

FX80 Supervisory Controller Catalog Page

LIT-1901010

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Overview

The FX80 Supervisory Controller is a web-based supervisory-class controller in the Facility Explorer® product family. The FX80 controller manages networks of field controllers using open communication protocols, such as BACnet®, LonWorks®, and N2 protocols. The FX80 controller supports a full set of building automation features, such as scheduling, alarming, historical data collection and management, data sharing, energy management, totalization, customized control routines, tagging, templates, search, and hierarchies, which are specifically designed for commercial facilities.

Each FX80 controller includes a graphical system user interface with an HTML5 web profile, a configuration tool that you can access with the web browser, and robust security. Remote access is easily achieved using a wired or wireless connection from the Internet or intranet. Multiple users can concurrently connect to the FX80 controller. You can manage security and presentation preferences through user profiles, login IDs, and passwords.

The FX80 Supervisory Controller is a compact DIN rail mountable controller with the capability for remote external input and output points.

In addition, the FX80 controller's hardware and software design is modular, so you can plug in accessories, such as communications option modules, if needed. The device and point licensing options allow you to select the device and point capacity most appropriate for the size of your facility and those options best needed to control it. And, in many cases, future expansions do not require the replacement of hardware.

Refer to the *FX80 Supervisory Controller Product Bulletin (LIT-12012250)* for important product application.



FX80 features and benefits

Fully commissioned and licensed out of the box

Power up, connect to a web browser, change default passwords, set up network parameters, and start adding your field controllers.

Web-based user interface

Provides rich, graphical displays for system operation and analysis.

Adoption of industry standard communication protocols

Allows for the integration of a wide variety of field controllers, including Facility Explorer field controllers and controllers provided by others without intermediate gateways or translators.

Embedded Configuration Tool

Requires no proprietary or desktop software to configure the FX80 controller. You only need a web browser for basic configuration and monitoring.

Modular design

Allows you to select only those components needed to meet specific project requirements.

Small, compact design

Installs easily.

FX Workbench

Reduces engineering and installation time by easily and quickly creating the FX80 database from field controller configurations offline.

Niagara® analytics

Allows you to apply a variety of analytical algorithms and diagnostics to both historical and real-time data.

North American emissions compliance

United States

This equipment has been tested and found to comply with the limits for a Class A digital device

pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the users will be required to correct the interference at their own expense.

Canada

This Class (A) digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe (A) respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Ordering information

FX80 Supervisory Controller ordering information

Table 1: FX80 Supervisory Controller ordering information

Region	Product code number	Description
North America	FX-SC8BDWIFI-0	FX80 Supervisory Controller and micro Secure Digital (SD) card, licensing required and purchased separately, disabled WLAN
Europe	FX-SC8BDWIFI-0E	
FX-SC8BASE-0		FX80 Supervisory Controller and micro Secure Digital (SD) card, licensing required and purchased separately
FX-SC8BASE-700		Replacement FX80 Supervisory Controller, no micro SD card, no licenses

FX80 core device licenses ordering information

Table 2: North America

Product code number	Description
FX-SC8CL005-0	FX80 Supervisory Controller core device license, 5 field devices, 250 points
FX-SC8CL010-0	FX80 Supervisory Controller core device license, 10 field devices, 500 points
FX-SC8CL025-0	FX80 Supervisory Controller core device license, 25 field devices, 1,250 points
FX-SC8CL100-0	FX80 Supervisory Controller core device license, 100 field devices, 5,000 points
FX-SC8CL200-0	FX80 Supervisory Controller core device license, 200 field devices, 10,000 points
FX-SC8CLDEMO-0	FX80 Supervisory Controller demo license, 500 field devices, 25,000 points. Enables all features needed to engineer and demonstrate FX Supervisory Controllers and FX Server stations. Intended for installing contractors. Requires annual support fee. Expires yearly.

