



# "INFINITY" LINEAR POWER SUPPLIES - Rack Mounting & Benchtop Case Sizes 2U13, 2B13

## INSTALLATION AND OPERATION

These power supplies are constructed in the form of assemblies that are front mountable in standard 19" wide RETMA cabinet racks or 17" wide benchtop units with rubber feet. Mounting of the equipment in a rack should be such that a hazardous condition is not achieved due to uneven mechanical loading. For safe operation, mount spaced away from other heat dissipating or air blocking assemblies. This will also result in cooler running operation, which in turn will maximize stability and reliability. If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the enclosed environment may be greater than room ambient. Therefore, consideration should be given to installing the power supply in an environment compatible with the maximum ambient temperature (Tma) specified by Acopian.

Make all connections before applying AC input power.

THE SENSING TERMINALS **MUST** BE CONNECTED to the Rtn terminals, either at the Rtn terminals of the power supply or at the load. Failure to have the sense terminals connected will affect the output voltage (usually causing it to be higher than the rating of the supply, and unadjustable), or may result in the overvoltage protection circuit (if present) to activate. If voltage drops in the output voltage leads (which degrade regulation) are not objectionable, local sensing can be used; leave in place the jumpers provided with the power supply (connecting the +Sense to the +Rtn and the -Sense to the -Rtn). However, if the best possible regulation at the load is required, then remove the jumpers and use two lighter gauge leads to connect the sense terminals to the output leads at the load. This configuration permits the power supply to sense and compensate the voltage actually across the load. Note that remote sensing is

capable of compensating only limited wiring drops. The voltage across the load, plus the voltage drops through the wiring, must be within the output voltage range of the supply for the voltage at the load to remain within the load regulation specification. Therefore, the wire gauge used for the output lines **MUST BE LARGE ENOUGH** to assure that their combined voltage drops will not exceed the difference between the maximum output voltage of the supply and the voltage to be maintained across the load. (Wide adjust output models compensate up to 0.5 Vdc drop per output line.)

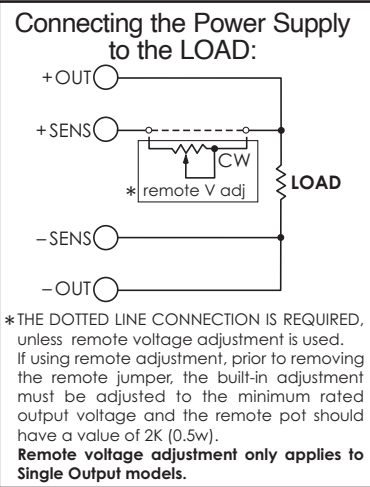
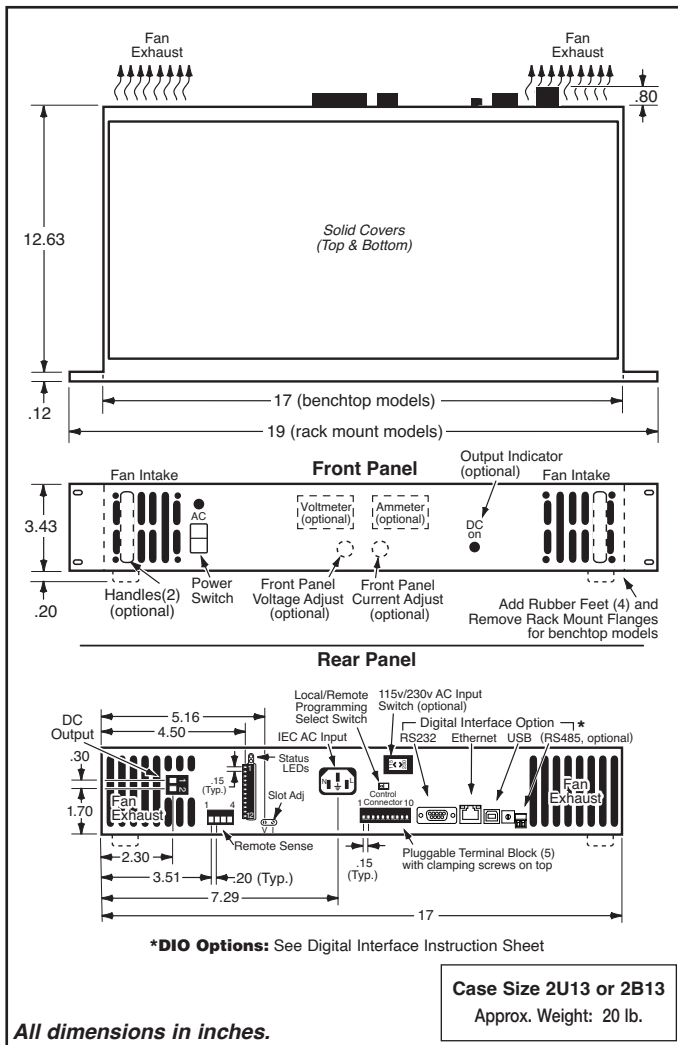
In electrically noisy environments it may be necessary to use shielded wire for remote sensing. Connect the shields to the Rtn terminal on the terminal block. Usually, the lowest level of output noise results when the load ends of the shield are *not* connected. Noise can be reduced in some applications with the use of a capacitor connected across the sense lines at the power supply; and in other applications, when one is connected across the load. A 0.1 mfd (100 WVdc) capacitor with good high frequency characteristics (such as Mylar types) is appropriate. Do not use a capacitor unless necessary.

Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

**Overload/Short circuit Protection:** These power supplies function as a constant voltage source. A short circuit or overload will force the power supply into the over current protection mode. The supply will recover automatically when the overload or short circuit is removed. Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

**Input voltage:** 105-125 VAC, 50-420 Hz, single phase (unless otherwise optionally specified).

**\*For models with Digital Interface:** See 'Digital Interface' instruction sheet (included with option).



**ALL ACOPIAN POWER SUPPLIES MADE IN U.S.A.**

**WARRANTY:** Acopian power supplies are warranted to be free from defects in material and workmanship for a period of five years (encapsulated devices and fans, for one year) from date of original shipment. Acopian's obligation under this warranty is limited to repairing any power supply returned to the factory Service Department in Easton, PA and replacing any defective parts. Authorization must be obtained from Acopian before a power supply may be returned for repair. Transportation charges are to be paid by the purchaser. A reinspection and handling charge will be applied to returned units found to have no defects. If a failure has been caused by misuse, operation in excess of specifications, or modification by the customer, repairs will be billed at cost; in such cases, a cost estimate will be submitted before work is started.

Acopian reserves the right to make changes or improvements in its products without incurring any obligation to install the same on products previously manufactured.

*This warranty is in lieu of all other warranties, obligations, and liabilities, expressed or implied, and is the purchaser's exclusive remedy. Acopian makes no warranty, either express or implied, of merchantability, fitness for a particular purpose or otherwise. In no event shall Acopian be liable for incidental or consequential damages of any kind, including loss of business or profits, or any other losses incurred by the purchaser or any third party.*

The validity, performance and construction of all terms and conditions and any sale made by Acopian shall be determined by the law of Pennsylvania, not including its law of conflict of laws.



The complete Acopian catalog is available on the Internet at [www.acopian.com](http://www.acopian.com)  
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# "INFINITY" LINEAR POWER SUPPLIES - Rack Mounting & Benchtop Case Sizes 2U13, 2B13 - OPTIONS WIRING AND INFORMATION

## OPTION / COMPONENT:

## DESCRIPTION / WIRING:

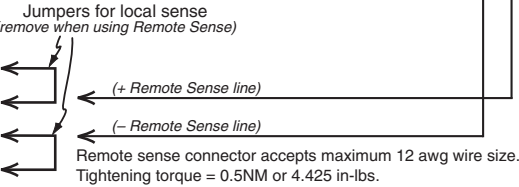
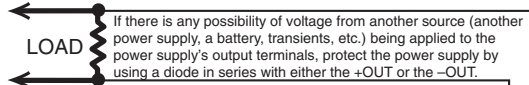
### IEC AC INPUT CONNECTOR



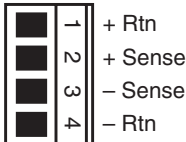
AC INPUT:  
105-125 VAC  
50-420Hz  
single phase

Note: All units are shipped with 125v IEC line cord (standard).

