Wilmore ELECTRONICS CO., INC.
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MODEL 1702
DC-AC INVERTER

BULLETIN NO. 2032C

2,000-VA DC-TO-AC INVERTERS
115-VAC SINE-WAVE OUTPUT

Model 1702-48-115-60

FEATURES

- **2,000 VA IN TWO RACK SPACES (HEIGHT 3.5”)**
- **ISOLATED, REGULATED LOW-DISTORTION OUTPUT**
- **QUARTZ CLOCK FREQUENCY STABILITY**
- **80%–85% EFFICIENT**
- **EXTERNAL AUTO-TRANSFER SWITCH AVAILABLE FOR UPS / REDUNDANT-POWER APPLICATIONS**

Designed for space-limited applications within the telecommunications, data processing and utility industries, the Model 1702 dc-to-ac inverter provides up to 2,000 volt-amperes in only 3.5 inches of vertical rack space. The inverter produces a well-regulated 115-Vac, frequency-stable 60-Hz sine-wave output from station batteries or other dc sources. Standard versions permit operation from either positive or negative 48-Vdc or 130-Vdc sources because the dc input is galvanically isolated from the ac output and from the chassis. The inverter is compact, lightweight and compatible with either 19-inch or 23-inch equipment racks.

The Model 1702 is well-suited for powering a variety of loads, from sensitive communications and SCADA equipment to loads normally considered difficult for inverters, including small motors and other reactive or high-surge loads. With the addition of Wilmore’s Model 1704 automatic transfer switch, the inverter can function as the primary or backup ac source for applications requiring uninterruptible / redundant power. Conservatively designed and well-protected against external faults, the Model 1702 dc-to-ac inverter is ideal for powering waveshape-sensitive and frequency-sensitive ac loads from dc power systems.

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
48	42-56	1.3	57.5	83%	1420	1702-48-115-60
130	105-145	0.6	22.8	84%	1320	1702-130-115-60

[1] Typical at no load and nominal input voltage
[2] Typical at full load and minimum input voltage

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

115 Vac nominal, single phase

Output Voltage Regulation

±1.0% versus dc input line
±2.0% versus load

Output Voltage Waveshape

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

Frequency

60 Hz nominal, ±0.01 hertz maximum variation over the full range of load and input voltage changes

Volt-Ampere Rating

2,000 VA

C-Message-Weighted Noise

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

Efficiency

The power-conversion efficiency, heat dissipation and no-load input current are shown in Table 1.

Temperature Range

Operating: -10°C to +50°C (internal fan cooling)
Storage: -40°C to +85°C

Protection

Protection against short-term overloads is provided electronically, and recovery is automatic upon removal of the fault. Sustained output faults may activate an overload shutdown protection circuit. The elapsed time to inverter shutdown is dependent upon the severity of the fault; a sustained short-circuit will initiate shutdown in about 1 second, while a 10% overload may be tolerated indefinitely. Upon shutting down, input power to the inverter must be removed and reapplied to resume normal operation.

Protection against accidental reversal of the input-voltage polarity during installation is provided by a shunt diode working in conjunction with the front-panel circuit breaker.

Front-Panel Controls and Indicators

A combination circuit breaker and ON/OFF switch is provided for input power. An amber LED indicates the presence of an output overload, and a red LED indicates activation of the overload shutdown protection circuit.

Mechanical Description

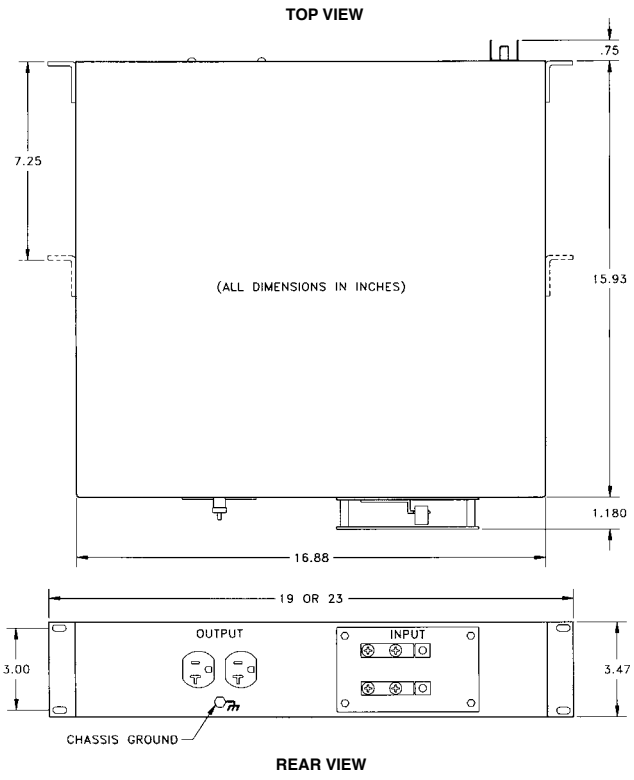
Figure 1 provides overall dimensions. Mounting brackets are provided for use with 19-inch or 23-inch equipment racks. A cover plate protects the dc-input rear-panel wiring connections, which are made via high-current compression lugs.

Output connections are made via a duplex receptacle, NEMA type 5-20R.

Standard front-panel paint color is light gray (ANSI-61).

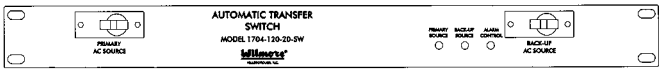
Weight is approximately 34 lbs.

Figure 1. Outline Dimensions



Specifications subject to change without notice

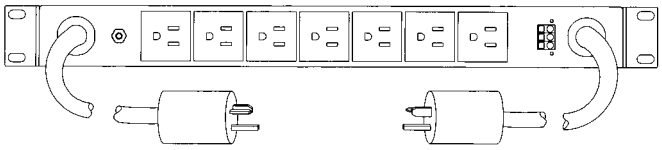
AUTOMATIC TRANSFER SWITCH / POWER DISTRIBUTION UNIT



FRONT VIEW

MODEL 1704-120-18-SW1

REAR VIEW



The Model 1704-120-18-SW1 automatic transfer switch enables operation of the Model 1702 inverter in a redundant manner with commercial ac power (or with a second inverter) to provide uninterruptible / backup power. The unit combines automatic power-failure sensing and high-speed switchover circuitry in a 1U (1.75" high) enclosure with seven rear-panel receptacles to facilitate power distribution to multiple loads. The user can choose to operate the inverter as the ac power source that normally powers the load, or as the standby ac power source. For more information, request Bulletin No. 2111.

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