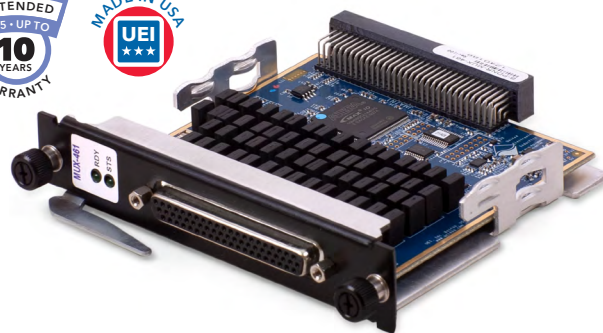


# DNA/DNR/DNF-MUX-461

## 26 channel Multiplexer for the DMM-261



- DNR/DNF-MUX-461 for use in RACKtangle/FlatRACK chassis
- DNA-MUX-461 for use in DNA series Cubes
- 26 two-wire or 13 four-wire channels
- Fully compatible with the DNx-DMM-261
- Connects to DMM-261 without external wiring
- $\pm 170$  VDC or VAC (maximum operating voltage)
- 0.5  $\Omega$  resistance (not including cabling)
- 500 mA switching current
- Relay operation counter tracks total relay cycles
- 500 Hz update rate



DNA-MUX-461 boards are for use in "Cube" chassis. The DNR/DNF-MUX-461 is designed for use in RACKtangle™/FlatRACK chassis respectively. (DNR-MUX-461 shown)

## General Description:

The DNA/DNR/DNF-MUX-461 provides 26 two-wire or 13 four-wire multiplexers for the DNx-DMM-261 DMM board. All connections are made inside the Cube or RACKtangle, so the only connections you need to make are to the various channels on the board. Up to five of the boards may be daisy chained within the Cube/RACK chassis, providing up to 130 two-wire or 65 four-wire channels in a single chassis. Larger systems are possible, though they will require the DMM-261 to MUX-461 interconnection be external to the chassis itself.

The MUX-461 boards are designed for use in a wide variety of switching and digital control applications. Each channel is capable of switching voltages up to  $\pm 170$  VDC or AC, and is rated for continuous operation at 500 mA DC or AC rms with a switch resistance of less than 0.5  $\Omega$  (not including external cables). For higher voltage applications please refer to the DNx-MUX-361-350 which support 350 VDC/350VAC operation. Note that the standard 170 V DNx-MUX-461 can be used in conjunction with the 350 V DNx-MUX-461-350 with the same DNx-DMM-261, but in this case, the maximum voltage rating on the 461-350 is reduced to 270 VDC/Vrms.

The reed relays are rated for 1 million operations at @ 24VDC/50 mA or 12 VDC/100 mA. A counter built into the board counts the number of switch cycles for each relay, so the age of the contacts can be tracked. All relays default to "open" on power up/reset. Switching rates up to 500 Hz are supported. Each board provides 350 VDC isolation between channels, and between the board, cube and other installed I/O boards.

A digital trigger input is provided at the I/O connector and can be used to initiate channel switches. A digital trigger output provides the relay status (in transition or stable).

MUX-461 series boards may be connected to DNx-DMM-261 series DMMs totally within the DNA or DNR chassis. In the DNA Cubes, the MUX-461 is connected to the DMM-262 by a set of internal connectors that connect to the board above (and/or below). In DNR chassis, a special cable is used to connect MUX-461 series board together as well as to the DMM-261.

All field-wiring connections are made through a convenient 62-pin D connector ensuring no problems obtaining mating cables or connectors. Users may also connect the DNx-MUX-461 boards to our popular DNA-STP-62 screw terminal panel via the DNA-CBL-62 cables. The cables are shielded and available in 1, 3, 10 and 20 foot lengths.

