

Pacific Power Source Application Note



17692 Fitch

Irvine, California, USA 92614

1 800 854-2433

Tel: 949 251 1800 Fax: 949 756-0756

Mobile Power Conditioning Unit (MPCU)

Overview

The purpose of this application note is to familiarize the reader with the Mobile Power Conditioning Unit (MPCU) developed by Pacific Power Source. The MPCU is a fully integrated AC Power System mounted in a composite case for transportation and storage. Depending upon the application the MPCU can be utilized as a power conditioner, frequency converter, voltage converter, current source, or any number of other applications.

Mobile Configurations

The transit case is made of a composite polyethylene material with an extended double-lid used to store cables and manuals. The AC Source Operation Manual, the Controller Operation Manual, and any modification documentation are placed within the pouch inside the front cover of the transit case (The pouch is to be installed facing downwards so the zipper pull-tab does not damage the power converter front panel silkscreen). Within the case is an aluminum rack suspended on elastomeric shock mounts to help protect the power source during transport and storage. Slide rails are provided to facilitate mounting of the power source within the transit case. A relief valve and tie downs are also provided. A number of options are available. The following photos represent one of the many configurations Pacific has supplied:



MPCU with Front Cover removed showing 345ASX-UPC3 front panel



MPCU with rear cover removed showing rear 400Hz output receptacle on the 345ASX-UPC3 and input power cable



MPCU with covers in place; handles and pressure relief valve can be seen

Mobile Configurations (continued)

The MPCU pictured on the previous page is configured as a portable AC Frequency Converter. It is a fully integrated, “turn-key” AC Power System that converts 60Hz 440V shipboard power into the MIL-STD-704E nominal values of 3Ø, 400Hz, 115/200V Power. The AC Power Source used is a Pacific Power Source 345ASX-UPC3. Input power is applied via an unterminated input power cable. Output power is taken from an FSL4-FR type female receptacle installed in a custom junction box mounted on the rear of the AC power source.

Mechanical Options

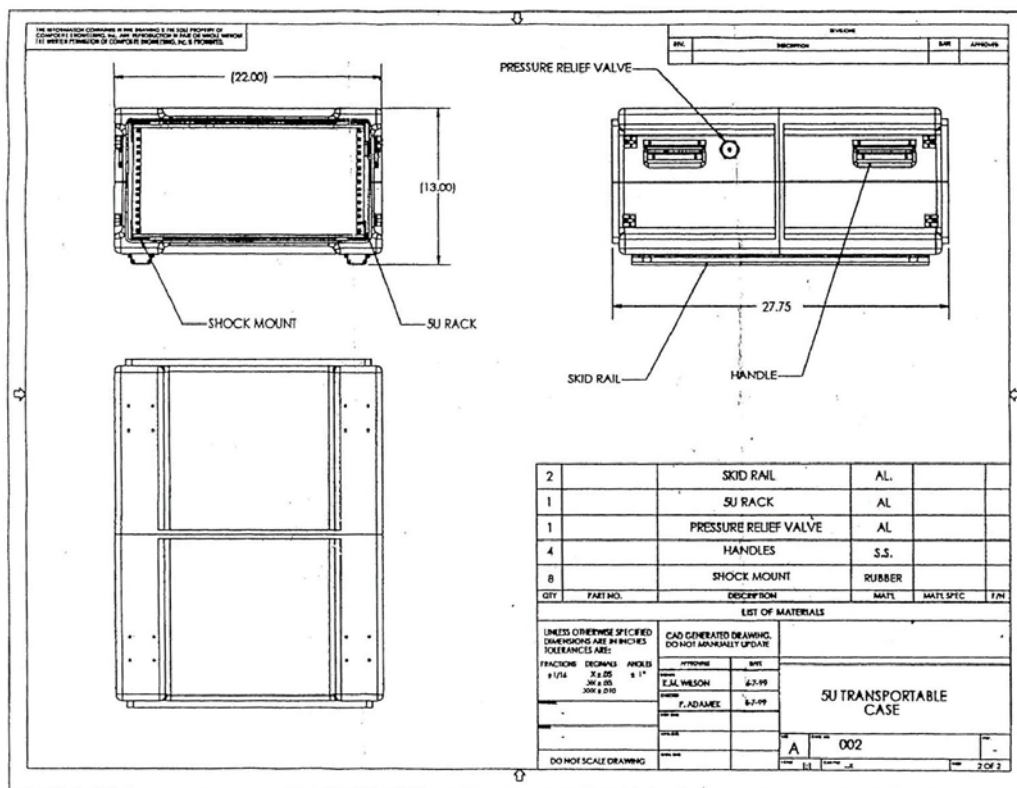
The following are some of the options Pacific has supplied with an MPCU. Please note this is only a sample of the MPCU options and the user should contact Pacific for specific applications or requirements.

- Output power receptacle
- Pressure relief valve
- Tie Downs
- Specialized name plate
- Input Power Cable (and connector if requested)
- Customer firmware

Operational Options

The AC Source utilized in the MPCU may be modified to meet specific application requirements. Pacifics’ AC Sources are configured with either manual or programmable controllers. The controllers can be modified in a number of ways to either restrict user access or to perform a specific function. Again, the following items are only a sample of potential modifications and the user should contact Pacific with a specific application or requirement:

- **Limit Inrush Current Surges** - An inrush surge limit circuit is added to minimize nuisance tripping of an appropriately trip rated (25Amp) shipboard branch circuit breaker during power converter turn-on sequence (315ASX).
- **Limited Front Panel Operation** - In this mode the front panel is used to monitor the values of voltage, frequency, current, etc. All control functions are disabled on the front panel. A non-obvious access code restricts calibration of the output voltage from the front panel to qualified personnel only. The RS232C remote interface provides unrestricted access to all standard controller functions.
- **Automatic Output Power On** - The AC power source will automatically enable its output when input power is applied.
- **Automatic CSC Operation** - CSC (continuous self-calibration) is automatically active after turn-on.
- **Fixed Output** - AC Power Source initializes a known state with a specific form, voltage, and frequency setting (i.e. 115/200V, 3Ø, 400Hz) at power up



Pacific Power Source, Inc.
James T. Lo Gudice
Sales Manager

Tel: 949-251-1800 Fax: 949-756-0756
jlogudice@pacificpower.com