44LS1

Input Power Line Conditioner with Holdup Capability

Features

- Protects Downstream DC/DC Converters From Mil-Std 704 Transients
- Optional Mil-Std 1275 compliance
- Reverse Polarity Protection
- +5vdc Standby Output
- BIT

Contents

Description

NAI's 44LS1 is a +28VDC IN power line conditioner with holdup capability. The 44LS1 protects downstream DC-DC converters Mil-Std 704 and Mil-Std 1275 transients, low voltage conditions and power interruptions; providing up to 50 milliseconds of holdup time. The 44LS1 is designed to meet standard 3U cPCI mechanical requirements and is a perfect companion unit for all NAI DC/DC converters.

Electrical Specifications

DC Input Characteristics:

Input	+28 VDC nominal
Input Transient Protection	MIL-STD-704A through F
	Mil-Std 1275AT (optional) Includes operation during +6Vdc cranking disturbance
EMI	Per MIL-STD-461F; CE102 when operated with NAI power converter.
Reverse Polarity Protection	44LS1 shall not be damaged when subjected to reverse DC polarity on the input
External On/Off	Connection to external ON/OFF switch / contact closure is provided.
Input Discrete Signaling	One input discrete signal (short/open) provided to support configurable logic.

DC Output Characteristics:

Main DC Output Power	Provides 22.5Vdc to 30Vdc @ 100 watts to the systems DC/DC Converters
Auxiliary DC Output Power	Provides standby output of 5Vdc @ 0.2 amps
Holdup Time	100 watts of primary power for 50milliseconds (per Mil-Std 704A, Category B power interruption). Unit to provide output of 22.5Vdc min when exposed to a low voltage transient per MIL-STD-704A Figure 9 curve 3, or a zero volt bus transfer followed by a normal transient as described in MIL-STD-704F paragraph 5.1.
Holdup cap replenishment time	10 Seconds
External Holdup Availability	Provides connections to system for additional holdup capacitors, when > 50milliseconds is required by the system.
Power Dissipation	5 watts max

Signal Types

Hold Up / Function BIT Signals	The following three signals available on the 44LS1 are all Open Collector signals capable of sinking 50 milliamps at +28Vdc as required to indicate that the holdup capability is properly functional. Please see the description of these signals below:
Charged	Indicates the internal energy storage for Holdup is replenished and available; Active low
VIn OK	Indicates that the input voltage is between 22.5Vdc and 30Vdc; Active low
VOut OK	Indicates that the output voltage is between 22.5Vdc and 30Vdc; Active low

