

**Questions? – User’s Manual References**

**Note: all PWMC 400 documentation and software is available on our website**

- Feature Overview – Section 1.0
- Specifications and Pin Out – Section 2.0
- Installation Configurations – Section 3.0
- Quick Start Instructions – Section 3.1
- Analog Input Control Mode – Section 4.3
- RS-232 Interface – Section 4.4
- PWM Controller Configuration – Section 4.6
- Diagnostics – Section 5.3

**Questions? Diagnostics, is my unit working?**

An efficient method by which to conclude that the PWMC is connected properly and the output is working is to use a typical handheld DMM and measure the voltage across a load (does not have to be your device). A standard DMM will respond very slowly and will provide some “average” value that will change as the duty cycle is varied.

**Questions? – Support:**

Support for your application is available by contacting Applied Processor and Measurement, Inc. directly (contact info is below). E-mail or FAX us your intended application / connection and questions so that our engineers may best address your installation by understanding the intended use.

Web: [www.appliedprocessor.com](http://www.appliedprocessor.com)  
 Email: [support@appliedprocessor.com](mailto:support@appliedprocessor.com)  
 Phone: 716-741-1141  
 FAX: 716-741-1142

**Controller Information**

Model 400 PWM Controller Information

Serial Number(s): \_\_\_\_\_

DOM: \_\_\_\_\_

This unit is fused for operation at: \_\_\_\_\_

Fuse Installed: \_\_\_\_\_

Configuration

Default     Customer Requested\*

Frequency of Operation (Hz): \_\_\_\_\_

Duty Cycle Resolution:  
 1.0%     0.5%     0.2%

Control Type:  
 Analog Input     RS-232  
 \_\_\_\_\_ start-up duty %

Analog Input Action:  
 Normal     Reverse Acting

External Enable Input  
 On     Off

\* contact APM, Inc. at time of order for PWMC 400 units pre-configured to your specifications

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**NOTICE !**

*Read This First Before Proceeding*

**INSTALLATION GUIDE**

**MODEL 400  
PULSE WIDTH MODULATION  
DRIVER/CONTROLLER**

DOCUMENT NO. 00071-17



**Applied Processor and  
Measurement, Inc.**

Thank you for purchasing the Applied Processor and Measurement, Inc. Model 400 PWM Controller. We are pleased to provide this high quality, feature rich, and value minded product for use in your application.

The purpose of this guide is to ensure proper usage and installation of your Model 400 Pulse Width Modulation Driver / Controller (PWMC 400) for your application.

#### This guide will:

- describe what you need to control your device with the PWMC 400
- describe configuration of your PWMC 400 unit and refer you to the proper User's Manual references regarding configuration of the PWMC 400
- illustrate how to connect the PWMC 400 in a low side drive application
- provide references to the User's Manual for further information

#### What you will need to set up your application with the PWMC 400:

- your device that is to be driven by the PWMC 400
- a power supply capable of providing the voltage and current necessary to drive your device and power the PWMC 400 unit
- wire – 18 or 16 AWG preferred
- for analog control of the output duty cycle – an analog 0 to 5V DC control signal
- for RS-232 control of the output duty cycle – host computer or PLC

#### General Description:

The PWMC 400 provides a fixed frequency PWM output. The duty cycle is controlled either in proportion to a 0 to 5V DC analog signal, or an RS-232 command.

#### Configuration:

Prior to use, the PWMC 400 must be configured. Configuration involves setting:

- PWM output frequency
- output duty cycle resolution (1%, 0.5%, 0.2%)
- analog input control or RS-232 control (if RS-232 control, start-up duty cycle)
- normal or reverse acting analog operation
- enable or disable external enable feature

Factory default settings are 100Hz, 0.5% resolution, analog input, normal acting, and external enable on. The PWMC 400 must be configured using its serial port. Refer to the User's Manual sections 3.1 or 4.6 for details on configuring the unit.

#### Fusing:

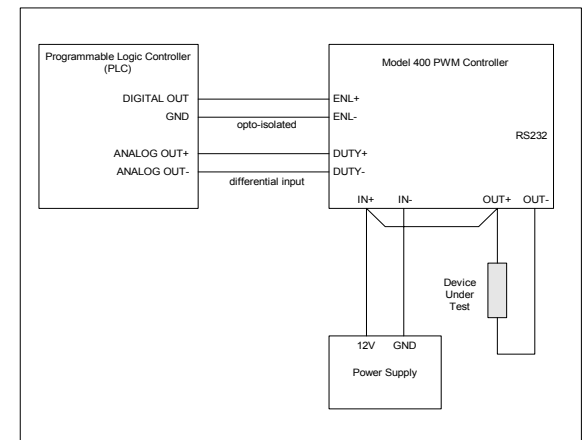
The PWMC 400 contains an internal fuse for protection of the unit's internal power MOSFET. This fuse is connected in series with the device (load) and will limit current to BOTH the load as well as the output drive electronics in the PWMC 400. The default fuse for the unit is 4A (chosen for 12V, max 50W application). A lower fuse value may be installed to better protect your device in your application.

#### Fusing (cont'd)

The fuse in the PWMC 400 is replaceable, however due to the construction (small size) of the unit, the fuse is only available from electronic distribution / component suppliers (see User's Manual section 3.3).

#### Connection:

A typical installation using the PWMC 400 in the low side drive configuration is shown in the figure below. Note that an external connection MUST be made from the positive (+) terminal of the output, and the positive terminal of the input on the PWMC unit. Refer to the User's Manual for other possible connection configurations (Section 3.0 Installation and Start-up).



Once power is applied to the PWMC 400, the unit will operate as configured (analog or RS-232 to PWM duty cycle out).