

NDAC Series 17

Networked Data Access & Control

The **NDAC Series 17** is a series of low cost controllers that monitor and control various system processes via local and wide area networks. These controllers provide the systems integrator or design engineer with the capability to collect real-time information and control real-time processes utilizing standardized low cost communications infrastructures. With Internet and Intranet connectivity, an immense range of information is reachable and controllable for a wide range of industrial products.

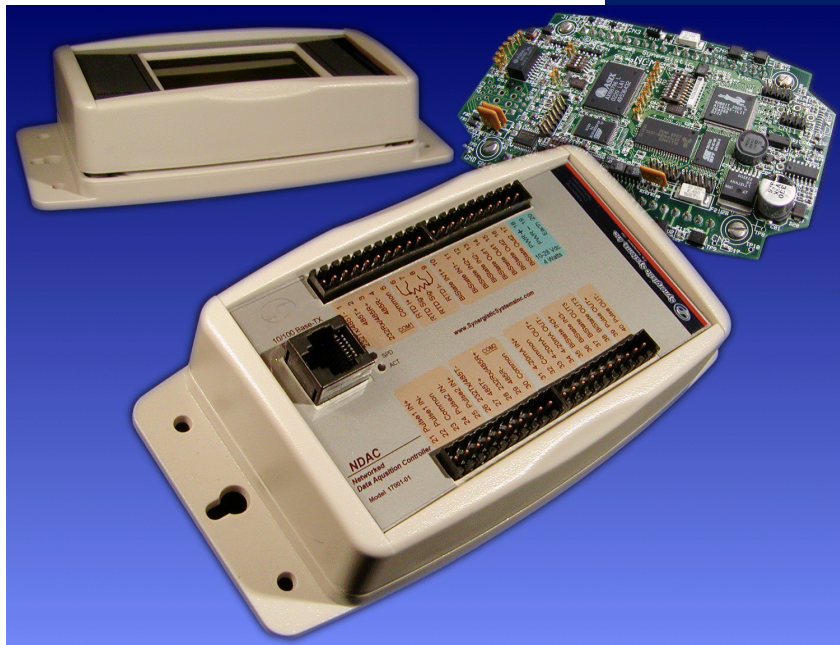
The NDAC Series 17 controllers provide a solution to the exponentially increasing demand for connectivity. Synergistic Systems, Inc. has encapsulated the intricacies of networking that face Original Equipment Manufacturers (OEMs) into a simple, low cost yet extensive connectivity solution.

Whether the application is injection molding farms, metering skids, dispatch terminals, HVAC, utility metering, factory automation, vending machines, material separators/sorters or many other applications, the NDAC Series 17 controllers are ideally suited for network enabling.

*Pervasive
Networking
of process
and control
variables*

Features:

- *Multiple I/O - Analog, BiState, Serial & Frequency*
- *TCP & UDP Sockets*
- *Web & Data servers resident*
- *Multicast sender resident*
- *Java Applet capable*
- *Java, VB.net & VB6 HMI examples available*
- *End User and Embedded OEM configurations available*
- *Low Cost*



Description:

The NDAC Series 17 controller is a complete hardware and standards based software solution for adding Ethernet connectivity for system process variables and controls. The NDAC functional architecture consists of a Network Control Module (NCM) and optionally an NDAC Control Display (NCD). The NCM continuously scans, converts and

