NetPod 4005 - High Speed Data Acquisition System

Interface Selection & Installation Guide

Data Acquisition Systems

Introduction

The NetPod 4005 is a lower cost version of the popular NetPod 4003 24 bit general purpose data acquisition system. This device is suitable for **dynamic** and **static** measurement just like all of the other NetPod series instruments. The design of the instruments makes them suitable for real-time applications. Shown below are details of the various interface modules that can be used with this system. The NetPod 4005 uses lower cost plastic connectors instead of the multi-way sub-miniature locking bayonet connectors as shown on the NetPod 4003 instruments. The NetPod 4005 has the same technical specification as the NetPod 4003.

The NetPod 4005 is modular in construction and allows any combination of input channels to be installed into a s single unit.

Synchronised Measurement

The NetPod 4005 is a fully synchronised measurement system. All inputs and outputs within a single instrument are synchronised. All measurements from multiple instruments on a local area network are also fully synchronised to each other.

Power Supply Module

The **NPGPSU-01** module operates with 230/240 V   50/60 HZ AC mains supply or 9 – 30 V DC supply and provides a regulated supply for the 4005 series of instruments. 25 W rated

A mains transient filter is fitted to the IEC connector of the instrument to remove spikes on the mains supply.

The **NPGPSU-02** power supply module is rated at 30W rated module for applications requiring additional excitation.

Other power supply options available upon request.

Analogue Input Card

All of the analogue input cards contain 4 input channels. Each input has it's own ADC and opto-isolation.
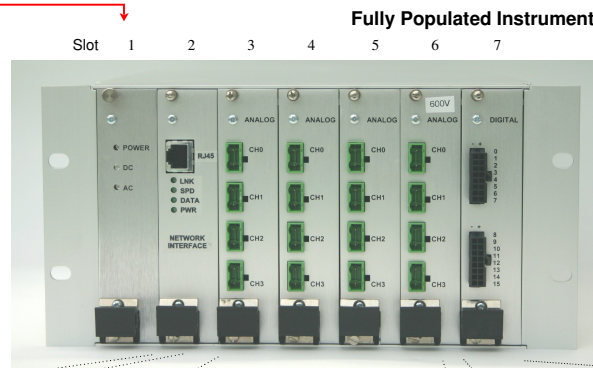
Power Supply Module

NPGPSU-01

NPGPSU-02

Slot   1   2   3   4   5   6   7

Fully Populated Instrument

Options for 4 x Analogue Input
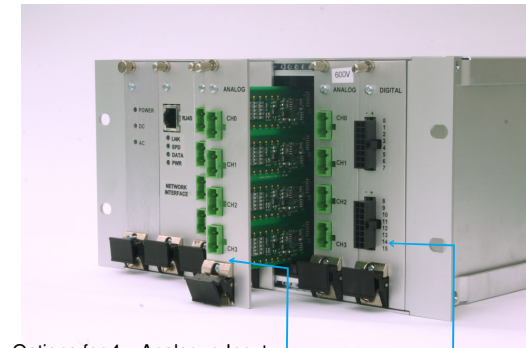or   4 x Analogue Output Cards

16 x Digital IO

Enclosure Options

The image opposite demonstrates a NetPod 4005 fully populated instrument fitted inside a 6U x 42 HP mini-rack system ideal for fitting into rack solutions.
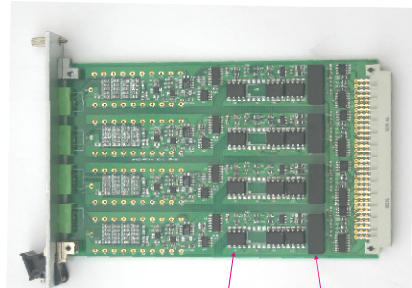
NP-RACK-04-4005 is a 6U x 84HP rack that supports 4 x NetPod 4005 instruments and includes all card rails with dual power supply and fans.

A desk top model is available. Part Number: **NPCAB-4005**

Individual ADC / Channel

High Voltage Isolator

6U

84 HP

Sensor Inputs

Thermocouples	Types B,C,J,K,R,S,T
Thermistor	2,3, and 4 wire configuration
Voltage inputs from	± 5 to 600V
	Other ranges upon request
Resistance	
Current Interface	0-20 mA, 4-20, 0-60 mA loops including excitation
Strain Gauge	Full, ½ and ¼ bridges 120,350,500 and 1 K Ohm Gauge
ICP Accelerometer	

NP-SF4001-100T DSP & Fan Controller

Analogue Input operation card
100 BaseT network connection
32 MB data buffer (standard)

**NP-OT4001-100T** DSP & Fan Controller

Analogue Output Control
100 BaseT network connection
32 MB data buffer (standard)

