

DNA-PC-921-D

Power Supply Conditioning Boards

10-Year
Availability
Guarantee

- Developed to add MIL-STD-1275/704 to any UEI Cube*
- Brown-out and surge protection
- UPS allows file closure or emergency shut down prior to Cube losing functionality
- Installs in bottom two slots of any UEI Cube
- Readback of input voltage and cap charge voltage

*UEINet not included.



General Description:

The DNA-PC-921-D is a power conditioning module designed for use in UEI's popular Cubes.* It has been designed to meet the surge and drop out requirements of MIL-STD-704 and 1275.

Internal brown-out/drop out energy is stored in a bank of 5 capacitors totalling 6000 μ F charged to 38 VDC. Hold-up time can be determined by adding the total Cube power dissipation (Cube and I/O boards), adding 2.5 W for the PC-921-D and referring to the chart later in this datasheet. A Power Failed input can be read, allowing the system software to close any open SD card/FLASH files prior to CPU power loss. The Power Failed input can also be used to launch emergency shut down actions.

Diagnostics on the DNA-PC-921-D include the ability to monitor input current, input voltage and holding capacitor voltage (38 VDC at full charge.) Two diagnostic LEDs are also provided, one indicates the capacitors are either charged, or charging. The second indicates normal operating status of the board.

All connections are through a 37-pin D female connector mounted in the bottom two slots of the Cube. Users of the DNA-PC-921-D should not use the standard Molex power connector near the top of the Cube. No damage will occur if both the Molex connector and the PC-921-D are powered at the same time but this connection will eliminate the protection offered by the PC-921-D.

The DNA-PC-921-D does not require any software to function, though an easy to use API does provide the user access to the various diagnostics available. Included in these diagnostics are the ability to read the board's input voltage (externally provided), the capacitor hold voltage (typically 38 VDC) as well as the internal 3.3 V power supply. Digital inputs are provided to indicate Power Failure, hold capacitor fully charged, and hold capacitor discharged. These diagnostics are available to all PowerDNA and UEIPAC. They may be added to other Cube deployments in the future. Please contact UEI for details.

*UEINet not included.

Technical Specifications:

Input voltage:	9 - 36V DC
Power Supply Rating	Designed to meet: MIL-STD-1275 and MIL-STD-704
Output voltage hold-up	Over 200 mS at 15 Watts. See plot below for further details.
Output enable/disable	Software controlled. Default condition is ON
Input fuse protection	10 A (Littlefuse 0453 010 or equivalent)
Diagnostic voltage readback accuracy.	± 100 mV
Power consumption	2.0W (plus up to 0.5 A while charging)
Environmental	
Temp (operating & storage)	-40 °C to 85 °C
Humidity	0 to 95%, non-condensing
Vibration	MIL-STD-810G plus the IEC specs below
(IEC 60068-2-64)	10–500 Hz, 5 g (rms), Broad-band random
(IEC 60068-2-6)	10–500 Hz, 5 g, Sinusoidal
Shock	MIL-STD-810G plus the IEC stds below
(IEC 60068-2-27)	100 g, 3 ms half sine, 18 shocks at 6 orientations; 30 g, 11 ms half sine, 18 shocks at 6 orientations
Altitude	70,000 feet, maximum
MTBF	>100,000 hours)

Pinout Diagrams:

DB-37 (female)
37-pin connector:

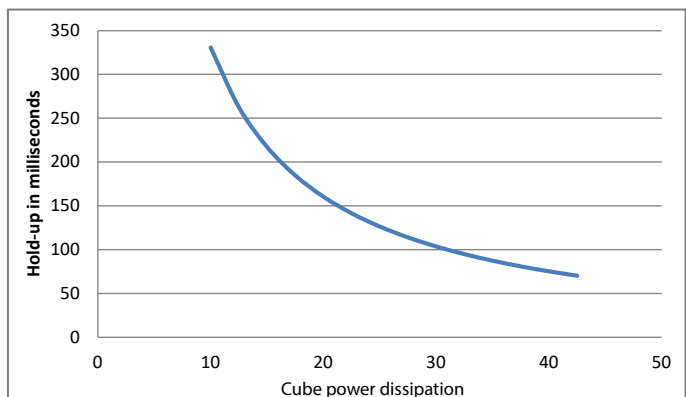
	1	20	-Vin
-Vin	2	21	-Vin
-Vin	3	22	-Vin
	4	23	+Vin
+Vin	5	24	+Vin
+Vin	6	25	+Vin
	7	26	
	8	27	
	9	28	

Connections should be made only to these 10 pins. All other pins are reserved.

Warning!

Do not connect the system power supply to this DB-37 connector and the 4-pin standard plastic MOLEX connector on the upper section of the Cube. Please connect power to ONLY this DB-37.

Power loss hold-up duration:



Connections:

Cable Required	Screw Terminal Panel	Description
DNA-CBL-37 or -37S	DNA-STP-37	37-pin "D" connector to screw terminals.