



44KS3-02

Input Power Line Conditioner with Holdup Capability

Features

- Protects DC/DC Converters From Mil-Std 704 Transients
- Designed to work with the NAI 55KQ2-02, DC-DC Converter
- 3U Form Factor
- Wedgelock, Plug-in Design
- Reverse Polarity Protection
- Holdup
- +5vdc Standby Output
- BIT

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Description

NAI's 44KS3-02 is a +28V IN DC power line conditioner with holdup capability which protects downstream DC-DC converters from Mil-Std 704 transients, low voltage conditions and power interruptions; providing up to 160 milliseconds of holdup time. The 44KS3-02 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	+22.5 to +30Vdc with Holdup capability; Operation down to +16Vdc with no Holdup capability
Input Transient Protection	MIL-STD-704A through F
EMI	Per MIL-STD-461F when used with additional system EMI filtering.
Reverse Polarity Protection	44KS3-02 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.

DC Output Characteristics:

Main DC Output Power	Provides 22.5 to 30Vdc @ 72.5 watts to downstream DC/DC Converters Provides 17 to 32V excursions during MIL-STD-704 Transients
Holdup Time	72.5 watts of primary power for up to 160milliseconds (per Mil-Std 704A, Category B power interruption). Unit to provide output of +24Vdc 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 > 160 milliseconds is required by the system.
Power Dissipation	2.5 watts Typical

Signals:	
Vin_OK	Monitors whether input voltage is within range
Vout_OK	Monitors whether output voltage is within range
Holdup_OK	Monitors whether Holdup Capacitors are ready

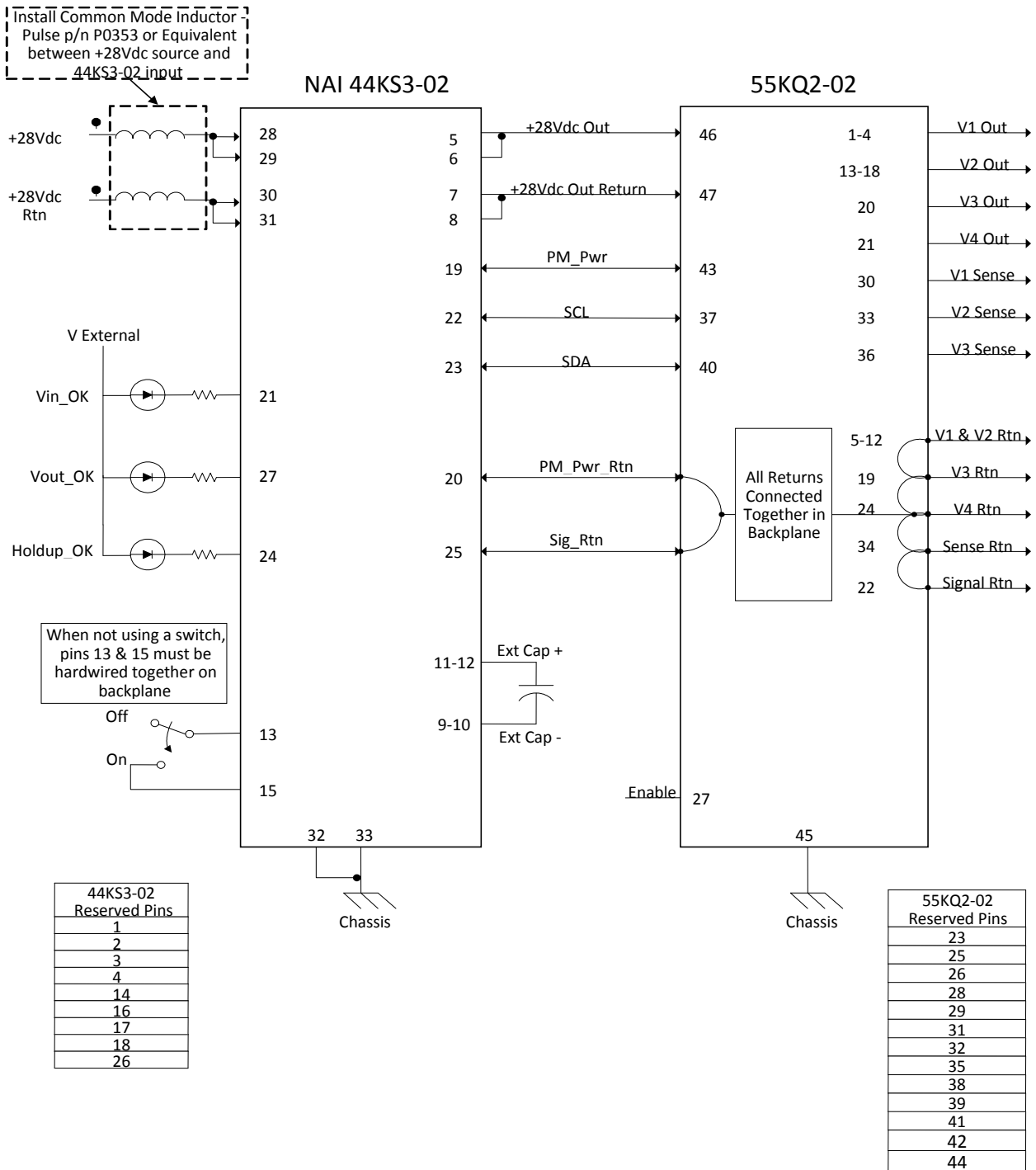
Physical/Environmental Specifications

Temperature Range	Operating: -40°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 Baseplate
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

