## *Go Digital with Anemostat BACnet Controllers . . . . Simple as ABC!!*

APPLICATION

When designing your HVAC system with digital control automation, consider specifying Anemostat air terminals ("VAV boxes") with Anemostat's BACnet Controllers (ABCs) – a turnkey solution that is easily implemented. Or if you intend to install a stand-alone DDC system today that can provide a network solution tomorrow, ABCs should be considered.
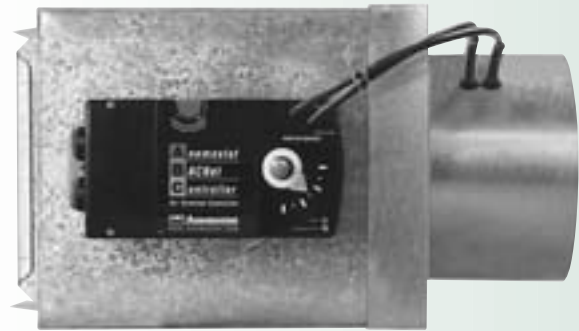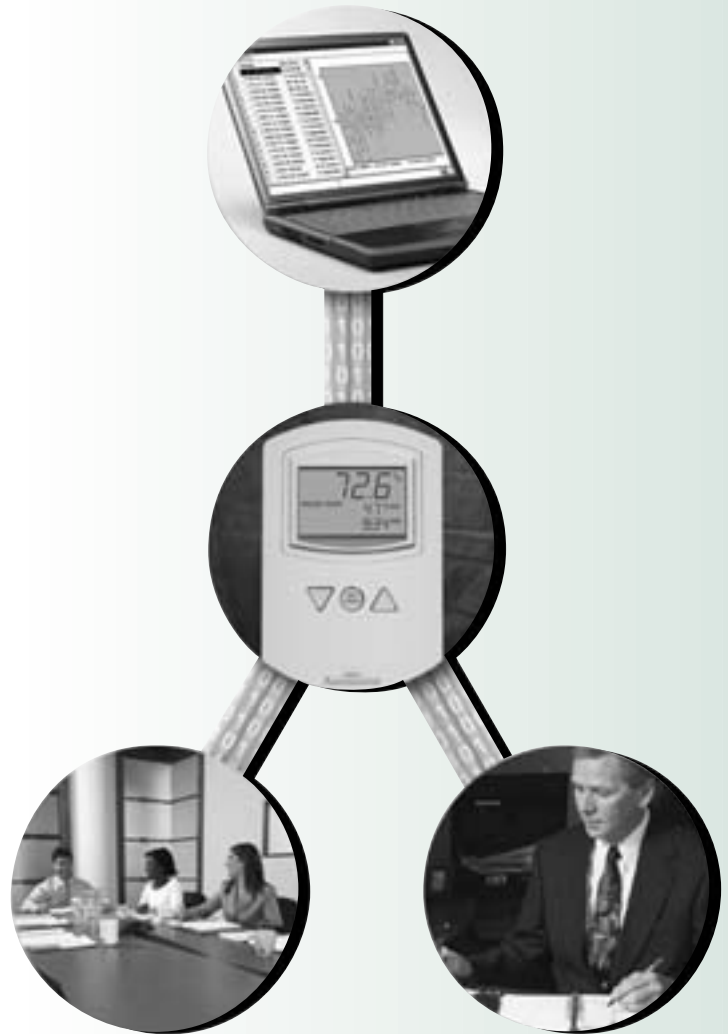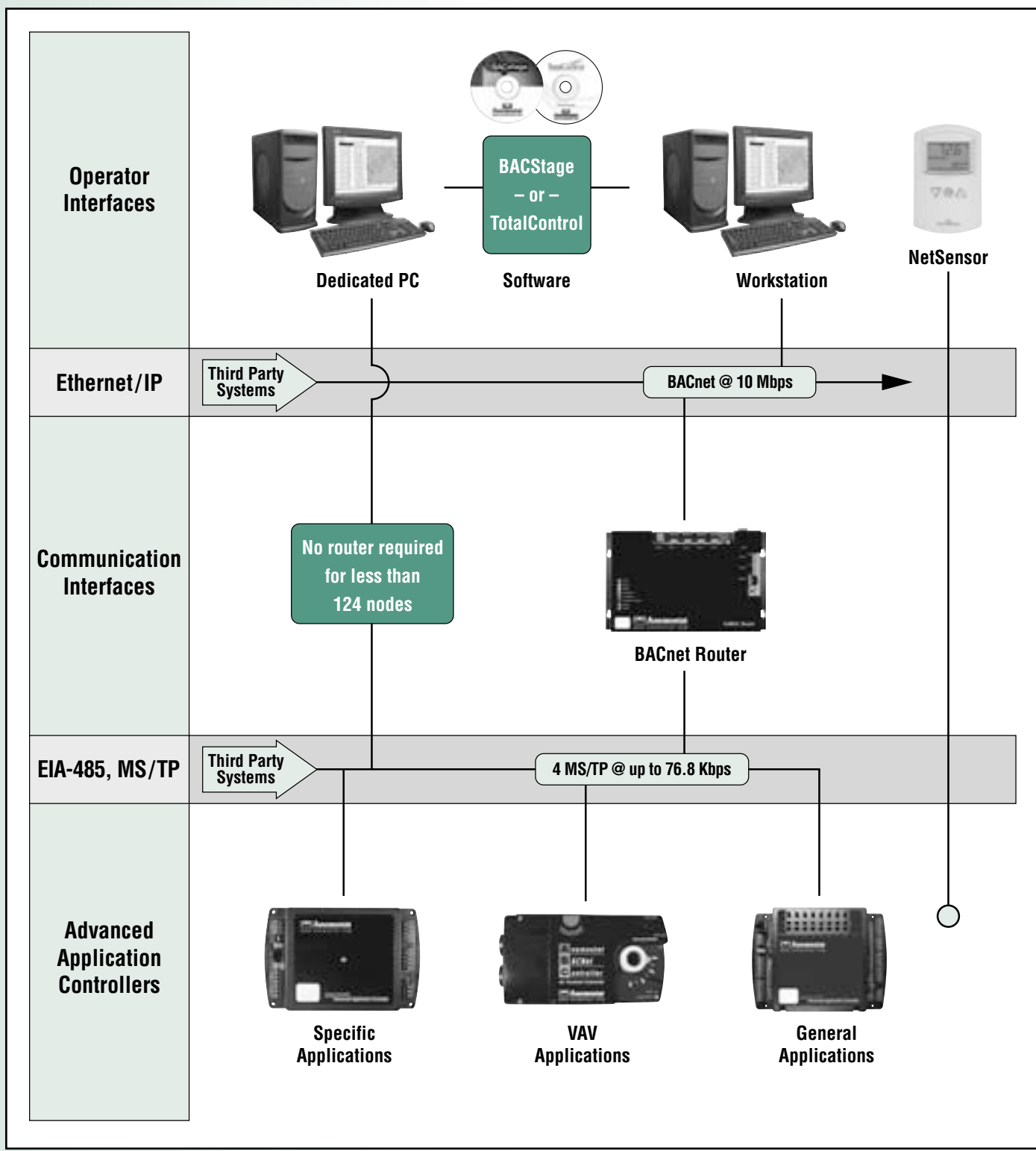
WHAT IS BACNET?

