

Supervisory Controllers

**FX20**

The FX20, FX40 and FX60 are building automation supervisory class controllers in the Facility Explorer product family. They provide integrated control, supervision and network management services to one or more local networks of field controllers. The FX20, FX40 and FX60 provide system-wide coordination to automate building control operations, improve occupant comfort, reduce energy usage, and optimize operating efficiencies.

**FX60**

The FX20, FX40 and FX60 are similar in function and overall capabilities. All three provide modular and scalable supervision and control for your building automation system. You choose only those hardware and software features that are applicable to your project requirements. The main difference between the three is their capacity.

Key features:

- Building automation and control
- Energy management
- Integration of multiple protocols
- Web-based user interface
- IT compatible
- Scalable

**FX40**



Building Automation and Control

The FX20, FX40 and FX60 incorporate a full suite of building automation and control features that you can apply to data points sourced from any of the integrated field devices. Examples of the available building automation control features include:

- occupancy/event scheduling
- history collection and reporting
- alarming
- totalization (runtime and COS count)
- energy management (demand limiting, optimized start/stop)
- open and closed loop control routines (PID control, Boolean logic)
- network-wide data sharing
- rich, graphical presentation of system-wide information
- remote access via LAN, WAN, Internet, intranet or dial-up connection
- web browser user access with password protection

Energy Management

The FX20, FX40 and FX60 provide several energy management components to help reduce your energy consumption. Demand limiting monitors energy usage and sheds loads when the demand approaches a preset limit for the particular time of day. When the electrical demand decreases the shed loads are automatically restored. The electrical load reduction can be accomplished by turning off equipment or changing a setpoint so that equipment operates at lower energy consumption.

Optimized start stop decreases energy usage by reducing the run time of equipment to that needed to obtain and maintain defined comfort conditions. It automatically calculates the latest start time and earliest stop time that will still meet the expected comfort levels for the served area.

Outside air optimization provides free cooling based on temperature or enthalpy. Conditions of the inside air and outside air are compared and equipment is signaled to use the most economical source for cooling.

Integration of Multiple Protocols

The FX20, FX40 and FX60 supervise one or more networks of field devices. Through included and optional drivers and communications interfaces you can connect to industry standard protocols such as BACnet® MS/TP, N2 Open, LonWorks®, Modbus, Z-Wave and M-Bus. You can also gather data, analyze information and make decisions for devices of diverse protocols from a single, easy to understand user interface.

Connecting to other supervisory controllers and other systems via the IT network is easy with included and optional networking protocols like TCP/IP, HTTP, BACnet IP, Niagara, LON over IP, oBIX, SNMP, SMS, and SSL. Multiple FX20s, FX40s and FX60s can share data using the embedded Niagara driver while the optional BACnet IP driver provides communications with other building automation systems.

Web Based User Interface

See more and do more with your FX20, FX40 and FX60 based system. The same Web-based user interface can be seen from your intranet, WAN, LAN, internet, even dial-up, all with a Web browser. With the Web UI you can have as simple or as sophisticated of a user interface as you need to accomplish the task at hand.

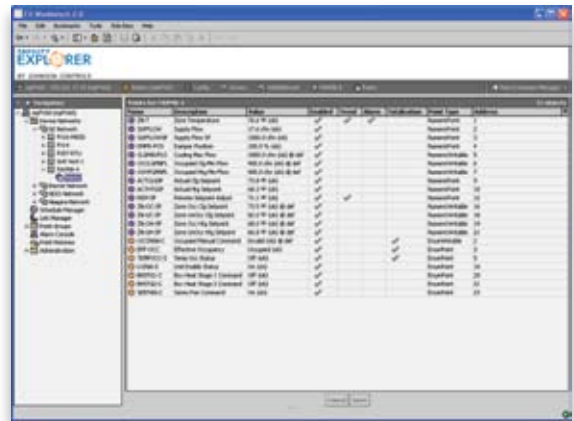
Information Technology

With drivers for BACnet IP, oBix, Niagara, SNMP, SMS you can not only use the existing IT infrastructure for the BAS you can also communicate important information via the existing IT services. SNMP provides information to the network management system about the health of the BAS components on the IT network. SMS enables the FX20, FX40 and FX60 to send messages to mobile telephone devices. These can be notifications of serious conditions that need immediate action or status information about the systems in your facility.

Scalable

The FX20, FX40 and FX60 allow you to install the capacity and computing power needed for your facility. Select the size of hardware needed for the project. If more capacity or more computing power is needed, add another controller without redesigning your system.

