Wilmore ELECTRONICS CO., INC.
P. O. Box 1329, Hillsborough, N. C. 27278, U.S.A.

MODEL 1740-74-14-30
DC-DC CONVERTER

BULLETIN NO. 1094

74-VOLT TO 14.2-VOLT DC-DC CONVERTER

- **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)**
- **MECHANICALLY RUGGED AND CONSERVATIVELY RATED**

Model 1740-74-14-30

This dc-dc converter provides an isolated, regulated and well-filtered 14.2-Vdc output from a 74-Vdc locomotive electrical system. The unit is rated for a continuous output current of up to 30 amperes and operates at high efficiency with a very low quiescent current drain, making it ideally suited for powering both continuous-duty electrical loads and equipment such as radio transceivers where extended periods of operation in "standby" mode are encountered. Rugged mechanical construction and conservative electrical design are intended to ensure long service life and dependable performance in onboard applications.

SPECIFICATIONS

Input Voltage
74 Vdc nominal.
The normal operating range is 40 Vdc minimum to 100 Vdc maximum. The converter will operate through brief abnormal input-voltage excursions down to 20 Vdc (operation at less than 40 Vdc is limited to 4 seconds maximum in any 2-minute period).

Output
14.2 Vdc nominal @ 0 amperes minimum, 30 amperes maximum load current.

Output Voltage Regulation
Output voltage regulation is better than +/- 5% with line and load variations.

Output Voltage Ripple
Output voltage ripple is less than 1% rms.

Ambient Temperature Range
Operating: -40°C to +70°C (-40°F to +158°F) Convection Cooling
Storage: -40ºC to +95ºC (-40ºF to +203ºF).

Protection
Protection against overloads, short circuits and converter-induced output overvoltages is provided electronically. Recovery to normal operating conditions is automatic upon removal of an overload or short-circuit fault. Following an overvoltage shutdown, input power to the converter must be removed and reapplied to resume converter operation.
A reverse-polarity protection diode is provided at the input to the converter to work in conjunction with a user-supplied fuse or circuit breaker to protect the converter should a reverse-polarity fault occur during installation.

Isolation
Isolation capable of passing a 1,500-Vdc stress test is provided between the input and output and between the input and chassis. Isolation capable of passing a 500-Vdc stress test is provided between the output and chassis.

Transient-Withstand Capability
The converter will not be damaged nor will it malfunction when its input is subjected to high-energy transients as specified in IEC 1000-4-5, Surge Immunity Test, Installation Class 3.
The converter will not be damaged nor will it malfunction when its input is subjected to transient bursts as specified in IEC 1000-4-4, Electrical Fast Transient/Burst Immunity Test, Level 4.

Input/Output Connections
Input/output terminations are provided via heavy-duty barrier strip terminal blocks using 1/4-inch threaded studs. Connections are protected by a removable cover.

Front-Panel Indicators
Front-panel LED indicators are provided for INPUT PRESENT (green), OUTPUT PRESENT (green), DISABLED-LOW INPUT (amber) and OUTPUT FAULT (red).

Mechanical
Enclosure is painted aluminum (black) and is constructed with welded seams and gasketed assembly interfaces.
Internal printed circuit boards are conformally coated.
Size: 4 Modular Concept Units (MCU's) as defined in Association of American Railroads Standard S-590.
Weight: 12 pounds (5.44 Kg)

For Additional Information
Telephone: (919) 732-9351
Fax: (919) 732-9359
E-mail: info@wilmoreelectronics.com
Web: www.wilmoreelectronics.com