EXTENDED INPUT RANGE DC-DC CONVERTERS

FOR 48-V AND 130-V STATIONARY OR MOBILE APPLICATIONS

Model 1640XR-13-7.5

Model 1640XR-13-15

Features:

- 40-150V INPUT RANGE
- 13 AND 24V OUTPUTS
- 200-WATT AND 100-WATT MODELS
- INPUT-TO-OUTPUT ISOLATION
- -40°C TO 70° TEMPERATURE RANGE
- CONVECTION COOLED
- ELECTRICALLY AND MECHANICALLY RUGGED

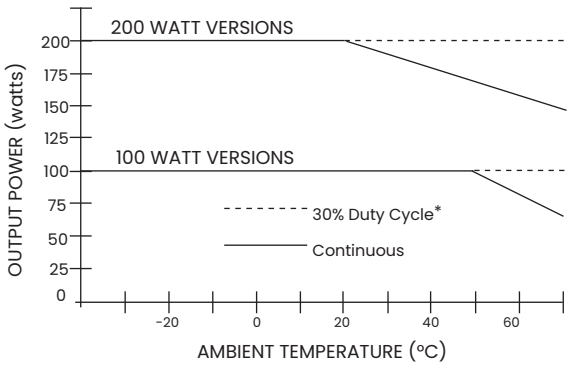
Series 1640XR dc-to-dc converters provide an isolated, regulated and well-filtered dc output voltage from nominal 48V and 130V battery systems. This output is galvanically isolated from the source and chassis and, therefore, may be connected either as a positive or a negative output. The extended input-voltage range of 40V-150V allows one version of the converter to cover 48 and 130V battery voltages. Designed to perform equally well in mobile and stationary applications, these converters can be used to power radio transceivers, telecommunications equipment and other sensitive electronic loads.

Table 1

Input Voltage Range (Vdc)	Nominal Output Voltage (Vdc)	Maximum[1] Output Current/Power	Model Number
40 - 150	13.6	7.5A/100W	1640XR-48/130-13-7.5
	13.6	15A/200W	1640XR-48/130-13-15
	24	4A/100W	1640XR-48/130-24-4
	24	8A/200W	1640XR-48/130-24-8

[1] Depending upon the ambient temperature, a duty-cycle rating may apply. See chart on page 2.

Figure 1.



*Intermittent duty for powering a voice/data two-way radio with a duty cycle of 30%.
**Mounted in any attitude with free-air convection cooling.

Specifications

INPUT VOLTAGE RANGE (VDC)	40 to 150
OUTPUT VOLTAGE AND CURRENT	See Table 1. See Figure 1 for information on output power versus ambient operating temperature. The no-load input-current drain is less than 4 watts.
OUTPUT VOLTAGE REGULATION	Versus line: ±1% Versus load: ±1%
OUTPUT VOLTAGE RIPPLE	Typically less than 10 mV rms and 50 mV peak-to-peak
AMBIENT TEMPERATURE RANGE	-40°C to +70°C (-40°F to +158°F) (Convection Cooling)
ISOLATION	Isolation capable of passing a 2,000-Vdc stress test is provided between the input and output and between the input and chassis.
PROTECTION	Protection against overloads, short circuits and output overvoltages is provided electronically. Recovery to normal operating conditions is automatic upon removal of the overload or short-circuit fault. Following an overvoltage shutdown, input power to the converter may need to 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 an appropriately-rated, user-supplied input fuse or circuit breaker. See section titled “Installation”.
INPUT/OUTPUT CONNECTIONS	The input and output connections are made via heavy-duty barrier-strip terminal blocks accommodating lugs for use with #6 hardware. A snap-on cover plate (not pictured) is provided for the input terminal block. The chassis/ground connection is made via a #6 sems screw.
INSTALLATION	Good installation practice for electronic equipment operated from a battery source 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 1640XR to protect against fault conditions at the input to the converter. Instead, an appropriately-rated 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 when the dc source is positive-grounded, installed in series with the negative (-) input line.
DIMENSIONS IN INCHES (MM)	For 100-watt models: 1.9 (48) high x 7.0 (177) wide x 9.0 (228) deep (excluding flanges and terminal blocks). For 200-watt models: 3.0 (76) high x 7.0 (177) wide x 9.0 (228) deep (excluding flanges and terminal blocks) Mounting flange on base is 0.5 (13) wide (each side). Terminal blocks extend 0.5 (13) from front panel.
WEIGHT LBS. (KG)	For 100-watt models: 3.5 (1.6); For 200-watt models: 5 (2.3)
MOUNTING	Mounting flange on base accepts four #10 screws. Hole pattern is 6.6 (168) front-to-back and 7.6 (193) wide.

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