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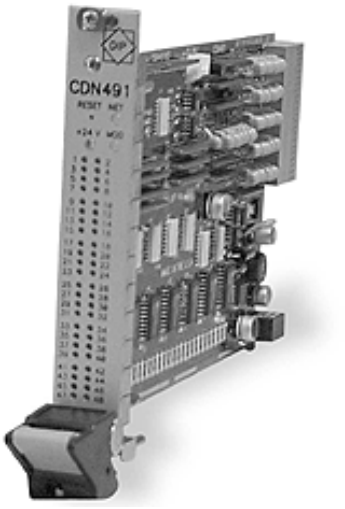
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DeviceNet™ 48 Bi-Directional Digital I/O

Type CDN491

DeviceNet Classes

CLASS CODE	OBJECT TYPE
01 (0x01)	Identity
02 (0x02)	Router
03 (0x03)	DeviceNet
04 (0x04)	Assembly
05 (0x05)	Connection
08 (0x08)	Digital Input Point
09 (0x09)	Digital Output Point
48 (0x30)	Device Supervisor Object

Features and Benefits

- ☐ 100 X 160 mm, 3U X 4HP, DeviceNet I/O Board
- ☐ 48 Bi-directional Digital I/O (24 Vdc)
- ☐ Switch and Jumper Settable MacID and Baud Rate
- ☐ cPCI J2 I/O Interface connector
- ☐ On board Thermal monitoring/fan control
- ☐ Power monitoring

Description

The CDN491 provides a high density DeviceNet Digital I/O controller. The unit may be rack mounted in standard cPCI compatible card cage or used in stand-alone control systems.

The CDN491 supports 48 bi-directional I/O that may be freely mixed between inputs and outputs. When used as an output the actual input state may be read to verify signal integrity.

On board monitoring of the digital supply voltages ensure that external power sources are within specification. Thermal monitoring provides both software as well as hardware control over a over temperature (FAN) output. Processor power is monitored to ensure integrity and all outputs are forced to an inactive state in cases of power degradation.

Rotary switches and jumpers provide control over the DeviceNet MacID and Baud Rate settings. The DeviceNet signaling is optically isolated from all I/O. On board isolated DC-DC converters provide processor (+5 Vdc) power from the DeviceNet 11-25 Vdc supply voltage.

mks
Technology for Productivity

DeviceNet Model

The CDN491 supports standard DIP and DOP application objects for I/O interfaces.

User selectable options within the Configuration Object allow the CDN491 to be tailored to specific applications by limiting the data transfers to exactly match the I/O requirements. The configuration object also provides access to the thermal and power monitoring status and control bits.

On board power monitoring ensures that the local processor power is within 5% of the specified 5 Vdc level. Processor power failure will force a hardware reset to the unit and force all outputs to the OFF (minimum voltage) state.

Auxiliary power monitoring on the 24 Vdc Digital supply is provided with both local LED indicators and DeviceNet alarm monitoring.

On board thermal monitoring provides an indication of the current operating temperature of the unit. The thermal monitor provides an active low output signal that can provide hardware control over an external FAN or Warning system.

The digital and DeviceNet subsystems are optically isolated to ensure a minimum of cross talk and ground loop issues.

I/O Connections

The CDN491 provides a 110 pin high density plug compatible to the cPCI J2 connector. In addition to all I/O signals the cPCI connectors carry the DeviceNet signals, the MacID and Baud Rate switch inputs and the auxiliary I/O power. The CDN491 is a member of the DIP cPCI Card DeviceNet controller family and provides a high density, low cost per point solution for a wide range of acquisition and control applications.

