C550ACN System 550 Relay Control Module

Quick Start Guide

2026-08-26 Part No. A16382GM7F Rev. C

This document includes minimum legal and warranty information only. Read the linked document and any other relevant bulletins, safety warnings, and cautions before dismounting, rigging, forking, moving, installing, using, or maintaining the product.

QR Code

To view the complete product documentation, scan the QR code. Document link:
https://docs.jci.com/C550ACN-001C-Control-Module

If you cannot locate these guides using the QR code or link, contact us immediately at co-global-bas-docfeedback@jci.com

Safety warnings

Important: Use this System 550 series control module only as an operating control. Where failure or malfunction of the System 550 could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the control system. Incorporate and maintain other devices, such as supervisory or alarm systems or safety or limit controls, intended to warn of or protect against failure or malfunction of the System 550 Module.

Important : Utiliser ce System 550 Series Control Module uniquement en tant que dispositif de contrôle de fonctionnement. Lorsqu'une défaillance ou un dysfonctionnement du System 550 risque de provoquer des blessures ou d'endommager l'équipement contrôlé ou un autre équipement, la conception du système de contrôle doit intégrer des dispositifs de protection supplémentaires. Veiller dans ce cas à intégrer de façon permanente d'autres dispositifs, tels que des systèmes de supervision ou d'alarme, ou des dispositifs de sécurité ou de limitation, ayant une fonction d'avertissement ou de protection en cas de défaillance ou de dysfonctionnement du System 550 Module.

⚠ WARNING

Risk of Electric Shock
Disconnect or isolate all power supplies before making electrical connections. More than one disconnection or isolation may be required to completely de-energize equipment. Contact with components carrying hazardous voltage can cause electric shock and may result in severe personal injury or death.

⚠ AVERTISSEMENT

Risque de décharge électrique
Débrancher ou isoler toute alimentation avant de réaliser un branchement électrique. Plusieurs isolations et débranchements sont peut-être nécessaires pour -couper entièrement l'alimentation de l'équipement. Tout contact avec des composants conducteurs de tensions dangereuses risque d'entraîner une décharge électrique et de provoquer des blessures graves, voire mortelles.

Wiring

NOTICE

Risk to equipment
Do not wire more than one power source to the System 550 control module. Wiring to more than one power source may damage the modules and may void your warranty.

NOTICE

Risk to equipment
Do not overtighten the terminal screws by more than 3 in.•lb. Excessive torque can damage the electronic board.

Important: Do not exceed the System 550 electrical ratings. Exceeding the electrical ratings can result in permanent damage and may void any warranty.

Figure 1: 24 VAC/DC wiring connection to a control module

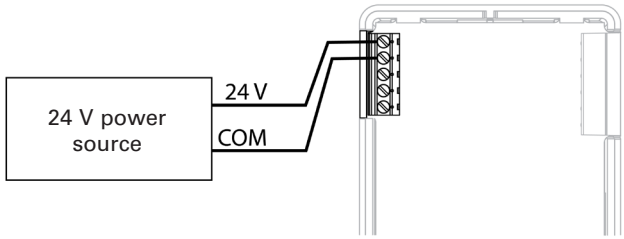
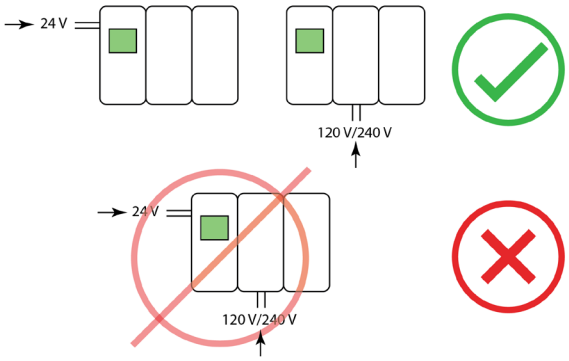


Figure 2: Connect to only one power source



Building Technologies & Solutions
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Branch offices: Principal cities worldwide

