

12-VOLT INPUT DC-DC CONVERTERS SINGLE OUTPUT



MODEL 1720



MODEL 1760

- 360-WATT AND 200-WATT MODELS
- ISOLATED, REGULATED, 24-VOLT OR 48-VOLT OUTPUT
- HEIGHT 1.75" (1 RACK SPACE)
- HIGHLY EFFICIENT AND CONVECTION COOLED
- AVAILABLE WITH OR WITHOUT VOLTMETER AND AMMETER

These dc-to-dc converters provide a well-regulated dc output voltage from 12-volt station batteries or other widely fluctuating 12-Vdc sources. This output is galvanically isolated from the source and chassis and, therefore, may be connected either as a positive or a negative output. Applications include powering radio transceivers, telecommunications equipment, supervisory control systems and other critical electronic loads.

Designed for rack mounting, these state-of-the-art converters achieve superior electrical performance in a low profile enclosure. Conservatively rated and very efficient, Series 1720/1760 converters will operate continuously at any load within their rating over a wide ambient temperature range with simple convection cooling. They are available with (Series 1760) or without (Series 1720) front-panel output meters, and additional standard options let users adapt converters to specific system requirements, including paralleling for redundancy and for additional power.

Four single-output models are available with different combinations of input and output voltages per the table below. Other voltage combinations are available, including single-output and dual-output versions at power levels up to 360 watts – contact our sales department for more information.

Table 1

Input Voltage Range (VDC)	Input Current ¹ (ADC)	Output Voltage (VDC)	Output Current (ADC)	Model Number ²
10.5 - 16 (13V nominal)	17.8	24	8	17xx-13-24-8
	33.5		15	17xx-13-24-15
	17.5	48	4	17xx-13-48-4
	33.1		7.5	17xx-13-48-7.5

¹Typical current at full load and nominal input voltage

² See reverse side for complete model numbering information

SPECIFICATIONS

Input Voltage and Current

The input voltage range, nominal input voltage and nominal input current at full output load for standard models are shown in Table 1.

Output Voltage and Current

The output voltage and output current for standard models are shown in Table 1 (other voltages available—contact our sales department)

Output Voltage Regulation

Versus line: $\pm 0.5\%$
Versus load: $\pm 2\%$

Output Voltage Ripple

5 millivolts rms (typical)
50 millivolts peak-to-peak (typical)

Isolation and Grounding

Mutual electrical isolation is provided between the input circuit, the output circuit, and chassis ground.

Protection

Protection against overloads, short-circuits and output overvoltages is provided electronically. Recovery to normal operating conditions is automatic upon removal of the overload or short-circuit fault. Following an overvoltage shutdown, input power to the converter must be removed and reapplied to resume converter operation. Protection against accidental reversal of the dc input-voltage polarity during installation is provided by a shunt diode working in conjunction with the front-panel circuit breaker.

Ambient Temperature Range

Operating: -30°C to $+50^{\circ}\text{C}$
(convection cooling)
Storage: -40°C to $+95^{\circ}\text{C}$

Efficiency

The efficiency reaches 80% at approximately 20% of full load and remains above 80% for most of the load range. The no-load input power is typically less than 6 watts. Full-load heat dissipation is approximately 250 BTU/hour for 360-watt models and approximately 135 BTU/hour for 200-watt models.

Front-Panel Switch and LED

A combination circuit breaker and ON/OFF switch is provided for input power. An LED indicates the presence (ON) of proper output voltage for non-metered versions (Series 1720),

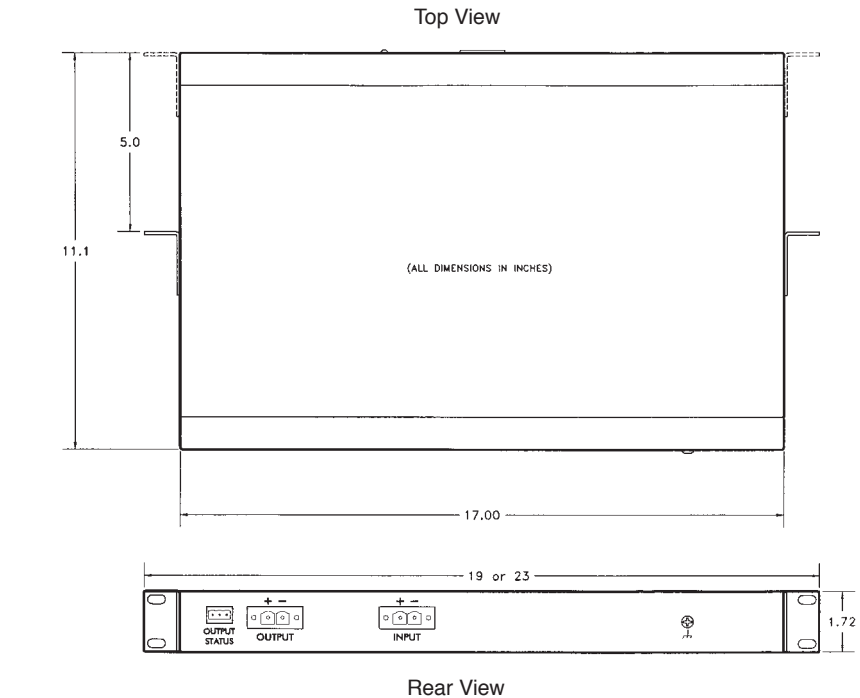


Fig. 1 Series 1720/1760 Overall Dimensions (rear-panel connections shown with optional auxiliary contacts for indication of output status)

while metered versions (Series 1760) provide a voltmeter and ammeter to display the dc output.

Physical Characteristics

Refer to Fig. 1 for overall dimensions. Weight is approximately 10 pounds for 360-watt models and approximately 8 pounds for 200-watt models. Brackets are provided for 19-inch and 23-inch rack mounting.

STANDARD OPTION FOR PARALLELING MULTIPLE CONVERTERS³

For applications where two or more converters will be operated in parallel to provide fault-tolerant redundancy and/or additional output power capability, a standard factory-installed option can be specified (see **MODEL NUMBERING INFORMATION**) to simplify the installation and operation of multiple-converter configurations. This option provides the following features:

- Integral output series diode to isolate an output fault in one converter from affecting others connected in parallel with it
- Auxiliary Form C contacts for remote indication of improper output (often referred to as a “converter fail alarm”)
- Integral circuitry to facilitate balanced load sharing between multiple paralleled converters

MODEL NUMBERING INFORMATION

Series 1720/1760 converters are identified by four number groups. In sequence, these give the basic series number (**1720** for plain front panel, and **1760** for output metered version) the nominal input voltage, the nominal output voltage, and the maximum load current. The standard paralleling option described in the previous section can be specified by adding the suffix **M3** to the part number. For example, **Model 1760-13-24-15-M3** is a 13-volt (nominal) to 24-volt converter with a 15-ampere maximum load rating. It is provided with output meters, paralleling diode, auxiliary contacts and load sharing capability.

OTHER WILMORE PRODUCTS

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

³ Depending upon model number, this option may affect voltage regulation, ripple, ambient temperature and/or efficiency specifications. Please consult 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