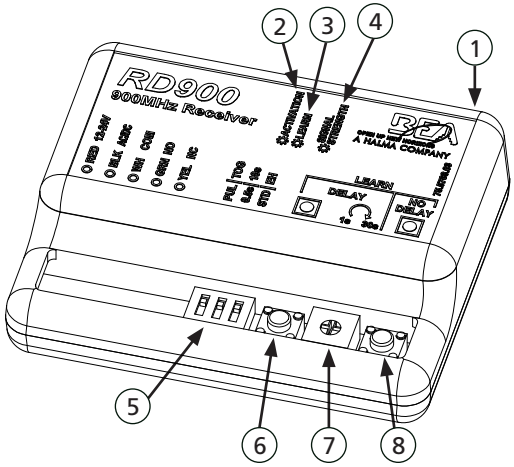
# 900 MHZ FAMILY

900 MHz Wireless
Transmitters & Receivers
(US version)

*Visit website for available languages of this document.*

## DESCRIPTION

RECEIVER




1. Antenna
2. Blue LED (Activation)
3. Red LED (Learn)
4. Tri-color LED (signal strength)
5. DIP switches
6. Delay Learn button
7. Delay Learn potentiometer
8. No-Delay Learn button

TRANSMITTERS

STANDARD SERIES:


*10TD900HH1*


*10TD900HH2*


*10TD900HH3*


*10TD900HH4*

INDUSTRIAL SERIES (NEMA 4):


*10TD900INDHH1*


*10TD900INDHH2*

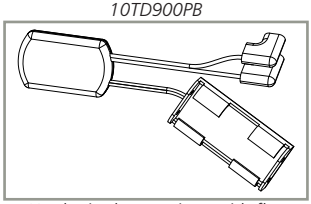

*10TD900INDHH3*


*10TD900INDHH4*

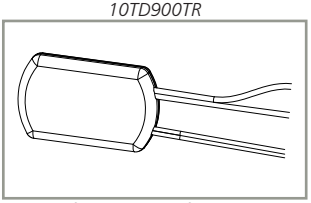
UNIVERSAL:


*10TD900HH1U*

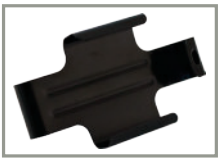
*10TD900PB*


*Hard-wired transmitter with flag connectors*

*10TD900TR*


*Touchless retrofit transmitter for touch-to-touchless plate retrofit applications*

## ACCESSORIES



*Belt-clip accessory for hand-held transmitters (Industrial series)*

*10BELTCLIP*

## *READ BEFORE BEGINNING INSTALLATION/PROGRAMMING/SET-UP*

**CAUTION**

**This wireless receiver is not intended to be used DIRECTLY with Maglocks or Electric Strikes due to possible damage caused by inductive load kickback.**

**This wireless receiver should instead be used to trigger a Logic Module (e.g. Br3) or Isolation Relay which then triggers the Maglock or Electric Strike.**

- ❑ Shut off all power going to the work area before attempting any wiring procedures.
- ❑ Maintain a clean and safe environment when working in public areas.
- ❑ Part 15.231 Compliance: Do not operate transmitter (i.e. do not hold button down) for longer than 5 seconds.
- ❑ Constantly be aware of pedestrian traffic around the area.
- ❑ Always stop pedestrian traffic through the doorway when performing tests that may result in unexpected reactions by the door.
- ❑ *ESD (electrostatic discharge)*: Circuit boards are vulnerable to damage by electrostatic discharge. Before handling any board, ensure you dissipate your body's ESD charge.
- ❑ Always check placement of components before powering up to ensure that moving parts will not catch any wires and cause damage to equipment.
- ❑ Ensure compliance with all applicable safety standards (i.e. ANSI A156.10/19) upon completion of installation.
- ❑ DO NOT attempt any internal repair of the components. All repairs and/or component replacements must be performed by BEA, Inc. Unauthorized disassembly or repair:
  1. May jeopardize personal safety and may expose one to the risk of electrical shock.
  2. May adversely affect the safe and reliable performance of the product resulting in a voided warranty.

