

# QUICK START GUIDE



**KEPCO** An ISO 9001 Company.

**RKW**  
Programmable

## SINGLE OUTPUT PROGRAMMABLE POWER SUPPLIES

### I — INTRODUCTION

**SCOPE OF MANUAL.** This Quick Start Guide covers the installation and operation of the Kepco RKW Series of PFC (Power Factor Corrected), RoHS (Reduction of Hazardous Substances) compliant, programmable switching power supplies. Full specifications are listed in the applicable Operator's Manual that can be downloaded from the Kepco web site:

- 300W: [www.kepcopower.com/support/opmanls.htm#rkw300](http://www.kepcopower.com/support/opmanls.htm#rkw300)
- 600W: [www.kepcopower.com/support/opmanls.htm#rkw600](http://www.kepcopower.com/support/opmanls.htm#rkw600)
- 1500W: [www.kepcopower.com/support/opmanls.htm#rkw1500](http://www.kepcopower.com/support/opmanls.htm#rkw1500)

**DESCRIPTION.** The Kepco RKW Programmable Series switching power supplies come in 300W, 600W and 1500W sizes (see Table 1). Each size has 3.3V, 5V, 12V, 15V, 24V, 28V and 48V models.

Units may be operated with a nominal 100V a-c to 240V a-c (input voltage range 85 to 265 Va-c), 50-60 Hz (input frequency range 47-66Hz). They will also operate on 110V to 370V d-c input. Overvoltage, overcurrent, overtemperature, fan failure and power failure protections and an isolated remote TTL ON-OFF control are provided for all models.

An LED "output voltage ON" light and an output voltage adjust trimmer are provided.

### II — INSTALLATION

**MOUNTING THE POWER SUPPLY:** Refer to Figure 1. The unit may be mounted on one mounting surface. Note the restrictions for maximum penetration of mounting screws (M4): 0.24 in (6 mm) from case. The air surrounding the power supply must not exceed the ambient values given in the graph in Figure 4.


**CONNECTIONS:** Figure 2 shows proper connection of one or more loads using either remote or local sensing. **If local or remote sensing is not configured, the unit will not work properly.** The unit is shipped with local sense cables in place for Local sensing. For remote sensing, remove the local sense cables and connect the +S and -S terminals to the load. Remote sensing compensation is up to 0.4V per load wire (0.15V for 3.3V models, 0.25V for 5V models). Transient recovery specs may not be met when remote sensing is used. If oscillations set off overvoltage protection, install one electrolytic capacitor (470 $\mu$ F min) between +S and + and one between - and -S terminals. The AC input power is applied via the terminal block. Make sure to connect the AC input Neutral, Line and Ground wires to the respective terminals of the terminal block (see Figure 3). **Sensing (either Local or Remote) MUST be used.**

TABLE 1. RKW OUTPUT RATINGS

Series	Rating	3.3V	5V	12V	15V	24V	28V	48V
RKW 300W	Model	3.3-70K	5-60K	12-27K	15-22K	24-14K	28-12K	48-7K
	Output Current (Amperes d-c)	70A	60A	27A	22A	14A	12A	7A
	Adjustment Range (Volts d-c)	1.8-3.6	3.5-6.0	7.2-14.4	10.5-18.0	16.8-28.8	19.6-33.6	33.6-52.8
RKW 600W	Model	3.3-150K	5-120K	12-53K	15-43K	24-27K	28-23K	48-13K
	Output Current (Amperes d-c)	150A	120A	53A	43A	27A	23A	13A
	Adjustment Range (Volts d-c)	1.8-3.6	3.5-6.0	7.2-14.4	10.5-18.0	16.8-28.8	19.6-33.6	33.6-52.8
RKW 1500W	Model	3.3-375K	5-300K	12-125K	15-100K	24-65K	28-55K	48-32K
	Output Current (Amperes d-c)	375A	300A	125A	100A	65A	55A	32A
	Adjustment Range (Volts d-c)	1.8-3.6	3.5-6.0	7.2-14.4	10.5-18.0	16.8-28.8	19.6-33.6	33.6-52.8

STANDARD MOUNTING

KEY:

