

# CH-PCX Expansion Input/Output Modules for the BCPro System Catalog Page

CH-PCX2723-0, CH-PCX3723-0, CH-PCX3733-0

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The CH-PCXs are expansion I/O modules with integral RS-485 MS/TP communications.

CH-PCXs can serve in one of two capacities, depending on where they are installed in the control system. When installed on the Sensor Actuator (SA) Bus of CH-PCA and CH-PCX controllers, the CH-PCXs expand the I/O interfaces of the controllers. When installed on the Field Controller (FC) Bus, CH-PCXs can be used as I/O point multiplexors to support monitoring and control from a BCPro™ Workstation.

A full range of CH-PCA models combined with the CH-PCX models can be applied to a wide variety of building applications ranging from simple fan coil or heat pump control to advanced central plant management.

Refer to the *CH-PCX Series Programmable Controllers and Related Products for BCPro System Product Bulletin (LIT-12012951)*.

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

## Features

- Standard Protocol with BTL Listing—Provides interoperability with Johnson Controls® and third-party Building Automation System (BAS) products that use the widely accepted BACnet® standard.
- Standard Hardware and Software Platform—Uses a common hardware design throughout the family line to support standardized wiring practices and installation workflows.

Also uses a common software design to support use of a single tool for control applications, commissioning, and troubleshooting to minimize technical training.

- Universal Inputs—Allow multiple signal options per channel to provide input flexibility.
- Complete Product Family with Modular Components—Meets any HVAC equipment or building system control requirement using only the needed components.
- Ability to reside on the FC Bus or SA Bus provides application flexibility

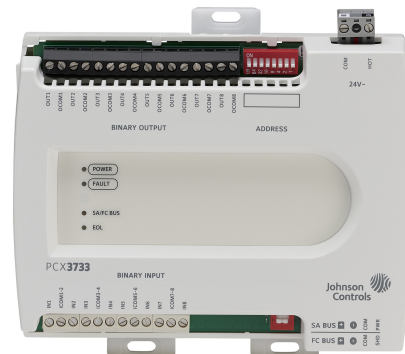


Table 1: CH-PCX Series Point Type Counts Per Model

Point Types	Signals Accepted	CH-PCX2723	CH-PCX3723	CH-PCX3733
Universal Input (UI)	Analog Input, Voltage Mode, 0–10 VDC Analog Input, Current Mode, 4–20 mA 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	8		
Binary Input (BI)	Dry Contact Maintained Mode Pulse Counter/Accumulator Mode (High Speed), 100 Hz		16	8
Analog Output (AO)	Analog Output, Voltage Mode, 0–10 VDC Analog Output, Current Mode, 4–20 mA	2		
Binary Output (BO)	24 VAC Triac (Ext Power Only)			8

Table 2: CH-PCX Series Ordering Information

Product Code Number	Description
CH-PCX2723-0	10-Point Expansion I/O Module with 8 UI, 2 AO, FC, and SA Bus Support.
CH-PCX3723-0	16-Point Expansion I/O Module with 16 BI, FC, and SA Bus Support.
CH-PCX3733-0	16-Point Expansion I/O Module with 8 BI, 8 BO, FC, and SA Bus Support. <b>Note:</b> BOs on the CH-PCX3733-0A controller do not supply power for the outputs; the BOs require external low-voltage (<30 VAC) power sources.

## Accessories


**Table 3: CH-PCX Accessories**

Product Code Number	Description
Y64T15-0	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	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	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	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 Blocks, 3-Position, Gray, Bulk Pack of 10
Mobile Access Portal (MAP) Gateway	Refer to the Mobile Access Portal Gateway Catalog Page (LIT-1900869) to identify the appropriate product for your region

