PMC MODELS: 0.001-50 AMPERES

Product Features

- ▶ System Output: DC, High Frequency Pulse and Pulse Reverse.
- ▶ Current outputs from 0.001 to 50 amperes.
- ▶ Voltage output from 1 to 350 volts.
- ▶ Multiple options for control interfaces.
- ▶ Custom outputs and configurations available.
- ▶ Single or multiple cells with single or multiple output channels.
- ▶ Small package size: linear technology.

Product Overview

The PRO Series is a custom configurable, programmable, multi-channel power supply built to meet your requirements. All channels use linear technology for highly regulated outputs in either voltage or current regulation modes. All outputs are controlled and monitored with an onboard microprocessor using a web-based HTML graphical user interface. Also available is a Windows™ based host control software program operating through the host ports, or a PLC using formatted ASCII command strings.

The PRO Series has no standard models. Each system is designed to be customer configured for each end-user's application.

Standard Capabilities

Menus are accessible to provide a myriad of controls and monitoring, including.

- ▶ Real Time Cycle (RTC) Control and alarms
- ▶ Ampere Time Cycle (ATC) Control and alarms
- ▶ Ampere Time Totalizer
- ▶ Manual control settings
- ▶ Recipe control settings
- ▶ Recipe creation and storage
- ▶ Process data logging
- ▶ Constant current, constant voltage, and cross-over regulation modes
- ▶ Electronic overload, over-temperature, and short circuit protection

PERFORMANCE SPECIFICATIONS

Pulse Timing (Pulse Units Only)

Multiple pulse timing configurations are available. For example, a four-digit control can provide ON/OFF Pulse Timing and Direction Timing such as:

▶ Direction: 1-999 milliseconds
- Resolution: 1 millisecond

▶ ON/OFF: 0.01-999.99 milliseconds
- Resolution: 0.01 milliseconds

▶ Frequency Stability: A minimum of 0.05% over the operating temperature and voltage range

▶ Pulsed Output Waveshape: Square wave

Pulse Rise and Fall Times (Pulse Units Only)

▶ Typical rise and falls times are 20 microseconds maximum into a non-inductive load resistor of 1.66 ohm. Rise and fall times depend on model and load.

▶ Rise and fall times measured between 10-90% of pulse amplitude

▶ Overshoot of Output Current: in current regulation mode, shall be less than the greater of:
- 10% of the peak output current setting or 1% of the peak output current rating of the channel

Other Specifications (All Units)

▶ Line Regulation:
- Current Regulation Mode: +/- 1% of setting or +/- 0.01% of peak rating, whichever is greater
- Voltage Regulation Mode: +/- 1% of setting or +/- 0.1% of peak rating, whichever is greater

▶ Load Regulation:
- Current Regulation Mode: +/- 1% of setting or +/- 0.01% of peak rating, whichever is greater
- Voltage Regulation Mode: +/- 1% of setting or +/- 0.1% of peak rating, whichever is greater

▶ Temperature Stability: 0.2% of peak rating after 15 minute warm up

▶ Operating Temperature: 0-40 C

▶ Ripple: <1% RMS of maximum rated output voltage

Options

▶ Multiple cell configurations

▶ Multiple channels of output

▶ Individual channel control

▶ Extended Range™ capability

▶ Windows™-based control software (DynaComm II)

▶ Automatic calibration software (DynaCal II)

▶ Bias control

▶ Trickle current

▶ Arbitrary waveform control

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OPTIONAL FEATURES

Extended Range

For maximum accuracy and repeatability, the typical recommended operating range of a power supply is from 10-100% of the peak current rating of the power supply. Dynatronix offers a patented feature called Extended Range® to accommodate a wider range of outputs. With this feature, a power supply will maintain highly accurate outputs throughout a range of 0.1-100% of the peak output current rating. The power supply will automatically scale it's resolution to the appropriate range, based upon the operator's peak output settings. Any range changes made during the process are transparent to the operator.

Multiple Cell Configurations

A power supply may be configured with multiple cell output capability. Each cell is essentially a stand-alone power supply (note: in some configurations common bulk power source is utilized). Each cell features an individual microprocessor allowing for independent output control. Each cell may also have multiple output channels. Cells may be configured with a common cathode or a common anode.

Multiple Output Channels

Each cell of a power supply may be configured with multiple output channels. Each channel has independent output control, supplying current and voltage up to the maximum output rating of the power supply. A totalizer computes ampere-time of all channels together. In the standard configuration, some features, such as pulse timing settings and start/stop times, are common between channels.

Individual Channel Control

Power supplies with multiple output channels may be configured to start and stop independently from other channels. Each channel also features an individual ampere time counter. Pulse timing parameters remain common among all channels within a cell.

Bias Control

Allows a power supply to be programmed with a bias offset. One bias level can be set for all "forward" off times and a separate bias level can be set for all "reverse" off times. When a nonzero bias level is set, the output of the power supply will go to the bias level instead of zero during the off time. The bias level must use the same regulation mode that the peak setting is using. In current mode, the bias level can be set independently from the operating range which the peak setting is using.

DynaCal II Automatic Calibration Software

The DynaCal II Program (auto version) is designed to work with all Dynatronix Programmable Power Supplies. It can be used to calibrate both serial port and ethernet port controlled power supplies.

DynaCal II will perform all functions of calibration, one channel at a time, or it can calibrate multiple channels. Calibration parameters may be selected individually (fwd, rev, amps, volts), or can be completed automatically in sequence. Built in pauses between amps and volts allow changing loads as required. Built-in pauses between channels also allow changing a load from channel to channel if multiple loads are not available.

(Requires Agilent meter model number 34401A or EXtech 560/570 multimeter for semi-automatic operation.)