• Based on ANSI/ASHRAE Standard 135 ***Building Automation and Control Networking*** protocol. Building management, users, and manufacturers collaborative effort!

• A non-proprietary, open data communications protocol using an agreed-upon set of rules for creating interoperable networks of building systems. It was developed by the American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE) but has become a worldwide standard (ISO-16484-5).

• The protocol encompasses all building systems from HVAC and building automation to lighting, security, fire and life safety, etc. It defines the messages that various devices exchange and how those messages are delivered.

• BACnet controllers do NOT use proprietary chipsets

• Interoperability of all BACnet control devices on a system – eliminates "owner lock-in" issues with proprietary systems, increases competitiveness, and provides significant hardware and software choices

BENEFITS OF FACTORY-SUPPLIED DDC HARDWARE

• In-Stock digital controls and wall sensors for all VAV air terminals – no more delays due to consignment controls that arrive late or never

• Eliminates coordination delays and integration "finger pointing"

• Single source responsibility:

  • *"Turnkey" means our engineering group integrates the controller with the air terminal for a complete, functioning assembly as specified and ready to install*

  • *Controls are factory programmed and tested "right on the air terminal" – not possible with consignment controls provided to the factory by other control manufacturers*

  • *Entire assembly factory warranted including wiring, relays, controls, sensors, and other miscellaneous hardware required to meet your specifications*

• Economic alternative to field installed controls

• Controls using the industry standard BACnet protocol eliminates integration difficulties with other "networked" devices

direct digital controls

Controls & Features

A

Anemostat BACnet Architecture

Operator Interfaces

Dedicated PC   Software   Workstation   NetSensor

BACStage – or – TotalControl

Ethernet/IP

Third Party Systems   BACnet @ 10 Mbps

Communication Interfaces

No router required for less than 124 nodes

BACnet Router

EIA-485, MS/TP

Third Party Systems   4 MS/TP @ up to 76.8 Kbps

Advanced Application Controllers

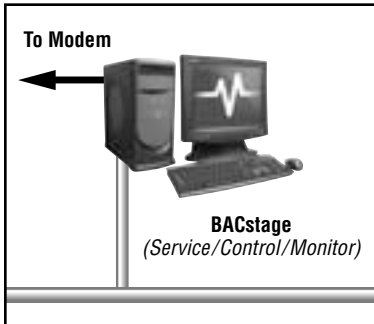Specific Applications   VAV Applications   General Applications

Notes:
1. ABC-5050 routers supports four MS/TP networks, four BACnet IP subnetworks and one BACnet 8802-3 network.
2. MS/TP units can operate standalone or may be networked (up to 124 units).
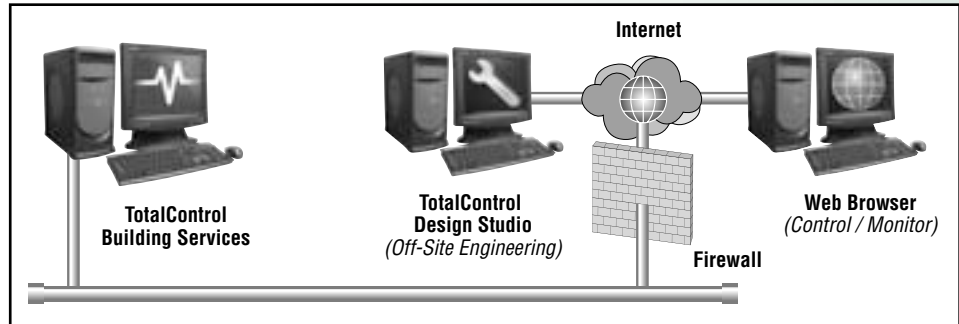
A-4 Anemostat

OPERATOR WORKSTATION SOFTWARE

Connect to your network and/or access BACnet control devices using PC software. Anemostat offers 2 software solutions based on your requirements:

- BACStage – essential tool to configure ABCs and our other BACnet controllers and create an operator workstation for your BACnet system
- TotalControl – a powerful, leading edge, building automation software using a web interface to communicate and manage remote or local networks in multiple locations

BACstage

To Modem

BACstage
(Service/Control/Monitor)

Internet

**TotalControl
Building Services**

**TotalControl
Design Studio**
(Off-Site Engineering)

Web Browser
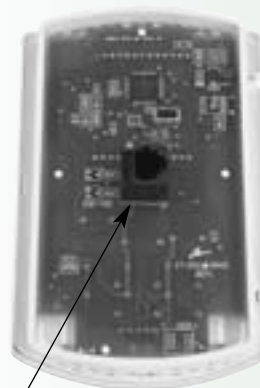*(Control / Monitor)*

Firewall

TotalControl

WALL / NETSENSORS

Anemostat offers various wall/space sensors that connect directly to the air terminal ABC controller:

- ABC-1161 – NetSensor monitors space temperature. Large, 4-character LCD display. Includes EIA-485 data port to allow computer access to the air terminal controller or any of our other BACnet controllers on the network.