Table 3: Europe

Product code number	Description
FX-SC8CL100-OE	FX80 Supervisory Controller core device license, 100 points
FX-SC8CL250-OE	FX80 Supervisory Controller core device license, 250 points
FX-SC8CL500-OE	FX80 Supervisory Controller core device license, 500 points
FX-SC8CL01K-OE	FX80 Supervisory Controller core device license, 1,250 points

Table 3: Europe

Product code number	Description
FX-SC8CLO5K-0E	FX80 Supervisory Controller core device license, 5,000 points
FX-SC8CL10K-0E	FX80 Supervisory Controller core device license, 10,000 points
FX-SC8CLDEMO-0E	FX80 Supervisory Controller demo license, 25,000 points. Enables all features needed to engineer and demonstrate FX Supervisory Controllers and FX Server stations. Intended for installing contractors. Requires annual support fee. Expires yearly.

- Each FX80 controller requires the purchase of a single core device license.
- Device licenses are also dependent on point (proxy) counts. For each device that is licensed, 50 points are licensed. A 5-device core license also licenses 250 points. This could satisfy five devices with 25 points each or three devices with 80 points each. For three devices with 90 points each, you need to purchase the 10-device core license (or add a 5-device additional license to the 5-device core license).

Initial purchase FX80 Controller software maintenance ordering information

Table 4: North America

Product code number	Description
FX-SC8D005M1-0	Initial 1 year software maintenance for FX80 Supervisory Controller with 5–9 field device capacity
FX-SC8D005M3-0	Initial 3 year software maintenance for FX80 Supervisory Controller with 5–9 field device capacity
FX-SC8D005M5-0	Initial 5 year software maintenance for FX80 Supervisory Controller with 5–9 field device capacity
FX-SC8D010M1-0	Initial 1 year software maintenance for FX80 Supervisory Controller with 10–24 field device capacity
FX-SC8D010M3-0	Initial 3 year software maintenance for FX80 Supervisory Controller with 10–24 field device capacity
FX-SC8D010M5-0	Initial 5 year software maintenance for FX80 Supervisory Controller with 10–24 field device capacity
FX-SC8D025M1-0	Initial 1 year software maintenance for FX80 Supervisory Controller with 25–99 field device capacity
FX-SC8D025M3-0	Initial 3 year software maintenance for FX80 Supervisory Controller with 25–99 field device capacity

Table 4: North America

Product code number	Description
FX-SC8D025M5-0	Initial 5 year software maintenance for FX80 Supervisory Controller with 25–99 field device capacity
FX-SC8D100M1-0	Initial 1 year software maintenance for FX80 Supervisory Controller with 100–199 field device capacity
FX-SC8D100M3-0	Initial 3 year software maintenance for FX80 Supervisory Controller with 100–199 field device capacity
FX-SC8D100M5-0	Initial 5 year software maintenance for FX80 Supervisory Controller with 100–199 field device capacity
FX-SC8D200M1-0	Initial 1 year software maintenance for FX80 Supervisory Controller with 200 and up field device capacity
FX-SC8D200M3-0	Initial 3 year software maintenance for FX80 Supervisory Controller with 200 and up field device capacity
FX-SC8D200M5-0	Initial 5 year software maintenance for FX80 Supervisory Controller with 200 and up field device capacity