Synergistic Systems, Inc.
Erie, Pennsylvania USA

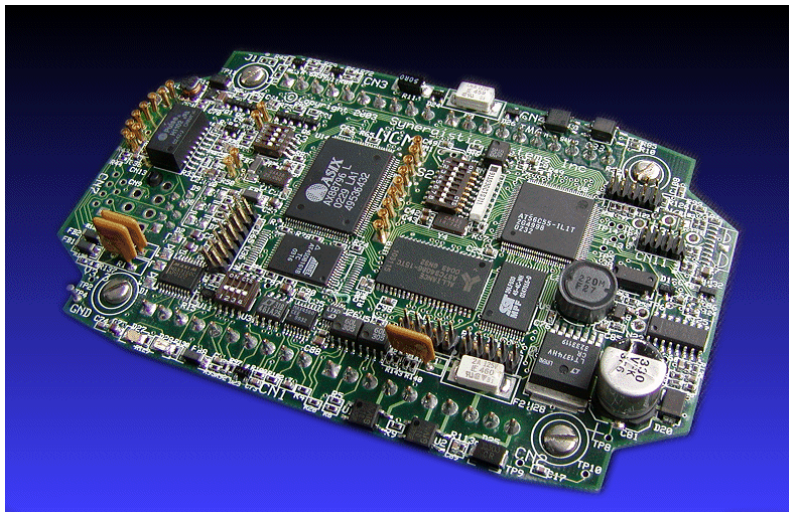
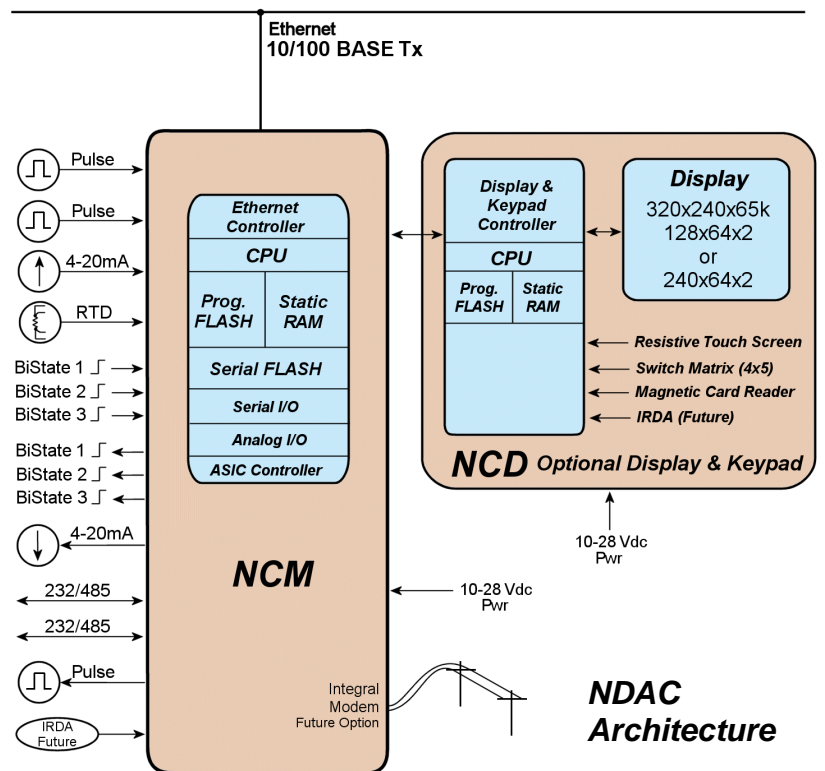
formats the process inputs (pulse counts, pulse rates, analog, bi-state and serial) for event (polled) transmission or timed transmission via an Ethernet network (see Networking below). Concurrently, the NDAC accepts control and configuration information from the Ethernet network which updates the NDAC outputs (analog, bi-state and serial). The optional display module (NCD) provides a gateway for local

Benefits:

- **Low cost**
- **Rapid Time to Market**
- **Standards based Remote control & monitoring**

human interface and dialog over the network.

The NCM and NCD modules are available as standalone PCB modules for embedded OEM applications or as packaged units. Enclosure options encompass plastic panel mount units for individual or combined module packaging, stainless JIC enclosures and others. Consult factory with your requirements.



Networking:

The NDAC Series of Controllers provides as standard a web server, data/configuration server and a multicast sender. The web server is a standard HTTP server service accessible by standard web browsers. Server Side Includes (SSI) and CGI interfaces may be utilized with this service for retrieval of variables and setting of controls. The data server service provides an efficient mechanism for high speed data

reception, control setting and configuration management via TCP/IP socket services. The data server service has been carefully designed for efficiency, robust reliability and ease of implementation.