- ABC-1181 – NetSensor monitors space temperature AND humidity. Large, 4-character LCD display. Includes EIA-485 data port to allow computer access to the air terminal controller or any of our other BACnet controllers on the network.

- ABC-6011 – Wall sensor with 10k Ω Thermistor.

- ABC-6010 – Wall sensor with 10k Ω Thermistor. Includes EIA-485 data port to allow computer access to the air terminal controller or any of our other BACnet controllers on the network.

- ABC-6012 - Wall sensor with LCD display for room temperature and setpoint adjustment

- ABC-6016 - Wall sensor with LCD display for room temperature and setpoint adjustment. Includes EIA-485 data port to allow computer access to the air terminal controller or any of our other BACnet controllers on the network.

Contact your local Anemostat Representative to learn more about many other sensors available for your specific applications, including CO2 sensors.

ABC-1161

*RJ12 Connector
(to controller)*

ABC-1181

*ABC-6011
ABC-6010*

*ABC-6012
ABC-6016*

direct digital controls

ADVANCED APPLICATION BACNET CONTROLLERS

Native BACnet controllers are available for: air terminals, specific applications and general use. They are installed in stand-alone environments or networked with other BACnet devices.

ABC-7001 / 7003 AIR TERMINAL CONTROLLERS

The 2 available models of ABCs are distinguished by their different output configurations used for various single duct, dual duct, and fan-powered air terminal applications:

DESCRIPTION

The ABC–7001 and ABC-7003 are native BACnet, direct digital controllers designed for VAV air terminal units. An integrated actuator and the supplied programs make this an ideal controller for adding temperature setback, overrides, and other HVAC sequences. Install this versatile controller in stand-alone environments or networked to other BACnet devices. As part of a complete facilities management system, the ABC-7001 & ABC-7003 controllers provide precise monitoring and control of connected points.

- BACnet MS/TP compliant

- VAV control sequences are incorporated to provide pressure independent control of single duct, dual duct, and fan-powered units. Programmed sequences are stored in the controller.

- Controller includes a platinum-ceramic flow-through, on-board sensor. When coupled with the patented Velocity Wing inlet air flow sensor, expect a high degree of primary flow control accuracy even with significant turn-down rates.

- Highly programmable sequencing using control basic – virtually unlimited control strategies to meet comfort needs while maintaining a high level of energy efficiency. Cooling, heating, proportional or step heat, setback, temperature limiting control loops are all easily configured.

SPECIFICATIONS

ABC-7001/7003 Inputs
- 3 universal inputs each of which is programmable as an analog, binary or accumulator objects. A fourth input is dedicated to the airflow sensor.
- Standard units of measure
- Pull-up resistors for switch contacts and other un-powered equipment. Switch select none or 10k Ω.
- Removable screw terminal block, wire size 14–22 AWG
- 10–bit analog–to–digital conversion
- Pulse counting to 16 Hz
- 0–5 volts DC analog input range
- Over-voltage input protection
- Compatible with ABC-1161/81 and ABC-6000 Series Wall / NetSensors

