United Electronic Industries / AMETEK®

# DNx-PC-910/911/912/913/914

## DNA/DNR/DNF-PC-91x series for use with Cube/RACKtangle™/ FLATRACK™ I/O chassis

- DNA/DNR/DNF-PC-91x series for use with Cube/RACKtangle™/FLATRACK™ I/O chassis

- Isolated DC/DC converters

- Overload protection Overtemperature shutdown

- Software-controlled On/Off switch

- Readback of input voltage and current

- NA version can be internally connected to an analog out board
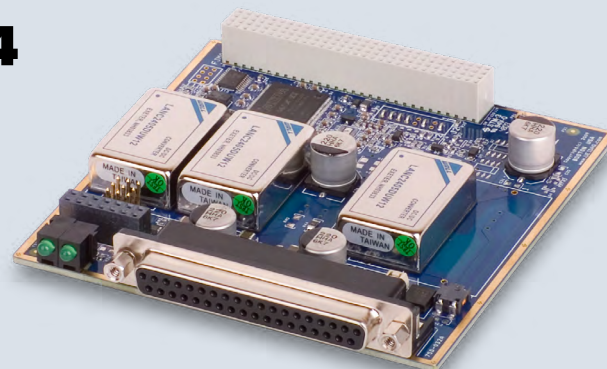
**DNA-PC-911 shown (all boards available in DNA, DNF and DNR configurations)**

## GENERAL DESCRIPTION

The DNA-PC-91x and DNR-PC-91x series provide external power to various sensors and signal conditioning when required by your application. The 91x series may also be used to provide power to the various DNx series I/O boards requiring external power. The DNA version is designed for use in UEI's Cube chassis, while the DNR and DNF series are for use in the RACKtangle and FLATRACK chassis form factors. The DNx-PC-91x series is fully backward compatible with the DNx-PC-90x series boards.

The DNx-PC-910, 911, 912, 913 and 914 are designed to provide output voltages of ±10 VDC, ±15 VDC, +24 VDC, ±45 VDC and ±63

VDC respectively. Input power for the boards is provided by the internal Cube or RACKtangle by default, but an external power supply* may be used to power the units. The units are designed to automatically detect the presence of an external supply and use power from it when available.

Outputs may be turned on and off under software control (default is On). The boards provide a read-back capability of the input voltage allowing the application to ensure acceptable input voltage levels.

All connections are through a 37-pin D female connector. The pinout of this connector is identical to that of the earlier DNA-PC-90x

series with the exception that pins designated as "NC" on the 90x series are now used as the connections to external power when used.

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 (All version unless otherwise noted)

| Input voltage | Uses the same 9–36 V DC as chassis in which it is installed |
|---|---|
| Output voltage/rated current: | (Call for info on other voltages) |
| DNx-PC-910 | ±10 V DC ±3% @ 1.5 A |
| DNx-PC-911 | ±15 V DC ±3% @ 1.2 A |
| DNx-PC-911-828 28 VDC | +28 V DC ±3% @ 1.3 A |
| DNx-PC-912 | ±24 V DC ±3% @ 1.6 A |
| DNx-PC-913 | ±45 V DC ±3% @ 0.4 A |
| DNx-PC-914 | ±63 V DC ±3% @ 0.4 A |
| Output current temperature derating | Derated 1.2% per °C above 40 °C |
| Output ripple voltage | <100 mV |
| Output enable/disable | Software controlled. Default condition is ON |
| Input Selection* | Power provided by internal bus or external connection. Default source is internal |
| Output protection | 5 A slow-blow fuse |
| Short circuit output current | 150 % of $I_{max}$ |
| Output Isolation | 350 Vrms, min |
| Input voltage readback accuracy | ±1% |
| Temperature measurement accuracy | ±2 °C |
| Power supply efficiency | >75% at all currents |
| Power consumption | 0.8W (without load) |
| Operating temperature range | -40 °C to +85 °C (output current derated 1.2% per °C above 40 °C) |
| Operating humidity | 95%, non-condensing |
| MTBF (Hours) | 150,000 |

* When the total power drawn from all DNx-PC-91x series boards in a single chassis exceeds 40 watts, the use of external power is recommended.

