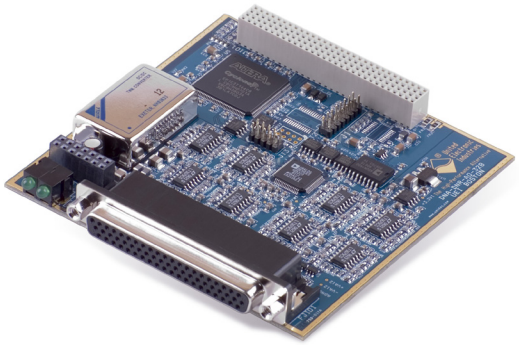
DNR-AO-332-828

28-Channel, 16-bit Analog Output Layer

- 28 independent DACs
- 16-bit resolution
- 10 kHz per channel max update rate
- ±10 V output range, ±10 mA per channel
- Signal/Ground pair per channel
- Low glitch output
- Per-channel offset and gain calibration
- Simultaneous update across all channels (if desired)

10-Year Availability Guarantee



General Description:

The DNR-AO-332-828 is a high density, high-precision, 28-channel analog voltage output layer available in the DNR/DNF formfactors. Similar in functionality to UEI's popular DNR-AO-332, the board offers 4 fewer channels than the standard 332, but provides 4 additional ground pins on the I/O connector. This allows users to keep the output cables in signal/ground pairs. The board offers full 16-bit resolution and guarantees monotonicity over the entire operating temperature range. Utilizing an innovative per-channel digital offset and gain calibration, initial gain and offset errors are limited to ±450 µV and ±305 µV respectively. Each DNR-AO-332-828 channel provides an output range of ±10 V and is capable of driving ±10 mA. For applications requiring higher output current, please refer to the DNR-AO-308-350 layer.

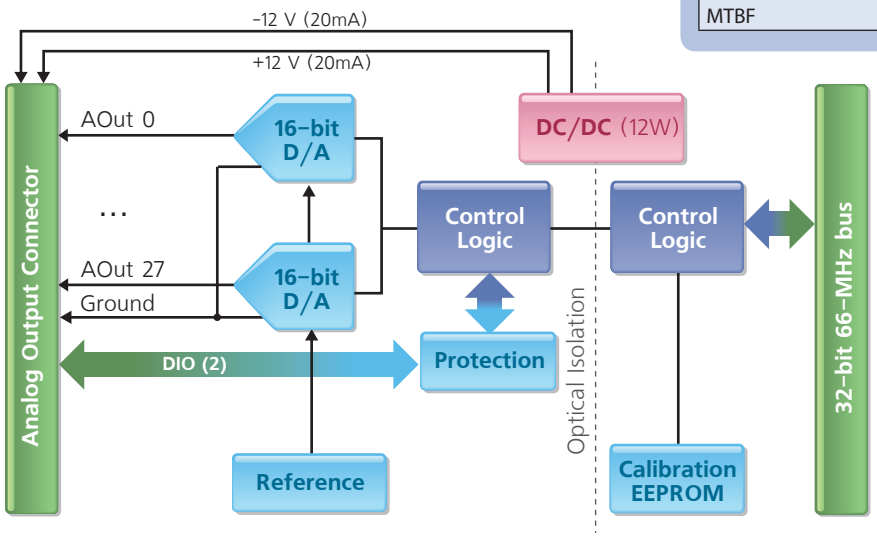
All 28 channels may be configured to update simultaneously, or they may be updated one at a time as data is written. A 1024 sample FIFO on each channel allows each D/A to be updated at 10 kHz without data loss. Double buffering the outputs combined with the use of low glitch D/As make the DNR-AO-332-828 an ideal solution for generating low frequency wave forms or providing highly accurate switched stimulus. The board also offers a digital input bit which may be used as a trigger or as a general purpose input. A digital output bit is also provided.

Software included with the DNR-AO-332-828 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, VXworks and more. Finally, the UEIDAQ Framework supplies complete support for those creating applications in data acquisition software packages such as LabVIEW, MATLAB/Simulink or any application which supports ActiveX or OPC servers.

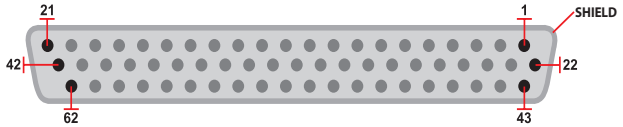
Technical Specifications:

Number of Channels	28
Resolution	16-bits
Max Update Rate:	10 kHz/channel (280 kHz max aggregate)
FIFO Buffer Size	1024 samples
Type of D/A	double-buffered
INL (no load)	±4 LSB (0.012%)
DNL (no load)	±1 LSB (0.003%)
Monotonicity	16 bits guaranteed over temperature
Gain Calibration Error	±450 µV typical
Offset Calibration Error	±305 µV typical
Offset Drift	5ppm/°C
Gain Drift	5ppm/°C
Output Range	±10 V
Output Coupling	DC
Output Impedance	0.1 Ω (typ)
Current Drive	±10 mA/channel
Capacitive Loads	500 pF
Settling Time	50 µs to 16 bits
Slew Rate	1 V/µs
Power up state	0 V ±10 mV
Digital I/O	1 digital input, 1 digital output (logic level)
Isolation	350Vrms
Power Consumption	2.0W - 3W
Operating Temp. (tested)	-40°C to +85°C
Operating Humidity	95%, non-condensing
Vibration *IEC 60068-2-6* *IEC 60068-2-64*	5 g, 10-500 Hz, sinusoidal 5 g (rms), 10-500 Hz, broad-band random
Shock *IEC 60068-2-27*	100 g, 3 ms half sine, 18 shocks @ 6 orientations 30 g, 11 ms half sine, 18 shocks @ 6 orientations
MTBF	>400,000 hours

Block Diagram:



Pinout Diagram:



Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	Gnd	22	AOut 0	43	Gnd	44	AOut 2
2	AOut 1	23	Gnd	45	Gnd	46	AOut 5
3	Gnd	24	AOut 3	47	Gnd	48	AOut 8
4	AOut 4	25	Gnd	49	Gnd	50	AOut 11
5	Gnd	26	AOut 6	51	Gnd	52	AOut 14
6	AOut 7	27	Gnd	53	Gnd	54	AOut 17
7	Gnd	28	AOut 9	55	Gnd	56	AOut 20
8	AOut 10	29	Gnd	57	Gnd	58	AOut 23
9	Gnd	30	AOut 12	59	Gnd	60	AOut 26
10	AOut 13	31	Gnd	61	Gnd	62	-12 V
11	Gnd	32	AOut 15				
12	AOut 16	33	Gnd				
13	Gnd	34	AOut 18				
14	AOut 19	35	Gnd				
15	Gnd	36	AOut 21				
16	AOut 22	37	Gnd				
17	Gnd	38	AOut 24				
18	AOut 25	39	Gnd				
19	Gnd	40	AOut 27				
20	DIn 0	41	Gnd				
21	DOut 0	42	+12V				

Note: When connecting outputs in Channel / Ground pairs, it is recommended the pairs be matched as shown in the boxes outlined. For example, AOut 0 should be matched with Pin 1, AOut 1 should be matched with pin 23, AOut2 should be matched with pin 43, etc.

Connection options:

Cable	Screw Terminal Panel	Description
DNA-CBL-62	DNA-STP-62	62 terminal screw terminal panel connects to board via DNA-CBL-62 round, shielded cable.