

## Series 2200 Room Units for TALON® Controllers

### Product Description

These room units measure temperature in the occupied space in which they are installed. Models with display allow users to view the measured temperature value. A version with temperature setpoint adjustment is also offered.

These devices are intended for use with appropriate signal input on a TALON Controller. The effective sensing and setpoint range is 55°F to 95°F (13°C to 35°C). Units are equipped with an RJ-11 tool port that allows access to the LON network.

These room units can be mounted on electrical boxes, stud-type mounting brackets, or drywall. Obtain the necessary mounting hardware and follow the appropriate mounting procedures for the type of installation required.

### Product Numbers

QAA2230.EWxC


QAA2230.FWxC

### Accessories

AQA2200-INTL Room Unit Back Plate (10-pack)

563-102 GSKT KIT      Room Sensor Insulating  
Gasket (10-pack)  
(For hollow wall  
installations)

### Caution Notations

CAUTION		Equipment damage or loss of data may occur if you do not follow a procedure as specified.
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### Expected Installation Time

20 minutes

### Required Tools

- Sizes 1 and 2 Phillips screwdrivers
- Small and medium flat-blade screwdrivers
- 1/16-inch hex key
- Medium-duty electric drill
- 3/16-inch (4.8 mm) drill bit
- One-inch (25 mm) hole saw
- Small level
- Tape measure
- Marker or pencil

### Prerequisites

- Review these instructions before beginning.
- Installed: appropriate field wiring within the maximum wiring run length for the individual equipment controller. The maximum recommended length is 100 feet (30 m).
- All wiring must comply with National Electric Code (NEC) and local regulations.



Figure 1. QAA2230.xWxC Room Units.

## Mounting Information

Always mount the room unit vertically.

Locate the room unit:

- according to design specifications and local regulations.
- where the air circulates around it freely (not in recessed areas or behind doors).
- allowing a minimum of 4 inches (10 cm) free space above and below for proper airflow, the front cover removal tool, and the computer communication cable.
- away from drafts caused by doors, windows, outside walls, air registers, pipes, return air plenums, and so on.
- away from heat sources such as strong lights, fireplaces, direct sunlight, and so on.
- on an inside wall (preferably), about 5 feet (1.5 m) above the finished floor.

## Drywall Mounting (No Rough-in), Typical

### Base Plate Mounting and Wiring

1. Mark the center (cable) hole and the mounting hole locations, using the room unit base plate as a template. See Figure 2.
2. Drill two 3/16-inch (4.8 mm) mounting holes and mount the two plastic wall anchors flush to below the wall surface for stable mounting of the device.
3. Cut a 1-inch (25 mm) center hole with a hole saw.
4. Pull about three inches (75 mm) of the cable through the hole in the base plate.
5. Mount the room unit base plate on the wall, noting the UP arrow:

NOTE: If required, position the Back Plate behind the Room Unit Base, aligning the top and bottom mounting holes, prior to mounting to the wall:

- a. Install the two mounting screws provided, but do not tighten.
- b. Level the room unit base plate for appearance.
- c. Tighten the two mounting screws to the room unit base plate.

- d. Cut the cable, leaving about three inches (75 mm) on the room unit side of the drywall. Ensure that pin Number 1 connects to the same wire at each end of the cable.

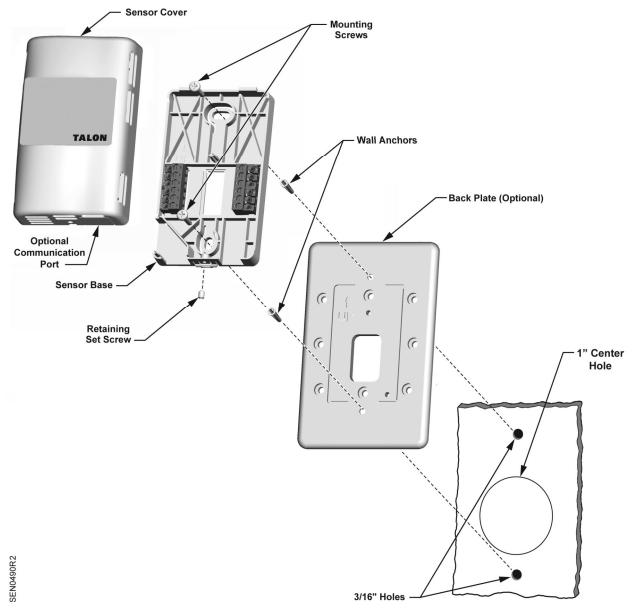


Figure 2. Drywall Mounting (No Rough-in), Typical.

7. Terminate the wires to the termination blocks on the room unit's base plate. (See Figure 5.)
8. Feed the extra cable back through the hole.

