

## DC TO AC INVERTERS

These C&D dc to ac inverters provide a well-regulated, 500 VA, low-distortion, 120-Vac sine wave output from a 21 to 29 Vdc or 42 to 58 Vdc power source. Almost any critical industrial or telecommunications equipment within the volt-ampere rating can be powered.

The field-proven components and power conversion techniques of dc to dc converter technology are used in this small, light-weight inverter. It is compatible with many loads normally considered difficult for

inverters, including half-wave rectified loads, high surge loads and a wide variety of nonlinear loads. The input and output are isolated from the chassis and from each other, allowing operation in a grounded system.

There is no practical limit on the load power factor because of the unique switching circuitry. It will operate continuously at any load within its rating over its full operating temperature range with simple convection cooling.

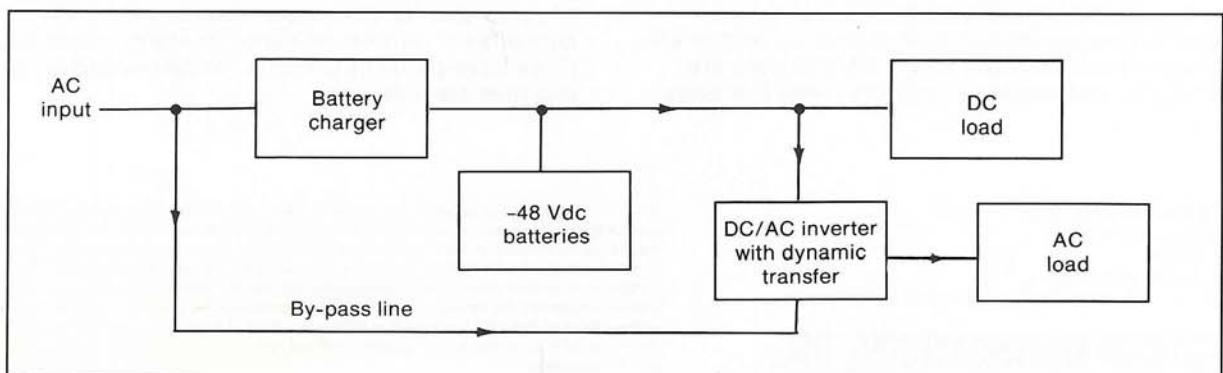
### FEATURES

- Relay rack mountable
- No practical limit on load power factor
- 3 percent total harmonic distortion
- 80 percent efficiency
- Compatible with non-linear loads
- Convection cooling
- Integral inverter-to-line transfer protection



**Model JV-113 - nominal 24 Vdc input**  
**JV-112 - nominal 48 Vdc input**

### TYPICAL TELECOMMUNICATIONS POWER SYSTEM





# INVERTER SPECIFICATIONS

**HEIGHT:** 5.2 in (132 mm)  
**WIDTH:** Brackets for 19- or 23-inch rack mounting  
**DEPTH:** 13.25 in (total) (337 mm)  
**WEIGHT:** 23 lbs (10.3 kgs)  
**COLOR:** ANSI-61 Gray

## INPUT VOLTAGES

21 Vdc to 29 Vdc (24 Vdc nominal)  
42 Vdc to 58 Vdc (48 Vdc nominal)

## INPUT CURRENT

No load: approximately 1.2 amperes at 24 Vdc input for 24-volt model  
approximately 0.66 amperes at 48 Vdc input for 48-volt model  
Full load: approximately 29.8 amperes at 21 Vdc input for 24-volt model  
approximately 14.9 amperes at 42 Vdc input for 48-volt model

## OUTPUT VOLTAGE

120 Vac nominal, single-phase

## OUTPUT VOLTAGE REGULATION

± 1.5 percent versus dc input line  
± 2.5 percent versus load

## OUTPUT WAVE SHAPE

Sine wave with 1 to 3 percent total harmonic distortion (typical) over all operating conditions

## VOLT-AMPERE RATING

500 VA

## LOAD POWER FACTOR

No practical limitation within the volt-ampere rating

## FREQUENCY

60 ± 0.01 Hz in free-running mode (automatic frequency and phase synchronization to commercial ac line)

## C MESSAGE WEIGHTING

Noise fed back to a 240 ampere-hour (or larger) battery source is less than 32 dB<sub>rn</sub>

## TEMPERATURE RANGE

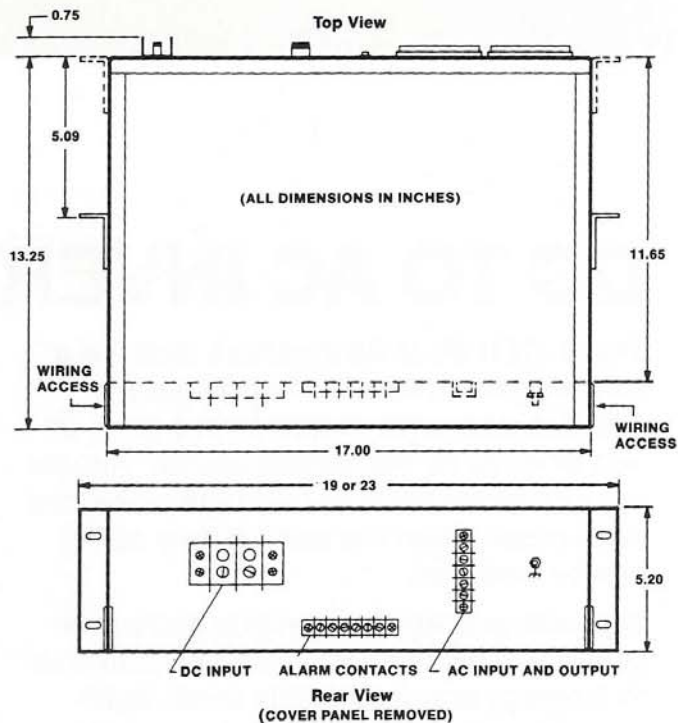
Operation: 32F (0C) to 122F (50C)  
Storage: -40F (-40C) to 185F (85C)

## POWER DISSIPATION

The maximum internal power dissipation at full load is approximately 130 watts (445 Btu/hour)

## OPERATION

Normally, the load power is provided by the inverter. If the inverter output is interrupted, an internal transfer switch automatically transfers the load from the inverter to commercial ac power. Because the transfer time between inverter and line is short (2 milliseconds, typical) and the inverter is automatically synchronized in both frequency and phase to the commercial power line, such transfers are normally not detected by even highly sensitive loads.



Outline dimensions

Upon restoration of inverter power, there is a delay of approximately four seconds, during which frequency and phase synchronization are gradually reestablished. Then a transfer back to inverter power automatically takes place.

## PROTECTION

Electronic protection against inverter overloads or short circuits is provided. Recovery to normal operation is automatic upon removal of the fault.

Protection against accidental reversal of the input voltage polarity during installation is provided by a shunt diode working in conjunction with the front panel circuit breaker. This circuit breaker is provided in the negative input line as standard.

The inverter will automatically turn off if subjected to an input voltage higher than 30 Vdc or lower than 24 Vdc for 24-volt models; and higher than 60 Vdc or lower than 40 Vdc for 48-volt models. Return to normal operation is automatic.

## FRONT PANEL CONTROLS AND INDICATORS

A combination circuit breaker and on/off switch is provided for input power. A voltmeter and ammeter are provided for the output. Auxiliary Form C contacts for remote indication of alarm conditions, three front-panel LED status indicators and an ac line fuse are included.

## POWERCOM DIVISION

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