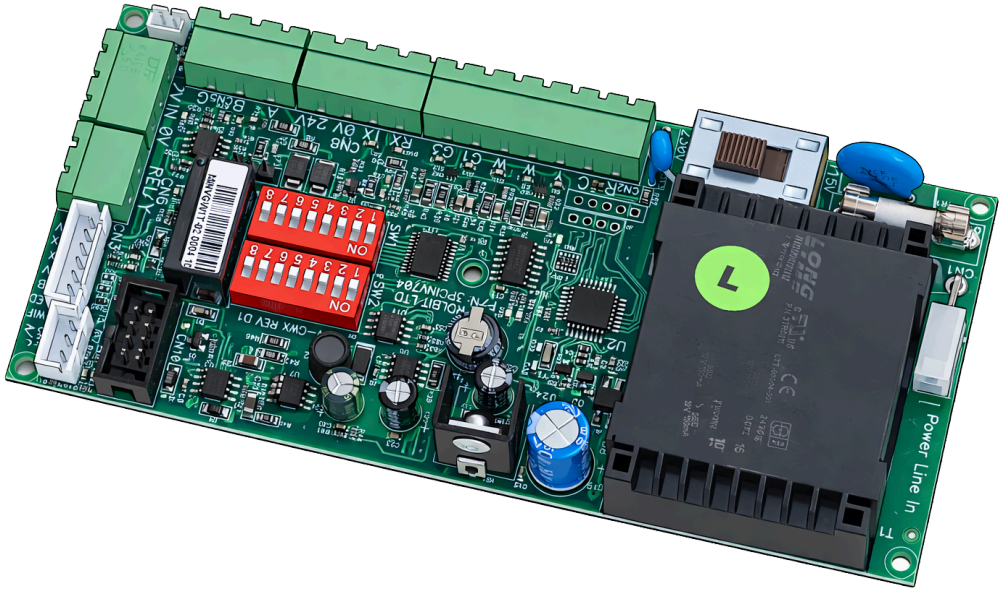
AIO® GWX Gateway Control Board

Product Data Sheet



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⚠ WARNING

Only qualified professionals should install and service this equipment. Improper installation or modifications by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the installation guide and on the labels attached to the equipment.

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1. AIO® GWX GATEWAY CONTROL BOARD

The GWX Gateway Control Board integrates and manages operations for AIO® Heat Pumps, supporting Wall Mounted (Gen 2+) and other models. This gateway facilitates seamless communication with building management systems, thermostats, and additional accessories, ensuring optimal system control and energy efficiency.

Note: This gateway board must be field-installed and connected inside the AIO® unit by an electrician or technician. Installation takes approximately 15 minutes.

1.1 AIO® GWX Submittal

Job	Reference
Construction	Location
Approval	Quote Number
Engineer	Date
Drawing Number	P.O. Number:
Submitted To	Submitted By:

2. SUPPORTED ELEMENTS AND ACCESSORIES

The following elements are enabled via dedicated ports or terminals on the GWX gateway:

- **Thermostats:** Supports INNOVA LTCH20 and TFTH20 thermostats/controllers and third-party thermostats/controllers.

  Note: When the GWX gateway is connected to a third-party controller, the display on the AIO® unit will show "61F" ("16C") for cooling mode and "88F" ("31C") for heating mode, regardless of the actual set point. These numbers only indicate that the unit is active. The actual temperature set point is displayed on the thermostat.
- **Building Management System (BMS):** Enables remote communication via MODBUS and BACnet protocols.
- **Wi-Fi connectivity:** Enables control via an additional module (not included) that is connected to a dedicated app for smartphones, tablets, and computers.
- **Motion detector:** Activates energy-saving modes based on room occupancy.
- **External temperature sensor:** Activates the electric heater (see below) based on external temperature conditions.

The following elements are enabled via the relay contact on the GWX gateway.

The relay on the GWX is a Pilot-Duty relay and is rated at only 24 VAC and 1 amp. When connecting an external device, do not exceed this capacity.

- **Auxiliary heater control:** Enables control and integration of auxiliary heating systems, including electric, hydronic, and baseboard heaters.
- **Fresh air unit:** Integrates control for fresh air intake systems.
- **Dual power sources:** Enables switching between one power source for heating and a second power source for cooling.

The relay contact can be configured for use with any of these elements, but not for more than one simultaneously.

3. SPECIFICATIONS

- **Power supply:** Operates on either 115V or 230V AC, 50/60 Hz, selected via a switch.
- **Power consumption:** 2.4 watts.
- **Operating environment:** Functional between 40°F (4.4°C) and 158°F (70°C).
- **Storage environment:** Stable between 0°F (-17.8°C) and 158°F (70°C) at 90% relative humidity (non-condensing).
- **Relay rating:** Dry-contact relay rated at 24 VAC, 1 amp.
- **Communication Protocols:** MODBUS and BACnet over RS-485 for BMS integration.
- **Thermostat connections:**
  - **INNOVA LTCH20/TFTH20 thermostats:** Connected via four screw terminals.
  - **Third-Party thermostats:** Connected via seven screw terminals (R, C, Y, W, H, M, L, where H = High Fan, M = Medium Fan, L = Low Fan).
- **Control settings:** DIP switches configure the operating mode and bus address. For more information, refer to the AIO GWX Gateway for AIO Heat Pumps Installation Guide.
- **Supported temperature set points:** 61°F - 88°F (16.1°C - 31.1°C).
- **Fuse protection:** 0.3-amp ceramic fuse.
- **Dimensions:** 6" x 2.7" x 1" (152 mm x 68 mm x 25 mm).
- **Warranty:** 2-year limited warranty.

