NetPod - Data Acquisition & Control System

Part Number - NP4817-JIO - 16 Channel Digital Input card

Updated: Aug 2010

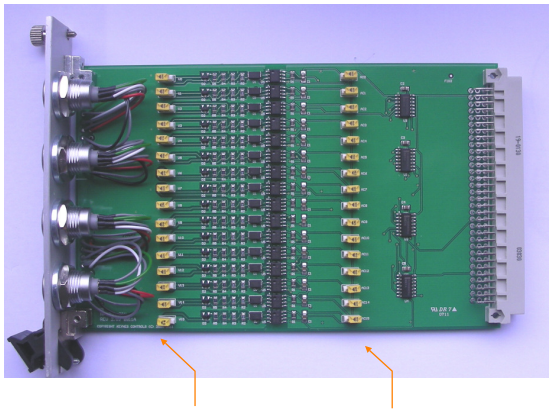
Specification & Operation

Introduction

The NP4817-JIO is an 16 channel high speed digital input card supporting both high and low level inputs in a single user defined card for the NetPod 4003/4004/4005 series data acquisition instrument.

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.

NP4808-JIO Digital Input card



16 x Independent Input Channels

User set High / Low level Trigger

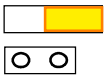
Maximum Isolation to 2000V DC/Channel

Up-to 5000 Input readings/Sec/Chan

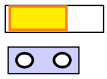
Power Consumption < 10 mA

Input Range to 230V AC / DC

SW-1 High / Low Trigger Level Setting



Open — Open = 18V (High)



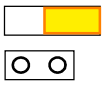
Closed — Closed = 3 V (Low)

Part Number - NP4808-JIO-X

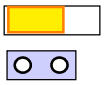
where X = desired trigger voltage

Some level of customisation is available at the time of manufacture

SW-2 AC / DC Signal Input Setting



Open — Open = DC Input



Closed — Closed = AC Input

Mounting Screw

Mounting Screw

Card Configuration

The NP4808-JIO-X card operations are configured using the Link/Switch positions defined by SW-1 and SW-2. SW-1 defines the low level trigger setting. SW-2 defines the input signal type.

By default the NP4808-JIO-18 is configured for 18 V trigger with a DC input signal

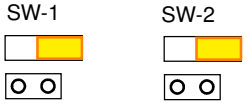
Operating Specifications - 18V Card Example

No. Inputs	16
Power Consumption	< 10 mA
Maximum Input	240 V AC/DC
Trigger Level	12 V Low 18 V High

Table 1

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

SW-1 SW-2



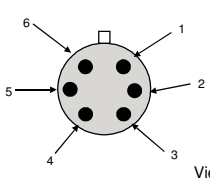
Open Open

Default Link / Switch Settings

Example

18V Trigger DC Input Signal

Digital Input Connector -Pin-outs

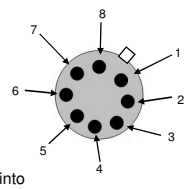


Year 2009

1 = -Ve for Chan 0 & 1
2 = +Ve Chan 0
3 = +Ve Chan 1

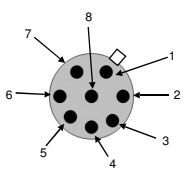
4 = - Ve for Chans 2 & 3
5 = +Ve Chan 2
6 = +Ve Chan 3

View looking into the connector



Year 2010

1 = -Ve Chan 0
2 = +Ve Chan 0
3 = -Ve Chan 1
4 = +Ve Chan 1
5 = -Ve Chan 2
6 = +Ve Chan 2
7 = -Ve Chan 3
8 = +Ve Chan 3



Year 2011

1 = -Ve Chan 0
2 = +Ve Chan 0
3 = -Ve Chan 1
4 = +Ve Chan 1
5 = -Ve Chan 2
6 = +Ve Chan 2
7 = -Ve Chan 3
8 = +Ve Chan 3

The digital port connector pin-outs shown opposite are for the cards manufactures in the years 2009, 2010 and 2011.

