 24V) for encoders or inductive speed sensors (upon request).
- CAN-bus data transmission interface (upon request).

ORDERING CODE

SVP	Proportional amplifier for motors and pumps control
X	**X** = For proportional solenoids 0.88 A (24 V DC) (STANDARD) **Y** = For proportional solenoids 1.76 A (12 V DC) **Z** = For proportional solenoids 2.50 A (9 V DC)
I	**I** = Independent control of the proportional output **S** = Symmetric control of the proportional output (STANDARD)
E	**E** = With external card enabling control (STANDARD) **K** = With external enabling control and proportional output enabling control **0** = Without enabling control
1	**1** = With voltage input ±5V (STANDARD) **2** = With current input ±20mA
ST	**ST**= Version with setting panel (STANDARD) **CN**=Version with CAN interface
00	NONE (STANDARD)
D1	Serie 1 digital model

Connectors and electrical contacts included in the fourniture.

CE registered mark with reference to the EU Community Directives, in accordance with the following norms:

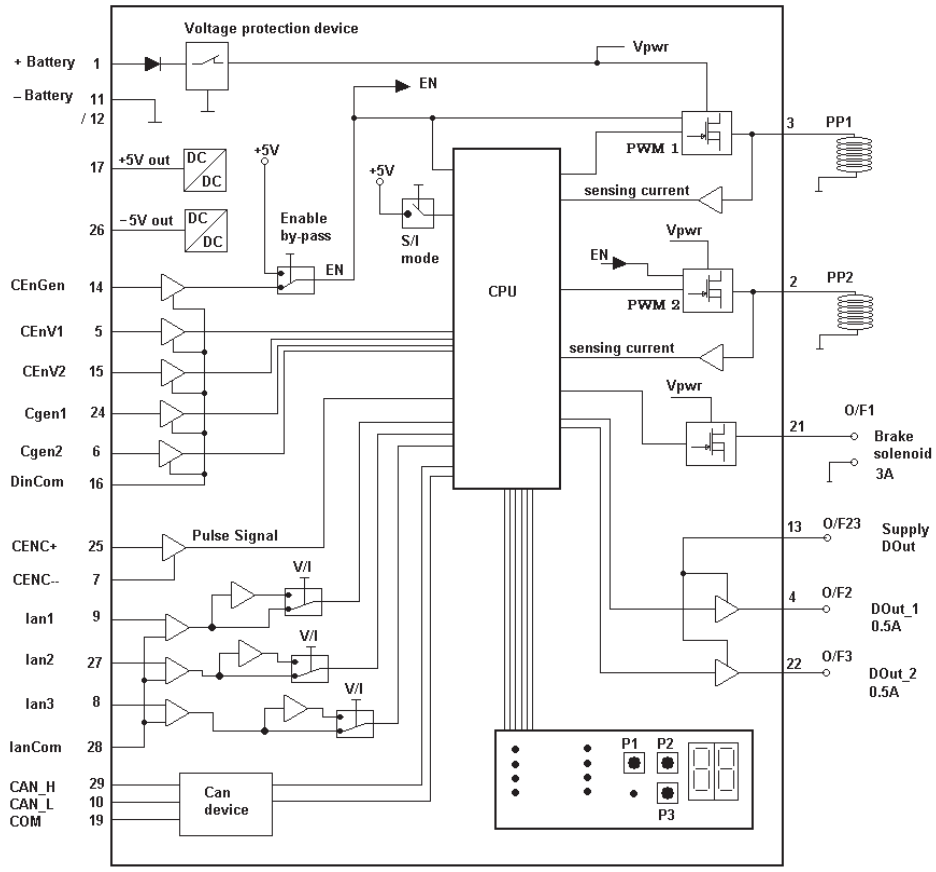
EN61000-6-1, EN61000-6-3

TECHNICAL DATA

Voltage supply	10 ÷ 30 VDC
Max input current	8 A
Max output current for each proportional channel	2.5 A
Max output current for brake control output	3 A
Analogue external reference signal for proportional control	±5V, or ±20mA
Resistance of external potentiometer	2KΩ ÷ 10 KΩ
Adjustable current rise time ramp	0 ÷ 20 sec
