DNx-DIO-403
48-Channel TTL Digital I/O Interface

- DNA-/DNR-/DNF-DIO-403 for use with Cube/RACKtangle™/FLATRACK™ I/O chassis
- 48 TTL-compatible digital I/O channels
- All channels configured as 6 eight-bit ports
- I/O throughput rate of 10kHz (20kHz aggregate)
- Outputs provide drive capability of 16 mA/channel
- Lines protected up to 7-kV electrostatic discharge
- Triggering available on digital inputs

DNA-DIO-403
shown

General Description:

The DNx-DIO-403 offers high density I/O and flexibility, with forty-eight 5V-compatible TTL digital lines configurable as either inputs or outputs in groups of eight-bit ports. The DNx-DIO-403 is a member of UEI's popular Guardian series, which provide high levels of user diagnostics. The DIO-403 board provides voltage monitoring functionality, which can help you reduce mean downtime by protecting the boards from external hardware failures. All DIO lines are isolated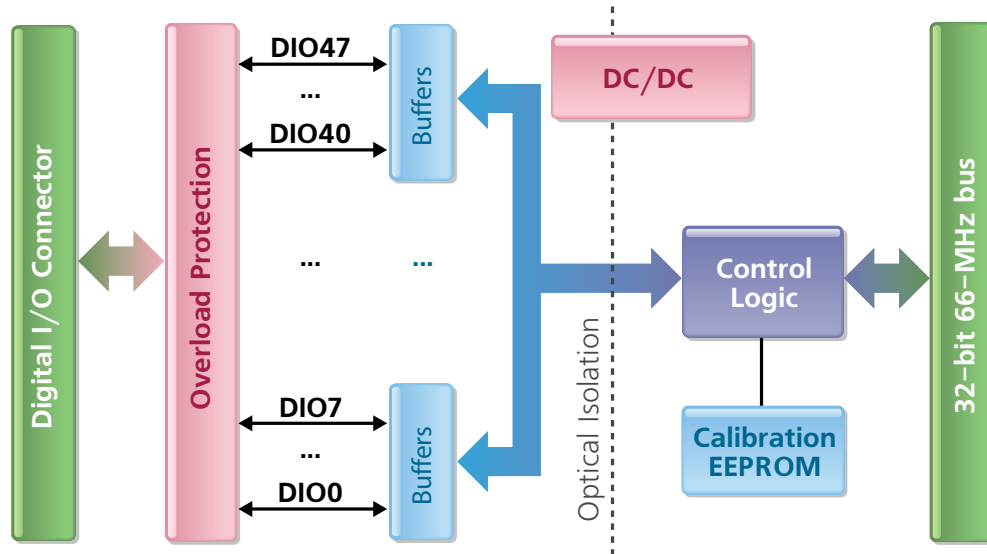 from the rest of the system (they share the same internal ground), and each pin is individually protected against ESD and overvoltage, making this layer suitable for the harsh industrial environment use. Guaranteed 2.4V @15 mA output allows direct interfacing of this layer to solid-state relays and other TTL-compatible devices. The DNx-DIO-403 is an excellent digital I/O solution for a wide array of data acquistion and control applications.

Software is included, providing a comprehensive, yet easy-to-use API that supports all popular operating systems, including Windows, Linux, and most real-time operating systems—such as QNX, Intime, VXworks, and more. Additionally, the UEIDAQ Framework—an even higher level Windows driver—supplies complete support for those creating applications in many popular Windows programming languages, as well as data acquisition software packages such as LabVIEW and MATLAB/Simulink.

BENEFITS OF UEI'S GUARDIAN SERIES

✓ TTL STAGE VOLTAGE MONITORING

UEI's Guardian series boards include a sophisticated, reliable on-board monitoring system, allowing quick and easy system testing, sensor diagnostics monitoring and fault detection for rapid resolution in field or lab.

Learn more about UEI's Guardian series

Technical Specifications:

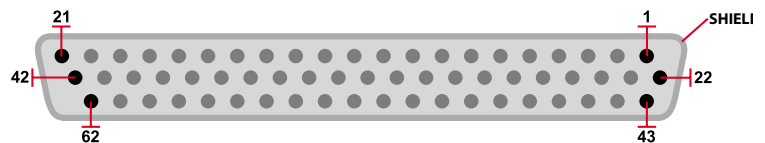|	
Digital I/O Lines	48
Logic Level	5V
Port Width	8 bit
Direction	Per-port configurable
Input FIFO	512 samples
Output FIFO	512 samples
Default Power-up State	Input
I/O Throughput Rate	10 kHz; 20 kHz aggregate
Drive Capacity	>16 mA per channel, continuous
Input High Voltage:	2.0 V min
Input Low Voltage:	0.8 V max
Output High Voltage: (typical / min)	3.5 V/2.5 V @ 3mA; , 3.5 V/2.4 V@ 15mA, 3.0 V/2 V @ 24 mA
Output Low Voltage:	0.55 V max @ 64 mA
Protection	±30 V overvoltage, 7 kV ESD, 22 Ω current limiting resistors
Output protection	140 mA PTC fuse
Power Consumption	1.2 W; plus approx. 0.007 W/mA of load current
Physical Dimensions	3.875" x 3.875" (98 x 98 mm)
Operating Temperature	-40 to +85 °C
Operating Humidity	0 - 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 IEC 60068-2-64	100 g, 3 ms half sine, 18 shocks @ 6 orientations 30 g, 11 ms half sine, 18 shocks @ 6 orientations
MTBF	> 600,000 hours
Altitude	120,000 ft
Isolation	350 Vrms

Block Diagram:

Pinout Diagram:

DB-62 (female)
62-pin connector:

62	N/C	42	DGND	21	+5V@140mA	
61	DIO2	41	DIO1	20	DIO0	
60	DIO5	40	DIO4	19	DIO3	
59	DIO8	39	DIO7	18	DIO6	
58	DIO11	38	DIO10	17	DIO9	
57	DIO14	37	DIO13	16	DIO12	
56	DIO17	36	DIO16	15	DIO15	
55	DIO20	35	DIO19	14	DIO18	
54	DIO23	34	DIO22	13	DIO21	
53	DIO26	33	DIO25	12	DIO24	
52	DIO29	32	DIO28	11	DIO27	
51	DIO32	31	DIO31	10	DIO30	
50	DIO35	30	DIO34	9	DIO33	
49	DIO38	29	DIO37	8	DIO36	
48	DIO41	28	DIO40	7	DIO39	
47	DIO44	27	DIO43	6	DIO42	
46	DIO47	26	DIO46	5	DIO45	
45	TRIG1	25	TRIG2	4	TRIG0	
44	DGND	24	N/C	3	N/C	
43	DGND	23	DGND	2	DGND	
		22	DGND	1	DGND	

Ordering Guide:

Part #	Description
DNx-DIO-403	48-Channel TTL digital I/O board
DNA-STP-62	3ft, 37-way round shielded cable
DNA-CBL-62	2.5ft, 62-way round shielded cable
DNA-STP-3762	Universal Screw Terminal Panel for DNx-Series I/O
DNA-DIO-O22	DNA-DIO-403 to PB-16 series SSR relay rack interface
DNA-STP-62-DR	Universal Screw Terminal Panel for DNx-Series I/O
Extended Warranty	Option to purchase UEI's extended warranty (up to 10 years) is available