WRZ-7860-0 Receiver for One-to-One Wireless Room Sensing Systems Catalog Page

2023-05-05

LIT-1900663

Description

Use the WRZ-7860-0 Receiver for One-to-One Wireless Room Sensing Systems to receive wireless Radio Frequency (RF) temperature and humidity data from WRZ Series Wireless Room Sensors, and provide single zone temperature and humidity control data to specified system digital controllers in building HVAC systems. The WRZ Series Wireless Room Sensor and WRZ-7860-0 Receiver combination is a functional equivalent to a wired network sensor, such as an NS8000 Network Sensor, but eliminates the need for communications wiring, usually placed inside the wall, between the room sensor and receiver.

Like a network sensor, the WRZ-7860-0 Receiver communicates over a Sensor Actuator (SA) bus interface through the MS/TP BACnet® protocol with Johnson Controls® field controllers. The receiver supplies the sensed zone temperature and humidity, temperature setpoint, and occupancy override data.

In an application, one WRZ Series Wireless Room Sensor reports to one WRZ-7860-0 Receiver. However, up to five WRZ Series Wireless Room Sensors can associate with a single WRZ-7860-0 Receiver. In multi-sensor applications, the receiver passes all the room sensors data to the controller. Configure the controller to either average the room sensors temperature and humidity input, or select the highest or lowest sensed temperature and humidity for control of the target zone.

The WRZ-7860-0 Receiver uses direct-sequence, spread-spectrum RF technology, and operates on the 2.4 GHz Industrial, Scientific, and Medical (ISM) band. The receiver meets the IEEE 802.15.4 standard for low-power, low-duty cycle RF transmitting systems. A WRZ-7860-0 Receiver operates as a transceiver, to create a bidirectional association with a WRZ Series Wireless Room Sensor.

Refer to the *WRZ-7860-0 Receiver for One-to-One Wireless Room Sensing Systems Product Bulletin (LIT-12011640)* for important product application information.

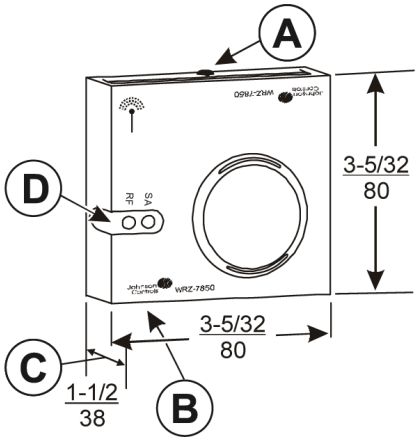
Figure 1: WRZ-7860-0 Receiver for One-to-One Wireless Room Sensing Systems



Dimensions

See the following figure for features and dimensions of the WRZ-7860-0 Receiver.

Figure 2: WRZ-7860-0 Receiver features and dimensions, in. (mm)



Callout	Description
A	Tamper-resistant set screw
B	RJ-12 port for SA bus connection on the underside of the receiver

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Callout	Description
C	Back of base to front of dome measurement
D	Status LEDs

Features and benefits

- System design: leverages the system's web-based platform to provide wireless temperature and humidity control to multiple field devices across the network.
- One-to-one wireless RF design: enables quick, economical, and low-maintenance installations, which reduces installation and wiring costs.
- Integral wireless signal strength testing built into the receiver: provides quick and easy visual indication of the wireless RF signal strength between the receiver and its associated sensor, helps locate optimum device positions during installation, and aids in troubleshooting.
- Multiple sensor temperature or humidity averaging or high or low selection: enhances zone temperature or humidity control by enabling up to five sensors to report to a single receiver, which enables the controller to average the sensors temperature or humidity input, or select the highest or lowest sensed temperature or humidity for control of the target zone.
- Compact and easy-to-install design: receives the sensed zone temperature and humidity, temperature setpoint, and low battery condition from the WRZ Series Wireless Room Sensor, and interfaces directly with a field controller.
- Simple, field-adjustable DIP switches: provides easy commissioning with up to 4,096 unique RF addresses.
- Optional, battery-powered ZFR-HPSST-0 Wireless Sensing System Tool: provides wireless mobility to check for the best RF link, and to determine the optimum receiver mounting locations.
- High resistance to RF interference from other radio devices or RF noise sources: results from application-based frequency agility, which enables automatically changing to a different channel to avoid RF interference and missed messages.
- Blinking LED light to indicate firmware version: flashes five seconds after startup to indicate the firmware revision. For example, three flashes of the LED during the startup process indicates firmware revision 3.

Important: Optional MS-ZFR1811-0 Wireless Field bus Router: for the 7860 solution, only the ZFR1811 and ZFR1812 routers can be used as repeaters. The WRZ-7860-0 is not compatible with ZFR182x or ZFR183x kits or systems.

Repair information

If the WRZ-7860-0 Receiver fails to operate within its specifications, replace the unit. For a replacement receiver, contact the nearest Johnson Controls representative.

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Ordering information

To order a WRZ Receiver, contact the nearest Johnson Controls representative. Specify the required product code number and accessories from the following tables.

