SIEMENS

Installation Instructions
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Series 4292 Wireless Sensor System Sensors

Product Description

These wireless sensors are used within the Series 4292 wireless system architecture to gather room environmental data and transmit it to the system gateway for export to the building automation system.

NOTE: These sensors are for use with the Siemens 4292 Wireless Sensing System and are not compatible with other wireless networks.

Model Number	Description
QAA4292.EWSC**	Room Temperature Sensor
QFA4292.EWSC**	Room RH & Temperature Sensor
QPA4292.EWSC**	Room CO_2 sensor
563-083**	Dry Contact Closure Transmitter
563-084*	BACnet/IP Gateway
563-085*	Wireless Repeater
535-104	24V Power Supply
563-087*	BACnet/MSTP Gateway
563-088*	Modbus RTU/TCP Gateway
563-089**	Site Survey Tool

* Class A device
** Class B device

QAA4292.EWSC
QFA4292.EWSC
563-083

QPA4292.EWSC

Series 4292 Gateway/Repeater

Site Survey Tool

Expected Installation Time

25 minutes

Prerequisites

- Familiarity with the Siemens 4292 Wireless Sensor System – See *Series 4292 Wireless Sensor System User Guide* P/N A6V11544782
- Thoroughly review these instructions before beginning.

. Required Tools

- Series 4292 Gateway
- USB-A to USB-Mini cable (supplied with Gateway)
- Series 4292 Site Survey Tool (Siemens part number 563-089)
- Basic hand tools
- 1 mm flatblade screwdriver (QAA4292.EWSC and 563-083)

Related Documentation

- A6V11536846: *Series 4292 Wireless Sensor System Technical Specification Sheet*
- A6V11541947: *Series 4292 Wireless Sensor System Site Survey Tool Operating Instructions*
- A6V11544782: *Series 4292 Wireless Sensor System User Guide*
- *Field Server Protocol Driver Sheet BACnet PIC Statement*

Product Data

Sensor Data Reporting		Sensor Type			
		QAA4292.EWSC	QFA4292.EWSC	QPA4292.EWSC	563-083
Sensing Points	S1	Temp (°F)	Temp (°F)	Average ofprevious 5 CO_2 readings (ppm)	X1 Current State 0 = Open, 1 = Closed
	S2	External Temp 1 (°F) (10k Ω Type II Thermistor)	Humidity % RH	Instantaneous CO_2 reading (ppm)	Count of X1 state changes during prior 120s
	S3	External Temp 2 (°F) (10k Ω Type II Thermistor)	Dew Point (°F)		% of time X1 is closed during prior 120s
	S4				
	S5				X2 Current State 0 = Open, 1 = Closed
	S6				Count of X2 current state changes during prior 120s
	S7				% of time X2 is closed during prior 120s

Configuration

NOTE: To preserve battery life, sensors are shipped in the **OFF** position. To activate the sensor, remove the access plate at the top of the sensor to access the **J1** jumper and remove the jumper. The sensor is now activated. Save the jumper by putting it across one pin, so it can be re-used if the sensor needs to be powered off.

QPA4292.EWSC (CO2) sensors do not require jumper removal for power-up.

J1 Jumper (QAA, QFA, and 563-083)

It is easiest to configure all the sensors for a deployment at one time.

NOTE: The gateway must be configured to communicate with a terminal emulator per *Series 4292 Wireless Sensor System User Guide* (Document No. A6V11544782) before attempting to configure sensors.

1. Using the terminal emulator function, select **S** from the main menu.
2. Attach the sensor to the gateway using the USB cable supplied with the gateway.

   On the QPA4292.EWSC CO_2 sensor, the cover must be removed to access the USB port. Remove and discard the Phillips head screw in the center of the back cover. Be careful not to damage locking tabs when removing/installing the cover.

   Other sensor USB ports can be accessed through the cut-out on the back of the housing.

During configuration each sensor is assigned an ID that is activated in the gateway. This number should be written on the label inside the sensor enclosure. It is also advisable to record the communication channel and network ID on the sensor.

Installation

NOTE: Care should be taken when mounting sensors to get the maximum communication range. For the best range, sensors should be mounted on drywall, wood, plastic, glass or other non-metallic and non-masonry surface.

1. Locate the sensor approximately 5 feet (1.5 m) above floor level and at least 1.75 feet (50 cm) from adjoining walls.
2. Do not install on an outside wall, behind curtains, near heating/cooling sources, or where exposed to direct sunlight.

Installation, Continued

3. Do not mount wireless sensors on, or in, metal structures such as refrigerators, freezers, tanks, and so on.
4. Avoid mounting the sensors directly over a metal stud.
5. Sensors should be mounted so that the longer dimension is vertical (portrait configuration).