The third network service is a multicast sender service that can continuously transmit data packets to a multicast group where “outside” services may join the multicast group to receive the data. Multicast architectures are well suited when the data must be transmitted on a

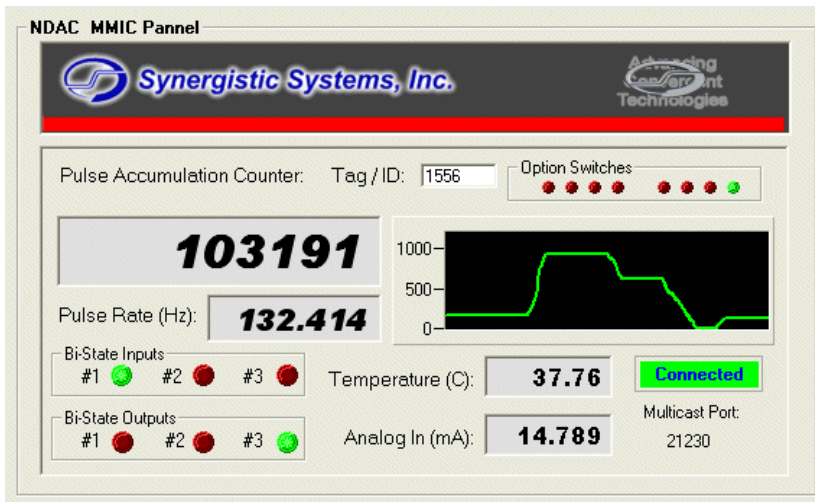


Figure 1 Example Visual Basic 6 HMI connected via Multicast group

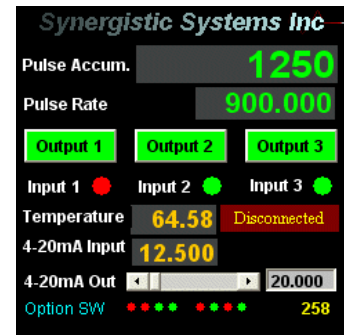
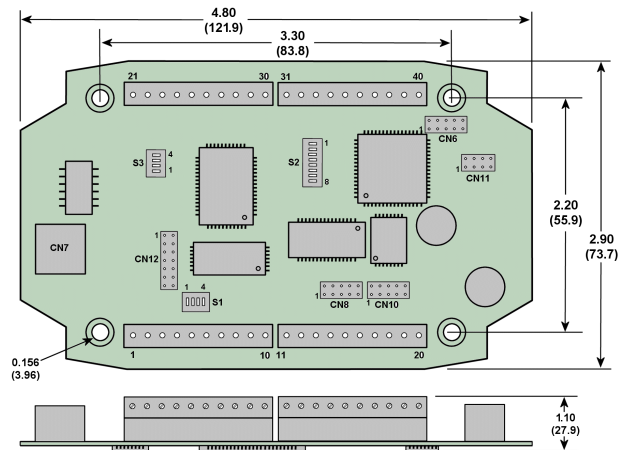
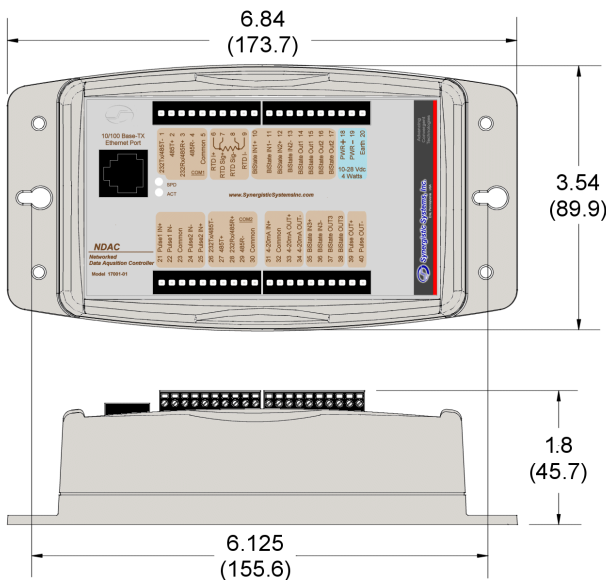


Figure 2 Example Java Applet running on IPAQ PDA

continuous basis and ideally suited for those applications where many services must receive the data. Figure #1 shows an example screen capture of a Visual Basic 6 application running on a PC that has "joined" the multicast group. Figure #2 is a screen capture example of a handheld PDA (Personal Digital Assistant) that has accessed the NDAC's web server to serve-up a Java Applet, which has then established a connection to the NDAC's data server.