# WIRING

## RECEIVER

| | POWER | | RELAY CONTACTS | | |
|---|---|---|---|---|---|
| LABEL | 12 – 24 | 12 – 24 | COM | NO | NC |
| WIRE COLOR | Red (+) | Black (-) | white | green | yellow |
| TERMINAL | 1 | 2 | 3 | 4 | 5 |
| DESCRIPTION | Control or Transformer power | | Control Common | Control Activation | Typically not used |

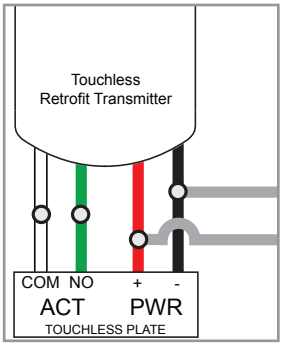
## TOUCHLESS RETROFIT TRANSMITTER

*In most applications for existing hard-wired touch push plates, only two (2) wires are installed which run within the wall from the push plate to the door control for activation.*

*The 900 MHz Touchless Retrofit Transmitter allows an existing, hard-wired, touch, push plate to be retrofitted with a new touchless plate that requires four (4) wires (2 wires for power and 2 wires for activation) without running additional wires.*

*This is achieved by use of a powered wireless transmitter and wireless receiver.*

1. Remove existing touch push plate and disconnect the two (2) existing in-wall wires from the push plate and door control activation.
2. Connect the green and white wires to the new touchless plate activation output (see image, right).
3. Parallel the red and black wires with the two (2) existing in-wall wires and connect them to the new touchless plate power input (see image below).
4. Mount new touchless plate.
5. Connect the two (2) existing in-wall wires to the power source in the door control header.
6. Install the 900 MHz wireless receiver in the header (sold separately).



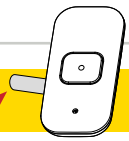
# PROGRAMMING

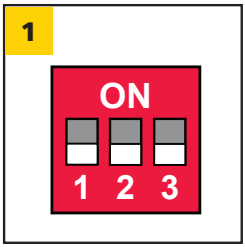
## SET DIP SWITCHES

| DIP SWITCH #1 | | |
|---|---|---|
| OFF | Pulse Relay | Pressing transmitter activates and holds relay according to DIP 2 and 3. |
| ON | Toggle Relay | Pressing transmitter once activates and holds relay indefinitely. Pressing transmitter again deactivates relay immediately (no hold). |
| **DIP SWITCH #2 (Pulse only)** | | |
| OFF | 0.5 sec Hold Time | Relay remains active 0.5 seconds after transmitter is pressed (standard hold) or released (extended hold). |
| ON | 10 sec Hold Time | Relay remains active 10 seconds after transmitter is pressed (standard hold) or released (extended hold). |
| **DIP SWITCH #3** | | |
| OFF | standard hold | Relay acts according to DIP 1 and 2 (does not matter if transmitter is pressed/released or pressed/held). |
| ON | extended hold | Relay remains active as long as transmitter is pressed/held; once released, relay acts according to DIP 1 and 2. |

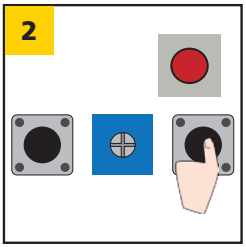
## HAND-HELD CONFIGURATION

***You must remove the plastic pull-tab from the transmitter to allow battery connection.***

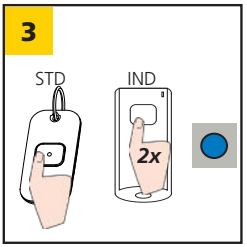





Set DIP switches as desired.




Press and release desired learn button (red LED on receiver will illuminate)[1].

