Wilmore ELECTRONICS CO., INC.
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MODEL 1605
DC-DC CONVERTERS

BULLETIN NO. 4043A

130-VOLT INPUT DC-DC CONVERTERS

Model 1605-130-48-16

FEATURES

- **800-WATT OUTPUT**
- **HEIGHT 3.45" (2 RACK SPACES)**
- **REGULATED, ADJUSTABLE OUTPUT VOLTAGE**
- **90% EFFICIENCY**
- **INPUT-OUTPUT ISOLATION**
- **-30°C TO +50°C TEMPERATURE RANGE**
- **VERY LOW RIPPLE AND NOISE**

Model 1605 dc-to-dc converters provide a well-regulated dc output voltage from station batteries or other widely fluctuating dc sources. This output is galvanically isolated from the source and chassis and, therefore, may be connected either as a positive or a negative output. Applications include powering radio transceivers, telecommunications equipment, supervisory control systems and other critical electronic loads.

Designed for rack mounting, these state-of-the-art converters achieve superior electrical performance in a low profile enclosure. Conservatively rated and very efficient, Model 1605 converters will operate continuously at any load within their rating over a wide ambient temperature range with simple convection cooling. Exceptionally effective noise suppression and filtering allow these converters to be used in many applications considered too noise-sensitive for other transistor-switching power converters. Standard options let users adapt converters to specific system requirements, including paralleling for redundancy and for additional power.

Two models are available with different combinations of dc output voltage and output current.

Table 1

Input Voltage Range (VDC)	Input Current[1] (ADC)	Output Voltage Adjustment Range (VDC)	Output Current (ADC)	Model Number[2]
90-160	6.1	22-26 (24 nominal)	30	**1605-130-24-30**
	6.4	44-52 (48 nominal)	16	**1605-130-48-16**

[1] Typical current at full load, nominal input and output voltages
[2] See reverse side for complete model numbering information

SPECIFICATIONS

Input Voltage
90 Vdc to 160 Vdc
(130 Vdc nominal)

Output Voltage and Current
The nominal output voltage, the adjustable output voltage range, and output current for standard models are shown in Table 1.

Output Voltage Regulation
Versus line: ±0.1%
Versus load: ±0.5%

Output Voltage Ripple
10 millivolts rms (typical)
100 millivolts peak-to-peak (typical)

Isolation and Grounding
Mutual electrical isolation is provided between the input circuit, the output circuit, and chassis ground.

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. An overvoltage fault will trip the front-panel circuit breaker. Protection against accidental reversal of the dc input-voltage polarity during installation is provided by a shunt diode working in conjunction with the front-panel circuit breaker.

Ambient Temperature Range
Operating: -30ºC to +50ºC (convection cooling)
Storage: -40ºC to +95ºC

Efficiency
The efficiency reaches 90% at approximately 30% of full load and remains above 90% for most of the load range. The no-load input current is approximately 50 milliamperes. Heat dissipation is approximately 320 BTU/hour at full load.

Front-Panel Controls and Indicators
A combination circuit breaker and ON/OFF switch is provided for input power. A potentiometer shaft with locking nut is provided to adjust the output voltage level. A voltmeter and ammeter display the dc output.

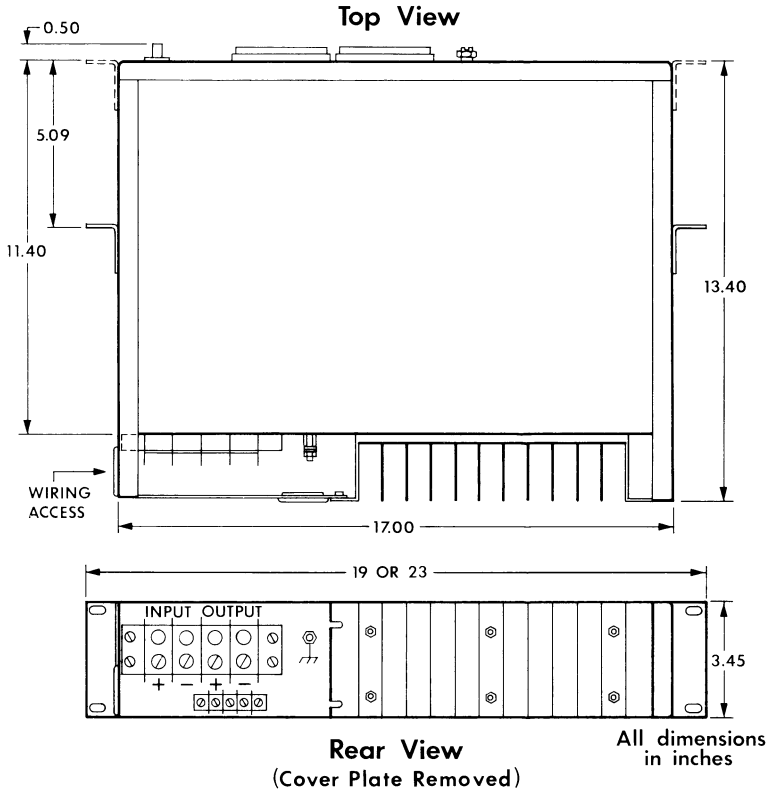

Fig. 1 Model 1605 overall dimensions

Physical Characteristics
Refer to Fig. 1 for overall dimensions. Weight is less than 14 pounds. Brackets are provided for 19-inch or 23-inch rack mounting. A cover panel protects the recessed rear panel and wiring connections.

STANDARD OPTIONS[1]
- Output series diode for parallel-redundant operation of multiple converters
- Auxiliary Form C contacts for remote indication of improper output (converter fail)
- Balanced load sharing between converters being paralleled for additional power

[1] Some options may affect voltage regulation, ripple and noise, and efficiency specifications.

MODEL NUMBERING INFORMATION
Model 1605 converters are identified by four number groups. In sequence, these give the basic model number (**1605**), the nominal input voltage, the nominal output voltage, and the maximum load current. Standard options are specified by an additional suffix: **M1** designates paralleling diode plus auxiliary contacts, **M2** designates load sharing and **M3** combines paralleling diode, auxiliary contacts and load sharing. For example, **Model 1605-130-24-30-M3** is a 130-volt to 24-volt converter with a 30-ampere maximum load rating. It is provided with output meters, paralleling diode, auxiliary contacts and load sharing capability.

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

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