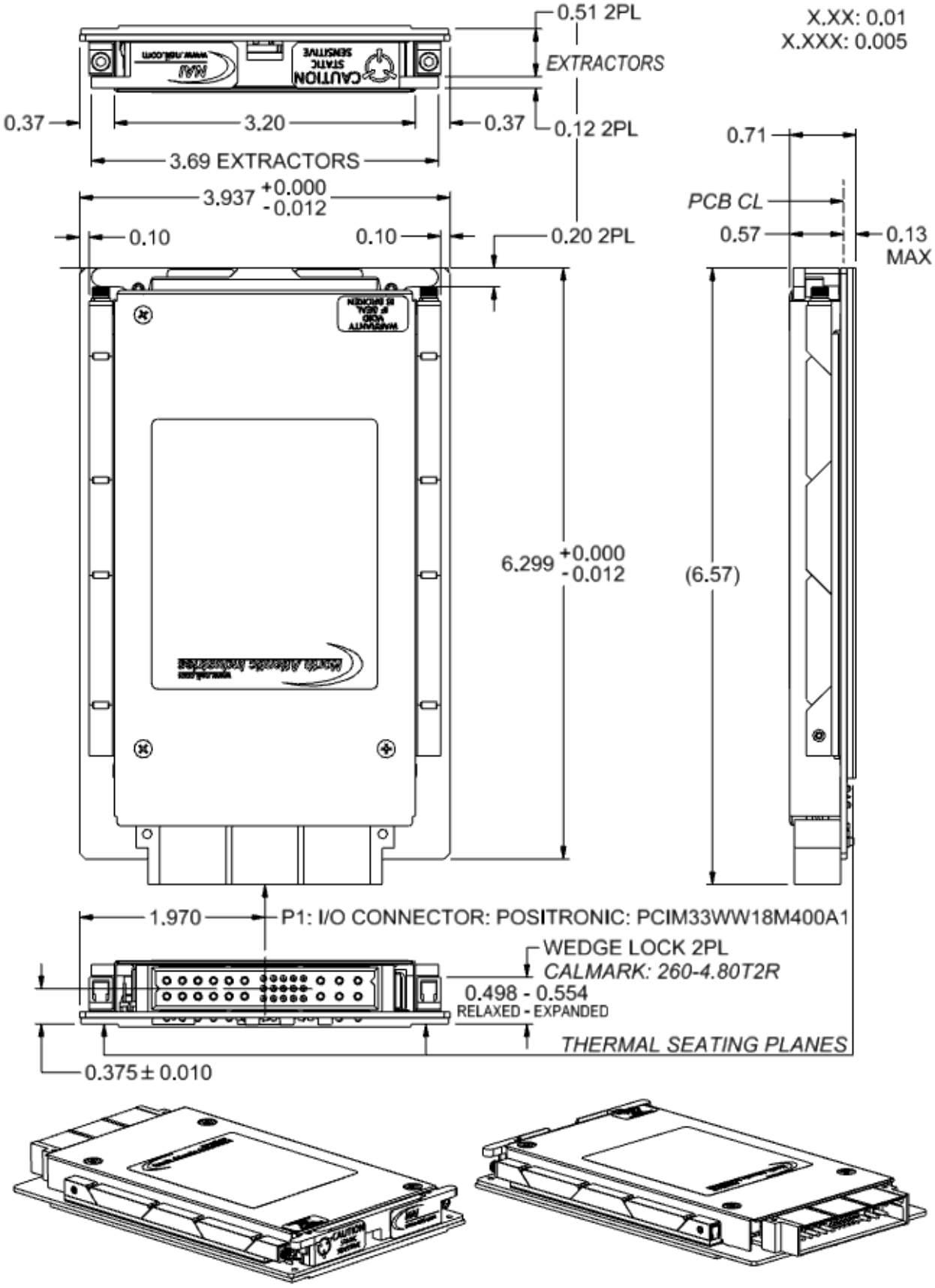
Physical/Environmental Specifications

Temperature Range	Operating: -55°C to +85°C at 100% load (Temperature measured at thermal seating plane; conduction via thermal seating plane); Storage: -55°C to +125°C
Temperature Coefficient	0.01% per °C
Shock	40 G's each axis, MIL-STD-810C, Method 516.2, Proc. 1. Hammer shock MIL-S-901C
Acceleration	6 G's per MIL-STD-810C, Method 513.2, Procedure 11, and 14 G's per Procedure 1
Vibration	Per MIL-STD-810C, Method 514.2, Procedure 1A
Reliability (MTBF)	100,000 hours, Ground Benign at 50°C cooling surface
Humidity	95% at 71°C per MIL-STD-810C, Method 507.1 (non-condensing)
Altitude	40,000 feet per MIL-STD-810C, Method 504.1, Category 6 Equipment
Dimensions	Standard 3U cPCI, single card slot; See Mechanical Outline
Salt & Fog	Per MIL-STD-810C, Method 509.1
Sand/Dust/Fungus	Per MIL-STD-810C
Enclosure	Aluminum housing to aluminum baseplate
Finish	Yellow Chemfilm; IAW Mil-C-5541, Class 1A
Interface	Connections per sheet 4
Weight	1.5 pounds max

Table 1 Option Sets

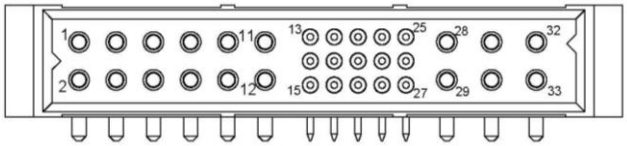
Option #	Description
01	Standard Version, no additional options
02	Mil-Std 1275AT option in place of Mil-Std 704. Includes operation during +6Vdc cranking disturbance

Mechanical Layout



Pinout and Connector

POSITRONIC P/N: PCIM33W18M400A1



Pin	Signal
1	N/U
2	N/U
3	N/U
4	N/U
5	+28Vdc Output
6	+28Vdc Output
7	+28Vdc Output Return
8	+28Vdc Output Return
9	External Cap return
10	External Cap return
11	External Cap +
12	External Cap +
13	ON/OFF Contact 1
14	+5Vdc Standby
15	ON/OFF Contact 2
16	N/U
17	N/U
18	N/U
19	N/U
20	N/U
21	V_IN OK
22	N/U
23	N/U
24	Charge Status
25	N/U
26	N/U
27	V_OUT OK
28	+28Vdc Input
29	+28Vdc Input
30	+28Vdc Input Return
31	+28Vdc Input Return
32	Chassis
33	Chassis

Typical Connection Diagram