

## 500-VA DC-TO-AC INVERTERS 120-VAC, SINE-WAVE OUTPUT

- 12, 24, 48 OR 130-VDC INPUT
- HEIGHT 1.75" (1 RACK SPACE)
- ISOLATED, REGULATED, FREQUENCY-STABLE OUTPUT
- APPROX. 90% EFFICIENT
- RUGGED, CONSERVATIVE DESIGN
- AVAILABLE WITH INTEGRAL HIGH-SPEED TRANSFER SWITCH FOR UPS/STANDBY-POWER APPLICATIONS
- AVAILABLE WITH OR WITHOUT AC POWER METER



Model 1745-48-120-60-U



Model 1765-48-120-60-U

Conservatively rated, electrically rugged and highly efficient, the Series 1745 and 1765 dc-to-ac inverters provide a regulated, frequency-stable, 120-Vac sine-wave output at up to 500 volt-amperes. Standard versions of the inverters permit operation from 12, 24, 48 or 130-volt station batteries or other widely fluctuating DC sources in ambient temperatures up to 50°C. Series 1745 inverters are not metered, whereas Series 1765 inverters feature a front-panel output meter that displays voltage, current, real power and power factor.

The inverters' low-distortion sine-wave output makes them particularly well-suited for powering sensitive electronic loads, such as telecommunication and data processing equipment (with or without power-factor-corrected power supplies), as well as loads normally considered difficult for inverters, such as small motors.

Both the Model 1745 and the Model 1765 are available as a plain inverter or, optionally, as an inverter that features built-in automatic load switchover capability to permit operation in UPS or stand-by power modes. The 1.75 inch (1U) rackmount package is compatible with both 19-inch and 23-inch standard equipment racks.

Standard versions provide 60Hz sine-wave outputs. 50Hz models are also available.

Table 1

Nominal Input Voltage (Vdc)	Input Voltage Range (Vdc)	Input Current No Load <sup>1</sup> (A <sub>dc</sub> )	Input Current Full Load <sup>2</sup> (A <sub>dc</sub> )	Full Load Efficiency <sup>1</sup> (Typical)	Model Number <sup>3</sup>
12	10.5-14.5	2.26	54.7	87%	17xx-12-120-60-x
24	21-29	1.06	26.4	90%	17xx-24-120-60-x
48	42-58	0.56	13.2	90%	17xx-48-120-60-x
130	105-145	0.24	5.22	90%	17xx-130-120-60-x

<sup>1</sup>Typical plain inverter (no switchover capability) at nominal input voltage

<sup>2</sup>Typical at minimum input voltage

<sup>3</sup>See reverse side for complete model numbering information.

## SPECIFICATIONS

### Input Voltage and Current

The nominal input voltage, the input voltage range, the no-load input current and the full-load input current are shown in Table 1.

### Output Voltage

118 Vac nominal, single phase

### Frequency

60 Hz nominal (50 Hz optional):  
 $\pm 0.01$  Hz maximum variation over the full range of load and input voltage changes (crystal controlled)

### Volt-Ampere Rating

500 VA

### Output Voltage Regulation

$\pm 1\%$  versus dc input line  
 $\pm 3\%$  versus load

### Output Voltage Wave Shape

Sine wave with 1%-3% total harmonic distortion (typical)

### Efficiency

Typical full-load operating efficiencies and no-load input currents for each model are shown in Table 1

### Temperature Range

Operating:  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$   
 Storage:  $-40^{\circ}\text{C}$  to  $+95^{\circ}\text{C}$

### Protection

Protection against output overload (including short-circuit) and input under-voltage is provided electronically. Recovery to normal operation is automatic upon removal or correction of fault conditions. A front-panel circuit breaker is provided in series with the dc input to protect against accidental reversal of dc input polarity during installation.

### Front-Panel Controls and Indicators

A combination circuit breaker and ON/OFF switch is provided for dc input power. **U** and **L** versions include three LED status indicators (see "U Version" and "L Version" descriptions below).

For Series 1765 models, an AC power meter is provided for assessing output power conditions including true-rms AC potential in Volts, true-rms AC current in Amperes, real AC power in Watts, and AC power factor.

### Mechanical Description

Figure 1 provides overall dimensions. Weight is approximately 15 lbs. Brackets are provided for 19-inch or 23-inch rack mounting.