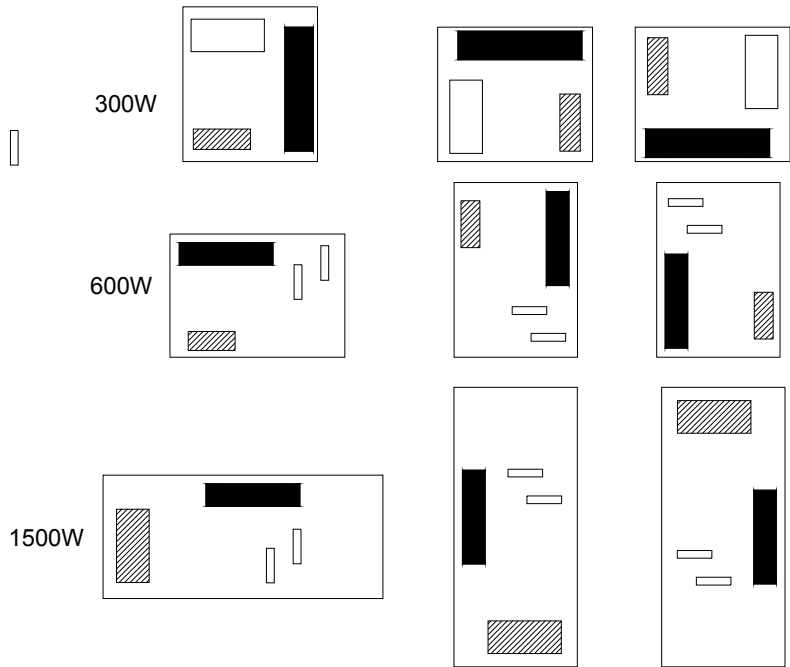
AC INPUT TERMINALS: 

SIGNAL TERMINALS: 

DC OUTPUT TERMINALS/BUS:  OR 

NOTE:

MAINTAIN A 1.25 IN. [30 MM] DISTANCE (2.0 IN. [50MM] FOR 600W) BETWEEN VENTILATION HOLES, FAN SURFACE AND SURROUNDING EQUIPMENT AND INSTALL SO AS TO PROVIDE ADEQUATE HEAT EXCHANGE TO OUTSIDE AIR.



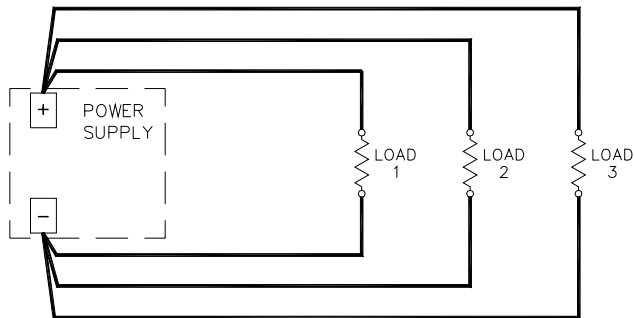
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FIGURE 1. POWER SUPPLY MOUNTING

CORRECT METHOD WITH SENSING AT OUTPUT TERMINALS (LOCAL SENSING)

300W AND 600W: INSTALL LOCAL SENSE CABLE TO CONNECT + TO +S AND - TO -S.

1500W: INSTALL LINKS BETWEEN +M AND +S AND -M AND -S.

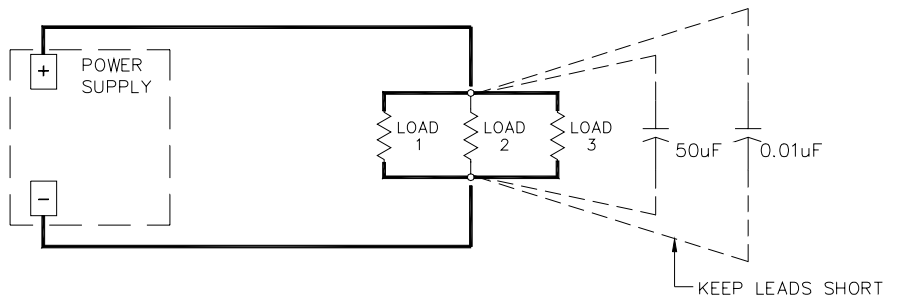


CORRECT METHOD WITH SENSING AT LOAD (REMOTE SENSING)

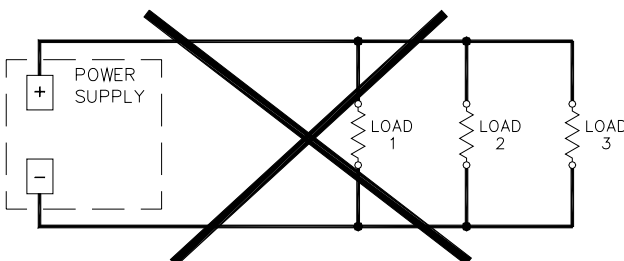
USE TWISTED WIRES TO CONNECT +S TO LOAD +COMMON AND -S TO LOAD -COMMON.

300W AND 600W: REMOVE LOCAL SENSE CABLE CONNECTING + TO +S AND - TO -S.

