

Facility Explorer

FX40 Supervisory Controller

Description

The FX40 is a Web-based supervisory-class controller in the Facility Explorer product family. The FX40 manages networks of field controllers using open communication protocols such as N2, LONWORKS®, and BACnet® protocols. The FX40 also provides onboard, input and output points for direct monitoring of equipment status or analog sensors and control of auxiliary devices or alarms.

The FX40 supports a full set of building automation features and functions specifically designed for commercial facilities such as scheduling, alarming, histories, data sharing, energy management, totalization, and customized control routines.

The FX40 includes a graphical system user interface and configuration tool that users can access with a Web browser. Multiple users can concurrently connect to the FX40. Security and presentation preferences are managed through user profiles, logon IDs, and passwords. Remote access is easily achieved from an Internet, intranet, or a dial-up connection.

Refer to the *FX40 Supervisory Controller Product Bulletin (LIT-12011046)* for important product application information.

Features

- Web-based User Interface (UI)
- adoption of industry standard communication protocols
- embedded configuration tool
- onboard inputs and outputs



FX40



Repair Information

If the FX40 fails to operate within its specifications, replace the unit. For a replacement controller, contact the nearest Johnson Controls® representative.

Selection Chart

FX40 Ordering Information

Product Code Number	Description
LP-FX4020A-0	FX40: includes 128 MB RAM, 32 MB Flash, 1 Ethernet port, 1 RS-485 port, 1 RS-232 port, 1 LONWORKS FT/TP-10 port, 6 universal inputs, 4 binary outputs, N2 driver, LONWORKS driver, BACnet Internet Protocol (IP) client driver, BACnet Master-Slave/Token-Passing (MS/TP) driver, embedded FX Workbench, embedded Web UI, 1-year software maintenance agreement
LP-FX4021A-0	FX40: includes 128 Mb RAM, 32 Mb Flash, 1 Ethernet port, 1 RS-485 port, 1 RS-232 port, 1 LONWORKS FT/TP-10 port, 6 universal inputs, 4 binary outputs, Niagara driver, N2 driver, LONWORKS driver, BACnet IP client driver, BACnet IP server driver, BACnet MS/TP driver, embedded FX Workbench, embedded Web UI, 1-year software maintenance agreement
LP-FX4022A-0	FX40: includes 128 Mb RAM, 32 Mb Flash, 1 Ethernet port, 1 RS-485 port, 1 modem, 1 LONWORKS FT/TP-10 port, 6 universal inputs, 4 binary outputs, N2 driver, LONWORKS driver, BACnet IP client driver, BACnet MS/TP driver, embedded FX Workbench, embedded Web UI, 1-year software maintenance agreement
LP-FX4023A-0	FX40: includes 128 Mb RAM, 32 Mb Flash, 1 Ethernet port, 1 RS-485 port, 1 modem, 1 LONWORKS FT/TP-10 port, 6 universal inputs, 4 binary outputs, N2 driver, LONWORKS driver, BACnet IP client driver, BACnet IP server driver, BACnet MS/TP driver, embedded FX Workbench, embedded Web UI, 1-year software maintenance agreement

FX Workbench Ordering Information

Part Number	Description
LP-FXTSPE-0	FX Tools Supervisor Pro Software on CD-ROM: End-user version. Includes FX Workbench, FX Workbench Pro, and FX Alarm Portal.
LP-FXTSPE-6	FX Tools Supervisor Pro Software Upgrade on CD-ROM. Used to upgrade any copy of FX Tools Supervisor Pro which is within the software maintenance agreement period.
LP-FXALMPTL-0	FX Alarm Portal Client Software on CD-ROM. Provides Alarm Portal functions only.
LP-FXSWMA-0	License file enabling 1 year of software maintenance for one copy of FX Tools Supervisor Pro.
LP-FXSWUPG-0	License file enabling a one-time software upgrade for one copy of FX Tools Supervisor Pro.

Accessories

FX40 Software Accessories Ordering Information (Part 1 of 2)

Part Number	Description
LP-FX40CN0-0	License enabling Enterprise Connectivity Station Pack (Niagara and BACnet IP server drivers) for one FX40
LP-FXMDBRTU-0	License enabling ModBus® Rooftop Unit (RTU) client (import) driver for one FX20/FX40/FX60
LP-FXMDBRTUS-0	License enabling ModBus RTU server (export) driver for one FX20/FX40/FX60
LP-FXMDBTCP-0	License enabling ModBus Transmission Control Protocol (TCP) client (import) driver for one FX20/FX40/FX60
LP-FXMDBTCPS-0	License enabling ModBus TCP server (export) driver for one FX20/FX40/FX60
LP-FXLONIP-0	License enabling LONWORKS IP driver for one FX20/FX40/FX60
LP-FXMBUS-0	License enabling M-Bus driver for one FX20/FX40/FX60
LP-FXZWAV-0	License enabling Z-Wave driver for one FX20/FX40/FX60
LP-FXSNMP-0	License enabling Simple Network Management Protocol (SNMP) driver for one FX20/FX40/FX60
LP-FXSMS-0	License enabling Simple Messaging Service driver (SMS) for one FX20/FX40/FX60
LP-FXSSL-0	License enabling Secure Socket Layer (SSL) for one FX20/FX40/FX60