cPCI J2 Connector

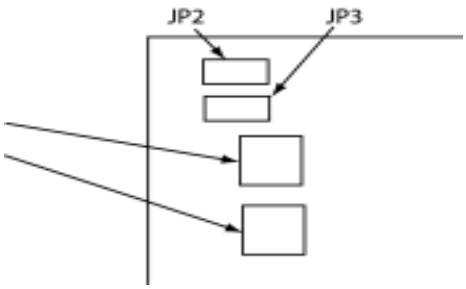
	Z	A	B	C	D	E	F
22	n/c	MacID 4 / GID 4	MacID 3 / GID 3	MacID 2 / GID 2	MacID 1 / GID 1	MacID 0 / GID 0	n/c
21	n/c	Reserved	Reserved	Reserved	Reserved	Reserved	n/c
20	n/c						n/c
19	n/c	DI/O 44	DI/O 45	DI/O 46	DI/O 47		n/c
18	n/c	DI/O 39	DI/O 40	DI/O 41	DI/O 42	DI/O 43	n/c
17	n/c	DigSignCom	DigSignCom	DigSignCom	DigSignCom	DigSignCom	n/c
16	n/c	DI/O 34	DI/O 35	DI/O 36	DI/O 37	DI/O 38	n/c
15	n/c	DI/O 29	DI/O 30	DI/O 31	DI/O 32	DI/O 33	n/c
14	n/c	DI/O 24	DI/O 25	DI/O 26	DI/O 27	DI/O 28	n/c
13	n/c	DigSignCom	DigSignCom	DigSignCom	DigSignCom	DigSignCom	n/c
12	n/c						n/c
11	n/c						n/c
10	n/c	DI/O 20	DI/O 21	DI/O 22	DI/O 23		n/c
9	n/c	DigSignCom	DigSignCom	DigSignCom	DigSignCom	DigSignCom	n/c
8	n/c	DI/O 15	DI/O 16	DI/O 17	DI/O 18	DI/O 19	n/c
7	n/c	DI/O 10	DI/O 11	DI/O 12	DI/O 13	DI/O 14	n/c
6	n/c	DI/O 5	DI/O 6	DI/O 7	DI/O 8	DI/O 9	n/c
5	n/c	DI/O 0	DI/O 1	DI/O 2	DI/O 3	DI/O4	n/c
4	n/c	24V	24Vret	24V	24Vret	FAN OUTPUT	n/c
3	n/c	MacID 5	MacID 6	CONFIG COMM	BAUD RATE 0	BAUD RATE 1	n/c
2	n/c	DNet V+	Dnet CAN H	SHLD	DNet CAN L	DNet V-	n/c
1	n/c						n/c

Note: MacID and BaudRate switch inputs are in parallel to on board switches. If off board signals are to be used the onboard switches must be in the OFF position.

Switch/Jumper Settings

JP2	JP3	Baud Rate
		125 kbits/second
	X	250 kbits/second
X		500 kbits/second
X	X	Software settable

Switch/Jumper Settings	
Switch	**Function**
S4	MSD of MacID
S5	LSD of MacID



Specifications

Specification	Min	Typ.	Max	Description
DeviceNet				ISO 11898 transceiver, optically coupled
MacID	0		63	Hardware settable (switch/backplane), Software settable
Data Rate	125		500	Kbit/second, hardware or software settable
Vpwr	11		25	Vdc
Ipwr		250	400	mA at 24 Vdc
Digital Inputs				48 Channels, linked to Digital Outputs
Ion	-4			mA
Ioff			-2	mA – Corresponding output must be in OFF state
Vin	-1		28	Vdc
Digital Outputs				48 Channels, linked to Digital Inputs
Ion		100	200	Individual channels will drive up to 200 mA. Dissipation should be limited to 800 mA for each group of 8 channels, averaging 100 mA / channel.
Ioff			.1 mA	Off leakage current for voltages less than VDIO
VOL		.9	1.1	@ 100 mA load
		1.1	1.2	@ 200 mA load
Digital Power				
VDIO	18	24	28	Vdc.
IDIO		40		mA + 6 mA / active I/O point
Fan Output				
Vol			1	Vdc @ 100 mA
Voh			28	Vdc (off condition)
Ion			100	MA @ 24 Vdc

Specifications are subject to change without notice.
DeviceNet™ is a trademark of the Open DeviceNet Vendor Association.

Ordering Information

CDN491 DeviceNet Digital I/O

Type Number: CDN491

CDN491	48 Digital I/O, 160 X 100mm, Type B cPCI Connector

Bulletin cdn491-6/02
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Technology for Productivity

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