Table 5: Europe

Product code number	Description
FX-SC8P250M1-0E	Initial 1 year software maintenance for FX80 Supervisory Controller with 100 and 250 points
FX-SC8P250M3-0E	Initial 3 year software maintenance for FX80 Supervisory Controller with 100 and 250 points
FX-SC8P250M5-0E	Initial 5 year software maintenance for FX80 Supervisory Controller with 100 and 250 points
FX-SC8P500M1-0E	Initial 1 year software maintenance for FX80 Supervisory Controller with 500 points
FX-SC8P500M3-0E	Initial 3 year software maintenance for FX80 Supervisory Controller with 500 points
FX-SC8P500M5-0E-0	Initial 5 year software maintenance for FX80 Supervisory Controller with 500 points
FX-SC8P01KM1-0E	Initial 1 year software maintenance for FX80 Supervisory Controller with 1,250 points
FX-SC8P01KM3-0E	Initial 3 year software maintenance for FX80 Supervisory Controller with 1,250 points
FX-SC8P01KM5-0E	Initial 5 year software maintenance for FX80 Supervisory Controller with 1,250 points
FX-SC8P05KM1-0E	Initial 1 year software maintenance for FX80 Supervisory Controller with 5,000 points
FX-SC8P05KM3-0E	Initial 3 year software maintenance for FX80 Supervisory Controller with 5,000 points
FX-SC8P05KM5-0E	Initial 5 year software maintenance for FX80 Supervisory Controller with 5,000 points

Table 5: Europe

Product code number	Description
FX-SC8P10KM1-0E	Initial 1 year software maintenance for FX80 Supervisory Controller with 10,000 points
FX-SC8P10KM3-0E	Initial 3 year software maintenance for FX80 Supervisory Controller with 10,000 points
FX-SC8P10KM5-0E	Initial 5 year software maintenance for FX80 Supervisory Controller with 10,000 points

Note:

- Device capacity is equal to the sum of the core device license and any additional device license applied to the FX80 controller. Select the device capacity that is equal or lesser than the sum.

- Maintenance cannot be purchased for any period beyond December 31, 2025.

FX80 Controller software maintenance (post initial) ordering information

Table 6: North America

Product code number	Description
FX-SC8D005M1-6	1 year software maintenance for FX80 Supervisory Controller with 5–9 field device capacity
FX-SC8D005M3-6	3 year software maintenance for FX80 Supervisory Controller with 5–9 field device capacity
FX-SC8D005M5-6	5 year software maintenance for FX80 Supervisory Controller with 5–9 field device capacity
FX-SC8D010M1-6	1 year software maintenance for FX80 Supervisory Controller with 10–24 field device capacity
FX-SC8D010M3-6	3 year software maintenance for FX80 Supervisory Controller with 10–24 field device capacity
FX-SC8D010M5-6	5 year software maintenance for FX80 Supervisory Controller with 10–24 field device capacity
FX-SC8D025M1-6	1 year software maintenance for FX80 Supervisory Controller with 25–99 field device capacity
FX-SC8D025M3-6	3 year software maintenance for FX80 Supervisory Controller with 25–99 field device capacity
FX-SC8D025M5-6	5 year software maintenance for FX80 Supervisory Controller with 25–99 field device capacity
FX-SC8D100M1-6	1 year software maintenance for FX80 Supervisory Controller with 100–199 field device capacity

Table 6: North America

Product code number	Description
FX-SC8D100M3-6	3 year software maintenance for FX80 Supervisory Controller with 100–199 field device capacity
FX-SC8D100M5-6	5 year software maintenance for FX80 Supervisory Controller with 100–199 field device capacity
FX-SC8D200M1-6	1 year software maintenance for FX80 Supervisory Controller with 200 and up field device capacity
FX-SC8D200M3-6	3 year software maintenance for FX80 Supervisory Controller with 200 and up field device capacity
FX-SC8D200M5-6	5 year software maintenance for FX80 Supervisory Controller with 200 and up field device capacity

