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SN Series

28 VDC to AC Sine Wave

- **High Density 2 W/in³ 180-Watt Inverter**
- **Military Temperature Range –55°C to +100°C**
- **400 Hz, 800 Hz and 1600 Hz Output Frequency**

Specifications

Input:
24 to 30 V dc. Other inputs available. (See Option H.)

Efficiency:
50% typical at 27 V dc input and full resistive load (no options).

Line Regulation:
Within 0.5% for full input change 24 V dc to 30 V dc with load constant.

Load Regulation:
Within 1.0% for load change of one half to full load with line constant.

Wave Form:
Sinusoidal with a 4% maximum harmonic distortion into a resistive load.

Frequency Stability:
±1% drift with time (within the first 8 hours after 30 seconds warm-up).

Frequency Accuracy:
±0.5% is initial setting tolerance.

Load Power Factor:
Derate linearly from 100% rated power at unity to 70% rated power at 0.7 power factor lagging or leading.

Isolation Voltage:
200 V dc input to case, 750 V dc output to case and input to output.

Insulation Resistance:
50 megohms minimum between input and output, input and case, output and case when measured at 50 V dc.

Temperature Range:
Operating –55°C to +100°C baseplate temperature; storage temperature –65°C to +125°C ambient.

Temperature Coefficient:
0.06%/°C from –55°C to +100°C, voltage change, frequency change, 1% maximum.

Input Transient Protection:
In accordance with MIL-STD-704A, Figure 9, Limit 1 (80 V dc for 0.1 second).

Load Transient Response:
Output voltage returns to regulation limits within 5 cycles for a load change of no load to full load.

Load Transient Overshoot:
10% maximum from nominal voltage set point.

Short Circuit Protection:
Completely protected against short circuit of any duration. Unit must be recycled to restore output to normal.

Reliability:
The MTBF calculated per MIL-HDBK-217D, under operating conditions of 50ºC baseplate temperature, maximum operating input voltage and full rated output power is 156,366 hours for a ground benign and 15,722 hours for air inhabited transport environments. With Enhanced Reliability Option (-ER) ground benign is 907,070 hours; air inhabited transport is 93,030 hours. Consult factory for other model and environment information.

Environment:
Hermetically sealed and encapsulated to meet the environmental requirements of MIL-STD-810C.

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Options

The following standard options are available on the SN Series inverters. Please refer to option section of this catalog for detailed information.

Special Connectors:
A military-type hermetically sealed connector is provided as **Option A** in place of our standard header to extend out the top surface. (To order, replace "D" in model number with "A," i.e., SN180A-27A-400.)

Severe Shock, Acceleration and Vibration:
Special encapsulation, **Option E**, enables all units to withstand 60 g's shock, 50 g's acceleration and 30 g's vibration. (To order, add "E" after "D" in model number, i.e., SN180DE-27A-400.)

Wide Input Voltage:
Option H recenters the input voltage to provide alternate inputs from 18 V dc to 32 V dc. See page 81 for output current derating. (To order, add "H" after the "D" in model number and specify input voltage range in parentheses after the entire model number, i.e., SN180DH-27A-400 (18-30).)

Remote Turn On/Off:
Option L provides isolated terminals to turn outputs on/off with TTL logic signal. (To order, add "L" to character preceding first dash in model number, i.e. SN180DL-27A-400.)

Over Temperature Protection:
Option OT turns off input power when conduction surfaces exceed safe limits. (To order, add "OT" after the "D" in model number, i.e., SN180DOT-27A-400.)

Remote Output Adjustment:
With **Option R**, an adjustment potentiometer can be remotely located to adjust the output voltage. (To order, add "R" after "D" in model number, i.e., SN180DR-27A-400.)

Frequency Adjustment:
Option -4 enables output frequency to be adjusted ±5% by means of an external potentiometer. (To order, add "-4" at the end of the entire model number, i.e., SN180D-27A-400-4.)

Enhanced Reliability:
-ER Option provides increased reliability by using higher levels of military-grade components. (To order, add "-ER" at the end of the entire model number, i.e., SN180D-27A-400-ER.)

6 Standard Models

Output Frequency (Hertz)	Output[1] Voltage Range	Output Amps (Resistive Load) Continuous	Harmonic Distortion (%)	Size (See Dwg.)	Weight[2] (Lbs.)	Weight[2] (Kgs.)	Model Number
400	25.4-28.6 108-122	6.667 1.565	4.0 4.0	14H 14H	5.5 5.5	2.5 2.5	SN180D-27A-400 SN180D-115A-400
800	25.4-28.6 108-122	6.667 1.565	4.0 4.0	14H 14H	5.5 5.5	2.5 2.5	SN180D-27A-800 SN180D-115A-800
1600	25.4-28.6 108-122	6.667 1.565	4.0 4.0	14H 14H	5.5 5.5	2.5 2.5	SN180D-27A-1600 SN180D-115A-1600

1. Output voltage is continuously adjustable between the limits shown by means of an externally accessible screwdriver adjustment potentiometer.

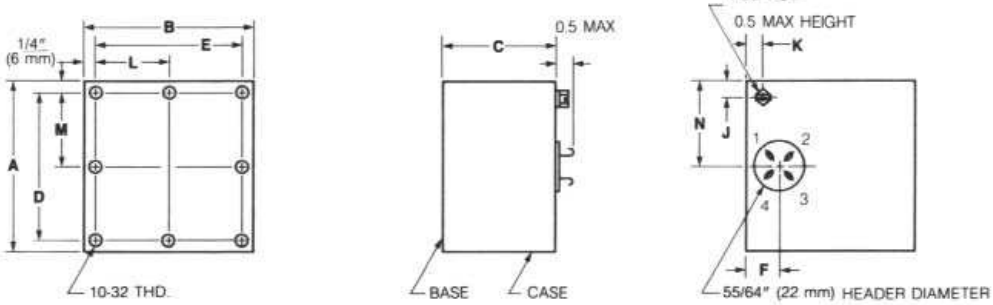
2. Maximum weight, not including options.

Model Numbering System

Product Line Series	Output Power Watts	Header Type	Options	Dash	Output Voltage AC	A	Dash	Frequency Hz
SN	180	D		–	27	A	–	400

>> 2

Case Drawings



Dimensions

Inches
mm

Model	Case Size	A	B	C	D	E	F	J	K	L	M	N
SN180	14H	6 152	6 152	2-1/2 64	5.50 139.7	5.50 139.7	3/4 19	1/4 6	1/4 6	2.75 69.8	2.75 69.8	3 76.2

Tolerances: If English unit is a fraction, ±1/32 inch, (0.8 mm); if English unit is a decimal, ±.015 inch, (0.4 mm).
Material: Base — Aluminum 6061-T6, Case — Steel

Finish: Black flat lacquer per FED-STD-595, Color 37038.
Mounting: 10-32 THD inserts 5/32" minimum depth are provided in baseplate. Steel 10-32 bolts American Standard, unified national fine series, slotted studs are supplied with each unit. Metric hardware and inserts available as a special order.

Pin Designations

(Standard model, not including options. Consult factory for details.)

Standard SN (4-Pin Header)

1. +Input (DC)
2. –Input (DC)
3. AC Output
4. AC Output

SN with Options (8-Pin Header*)

1. +Input (DC)
2. –Input (DC)
3. AC Output
4. AC Output
5. Options
6. Options
7. Options
8. Options

*1-1/16" (27 mm) Diameter

Input Current

(Typical)
Amps

Output Load	Low Line	High Line
50%	6	6.1
100%	12	12

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