

VM Series Proportional Amplifier/Controller

FEATURES

- For use with Magtrol Hysteresis Brakes, Hysteresis Clutches
- Additional PI controller and signal amplifier
- Current control: < 1 A (Model VM6)
≤ 3 A (Model VM8)
- 5 kHz PWM switching frequency
- Narrow design (22.5 mm)
- Snap-on DIN rail mounting

DESCRIPTION

NOTE: Refer to the schematics on page 3 for reference numbers inside brackets.

The VM Series Proportional Amplifier/Controller is used to supply and control power (up to 3 A) to Magtrol Hysteresis Brakes and Clutches. The analog inputs of the amplifier/controller are designed for 10 V signals with two inputs switchable to 20 mA current input (using switches “S1” and “S2”).

The unit functions in two possible modes:

Proportional Amplifier (control loop)

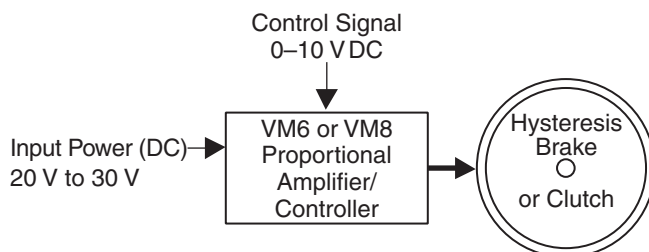
In this mode, the integrated controller stays disabled and a set value is activated at input [3]. At the maximum set value of 10 V, the output current is adjustable from 0 to 100% using potentiometer “R1”. “R3” shifts the zero point from 0 to 20%.



Proportional Controller to Set Up Control Circuits (for pressure, speed, etc.)

This mode requires enabling of the integrated PI controller via the control input [9] and activation of inputs [1] and [2] with set/actual values. With the PI controller in use, the reference value input [3] can be used as a summer input (if required). This allows the actuator to operate with a set value pilot control, with the controller only adjusting the set/actual value deviation, which considerably improves the stability and dynamics of the control circuit. The integrated adjustable signal amplifier can be used to align or invert the set/actual values.

SYSTEM CONFIGURATION



ORDERING INFORMATION

Model	Maximum Power Output
VM6	< 1 A
VM8	≤ 3 A

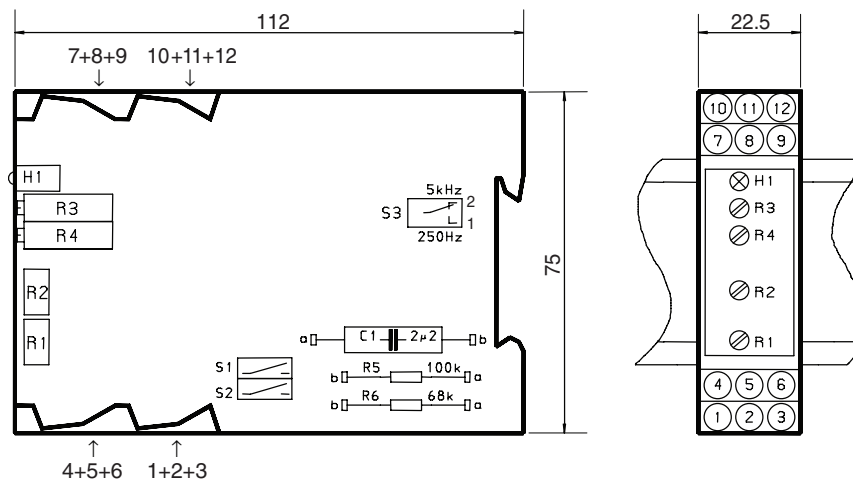
RATINGS

POWER CHARACTERISTICS	
Supply Voltage (U _V)	20 to 30 VDC; Ripple ±5%
Power Consumption	70 mA + Load current
Power Output I _{MAX} / V _{MAX}	VM6: < 1 A / U _V minus 2 V VM8: 1 – 3 A / U _V minus 2 V
Type of Load	Inductive loads only
Current Adjustment [through R1]	0 to 100%
Zero Displacement [through R3]	0 to 20%
Control Stroke [through R2]	0 to 100%
Switchable Clock Frequency [S3]	250 kHz (for proportional valves) 5 kHz (for brakes and clutches)
<ul style="list-style-type: none"> • Switch Setting 1 • Switch Setting 2 * 	
INPUTS/OUTPUTS	
Reference Value Input [3]	0 to +10 V RIN = 100 kΩ
Controller Enable [9]	15 to 30 V 5 to 12 mA
Controller Inputs [1+2]	0 to +10 V RIN = 100 kΩ
Signal Amplifier Input [4]	0 to ±10 V ** RIN = 95 kΩ **
Signal Amplifier Outputs [5+6]	0 to ±12 V max. 10 mA
Current Inputs [1+4]	0(4) to 20 mA Burden = 100 Ω
Terminals	Screw-type 2.5 mm ²
ENVIRONMENTAL CHARACTERISTICS	
Ambient Temperature	0 °C to 50 °C
MECHANICAL CHARACTERISTICS	
Housing	Gray insulation material
Device Mounting	Snap-on for TS-35 DIN rail