Configurations and Customizations:

Standard units are available with varying I/O and data communications configurations that satisfy many applications. For those customers requiring custom configurations, Synergistic Systems, Inc. can provide solutions for the particular application. Many solutions have already been developed for Email alerting (process values exceeding thresholds), GPS (Global Positioning System) interfaces for position-stamping of data, Modbus interfaces, wireless WiFi architectures, Handheld PDA HMIs, Telnet services and FTP services. These are just a few of the customizations Synergistic Systems, Inc. can supply. Contact the factory with your application.



Model No. (others available)	No Enclosure	Plastic Enc. (1x)	Plastic Enc. (2x)	Plastic Enc. (W2x)	10/100 Ethernet	Pulse Input	Pulse Output	Temperature (RTD)	4-20 mA Input	4-20 mA Output	BI-State Inputs	BI-State Outputs	232/485 Async I/O	No Display	320x240x65k Color	240x64x2 Display	128x64x2 Display	Touch Screen Input	20 Key Membrane	Magnetic Card Reader (interface)	IDRA (Future)	2400 BPS Modem (Future)	
17-01000-01	•				1	1	1	1	1	1	3	3	2	•									
17-01001-01		1			1	1	1	1	1	1	3	3	2	•									
17-01052-01				1	1	1	1	1	1		3	3			1			1		1			
17-01063-01			1		1	1	1	1	1		3	3					1						
17-01000-02	•				1	1		1	1		1	1		•									

Specifications:

Power input:

10-28Vdc, 4 watts max

Pulse Input (High Drive mode):

Off State – 0 to 0.8Vdc, On State – 5 to 26Vdc,
0 -10kHz, approx 1.5k input impedance

Pulse Input (mV mode):

Input impedance approx. 1.5k,
Programmable gain front-end, 0 – 4kHz
Gain1: Off State – 0 to 90 mVdc,
On State – 160 to 2.2Vdc
Gain2: Off State – 0 to 10 mVdc,
On State – 25 mVdc to 2.2Vdc

BiState Input:

Off State – 0 to 0.8Vdc, On State – 5 to 26Vdc,
Optically isolated, approx 1.8k input impedance

BiState output:

Optically isolated, SSR, 32Vdc maximum,
125mA max

Pulse Output:

Optically isolated phototransistor, 30Vdc max.,
10mA maximum

Asynchronous I/O:

Switch selectable EIA232 or EIA485 (4-wire),
programmatically selectable bit rate, termination
resistors for 485 via switch settings

Analog Input (RTD):

100 ohm 4-wire Platinum RTD input, 1: 1048576
resolution, 0.25°C absolute accuracy

Analog Input (4-20mA):

20-bit resolution, 0.1% accuracy, negative side
connected to power supply negative (ground), 3V
max drop @ 20mA

Analog Output (4-20mA):

1:65536 resolution, 12uA accuracy, Loop-
powered, Optically isolated, passive

Network:

10Base-T / 100Base-Tx Ethernet

Display (240x320 Color):

Transflective, ATFT, LED backlit, 65k color with
resistive touchscreen input

Display (240x64)

Transflective, LED backlit, Green/Black

Display (128x64)

Transflective, LED backlit, Green/Black

Keypad input:

20-key (4x5 matrix) passive input, suitable for
membrane or discrete contacts

Card Reader:

Interface for Magnetic card swipe reader
(Compatible with Matsushita #ZU-M1242S16 or
equivalent reader)

Environmental:

-30 to +60 °C, 10 to 90% humidity, (restrictions
with display options – consult factory)

For more information navigate to:

www.SynergisticSystemsInc.com

or email:

info@SynergisticSystemsInc.com



Erie, Pennsylvania USA

Advancing
Convergent
Technologies