**Table 4: CH-PCX Series Technical Specifications**

Product Code Numbers	<p><b>CH-PCX2723-0</b> - 10-Point Expansion Input/Output Module with 8 UI, 2 AO, FC and SA Bus Support</p> <p><b>CH-PCX3723-0</b> - 16-Point Expansion Input/Output Module with 16 BI, FC and SA Bus Support</p> <p><b>CH-PCX3733-0</b> - 16-Point Expansion Input/Output Module with 8 BI, 8 BO, FC and SA Bus Support</p>
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	<p>14 VA maximum</p> <p><b>Note:</b> 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), depending on the CH-PCX model.</p>
Ambient Conditions	<p><b>Operating:</b> 0 to 50°C (32 to 122°F); 10 to 90% RH noncondensing</p> <p><b>Storage:</b> -40 to 80°C (-40 to 176°F); 5 to 95% RH noncondensing</p>
BACnet/MS/TP Addressing	<p>DIP switch set; valid controller device addresses 4–127</p> <p>(Device addresses 0–3 and 128–255 are reserved and not valid CH-PCX addresses).</p>
Communications Bus	<p>BACnet MS/TP, RS-485</p> <p>3-wire FC Bus between the supervisory controllers and CH-PC controllers</p> <p>4-wire SA Bus between CH-PC controller, NS Series Network Sensors, and other sensor/actuator devices. Includes a lead source 15 VDC supply power (from CH-PC controller) to bus devices.</p>
Processor	RX631 Renesas® 32-bit microcontroller
Memory	4 MB External Serial Flash Memory
Input and Output Capabilities	<p><b>CH-PCX2723</b></p> <p>8 - Universal Inputs: Defined as 0–10 VDC, 4–20 mA, 0–600k ohm, or Binary Dry Contact</p> <p>2 - Analog Outputs: Defined as 0–10 VDC or 4–20 mA</p> <p><b>CH-PCX3723:</b></p> <p>16 - Binary Inputs: Defined as Dry Contact Maintained or Pulse Counter/Accumulator Mode</p> <p><b>CH-PCX3733:</b></p> <p>8 - Binary Inputs: Defined as Dry Contact Maintained or Pulse Counter/Accumulator Mode</p> <p>8 - Binary Outputs: Defined as 24 VAC Triac (Require external low-voltage power source)</p> <p><b>Note:</b> Binary Outputs (BOs) on CH-PCX3733 controllers do not supply power for the outputs; the BOs require external low-voltage (&lt; 30 VAC) power sources</p>
Analog Input/Analog Output Resolution and Accuracy	<p><b>Analog Input:</b> 16-bit resolution</p> <p><b>Analog Output:</b> 16-bit resolution and ±200 mV in 0–10 VDC applications</p>
Terminations	<p>Input/Output: Fixed Screw Terminal Blocks</p> <p><b>Note:</b> There are no labels on I/O terminal blocks. The labels are above/below the terminal blocks on the PCX packaging.</p> <p>SA/FC Bus and Supply Power: 4-wire and 3-wire Pluggable Screw Terminal Blocks</p> <p>SA/FC Bus Port: RJ-12 6-Pin Modular Jacks</p>

**Table 4: CH-PCX Series Technical Specifications**

<b>Mounting</b>	Horizontal on single 35 mm DIN rail mount (preferred), or screw mount on flat surface with three integral mounting clips on controller
<b>Housing</b>	Enclosure material: ABS and polycarbonate UL94 5VB; self-extinguishing, Plenum-rated protection class: IP20 (IEC529)
<b>Dimensions (Height x Width x Depth)</b>	<p><b>CH-PCX2723, CH-PCX3723, and CH-PCX3733 Models:</b></p> <p>150 x 164 x 53 mm (5-7/8 x 6-7/16 x 2-1/8 in.) including terminals and mounting clips</p> <p><b>Note:</b> Mounting space for all controllers requires an additional 50 mm (2 in.) space on top, bottom, and front face of controller for easy cover removal, ventilation, and wire terminations.</p>
<b>Weight</b>	0.5 kg (1.1 lb) maximum
<b>Compliance</b>  	<b>United States:</b> UL Listed, File E107041, CCN PAZX, UL 916, Energy Management Equipment; FCC Compliant to CFR47, Part 15, Subpart B, Class A
	<b>Canada:</b> UL Listed, File E107041, CCN PAZX7, CAN/CSA C22.2 No. 205, Signal Equipment; Industry Canada Compliant, ICES-003
	<b>Europe:</b> CE Mark –Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC.
	<b>Australia and New Zealand:</b> RCM Mark, Australia/NZ Emissions Compliant
	<b>BACnet International:</b> BACnet Testing Laboratories (BTL) Protocol Revision 12 Listed BACnet Smart Actuator (B-SA)



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