**EasyDAQ**
Neat products, low cost, no frills

Product Datasheet 23 (Provisional)

Features

- Network enabled data acquisition & control module (uses UDP network protocol).

- Ethernet, wireless hub or direct connect

- 4 ADC channels (5V/10 bit, update once per sec), 16 digital outputs, 16 digital inputs & one RS232 serial port, watchdog function (for network comm's link monitoring)

- Low cost, small profile, stackable

- Screw terminal access to all analogue and digital signals. Header connectors also fitted for access to all DIO signals. RS232 connector is a 9 way D Type (male).

- LabView example programs available for each of the card functions

- Onboard LED indicators for power, network communications & test functions

- Applications include remote data acquisition/control functions are required such as security (perimeter monitoring/ door access systems), medical, factory or office temperature monitoring etc

- Can be used in direct connect mode at cable lengths of up to 50 metres (via a swap over cable) for applications where cable lengths limit other solutions

- Available with the option of an add on card (NETDAQX) which offers 8 relays (240V/10A power or 1A signal relay options), two thermocouple/ instrumentation amplifier channels and an onboard temperature sensor

- Supplied with nylon feet & clear, protective cover/base option

- CЄ compliant, BS9001:2000 manufacture
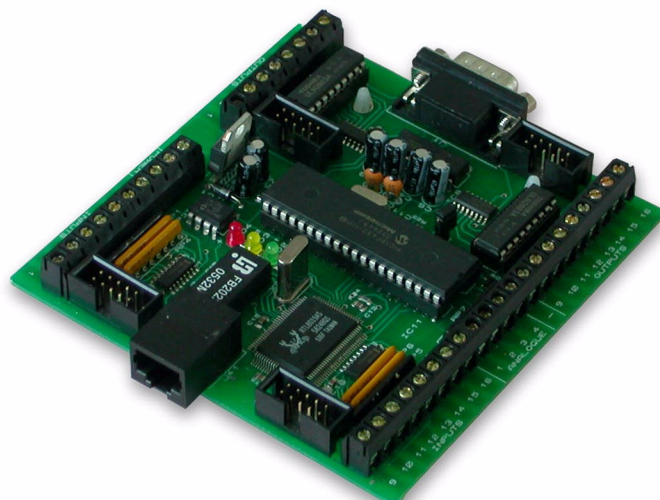
Description

Powerful, low cost, general purpose, network Data Acquisition module. Suitable for a wide range of measurement, monitoring and control purposes via an Ethernet/LAN, wireless hub or direct connection to a PC (via a swap over cable). Available with the option of an add-on card (NETDAQX) specifically designed to increase usability and provide additional functionality to the basic NETDAQ card. LabView examples for all card functions.

The NETDAQ & NETDAQX cards are the same size & profile and are supplied as a stack, using spacer pillars. Two NETDAQX cards can be used with one NETDAQ card to provide two additional thermocouple channels and increase the number of relays available to 16. The NETDAQX card has a 2.1mm DC power jack connector which, along with the Digital channels, is used to pass 12V DC to the NETDAQ card via a short ribbon cable.

The NETDAQ module offers 4 analogue inputs (5V DC/10 bit/1S), 16 DIO, a serial port and a watchdog timer/alarm. The watchdog function indicates a network link failure which could, for example, be used to provide a remote reset function or alarm indication. Onboard power/status/test LED's.

Specifications

Network Interface
RJ45 network connector
Analogue input signals
Range; +/- 5VDC, 10 bit, 1S/S
DIO signals
5V DC (max), output low 0.7V (max).
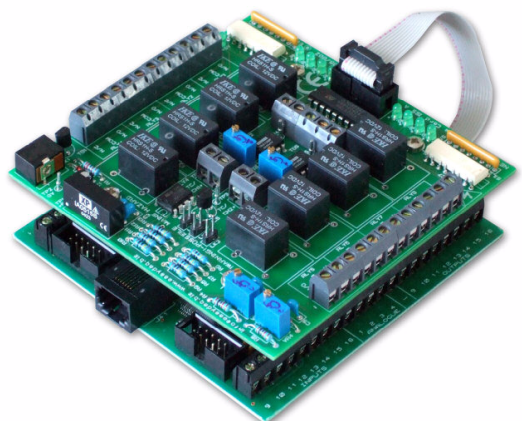**Operating temp range**
0-70^{0}C

Power
12V DC @ 100mA (max)
Dimensions
Dimensions approx 110mm (D) 108mm (W) 25mm (H) (exc feet), Weight tbdg.

