# QUICK START GUIDE

KEPCO An ISO 9001 Company.

**HSF -1UR**

SINGLE OUTPUT 1U
HOT SWAP PLUG-IN POWER SUPPLIES

## I — INTRODUCTION

SCOPE OF MANUAL. This Quick Start Guide covers the installation and operation of the Kepco HSF-1UR Series of Hot Swap Plug-in Power Supplies. Full specifications are listed in the applicable 50W, 100W or 150W HSF-1UR Operator Manual that can be downloaded from the Kepco web site at:

**www.kepcopower.com/support/opmanls.htm#hsf1ur**

These power supplies are designed to be installed in Kepco's RA 19-1U Rack Adapter. The RA 19-1U Operator Manual can be downloaded from the Kepco web site at:

**www.kepcopower.com/support/opmanls.htm#ra19-1u**

DESCRIPTION. The Kepco HSF-1UR Series power supplies come in 50W, 100W and 150W power ratings. Each group has 3.3V, 5V, 12V, 15V, 24V, 28V and 48V models (the 28V 50W models are only available on T, X, C and Y options). Power Factor Correction (PFC) is included in all models.

Units may be operated with a nominal 120V a-c/240V a-c (input voltage range 95 to 264 Va-c), 50-60 Hz (input frequency range 47-440Hz (at 440Hz leakage current exceeds UL/VDE safety spec. limit). They will also operate on 125V to 370V d-c input. Overvoltage protection is provided. Current limiting with automatic recovery from short circuit is featured. The 100W and 150W 3.3V units and all 50W models are convection cooled; all other 100W and 150W units use forced convection, ball-bearing fans, life expectancy 50,000+ hours.

OPTIONS. C option (-1URC) models include a current sensing resistor, allowing current monitoring within ±10% (contact Kepco if greater accuracy is required). X option models (-1URX) include the ability to turn the unit on/off from a remote location. Y Option models (-1URY) include both the current sensing resistor and remote on/off capabilities. T Option models (-1URT for 50W Series only) weigh less, and have improved efficiency (input current) specifications as well as one additional model (28V).

**TABLE 1. HSF -1UR HOT SWAP MODELS**

| SIZE | MODELS | | | | | | |
|---|---|---|---|---|---|---|---|
| | 3.3V | 5V | 12V | 15V | 24V | 28V | 48V |
| 50W | HSF 3.3-10-1UR | HSF 5-10-1UR | HSF 12-4.3-1UR | HSF 15-3.5-1UR | HSF 24-2.2-1UR | * | HSF 48-1.1-1UR |
| 100W | HSF 3.3-25-1UR | HSF 5-20-1UR | HSF 12-8.4-1UR | HSF 15-6.7-1UR | HSF 24-4.2-1UR | HSF 28-3.5-1UR | HSF 48-2-1UR |
| 150W | HSF 3.3-30-1UR | HSF 5-30-1UR | HSF 12-12-1UR | HSF 15-10-1UR | HSF 24-6.3-1UR | HSF 28-5.3-1UR | HSF 48-3.1-1UR |
| * MODELS HSF 28-1.8-1URT, HSF 28-1.8-1URX, HSF 28-1.8-1URC and HSF 28-1.8-1URY only. | | | | | | | |

## II — INSTALLATION

MOUNTING THE POWER SUPPLY. Refer to Figure and insert HSF-1UR power supply in selected slot until power supply front panel is flush with rack adapter chassis and secure with two front panel mounting screws.
**CAUTION: Do not overtighten these screws: max. torque is 2 in.-lbs (0.23 N x m).**

CONNECTIONS. All connections are made at the rear panel of the RA 19-1U Rack Adapter (see RA 19-1U Operator Manual). Connect the load to the applicable ± DC OUTPUT terminals. AC input power is applied via two INPUT POWER terminal blocks: one supplying slots 2 and 4, the other supplying slots 1 and 3. Make sure to connect the AC input Neutral, Line and Ground wires to the respective terminals of the terminal blocks.

REMOVAL. To remove a power supply, first use the POWER switch to turn off the unit. Then loosen the two mounting screws and extract the unit from the RA 19-1U Rack Adapter. **CAUTION: The ON/OFF switch must be set to OFF before removing the unit from the rack adapter.**

NOTE: MOUNTING SCREW MAX TORQUE: 2 IN.-LBS. (0.23 N x m)

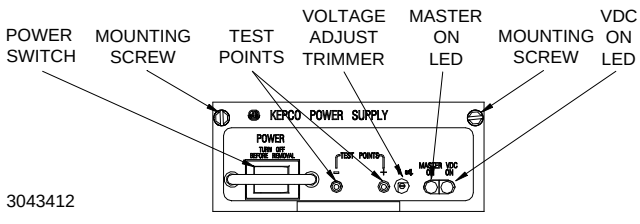


**FIGURE 1. COMPONENT LOCATIONS**

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## III — OPERATION

Turn the unit on using the front panel POWER switch (see Figure 1). **CAUTION: DO NOT repeatedly toggle the POWER on/off switch as this may cause unit to fault.**

When output voltage is available, the VDC ON LED is on (green). For 100W and 150W 5V through 48V models the VDC ON LED lights red to indicate a fan malfunction. The 100W 3.3V model and all 50W models use convection cooling and do not include a fan.

While monitoring output voltage at the front panel test points, the Output Voltage Adjust trimmer allows adjustment of the output voltage.

The 3.3V models do not use forced current sharing so the MASTER ON LED is always off. The MASTER ON LED for 5V through 48V models goes on under any of the three following conditions:

- Independent operation.
- Operation in a parallel master/slave configuration to indicate which unit is the master
- Operation in a parallel master/slave configuration to indicate that a slave unit is no longer within the proper specifications for paralleled units. Slave 1 should be optimally adjusted to 40mV less than master, slave 2 adjusted to 40mV less than slave 1, etc. The maximum allowable difference between paralleled units is 250mv. The minimum allowable difference between paralleled units is 25mV. If a slave exceeds these limits, the MASTER ON light goes on.

NOTES:

1. MASTER ON LED not used on 3.3V model: always OFF.
2. HSF models also share current when all units are adjusted to the same output voltage, however MASTER ON indicator may be lit on all units in parallel.

The following features of the HSF -1UR power supplies are covered in the applicable Operator's manual referenced on page 1.

- Parallel Operation
- Forced Current Sharing
- Current Monitoring (Option C and Y only)
- Remote On/Off (option X and Y only)
- Alarms
- Keying

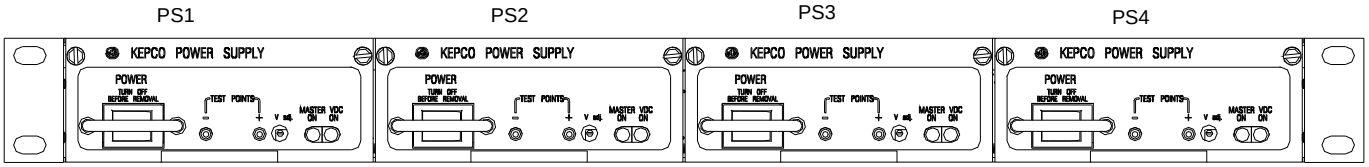


**FIGURE 2. HSF -1UR MODELS INSTALLED IN RA 19-1U RACK ADAPTER**