1500W: REMOVE LINKS BETWEEN +M AND +S AND -M AND -S.



INCORRECT METHOD



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FIGURE 2. LOAD CONNECTIONS

### III — OPERATION

When output voltage is available, the green LED is on. The Output Voltage Adjust trimmer (see Figure 3) allows adjustment of the output voltage.

**REMOTE ON-OFF CONTROL:** When remote ON/OFF is not in use,  $\pm$ RC terminals must be shorted (use shorting link supplied) for unit to operate. Remove short across  $\pm$ RC and apply "high," 2.4V to 24V (or open), across  $\pm$ RC to turn unit OFF (Fan Off). Apply "low," 0.0V to 0.4V (or closed) across  $\pm$ RC to turn unit ON. Source current is 1.6mA maximum at low level, and sink current is 1.0 mA maximum at high level. The  $\pm$ RC terminals are isolated from the a-c input terminal and the DC output terminals.

**REMOTE VOLTAGE PROGRAMMING:** In addition to the integral trimmer, output voltage can be also be adjusted via an external variable resistance or external variable d-c voltage. Refer to the Operator's Manuals listed on page 1 for details.

**PARALLEL OR SERIES OPERATION:** Power Supplies can be connected in parallel (with or without N+1 redundancy) for increased current or in series for increased voltage. Refer to Operator's Manual listed on page 1 for details.