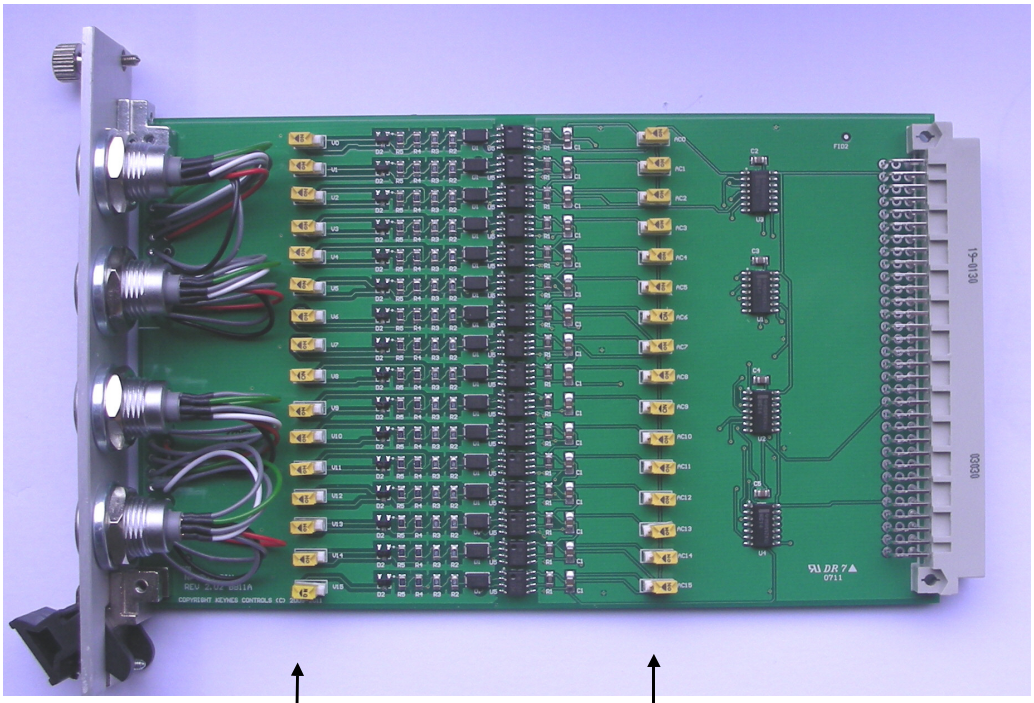
The connector has changed only when parts have become obsolete.

The operating features of the card has not changed on any model. Any software developed using this card will operate regardless to the year in which the card was manufactured.

Card Installation

The NP4808-JIO card like all other digital interfaces only fits into slot 7 of a NetPod 4003/4004/4005 instrument

Part Number - NP4808-JIO-18 18V digital input card 18V Trigger
NP4808-JIO-X where X is high level



NP4808-JIO Digital Input card

SW-1
High Voltage / Low Voltage

SW-2
AC/DC Switch

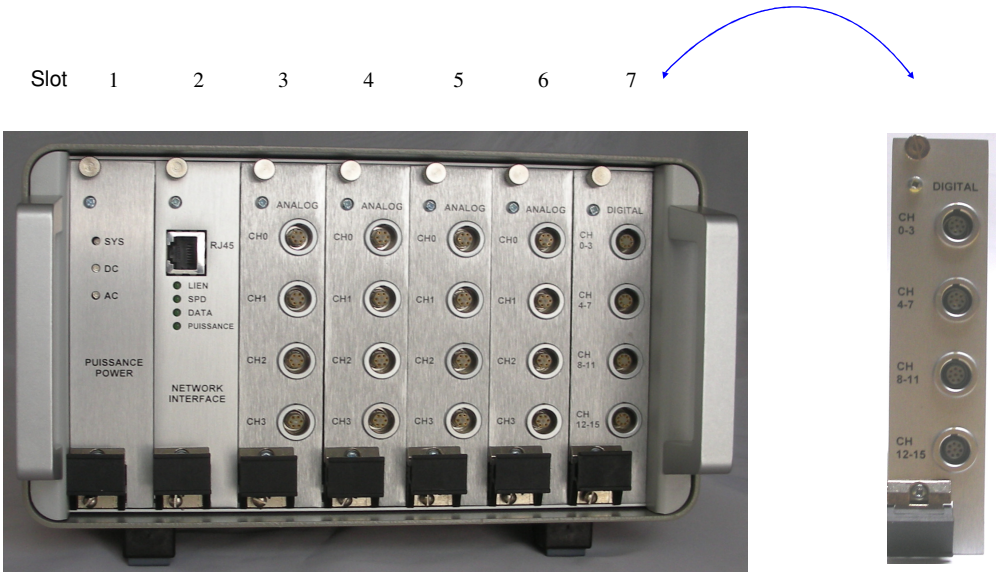
Fitting the NP4817-JIO into the Instrument

The NP4817-JIO card is fitted into only slot 7 of the instrument 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 NP4817-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

Windows Driver Software

The following instructions demonstrate using the NP4817-JIO card from within the standard podmng Windows driver.