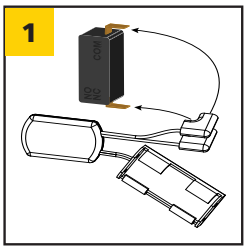



Press transmitter TWICE (blue LED on receiver will illuminate).

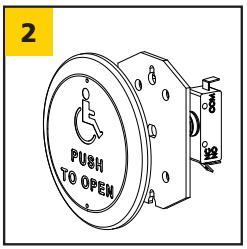
**NOTES:**

1. If "Learnw/Delay" button is used, adjust potentiometer (1 – 30 seconds).

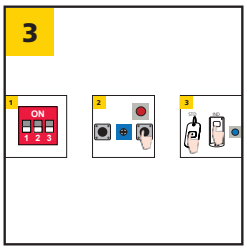
## PUSH PLATE CONFIGURATION (STANDARD TRANSMITTERS ONLY)




Connect transmitter[1] to push plate (NO and COM) and insert into box.




Install push plate.




Follow steps 1-3 in Hand-Held Configuration.

**NOTES:**

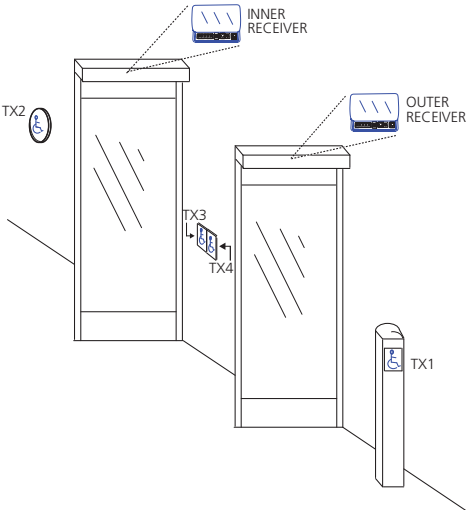
1. 10TD900PB required for push plates.

# PROGRAMMING (cont.)

## VESTIBULE CONFIGURATION (STANDARD TRANSMITTERS ONLY)

Program each receiver to the appropriate transmitters according to the chart and graphic below.

| RECEIVER | TRANSMITTER | LEARN[1] |
|---|---|---|
| Outer | outer (1) | No Delay |
| | inner (2) | Delay |
| | vestibule (4) | No Delay |
| Inner | outer (1) | Delay |
| | inner (2) | No Delay |
| | vestibule (3) | No Delay |




## SIGNAL STRENGTH INDICATOR

Pressing and holding transmitter button (3 seconds for standard, 5 seconds for industrial) activates signal strength tri-color LED on receiver.

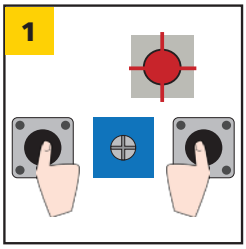
**Green** = strong signal

**Red** = weak signal

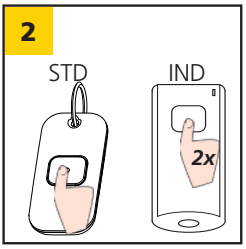
**Yellow** = medium signal

# UN-PROGRAMMING

## SINGLE TRANSMITTERS

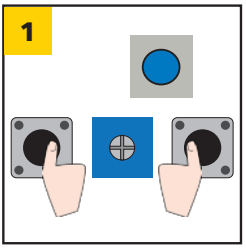



Press BOTH learn buttons until red LED flashes once (~2 s).




Press transmiter TWICE within 10 seconds.

## ALL TRANSMITTERS



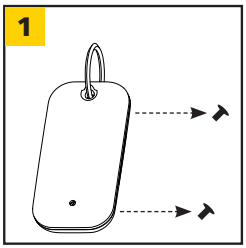

Press BOTH learn buttons until blue LED illuminates (~10 s).