### Sensor Set-up

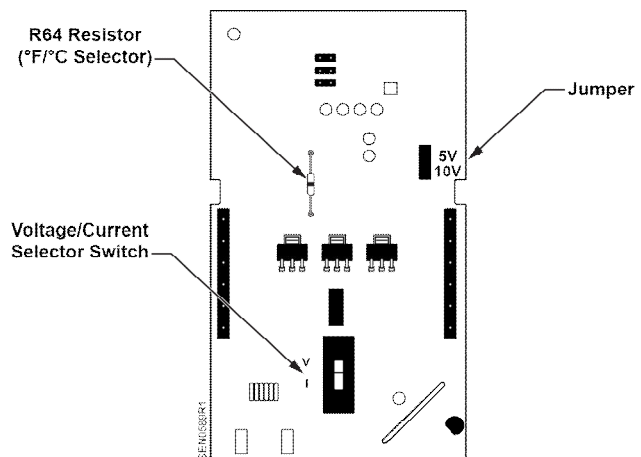


Figure 3. Circuit Board (Located inside Room Unit Cover.)

1. If the device has a switch, determine if voltage or current output is needed.
  - For current, set the switch in the down position (I).
  - For voltage, set the switch in the up position (V).

NOTE: The output setting applies to all outputs (temperature, and setpoint).

2. If selecting voltage, set the jumper:
  - Use the top and middle pins for 0 to 5V.
  - Use the bottom and middle pins for 0 to 10V.

NOTE: If the jumper is missing or removed, the output voltage will default to 0 to 10V.

**NOTE:** The factory default for displayed temperature units is °F. To change the display to °C, snip the wire jumper (0 Ohm resistor R64) on the back of the PCA.

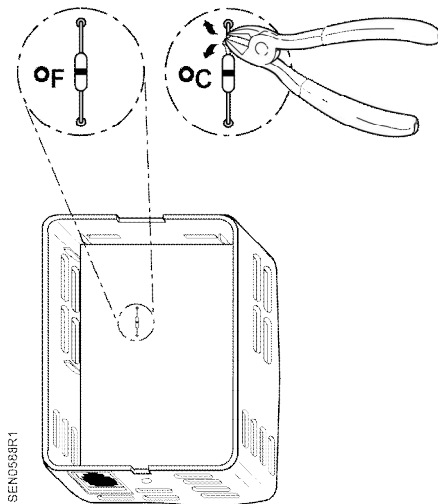


Figure 4. Changing Display to °C.

9. Snap the room unit cover to the room unit base plate by first hooking the room unit front to the top latches, and then rotating the cover downward until it latches.
10. Loosen the safety set screw at the bottom of the base one or two revolutions to lock the cover to the base. Be careful not to loosen too far as the screw can be completely removed from the base.

## Electrical Box and Rough-in Mounting, Typical

1. If a locator is attached to the rough-in device, remove the locator by removing the two screws and lightly rocking the locator to pull it free.
2. Untie the twist tie and pull about three inches (75 mm) of the room unit cable through the hole in the base plate.

3. Mount the room unit base plate on the wall, noting the UP arrow:

NOTE: If required, position the Back Plate behind the Room Unit Base, aligning the top and bottom mounting holes, prior to mounting to the wall:

- a. Install the two room unit mounting screws provided, but do not tighten.
- b. Level the room unit base plate for appearance only.
- c. Tighten the two mounting screws to the room unit base plate.



### CAUTION:

Over-tightening may cause the room unit base plate to crack or bend.

4. Continue with *Drywall Mounting (No Rough-in), Typical*, Steps 6 through 8, and *Sensor Set-up*.



### CAUTION:

To prevent equipment damage, do the following:

If room unit is powered by AC (See **Error! Reference source not found.**):

- AC Supply must be type NEC Class 2 and earth grounded at the secondary neutral.
- Room Unit ACN (GND) must be connected to the controller common.
- If the controller has a floating common, that common must be connected to the same earth ground point as the controller AC supply.

If room unit is powered by isolated DC (See **Error! Reference source not found.**):

- Where power is current limited up to 300 mA, it is not required to earth ground the controller isolated common.
- Room Unit DC-(GND) must be connected to the controller common.

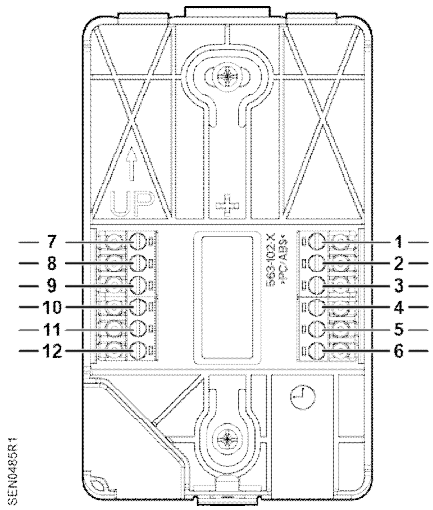


**CAUTION:**

Follow manufacturer's Installation Instructions and Wiring Guidelines for connecting the controller to the Room Unit.

