

# 1000-VA DC-TO-AC INVERTER

## 120-VAC, SINE-WAVE OUTPUT



Model 1746-48-120-60-U

### FEATURES

- 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

Conservatively rated, electrically rugged and highly efficient, the Model 1746 dc-to-ac inverter provides a regulated, frequency-stable, 120-Vac sine-wave output at up to 1000 volt-amperes. Standard versions of the inverter permit operation from 24, 48 or 130-volt station batteries or other widely fluctuating DC sources in ambient temperatures up to 50°C.

The inverter's low-distortion sine-wave output makes it 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.

The Model 1746 is 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> (Acd)	Input Current Full Load <sup>2</sup> (Acd)	Full Load Efficiency <sup>3</sup> (Typical)	Model Number <sup>4</sup>
24	21-29	1.0	53.5	90%	1746-24-120-60
48	42-58	0.4	25.8	92%	1746-48-120-60
130	105-145	0.18	10.3	92%	1746-130-120-60

<sup>1</sup>Typical plain inverter (-P) at nominal input voltage

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

<sup>3</sup>Typical at nominal input voltage

<sup>4</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

1000 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  $+50^{\circ}\text{C}$   
 (internal fan cooling)  
 Storage:  $-40^{\circ}\text{C}$  to  $+95^{\circ}\text{C}$

### Protection

Protection against output overload (including short-circuit), input under-voltage and input over-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).

### Mechanical Description

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

### Standard Configurations

**P VERSION:** Adding the suffix **P** to the

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 1746 inverters should be identified by a string of product description designators in the following sequence:

- 1000 VA sine-wave inverter (1746)
- input voltage (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 and the inverter-preferred UPS configuration option is Model 1746-48-120-60-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 uninterruptible power systems, please contact our sales department.

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

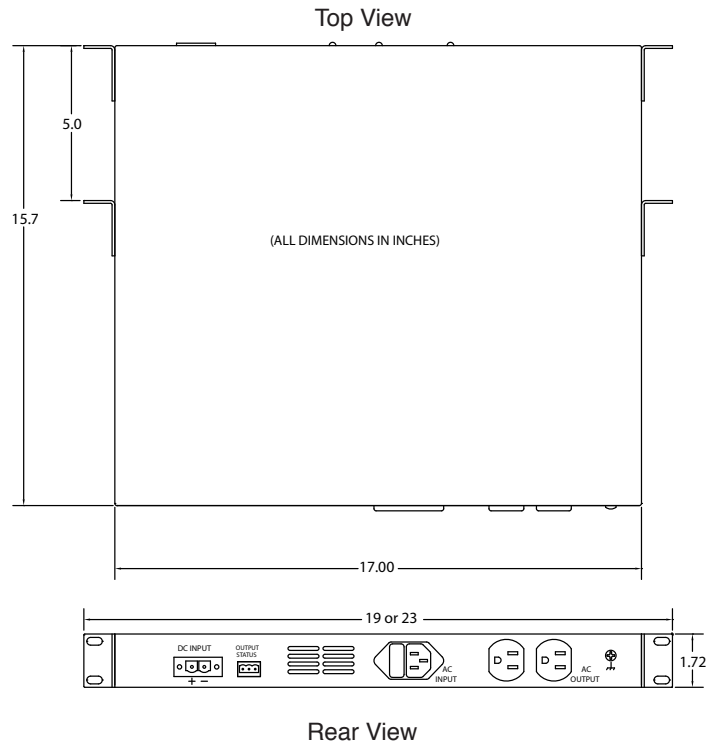


Fig. 1 Overall dimensions. Inverter shown is U or L version.

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