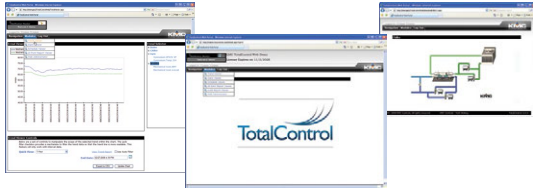




# Software

## TC Series

### TotalControl–Building Services Building Automation Software



The **TotalControl suite of programs** includes:

- **Design Studio**—Master operator workstation software to build browser-based operator pages, configure controllers, manage the database, and set-up trends, schedules, and alarms (see below)
- **Building Services**—Collects data from multiple BAS protocols, stores trends, schedules, and alarms data in a central database, and serves web pages
- **Web interface**—Authorized operators use a standard Internet browser to view and manage the building automation services with pages created with Design Studio; pages are served from the Building Services computer

**Building Services** collects, stores, and routes data between a building automation network and an operator interface or workstation. Built on XML and Microsoft .NET Framework, this program is just one part of a powerful suite of software tools. Once the TotalControl site is configured and the graphic pages are constructed with Design Studio, operators manage the site with web browser access. Design Studio is not required for daily operation.

- Building Services includes the following components.
- Alarm management service
  - Trend logging service
  - A system monitor engine that coordinates movement of data among the other services
  - Scheduling service
  - An SQL server to store and retrieve data
  - A Protocol Driver Service (PDS) links TotalControl Building Services to a building automation protocol
  - Internet browser accessibility modules

TotalControl Building Services stores data in an included Structured Query Language (SQL) database server. Microsoft SQL Server 2005 Express, a lightweight version of the Microsoft SQL Server family, is included with Building Services. KMC Controls recommends upgrading to Microsoft SQL Server Workgroup, Standard, or Enterprise edition on sites with more than 300 controllers.

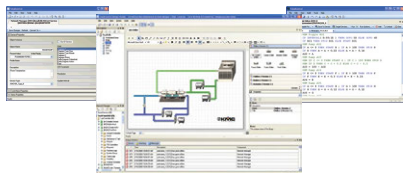
TotalControl TC-BAC and TC-BACUNL when used with TotalControl Design Studio, is a BACnet Testing Laboratory (BTL) listed Advanced Operator Workstation.

#### Models

SEE: [TotalControl series](#) web page and [data sheet](#) for details.

## TC Series

### TotalControl–Design Studio Advanced Operator Workstation Software



TotalControl Design Studio, when used as part of TC-BAC Building Services, is a BACnet Testing Laboratory listed Advanced Operator Workstation, used for configuring a building automation system. Built on XML and Microsoft.Net, this program is just one part of a powerful suite of software tools. Design Studio includes Graphic Designer, Network Manager, Site Explorer, Resource Manager, Graphics Library, Web Administration, Controller Configuration Tool, and Control Basic Editor. TotalControl Design Studio features:

- Standard Microsoft Windows interface—Quickly locate controllers, objects, and points from an expandable list of controllers and devices
- Create custom graphic pages—Design Studio includes an extensive graphics library of HVAC components with which you can build operator interface pages and then publish them for Internet browser access
- Configure controllers—Individual devices and controllers are configured with standard Windows text fields and drop-down lists
- Alarm management—Use Design Studio to set up alarms to notify key operators of critical events
- View and acknowledge alarms—Set up email notification with custom messages for key operators

- Program with Control Basic—The TotalControl Code Editor is the tool with which Control Basic programs are entered and edited in KMC controllers
- View reports—Use TotalControl reports for site commissioning and recording system operation
- Configure trends—Configure TotalControl to collect trend data from either controller based trends or by direct polling of a point and storing the data in the SQL database; TotalControl supports controller, database, and PC trends
- Scheduling—Schedule special holidays, maintenance schedules, and special days for up to a full year
- Supported protocols—Design Studio, through a connection to TotalControl Building Services, supports the configuration of controllers operating on BACnet, KMDigital, as well as OPC
- Security—TotalControl security locks out tampering and still allows authorized operators to make changes
- Internet browser site access—Once the site is configured and the graphic pages are constructed, operators manage the site with an internet browser access; Design Studio is not required for daily operation

