

Questions? – User’s Manual References

Note: all Model 400A 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
- USB 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 Model 400A is connected properly and the output is working is to use a typical handheld DMM and measure the voltage across a resistor 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
Email: support@appliedprocessor.com
Phone: 716-741-1141
FAX: 716-741-1142

Controller Information

<p><u>Model 400A PWM Controller Information</u></p> <p>Serial Number(s): _____</p> <p>DOM: _____</p> <p>This unit is fused for operation at: _____</p> <p>Fuse Installed: _____</p> <p><u>Configuration</u></p> <p><input type="checkbox"/> Default <input type="checkbox"/> Customer Requested*</p> <p>Frequency Input: <input type="checkbox"/> Analog Input <input type="checkbox"/> USB</p> <p>Frequency of Operation (Hz): _____</p> <p>Frequency Range (Hz): _____</p> <p>Duty Cycle Control Type: <input type="checkbox"/> Analog Input <input type="checkbox"/> USB _____ start-up duty %</p> <p>Duty Cycle Resolution: <input type="checkbox"/> 1.0% <input type="checkbox"/> 0.5% <input type="checkbox"/> 0.2%</p> <p>Analog Input Action: <input type="checkbox"/> Normal <input type="checkbox"/> Reverse Acting</p>

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

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NOTICE !

Read This First Before Proceeding

INSTALLATION GUIDE

MODEL 400A PULSE WIDTH MODULATION DRIVER/CONTROLLER

DOCUMENT NO. 00202-06



**Applied Processor and
Measurement, Inc.**

Thank you for purchasing the Applied Processor and Measurement, Inc. Model 400A 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 400A Pulse Width Modulation Driver / Controller for your application.

This guide will:

- describe what you need to control your device with the Model 400A
- describe configuration of your Model 400A unit and refer you to the proper User's Manual references regarding configuration of the Model 400A
- illustrate how to connect the Model 400A 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 Model 400A:

- your device that is to be driven by the Model 400A
- a power supply capable of providing the voltage and current necessary to drive your device and power the Model 400A unit
- wire – 18 or 16 AWG preferred
- for analog control of output duty cycle and frequency – analog 0 to 5V DC control signals
- for USB control of output duty cycle and frequency – host computer, or PLC

General Description:

The Model 400A provides a PWM output with the duty cycle and frequency controlled in proportion to a 0 to 5V DC analog input signal, or a USB command.

Configuration:

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

- PWM frequency control source, analog or USB and range of operation for analog input (100, 500, 1000, or 5000 Hz)
- duty cycle control source analog or USB, (if USB control, then the start-up duty cycle)
- output duty cycle resolution (1%, 0.5%, 0.2%)
- normal or reverse acting analog operation

Factory default settings are 100Hz, 0.5% resolution, analog input control of duty cycle, normal acting, and USB control of PWM frequency. Simply connect the Model 400A USB port to a PC (no other connections are necessary) and use our PC configuration utility. Refer to the User's Manual sections 3.1 or 4.6 for details.

Fusing:

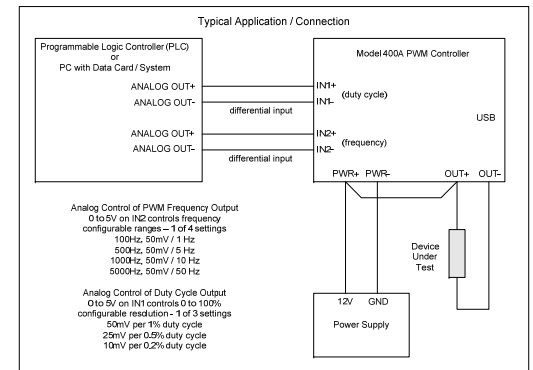
The Model 400A contains an internal fuse for protection of the unit's internal power MOSFET. This fuse is connected in series with the device (load) and will limit current to BOTH the load as well as the output drive electronics in the Model 400A. The default fuse for the unit is 4A (chosen for 12V,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

Fusing (cont'd)

The 4A fuse in the Model 400A is replaceable (replacement fuse – Littelfuse 0451004.MRL) Replacement fuses are available from electronic distribution / component suppliers. See User's Manual section 3.3 for part numbers and other fuse values.

Connection:

A typical installation using the Model 400A 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 Model 400A unit. Refer to the User's Manual for other possible connection configurations (Section 3.0 Installation).



Once power is applied to the Model 400A, the unit will operate as configured (analog or USB to PWM frequency and duty cycle out).

Note that the USB powers the Model 400A for configuration, but will **NOT** control the PWM output without applying PWR+/PWR- power.