

1. Introduction

The NDACS 6000 is an affordable general purpose Ethernet data acquisition and logger unit that supplies a simple solution to many industrial tasks. Compliant to IEEE 802.3 Ethernet standards, the NDACS can be directly connected to many industry standard networks and operates like any other network device. The instrument can also be connected directly to an external modem/mobile WAP phone for remote stand-alone operations.

Access to data and observations of real-time results can be carried out using computer system supporting TCP/IP protocol. This can be via PCs, workstations or main frames.

Safety Rules

This instrument has been tested according to the following EC directive 89/336/EEC (EMC of Nov 1992, Electromagnetic Capability). To ensure the best operation of the instrument you must follow the operations described in this manual. Failure to do so may result in the damage of your system.

Features

- ?? Compliant to IEEE802.3 10Base-T standards.
- ?? Plug-and-go simple and flexible installation
- ?? 2 X Independent Data Loggers – 13,000 records/logger
- ?? LED Indicators for monitoring network health
- ?? 24 Bit ADC operations – 16 million counts
- ?? 100 Hz/channel operation
- ?? Auto-calibration of the analogue inputs
- ?? Real-time clock
- ?? RS232 support for Modem and WAP enabled mobile phone.
- ?? Integrated Web Server
- ?? 2 x Independent E-mail alert/alarm systems per channel.
- ?? On-line Manual – Web page format
- ?? Windows Operating System Support
- ?? Network Upgradeable Software

The instrument can be fully configured using a standard web browser for data logging and analysis operations without any requirement for third party applications software.

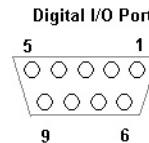
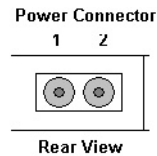
2. Specifications

Power	9-24V DC at 3W max load 2.1 mm Connector
Dimensions	230 X 130 x 100 mm
Weight	Approx: 1.2 Kg
Temperature	0 to 60 Deg C (Operating) -20 to 80 Deg C (Storage)
Event Logger	13,000 Records
General Logger	13,000 Records

3. Installation Guide

The following instructions demonstrate how the NDACS should be installed for stand-alone and network operations.

- a) Install the power supply and ensure that the polarity is as shown below.



Pin	Description
1	Input Dig0
2	Input Dig1
3	Input Dig2
4	Input Dig3
5	GND
6	Output Dig 4
7	Output Dig 5
8	Output Dig 6
9	Output Dig 7

On connecting the power supply the Power status LED will illuminate. Ensure that the power supply rating is 3W.

There are two green status LED's mounted on the NDACS that are used to indicate the condition of the Ethernet LAN and to show that power is connected to the instrument. The LAN status LED only illuminates when the instrument is successfully connected to an Ethernet LAN and data is being passed on to the network.

4. Stand-alone Operations - Direct Connection to a PC

The NDACS contains a 10baseT Ethernet Port that can be used pass data directly to a Laptop or PC only when the network connection is correctly configured.

Default Instrument Settings

Each NDACS is assigned the following default network setting.
IP address **23.0.0.100** Subnet Mask: **255.0.0.0**.

Network Connection

For direct connection of an instrument to a Laptop or PC a 10baseT cross over cable can be used to connect the Ethernet port on the NDACS to the port on the PC. The cross over cables are standard network accessories available from many good network sources and are generally labelled with the tile **XOVER** by each RJ45 Connector.

The green network status LED will illuminate when a successful connection to the PC is made and data packets are being communicated.

Setting up the NDACS for network communications

In order that the NDACS can communicate to a Laptop or PC via the Ethernet port then the following networking settings must be assigned.

a) **Instrument IP Address** -- Unique address that is used to identify the NDACS on a network

b) **PC IP Address** -- Address of the host PC which is to be used to examine the data and configure the instrument.

The PC that will be used to store data must be able to see each NDACS on a network.

Instrument Default IP address

Upon powering on an individual NDACS the instrument default IP address is:

Instrument IP address: 23.0.0.100

In order to see data on a host PC then the computer must be able to see the instrument IP address but must not under any circumstance be assigned the same IP address of any instruments on the network.

