

74-V INPUT DC-DC CONVERTERS



Model 1620H-74-13-30

- FOR LOCOMOTIVE/RAIL-TRANSIT APPLICATIONS
- 400-WATT OUTPUT POWER RATING
- INPUT SURGE/TRANSIENT PROTECTION
- INPUT-TO-OUTPUT ISOLATION
- -40°C TO +70°C OPERATING TEMPERATURE RANGE (CONVECTION COOLED)
- EXTREMELY RUGGED AND RELIABLE

The Model 1620H-74-13-30 dc-to-dc converter provides an isolated, regulated and well-filtered 13.6-Vdc output voltage from 74-Vdc electrical systems on locomotives and other rail vehicles. A field-proven input-transient protection system and extremely rugged mechanical construction make it well suited for powering voice/data radios and other sensitive electronic loads in the harsh railroad vehicle environment.

SPECIFICATIONS

Input Voltage Range

50 Vdc to 90 Vdc

Output Voltage

13.6 Vdc

Output Current

30 amperes @25% duty cycle[†]
20 amperes continuous duty

[†](30A for up to 5 minutes in any 20 minute period, 10A or less for the remainder of the period)

Output Voltage Regulation

Versus line: $\pm 1\%$
Versus load: $\pm 2\%$

Output Voltage Ripple

Typically less than 20 mV rms

Ambient Temperature Range

-40°C to +70°C (-40°F to +158°F)
(Convection Cooling)

Protection

Protection against output short circuits and overvoltages is provided electronically. Recovery to normal operating conditions is automatic upon removal of a 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 a user-supplied input fuse or circuit breaker. See section titled "Installation".

Isolation

Isolation capable of passing a 2,500-Vdc stress test is provided between the input and output and between the input and chassis.

Transient-Withstand Capability

Transient input-voltage surges up to 7,000 volts peak, per IEC 571, Paragraphs 3.5 and 5.4, will not harm the converter. The abrupt discharge of a 16- μ F capacitor, charged to 1,500 Vdc and applied from line to line across the input or from either input line to chassis, will not damage the converter or interfere with its operation.

Input/Output Connections

The input and output and chassis ground connections are provided via heavy-duty barrier-strip terminal blocks. The input terminal-block accepts lugs for use with #6 hardware, and the output terminal block accepts lugs for use with #8 hardware. The chassis ground connection is provided by a self-locking #8 sems screw.

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

Installation

Good installation practice for mobile electronic equipment dictates that input fuses or circuit breakers should be located at the power-source end of the cables feeding the converter. For this reason, no protection devices are built inside the Model 1620H to protect against fault conditions at the input to the converter. Instead, a 20-A fuse or circuit breaker should be installed near the dc-input source in series with the positive (+) input line when this source is negative-grounded or not grounded (floating); or when the dc source is positive-grounded, installed in series with the negative (-) input line.

Mechanical

Size:

Dimensions given in inches (mm):
3.25 (83) high x 8.6 (218) wide x 11.25 (286) deep (excluding flanges and terminal block).
Mounting flanges on base are 0.5 (13) wide (each side).

Terminal block extends 0.7 (18) from front panel.

Weight:

8.5 pounds (3.9 Kg)

Mounting:

Mounting flanges on base accept six #10 screws, 3 per side on 4.4 (112) hole-center spacing front-to-back and 9.25 (235) side-to-side.

For Additional Information

Telephone: (919) 732-9351

Fax: (919) 732-9359

E-mail: info@wilmoreelectronics.com

Web: www.wilmoreelectronics.com