



# Wireless 418 MHz/433 MHz Receiver

## Installation and Operating Instructions

17613\_ins\_wireless\_418\_rcvr

Rev 05/07/2007

### Overview

The BAPI 418 MHz or 433 MHz unit receives the RF signal from one or more wireless temperature or humidity transmitters which have a range of 100 feet. The receiver then outputs the values to any Analog Output Module through an RS485 four-wire bus. The Analog Output Module converts the signal to an analog voltage, current or resistance for the controller. The receiver can accommodate up to 127 different Analog Output Modules. It is surface, snaptrack or din rail mountable with a 79" extendable antenna for optimum reception.

### Product Identification

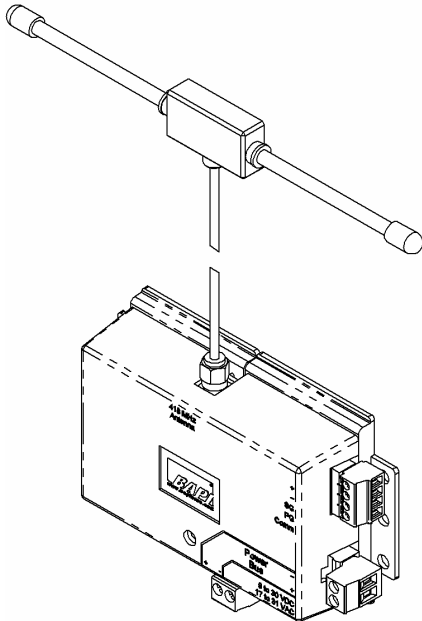


Figure 1: 418/433 MHz Receiver

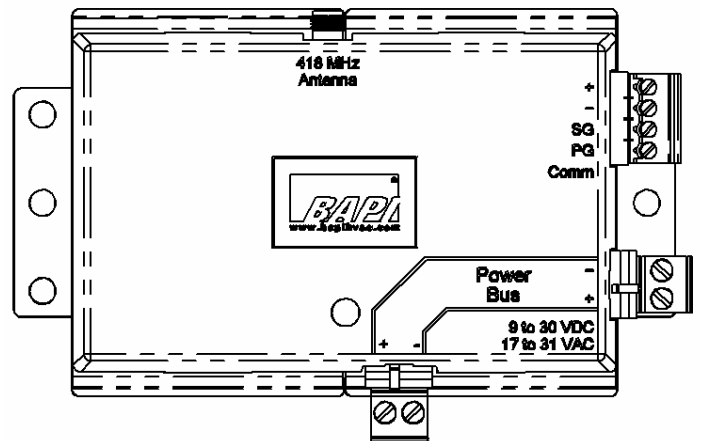


Figure 2: 418/433 MHz Receiver Front View

### Tools and Materials

#2 Philips Screwdriver, Drill, Wire

### Analog Output Module Training

1. Apply power to the receiver and output modules.
2. The power LED on the Receiver should light and remain lit. The powered analog output module's LED should flash and go out. (The flash is very quick.)
5. Remove the cover of the transmitter and install the batteries, observe polarity. The small LED at the bottom right, next to the Transmitter Training Button, should flash approximately once every 10 seconds. (The flash is very quick.)
6. Pick a transmitter and an analog output module you want to train to recognize one another. Press and hold the plastic service button on the top of the Output Module, at the same time press for one second and release the button on the transmitter. When the LED on the output module lights, release its button (The LED will go out when you release the button). The output module will now report the environmental conditions from the transmitter trained to it. The output module's LED will quickly flash whenever it receives an update from the transmitter.
7. Mount the transmitter at the desired location. If needed, remove the batteries to do so. The units will remain trained to one another through power failures and battery replacement.
8. Replace the transmitter's cover and back out the security screws.

