

917MHz HL-Series RF Receivers

Installation Manual

- Flexible operating voltage: 10~24 VAC, 9~48 VDC
- Independently programmable channels
- Compatible with all SECO-LARM HL-Series transmitters of the same frequency
- 5 Output modes per channel
- RF Signal strength / site survey test mode



HL-951R1-SQ shown

One- and Two-Channel Receivers:

Model	Channels	Output	Frequency*	Operating Voltage
HL-951R1-SQ	1	1x 10A Form "C" relay output	917MHz	10~24 VAC, 9~48 VDC
HL-951R2-SQ	2	2x 10A Form "C" relay outputs	917MHz	10~24 VAC, 9~48 VDC

*868.35MHz C € versions also available

Compatible Transmitters:

- HL-951T1-SQ** 1-Button pocket-sized pendant, 917MHz*, CR-2032 coin-type battery
- HL-951T2-SQ** 2-Button pocket-sized pendant, 917MHz*, CR-2032 coin-type battery



HL-951T1-SQ shown

*868.35MHz C € versions also available

Introduction:

The ENFORCER 917MHz HL-951 series RF transmitters and receivers use digital modulation for improved immunity to interference, better signal penetration in environments with heavy obstructions, and significantly longer range of up to 1,800ft (550m) line of sight. The transmitter's ultra-low power consumption gives you longer battery life with easy to obtain coin-type batteries (CR-2032).

NOTE: Operating range will vary greatly depending on the installation and operating environment.

Installation Notes:

Mount the receiver out of sight in a location where it is not exposed to weather or moisture. For optimal range, mount as high as possible and away from other electronic devices that might interfere with the signal

Entering Programming Mode:

1. Press the selector button for 3 seconds or more. The channel's LED will flash L1, indicating channel 1. Press the selector to toggle between channels 1 and 2.
2. After 2 seconds, the LED will slow flash with the display showing the number of codes already in storage and enter programming mode.

NOTE: The LED will flash a maximum of 15 seconds. If the selector button or no transmitter button is pressed during this time, the receiver will exit programming mode, and the LED will turn off.

Code Learning a New Transmitter Button:

1. Enter programming mode and select the desired channel as described on pg. 1.
2. While the LED is flashing, press the desired transmitter button to be learned one time. The three horizontal bars of the receiver's LED indicator will flash two times to indicate the transmitter button has been successfully learned and will automatically exit learning mode. To learn further codes, re-enter programming mode and repeat.

NOTES:

- Do not press the selection button again after entering programming mode as this will take you to output mode programming.
- The indicator LED will flash a maximum of 15 seconds. If no transmitter button is pressed during this time, the receiver will exit code programming mode, and the LED will turn off.
- If the code has already been learned, the indicator LED will slowly flash two dashes. The code will not be learned a second time.
- One channel can learn the codes of a maximum of 99 transmitter buttons. If you attempt to learn an additional transmitter code, the earliest code learned will be deleted and the new code will be learned.

Clear Channel Memory:

1. Enter programming mode and select the desired channel to clear as described on pg. 1.
2. While the LED is flashing the correct channel, press the selector button again for at least 3 seconds or until the channel indicator LED flashes 2 times. This will clear all codes for that channel.
3. To clear codes from the other channel, enter programming mode for the other channel and repeat the above steps.

Display Channel Memory:

1. To see how many codes have been learned by a channel, enter programming mode and select the desired channel as described on pg. 1.
2. The LED will flash for 15 seconds showing number of codes stored in that channel's memory.

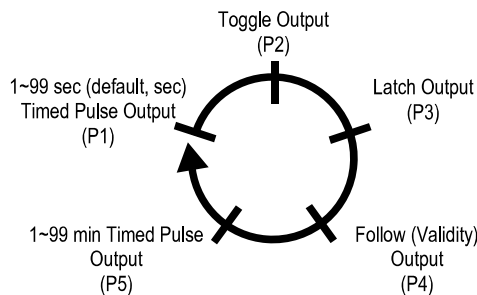
Programming Channel Relay Output Mode:

Each channel relay can be programmed to one of five output modes. (**HL-951R2-SQ only**: Each channel can be independently programmed to operate in a different output mode, depending on the user's application.) The five modes are:

