

# 400-WATT DC-DC CONVERTERS SINGLE OUTPUT

- 24, 48 OR 130 VDC INPUT
- ISOLATED, REGULATED OUTPUT
- HEIGHT 1.75" (1 RACK SPACE)
- HIGHLY EFFICIENT (90%) AND CONVECTION COOLED
- AVAILABLE WITH OR WITHOUT VOLTMETER AND AMMETER



MODEL 1720



MODEL 1760

These single-output converters provide a well-regulated dc output voltage from station batteries or other widely fluctuating dc 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.

Nine different 400-watt input/output voltage combinations are available per the table below. Other power levels and voltage combinations are available within this family of single-rack-space converters, including single-output and dual-output versions at power levels up to 400 watts – contact our sales department or visit our web site for more information.

Table 1

Input Voltage Range (VDC)	Input Current <sup>1</sup> (ADC)	Output Voltage (VDC)	Output Current (ADC)	Model Number <sup>2</sup>
21-29 (24 nominal)	18.4	13.3	0-30	17xx-24-13-30
	18.2	24	0-16	17xx-24-24-16
	18.2	48	0-8	17xx-24-48-8
42-58 (48 nominal)	9.2	13.3	0-30	17xx-48-13-30
	9.0	24	0-16	17xx-48-24-16
	9.0	48	0-8	17xx-48-48-8
105-145 (130 nominal)	3.4	13.3	0-30	17xx-130-13-30
	3.3	24	0-16	17xx-130-24-16
	3.3	48	0-8	17xx-130-48-8

<sup>1</sup>Typical current at full load and nominal input voltage

<sup>2</sup> 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:  $\pm 1\%$

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

### Efficiency

The efficiency reaches 90% at approximately 20% of full load and remains above 90% for most of the load range. The no-load input power is approximately 5 watts. Heat dissipation is approximately 150 BTU/hour at full load.

### Front-Panel Controls and Indicators

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 (Model 1720),

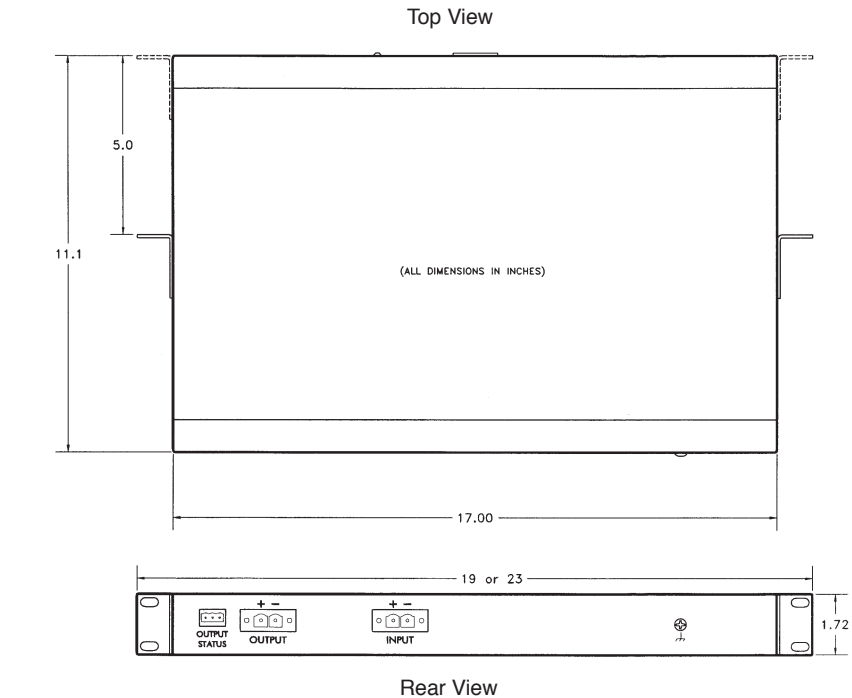


Fig. 1 Series 1720/1760 Overall Dimensions (rear-panel connections shown with optional auxiliary contacts for indication of output status)

while metered versions (Model 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. Brackets are provided for 19-inch and 23-inch rack mounting.

## STANDARD OPTION FOR PARALLELING MULTIPLE CONVERTERS<sup>3</sup>

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 metered versions) 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 1760-48-24-16-M3** is a 48-volt to 24-volt converter with a 16-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 uninterruptible power systems, please contact our sales department.

<sup>3</sup> This option may affect voltage regulation, ripple, and efficiency specifications.

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

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