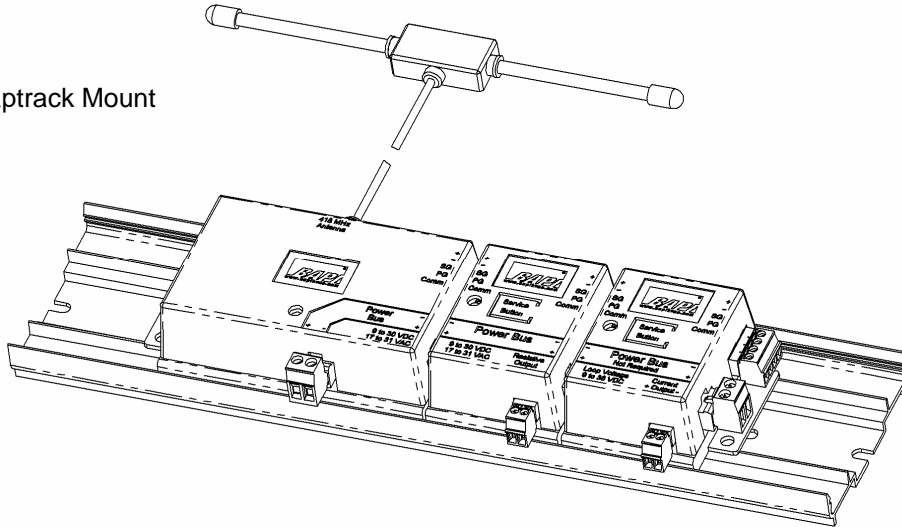
Specifications subject to change without notice.

### Mounting & Terminations

There are several ways to mount the receivers. Make sure that the Power Bus negative (-) is connected to the controller's analog ground.

#### Snaptrack Mount

Figure 3: Snaptrack Mount



Insert the **BA/RCV418** or a **BA/RCV433** into a piece of snaptrack. Insert into the snaptrack just to the right of the receiver an analog output module, slide the module to the left until it's connectors are fully mated into the receiver. You may attach up to 127 analog output modules by mating each new one into the analog output module on the end of the train. If you wish to connect more output modules than room in your snap track, place another piece of snap track nearby and connect wires from the right end of the train to an analog output module on the left end of the second piece of snaptrack. Continue to place additional analog output modules in the second piece of snaptrack to the right of the first additional analog output module and sliding them into place.

#### 35mm DIN Rail Mount

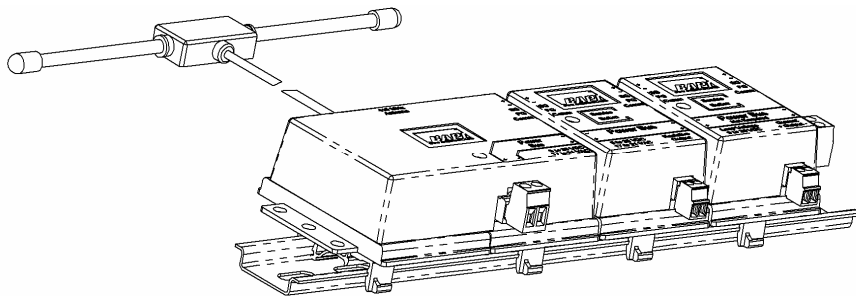


Figure 4: DIN Rail mount

Clip a **BA/RCV418** or a **BA/RCV433** onto a piece of DIN Rail. Clip onto the DIN Rail just to the right of the receiver an analog output module, slide the module to the left until it's connectors are fully mated into the receiver. You may attach up to 127 analog output modules by mating each new one into the analog output module on the end of the train. If you wish to connect more output modules than room on your DIN Rail, place another piece of DIN Rail nearby and connect wires from the right end of the train to an analog output module on the left end of the second piece of DIN Rail. Continue to place additional analog output modules on the second piece of DIN Rail to the right of the first additional analog output module and sliding them into place.

