

50-VA DC-TO-AC INVERTERS

120-VAC, 60-HZ OUTPUT



Model 1405-12-120-60



Model 1405R-12-120-60-U

FEATURES

- **ISOLATED, REGULATED FREQUENCY-STABLE OUTPUT**
- **12, 24 OR 48 VDC INPUT**
- **FLANGE-MOUNT OR RACK-MOUNT ENCLOSURE**
- **AVAILABLE WITH INTEGRAL HIGH-SPEED TRANSFER SWITCH FOR UPS/STANDBY-POWER APPLICATIONS**

Designed as a rugged, cost-effective inverter for low-power industrial and telecommunications applications, the Series 1405 provides 50 volt-amperes in a choice of compact enclosures. These inverters supply a well-regulated, 120-Vac, frequency-stable quasi-sine-wave output. Standard versions of the inverter permit operation from 12-Vdc, 24-Vdc, or 48-Vdc battery sources. For operation in a -10°C to +50°C ambient, only simple convection cooling is required.

The Series 1405 inverters' conservative design makes them particularly well-suited for powering sensitive electronic loads, such as radio transceivers and data processing equipment, as well as loads normally considered difficult for inverters, such as small motors and ac-dc power supplies.

Two mechanical configurations are available: a robust enclosure with mounting flanges for mobile or stationary installations (Model 1405), and a compact, 1.75"-high, rack-mount package (Model 1405R) compatible with both 19-inch and 23-inch standard equipment racks. Furthermore, the rack-mount Model 1405R 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 standby-power modes.

Table 1

Nominal Input Voltage (VDC)	Input Voltage Range (VDC)	Input Current No Load ¹ (ADC)	Input Current Full Load ² (ADC)	Efficiency ²	Heat Dissipation ² (BTU/hour)	Model Number ³
12	10.5 -15	0.3	6.7	72%	64	1405-12-120-60
24	21-29	0.2	3.0	80%	42	1405-24-120-60
48	42-58	0.1	1.5	80%	42	1405-48-120-60

¹Typical at no load and nominal input voltage

²Typical at full load and minimum input voltage

³See 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 nominal¹, single phase

Output Voltage Regulation

±5.0% vs. dc input line and output load

Output Voltage Waveshape

Three-level stepped approximation to a sine wave with peak, average and rms values approximating those of a sine wave.

Volt-Ampere Rating

50 VA

Frequency

60 Hz nominal. ±0.25 Hz maximum variation over the full range of load and input voltage changes.

C-Message-Weighted Noise

Noise fed back to a typical stationary battery source is less than 32 dBmC.

Efficiency

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

Temperature Range

Operating: -10°C to +50°C
Storage: -40°C to +85°C

Protection

A front-panel circuit breaker is provided in series with the dc input to protect against output overloads and 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. Rack-mount **L** and **U** option models include an ac-line fuse and three LED status indicators (see “L version” and “U version” descriptions below).

Model 1405R (Rack-mount) Configuration Options

P VERSION: Adding the suffix **P** to the basic model number 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 front-panel LED status indicators, ac-line fuse, or 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 commercial ac power. The transfer time between inverter and line is short (2 msec. typical) and such transfers are normally not detected by even highly sensitive loads. This version includes auxiliary Form C contacts for remote indication of alarm conditions, three front-panel LED status indicators and an ac-line fuse.

¹As measured with a conventional average-responding, rms-calibrated voltmeter

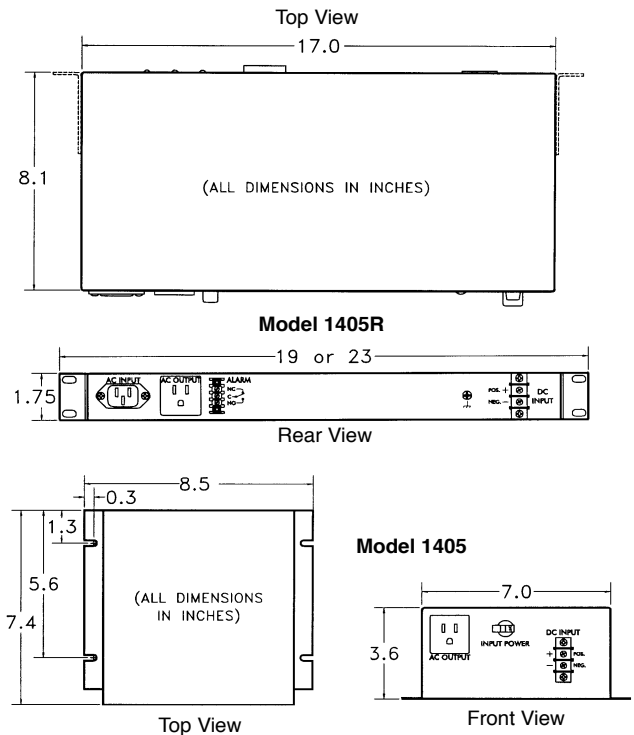
Information provided in this bulletin is subject to change without notice.

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 commercial ac 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.

Mechanical Description

Figure 1. provides overall dimensions for standard enclosures. Unit weights are approximately 10 lbs for flange-mount (1405) models, and 13 lbs for the rack-mount (1405R) models. Brackets are provided for 19-inch or 23-inch rack mounting.

Fig.1 Models 1405R & 1405 Overall Dimensions



MODEL NUMBERING INFORMATION

For ordering purposes Series 1405 inverters should be identified by a string of product description designators in the following sequence:

- Flange-Mount or Rack-Mount
- Enclosure Type: 1405 or 1405R
- Nominal Input Voltage: 12, 24, or 48
- Output Voltage: 120
- Output Frequency: 60
- Configuration (rack-mount versions only) P, U, or L (1405R only)

For example, the correct part number for a rack-mount inverter with a 48-volt input and the inverter-preferred UPS configuration option is **Model 1405R-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.

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