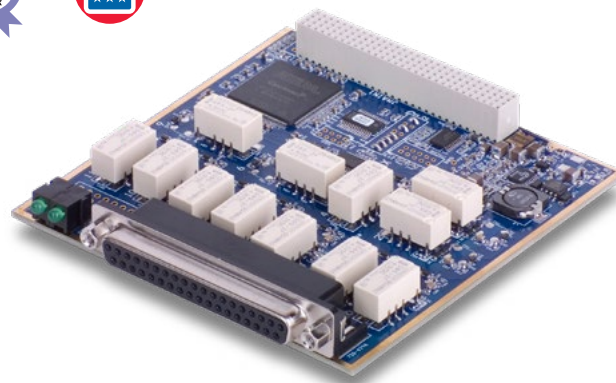


# DNA/DNR/DNF-DIO-452

## 12-Channel Electromechanical Relay Output Layer



- DNR/DNF-DIO-452 for use in RACKtangle/FlatRACK chassis
- DNA-DIO-452 for use in DNA series Cubes
- 12 independent Form C (SPDT) electromechanical relays
- 220 VDC or 250 VAC (maximum operating voltage)
- 200 mOhm resistance (not including cabling)
- 2 Amp @ 30 VDC, (continuous rated load)
- 750 mA @ 125 VAC (continuous rated load)
- 125 Hz switching rates (36000 operations/hour limit)
- Available with output current/voltage readback (see DIO-462)



DNA-DIO-452 boards (shown) are for use in "Cube" chassis. The DNR/DNF-DIO-452 is designed for use in RACKtangle™/FlatRACK chassis respectively.

## General Description:

The DNA/DNR/DNF-DIO-452 are 12-channel, electromechanical relay boards for use with UEI's "Cube", RACKtangle and FlatRACK chassis respectively. The DIO-452 boards are designed for use in a wide variety of switching and digital control applications. Each channel is configured as a standard Form C (SPDT) relay and switches voltages up to 220 VDC or 250 VAC. Each channel is rated for continuous operation at 2 Amps @ 30 VDC and 0.75 Amp at 125 VAC with an output voltage drop of less than 200 mV (impedance <200 mOhm).

All relays default to "NC" on power up/reset. Switching rates up to 125 Hz are supported. There are no fuses or overcurrent protection devices on the board. If an overcurrent condition is possible, we recommend the use of an external fuse.

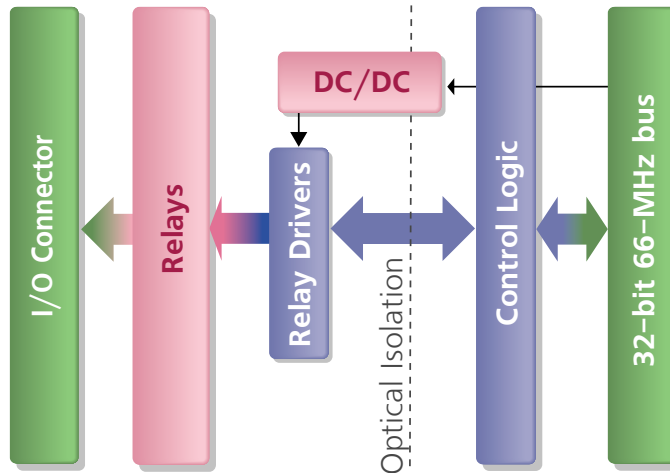
All connections are made through a convenient 37-pin D connector ensuring no problems obtaining mating cables or connectors. Users may also connect the DNx-DIO-452 boards to our popular DNA-STP-37 screw terminal panel via the DNA-CBL-37S cables. The cables are fully shielded and are available in 1, 3, 10 and 20 foot lengths. Each board provides 350 VDC isolation between channels, as well as between the board, cube and other installed I/O boards.

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.

## Technical Specifications:

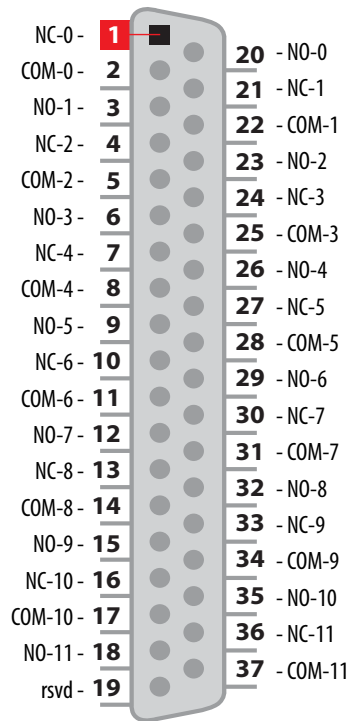
Output specifications		
Rated Load		2 A at 30 VDC, 0.75 A at 125 VAC continuous
Max Switching Capacity		94 VA, 90 W
Max Operating Voltage		220 VDC, 250 VAC
Min Permissible Load		10 $\mu$ A, 10 mVDC
Contact Material		Ag (Au clad)
Contact ON impedance		200 mOhm max (at the I/O connector)
Contact OFF impedance		> 100 MOhm
Off Leakage Current		< 1 $\mu$ A
Turn-On Time		4 mS max, 2.5 mS typ
Turn-Off Time		4 mS max, 1.5 mS typ
Max Operating Freq.		125 operations/second (36000/hour limit)
Service Life		
Mechanical		100 000 000 min
Electrical		100 000 at 2 A 30 VDC or 0.75 A and 125 VAC
Power up / reboot state		Off (NC Energized)
Power dissipation		< 5 W not including output switches
Isolation		350 Vrms
Operating Temp. Range		Tested -40 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
Altitude		120,000 ft
MTBF		275,000 hours

## Block Diagram:



## Pinout Diagram:

DB-37 (female)  
37-pin connector:



## Ordering Guide:

Part #	Description
<a href="#">DNX-DIO-452</a>	12-Channel electromechanical relay output board
<a href="#">DNA-STP-37</a>	37-channel screw terminal panel
<a href="#">DNA-CBL-37</a>	33ft, 37-way flat ribbon cable
<a href="#">DNA-CBL-37S</a>	3ft, 37-way round shielded cable
<a href="#">DNA-STP-3762</a>	Universal Screw Terminal Panel for DNX-Series I/O
<a href="#">DNA-STP-37-DR</a>	37-pos Terminal Panel for PowerDNA Layers
<a href="#">Extended Warranty</a>	Option to purchase UEI's extended warranty (up to 10 years) is available