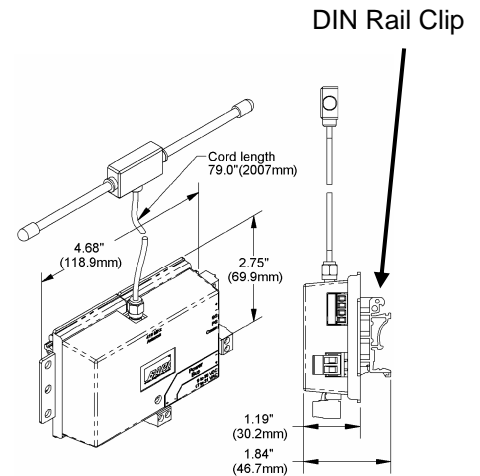


Figure 5: Dimensions and DIN Rail Clip

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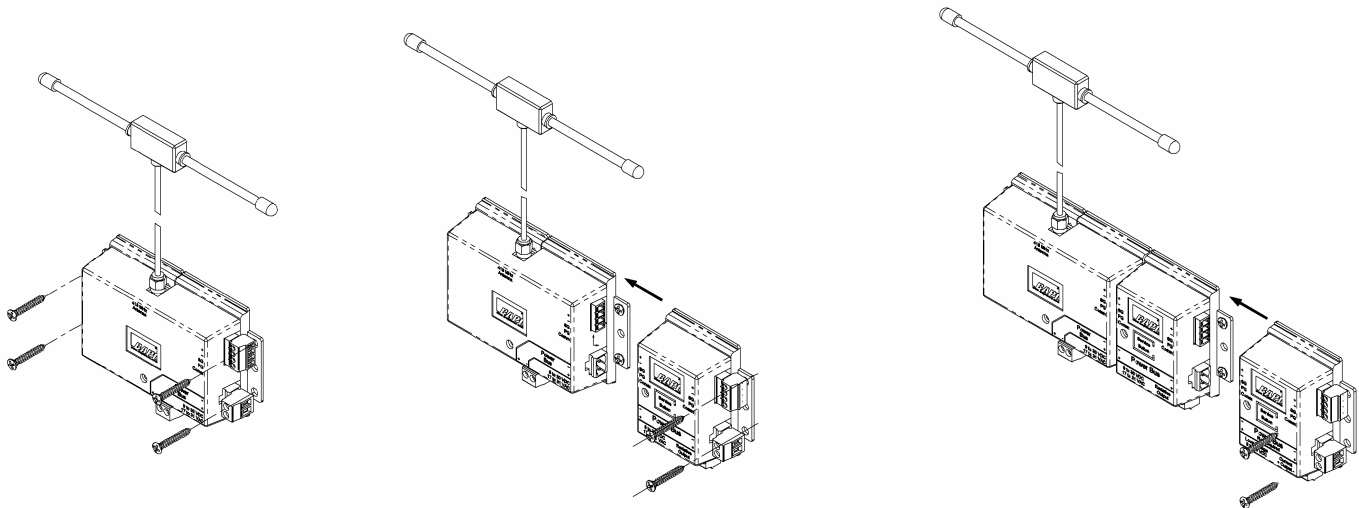
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### Surface Mount

