NetPod 4004 - Data Acquisition & Control System

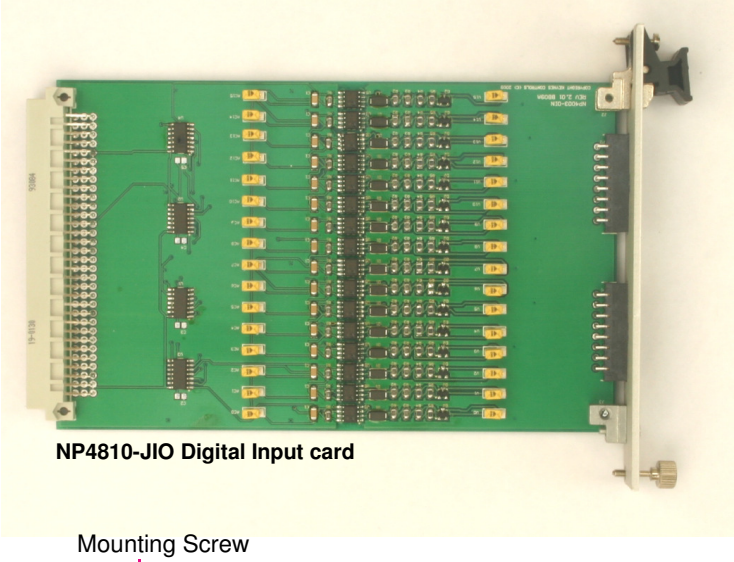
Part Number - NP4810-JIO

Specification & Operation

Introduction

The NP4810-JIO is a high speed digital input card supporting both high and low level inputs in a single user defined card for the NetPod 4004 series data acquisition instrument. The NP4810-JIO input card supports up to 8 independent digital input signals. Each input can be individually processed from the driver software.

Important Note: When using this card make sure that the mounting screws are correctly terminated to guarantee an electrical earth connection to the main instrument chassis. This is essential for safety when operating with high voltages. Do not use this card if the mounting screws are not fitted.



NP4810-JIO Digital Input card

16 x Independent Input Channels

User set 300/5V Input Range

Maximum Isolation 2000V DC/Channel

Maximum Cable Size 1.5 mm ²

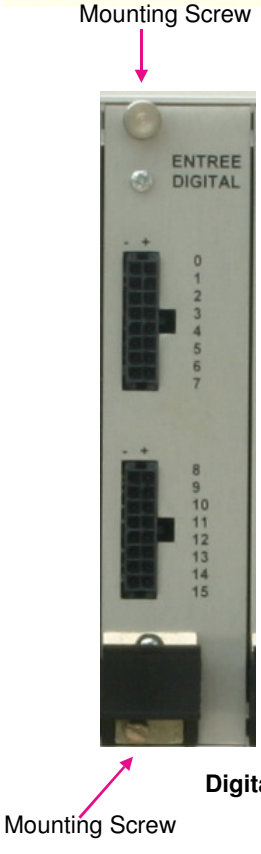
Microsoft Windows / Linux / Unix driver support

Up-to 5000 Input readings/Sec/Chan

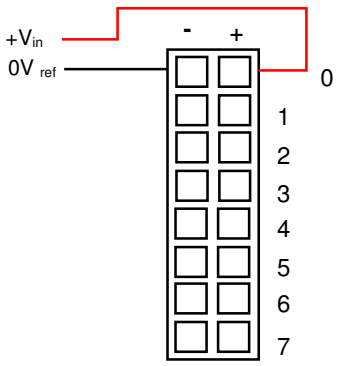
Power Consumption < 10 mA

SW-1 SW-2 Switch Settings

Open Closed



Digital Input Panel



The image above demonstrates how to connect a digital input signal to Channel 0 of the NP4810-JIO card.

Signal Level Connection

The input signals are connected the input port as shown opposite. The +Vin signal goes to the '+' input and the 0V goes to the '-' input.

There is no limit to the different combination of digital signal types that can be used to a single input card.

The jumper settings in Table 1 show how to configure the card for high voltage and / or AC/DC input signal operations.