Table 7: Europe

Product code number	Description
FX-SC8P250M1-6E	1 year software maintenance for FX80 Supervisory Controller with 100 & 250 points
FX-SC8P250M3-6E	3 year software maintenance for FX80 Supervisory Controller with 100 & 250 points
FX-SC8P250M5-6E	5 year software maintenance for FX80 Supervisory Controller with 100 & 250 points
FX-SC8P500M1-6E	1 year software maintenance for FX80 Supervisory Controller with 500 points
FX-SC8P500M3-6E	3 year software maintenance for FX80 Supervisory Controller with 500 points
FX-SC8P500M5-6E	5 year software maintenance for FX80 Supervisory Controller with 500 points
FX-SC8P01KM1-6E	1 year software maintenance for FX80 Supervisory Controller with 1,250 points
FX-SC8P01KM3-6E	3 year software maintenance for FX80 Supervisory Controller with 1,250 points
FX-SC8P01KM5-6E	5 year software maintenance for FX80 Supervisory Controller with 1,250 points
FX-SC8P05KM1-6E	1 year software maintenance for FX80 Supervisory Controller with 5,000 points
FX-SC8P05KM3-6E	3 year software maintenance for FX80 Supervisory Controller with 5,000 points
FX-SC8P05KM5-6E	5 year software maintenance for FX80 Supervisory Controller with with 5,000 points
FX-SC8P10KM1-6E	1 year software maintenance for FX80 Supervisory Controller with 10,000 points
FX-SC8P10KM3-6E	3 year software maintenance for FX80 Supervisory Controller with 10,000 points
FX-SC8P10KM5-6E	5 year software maintenance for FX80 Supervisory Controller with 10,000 points

Note:

- Device capacity is equal to the sum of the core device license and any additional device license applied to the FX80 controller. Select the device capacity that is equal or lesser than the sum.
- Maintenance cannot be purchased for any period beyond December 31, 2025.

FX80 Controller additional field device licenses ordering information

Table 8: North America

Product code number	Description
Initial purchase	
FX-SC8DL10-0	License enabling an additional 10 field devices, 500 points for one FX80, initial purchase only
FX-SC8DL25-0	License enabling an additional 25 field devices, 1,250 points for one FX80, initial purchase only
FX-SC8DL50-0	License enabling an additional 50 field devices, 2,500 points for one FX80, initial purchase only
After initial purchase	
FX-SC8DL10-6	License enabling an additional 10 field devices, 500 points for one FX80; upgrade after initial purchase
FX-SC8DL25-6	License enabling an additional 25 field devices, 1,250 points for one FX80; upgrade after initial purchase
FX-SC8DL50-6	License enabling an additional 50 field devices, 2,500 points for one FX80; upgrade after initial purchase

Table 9: Europe

Product code number	Description
Initial purchase	
FX-SC8PL500-0E	License enabling an additional 500 points for one FX80, initial purchase only
FX-SC8PL01K-0E	License enabling an additional 1,250 points for one FX80, initial purchase only
FX-SC8PL02K-0E	License enabling an additional 2,500 points for one FX80, initial purchase only
After initial purchase	

Table 9: Europe

Product code number	Description
FX-SC8PL500-6E	License enabling an additional 500 points for one FX80;upgrade after initial purchase
FX-SC8PL01K-6E	License enabling an additional 1,250 points for one FX80; upgrade after initial purchase
FX-SC8PL02K-6E	License enabling an additional 2,500 points for one FX80; upgrade after initial purchase

- ① **Note:** Additional devices are used to expand capacity from the core device license. For example, you can order the FX-SC8DL25-0 with the FX-SC8CL025-0 for a total of 50 devices, 2,500 points.

Niagara analytics licenses ordering information

Table 10: North America

Product code number	Description
FX-ASCL100-0	License enabling 100 analytic points for Niagara Analytics on an FX80 Supervisory Controller at FX Supervisory Family Software Release 14.2 or greater
FX-ASCL250-0	License enabling 250 analytic points for Niagara Analytics on an FX80 Supervisory Controller at FX Supervisory Family Software Release 14.2 or greater
FX-ASCL500-0	License enabling 500 analytic points for Niagara Analytics on an FX80 Supervisory Controller at FX Supervisory Family Software Release 14.2 or greater
FX-ASCL1000-0	License enabling 1,000 analytic points for Niagara Analytics on an FX80 Supervisory Controller at FX Supervisory Family Software Release 14.2 or greater