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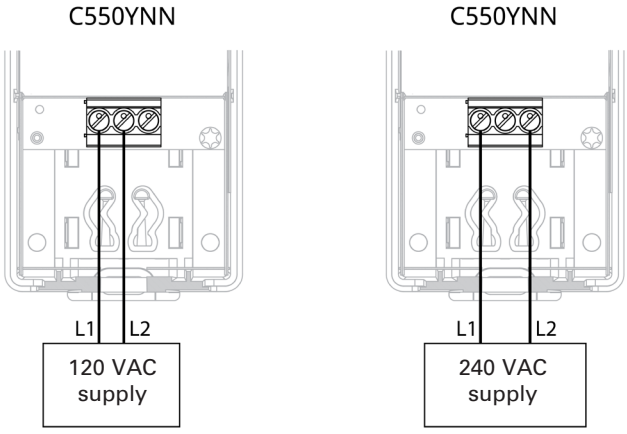
Figure 3: C550YNN power module line voltage wiring



Modules

The following information relates to the C550ACN module. A C550ACN assembly can contain the following modules:

- C550ACN control module: Supports one temperature, pressure, or humidity input sensor, and two relay outputs. Can be expanded to up to ten outputs.
- C550SCN relay expansion module: Two additional relay outputs.
- C550SQN analog expansion module: Two additional analog outputs.
- C550YNN power module: Supports a 120 V or 240 V power supply.

Wiring a temperature sensor

Use a two-wire temperature sensor.

1. Connect one wire to a sensor input terminal (SN).
2. Connect the other wire to a common terminal (COM).

Note: PENN A99 sensors and other Johnson Controls passive resistance sensors are not sensitive to polarity.

Wiring a humidity transmitter

Use a three-wire humidity transmitter. Refer to the *System 550 User Guide (LIT-12014465)* for available humidity transmitters.

1. Connect the sensor's voltage out signal to a sensor input terminal (SN).
2. Connect the sensor's common wire to a common terminal (COM).
3. Connect the sensor's voltage supply wire to the 24 V terminal.

Note: If you power the System 550 and the humidity transmitter from an external 24 VAC source, ensure you keep the polarity the same between the supply, the humidity transmitter, and the System 550.

Wiring a pressure transducer

Use a three-wire pressure transducer. Refer to the *System 550 User Guide (LIT-12014465)* for available pressure transducers.

1. Connect the sensor's voltage out or current out signal to a sensor input terminal (SN).
2. For sensors that use voltage out, connect the common wire to a common terminal (COM).
3. Connect the sensor to the 5 V terminal or the 24 V terminal depending on the specifications of your sensor.

Navigating the user interface

- The first time you start the C550ACN control module, complete the guided setup when prompted. This configures the C550ACN control module based on the System 350 that you are replacing.
- Press and hold the dial for five seconds to access the main menu.
- Press and quickly release the dial to select an option.
- On the idle screen, when a setpoint displays, press and quickly release the dial to access the setpoint parameter edit screen.
- Rotate the dial to navigate up and down a menu, or to adjust a value.

Setting up a connection to the cloud app

The end customer and the field service company (FSC) work together to set up a control module in the Controls System Cloud app.

1. Contact your FSC.
2. If you do not have a cloud app end customer account, the FSC sets up an end customer account for you.
3. If the C550 control module is at a location that doesn't correspond to a cloud app site, create the site in the cloud app. Assign your FSC as the site's field service company.
4. The FSC registers the control module in the cloud app.
5. The FSC purchases a license through a subscription.
6. The FSC assigns your license to your C550 control module immediately through the cloud app. Verify that your FSC completes this step.

Configuring the control with the local web page

On the control module's local web page, you can import and export configuration files, reconfigure network credentials, perform local firmware updates, and view diagnostics. Refer to the control module's user guide.

Importing and exporting configuration files

Import and export files with a laptop, or a phone if no laptop is available.

1. On the C550 control module's main menu, navigate to **ADVANCED > CONNECTIVITY > WIFI > WIFI AP > WIFI INFO**. The screen displays an SSID.
2. On your laptop or phone, connect to the Wi-Fi network with the same SSID.
3. Enter the password on the control module screen.
4. On your laptop or phone's internet browser, navigate to `http://192.168.142.1` .
5. On the web page, complete one of the following steps:
   - To export the control module's existing configuration, on the web page in the **Config File Transfer** tab, click **Download Configuration** and save the file.
   - To import a configuration file to the control module and override its current configuration, on the web page in the **Config File Transfer** tab, click **Choose File** and select the file from your laptop's file storage.