4. WIRING AND INSTALLATION

The GWX control board includes three cables:

- **Communication Cable (round gray):** For connecting the GWX board to the air conditioning control system in AIO® Wall Mounted Gen 2+ units.
- **Communication Cable (flat ribbon gray):** For connecting the GWX board to the air conditioning control system in other AIO® units.
- **Power Cable (black):** For supplying power from the unit.

4.1 AIO® unit compatibility

The GWX gateway can be installed in the following AIO® units:

- AIO® Wall Mounted Standard/Pro (Gen 2+)
- AIO® Ceiling Ducted (with and without ERV)
- AIO® Ceiling Suspended (with and without ERV option)
- AIO® Vertical Stack
- AIO® Vertical Stack XL

The GWX is not compatible with the AIO® Wall Mounted (Gen 1) unit.

4.2 Installation instructions:

- In some models, installers must connect the communication cable from the GWX board to the AIO unit's controller panel, and the power cable must be hard-wired to the electrical panel (if it is not pre-installed).
- In some models, installers must connect the communication and power cables from the GWX board to terminals at the bottom of the AIO unit.
- In newer models, the communication and power cables are pre-installed within the AIO unit and only need to be connected to the gateway.

For complete installation instructions for each unit type, refer to the AIO GWX Gateway for AIO Heat Pumps Installation Guide.

5. RELAY CONFIGURATION LOGIC

5.1 Heating mode logic

The GWX gateway includes an external heating function that enables the use of an external sensor (NTC thermistor) to automatically activate heating from an external or baseboard heater at specific temperatures. The heating modes are configured using the GWX SW2 DIP switches #4 and #5, with the following logic:

Table 1: SW2 Heating mode controls

DIP #4	DIP #5	Heating mode	External heater used when:
OFF	OFF	Internal Heat	Never
ON	OFF	Low-Temperature External Heat	Outside temp < -5°C (23°F)
OFF	ON	Basic External Heat	Outside temp < 5°C (41°F)
ON	ON	Invalid - no action	N/A

- **Internal Heat mode:** Heating is always controlled by the AIO® unit.
- **Both External Heat modes:** Heat is controlled by a baseboard heater or other external heater when the outside temperature is below the listed threshold. When the outside temperature is above this threshold, heating is controlled by the AIO® unit.
- Both External Heat modes assume an external NTC sensor is connected. If no sensor is connected, the system will revert to Internal mode.
- Cooling mode is controlled by the AIO® unit regardless of the heating mode selected.
- The external heater can be operated using the LTCH20 or TFTH20 controllers.

5.2 Dual power sources logic

The GWX gateway enables the unit to connect to dual power sources and to switch between them depending on whether the unit is in heating or cooling mode, with the following logic:

- The relay opens when the unit is in cooling mode.
- The relay closes when the unit is in heating mode.

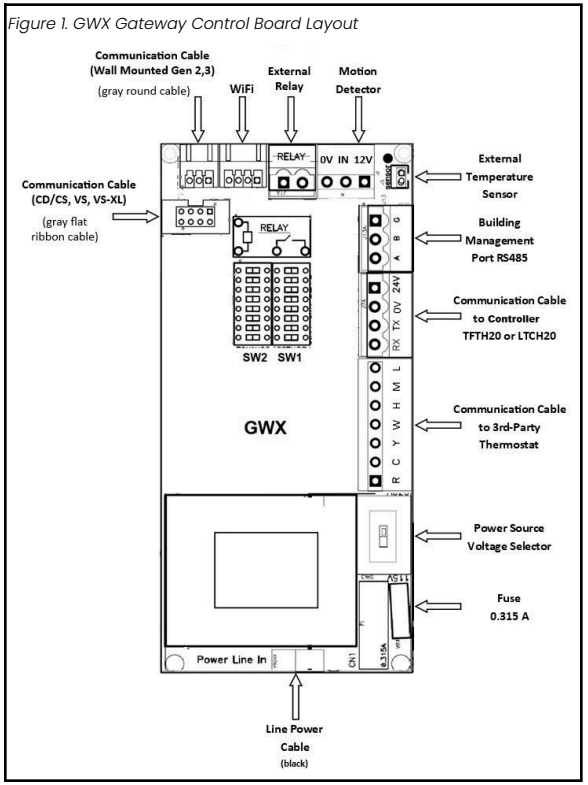
For more information about configuring these functions with the relay contact, refer to the AIO GWX Gateway for AIO Heat Pumps Installation Guide.

6. LAYOUT

To view the Layout of the Gateway as a PDF file, click the link below:

GWX Gateway Control Board Layout.pdf

Figure 1. GWX Gateway Control Board Layout



REVISION HISTORY

Rev	Date	Revised By	Changes
A	2026-03-26	Leah Kuber	New document
B	2026-05-26	Leah Kuber	Add section 5 with Heating mode logic
C	2026-09-23	Leah Kuber	Add references to dual power sources and update the layout diagram accordingly.

With over 20 years of experience in the climate comfort sector, we have a clear goal: growth through innovation. Our team is laser-focused on the conception, development, and production of innovative heating, ventilation, and air conditioning solutions. This mission has developed through bringing together technical skills, creativity, technology, design, Italian passion, and a global vision to achieve the best energy efficiency and performance.

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MADE IN ITALY

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