# BATTERY REPLACEMENT

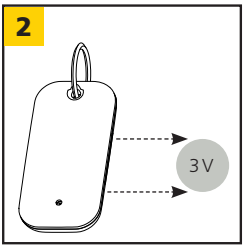
**LOW BATTERY INDICATOR:**
Low battery is indicated (after pressing button) by 3 transmitter LED blinks.

All transmitters must ONLY be powered with provided batteries or equivalent.

## STANDARD TRANSMITTER (TD900HHx)

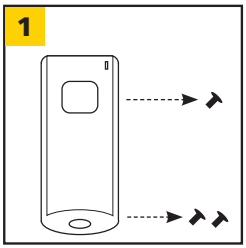



Remove back screws (2) and disassemble.

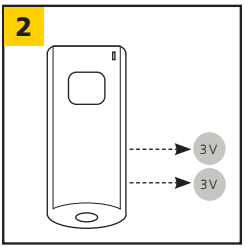



Replace 3-volt (CR2032) battery[1], observing polarity, and reassemble.

## INDUSTRIAL TRANSMITTER (TD900INDHHx)

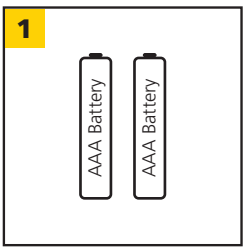



Remove back screws (3) and disassemble.




Replace two 3-volt (CR2032) batteries[1], observing polarity, and reassemble.

## PUSH PLATE (TD900PB)




Replace 2 AAA batteries observing polarity.

# TROUBLESHOOTING

| | | |
|---|---|---|
| Weak signal | Receiver antenna wire poorly positioned | Position antenna outside of door header. |
| ***STD TRANSMITTERS ONLY:*** Red LED on receiver is flickering; unable to program | Stuck push plate or faulty transmitter | Disconnect each push plate until LED goes out. |
| | Faulty transmitter | Remove each transmitter battery until LED goes out. Replace faulty transmitter. |
| ***RETROFIT TRANSMITTERS ONLY:*** No activation | Power wires not connected | Verify power connect at transmitter, touchless plate, and power source. |
| | Activation wires not connected | Verify activation connection at transmitter and door control. |
| | Receiver not programmed | Set up transmitter. |
| ***RETROFIT TRANSMITTERS ONLY:*** Constant activation | Something is moving in front of the touchless plate | Clear the area around the plate. |
| | Transmitter connected to NC of touchless sensor | Connect to NO. |
| | Receiver and/or touchless sensor set to Toggle Mode | Set receiver and/or touchless sensor to Pulse Mode. |

Can't find your answer? Visit www.BEAsensors.com or scan QR code for Frequently Asked Questions!

## TECHNICAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| Frequency: | 908 – 918 MHz | | | |
| Radio Control Type: | Digital | | | |
| Emitted Radio Power: | -25 dBm (TX) | | | |
| Power Consumption: | STANDARD:<br>30mA (TX)<br>40mA (RX) | INDUSTRIAL:<br>13mA (TX)<br>40mA (RX) | RETROFIT:<br>22 mA | UNIVERSAL:<br>30mA |
| Input Voltage: | 12 – 24 VAC / VDC | | | |
| Contact Rating: | 1.0 A @ 30 VDC<br>0.3 A @ 60 VDC<br>0.5 A @ 125 VAC | | | |
| Operating Temperature: | 14 – 131 °F (-10 – 55 °C) | | | |
| Transmitter capacity (per receiver):<br>Programmable (standard):<br>Universal: | <br>75<br>unlimited | | | |
| LEDs: | Receivers:<br>Red (Receiver Learn)*<br>Blue (Relay Activation)<br>Tri-color (signal strengths) | Transmitters:<br>Red = Transmitting<br>Red blinking = low battery | | |
| Dimensions:<br>Transmitter:<br><br><br><br>Receiver: | <br>Standard Hand-Held: 2.75" (W) x 1.38" (D) x 0.56" (H)<br>Standard Push-Plate Transmitter: 1.75" (W) x 1.0" (D) x 0.3" (H)<br>Industrial Hand-Held: 1.5" (W) x 3.0" (D) x 0.5" (H)<br>Retrofit: 1.72" (W) x 1.06" (D) x 0.32" (H)<br>RD900: 2.5" (W) x 2.0" (D) x 0.75" (H) | | | |
| Norm Conformance: | All: FCC, IC<br>Industrial Hand-Held: IP65 / NEMA 4 | | | |