Instructions

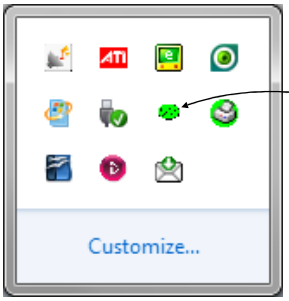
The following instructions are based on the **NP4817-JIO** card already being installed into the Net Pod 4004

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

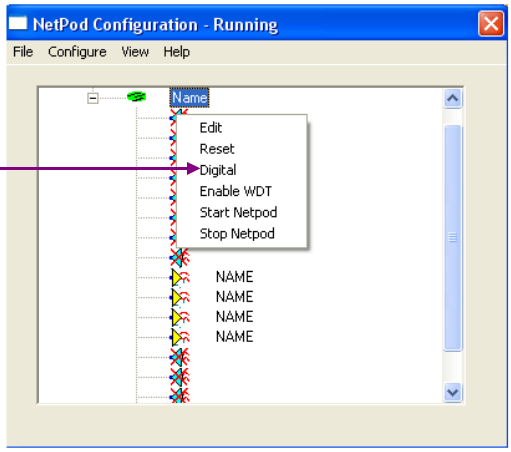
3) Move the mouse pointer over the instrument name and select the right mouse button.

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

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

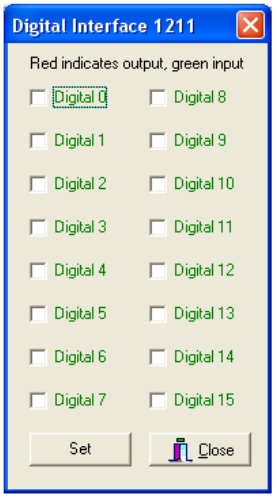
Select the '**Digital**' menu option
To see the real–time input port levels.

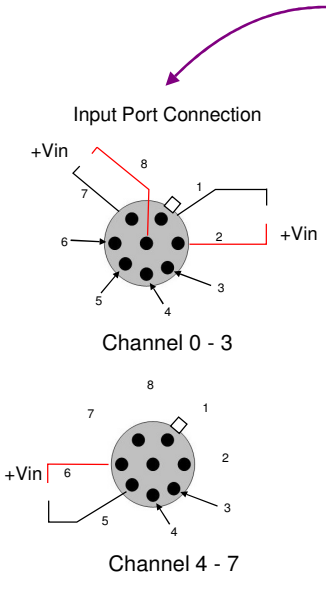
The '**Digital Interface**' Window will appear and the tick boxes show the input port levels.



Viewing Digital Input Port Levels

The input signal levels to the NP4817-JIO card are only shown when the NetPod 4004 is in 'Run Mode' and acquiring data.





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

Trigger Levels

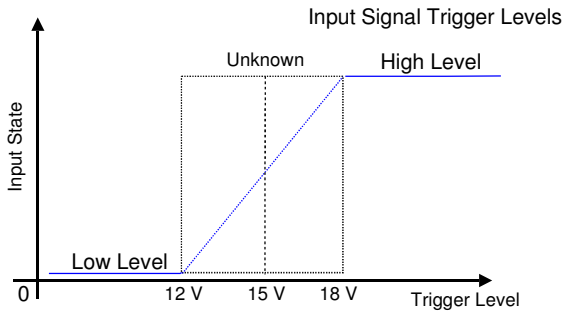
The **NP4817-JIO-18** card offers both high and low signal operations in a single card.

High Level - 300V Operation

Low signal < 12V High > 18 ≤ 300 V

Low Level Operation

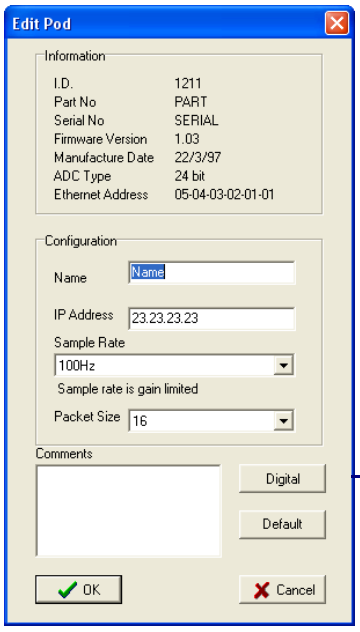
Low signal < 3V High > 3 ≤ 50 V



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

Default Port Setting

The following instructions show how to set the NP4817-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 NP4817-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 NP4817-JIO card use channels 0 - 15 on this Window.

All channels are shown in green showing digital inputs only.