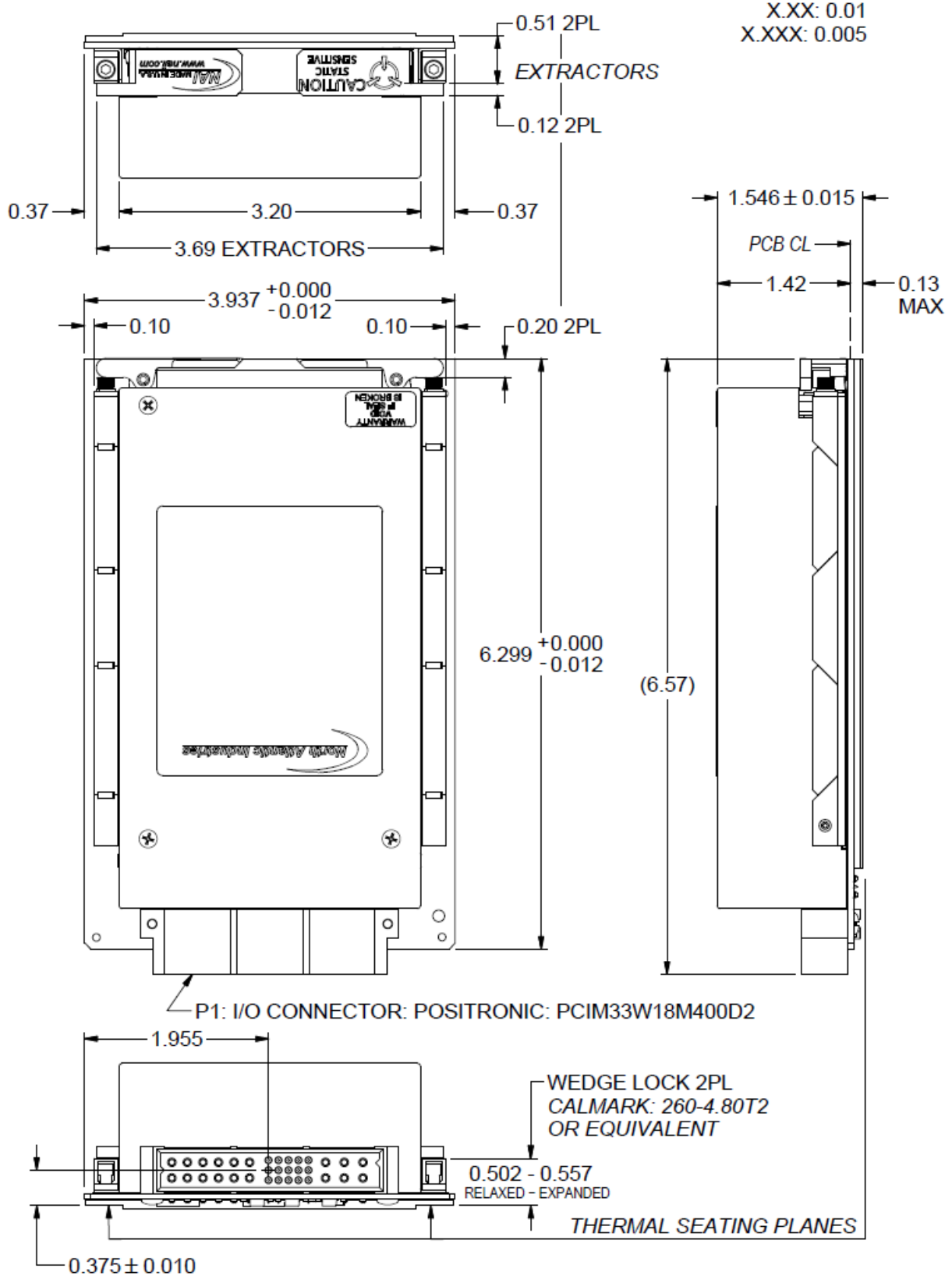
Table 1. 44KS3-02 Pinout Designations		
Pin	Signal	Description
1	RESERVED	Reserved
2	RESERVED	Reserved
3	RESERVED	Reserved
4	RESERVED	Reserved
5	+28Vdc Output	Output to DC/DC Converter
6	+28Vdc Output	Output to DC/DC Converter
7	+28Vdc Output Return	Output Return to DC/DC Converter
8	+28Vdc Output Return	Output Return to DC/DC Converter
9	External Cap return	For Additional H/U
10	External Cap return	For Additional H/U
11	External Cap +	For Additional H/U
12	External Cap +	For Additional H/U
13	ON/OFF Contact 1	For External Switch
14	RESERVED	Reserved
15	ON/OFF Contact 2	For External Switch
16	RESERVED	Reserved
17	RESERVED	Reserved
18	RESERVED	Reserved
19	PM_Pwr	IPMB_PWR
20	PM_Pwr_Rtn	IPMB_PWR Rtn
21	Vin_OK	Input Voltage Monitor
22	SCL	I ² C Clock (Optional)
23	SDA	I ² C Data (Optional)
24	Holdup_OK	Holdup Cap Monitor
25	Sig_Rtn	Signal Return
26	RESERVED	Reserved
27	Vout_OK	Output Voltage Monitor
28	+28Vdc Input	Input to 44KS3-02
29	+28Vdc Input	Input to 44KS3-02
30	+28Vdc Input Return	Input Return to 44KS3-02
31	+28Vdc Input Return	Input Return to 44KS3-02
32	Chassis	Chassis Ground
33	Chassis	Chassis Ground

Table 2. Connector Types	
Connector	Part Number - Series
Unit Connector	Positronic PCIM33W18M400A1
Mating Connector	Positronic PCI33Fxx

Wiring Diagram – 44KS3-02 Conditioner / Holdup Unit to 55KQ2-02 DC/DC Converter



Mechanical Layout & Dimensions 44KS3-02



X.XX: 0.01
X.XXX: 0.005