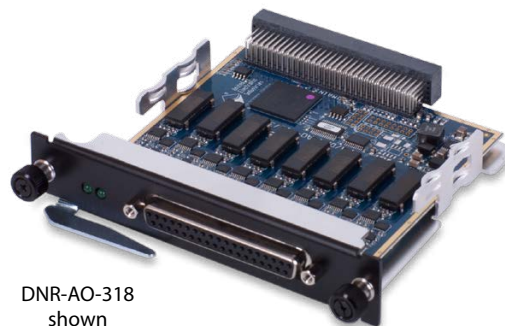


DNx-AO-318

8-Channel isolated D/A Board with Built-in-test

- DNA- / DNR- / DNF-AO-318 for use in "Cube" / RACKtangle / FLATRACK I/O chassis
- 8 independent fully isolated 16-bit DACs
- Built-in-test functionality monitors both output voltage and current
- 10 kHz per channel max update rate
- ± 10 V output range, ± 10 mA per channel
- Simultaneous update across all channels

10-Year
Availability
Guarantee



DNR-AO-318
shown

General Description:

The DNA-AO-318, DNR-AO-318 and DNF-AO-318 are fully isolated, high-precision, 8-channel analog voltage output board compatible with UEI's popular "Cube", RACKtangle and FLATRACK I/O chassis respectively. The boards offer full 16-bit resolution and guarantee monotonicity over the entire operating temperature range. Each DNA/DNR-AO-318 channel provides an output range of ± 10 V and is capable of driving ± 10 mA. For applications requiring higher output current or voltage, please refer to the DNx-AO-308-35x series boards.

The DNx-AO-318 provides extensive built-in-test diagnostics. An on-board A/D converter on each channel allows the user to monitor both output voltage and current. A solid state relay on each output allows the D/A channel to be disconnected from the field I/O so that a complete board self-test can be completed without driving the circuitry connected to the outputs. This relay in combination with the output current and voltage sensing can also be set to disconnect the D/A output in the event of an external fault condition such as a short to ground or a DC power supply.

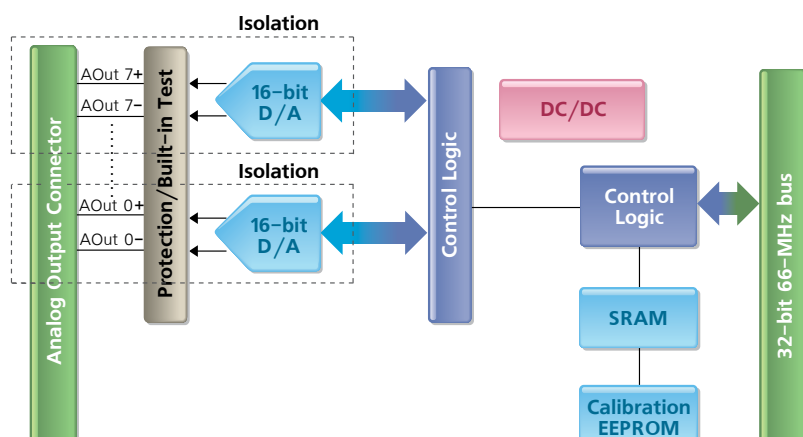
All 8 channels may be configured to update simultaneously, or they may be updated one at a time as data is written. A 1024 sample FIFO allows each D/A to be updated at 10 kHz without data loss. Double buffering the outputs combined with the use of low glitch D/As make the DNx-AO-318 an ideal solution for generating low frequency waveforms or providing highly accurate switched stimulus.

Software included with the DNx-AO-318 provides a comprehensive yet easy to use API that supports all popular Windows programming languages as well as supporting programmers using Linux and most real-time operating systems including QNX, RTX, RT Linux, VXworks and more. Finally, the UEIDAQ Framework supplies complete support for those creating applications in data acquisition software packages such as LabVIEW, MATLAB/Simulink, DASyLab or any application which supports ActiveX or OPC servers.

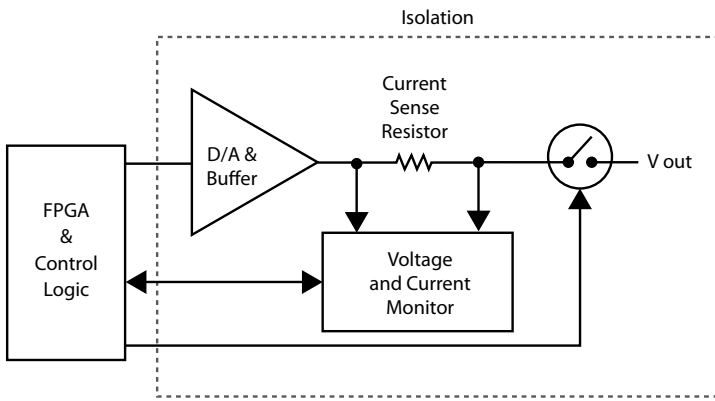
Technical Specifications: (at 25°C unless otherwise noted)

Analog Outputs	8 channels
Resolution	16-bits
Max Update Rate:	10 kHz/channel (80 kHz max aggregate)
FIFO Buffer Size	1024 samples
INL (no load)	± 6 LSB (0.018%)
DNL (no load)	± 2 LSB (0.006%)
Monotonicity	16 bits guaranteed over temperature
Gain Calibration Error	± 610 μ V, typ.
Offset Calibration Error	± 305 μ V, typ.
Output Range	± 10 V
Output Impedance	0.5 Ω (typ)
Current Drive	± 10 mA/channel
Settling Time	50 μ s to 16 bits
Slew Rate	1 V/ μ s
Power up state	0 V ± 10 mV
Output Monitoring	
Accuracy (V / I)	± 5 mV / 100 μ A (± 50 mV / 1 mA over FS temp)
Sample/Update rate	10 Hz
Isolation	350Vrms channel-to-channel and field wiring to chassis.
Power Consumption	4.0 W (not including output loads)
Operating Temp. (tested)	-40 °C to +85 °C
Operating Humidity	95%, non-condensing
Vibration IEC 60068-2-6	5 g, 10-500 Hz, sinusoidal
IEC 60068-2-64	5 g (rms), 10-500 Hz, broad-band random
Shock IEC 60068-2-27	50 g, 3 ms half sine, 18 shocks @ 6 orientations 30 g, 11 ms half sine, 18 shocks @ 6 orientations
MTBF	250,000 hours

Block Diagram:



Simplified output schematic:



Pinout Diagram:

rsvd	1	rsvd
rsvd	2	20 rsvd
rsvd	3	21 rsvd
rsvd	4	22 rsvd
rsvd	5	23 rsvd
rsvd	6	24 rsvd
rsvd	7	25 rsvd
Aout 7 Gnd	8	26 Aout 7
Aout 6	9	27 rsvd
rsvd	10	28 Aout 6 Gnd
Aout 5 Gnd	11	29 Aout 5
Aout 4	12	30 rsvd
rsvd	13	31 Aout 4 Gnd
Aout 3 Gnd	14	32 Aout 3
Aout 2	15	33 rsvd
rsvd	16	34 Aout 2 Gnd
Aout 1 Gnd	17	35 Aout 1
Aout 0	18	36 rsvd
Rsvd	19	37 Aout 0 Gnd

Connection options:

Cable	Screw Terminal Panel	Description
DNA-CBL-37 series	DNA-STP-37	37 conductor screw terminal panel connects to board via DNA-CBL-37 or 37S series cables.