*Specifications are subject to change without prior notice.*
*All values measured in specific conditions.*

## FCC/IC COMPLIANCE

"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 BEA Incorporated could void the user's authority to operate the equipment.

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.

This device complies with Industry Canada licence-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.

| | | | |
|---|---|---|---|
| *STANDARD:* | FCC ID: 2ABWS-10RD900 | IC: 4680A-10RD900 | MODEL: 10RD900 |
| | FCC ID: 2ABWS-10TD9001HH4 | IC: 4680A-10TD9001HH4 | MODEL: 10TD900INDHH1 |
| | FCC ID: 2ABWS-10TD9001HH4 | IC: 4680A-10TD9001HH4 | MODEL: 10TD900INDHH2 |
| | FCC ID: 2ABWS-10TD9001HH4 | IC: 4680A-10TD9001HH4 | MODEL: 10TD900INDHH3 |
| | FCC ID: 2ABWS-10TD9001HH4 | IC: 4680A-10TD9001HH4 | MODEL: 10TD900INDHH4 |
| *INDUSTRIAL:* | FCC ID: 2ABWS-10RD900 | IC: 4680A-10RD900 | MODEL: 10RD900 |
| | FCC ID: 2ABWS-10TD900PB | IC: 4680A-10TD900PB | MODEL: 10TD900PB |
| | FCC ID: 2ABWS-10TD900HH4 | IC: 4680A-10TD900HH4 | MODEL: 10TD900HH1 |
| | FCC ID: 2ABWS-10TD900HH4 | IC: 4680A-10TD900HH4 | MODEL: 10TD900HH2 |
| | FCC ID: 2ABWS-10TD900HH4 | IC: 4680A-10TD900HH4 | MODEL: 10TD900HH3 |
| | FCC ID: 2ABWS-10TD900HH4 | IC: 4680A-10TD900HH4 | MODEL: 10TD900HH4 |
| *RETROFIT:* | FCC ID: 2ABWS-10TD900TR | IC: 4680A-10TD900TR | MODEL: 10TD900TR |
| *UNIVERSAL:* | FCC ID: 2ABWS-10TD900HH1U | IC: 4680A-10TD900HH1U | MODEL: 10TD900HH1U |

## BEA, INC. INSTALLATION/SERVICE COMPLIANCE EXPECTATIONS

BEA, Inc., the sensor manufacturer, cannot be held responsible for incorrect installations or incorrect adjustments of the sensor/device; therefore, BEA, Inc. does not guarantee any use of the sensor/device outside of its intended purpose.

BEA, Inc. strongly recommends that installation and service technicians be AAADM-certified for pedestrian doors, IDA-certified for doors/gates, and factory-trained for the type of door/gate system.

Installers and service personnel are responsible for executing a risk assessment following each installation/service performed, ensuring that the sensor/device system performance is compliant with local, national, and international regulations, codes, and standards.

Once installation or service work is complete, a safety inspection of the door/gate shall be performed per the door/gate manufacturer's recommendations and/or per AAADM/ANSI/DASMA guidelines (where applicable) for best industry practices. Safety inspections must be performed during each service call – examples of these safety inspections can be found on an AAADM safety information label (e.g. ANSI/DASMA 102, ANSI/DASMA 107, UL294, UL325, and International Building Code).

Verify that all appropriate industry signage, warning labels, and placards are in place.



Tech Support & Customer Service: 1-800-523-2462
General Tech Questions: techservices-us@BEAsensors.com | Tech Docs: www.BEAsensors.com