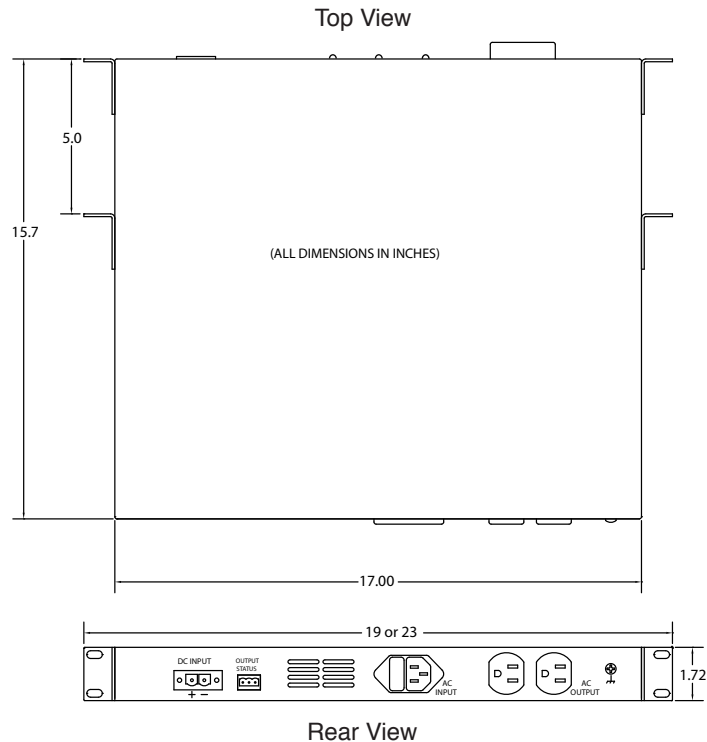


Fig. 1 Overall dimensions. Inverter shown is U or L version.

### Standard Configurations

**P VERSION:** Adding the suffix **P** to the basic model designates a plain inverter, i.e. a unit with no internal inverter-to-line or line-to-inverter transfer switching provisions ("line" refers to commercial ac power). This version does not have the front-panel LED status indicators, rear-panel ac-line inlet or rear-panel alarm contacts.

**U VERSION:** Adding the suffix **U** to the basic model number designates the inverter-preferred UPS configuration. In this configuration, the inverter normally provides load power. However, if the inverter output is interrupted, an internal transfer switch automatically transfers the load from the inverter to line. The transfer time between inverter and line is less than one ac cycle. Such transfers are normally not detected by even highly sensitive loads. This version includes auxiliary Form C contacts for remote indication of alarm conditions, a fused ac-line inlet and three front-panel LED status indicators.

**L VERSION:** Adding the suffix **L** to the basic model number designates a unit which is identical to the "U" version except that, in the L configuration, the load power is normally provided by the line and the inverter operates in the standby mode. If commercial ac power is interrupted, an internal transfer switch automatically transfers the load to the inverter. Upon restoration of commercial ac power, there is a delay of

approximately four seconds after which the load is transferred back to commercial ac power and the inverter again operates in the standby mode. Other features such as transfer speed, alarms, indicators, etc. are the same as in the U version.

### Model Numbering Information

For ordering purposes, Series 1745 and 1765 inverters should be identified by a string of product description designators in the following sequence:

- 500 VA sine-wave inverter, no meter (1745) with meter (1765)
- input voltage (12, 24, 48 or 130)
- output voltage (120)
- output frequency (60 or 50)
- configuration (P, U or L version)

For example, the correct part number for a 60 Hz inverter with a 48-volt input, the inverter-preferred UPS configuration option and an AC power meter is Model 1765-48-120-60-U.

### OTHER WILMORE PRODUCTS

For information about other Wilmore dc-to-ac inverters or for information about other power-conditioning products such as switching power supplies, dc-to-dc converters, and custom power solutions, please contact our sales department.

Information provided in this bulletin is subject to change without notice.

**WILMORE ELECTRONICS COMPANY, INC.**

P. O. Box 1329, Hillsborough, N. C. 27278 • Telephone (919) 732-9351 • FAX (919) 732-9359

[www.wilmoreelectronics.com](http://www.wilmoreelectronics.com)