Adjustable current drop time ramp	0 ÷ 20 sec
Adjustable min. output current for each proportional channel	0 ÷ 50% of set Max output current
Adjustment of current gain for each proportional channels	50% ÷ 100% of Max current
Brake adjustment release	0 ÷ 50% of set Max output current
Connector	AMP 29 poles Connector and contacts included (*)
Operative environment temperature	-40°C ÷ +80°C
Protection degree	IP65 With correct connector assembling and wiring (*)

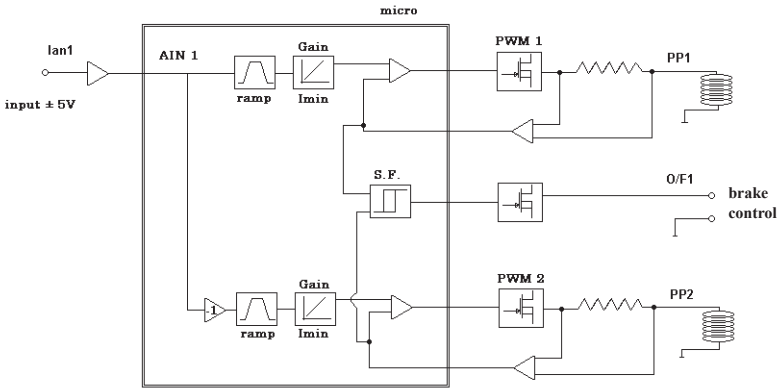
(*) It is responsibility of the customer the assembling and the wiring of the connector supplied with the SVP proportional card.

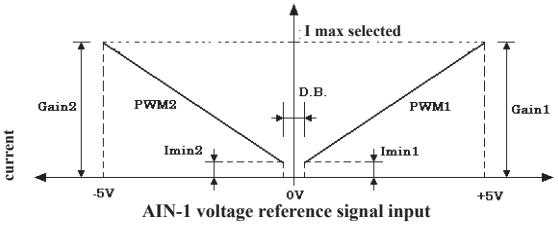
CONNECTION SCHEME



CHARACTERISTIC CURRENT OUTPUT CURVES

SYMMETRIC OPERATION OF THE PROPORTIONAL OUTPUTS





AIN-1 voltage reference signal input

D.B. = dead band
I min = offset minimum current
Gain = current gain

In this configuration, the command signal varies between -5V and +5V with 0V as the central value and the command signal is to be given on the analogue input Ian 1.

Any command signals sent to analogue input 2 of the board are ignored.

In symmetric mode, when the reference signal is between 0V and -5V, the proportional output PWM 1 (PP1) is off, while the proportional output PWM 2 (PP2) is on. When the reference signal on the other hand is between 0V and +5V, the proportional output PWM 1 (PP1) is on, while the proportional output PWM 2 (PP2) is off.

