

74-V INPUT DC-DC CONVERTERS



Model 1620H-74-13-30

- FOR LOCOMOTIVE/RAIL-TRANSIT APPLICATIONS
- 13.6-V OR 24-V OUTPUT AT UP TO 400 WATTS
- INPUT SURGE/TRANSIENT PROTECTION AND INPUT-TO-OUTPUT ISOLATION
- -40°C TO +70°C OPERATING TEMPERATURE RANGE (CONVECTION COOLED)
- EXTREMELY RUGGED AND RELIABLE

Model 1620H-74-13-30 and Model 1620H-74-24-16 dc-to-dc converters provide an isolated, regulated and well-filtered 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
Model 1620H-74-13-30
 13.6 Vdc
Model 1620H-74-24-16
 24.0 Vdc

Output Current
Model 1620H-74-13-30
 30 amperes @25% duty cycle†
 20 amperes continuous duty
Model 1620H-74-24-16
 16 amperes @25% duty cycle†
 11 amperes continuous duty
 †(up to 5 minutes in any 20-minute period, with the remainder of the period at less than 50% of this maximum)

Output Voltage Regulation
 Versus line: ±1%
 Versus load: ±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)

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

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".

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-μF 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 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.

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

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