Table 11: Europe

Product code number	Description
FX-ASCL100-0E	License enabling 100 analytic points for Niagara Analytics on an FX80 Supervisory Controller at FX Supervisory Family Software Release 14.2 or greater. Only available to partners that are Niagara Analytics TCP trained.
FX-ASCL250-0E	License enabling 250 analytic points for Niagara Analytics on an FX80 Supervisory Controller at FX Supervisory Family Software Release 14.2 or greater. Only available to partners that are Niagara Analytics TCP trained.
FX-ASCL500-0E	License enabling 500 analytic points for Niagara Analytics on an FX80 Supervisory Controller at FX Supervisory Family Software Release 14.2 or greater. Only available to partners that are Niagara Analytics TCP trained.
FX-ASCL1000-0E	License enabling 1000 analytic points for Niagara Analytics on an FX80 Supervisory Controller at FX Supervisory Family Software Release 14.2 or greater. Only available to partners that are Niagara Analytics TCP trained.

- ① **Note:** Niagara Analytics products require Niagara Analytics N4 certification. Niagara Analytics certification training requires Niagara 4 TCP Certification.

FX80 supporting software ordering information

Table 12: FX80 supporting software ordering information

Region	Product code number	Description
North America	FX-WBALM-0	License enabling Alarm Portal Client for FX Supervisory Family Software Release 14.2 or greater
Europe	FX-WBALM-0E	

FX80 Controller software accessories ordering information

Table 13: North America

Product code number	Description
FX-SC8LCCN-0	License enabling Carrier® Communication/Comfort Network (CCN) driver for one FX80 Supervisory Controller; initial purchase
FX-SC8LAX-0	License enabling AX 3.8 downgrade for one FX80; initial purchase
FX-SC8LCCN-6	License enabling Carrier CCN driver for one FX80; upgrade after initial purchase
FX-SC8LAX-6	License enabling AX 3.8 downgrade for one FX80; upgrade after initial purchase
FX-SC8LAC-6	License enabling AC256 over RS-232 or RS-485 driver
FX-SC8LAINF-6	License enabling Andover® Infinity driver

Table 13: North America

Product code number	Description
FX-SC8LAPHP-6	License enabling American Auto-Matrix™ PHP over RS-232 or RS-485 driver
FX-SC8LAPUP-6	License enabling American Auto-Matrix™ PUP over RS-232 or RS-485 driver
FX-SC8LFLEX-6	License enabling Flex™ driver over RS-232 or RS-485
FX-SC8LGLOB-6	License enabling control of IR AV equipment through an RS-232 to Global Cache FC module
FX-SC8LHELV-6	License enabling Helvar lighting control driver
FX-SC8LHORT-6	License enabling European Hortsman meter driver
FX-SC8LJOS-6	License enabling Josam® grease trap sensor driver
FX-SC8LLANG-6	License enabling Lang™ oven RS-232 or RS-485 driver
FX-SC8LMCQ-6	License enabling McQuay® driver to OPM driver
FX-SC8LSMS-6	License enabling SMS alarms through Global System for Mobile Communication (GSM)/General Packet Radio Services (GPRS) modem to RS-232 serial port driver
FX-SC8LVDRT-6	License enabling Veeder-Root® RS-232 or RS-485 driver

- ① **Note:** FX-SC8LAC-6 is available in Beta version only.
- ① **Note:** The FX-SC8LGLOB-6, FX-SC8LHORT-6, FX-SC8LJOS-6, FX-SC8LLANG-6, FX-SC8LSMS-6, and FX-SC8LVDRT-6 are supported at FX Supervisory Family Software Release 6.3 only. These drivers are not supported at FX Supervisory Family Software Release 14.x.