# PINOUT DIAGRAMS

## DB-37 (female)
### 37-pin connector:
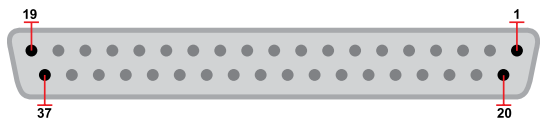


### DNx-PC-910

| Label | Pin | Pin | Label |
|---|---|---|---|
| Ext PWR Ret | 37 | 19 | Ext PWR Ret |
| DGND | 36 | 18 | −10V |
| DGND | 35 | 17 | −10V |
| DGND | 34 | 16 | −10V |
| DGND | 33 | 15 | −10V |
| DGND | 32 | 14 | −10V |
| DGND | 31 | 13 | −10V |
| DGND | 30 | 12 | −10V |
| DGND | 29 | 11 | N/C |
| DGND | 28 | 10 | N/C |
| DGND | 27 | 9 | N/C |
| DGND | 26 | 8 | +10V |
| DGND | 25 | 7 | +10V |
| DGND | 24 | 6 | +10V |
| DGND | 23 | 5 | +10V |
| DGND | 22 | 4 | +10V |
| DGND | 21 | 3 | +10V |
| Ext PWR+ | 20 | 2 | +10V |
| | | 1 | Ext PWR+ |

### DNx-PC-911

| Label | Pin | Pin | Label |
|---|---|---|---|
| Ext PWR Ret | 37 | 19 | Ext PWR Ret |
| DGND | 36 | 18 | −15V |
| DGND | 35 | 17 | −15V |
| DGND | 34 | 16 | −15V |
| DGND | 33 | 15 | −15V |
| DGND | 32 | 14 | −15V |
| DGND | 31 | 13 | −15V |
| DGND | 30 | 12 | −15V |
| DGND | 29 | 11 | N/C |
| DGND | 28 | 10 | N/C |
| DGND | 27 | 9 | N/C |
| DGND | 26 | 8 | +15V |
| DGND | 25 | 7 | +15V |
| DGND | 24 | 6 | +15V |
| DGND | 23 | 5 | +15V |
| DGND | 22 | 4 | +15V |
| DGND | 21 | 3 | +15V |
| Ext PWR+ | 20 | 2 | +15V |
| | | 1 | Ext PWR+ |

### DNx-PC-911-828 28 VDC

| Label | Pin | Pin | Label |
|---|---|---|---|
| Ext PWR Ret | 37 | 19 | Ext PWR Ret |
| DGND | 36 | 18 | 28V |
| DGND | 35 | 17 | 28V |
| DGND | 34 | 16 | 28V |
| DGND | 33 | 15 | 28V |
| DGND | 32 | 14 | 28V |
| DGND | 31 | 13 | 28V |
| DGND | 30 | 12 | 28V |
| DGND | 29 | 11 | N/C |
| DGND | 28 | 10 | N/C |
| DGND | 27 | 9 | N/C |
| DGND | 26 | 8 | 28V |
| DGND | 25 | 7 | 28V |
| DGND | 24 | 6 | 28V |
| DGND | 23 | 5 | 28V |
| DGND | 22 | 4 | 28V |
| DGND | 21 | 3 | 28V |
| Ext PWR+ | 20 | 2 | 28V |
| | | 1 | Ext PWR+ |

### DNx-PC-912

| Label | Pin | Pin | Label |
|---|---|---|---|
| Ext PWR Ret | 37 | 19 | Ext PWR Ret |
| DGND | 36 | 18 | DGND |
| DGND | 35 | 17 | DGND |
| DGND | 34 | 16 | DGND |
| DGND | 33 | 15 | DGND |
| DGND | 32 | 14 | DGND |
| DGND | 31 | 13 | DGND |
| DGND | 30 | 12 | DGND |
| DGND | 29 | 11 | N/C |
| DGND | 28 | 10 | N/C |
| DGND | 27 | 9 | N/C |
| DGND | 26 | 8 | +24V |
| DGND | 25 | 7 | +24V |
| DGND | 24 | 6 | +24V |
| DGND | 23 | 5 | +24V |
| DGND | 22 | 4 | +24V |
| DGND | 21 | 3 | +24V |
| Ext PWR+ | 20 | 2 | +24V |
| | | 1 | Ext PWR+ |

