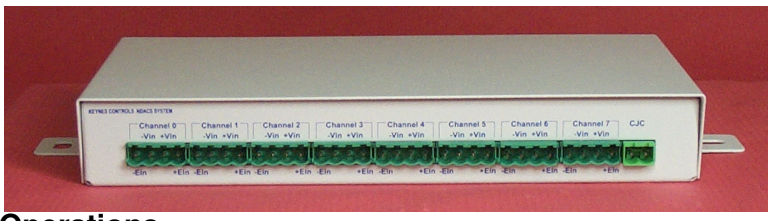
Process Measurement Solutions

NDACS 6016 Series

Ethernet Data Acquisition & Logger Unit

- 16 General Purpose 24 Bit Analogue Inputs
- 1000V Block Opto-isolation
- Embedded Web Server
- Automatic E-mail Data Reports
- Automatic Status messages
- E-mail Alarm Settings
- 300K Sample Readings / Per Logger
- 50 Hz/Channel Ethernet Acquisition Operations
- Auto-Calibration using in built precision reference
- CJC for Thermocouple operations
- Ethernet - TCP/IP - RS232 - Modbus Connectivity
- 24 Hr Real Time Clock
- 2 Independently Programmable Loggers
- Data routing via Keynes VPS



System Description

The NDACS 6016 instrument contains additional Flash memory compared to the standard 6016 model and allows upto 300K records to be stored in a single device. The NDACS 6016 contains all of the same features of the other systems in the NDACS 6000 range.

The 6016 instrument utilises a low noise 24 bit ADC for all of its analogue acquisition operations and combined with its low noise sensor pre-amplifiers, input noises below 1 uV are achieved.

Flexibility

The NDACS 6016 is one of the most flexible low cost instruments upon the market today. Not only can it read and send data across a network or Internet but it can also record data internally and send automatic reports by e-mail to a user. The instrument is fully integrated to the Internet. Not only can the NDACS 6016 be directly connected to an Internet server but is can be deployed remotely by direct connection to a modem or mobile phone supporting a data link operations.

Remote Deployment

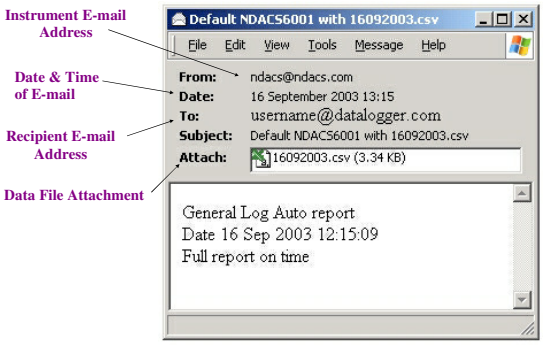
The NDACS 6016 can be deployed remotely to acquire data continually or configured to look for a pre-determined event and to notify the user when it occurs. The NDACS contains all the software to connect directly to radio modems, standard fixed line modems, data link mobile phones and configured to send data to via most dial-up Internet Service provider accounts.

Status Messages

A series of status messages can be sent at preset time intervals or when the instrument restarts to indicate that the system is alive and functioning correctly. These messages are useful to show that the instruments are working when deployed remotely or when waiting for a specific in frequent event to occur.

Data Logging Operations.

The NDACS 6016 supports 2 independent flash memory data loggers. Each flash memory logger is capable of storing 300K sample readings per channel.



The instrument can report data automatically after a preset number of records, or data recorded up to a specified date or time and upon detecting a specified event. Each of the loggers can be set to report to a specified User by E-mail. The data files appear as attachments to an E-mail and can opened directly into spread sheet packages.

Web Interface

The NDACS 6016 contains an embedded Web interface enabling the configuration of all instrument operations to be carried out using a standard Web Browser no matter which communication interface is being used. The User Interface is the same no matter if the connection to a system is made via the Internet or dial-up telephone connection. Any computer using a modern operating system will be able to examine data without the need for any third party applications software.

Internet Connectivity

The NDACS 6016 supports all the network operations required to transmit data across the Internet via a data server. A multiple level password system ensures that data and instrument configurations stay safe when operating on an un-secure network. The instrument can be configured to transmit Ethernet packets across private networks using the Ethernet configuration commands.