Table 14: Europe

Product code number	Description
FX-SC8LCCN-0E	License enabling Carrier® Communication/Comfort Network (CCN) driver for one FX80 Supervisory Controller; initial purchase
FX-SC8LAX-0E	License enabling AX 3.8 downgrade for one FX80; initial purchase
FX-SC8LCCN-6E	License enabling Carrier CCN driver for one FX80; upgrade after initial purchase
FX-SC8LAX-6E	License enabling AX 3.8 downgrade for one FX80; upgrade after initial purchase

FX80 Controller hardware accessories ordering information

Table 15: FX80 Controller hardware accessories ordering information

Region	Product code number	Description
North America	FX-SC8SD-700	FX80 micro SD replacement (micro SD only); no licenses
Europe	FX-SC8SD-700E	
North America	FX-SC8XLON-0	LonWorks FX80 expansion module for the FX80 Supervisory Controller
Europe	FX-SC8XLON-0E	
North America	FX-SC8XD485-0	Dual port isolated RS-485 expansion module for the FX80 Supervisory Controller
Europe	FX-SC8XD485-0E	
North America	FX-SC8X232-0	RS-232 expansion module for the FX80 Supervisory Controller
Europe	FX-SC8X232-0E	
FX-SC8AKIT-700		FX80 accessory kit including replacement connectors
FX-SC8XKIT-700		FX80 expansion module kit including one-size-fits-all replacement connector
North America	FX-SC8XPS-0	FX80 universal wall mount power supply 100–240 VAC/24 V includes United States, Europe, United Kingdom, and Australia style plugs
Europe	FX-SC8XPS-0E	
Europe	FX-SC8XIOPUSU-0E	PSU Remote FX IO Modules, 90-240Vac to 15Vdc DIN rail mount 30Va
FX-SC8WKIT-700		Extension cable and bracket for FX80 WLAN
North America	FX-SC8XIOR16-0	Remote input/output module for the FX Supervisory Controllers; includes 8 universal inputs, 4 relay outputs, and four 0-10 V analog outputs.
Europe	FX-SC8XIOR16-0E	
North America	FX-SC8XIOR34-0	Remote input/output module for the FX Supervisory Controllers; includes 16 universal inputs, 10 relay outputs, and eight 0-10 V analog outputs.
Europe	FX-SC8XIOR34-0E	

FX80 Controller - ESIGN and FIPS 140-2 accessories (North America only)

Table 16: FX80 Controller - ESIGN and FIPS 140-2 accessories (North America only)

Product code number	Description
FX-SC8FIPS-0	Provides FIPS 140-2 Level 1 conformance that uses the integrated FIPS-certified BouncyCastle module for an FX80. Compatible with FX version 14.6 and later.
FX-SC8LES250-0	License enabling e-signature application with 250 points for FX80
FX-SC8LESUNL-0	License enabling e-signature application with unlimited points for FX80
FX-SC8LESUP25-0	License adding 250 e-signature points for FX80
FX-TSES-0	E-signature technical support - up to 8 hours in 90-day period following order placement.

ⓘ **Note:** FX-TSES-0 is required with the first ESIGN order.

FX80 is restricted from being sold in the following countries

Table 17: FX80 is restricted from being sold

Country	Country Code	FX80 Part Number with Wi-Fi	FX80 Part Number with Wi-Fi Disabled
Cuba	—	Restricted from Sale	Restricted from Sale
Iran	—	Restricted from Sale	Restricted from Sale
North Korea	—	Restricted from Sale	Restricted from Sale
Sudan	—	Restricted from Sale	Restricted from Sale
Syria	—	Restricted from Sale	Restricted from Sale