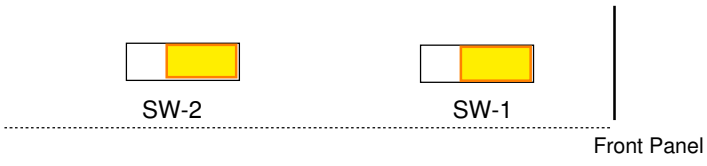


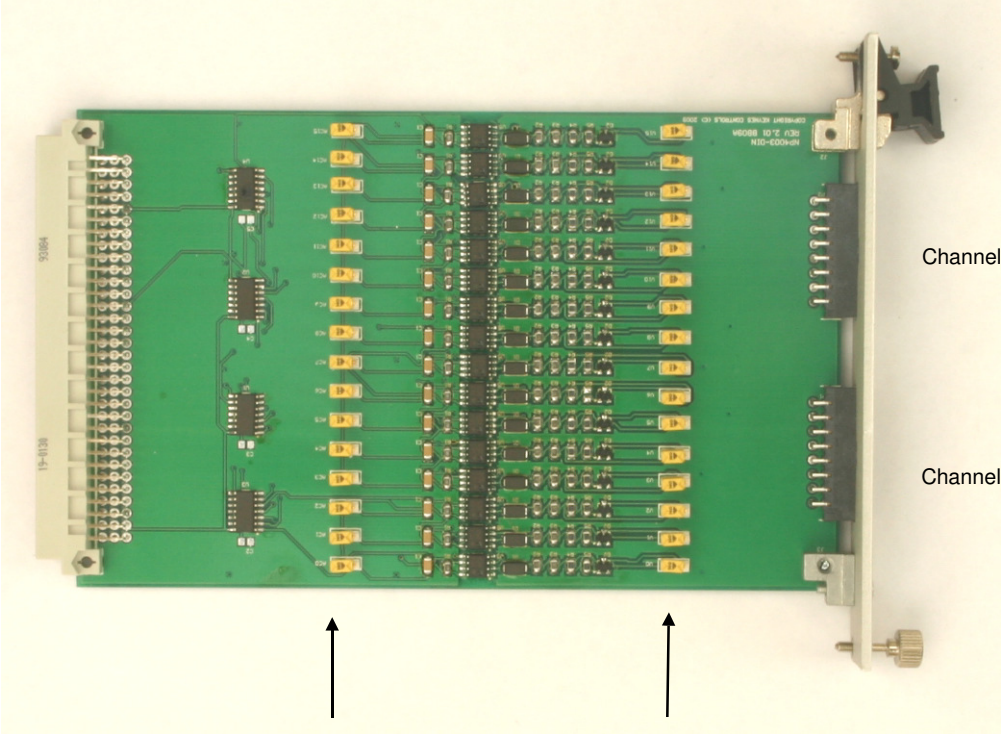
Table 1

	Open	Closed
SW-1	High Voltage	Low Voltage
SW-2	DC Input	AC Input

Example

Set Channel 1 to 300V AC input range.
SW-1 is set to open. SW-2 is set to closed.

Set Channel 4 to 5 V DC operation
SW-1 is set to Closed, SW-2 is set to Open.



SW-2
AC/DC Switch

SW-1
High Voltage / Low Voltage

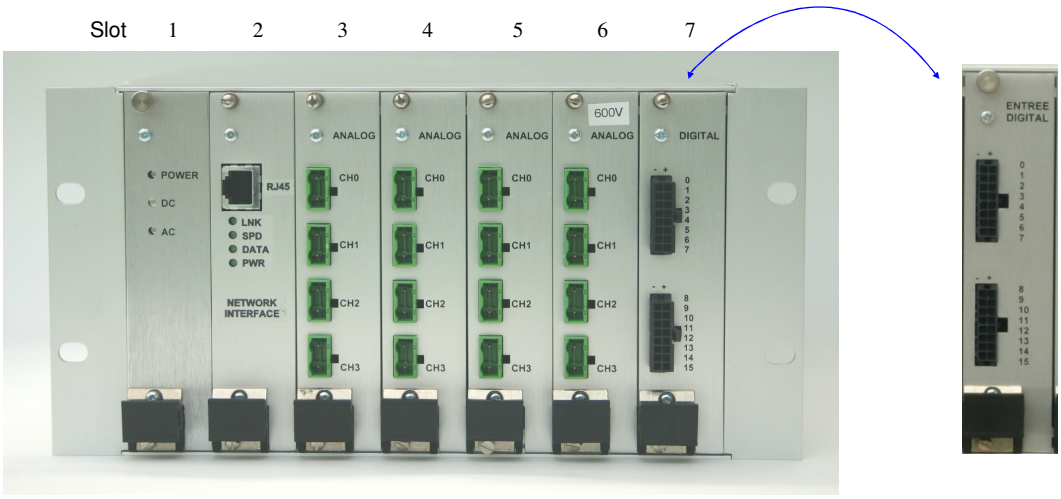
Fitting the NP4810-JIO into the Instrument

The NP4810-JIO card is fitted into slot 7 of the instrument only as shown below.

1) Slide the NP4810-J10 card into slot 7 and fasten into the chassis using the top and bottom mounting screws

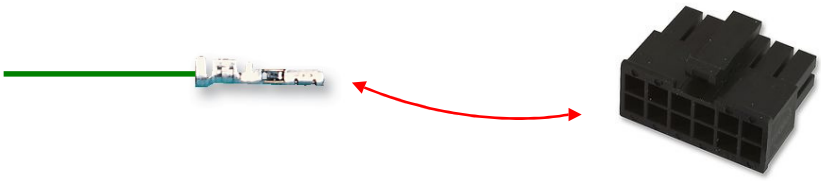
Important Note - Earth Connection

The top and bottom mounting screws fitted to the front panel of the NP4810-JIO card must be securely fastened to the instrument chassis to provide the earth connection for electrical safety. This is essential when operating the card with high 300V input signals.