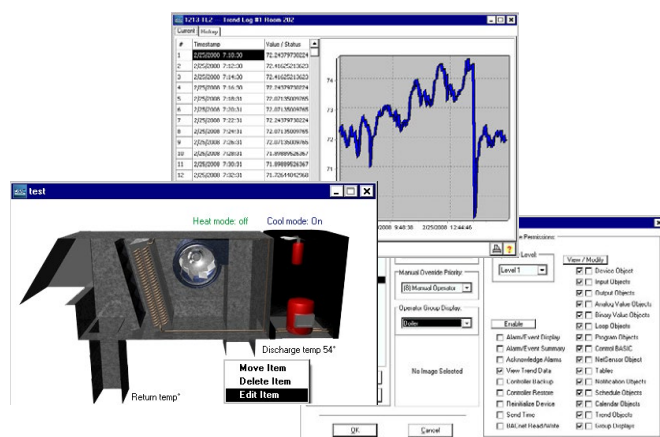
#### Models

SEE: [TotalControl series](#) web page and [data sheet](#) for details.



## BAC-5000

### BACstage Operator Workstation



BACstage™ is a basic software tool with which you can program KMC BACnet controllers for a building automation system. Highlights include:

- Worksheet style entry and drop-down list boxes to make programming quick and easy
- Quickly create graphical user interfaces with easy to use drag-and-drop group displays
- Password protected

#### Models

BAC-5000	BACstage operator workstation
HW-KEY	KMC Controls hardware license key

Each copy of BACstage is licensed to end-users for use on one computer at a time. Order a hardware license key (HW-KEY) for each copy of BACstage. The hardware license key requires a dedicated USB port.

SEE ALSO: [BAC-5000](#) web page for details.

#### Accessories

KMD-5559	CommTalk Communications Interface
SP-022	Digital Designer's Guide

#### Main Features

##### Easy Programming

- Required for full access to features in KMC BACnet controllers starting with firmware releases 1.7
- Configure KMC Controls BACnet devices with MAC addresses, device instance numbers and baud rate
- Configure objects in third-party controllers
- Configure standard BACnet objects in controllers
- Identify inputs, outputs, and other functions with easy to remember names and descriptions
- Assign standard device types for both analog and digital objects
- Full control over built-in PID control loop routines
- Write, compile, and send building automation programs with the BACnet Control Basic editor
- Automatically synchronize system time to computer time
- Save configuration files to disk
- Prepare configuration files off-line with the simulator mode

##### Security

- Security locks out tampering and still permits authorized operators to make system changes
- Password protection for multiple users prevents unauthorized access
- Logs operator sign-in, sign-out, and other significant operator action
- Choose from four preset levels or create a custom level for each operator

##### Custom group displays

- Design and construct operator friendly graphic interfaces with BACstage group displays
- Use the extensive KMC Controls graphic libraries to build custom graphics for chillers, boilers, roof top units, air handlers, and more
- Add motion to displays with animation files
- Easily drag-and-drop links to other group displays or object properties on the display
- Add links from site or floor plans to critical equipment or control points
- Use graphics from any program that generates BMP, JPG, GIF, WMF, or EMF file types

##### Manage alarms

- Program, view, and acknowledge alarms.
- Manage recipient lists in notification class objects
- View an alarm summary for each device

##### Data logging

- Retrieve and display temperature, humidity, or any performance data stored in each controller
- View trend objects from any controller
- Display data as graphs or text
- Retrieve and save logs for analysis in programs such as Excel

##### Scheduling

- Program BACnet schedule objects in individual controllers for recurring daily activities
- Create special days, such as holidays, in the controller's calendar objects that override the weekly schedules

##### Connectivity

- MS/TP
- Ethernet 802.3
- Ethernet IP
- Register as foreign device to a BBMD (BACnet broadcast management device)
- PTP including modem



# Additional Information

## Accessories

This catalog supplements the information in the larger [SP-071 KMC Catalog \(Electronic and Pneumatic Controls\)](#). See that catalog for information about the many input, output, and other devices for the digital controllers.