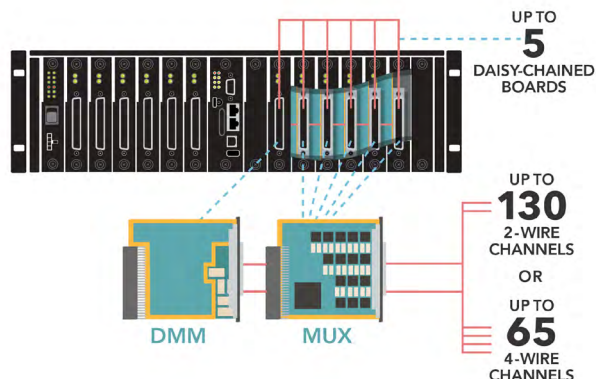
The DNx-MUX-461 series includes software drivers supporting all popular operating systems including: Windows, Linux, QNX, VXWorks,

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

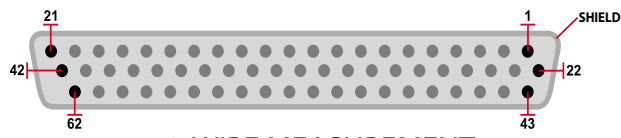
Output Configuration	26 two-wire or 13 four-wire multiplexers
Output Specifications	
Rated Load (Switching)	500 mA (-40 to +85 °C)
Rated Load (Carry)	1 A
Maximum Operating Voltage	170 VDC or VAC (other versions available as special order)
Contact Type	Reed relay
Contact ON Impedance	0.5 $\Omega$ maximum (at the I/O connector)
Contact OFF Impedance	>10 G $\Omega$
Off Leakage Current	<20 nA
Carrying Current	1 A
Maximum Update Rate	500 Hz
Turn-Off Time	<0.35 ms typical
Turn-On Time	<0.25 ms typical
Maximum Operating Rate	500 Hz
Rated Contact Life	1 million operations at 24 VDC/50 mA 1 million operations at 12 VDC/100 mA
Power Up/Reboot State	All switches off
Power Dissipation	<5 W not including output switches
Isolation	350 Vrms
Operating Temperature 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 50 g, 3 ms half sine, 18 shocks @ 6 orientations 30 g, 11 ms half sine, 18 shocks @ 6 orientations
MTBF	400,000 hours

RTX, and other popular Real-Time Operating Systems. Windows users may take advantage of the powerful UEIDAQ Framework which provides a simple and complete software interface to all popular Windows programming languages and data acquisition and control applications (e.g. LabVIEW, MATLAB).

