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## QUESTIONS AND ANSWERS

### A1. Can I parallel multiple SW series units for higher current capability?

No, the SW series sources cannot utilize multiple standard chassis operated in parallel. The larger SW series units utilize a dedicated master unit, a current summing unit (the PDU) and 1 to 3 dedicated slave chassis. Your single chassis SW may be able to be converted to a master and have the PDU and slave(s) added at the factory to achieve higher current outputs. Contact <mailto:service@programmablepower.com> for more information.

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- A2. How do I place the output phases into parallel mode if I need single phase output that exceeds the phase current of my SW series source?

First, remove AC input power from the unit.

Second, fabricate jumpers that will tie the A, B and C outputs together.

Third, fabricate a similar jumper to tie the three neutrals together.

Fourth, attach the parallel outputs to your load.

Fifth, tell the SW to use the parallel outputs, either via the front panel or via GPIB. (NOTE: The output relay must be open in order to set the parallel mode to ON or OFF.)

Via front panel: Select the INSTR menu; at the bottom of the INSTR menu select the PARALLEL option; use the encoder to change the option to ON.

Via GPIB: Send the command, SYST:PARAL ON

Any program voltage setting will be removed and set to 0 when changing the parallel mode.

If you intend to use the SW in this mode for a more-or-less permanent condition, set the power-on defaults so that you do not have to set the parallel mode to ON each time the unit is turned on. See the FAQ on storing a set of parameters for the power up condition of the SW.

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- A3. Can I store a set of parameters for the power up condition for the SW?

Yes. First, set any parameters you need to keep (these may be voltage, frequency, Vlim, parallel mode, etc).

Next, select the SYSTEM menu from the front panel. In the SYSTEM menu, select USER. In the menu to the right, select SAVE SYSTEM CNFG and press ENTER. This will save your settings. **NOTE:** The output relay cannot be set to close on power up. The output relay always requires a front panel or GPIB command to close.

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- A4. Do I need to have a neutral connection on the input of my SW series source?

For some versions of the SW series, an input neutral is not required. Check the full model number that appears on the nameplate, which is located on the right side panel of the chassis when facing the front. An example model number would look like: SW5250A-1-3-2 or SW3500A-3-3-1. The first number after the initial seven-character grouping indicates the unit's input configuration. If the input configuration is a "1" (as in the first example model number) or a "3" (as in the second example model number), it utilizes a 3-phase input at a nominal 208V line to line, and does not require a neutral connection even though a neutral termination is provided on the input interface (it is not connected internally on these models). Other models in the series (their first number after the initial seven-character grouping, is a "2," a "4" or a "6") *must* have a neutral connection. Refer to the installation section of your manual for additional details on input power requirements (section 2.8).

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A5. Can I use the RS-232 port on the rear panel of the SW for controlling the device?

The RS232 serial port on the SW series units, is designed to support field upgrades of the firmware only. Some, but not all of the SCPI commands may function via this interface. However, the RS232 port was not intended for general communications and is therefore not recommended for control usage.

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A6. Can I remove the ground bonding jumpers (GND to NEUT) that tie the output neutral of my SW series product to the chassis ground?

Yes, the output neutral can be disconnected from the chassis. The output neutral can float only about 20V above the ground potential. Above 20V, a safety system shuts the SW output down and indicates a ground fault error message.

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A7. Can I connect my delta configuration load to the SW's wye output?

Yes, the output can drive a Delta load. Since the programmed voltage is referenced line-to-neutral, take this into consideration when setting a line-to-line voltage for your Delta load.

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A8. How do I use remote sense when using a Delta load?

The three phases will go to the appropriate remote terminations for the appropriate phases. The Sense Neutral will just be tied locally to the output Neutral termination.

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A9. Can I get more than 13A current output from my SW Series unit that is rated at 1750VA per phase, if my application is at a low voltage where the VA limit stays below 1750?

No. Even though your application demands may be less than the rated 1750VA limit, the amplifier can only provide a defined maximum current. The maximum rms current that can be delivered for voltages from 0 to 135V in the low range, is 13A. The maximum rms current that can be delivered for voltages from 0 to 270V in the high range, is 6.5A. Output voltage can reach 156V in the low range and 312V in the high range; however the maximum VA limit cannot be exceeded. E.g., at 140V output in the low range the current limit is 12.5A.

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A10. Can I get or modify an SW series source that can run on single phase input power at 120VAC?

No. The input power required to operate this product would demand more current than what is commonly available from 120V distribution.

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A11. Can the SW series phase lock to an external clock or to another AC source?

Yes. Check section 3.3.7.3 in the operation manual.

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A12. Can a clock signal output be provided for a frequency and/or phase reference?

Yes. Check section 3.3.7.3 regarding the system external sub-menu, in the operation manual.

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A13. Why do I not see an output voltage on the BNC connectors on the front panel?

The BNC type connectors on the front panel, labeled A, B, C, are a scaled signal that drives the amplifier stage. These do not have the full output voltage or current available. Rather, their purpose is to allow data acquisition equipment to react to events occurring. The scaling for these connections is approximately 1.25 Vrms for full-scale output of 156 Vrms for the low range (roughly 8mV/V), and 1.25 Vrms for full-scale output of 312 Vrms in the high range (roughly 4mV/V). These outputs are designed to drive a 1M ohm load.

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A14. If my sense leads disconnect, will the output voltage jump to full scale?

No. The SW utilizes an internal resistance to tie the sense leads to the output. If the sense leads disconnect, the output at the load will drop in voltage. The amount of drop depends on the resistance of the output cables and any contacts, switches etc. in the lines.

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A15. Can my SW operate on a 400Hz input?

If your model has the PFC input option, yes. You can determine the input option by the full model number that appears on the nameplate, which is located on the right side panel of the chassis when facing the unit's front panel. An example model number would look like: SW5250A-4-3-1 or SW3500A-3-3-2. The first number after the initial seven-character grouping indicates the unit's input option. If the input option is a "4" (as in the first example model number) or a "3" (as in the second example model number), then you have the PFC option. (If the first number after the initial seven-character grouping is a "1" or a "2," you have the Rectifier option, which cannot operate on a 400Hz input.

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A16. What are the differences among the SW series that have A, AE, L, M and S in the model numbers?

The first generation SW series did not have any letter suffix following the basic model number. The second generation units have the letter suffix in place. The **A** is the general purpose, single chassis version in the series. This model has improved performance over the non-letter first generation series. The **AE** is a special variant used for IEC testing that has a limited frequency range and output impedances that meet the requirements for IEC and flicker testing. The **L** is a frequency limited version (595Hz max.) of the A for export into regions that fall under U.S. Department of State restrictions on 3 phase sources. The **M** is the Master chassis in a multi chassis system. The **S** is the slave chassis for the multi chassis system.

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A17. Can I make multiple single chassis systems from a SW system built up with a master chassis and one or more slaves?

No. The slave chassis are just additional amplifiers and their associated input power converters. No front-end control is in place in these chassis since the master chassis supplies this function. Because the master chassis is modified to work with the system it was configured with, it will not have proper current limiting protection and is likely to be damaged.

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