

FX-PCG General Purpose Programmable Controllers

Description

The Facility Explorer General Purpose Programmable Controllers (FX-PCGs) can be applied to a wide variety of building equipment control applications ranging from simple fan coil or heat pump control to advanced central plant management.

The FX-PCG models include the 10-point FX-PCG16 and the 17-point FX-PCG26. FX-PCG models include a 32-bit microprocessor, intuitive design, and are available with an optional built-in Liquid Crystal Display (LCD) screen local User Interface (UI).

Refer to the *FX-PC Series Programmable Controllers and Related Products Product Bulletin (LIT-12011657)* for important product application information.

Features

- Patented Proportional Adaptive Control (P-Adaptive) and Pattern Recognition Adaptive Control (PRAC) technologies — provide continuous loop tuning
- user-friendly graphic theme and clear push-button identification — facilitate easy controller use

- writable flash memory — allows you to download standard or customized applications from the Facility Explorer Programmable Controller Programming and Commissioning Tool (FX-PCT) Software
- large product family — provides a wide range of point mix to meet application requirements and allows for the addition of one or more FX-PCX Expansion Input/Output Modules and/or network sensors to provide even more application capacity
- FX-Supervisory Controller Import Wizard — allows for easy controller integration
- local UI display option (integral display or stand-alone display) — provides enhanced local monitoring
- BACnet® Master-Slave/Token-Passing (MS/TP) communication — provides open system compatibility
- 32-bit microprocessor — ensures optimum performance and meets industry specifications
- wireless capability via FX-ZFR Series Wireless Field Bus System — enables wireless mesh connectivity between FX-PCGs, FX-WRZ Series Wireless Room Temperature Sensors, and FX-Supervisory Controllers, facilitating easy initial location and relocation
- universal and configurable inputs and outputs — support multiple signal options and increase controller application flexibility



FX-PCG26 Controller

Repair Information

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

Selection Charts

FX-PCG Series Point Type Counts per Model

Point Types	Signals Accepted	FX-PCG16	FX-PCG26
Universal Input (UI)	Analog Input, Voltage Mode, 0–10 VDC Analog Input, Current Mode, 4–20 mA ¹ Analog Input, Resistive Mode, 0–2k ohm, RTD (1k NI [Johnson Controls], 1k PT, A99B SI), NTC (10k Type L, 2.252k Type 2) Binary Input, Dry Contact Maintained Mode	2	6
Binary Input (BI)	Dry Contact Maintained Mode Pulse Counter/Accumulator Mode (High Speed), 100 Hz	1	2
Analog Output (AO)	Analog Output, Voltage Mode, 0–10 VDC Analog Output, Current Mode, 4–20 mA	0	2
Binary Output (BO)	24 VAC Triac	3	3
Configurable Output (CO)	Analog Output, Voltage Mode, 0–10 VDC Binary Output Mode, 24 VAC Triac	4	4

1. Analog Input, Current Mode is set by hardware for the FX-PCG26, and as software for the FX-PCG16.

FX-PCG General Purpose Programmable Controllers (Continued)

Ordering Information

Product Code Number	Description
FX-PCG1611-0	10-Point General Purpose Programmable Controller with 2 UI, 1 BI, 3 BO, and 4 CO
FX-PCG1621-0	10-Point General Purpose Programmable Controller with 2 UI, 1 BI, 3 BO, and 4 CO; Integral Display
FX-PCG2611-0	17-Point General Purpose Programmable Controller with 6 UI, 2 BI, 3 BO, 2 AO, and 4 CO
FX-PCG2621-0	17-Point General Purpose Programmable Controller with 6 UI, 2 BI, 3 BO, 2 AO and 4 CO; Integral Display

Accessories (Order Separately)

Product Code Number	Description
Y64T15-0 ¹	Transformer, 120/208/240 VAC Primary to 24 VAC Secondary, 92 VA, Foot Mount, 30 in. Primary Leads and 30 in. Secondary Leads, Class 2
Y65A13-0 ¹	Transformer, 120 VAC Primary to 24 VAC Secondary, 40 VA, Foot Mount (Y65AS), 8 in. Primary Leads and 30 in. Secondary Leads, Class 2
Y65T42-0 ¹	Transformer, 120/208/240 VAC Primary to 24 VAC Secondary, 40 VA, Hub Mount (Y65SP+), 8 in. Primary Leads and Secondary Screw Terminals, Class 2
Y65T31-0 ¹	Transformer, 120/208/240 VAC Primary to 24 VAC Secondary, 40 VA, Foot Mount (Y65AR+), 8 in. Primary Leads and Secondary Screw Terminals, Class 2
AP-TBK4SA-0	Replacement MS/TP SA Bus Terminal, 4-Position Connector, Brown, Bulk Pack
AP-TBK4FC-0	Replacement MS/TP FC Bus Terminal, 4-Position Connector, Blue, Bulk Pack
AP-TBK3PW-0	Replacement Power Terminal, 3-Position Connector, Gray, Bulk Pack
FX-BTCVT-1	Bluetooth® Commissioning Converter
FX-BTCVTCBL-700	Cable Replacement Set for the FX-BTCVT-1 or the NS-ATV7003-0; includes one 1.5 m (5 ft) retractable cable
FX-DIS1710-0	Local Controller Display for FX-PCG1611 and FX-PCG2611 models
FX-ZFR1810-0	Wireless Field Bus Coordinator, 10 mW Transmission Power; functions with FX Supervisory Controllers
FX-ZFR1811-0	Wireless Field Bus Router, 10 mW Transmission Power; functions with FX-PC Programmable Controllers and FX-WRZ Wireless Room Sensors

1. Additional Y6x Series Transformers are available from Johnson Controls. Refer to the *Series Y63, Y64, Y65, Y66, and Y69 Transformer Catalog Page (LIT-1922175)* for more information regarding transformers.