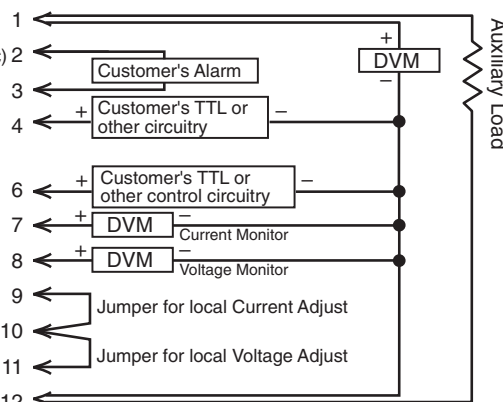
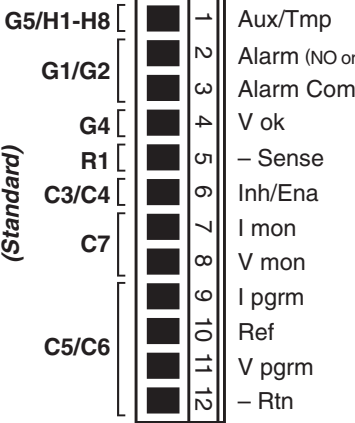
### DC OUTPUT CONNECTOR



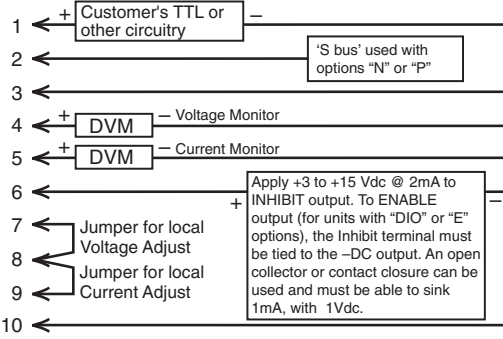
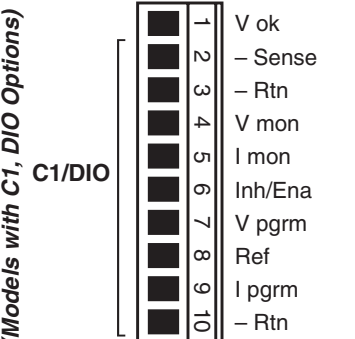
### REMOTE SENSE CONNECTOR (Standard)



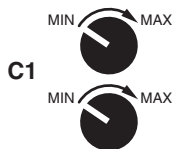
### CONTROL CONNECTOR (Standard)



### CONTROL CONNECTOR (Models with C1, DIO Options)



Control connectors accept 22 to 16 awg wire size. Tightening torque = 0.2NM or 1.7in-lbs. Screw size M2.



Knob - Front Panel Voltage Adjust

Knob - Front Panel Current Adjust

**OPTION C3, Inhibit Control, TTL compatible:**  
To disable the supply, apply a voltage between '-Rtn' and 'Inh/Ena'. The voltage can be any value from +3 Vdc to +15 Vdc.

**OPTION C4, Enable Control, TTL compatible:**  
To enable the DC output, 'Inh/Ena' must either be shorted to '-Rtn' or pulled to within 0.8 Vdc of '-Rtn'. An open collector or contact closure can be used.

**OPTION G1, NC Relay Contacts:**  
Close when output voltage drops more than 10% below normal.

**OPTION G2, NO Relay Contacts:**  
Open when output voltage drops more than 10% below normal.

**OPTION G4, 'Voltage Output OK' Monitor:**  
TTL High when Vout is between -10% and +15% of rated output.

**OPTION G5, Temperature Monitor:**  
Used to measure the power supply's internal temperature. Monitor output voltage is set to 2.5 Vdc at 25°C and varies above or below this value by 0.1 Vdc per °C. For example, if the temperature is 20°C the output will be 2 Vdc. Monitor between '-Rtn' and 'Aux/Tmp'.

