400W DC-DC CONVERTERS

FOR 74-V LOCOMOTIVE AND 37-V RAIL / TRANSIT APPLICATIONS

Features:

- 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

Series 1620H dc-to-dc converters provide an isolated, regulated and well-filtered output voltage from 74-Vdc or 37-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.

TABLE 1

INPUT VOLTAGE RANGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (ADC)[1]	MODEL
25 - 45 (37 Nominal)	13.6	30	1620H-37-13-30
	24.0	16	1620H-37-24-16
50 - 90 (74 Nominal)	13.6	30	1620H-74-13-30
	24.0	16	1620H-74-24-16

[1]See specifications on Page 2 for additional information regarding duty cycle

SPECIFICATIONS

INPUT VOLTAGE RANGE (VDC)	See Table 1
OUTPUT VOLTAGE (VDC)	See Table 1
OUTPUT CURRENT (ADC)	Model 1620H-74(or 37)-13-30: 30A at 25% duty cycle† ; 20A continuous duty Model 1620H-74(or 37)-24-16: 16A at 25% duty cycle† ; 11A 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 converter will not be damaged when its input is subjected to high-energy transients as specified in IEC 1000-4-5, Surge Immunity Test, Level 3, applied line-to-line or line-to-chassis.
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 for 74Vdc-input models or for use with #8 hardware for 37Vdc-input models, 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 (for 74Vdc-input models) or a 30-A fuse (for 37Vdc-input models) 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.
DIMENSIONS IN INCHES (MM)	3.25 (83)H X 8.6 (218)W X 11.25 (286)D excluding flanges and terminal blocks Mounting flanges on base are 0.5 (13) wide (each side). Terminal block extends 0.7 (18) from front panel.
WEIGHT LBS. (KG)	8.5 (3.9)
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.

Products

For information about other Wilmore dc-to-dc converters or for information about other power-conditioning products such as dc-to-ac inverters, switching power supplies, and custom power solutions, please contact our sales department.

Wilmore Electronics Company, INC.
P.O. Box 1329, Hillsborough, NC 27278
Telephone 919.732.9351 | Fax 919.732.9359
www.wilmoreelectronics.com