

# APM Motor Control

## for Governor Speed-Setting Motors

### Introduction

The APM (Advanced Permanent Magnet) Motor Control is designed for the Woodward 24 VDC PM Motor. It converts almost all types of input voltage to variable DC voltage (typically 24 VDC). The speed of the PM motor is set by this variable DC voltage.

### Description

With the combination of APM Motor Control and PM Motor, the PM motor keeps a constant speed when the load of the motor control cover is changed.

Two types of APM Motor Control cover most voltages and many applications with 24 VDC type PM motor.

### Adjustment

Use the potentiometer on the APM Motor Control to set the rate at which the PM motor changes the speed setting of the governor.

Adjust the potentiometer clockwise for a faster rate of speed reference change. Adjust the potentiometer counterclockwise for a slower rate of speed reference change.

The recommended output voltage of the APM Motor Control for the PM motor is 10–24 VDC.

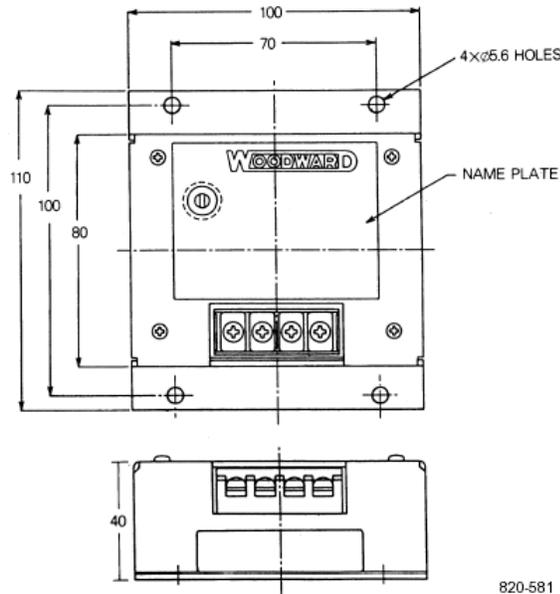
### Installation

The APM Motor Control requires a double-pole, double-throw switch in the output line. The rotational direction of the PM motor must be set according to the type of governor being controlled. Reverse the leads from the APM motor control to reverse the direction of the PM motor.

The metal mounting plate provides adequate cooling.

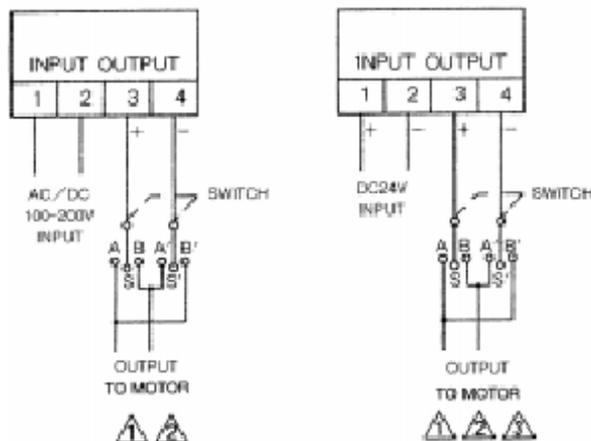
### Standard Electrical Specifications

Input Voltage	100–220 VAC/VDC 24 VDC $\pm$ 10%
Output Drive Voltage for Motor	0–24 V adjustable 0–4 V below input voltage



**Outline Drawing**  
(Do not use for construction)

- Convenient conversion of most voltage
- Alternating current and direct current models
- Direct current output
- Provides adjustable speed setting change rate
- Compact design
- Meets all RoHS 2015 criteria



## NOTES

- 1—Governor speed raise/lower corresponds to switch as follows:  
 Type UG—*Lower* = switch position A-A', *Raise* = switch position B-B'  
 Type SG, PSG, 3161—*Lower* = switch position B-B', *Raise* = switch position A-A'
- 2—Motor wire connections:  
 Sawamura—Red to B-A', Black to A-B'  
 Pittman—Red to A-B', Black to B-A'
- 3—Maximum output voltage is 4 volts lower than input voltage.

## NOTICE

**Do not stall the motor for a long time; it could burn out the motor or a PM Motor Control.**

## Replacement Information

When ordering a replacement, the part number shown on the nameplate must be mentioned. The controller should not be replaced until the reason for its failure is clearly known. Parts are not available separately. Woodward recommends a complete replacement if a controller failure is found.



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