

VOLTAGE-BOOSTING DC-DC CONVERTER

OPERATE 74-V LOCOMOTIVE ELECTRONICS THROUGH ENGINE CRANKING
OR ON-BOARD LOWER-VOLTAGE RAIL VEHICLES



Model 1741-60-7

Features

- 60-VDC Minimum Output at Input Voltages Down to 20 Vdc
- Output Current up to 7 Amperes
- -40°C TO +70°C Operating Temperature Range (Convection Cooled)
- Extremely Rugged and Reliable

Model 1741-60-7 dc-to-dc converters are designed to allow nominal 74-volt locomotive equipment to operate through low-input-voltage conditions or on-board 37-volt or 24-volt rail vehicles. When the converter's input voltage drops below 60 Vdc, the converter automatically boosts its output voltage to 60 Vdc to continue powering equipment connected to it. At input voltages above 60 Vdc, the converter provides additional filtering and transient protection without substantially altering the input voltage. Conservative electrical design, very high operating efficiency and rugged mechanical construction make these converters well suited for powering voice/data radios and other sensitive electronic loads in the harsh railroad vehicle environment.

FULL SPECIFICATIONS: SEE PAGE 2

Specifications

INPUT VOLTAGE RANGE (VDC)	20 to 90 Converter will not be damaged by occasional excursions to 100 Vdc.
OUTPUT VOLTAGE (VDC)	At input voltages above 60 Vdc, output voltage is approximately equal to input voltage. Below 60 Vdc, output voltage is boosted to 60 Vdc.
OUTPUT CURRENT (ADC)	7 Amperes Maximum
OUTPUT VOLTAGE VARIATION	At input voltages above 60 Vdc, the output voltage is equal to the input voltage ± 1 volt across the load range. At input voltages less than 60 Vdc, the output voltage is 60 Vdc ± 1 volt across the line and load range.
OUTPUT VOLTAGE RIPPLE	Typically less than 50 mV rms at input voltages below 60 Vdc.
CONVERSION EFFICIENCY	Greater than 90% over most of the load range. No-load input power is typically about 3 watts.
PROTECTION	Protection against accidental reversal of the dc input-voltage polarity during installation is provided by an internal shunt diode working in conjunction with the front-panel fuse, which is wired in series with the input positive (+) line. Protection against moderate output overloads is provided electronically, and the converter will resume normal operation upon removal of the fault. More severe overloads and output short circuits may cause the front-panel fuse to open.
ISOLATION	Isolation capable of passing a 2,000-Vdc insulation stress test is provided between the converter circuitry and chassis ground. The input and output are not isolated from each other and share a common return.
TRANSIENT-WITHSTAND CAPABILITY	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.
AMBIENT TEMPERATURE RANGE	-40°C to +70°C (-40°F to +158°F) (Convection Cooling)
INPUT/OUTPUT CONNECTIONS	The input and output connections are provided via heavy-duty barrier strip terminal blocks accepting lugs for use with #8 hardware. A front panel chassis ground connection is provided for use with #8 hardware.
DIMENSIONS INCHES (MM)	3.0 (76) high x 7.0 (177) wide x 9.0 (228) deep (excluding flanges, terminal block and fuse holder).
MOUNTING INCHES (MM)	Mounting flange on base accepts four #10 screws. Hole pattern is 6.6 (168) front-to-back and 7.6 (193) wide.
WEIGHT LBS (KG)	5.3 (2.4)

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.