Set The PC IP address to **23.0.0.110** or similar

To change the PC IP address (network address)

For the Windows 2000/NT operating systems

Select **Settings ? Network & Dial-up Connections**
? Local area connection

The **Local Area Connection Status** Window will appear.

Select Properties Tab

Select **Internet Protocol (TCP/IP)**

The **Internet Protocol (TCP/IP) Properties** Window will appear.

Adjust the PC IP address and subnet mask settings to

IP Address: **23.0.0.110**
Subnet Mask: **255.0.0.0**

Ensure that the **OK** button is selected to confirm the new settings.

5. Web Browser Settings

In order to examine data and configure the NDACS, the Microsoft Internet Explorer 6.0 web browser should have the following parameters set.

Start Web Browser.

Tools ? Internet Options?? Advanced



- Java console enabled (requires restart)
- Java logging enabled
- JIT compiler for virtual machine enabled (requires restart)

Internet Explorer 5.0 and 5.5 can be used and should be configured as above, however on some versions of this software the Service Pack II must be installed. The service pack for the Microsoft Internet Explorer is freely available from the Microsoft web site.

6. Using the NDACS

Once the Web Browser is configured and the PC IP address has been set then it is now possible to examine data and configure the instrument.

- 1) Start the Internet Explorer web browser.
- 2) Enter **23.0.0.100** as the browser address. The instrument web page will be displayed.

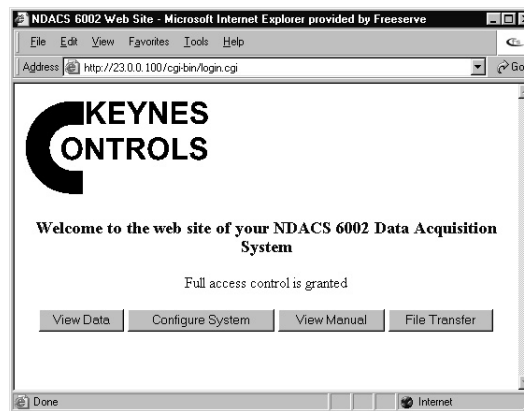
Instrument IP Address



3) Enter default password "full" -- lower case

There are 3 levels of password protection for the NDACS but to allow full configuration of the instrument the default password shown above must be entered. The passwords can be user set at any time.

4) The main instrument web page will now be displayed.



To observe data -- Select **View Data** button

All of the NDACS analogue inputs are preset to accept input signals in the range of 0 - 5V.

To read on-line manual -- Select **View Manual** button. The on-line manual includes comprehensive instructions for all of the instruments operations.

7. Modem/WAP Enabled Mobile Phone Connection

The NDACS can be directly connected to an external modem or WAP enabled mobile phone. The modem must be Hayes compatible. The instrument contains all the software to control the modem or WAP phone and automatically answers any telephone call.

Connection to the NDACS

Connect a standard 9 pin PC modem cable between the NDACS and the modem or use the data link cable supplied with a WAP mobile phone.

Windows 2000/NT Dial-In Account TCP/IP Settings

- 1) Select Control Panel ? Network & Dial-Up Connections
- 2) Select Dial-Up account
- 3) Select Properties
- 4) Networking ? **Internet Protocol??TCP/IP]**
- 5) Select **IP Address Automatically Selected** Tab
Select **DNS Server Address Automatically** Tab

Making a Dial-in connection

- 1) Dial-up the NDACS using a standard dial-up account from a PC

The dial-up account should have

Username = "NDACS" Password = "NDACS" -- lower case

The instrument will automatically answer the incoming call and will indicate that it is negotiating the connection with the PC. The standard Windows modem icon should appear on the task bar.

Accessing the instrument

- 1) Start a web browser and enter the address 195.20.17.50.

This is the default dial-in IP address setting for the NDACS.

- 2) The Login web page will appear (as shown for network connection above).

Enter password "full" -- lower case.

The main instrument web page will now appear and it will now be possible to examine data and configure the instrument.