

# Ranger Long-Range Wireless Receiver (433-MHz)

## Farpointe Data Receiver Installation Guide

This Installation Guide is intended for experienced installation technicians. It is a basic reference to ensure all connections are properly made. Additional information may be downloaded from the Farpointe Data website found at [www.farpointedata.com](http://www.farpointedata.com); under Products > Ranger ® Long Range Transmitters and Receivers.

The Ranger Long-Range Wireless Radio Transmitter is compliant with the following organizations:



FCC compliance Statement: 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.

Product can be used without license conditions or restrictions in all European Union countries, including Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Sweden, United Kingdom, as well as other non-EU countries, including Iceland, Norway, and Switzerland.

### 1.0 Description

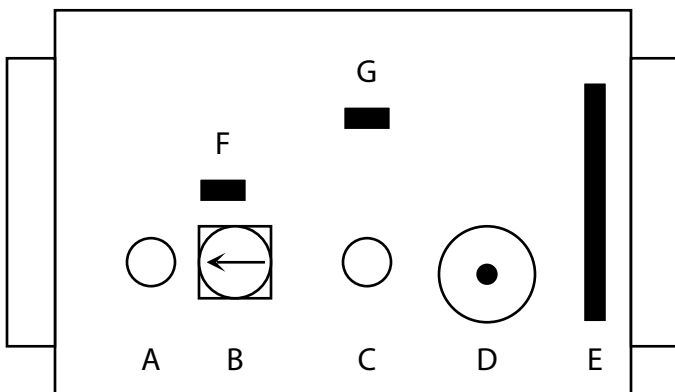
Wireless Radio Transmitters and Long Range Receivers with an integrated receive antenna comprise Farpointe Data's high frequency, long-range identification solution known as Ranger<sup>1</sup>. Intended for security access control applications, Ranger's wireless communications are based upon a secure, digital, anti-playback routine<sup>2</sup>.

Intended for security access control applications, Ranger's wireless communications are based upon a secure digital anti-playback routine. The two-channel Ranger Receiver (Channels A and B) allows Ranger Transmitter data to be sent over a pair of Wiegand outputs. Formatting of the Wiegand output is dependent upon the programmed format of the individual Ranger Transmitter.

The Receiver kit includes:

- 1 x Receiver mounted in an IP66 compliant plastic enclosure
- 1 x cable grommet for weather resistance
- 4 x self-captivating M4 screws for lid mounting
- 2 x 3,0 x 16 screws for mounting to a European style wall box
- 4 x #6 1-inch Phillips flat head wood screws for flat surface mounting
- 2 x #6 1-inch Phillips flat head machine screws for mounting to a USA single gang wall box

### 2. Receiver Layout



#### Legend:

- A: Range LED
- B: Range Adjustment Pot
- C: Functional LED Indicator
- D: Beeper
- E: 7-PIN Terminal Block
- F: Button Select Jumper
- G: Front LED Control Jumper

### 3.0 Cable Requirements

Per the Security Industry Association's Wiegand specification, the Receiver operates at cable runs up to 500 feet (152 m), using AWG 24 (0.6 mm), seven-conductor, shielded cable – such as Belden 9537.

<sup>1</sup>Models include the WRT-2+, WRT-2+H, WRT-2+A, WRT-4+, WRT-4+H, WRT-4+A, WRT-2+S1, WRT-2+S4, WRT-4+S1, and WRT-4+S4

<sup>2</sup>Addresses the risks associated with code sniffing and unauthorized duplication

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### 4.0 Output Formats

Wiegand (industry standard 26-bit Wiegand and custom Wiegand formats)

### 5.0 Grounding

Shield (drain) continuity must run from the Receiver to the access panel. Further, the shield and Receiver ground must be tied together at the access panel, and must connect to an earth ground at one point only.

### 6.0 Power

The Receiver may be powered by the access panel, so the Receiver is powered on when the access panel is powered on. However, the best case is to power the Receiver by a separate, linear power supply. Power required is 8 to 24 VDC at 80 mA (nominal).

### 7.0 Mounting

The Receiver may be mounted indoors or outdoors. The base of the enclosure includes a drill template providing mounting provisions to a single gang wall box (North American and European), as well as pre-drilled holes in the four corners allowing mounting to a flat surface.

### 8.0 Range<sup>1</sup>

The read range between the Receiver and Transmitter may be adjusted. As shipped, the Receiver is set for the maximum, up to 150 feet (45.7 m). This may be reduced to a minimum of several feet by adjusting the Range Pot in the counter-clockwise direction<sup>2</sup>.

### 9.0 LED and Beeper Indicators<sup>3</sup>

Refer to the table below for explanations on the Receiver's LED and Beeper operation

Color/Sound	Corrective Action
Green & Beep	Initial power up
Amber	Normal ON state
Flash Green & Beep	an activated transmitter button press has been processed
Flash Red	a deactivated transmitter button press has been detected
Off <sup>a</sup>	Receiver is not powered on, or failed to power up successfully

### 10.0 Button Selection

Utilizing the Button Select Jumper, the Receiver can be configured to receive data from Buttons 1 and 2, or from Buttons 3 and 4, over channels A and B. Refer to the following table for button control:

Jumper Position	Activated Transmitter Button	Output Channel	Deactivated Transmitter Button
Open	Button 1	AD0 & AD1	Buttons 3 & 4
Open	Button 2	BD0 & BD1	Buttons 3 & 4
Closed	Button 3	AD0 & AD1	Buttons 1 & 2
Closed	Button 4	BD0 & BD1	Buttons 1 & 2

### 8.0 Troubleshooting

Issue/Possible Cause	Corrective Action
No data received/Transmitter not enrolled	Transmitter must be clicked twice to be learned by the Receiver upon initial Receiver power up
Short Read Range/Receiver Knob	Adjustable knob should be set to the maximum setting
Some Buttons not working/Channel Jumper	Jumper must be set to channel 'A' for buttons 1 & 2. Jumper must be set to channel 'B' for buttons 3 & 4

<sup>1</sup>For best performance it is important that the Receiver be mounted as far from interference sources as possible. These sources may include, but are not limited to, large metal obstructions, such as duct work and appliances, as well as magnetic fields and radio transmissions.

<sup>2</sup>The Receiver features a green Range LED that will shine brighter when the range is turned up, and dimmer when turned down.

<sup>3</sup>The Transmitter includes a red LED that will flash upon button press, indicating data transmission.

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