Fully Populated Instrument

Digital Port Connector



Max Cable Diameter:1.52mm
Max Wire Area Size:0.12m²
Max Wire Size AWG:30AWG
Min Cable Diameter:1.52mm
Min Wire Area Size:0.05m²
Min Wire Size AWG:26AWG

Windows Driver Software

The following instructions demonstrate using the NP4810-JIO card from within the standard podmng Windows driver.

Instructions

The following instructions are based on the **NP4810-JIO** card already being installed into the Net Pod 4004

1. Start the PodMng.exe software

   Make sure the network has been scanned and the instrument to be used has been recognised by the driver.

   Refer to the User Guide for details of using the driver software.

   The Podmng.exe task bar icon should be green and flashing as shown below:

Podmng - task bar icon

Mode - Run Mode Active
(gathering data)

2) Select the instrument under investigation from within the main Podmng Window

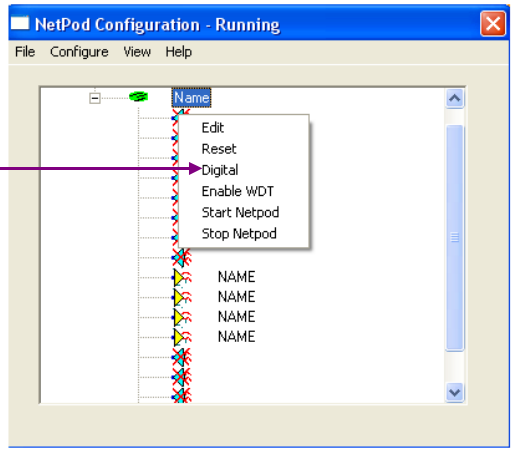
3) Move the mouse pointer over the instrument name and select the right mouse button.

The menu system shown in the '**NetPod Configuration**' Window will appear.

From the menu system select the '**Digital**' menu item.

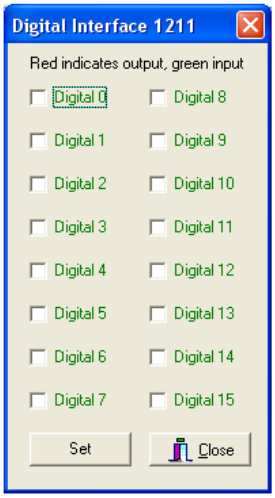
Select the '**Digital**' menu option
To see the real–time input port levels.

The '**Digital Interface**' Window will appear and the tick boxes show the input port levels.

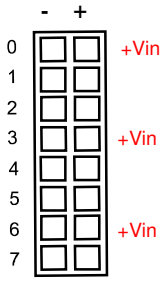


Viewing Digital Input Port Levels

The input signal levels to the NP4810-JIO card are only shown when the NetPod 4004 is in 'Run Mode' and acquiring data.



Input Port Connection



The example opposite shows the levels on the digital ports when suitable digital signals are connected to channels 0, 3 and 6.

Trigger Levels

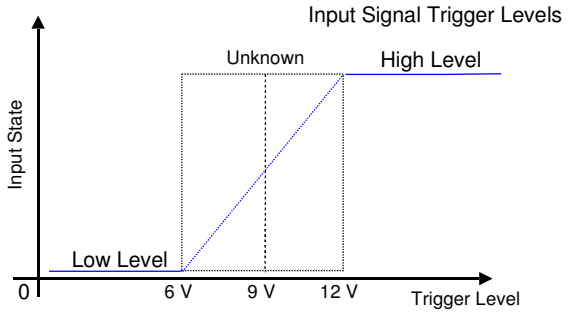
The **NP4810-JIO** card offers both high and low signal operations in a single card.

High Level - 300V Operation

Low signal < 6V High > 12 ≤ 300 V

Low Level Operation

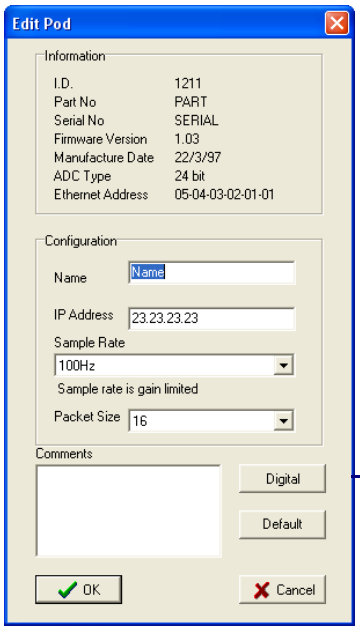
Low signal < 3V High > 3 ≤ 50 V



The diagram above shows the trigger levels for 18V input signals.

Default Port Setting

The following instructions show how to set the NP4810-JIO output port initialisation default switch positions for the card at the time of powering on of the instrument.



Edit Pod Window

1) Using the '**Edit Pod**' Window select the 'Digital' button.

   The '**Digital Interface' Window** showed below will appear.

   In the case of the NP4810-JIO card the 'default Digital Interface' Window only shows all channels as digital inputs. There is no way a change in the channel type with this card.

Digital input channels are shown in green.

Digital Interface Information

The 'Digital Interface' Window show those channels that are defined for outputs and those set for input operations.

The NP4810-JIO card use channels 0 - 15 on this Window.

All channels are shown in green showing digital inputs only.