Table 1: Selection chart

Product code	Product description
WRZ-MHN0100-2	WRZ Wireless Room Sensor, temperature, RH 3% accuracy, manual occupancy override button, PIR occupancy sensor without setpoint dial adjustment, ZFR183x compatible.
WRZ-MTJ0100-2	WRZ Wireless Room Sensor, temperature, LCD display, °F/°C, manual occupancy override button, passive infrared (PIR) occupancy sensor, setpoint adjustment button, ZFR183x compatible.
WRZ-RMT10K-2	WRZ Wireless Remote Temperature Transmitter, temperature, LCD display, °F/°C button, manual occupancy override button without setpoint dial adjustment, ZFR183x compatible.
WRZ-STR0000-2	WRZ Wireless Refrigerator/Freezer Temperature Transmitter with probe assembly, temperature, LCD display, °F/°C, manual occupancy override button, without setpoint dial adjustment, ZFR183x compatible.
WRZ-THJ0000-2	WRZ Wireless Room Sensor, temperature, RH 3% accuracy, LCD display, °F/°C, manual occupancy override button, setpoint adjustment button, ZFR183x compatible.
WRZ-THN0000-2	WRZ Wireless Room Sensor, temperature, RH 3% accuracy, manual occupancy override button without setpoint dial adjustment, ZFR183x compatible.
WRZ-TTJ0000-2	WRZ Wireless Room Sensor, temperature, LCD display, °F/°C, manual occupancy override button, button setpoint adjustment, ZFR183x compatible.
WRZ-TTK0000-2	WRZ Wireless Room Sensor, temperature, LCD display, °F/°C, fan speed control, manual occupancy override button, setpoint adjustment button, ZFR183x compatible.
WRZ-TTP0000-2	WRZ Wireless Room Sensor, temperature, manual occupancy override button, Warmer/Cooler (+/-) setpoint dial adjustment, ZFR183x compatible.
WRZ-TTR0000-2	WRZ Wireless Room Sensor, temperature, manual occupancy override button, without setpoint dial adjustment, ZFR183x compatible.
WRZ-TTS0000-2	WRZ Wireless Room Sensor, temperature, manual occupancy override button, setpoint dial adjustment, ZFR183x compatible.

Table 2: Accessories

Product code	Description
WRZ-SST-120	Wireless system survey tool
CBL-NETWORK6-0	6 ft (1.8 m) SA bus interface cable to connect the WRZ-7860-0 Receiver to the controller.

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Table 2: Accessories

Product code	Description
CBL-NETWORK25-0	25 ft (7.6 m) SA bus interface cable to connect the WRZ-7860-0 Receiver to the controller.
CBL-NETWORK50-0	50 ft (15.2 m) SA bus interface cable to connect the WRZ-7860-0 Receiver to the controller.
CBL-NETWORK75-0	75 ft (22.9 m) SA bus interface cable to connect the WRZ-7860-0 Receiver to the controller.
CBL-NETWORK100-0	100 ft (30.5 m) SA bus interface cable to connect the WRZ-7860-0 Receiver to the controller.
MS-ZFR1811-0	Wireless field bus router
MS-ZFRRPT-0	Power supply for optional MS-ZFR1811-0 wireless field bus router.

Technical specifications

Table 3: WRZ-7860-0 Receiver for One-to-One Wireless Room Sensing Systems technical specifications

Specification	Description
Field controller interface	Power and SA bus interface between WRZ-7860-0 Receiver and VMA16 Series Controller or FEC
Supply voltage	Nominal 15 VDC through the SA bus, 6.7 to 16.5 VDC required
Current consumption	10 mA maximum
Addressing	DIP switches, field-adjustable for up to 4,096 unique RF addresses
Ambient limits	Operating: 32°F to 122°F (0°C to 50°C), 5% RH to 95% RH, noncondensing Storage: -40°F to 160°F (-40°C to 71°C), 5% RH to 90% RH, noncondensing
RF band	Direct-sequence, spread-spectrum, 2.4 GHz ISM bands
Transmission power	10 mW maximum
Transmission range	150 ft (45 m) maximum indoor line-of-sight 100 ft (30 m) practical average indoor
Receiver outputs	One RJ-12 port for SA communication bus output, sensed zone temperature and humidity, temperature setpoint, and occupancy override data
Temperature sensor accuracy	1.0°F (0.6°C) over the range of 55°F to 85°F (13°C to 29°C); 1.5°F (0.9°C) over the range of 32°F to 55°F (0°C to 13°C) and 85°F to 110°F (29°C to 43°C)
Temperature sensor type	Internal 10k ohm Negative Temperature Coefficient (NTC) thermistor

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Table 3: WRZ-7860-0 Receiver for One-to-One Wireless Room Sensing Systems technical specifications

Specification		Description
Humidity measurement range		Full range 0% RH to 100% RH, calibrated range 10% RH to 90% RH at 74°F (23°C)
Humidity sensor accuracy		±3% RH across the range of 20% RH to 80% RH, ±6% RH across the ranges of 10% RH to 20% RH and 80% RH to 90% RH within the temperature range of 55°F to 85°F (13°C to 29°C)
Humidity sensor type		Planar capacitive polymer sensor
Materials		NEMA 1 white plastic housing; UL94-5VB and V-0 plenum flammability rated
Compliance	United States	Transmission complies with FCC Part 15.247 regulations for low power unlicensed transmitters. Transmitter FCC identification: TBF-MATRIXL or OEJ-WRZRADIO.
	Canada	Industry Canada IC:5969A-MATRIXL or 279A-WRZRADIO
CE	Europe	CE Mark – Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the RED, EMC, LVD, and RoHS Directives.
	Australia and New Zealand	Australia/NZ emissions compliant. Regulatory compliance mark (RCM).
ANATEL	Brasil	Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados. ANATEL: 05194-22-06174.
NOM UL	México	La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada. IFT, Número: RCPJOWR22-4336.
Shipping weight		0.2 lb (0.09 kg)

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products.

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

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Software terms

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Patents

Patents: https://jcipat.com

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Contact information

Contact your local Johnson Controls representative: www.johnsoncontrols.com/locations
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