FX-PCG General Purpose Programmable Controllers (Continued)

Technical Specifications

FX-PCG Series							
Product Code Numbers	FX-PCG1611-0: 10-Point General Purpose Programmable Controller FX-PCG2611-0: 17-Point General Purpose Programmable Controller FX-PCG1621-0: 10-Point General Purpose Programmable Controller with Display and Push Button User Interface FX-PCG2621-0: 17-Point General Purpose Programmable Controller with Display and Push Button User Interface						
Supply Voltage	24 VAC Nominal, (20 VAC Minimum/30 VAC Maximum), 50/60 Hz, Power Supply Class 2 (North America), Safety Extra-Low Voltage (SELV) (Europe)						
Power Consumption	14 VA Maximum for FX-PCG1611 and FX-PCG2611 (No Integral Display) 20 VA Maximum for FX-PCG1621 and FX-PCG2621 (With Integral Display) Note: Note: VA ratings do not include any power supplied to the peripheral devices connected to Binary Outputs (BOs) or Configurable Outputs (COs), which can consume up to 12 VA for each BO or CO; for a possible total consumption of an additional 84 VA (maximum).						
Ambient Conditions	Operating: 0 to 50°C (32 to 122°F); 10 to 90% RH Noncondensing Storage: -40 to 80°C (-40 to 176°F); 5 to 95% RH Noncondensing						
Controller Addressing	DIP Switch Set; Valid Controller Device Addresses 4–127 (Device addresses 0–3 and 128–255 are reserved and not valid controller addresses.)						
Communications Bus	BACnet® MS/TP, RS-485: 3-Wire FC Bus Between the Supervisory Controller and Programmable Controllers 4-Wire SA Bus Between Programmable Controller, Network Sensors, and other Sensor/Actuator Devices, Includes a lead to source 15 VDC supply power (from Programmable Controller) to bus devices.						
Processor	H8SX/166xR Renesas® Microcontroller						
Memory	1 MB Flash Memory and 512 KB Random Access Memory (RAM)						
Input and Output Capabilities	FX-PCG16 Models: 2 - Universal Inputs: Defined as 0–10 VDC, 4–20 mA, 0–600k ohm, or Binary Dry Contact 1 - Binary Inputs: Defined as Dry Contact Maintained or Pulse Counter/Accumulator Mode 3 - Binary Outputs: Defined as 24 VAC Triac (Selectable Internal or External Source Power) 4 - Configurable Outputs: Defined as 0–10 VDC or 24 VAC Triac BO FX-PCG26 Models: 6 - Universal Inputs: Defined as 0–10 VDC, 4–20 mA, 0–600k ohm, or Binary Dry Contact 2 - Binary Inputs: Defined as Dry Contact Maintained or Pulse Counter/Accumulator Mode 3 - Binary Outputs: Defined as 24 VAC Triac (Selectable Internal or External Source Power) 4 - Configurable Outputs: Defined as 0–10 VDC or 24 VAC Triac BO 2 - Analog Outputs: Defined as 0–10 VDC or 4–20 mA						
Analog Input/Analog Output Resolution and Accuracy	Analog Input: 16-bit Resolution Analog Output: 16-bit Resolution and ±200 mV in 0–10 VDC Applications						
Terminations	Input/Output: Fixed Screw Terminal Blocks FC Bus, SA Bus, and Supply Power: 3-Wire and 4-Wire Pluggable Screw Terminal Blocks FC Bus and SA Bus: RJ-12 6-Pin Modular Jacks						
Mounting	Horizontal on Single 35 mm DIN Rail Mount (preferred), or Screw Mount on Flat Surface with Three Integral Mounting Clips on Controller						
Housing	Enclosure material: ABS and Polycarbonate UL94 5VB; Self-extinguishing, Plenum-rated Protection Class: IP20 (IEC529)						
Dimensions (Height x Width x Depth)	FX-PCG16 Models: 150 x 164 x 53 mm (5-7/8 x 6-7/16 x 2-1/8 in.) Including Terminals and Mounting Clips FX-PCG26 Models: 150 x 190 x 53 mm (5-7/8 x 7-1/2 x 2-1/8 in.) Including Terminals and Mounting Clips Note: Mounting space for FX-PCG16 and FX-PCG26 Models requires an additional 50 mm (2 in.) space on top, bottom, and front face of controller for easy cover removal, ventilation, and wire terminations.						
Weight	FX-PCG16 Models: 0.4 kg (0.9 lb) FX-PCG26 Models: 0.5 kg (1.1 lb)						
Compliance	<table border="1"> <tr> <td>United States</td> <td>UL Listed, File E107041, CCN PAZX, UL 916, Energy Management Equipment; FCC Compliant to CFR47, Part 15, Subpart B, Class A</td> </tr> <tr> <td>Canada</td> <td>UL Listed, File E107041, CCN PAZX7, CAN/CSA C22.2 No. 205, Signal Equipment Industry Canada Compliant, ICES-003</td> </tr> <tr> <td>Australia and New Zealand</td> <td>C-Tick Mark, Australia/NZ Emissions Compliant</td> </tr> </table>	United States	UL Listed, File E107041, CCN PAZX, UL 916, Energy Management Equipment; FCC Compliant to CFR47, Part 15, Subpart B, Class A	Canada	UL Listed, File E107041, CCN PAZX7, CAN/CSA C22.2 No. 205, Signal Equipment Industry Canada Compliant, ICES-003	Australia and New Zealand	C-Tick Mark, Australia/NZ Emissions Compliant
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