Installation Procedure

1. Remove the sensor back plate and use screws and anchors as necessary to secure the back plate to a wall in the desired location.
2. Document the Sensor ID (and Network ID, if desired) on building floor plans or other configuration documentation.
3. Snap the sensor assembly to the back plate to complete mounting.
4. The sensor installation/configuration is now complete.

Sensor Replacement

When a sensor is replaced, it is essential for proper operation that the Sensor ID and Network ID from the replaced sensor be programmed into the replacement sensor. Document the Sensor ID (and Network ID, if desired) on building floor plans or other configuration documentation.

Remove the existing sensor

1. Select **S – Configure Sensor in Gateway** in the terminal emulator.
2. Attach the old sensor to the gateway using a USB cable.
3. Select option **3 -- Erase Sensor Data and Deactivate in Gateway.**
4. Disconnect the sensor from the gateway.
5. Re-install the jumper to power down the sensor. Failure to take this step will result in the removed sensor continuing to transmit data over the network.

Configure the new sensor

1. Connect the new sensor to the gateway using the PC Interface port.
2. Select **S – Configure Sensor in Gateway**.
3. Record the **SENSOR ID** as shown on screen.
4. Disconnect the sensor from the gateway and install in the desired location.

QAA4292.EWSC – Remote Temperature Sensor Wiring

In addition to the onboard temperature sensor, the QAA4292.EWSC can also accept two 10k Ω Type 2 thermistor inputs from remote devices. The data from the remote devices will be reported back to the automation system at separate points.

Remove the sliding tab at the top of the sensor housing to access the wiring terminals.

Figure 1. Wiring Terminals, Remote Temperature Sensors.

Connect remote temperature sensor No. 1 to the **S2** terminals and remote temperature sensor No. 2 to the **S3** terminals. Data will be reported back the gateway at points **S2** and **S3**, with point **S1** being the on-board sensor.

563-083 – Romote Contact Wiring

The 563-083 enables ON/OFF device data, such as from flow switches, to be wirelessly transmitted back to the gateway. Each 563-083 accepts up to two ON/OFF inputs which will be reported back as individual points. The 563-083 does not include an onboard sensor.

Remove the sliding tab at the top of the sensor housing to access the wiring terminals.

Figure 2. Wiring Terminals, Remote Contact.

Connect remote contact No. 1 to the **X1** terminals and remote contact No. 2 to the **X2** terminals.

NOTE: The 563-083 is not designed for use as a pulse-counter. Contact state changes that occur more frequently than 1 per minute will result in diminished battery life.

Sensor Calibration

QAA4292.EWSC
The QAA4292.EWSC utilizes a stable, long life sensing element that does not require calibration. The temperature sensor accuracy is rated at +/- 1% (50°F to 90°F).

QFA4292.EWSC
The QFA4292.EWSC utilizes a stable, long life sensing element that does not require calibration. The humidity sensor accuracy is rated at +/- 3% rh (11% to 89% rh) and a long-term stability of +/- 0.25% rh per year.

QPA4292.EWSC
The QPA4292.EWSC utilizes Non-Dispersive Infra-Red (NDIR) technology and is self-calibrating to an accuracy of +/- 50 ppm +3% of the reading.
To enable the sensor to self-calibrate it must see "fresh air" a minimum of once per week. In most HVAC use cases this should occur without intervention, as CO_2 levels typically return to outdoor background levels while the building is vacant.

If manual calibration is required, place the sensor outside or in a location with a background concentration of CO_2 near 385 ppm. Press the **Cal/RESET** button on the inside of the sensor for two seconds. The sensor should remain in this location for 30 minutes.

NOTE: When placing the sensor outside for calibration, ensure that it is not placed in direct sunlight or where exposed to rain or excess moisture. The temperature should be between 0°F and 120°F.

The QPA4292.EWSC has a selectable broadcast interval from 1 to 5 minutes using the jumper directly below the **CAL/RESET** button. The default setting of 5 minutes will provide adequate control in most spaces and result in maximizes battery life.

- Jumper 1 = 1 minute
- Jumper 2 – 2 minutes
- Jumper 3 = 3 minutes
- Jumper 4 = 5 minutes
- Jumper 5 = 10 minutes

NOTE: Battery life is 15 years at the factory default of 5-minute broadcast intervals. More frequent broadcasts will reduce battery life.

FCC Note:
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the manufacturer for compliance could void the user's authority to operate the equipment.

Class B Devices Statement:
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Class A Devices Statement:
Note: 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 the 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 is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended.
The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Canada Note:
This Class A or B digital apparatus complies with Canadian ICES-003
Cet appareil numérique de classe A ou B est conforme à la NMB-003 du Canada

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

To access complete technical and regulatory details for the tranceiver module go to the following link.

http://ww1.microchip.com/downloads/en/DeviceDoc/75017B.pdf

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