

## PS-94 SERIES ACCESSORIES



**PROGRAMMING PLUGS (PP SERIES)**



**PARALLELING BOX (PB SERIES)**



**PARALLELING CONTROL BOX (PCB SERIES)**



**INTERCONNECTING CABLES (PPC, PBC AND IPC SERIES)**

To operate the PS-94 Series converters in a system configuration, interconnecting cables are needed. The PPC, PBC and the IPC Series cables have been developed as accessory items. Unitron provides cables at different lengths or will provide hook-up information so that its customers can fabricate the cables on-site when lengths are not easily predetermined.

This product was manufactured in a plant whose quality management system is registered to ISO 9001:2008.

## APPLICATION:

The accessories presented below are designed to facilitate the full range of capabilities offered by Unitron's PS Series frequency converters, whether the requirement is for a single or multiple system configuration. These accessories are for use with PS Series units that have paralleling and programming attributes. The accessories determine the output frequency and voltage configuration, and through paralleling, the system power capacity. Each PS Series converter is rated at either 3.0 or 3.5 kVA depending on parameters selected. Reference to the specific unit specifications will help determine which combination of accessories are needed to meet the requirements of a particular application.

## PROGRAMMING PLUGS (PP SERIES):

The programmable PS Series converters are provided with a programming plug. The specific PP Series plug is selected by determining the particular output parameters that are required. Multiple outputs from a single PS Series converter can be achieved simply by changing the type of plug inserted into the control receptacle (J3) located on the front panel of a PS Series converter. An output frequency can be selected (50, 60 or 400 Hz) as well as a single-phase (115v, 120v, 115/230v or 120/240v) or three-phase (115/200v or 120/208v) output voltage.

## PARALLELING BOX (PB SERIES):

PS Series converters can be operated in parallel (up to 5 units) using a PPC Series control cable and a PB Series Paralleling Box. This system arrangement facilitates a maximum **power grid expansion** of 15.0 kVA or 17.5 kVA, depending upon output configuration and number of units selected. The PB Series paralleling box determines system output frequency and voltage configuration. If a PS-94 Series converter should fail, the entire system will automatically shut down. Converter front panel diagnostics will identify the faulty unit. Disconnect of the power input and output cables (J1 and J2) of the faulted unit will allow a derated operation (by one unit) of the remaining units once their input power is removed and reapplied (rebooted). (See Figure 1.)

## PARALLELING CONTROL BOX (PCB SERIES):

System requirements often dictate the paralleling of power modules to assure adequate power availability during critical missions. Regardless of how reliable a power module may be, it will fail at some point. To decrease the probability of a power module failure causing a critical buss outage, one is able to parallel modules that in total will represent a power capacity greater than needed. Doing so results in having an (N+1) Redundant System where "N" is the number of parallel modules required at all times. Such a system must be able to automatically remove the failed module from the buss without causing an interruption. It should identify which module failed and provide both local and remote announcement of the failure. "HOT-SWAP" replacement of the module, again without disturbing the critical buss, should be possible if (N+1) Redundancy is to be restored during the mission. The PCB Series Paralleling Control Box, in conjunction with two or more (up to five) PS-94 Series converters, does all this and more. The PCB Series also determines system output frequency and voltage configuration. A PBC Series Paralleling Box Cable and an IPC Series Interconnect Power Cable are used, (one set per PS-94 Series converter selected) to complete the (N+1) Redundancy System offered by Unitron. (See Figure 2.)