### DNx-PC-913

| Label | Pin | Pin | Label |
|---|---|---|---|
| Ext PWR Ret | 37 | 19 | Ext PWR Ret |
| DGND | 36 | 18 | −45V |
| DGND | 35 | 17 | −45V |
| DGND | 34 | 16 | −45V |
| DGND | 33 | 15 | −45V |
| DGND | 32 | 14 | −45V |
| DGND | 31 | 13 | −45V |
| DGND | 30 | 12 | −45V |
| DGND | 29 | 11 | N/C |
| DGND | 28 | 10 | N/C |
| DGND | 27 | 9 | N/C |
| DGND | 26 | 8 | +45V |
| DGND | 25 | 7 | +45V |
| DGND | 24 | 6 | +45V |
| DGND | 23 | 5 | +45V |
| DGND | 22 | 4 | +45V |
| DGND | 21 | 3 | +45V |
| Ext PWR+ | 20 | 2 | +45V |
| | | 1 | Ext PWR+ |

### DNx-PC-914

| Label | Pin | Pin | Label |
|---|---|---|---|
| Ext PWR Ret | 37 | 19 | Ext PWR Ret |
| DGND | 36 | 18 | −63V |
| DGND | 35 | 17 | −63V |
| DGND | 34 | 16 | −63V |
| DGND | 33 | 15 | −63V |
| DGND | 32 | 14 | −63V |
| DGND | 31 | 13 | −63V |
| DGND | 30 | 12 | −63V |
| DGND | 29 | 11 | N/C |
| DGND | 28 | 10 | N/C |
| DGND | 27 | 9 | N/C |
| DGND | 26 | 8 | +63V |
| DGND | 25 | 7 | +63V |
| DGND | 24 | 6 | +63V |
| DGND | 23 | 5 | +63V |
| DGND | 22 | 4 | +63V |
| DGND | 21 | 3 | +63V |
| Ext PWR+ | 20 | 2 | +63V |
| | | 1 | Ext PWR+ |

# BLOCK DIAGRAM
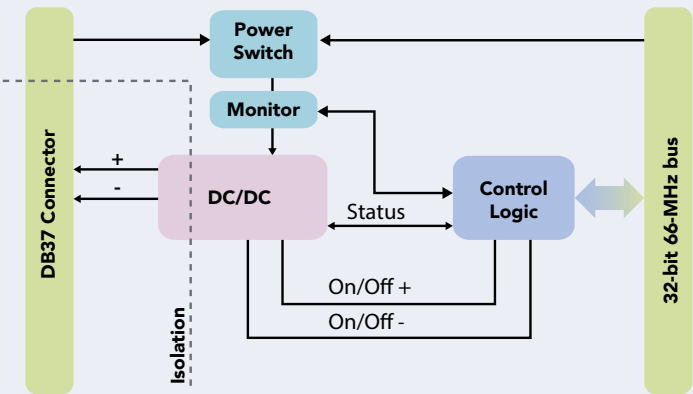


# ORDERING GUIDE

**Including SDK/Board Support Packages** (Only one toolkit is required, regardless of the number of UEIPACs deployed)
**To place an order**, you can build an estimate online at www.ueidaq.com, or contact us at 508-921-4600 or uei.sales@ametek.com.

| Part Number | Description |
|---|---|
| DNA-CBL-37S | 3 ft., 37-way, male to female, round shielded cable |
| DNA-STP-37 | Universal Screw Terminal Panel for DNx-series I/O |
| DNA-STP-37-DR | Universal Screw Terminal for DNx-series I/O with DIN rail mounts |
| Extended Warranty | Option to purchase UEI's extended 5 year warranty is available |