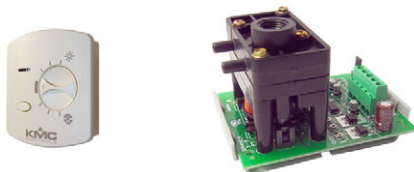
Output options include:

- **Actuators** (10 to 320 in.-lb., tri-state/proportional/two-position inputs, selectable fail-safe direction, and other control options)
- **Valves** (1/2" to 6", 2-way and 3-way, and various actuator options)



Input options include:

- **Sensors and transmitters** (temperature, humidity, air flow, pressure, smoke, CO, CO<sub>2</sub>, and refrigerant)
- **Switches** (limit, position, and pressure)
- **Transducers/converters** (pressure, air flow, current, voltage, and pulse width)



Other miscellaneous accessory options include:

- **Controllers** (analog electronic, and low limit)
- **Relays** (multiple inputs, outputs, and control options)
- **Thermostats** (analog electronic)
- **Enclosures** (various sizes for relays, controllers, and actuators)

Many of these are used with KMC's older analog electronic controllers as well as with the latest digital controllers.



For digital sensors (NetSensors) and digital accessories (including literature about digital products), see the Digital Sensors and Accessories Catalog Supplement (SP-094).

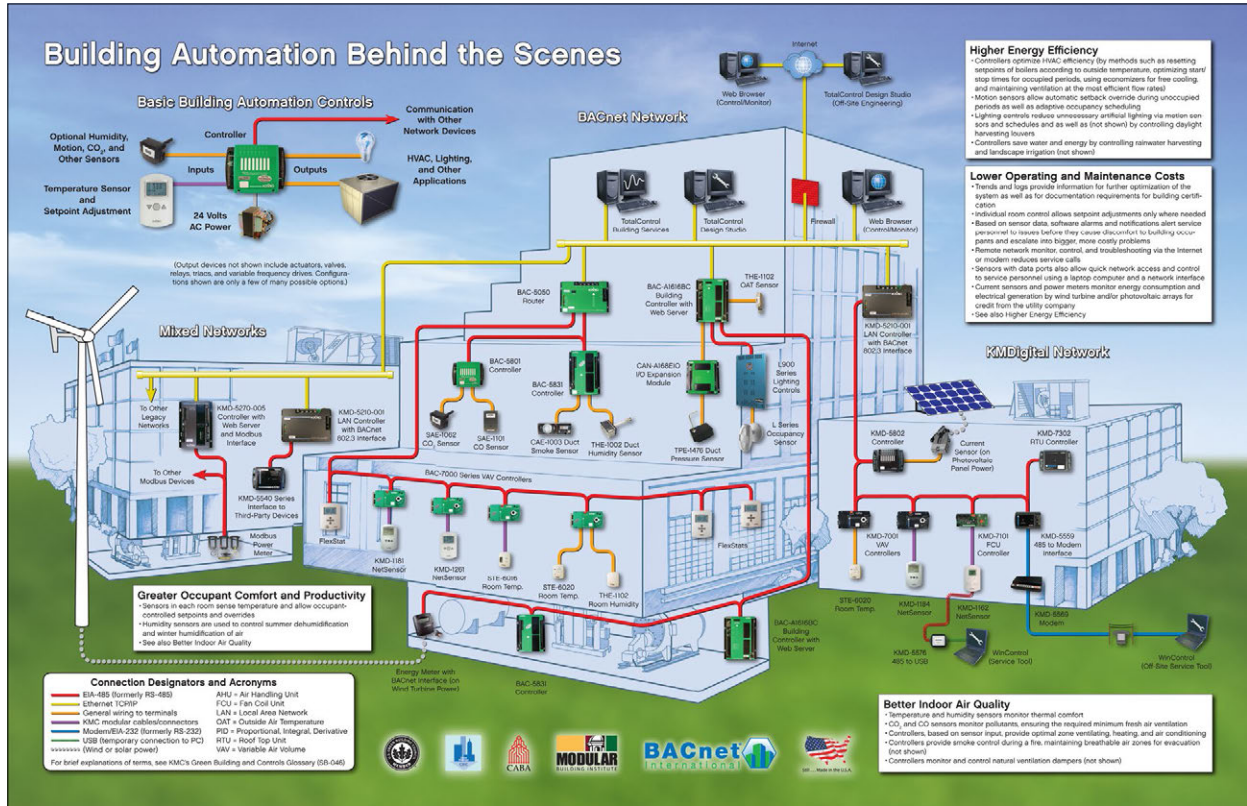


**NOTE:** For KMDigital products, see the KMDigital Catalog Supplement (SP-093).

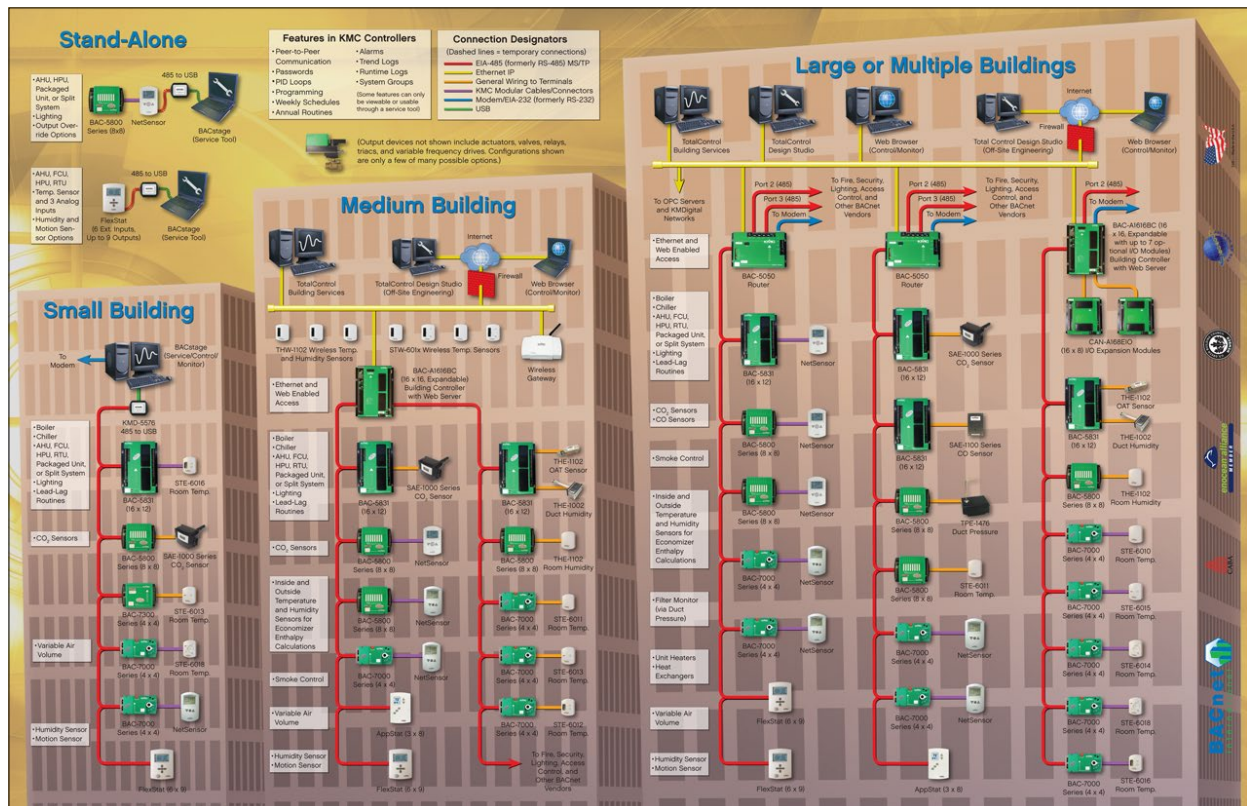




# Sample BACnet Networks



This is the inside spread of the Controlling Your Green Building Brochure (SB-048)



This is the inside spread of the Native BACnet Building Automation Solutions Brochure (SB-008)