- TALON Controllers with common already earth grounded are TXIO used on TC Modular and TC Compact 36 Expansion. These do not require the earth ground wire to be connected to the controller.
- TALON Controllers with floating common are TC Compact 16/24/36, Raptor, Predator and PPM. These require the earth ground wire to be connected to the controller.

- NOTES:**
1. If active temperature (0 to 5V/0 to 10V/4 to 20 mA) (Pin 3) rather than passive/ resistive temperature is used, Passive Temp Common (Pin 6) does not need to be terminated.
  2. To use the override function with a Predator Controller, a 500 ohm resistor must be wired in series with the setpoint termination on the Predator Controller and the Override termination 8 on the Room Sensor. See Figure 6 and Figure 7 for the complete wiring diagrams for the two different style controllers.



**Figure 5. Typical Wiring Base.  
 (All terminals may not be present.)**

Pin No.	Function
<b>QAA2230.EWxC</b>	
2	Temperature
3	Temp_Common
7	LON1
8	LON2
<b>QAA2230.FWxC</b>	
1	DC + or ACH
2	DC - or ACN (GND)
3	Temperature Output
5*	Passive Temp
6*	Passive Temp Common
7	Setpoint Output
8	Override
9	Override Common
10	GND
11	LON1
12	LON2

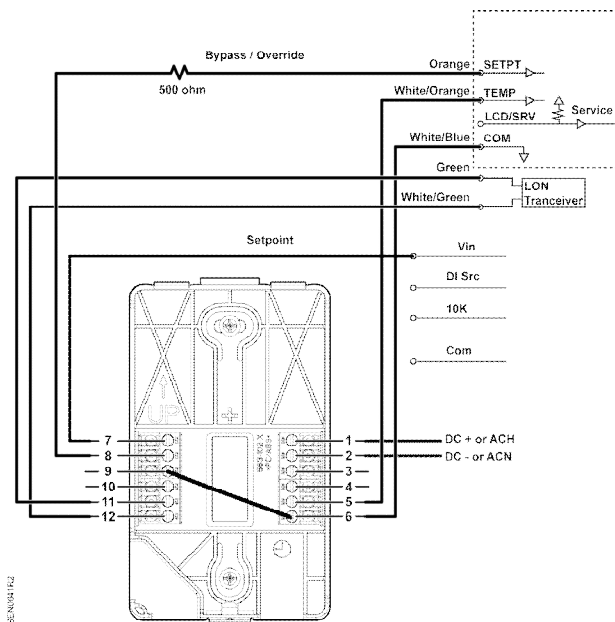


Figure 6. Predator Actuator (587-104) Wiring.

**NOTES:** 1. Wire color code shown in diagrams is for the 588-100x family of cables.

2. If powering the sensor from the same 24 Vac as the Predator Controllers, ACN for the controller must connect to pin 2 (DC – or ACN) of the sensor.

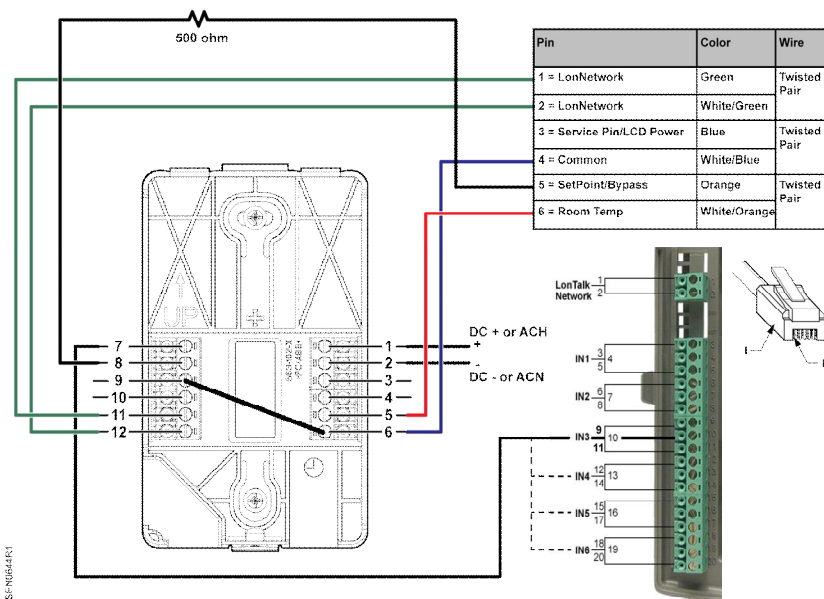


Figure 7.

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