64 Channel Rack System Option

Part No: **NP-RACK-04-4005** is a 6U x 84 HP rack that supports 4 x complete NetPod 4005 instruments.
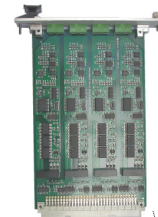
NP-RACK-04-4005 comes complete with all back planes, card slides, computer controlled cooling system and independent power supplies.
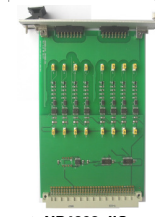
NPAI24-VHI-P-4
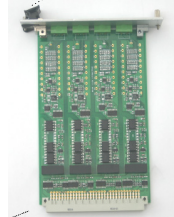
**Analogue Input
4 x Individual Inputs
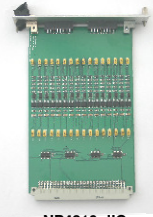with ADC & Isolation**
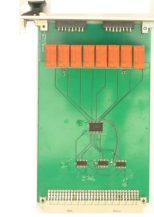
NPAO16-10/30

**Analogue Output
4 Channels**

Part Number	Description
NPAI25-V1PI-4	4 Channel ± 12V. 24 bit ADC board
NPAI25-V2PI-4	4 Channel ± 50V. 24 bit ADC board
NPAI25-V3PI-4	4 Channel ± 600V. 24 bit ADC board
NPAI25-VPH1-4	4 Channel ± 50 mV. 24 bit ADC board
NPAI25-SC1-P-4	4 Channel of 24 bit Current loop . 4-20mA, 0-60 mA
NPAI25-SC5A-P-4	4 Channel of 24 bit Current Input 5A
NPAI25-SG1-P-4	4 Channel of 24 bit ¼ and ½ bridge strain gauge card
NPAI25-SG2-P-4	4 Channel of 24 bit full bridge strain gauge card
NPAI25-SG3-P-4	4 Channel of 24 bit full bridge strain gauge - No Excitation
NPAI25-TC-B-P-4	4 Channel of 24 bit thermocouple type B
NPAI25-TC-C-P-4	4 Channel of 24 bit thermocouple type C
NPAI25-TC-E-P-4	4 Channel of 24 bit thermocouple type E
NPAI25-TC-K-P-4	4 Channel of 24 bit thermocouple type K
NPAI25-TC-N-P-4	4 Channel of 24 bit thermocouple type N
NPAI25-TC-R-P-4	4 Channel of 24 bit thermocouple type R
NPAI25-TC-S-P-4	4 Channel of 24 bit thermocouple type S
NPAI25-TC-T-P-4	4 Channel of 24 bit thermocouple type T
NPAI25-RT1-P-4	4 Channel of 24 bit RTD - Type A & B
NPAI25-PUL-4	24 bit Pulse Counter Card - High Speed Pulse Counter
NPAI25-ICP4	4 channel of 24 bit ICP accelerometer interface card
NPAO16-10/30	4 Channel Analogue Output +/- 10V / +/- 30 mA switched

Digital Interfaces

**NP4808-JIO
8 Channel**

**NP4810-JIO
16 Channel**

NP4005-RLY-8
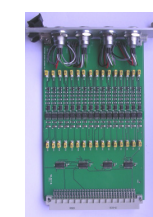
**NP4817-JIO
16 Channel input**

Part Number	Description
NP4808-JIO-X	8 Channel digital input - 2 KV Isolation
NP4809-JIO	16 input TTL Input channel
NP4810-JIO	16 input, Jumper Select TTL/300v isolated digital Input
NP4005-RLY-8	8 channel relay switch card 3A @ 240V A/C8
NP4818-DO-8	8 channel digital output - memory ID - 2 K V isolation

where **NP4808-JIO-X**   X = High level
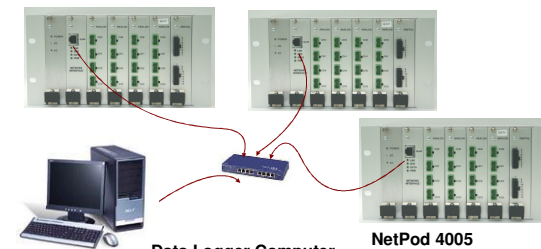
Enclosures

NP-RACK-04-4005	4 instrument rack system
NPCAB-4005	6U x 42 HP mini-case
NPRCK-013	Standard 6U x 84HP rack
NPCASE-4005	Desk top case

Typical High Speed Data Acquisition System

The image opposite demonstrates a typical data acquisition network using the NetPod 4005 instruments. A PC computer system is used to acquire and store data.

Data Logger Computer

NetPod 4005