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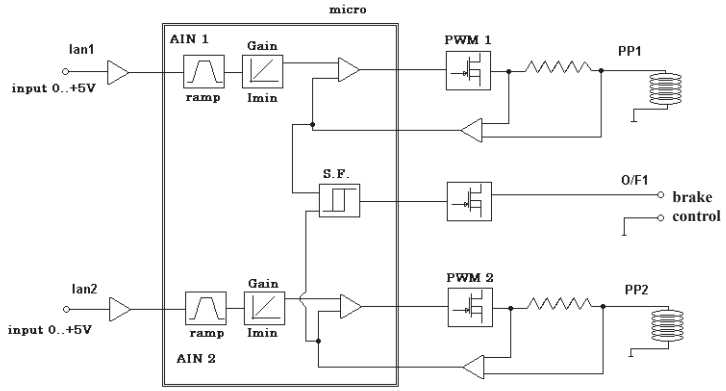
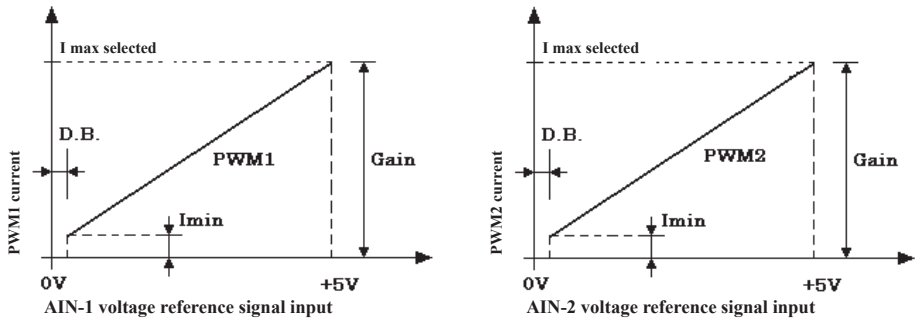
CHARACTERISTIC CURRENT OUTPUT CURVES

INDEPENDENT OPERATION OF THE PROPORTIONAL OUTPUTS



In this mode, the two outputs work independently and the proportional output PWM 1 (PP1) is controlled by the signal on the analogue input Ian 1 and the proportional output PWM 2 (PP2) is controlled by the signal on the analogue input Ian 2.



In this mode both proportional outputs may be on simultaneously.

D.B. = dead band
I min = offset minimum current
Gain = current gain

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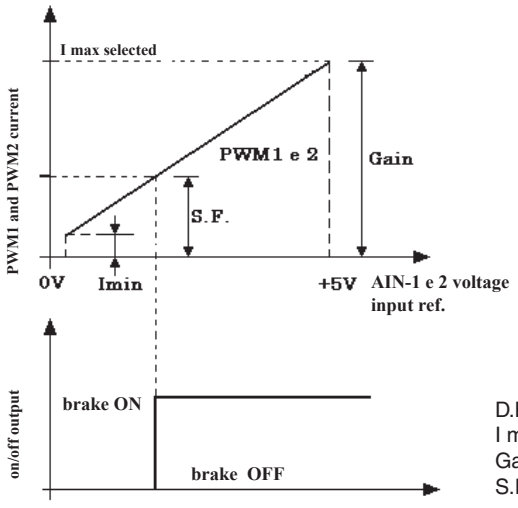
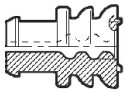
OUTPUT CHARACTERISTIC OF THE BRAKE COMMAND



Whatever the operating mode of the proportional outputs, be it symmetric or independent, the operating logic of the brake command is always the same. Set a current threshold value on the adjustment panel (SF). When the current on both proportional outputs drops below the set threshold (SF), the output of the brake is on. Whereas for the command output of the brake to be disabled, all it takes is for the current of one of the proportional outputs to exceed (SF).

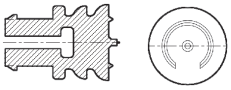
D.B. = dead band
I min = offset minimum current
Gain = current gain
S.F. = threshold brake release

SPARE PARTS AMP SEAL



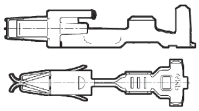
(Pack. 30 pcs.)

Single wire seal
CODE 828905-1*



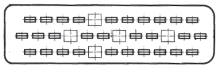
(Pack. 20 pcs.)

Plug cavity sealing
CODE 828906-1*

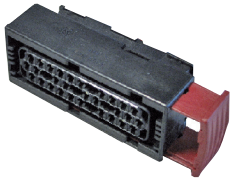


(Pack. 30 pcs.)

JPT contact
CODE 929937-3 o 929938-3*



Silicon facial sealing
CODE 963222-1*



JPT housing connector
(plug) 29P
CODE 963449-2*

* AMP code

Spare parts kit, gaskets, connectors and electrical contacts: V89960000

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