Supported network controls:

IP Address
Subnet Mask
Gateway
SMTP IP Address

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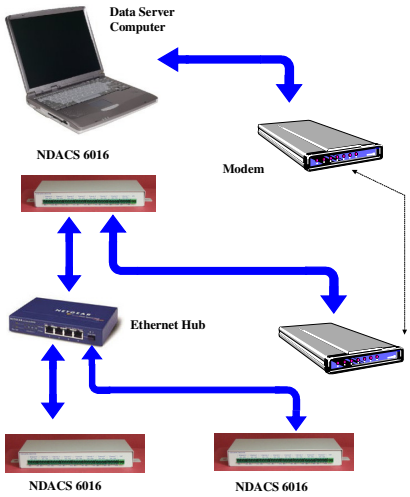
Operations

The images below show two typical network layouts possible with the NDACS 6016. When operating on a LAN the instrument can be used to transmit data live to multiple users running third party applications or simply to be shown on the systems own web page data display.

For remote applications data logger computer can extract the recorded data directly or have the instruments E-mail the results at preset times or upon user defined conditions. Most modern operating systems such the Microsoft Windows or Unix platforms contain standard utilities that can be configured to automate the downloading of data.

Applications

The NDACS 6016 is a general purpose device and such can be configured to monitor a wide range of applications both in real time across a LAN or as a data logger. It is possible to mix sensor inputs such that a single instrument can undertake thermometry at the same time as it structural analysis tasks and to report the results automatically. No expensive applications software is required to run the instruments as they can be fully configured and data examined using a standard web browser. The instruments low noise input amplifiers it can cope very well with signals containing a large dynamic range.



Processor	32 Bit
Communication	Ethernet 10BaseT Port RS232 115 KB
Enclosure	Desktop & Bulkhead mounting cases
Web Server	Web interface for Configuration & Control
Memory	4 MB RAM - 64 MB Flash
ADC Resolution	24 Bit Sigma Delta Conversion
Analogue Inputs	16 Full Differential Inputs
Ranges per Channel	50mV, 250mV, 500mV, 1V,, 2.5V 5V
Peak-Peak Noise	0.69 uV @ 1 Hz 120 uV @ 100 Hz
CJC	10 KOhm precision RTD
Thermocouple Types	B,C,E,J,K,N,R,S,T
Standard Process Options	Direct Voltage, Thermocouple, RTD, Strain Linear, Scaled Current (0-20mA,4 -20mA)
Isolation	1000V Block Isolation
Overload Protection	25V Full Load
Power Supply	12V Nominal (9-24V DC) at 5W maximum load
Real Time Clock	24 Hour Fornat. HH:MM:SS
Sample Rates	Local Area Network/Internet 1, 2, 5, 10, 20, 50 Hz/Chan
General Logger	250 K sample readings
Sample Rates	1 sec - 3600 secs (hour)
Auto Report	Daily/Weekly/Monthly/Number Records
Flash Logger	3 Million Sample Readings
Sample Rates	0.1, 1, 10, 60, 600 (10min), 3600 (1 hr)
Auto Report	Daily/Weekly/Monthly/Number Records
Connectors	2.5 mm Diameter Screw lock
Maximum CMR	10V Channel to Channel

Compliance to European Union Directives

This product is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives:

EMC Directive

The analog modules are tested to meet Council Directive 89/336/EEC Electromagnetic Compatibility (EMC) and the following standards, in whole or in part, documented in a technical construction file:

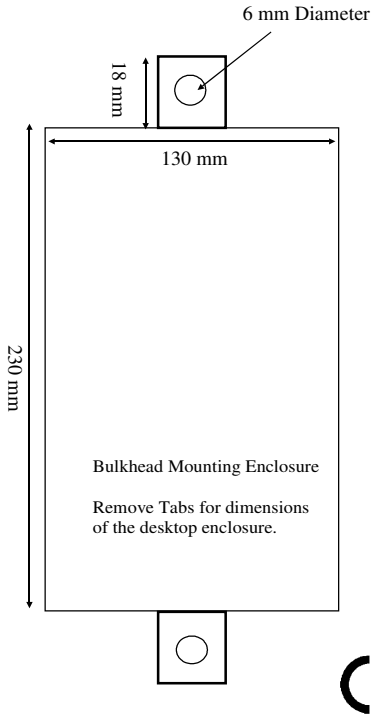
EN 50081-2

EMC – Generic Emission Standard, Part 2 - Industrial Environment

EN 50082-2

EMC – Generic Immunity Standard, Part 2 - Industrial Environment

This product is intended for use in an industrial environment.



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