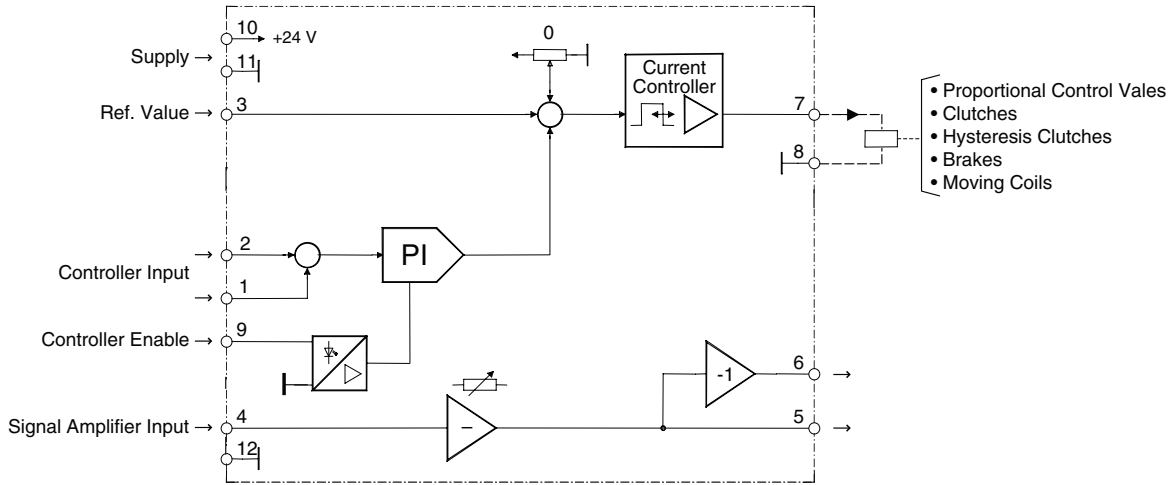
* For use with Magtrol Hysteresis Brakes, customer must manually switch to “2” position.
 ** Delivery default settings

NOTE: When used with Magtrol Hysteresis Brakes, the maximum torque available depends on the brake’s operating temperature. Please contact Magtrol Customer Service for more information.

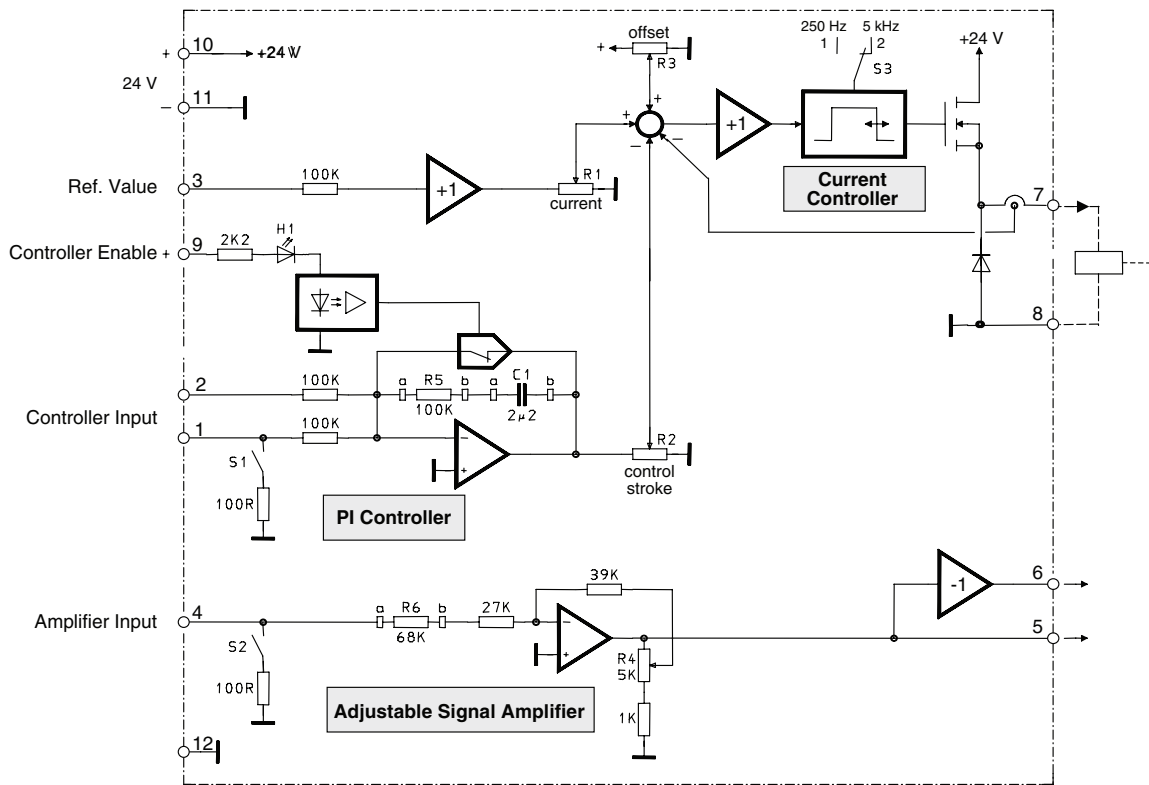
DIMENSIONS



GENERAL DIAGRAM



ELECTRICAL DIAGRAM



Due to the continual development of our products, we reserve the right to modify specifications without forewarning.



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