**OPTIONS H1 thru H8, Additional Low Current Auxiliary Voltages:**  
<1% Initial Accuracy, ±0.2% Line Regulation and ±0.2% Load Regulation, <10 mV peak-to-peak ripple.  
H1: 3.3 Vdc, 0.1 Amp H5: 15 Vdc, 0.1 Amp  
H2: 5 Vdc, 0.1 Amp H6: -5 Vdc, 0.1 Amp  
H3: 12 Vdc, 0.1 Amp H7: -12 Vdc, 0.1 Amp  
H4: 13.8 Vdc, 0.1 Amp H8: -15 Vdc, 0.1 Amp

**OPTION R1, Resistive Programming:**  
Output voltage and current may be programmed from 0 to rated output. Programming: ohms per volt out = 10k÷VRated ±5%. Program resistors are connected from 'V pgrm' to '-Sense' and 'I pgrm' to '-Rtn'.

### C5 or C6 - Output Programming

**REMOTE VOLTAGE ADJUSTMENT:**  
First, set front panel voltage adjustment to maximum rated output voltage, then remove jumper between 'Ref' and 'V pgrm'.  
Do not remove jumper unless 'Voltage Programming' or 'Remote Voltage Adjustment' is used.

**VOLTAGE PROGRAMMING OF OUTPUT VOLTAGE:**  
First, set front panel voltage adjustment to maximum rated output voltage, then remove jumper between 'Ref' and 'V pgrm'.  
Do not remove jumper unless 'Voltage Programming' or 'Remote Voltage Adjustment' is used.

**REMOTE CURRENT ADJUSTMENT:**  
(If option C1 or C2 is included, first set front panel current adjustment to maximum rated output current, then remove jumper between 'I pgrm' and 'Ref'.)  
Do not remove jumper unless 'Remote Current Adjust' or 'Voltage Programming of Output Current' is used.

**VOLTAGE PROGRAMMING OF OUTPUT CURRENT:**  
(If option C1 or C2 is included, first set front panel current adjustment to maximum rated output current, then remove jumper between 'I pgrm' and 'Ref'.)  
Do not remove jumper unless 'Remote Current Adjust' or 'Voltage Programming of Output Current' is used.

**CAUTION: DO NOT** apply negative polarity control voltage to the voltage or current program terminals.

**NOTE: Please contact factory for programming with remote sense.**

**OPTION C5 or C6, Output Programming:**  
(voltage and/or current) See diagrams above.

**OPTION C5:**  
The output voltage and current may be programmed from 0 to full rating by means of control voltage inputs of 0 to +5 Vdc.

**OPTION C6:**  
The output voltage and current may be programmed from 0 to full rating by means of control voltage inputs of 0 to +10 Vdc.  
Voltage mode accuracy: 0.5%. Current mode accuracy: 0.5% or ±15 mA, whichever is greater. Accuracy percentages do not apply below 5% of output rating.

**OPTION C7, Voltage and Current Monitoring:**  
**For models with no programming or with 0-10v programming (option C6):**  
**Voltage Monitor Terminal:**  
Permits remote monitoring of output voltage, stepped down by a ratio of 10:1 (for 3.3v to 90v models) or 100:1 (for 100v to 150v models). Accuracy is 0.5% of maximum rated output voltage.  
**Current Monitor Terminal:**  
-For models with greater than 10 amps output current: permits remote monitoring of output current, stepped down by a ratio of 100 mV/Amp (accuracy is 1% of maximum rated output current).  
-For models with less than 10 amps output current: permits remote monitoring of output current, stepped down by a ratio of 1000 mV/Amp. Accuracy is 1% of maximum rated output current or ±15 mA, whichever is greater.

**For models with 0-5v programming (option C5):**  
**Voltage Monitor Terminal:**  
Permits remote monitoring of output voltage, stepped down by a ratio of 10:1 (for 3.3v to 45v models) or 100:1 (for 48v to 150v models). Accuracy is 0.5% of maximum rated output voltage.  
**Current Monitor Terminal:**  
-For models with greater than 45 amps output current: permits remote monitoring of output current, stepped down by a ratio of 10 mV/Amp.  
-For models with from 5 amps to 45 amps output current: permits remote monitoring of output current, stepped down by a ratio of 100 mV/Amp.  
-For models with less than 4.5 amps output current: permits remote monitoring of output current, stepped down by a ratio of 1000 mV/Amp.  
Accuracy is 1% of maximum rated output current or ±15 mA, whichever is greater.

(When monitoring the output voltage and/or current by means of the monitor terminals, the use of an instrument having an input impedance of at least 10 megohms is recommended.)