Technical specifications

Table 18: FX80 Supervisory Controller

Enclosure/ mounting	Plastic/DIN Rail
Dimension	216 mm x 152 mm x 68 mm (8.5 in. x 6 in. x 2.625 in.)
Power supply	24 VAC/DC
Processor	TI AM3352: 1000MHz ARM® Cortex™ A8
RAM memory	1 GB DDR3 SD RAM
Flash memory	Removable micro-SD card with 4GB flash total storage, 2 GB user storage
Environment	Operating Temperature: -20°C to 60°C (-4°F to 140°F) Storage Temperature: -40°C to 85°C (-40°F to 185°F) Relative Humidity: 5% to 95%, noncondensing
Onboard	2 Ethernet 10/100 Mbps; 2 RS-485 (Isolated); 1 USB, 1 Micro USB, Fast USB Bus; Wi-Fi
Plug-in options	Dual port RS-485 (Isolated); LON FT/TP-10; RS-232
Network drivers	
Embedded	N2, BACnet, Niagara
Direct I/O	
Onboard	None
Optional	Up to 256 by using 16 Remote I/O Modules (FXRIO16)
Local (NDIO)	None
Remote I/O	Up to 256 I/O by using 16 Remote I/O Modules (FXRIO16)
Compliance CE	United States UL Listed, File E207782, CCN PAZX, under UL 916, Energy Management Equipment FCC compliant to CFR 47, part 15, subpart C, Class B
	Canada UL Listed, File E207782, CCN PAZX7, under CSA C22.2 No. 205, Signal Equipment Industry Canada compliant to ICES-003
	Europe CE Mark – Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive.

Table 19: Remote Input Output Modules

Product codes	LP-FXRIO16-0: 8 universal inputs, 4 relay outputs, 4 analog outputs
Dimensions	102 mm x 92 mm x 67 mm (4 in. x 3.625 in. x 2.625 in.)
Universal input types supported	<p>10k ohm Type 3 thermistors. Thermistor Sensor Range: -23.3° C to 115.5° C (-10° F to 240° F). Input accuracy is in the range of ±1% of span. Characteristic curve is customizable.</p> <p>0–10 V; accuracy is ±2% of span, without user calibration; uses an external resistor for current input (four provided, mounted by installer on terminal connections)</p> <p>4–20 mA current loop; accuracy is ±2% of span, without user calibration; self-powered or board-powered sensors accepted</p> <p>Dry contact: V open circuit, 300- µA short-circuit current</p> <p>Pulsing dry contact at a rate of up to 20 Hz; 50% duty cycle</p>
Digital outputs	<p>Form A relay contacts suitable for on/off control only; floating control not supported</p> <p>Maximum voltage 30 volts AC or DC, 1/2 A maximum current rating</p>
Analog outputs	<p>0–10 V DC</p> <p>Minimum load supported per output is 2,500 ohms minimum or 4 mA drain maximum</p>

Table 20: FX Workbench Requirements

Processor	<p>Intel® Pentium® 4, 1 GHz or higher</p> <p>102 mm x 92 mm x 67 mm (4 x 3.625 x 2.625 in.)</p>
Operating System	<p>32-bit: Windows® 10 Pro or Enterprise, Windows 8 Pro or Enterprise, Windows 7 Professional, Enterprise, or Ultimate, or Windows XP® Professional</p> <p>64-bit: Windows® 10 Pro or Enterprise, Windows 8.1 Pro or Enterprise, Windows 8 Pro or Enterprise, Windows 7 Professional, Enterprise, or Ultimate, Windows Server 2012 Standard or Enterprise with SP2, or Windows Server® 2012 R2 Standard or Enterprise with SP2</p>
Memory	1 GB minimum, 4 GB or more recommended for larger systems
Hard disk	4 GB minimum, more recommended depending on archiving requirements
Network support	Ethernet 10/100 Mbps with RJ-45 connector

- ① **Note:** The information relating to Processor in this table applies to both the FX Supervisory Software Release 14.x and FX Supervisory Software Release 6.x if using the AX license

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

Single point of contact

APAC	Europe	NA/SA
JOHNSON CONTROLS C/O CONTROLS PRODUCT MANAGEMENT NO. 32 CHANGJIANG RD NEW DISTRICT WUXI JIANGSU PROVINCE 214028 CHINA	JOHNSON CONTROLS WESTENDHOF 3 45143 ESSEN GERMANY	JOHNSON CONTROLS 507 E MICHIGAN ST MILWAUKEE WI 53202 USA

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