

48-VOLT INPUT DC-DC CONVERTERS



Model 1502-48-13-30

FEATURES

- 400-WATT and 200-WATT MODELS
- HEIGHT 3.45" (2 RACK SPACES)
- REGULATED, ADJUSTABLE OUTPUT VOLTAGE
- 80%-85% EFFICIENCY
- INPUT-OUTPUT ISOLATION
- -30°C TO +60°C TEMPERATURE RANGE
- VERY LOW RIPPLE AND NOISE

Series 1500 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 relay rack mounting, these state-of-the-art converters achieve superior electrical performance in a low profile enclosure. Conservatively rated and very efficient, Series 1500 converters will operate continuously at any load within their rating over a wide ambient temperature range with simple convection cooling. Exceptionally effective noise suppression and filtering allow these converters to be used in many applications considered too noise-sensitive for other transistor-switching power converters. Standard options let users adapt converters to specific system requirements, including paralleling for redundancy and for additional power.

Eight 48-volt input versions are available with different combinations of dc output voltage and output power.

Table 1

Input Voltage Range (VDC)	Input Current ¹ (ADC)	Output Voltage Adjustment Range (VDC)	Output Current (ADC)	Model Number ²
40-58	5.2	12-14 (13 nominal)	0-15	15xx-48-13-15
	10.3		0-30	15xx-48-13-30
	4.8	22-26 (24 nominal)	0-8	15xx-48-24-8
	9.5		0-16	15xx-48-24-16
	4.7	44-52 (48 nominal)	0-4	15xx-48-48-4
	9.4		0-8	15xx-48-48-8
	4.6		0-1.5	15xx-48-130-1.5
	9.4	123.5-136.5 (130 nominal)	0-3	15xx-48-130-3

¹Typical current at full load, nominal input and output voltages

²See reverse side for complete model numbering information

SPECIFICATIONS

Input Voltage

40 Vdc to 58 Vdc (48 Vdc nominal)

Output Voltage and Current

The nominal output voltage, the adjustable output voltage range and output current for standard models are shown in Table 1.

Output Voltage Regulation

Versus line: $\pm 0.1\%$
Versus load: $\pm 0.5\%$

Output Voltage Ripple and Noise

3 millivolts rms (typical)
30 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 $+60^{\circ}\text{C}$
(convection cooling)
Storage: -40°C to $+95^{\circ}\text{C}$

Efficiency

The efficiency reaches 80% at approximately 15% of full load and remains above 80% for most of the load range. The no-load input current is approximately 100 milliamperes. Heat dissipation is approximately 340 BTU/hour for 400-watt models and 170 BTU/hour for 200-watt models.

Front-Panel Controls and Indicators

A combination circuit breaker and ON/OFF switch is provided for input power. A potentiometer shaft with locking

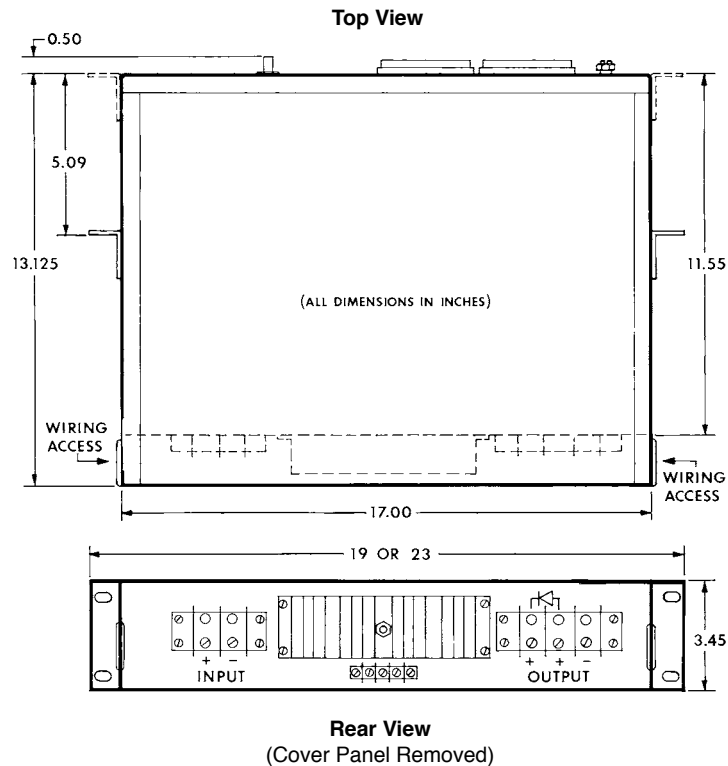


Fig. 1 Converter shown with optional meters, auxiliary contacts and paralleling diode with heatsink.

nut is provided to adjust the output voltage level. An optional voltmeter and ammeter display the dc output.

Physical Characteristics

Refer to Fig. 1 for overall dimensions. Weight is less than 15 pounds. Brackets are provided for 19-inch or 23-inch relay rack mounting. A cover panel protects the recessed rear panel and wiring connections.

STANDARD OPTIONS

- Output voltmeter and output ammeter
- Output series diode for parallel-redundant operation of multiple converters
- Auxiliary Form C contacts for remote indication of improper output (converter fail)
- Balanced load sharing between converters being paralleled for additional power

MODEL NUMBERING INFORMATION

Series 1500 converters are identified by four numbers. In sequence, these

give the basic model number (**1501** for plain front panel, **1502** for output meter option), the nominal input voltage, the nominal output voltage and the maximum load current. Standard options other than meters are specified by an additional suffix: **M1** designates paralleling diode plus auxiliary contacts, **M2** designates load sharing and **M3** combines paralleling diode, auxiliary contacts and load sharing. For example, **Model 1502-48-13-30-M3** is a 48-volt to 13-volt converter with a 30-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.

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