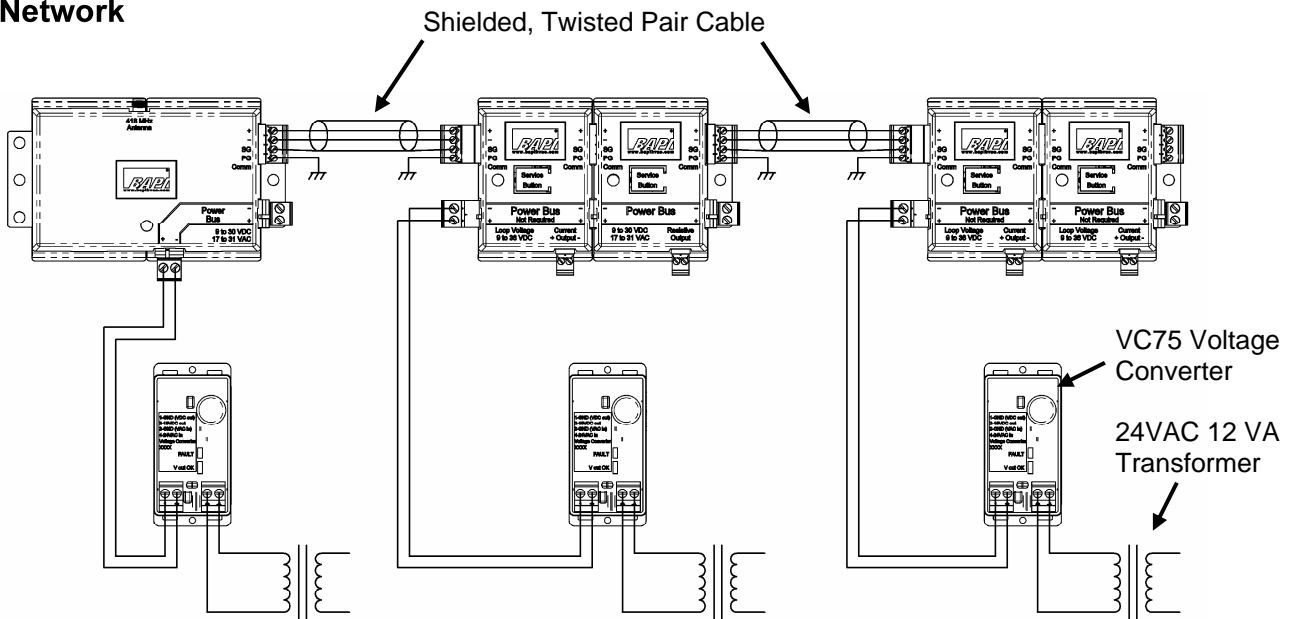


**Figure 6:** Mount Receiver    **Figure 7:** Mount 1st Analog Output Module    **Figure 8:** Mount 2nd Analog Output Module

Mount a **BA/RCV418** or a **BA/RCV433** to a surface with four screws as shown in Figure 6. Slide an analog output module onto the receiver until its connectors are fully mated into the receiver. Attach the analog output module to the surface with two screws as shown in figure 7. Slide additional analog output modules on the end as shown in Figure 8. Make sure to attach each additional analog output module to the surface with two screws. The next module covers the previous one's screws, so remember to drive the screws as you proceed.

You may attach up to 127 analog output modules by mating each new one into the analog output module on the end of the train. If you wish to connect more output modules than can fit on your surface, place additional analog output modules nearby and connect wires from the right end of the train to the additional analog output module. Continue to place additional analog output modules to the right of the first additional analog output module and sliding them into place. Remember to screw the analog output modules in place as you go.

### RS-485 Network



**Figure 9:** RS485 Analog Output Module Network

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### RS-485 Network Continued

The Analog Output Modules may be mounted up to 4,000 Ft away from the receiver. The total length of all the shielded, twisted pair cables shown in Figure 9 is 4000Feet (1220 meters). Connect the terminals together as shown in Figure 9. If the distance from the receiver to the analog output module is greater than 100 Feet (30 meters), provide a separate power supply for the Analog Output Modules. BAPI **BA/VC75** and a small transformer can be used to power the remote analog output modules.

### Troubleshooting

#### Possible Problems:

Temperature or Humidity is reading its low limit

#### Possible Solutions:

- Check wire from output modules to controller for proper connections and polarities.
- Check to see if the controller's software is configured properly.
- Check transmitter to see if its LED flashes about every 10 seconds. If not replace the batteries.
- Check power to the receiver and output module.
- Check output modules LED, if it is blinking fast
  - Check the associated transmitter as described above
  - Retrain the modules

Temperature or Humidity is reading is coming out the wrong output module

- Retrain the modules.

Temperature or Humidity is reading incorrectly

- Check wire from output modules to controller for proper connections and polarities.
- Check to see if the controller's software is configured properly.
- Check to see if the correct output module is connected to the right controller.

### Specifications

**Supply Power:** 9 to 30 VDC or 17 to 31 VAC

**Power Consumption:** 20 mA max. DC, .5 VA max AC

**Inputs:** 418MHz or 433MHz

**Output:** RS485

**RS485 Cable Distance:** 4,000 ft with shielded, twisted pair cable (Belden 9841, Belden 8132 or equivalent)

**Maximum Output Modules per Receiver:** 127

**Environmental Operation Range:**

Temp: 0° to 60°C

Humidity: 5% to 95% RH non-condensing

**Material:** ABS Plastic

**Material Rating:** UL94, V-0

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