Note: Detailed technical specs for all I/O signals& relays are listed on the following pages.

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Order code

NETDAQ
Network DAQ card with 4 analogue input channels (1S/s), 16 digital input channels, 16 digital output channels, one serial (RS232) port, one watchdog timer. Screw terminal block access to analogue & DIO signals and also header connector access to DIO channels. RS232 connector is a 9 way D Type (male).

NETDAQX(P/S)
Designed as an add on product for the NETDAQ card aimed at enhancing its usefulness and functionality. It has 8 onboard relays (option of two relay types, 240V/10A power relay or 30VDC/1A high sensitivity (gold contact) signal relays, 2 thermocouple/general purpose instrumentation amplifier channels, and an on board temperature sensor device.

NETDAQXR(P/S)
Identical to the NETDAQX card described above but with only the relays fitted (no analogue amplifiers fitted). For a card fitted with 240V/10A relays, the order code is NETDAQXR. For a card fitted with the 30VDC/1A high sensitivity relays, the order code is NETDAQXRS.

NETDAQ SPECIFICATIONS:

Analogue inputs

Parameter	Conditions	Specification
A/D converter type		Successive approximation type
Number of channels		4 (single ended)
Input ranges, single ended mode		+/- 5VDC
Throughput		1 sample/S max (user definable).
Channel gain		S/W configurable range & gain
Resolution		10 bits (+/- 5mV per bit SE)

Digital outputs

Parameter	Conditions	Specification
Device/signal type		TTL (ULN2803 - open collector output)
Number of channels		16
Configuration		Two groups of 8
Pull up/down configurations		NETDAQ card none. Included on NETDAQX for all 16 channels
Output high voltage threshold		3.8VDC min (IOH= -2.5mA)
Output low voltage threshold		0.7VDC max (IOH= +2.5mA)

Digital inputs

Parameter	Conditions	Specification
Device/signal type		TTL/CMOS compatible
Number of channels		16
Configuration		Two groups of 8
Pull up/down configurations		10K pullup/100K series buffered inputs
Output high voltage threshold		3.8VDC min
Output low voltage threshold		0.7VDC max
Input scan rate		100mS (>200mS to detect/register)

Watchdog function

Parameter	Conditions	Specification
Digital output channel used	S/W selectable	Dig Chan 1 (dedicated to watchdog function if this option is selected)
Timeout period	S/W selectable	15 secs (default), user selectable
Latency		Chan 1 activated if no network activity for more than selected timeout period

Power

Parameter	Conditions	Specification
Supply voltage		12V DC
Supply current		50mA max

NETDAQX SPECIFICATIONS:

Relays

Parameter	Specification (Power relays)	Specification (Signal relays)
Rated drive voltage/current	12VDC/80mA	12VDC/42mA
Must operate/release voltage	75%/10% of rated voltage	75%/10% of rated voltage
Contact ratings	10A/240VAC/8A 30VDC	1A/120VAC/1A 30VDC
Contact resistance	100mΩ max	100mΩ max
Operate/release time	10mS/5mS	5mS/5mS
Contact bounce period	0.6mS operate/ 7.2mS release	0.6mS operate/ 7.2mS release
Contact material	$AgSnO_2$	AgAu
Operational life (min)	Mechanical 10^7 / Electrical 10^5	Mechanical 10^7 / Electrical 10^5
Contact arrangement	SPDT	SPDT

Thermocouple / Instrumentation amplifiers

Parameter	Conditions	Specification
Instrumentation amplifier gain	Potentiometer Adjustable	10 to > 10,000
Instrumentation amplifier offset drift		3μV/Deg C
Instrumentation amplifier offset voltage		250 μV max
Thermocouple type	User adjustable via gain pots	Type K (Other types can also be used if gain is adjusted to suit)
Thermocouple temperature range		-270 to +1200 Deg C
Temperature measurement accuracy		+/- 3 Deg C
Thermocouple CJC temperature range		0 to +70 Deg C
Thermocouple CJC voltage		10 mV per Deg C
Thermocouple voltage output (Nom)		10 mV per Deg C

Temperature sensor

Parameter		Specification
Temperature range		0 to +70 Deg C
Temperature measurement accuracy		+/- 1 Deg C (@25 Deg C)
Non linearity		0.2 Deg C
Output voltage (per Deg C)		10 mV per Deg C

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Power		
Parameter	**Conditions**	**Specification**
Supply voltage		12 V DC
Supply current		200 mA max (all relays active)