

# 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



Series 1720

Series 1720 dc-to-dc 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 converters will operate continuously at any load within their rating over a wide ambient temperature range with simple convection cooling. Standard options let users adapt converters to specific system requirements, including paralleling for redundancy and for additional power.

Nine single-output 400-watt models are available with different combinations of input and output voltages per the table below. Other combinations are available, including single-output and dual-output versions at power levels from 100 watts 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	1720-24-13-30
	18.2	24	0-16	1720-24-24-16
	18.2	48	0-8	1720-24-48-8
42-58 (48 nominal)	9.2	13.3	0-30	1720-48-13-30
	9.0	24	0-16	1720-48-24-16
	9.0	48	0-8	1720-48-48-8
105-145 (130 nominal)	3.4	13.3	0-30	1720-130-13-30
	3.3	24	0-16	1720-130-24-16
	3.3	48	0-8	1720-130-48-8

<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 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.

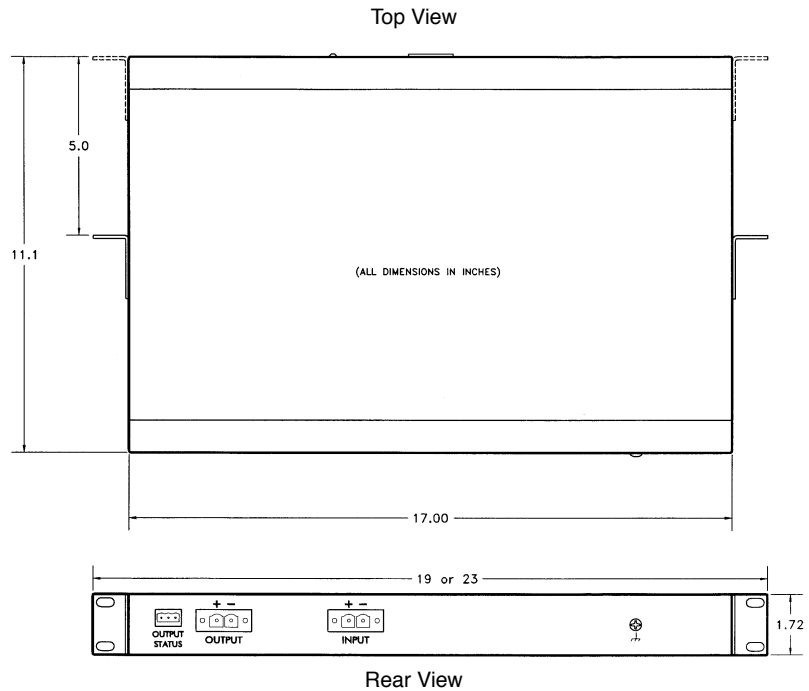


Fig. 1 Series 1720 Overall Dimensions (rear-panel connections shown with optional auxiliary contacts for indication of output status)

### 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 converters are identified by four number groups. In sequence, these give the basic series number (**1720**) 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 1720-24-13-30-M3** is a 24-volt to 13-volt converter with a 30-ampere maximum load rating. It is provided with 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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