System User Interface Table Format



The screenshot shows the Facility Explorer software interface in a table format. The table lists various system components, including their names, addresses, and status. The columns are: Name, Address, Description, Status, and Location. The table contains several rows of data, including entries for 'AHU1', 'AHU2', 'AHU3', and 'AHU4'. The interface also shows a tree view on the left side of the window.

System User Interface Graphical Format



FX Workbench

FX Workbench is the engineering tool for the Facility Explorer supervisory controllers. It can operate as a standalone application on a PC or it can be served up by the FX20, FX40 and FX60 via a Web browser. FX Workbench includes several labor-saving features such as:

- online discovery of LonWorks and BACnet devices and points
- online discovery of N2 devices with assisted importing of points
- a check box method to add features such as alarms, histories, and totalizations
- easy-to-use managers for grouping points, creating schedules, and linking points
- automatic system graphic creation and binding to source points
- a library of predefined systems, with associated graphics, points list, and default features

FX SUPERVISORY CONTROLLERS

Users can configure the FX20, FX40 and FX60 online while directly or remotely connected with FX Workbench. FX Workbench also allows users to create an FX20, FX40 and FX60 configuration offline and then download it at a later time.

Feature	FX40	FX20	FX60
Enclosure / Mounting	Sheet metal/wall	Plastic/DIN Rail	Plastic/DIN Rail
Power Supply	120 VAC	DIN Rail Power modules	DIN Rail Power modules
Processor	Motorola RISC 250MHz	IBM PowerPC 405EP 250MHz	IBM PowerPC 440EP 524MHz
RAM Memory	128 MB RAM	128 MB RAM	128 MB RAM (upgradeable to 256 MB)
Flash Memory	32 MB Flash	64 MB Flash	128 MB Flash
Communications Port			
Onboard	<ul style="list-style-type: none"> 1 Ethernet 10/100 1 RS-485 1 RS-232 or modem 1 LON FT/TP-10 	<ul style="list-style-type: none"> 2 Ethernet 10/100 1 RS-485 1 RS-232 2 option slots 	<ul style="list-style-type: none"> 2 Ethernet 10/100 1 RS-485 1 RS-232 2 option slots
Optional	none	<ul style="list-style-type: none"> Dual port RS-485 (up to 4 ports) 1 LON FT/TP-10 modem RS-232 	<ul style="list-style-type: none"> Dual port RS-485 (up to 4 ports) 1 LON FT/TP-10 modem RS-232
Network Drivers			
Embedded	<ul style="list-style-type: none"> N2 LonWorks BACnet MS/TP BACnet IP Client 	<ul style="list-style-type: none"> N2 Niagara oBIX 	<ul style="list-style-type: none"> N2 Niagara oBIX
Optional	<ul style="list-style-type: none"> BACnet IP Server Niagara ModBus RTU Client ModBus RTU Server ModBus TCP Client ModBus TCP Server SNMP SMS 	<ul style="list-style-type: none"> LonWorks BACnet MS/TP BACnet IP Client BACnet IP Server ModBus RTU Client ModBus RTU Server ModBus TCP Client ModBus TCP Server SNMP SMS 	<ul style="list-style-type: none"> LonWorks BACnet MS/TP BACnet IP Client BACnet IP Server ModBus RTU Client ModBus RTU Server ModBus TCP Client ModBus TCP Server SNMP SMS
Local I/O			
Onboard	10	none	none
Optional	none	up to 66 (via NDIO modules)	up to 66 (via NDIO modules)

FX Server

The Facility Explorer FX Server expands the capabilities of the FX20, FX40, and FX60 Supervisory Controllers by seamlessly integrating their functions into a single, networked control system. The FX Server provides network integration and supervisory capabilities for all connected FX20, FX40 and FX60 Supervisory Controllers.

Key Features:

- Central storage for large amounts of histories, alarms and events
- Single seat user interface
- Master scheduling
- System wide database management
- Enterprise integration
- Web-based graphical user interface

The FX Server is a software package that can be loaded onto a variety of third party PC or server hardware platforms, providing flexibility and options when designing the system. Optional network drivers include:

- BACnet IP
- ModBus
- OPC
- oBIX

In addition, you can add enterprise-level database drivers to the FX Server, allowing it to export its alarm, event, and history records to the desired database format. Optional database drivers include:

- Microsoft® SQL
- Oracle®
- IBM® DB2

FX
Server



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FRAMEWORK™

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