Technical specifications

Specification	Description
Product	Digital electronic control module with simplified user interface to support System 350 customers
Wireless cloud connectivity	Available with a subscription
Sensor inputs	One input: Either a temperature, humidity, or pressure sensor
Number of relay outputs	Two
Maximum number of outputs including expansion modules	Ten. Any combination of relay and analog ouputs.
Compatible modules	C550YNN power module, C550SCN relay output expansion modules, and C550SQN analog output expansion modules. See *Modules*.
Display	Dot-matrix full-character LCD display with adjustable backlight
Power consumption	3 VA maximum

Specification		Description
Supply power		A maximum of one wired power supply from the following options: Internal supply power: C550YNN-1C Power Supply Module with line voltage connection External supply power: • 24 VAC (20 VAC to 30 VAC) Class 2 (North America), 50/60 Hz, safety extra-low voltage (SELV) (Europe), 10 VA minimum • 24 VDC ±10%, 10 W minimum
Ambient operating conditions		Temperature: -40°F to 150°F (-40°C to 66°C) Humidity: Up to 95% RH non-condensing. Maximum dew point 85°F (29°C)
Ambient shipping and storage conditions		Temperature: -40°F to 176°F (-40°C to 80°C) Humidity: Up to 95% RH non-condensing. Maximum dew point 85°F (29°C)
Input signal		0 VDC to 10 VDC for active sensors of any type, or any range within 0 VDC to 10 VDC 0 VDC to 5 VDC for static pressure transducers 0.5 VDC to 4.5 VDC for ratiometric pressure transducers 500 Ω to 2,100 Ω for PTC sensors 300 Ω to 500,000 Ω for NTC sensors
Output relay contacts	General:	1/2 HP at 120/240 VAC, SPDT
	Specific:	AC motor ratings 120 VAC: • AC full-load amperes: 9.8 A • Locked-rotor amperes: 58.8 A AC motor ratings 208/240 VAC: • AC full-load amperes: 4.9 A • Locked-rotor amperes: 29.4 A 10 amperes AC non-inductive at 24/240 VAC Pilot duty: 125 VA at 24/240 VAC
5V ratiometric output for ratiometric pressure sensors		5 V +/- 1%, current limited at 30 mA
Enclosure		Type 1, IP 20 high-impact thermoplastic
Dimensions (H x W x D)		5.09 in. x 2.4 in. x 2.7 in. (129 mm x 61 mm x 69 mm)
Weight		0.50 lb (225 g)
Compliance	United States	ULus Listed; UL 60730-1, File E27734. FCC Compliant to CFR47, Part 15, Subpart B, Class B limits and FCC Part 15, Subpart C, KDB 996369 D04 Module Integration Guide.
	Canada	cUL Listed; CAN/CSA-E60730-1, File E27734. Industry Canada (IC) Compliant to Canadian ICES-003, Class B limits.
	Europe CE	CE Mark – Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the RED Directive and EMC Directive.

System 350 cross-reference

System 550 modules are not backwards compatible with System 350 modules. If you need to replace a System 350 module, you must replace all modules with the required System 550 modules. The C550ACN replaces the following System 350 control modules:

- A350AA-1
- A350AA-2
- A350AA-3
- A350AB-1
- A350AB-2
- A350AB-5
- A350AB-6
- A350BA-1
- A350BA-2
- A350BB-1
- A350CA-7
- A350EA-1
- A350EA-2
- A350EA-4
- A350EB-1
- A350EB-2
- A350EB-4
- P352AB-2
- P352AB-3
- P352AB-4
- W351AA-1
- W351AA-2
- W351AB-2

Repair information

Do not make field repairs. For a replacement control contact the nearest Johnson Controls wholesaler.

Product warranty

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

Patents

Patents: https://jcipat.com

Software terms

Use of the software that is in (or constitutes) this product, or access to the cloud, or hosted services applicable to this product, if any, is subject to applicable end-user license, open-source software information, and other terms set forth at www.johnsoncontrols.com/techterms. Your use of this product constitutes an agreement to such terms.

Contact information

Contact your local Johnson Controls representative: www.johnsoncontrols.com/locations

Contact Johnson Controls: www.johnsoncontrols.com/contact-us

Single point of contact

APAC	Europe	UK	NA/SA
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