ABC-7001 OUTPUTS
- 3 universal outputs each of which is programmable as an analog or binary object.
- 1 output dedicated to the actuator
- Standard and custom units of measure
- Removable screw terminal block, wire size 14-22 AWG
- 0-10 volts DC for analog objects
- 0-12 volts DC for binary objects
- Output current limited to 100mA per output.
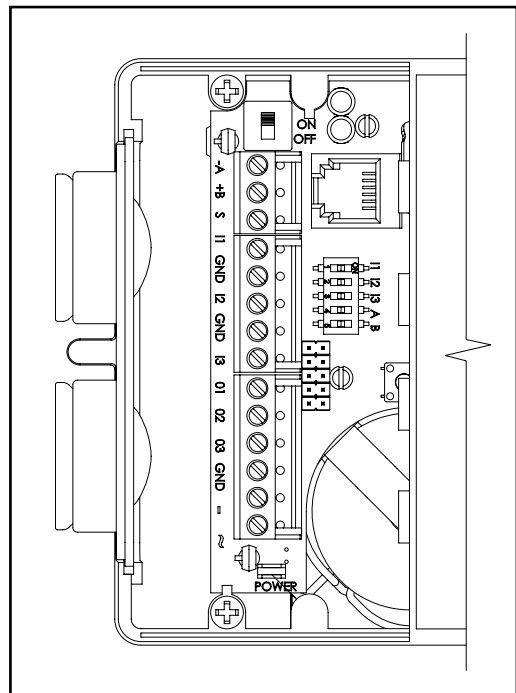
ABC-7001 Terminal Strip

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ABC-7003 OUTPUTS

Universal
- 1 universal output that is programmable as an analog or binary object.
- 1 output dedicated to the actuator
- Standard and custom units of measure
- Removable screw terminal block, wire size 14–22 AWG
- 0–10 volts DC for analog objects
- 0–12 volts DC for binary objects
- Output current limited to 100mA per output.

Triac Output
- 1 optically isolated triac output. Programmable as a binary object.
- Maximum switching 30 volts AC at 1 ampere
- Removable screw terminal block, wire size 14–22 AWG

Relay Output
- 1 normally open relay contact
- Maximum switching 30 VAC/VDC, 2A Max
- Removable screw terminal block, wire size 14–22 AWG
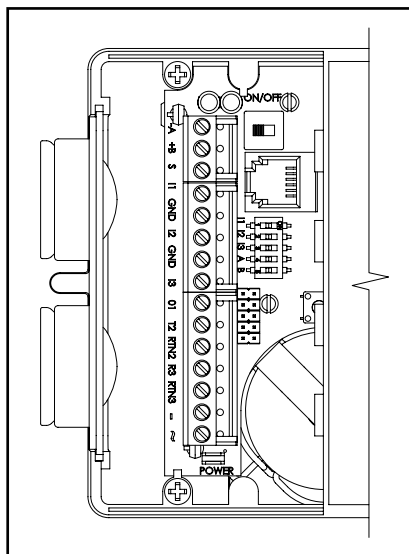
ABC-7003 Terminal Strip

PROGRAMMABLE FEATURES
- 10 Control Basic program areas
- 4 PID loop objects
- 40 analog and 40 binary value objects
- See Pic statement for supported BACnet objects

Schedules
- 8 Schedule objects
- 3 Calendar objects

Alarms and events
Supports intrinsic reporting

8 Notification class objects

Trends
- 8 Trend objects

Memory
- Programs and program parameters are stored in nonvolatile memory.
- Auto restart on power failure

COMMUNICATIONS
- EIA–485 operating up to 76.8 kilobaud
- NetSensor Models ABC-1161/81 are compatible through RJ–12 connector

ACTUATOR FEATURES

Torque
- 50 in-lb. minimum
- 70 in-lb. maximum

Motor Timing
- 18°/minute at 60 Hz.

SPECIFIC APPLICATION CONTROLLERS

Native BACnet job-specific controllers are fully programmable and designed for a variety of applications. As part of a complete facilities management system, these controllers provide precise monitoring and control for roof top units, air handlers, and heat pump applications.

GENERAL USE CONTROLLERS

Native BACnet general use controllers are fully programmable and designed for general applications. Programmable inputs / outputs and user defined Control Basic programs allow for unlimited applications as part of a complete facilities management system.

FULLBAC ROUTER

Use this multi-port BACnet router to manage BACnet building automation data between BACnet/IP, BACnet Ethernet, and MS/TP networks. This router conforms to ANSI/ASHRAE Standard 135.

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