## DMM / MUX Integration:



## Pinout Diagram: DB-62 (female)



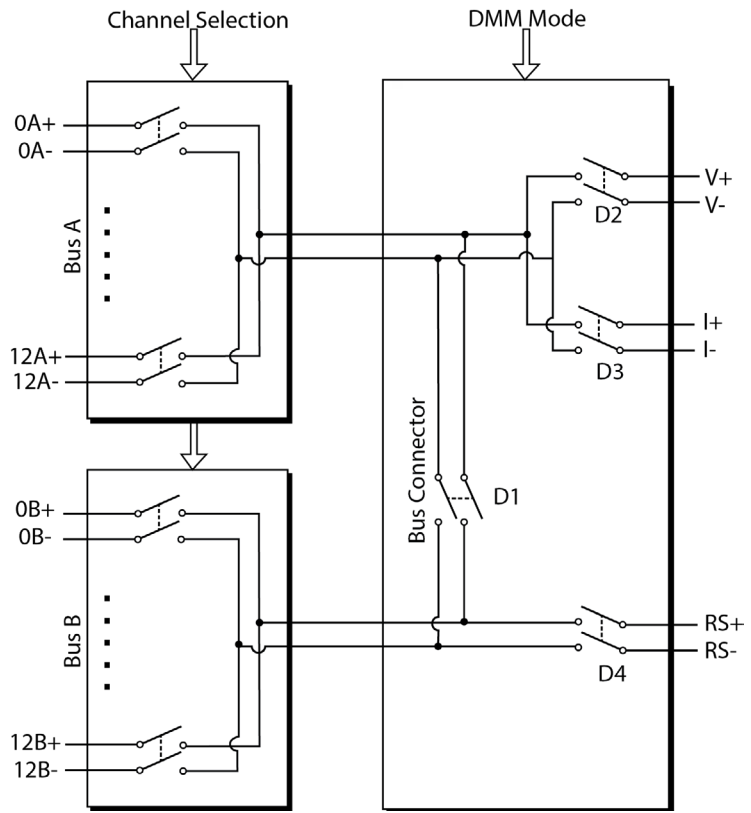
### 2-WIRE MEASUREMENT

Pin	Signal	Pin	Signal	Pin	Signal
1	Sync +3.75V	22	Sync Gnd	43	IN 12-
2	Sync Out	23	Sync In	44	IN 12+
3	IN 25+	24	IN 25-	45	IN 24-
4	IN 11+	25	IN 11-	46	IN 24+
5	IN 10+	26	IN 10-	47	IN 9-
6	IN 23+	27	IN 23-	48	IN 9+
7	IN 22+	28	IN 22-	49	IN 21-
8	IN 8+	29	IN 8-	50	IN 21+
9	IN 7+	30	IN 7-	51	IN 6-
10	IN 20+	31	IN 20-	52	IN 6+
11	IN 19+	32	IN 19-	53	IN 18-
12	IN 5+	33	IN 5-	54	IN 18+
13	IN 4+	34	IN 4-	55	IN 3-
14	IN 17+	35	IN 17-	56	IN 3+
15	IN 16+	36	IN 16-	57	IN 15-
16	IN 2+	37	IN 2-	58	IN 15+
17	IN 1+	38	IN 1-	59	IN 0-
18	IN 14+	39	IN 14-	60	IN 0+
19	IN 13+	40	IN 13-	61	DMM V-
20	DMM RS-	41	DMM RS+	62	DMM V+
21	DMM I-	42	DMM I+		

### 4-WIRE MEASUREMENT

Pin	Signal	Pin	Signal	Pin	Signal
1	Sync +3.75V	22	Sync Gnd	43	IN 12A-
2	Sync Out	23	Sync In	44	IN 12A+
3	IN 12B+	24	IN 12B-	45	IN 11B-
4	IN 11A+	25	IN 11A-	46	IN 11B+
5	IN 10A+	26	IN 10A-	47	IN 9A-
6	IN 10B+	27	IN 10B-	48	IN 9A+
7	IN 9B+	28	IN 9B-	49	IN 8B-
8	IN 8A+	29	IN 8A-	50	IN 8B+
9	IN 7A+	30	IN 7A-	51	IN 6A-
10	IN 7B+	31	IN 7B-	52	IN 6A+
11	IN 6B+	32	IN 6B-	53	IN 5B-
12	IN 5A+	33	IN 5A-	54	IN 5B+
13	IN 4A+	34	IN 4A-	55	IN 3A-
14	IN 4B+	35	IN 4B-	56	IN 3A+
15	IN 3B+	36	IN 3B-	57	IN 2B-
16	IN 2A+	37	IN 2A-	58	IN 2B+
17	IN 1A+	38	IN 1A-	59	IN 0A-
18	IN 1B+	39	IN 1B-	60	IN 0A+
19	IN 0B+	40	IN 0B-	61	DMM V-
20	DMM RS-	41	DMM RS+	62	DMM V+
21	DMM I-	42	DMM I+		

## Block Diagram:



## Products/Accessories:

Part Number	Description
<a href="#">DNx-MUX-461</a>	26 channel Multiplexer for the DMM-261
<a href="#">DNA-STP-62</a>	62-channel screw terminal panel
<a href="#">1000-126</a>	DIN rail tray for the STP-62
<a href="#">DNA-STP-62-DR</a>	62-pos Terminal Panel for PowerDNA Layers
<a href="#">DNA-CBL-62</a>	2.5ft, 62-way, male to male, round shielded cable
<a href="#">Extended Warranty</a>	Option to purchase UEI's extended 5 year warranty is available