**PRELIMINARY ELECTRICAL CHECK** To verify power supply functionality, refer to Operator's Manual listed on page 1.

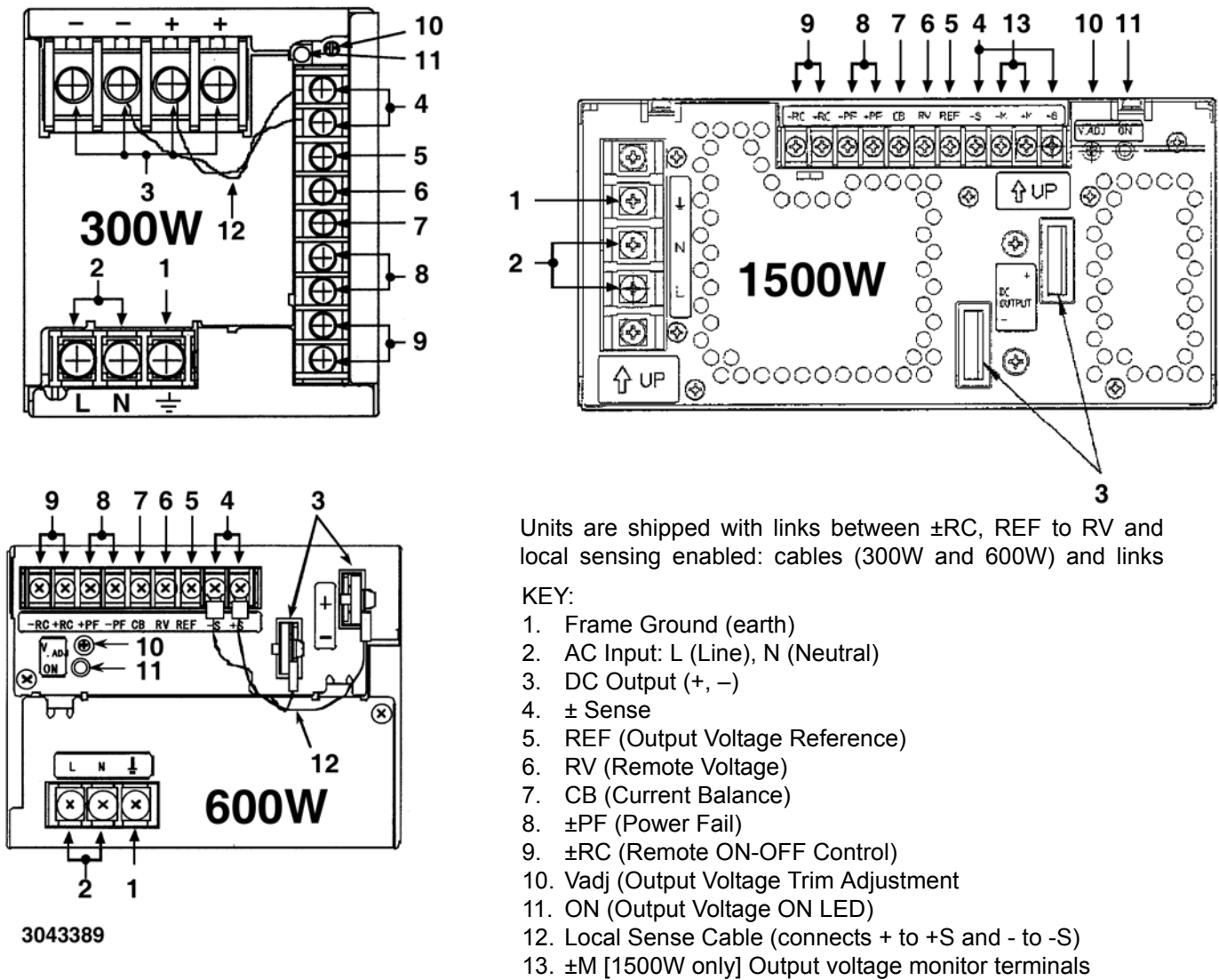
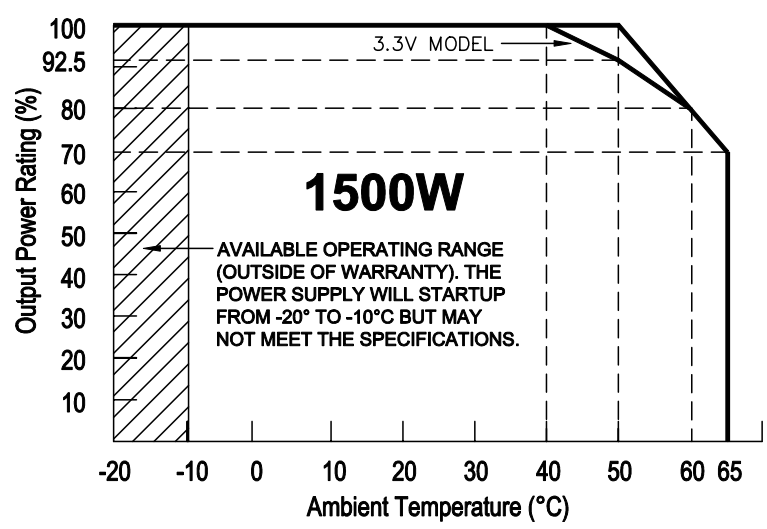
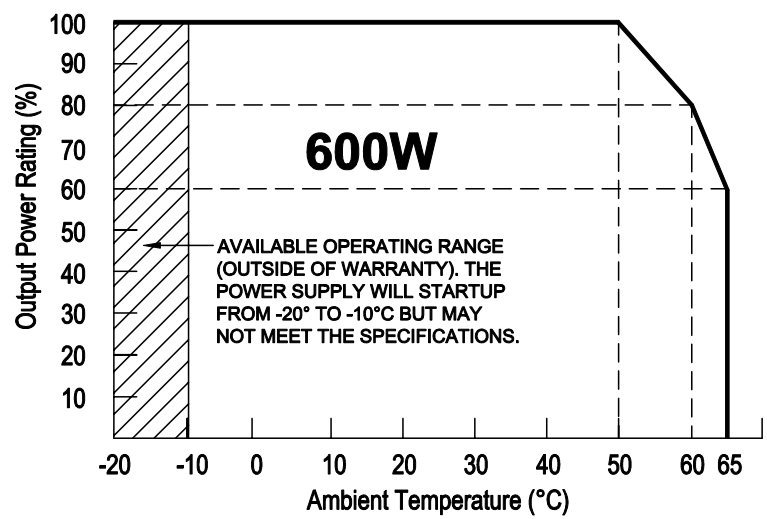
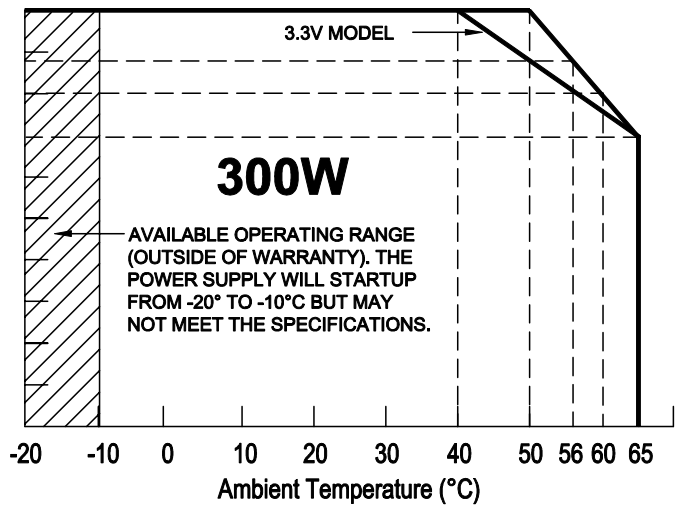


FIGURE 3. COMPONENT LOCATIONS



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FIGURE 4. OUTPUT POWER VS. TEMPERATURE