FX40 Supervisory Controller (Continued)

FX40 Software Accessories Ordering Information (Part 2 of 2)

Part Number	Description
LP-FX40MA-0	License enabling 1 year of annual software maintenance for one FX20/FX40/FX60. Includes new releases and interim service releases for 1 year from the date of purchase.
LP-FX40UPG-0	License enabling one-time, new release software upgrade for one FX20/FX40/FX60

FX40 Replacement Parts Ordering Information

Part Number	Description
LP-KIT401A-0	Onboard modem
LP-KIT402A-0	Battery, 12 VDC, 1.2 AH
LP-KIT403A-0	FX40 Hardware Accessory Package, includes: • six 499 ohm, 0.6 W resistors • four 6-position Input/Output (I/O) screw terminal connectors • one 3-position RS-485 screw terminal connector • two wire nuts • one LONWORKS 2-position screw terminal connector
LP-KIT407A-0	Battery/ground harness (also includes 6-position power connector)
LP-KIT408A-0	Adapter, RJ-45 to DB-9 null modem, for serial port to connect to Data Terminal Equipment (DTE) device
LP-KIT409A-0	Silver satin patch cable, 4 ft (used between adapter and serial port)
LP-KIT410A-0	Silver satin patch cable, 10 ft (used between adapter and serial port)
LP-KIT411A-0	Silver satin patch cable, 25 ft (used between adapter and serial port)

Technical Specifications

FX40 Controller (Part 1 of 2)	
Product Codes	LP-FX4020A-0, LP-FX4022A-0
Power Requirements	120 VAC, 50/60 Hz 25 VA maximum Lead wires for hot/neutral (wire nut), stud for ground connection
Environmental	Operating Temperature: 32 to 122°F (0 to 50°C) Storage Temperature: 32 to 158°F (0 to 70°C) Relative Humidity: 5 to 95%, noncondensing
General	Motorola® Reduced Instruction Set Computer (RISC) Processor @ 250 MHz Facility Explorer Control Engine with direct I/O support objects 128 MB RAM, 32 MB flash for database backup One 10/100 MB Ethernet RJ-45 connector FCC Class A computing device Wind River VxWorks® Operating System with Jeode® Java® Virtual Machine Facility Explorer Software with I/O control objects
Communications	One 10/100 Mb Ethernet port—RJ-45 connection One RJ-45 connector for RS-232 port One RS-485 port (up to 57,600 baud) One LONWORKS port—FTT-10 with Weidmuller connector Optional auto-dial/auto-answer 56k modem; RJ-11 connector (uses the RS-232 port when installed)
Inputs/Outputs	Four form C Single-Pole, Double-Throw (SPDT) relay outputs rated for 24 VAC/DC @ 2 ampere resistive One Light-Emitting Diode (LED) indicator for each relay Six Universal Inputs for 10k ohm Type III (10k 4A1-International) Thermistor, 4/20 mA current loop, 0 to 10 volt, or dry contact 12-bit A/D converter Thermistor Sensor Range: 23.3 to 57.2°C (10 to 135°F). Input accuracy is in the range of ±1% of span, characteristic curve is customizable 0 – 10 volt or 4/20 mA accuracy is ±2% of span, without user calibration. Uses an external resistor for current input (four provided). Self-powered or board powered sensors accepted. Dry contacts (on UI) 20 Hz max. frequency (25 ms minimum pulse width) 3 V open circuit, 300 Micro A short-circuit current 20 VDC @ 80 mA to drive 4/20 mA powered sensors. 24 VDC terminal and external resistor can be used if monitoring contacts that require higher voltages or higher current. All I/O uses screw terminals on 0.2 in. centers
Battery Backup	Provided for all onboard functions including I/O. Monitored and trickle charged. Battery maintains processor operation through power failures for a predetermined interval, then writes all data to flash memory, turns off the processor, and maintains clock for a minimum of 5 years.

FX40 Supervisory Controller (Continued)

FX40 Controller (Part 2 of 2)	
Chassis – Housed in Metal Enclosure	Intended for indoor wall mounting only Cooling: Internal air convection Dimensions: 11 x 14 x 2.5 in. (27.94 x 35.56 x 6.35 cm) Weight: Net 4 lb (1.814 kg), gross 5 lb (2.268 kg)
Agency Listing	United States - UL Listed, File E107041, CCN PAZX, under UL 916, Energy Management Equipment FCC compliant to CFR 47, part 15, subpart B, class A Canada - UL Listed, File E107041, CCN PAZX7, under CSA C22.2 No. 205, Signal Equipment Industry Canada compliant to ICES-003
FX Workbench Requirements	
Processor	Intel® Pentium® 4, 1 GHz or higher
Operating System	Microsoft® Windows NT® Version 4.0 with SP 4.0 or later Microsoft Windows® 2000 Microsoft Windows XP® Professional
Web Browser	Microsoft Internet Explorer® Version 5.0 or later Netscape Communicator® Version 4.5 or later
Memory	512 MB minimum
Hard Disk	1 GB minimum, 5 GB recommended
Network Support	Ethernet 10/100 Mb with RJ-45 connector