1. **P1 – 1~99 Second Timed Pulse Output** (default, 1 second) – When the transmitter button is pressed, the relay will turn ON for the programmed number of seconds.
2. **P2 – Toggle Output** – Works much like a toggle switch to turn a device ON & OFF alternately. Press the transmitter button once, and the relay turns ON. Press the transmitter button again, and the relay turns OFF.
3. **P3 – Latch Output** – Press the transmitter button once, and the relay turns ON and stays ON. The channel relay will remain ON regardless of whether a compatible transmitter button is pressed again or not. To turn the relay OFF, press the selector switch on the receiver once to reset.
4. **P4 – Follow (Validity) Output** – The relay status follows the transmitter button status and will remain active for as long as the transmitter button is pressed.
NOTE: Due to possible interference or drops in transmitter battery power while the transmitter button is continuously pressed (even for short periods of time), the receiver may lose the transmitter's signal and turn the relay OFF.
5. **P5 – 1~99 Minute Timed Pulse Output** – When the transmitter button is pressed, the relay will turn ON for the number of minutes preset.

Selecting the relay output mode:

1. Enter programming mode and select the desired channel as described on pg. 1.
2. Press the selection button again. The LED will display the current output mode (default P1).
3. To change a channel's output mode, press the selector button repeatedly to scroll through the 5 output modes until the desired mode appears. Each press moves to the next mode in the sequence as shown in the diagram to the right.
4. In modes P1 and P5, long press the selector button to choose the number of seconds or minutes, respectively.
5. When complete, wait 15 seconds for the receiver to automatically exit programming mode.



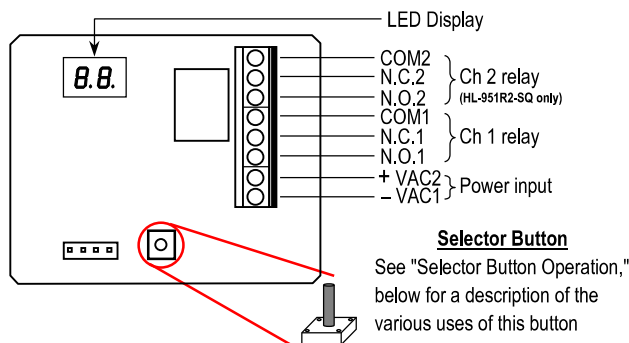
NOTE: For a diagram of the PC board, including the location of the function switch, please see *Overview*, pg. 3.

Overview:

The LED indicator displays:

- General status – the left dot will flash every 3~5 when operating
- RF signal received – the right dot will light when an RF signal is being received
- TX Code enrollment and deletion
- Display number of codes programmed
- Output mode programming

See "LED Indicator" below for details.



HL-951R2-SQ PC board shown. Remove the front cover of the receiver to access the function switch and terminal block.

Selector Button Operation:

RF Signal strength / site survey test mode	Press briefly to enter the signal strength / site survey test mode. Pressing one of the transmitter channel buttons will show its relative signal strength (0~99, where 99 is the strongest signal) at that location. Test at various locations and conditions to find the optimal receiver placement. The relay will not operate in this mode, so ensure that you press again to leave this test mode when finished.
Enter programming mode	Press and hold the selector button for three seconds or more to enter programming mode.
Select channel for programming	Entering programming mode automatically takes you to channel 1. Pressing the button again will toggle between channels 1 and 2.
Learn code	After entering programming mode for the desired channel, the receiver is ready to learn a code, so the selector button is not used again. To learn a code press the desired button on the transmitter.
Delete all codes from a channel	After entering programming mode for the desired channel, wait until the LED begins to flash a number (the number of codes learned for that channel), then press and hold the selector button for at least three seconds or until the LED flashes 3 stripes.
Memory display	After entering programming mode for the desired channel, after 2 seconds the LED will begin to flash a number indicating the number of codes already stored for that channel.
Programming output mode	After entering programming mode for the desired channel, press the selector button again. The display will show the current mode (P1~P5). To change the mode, press again repeatedly until the display shows the desired mode.
Programming timed pulse duration	After following the above steps to program the output mode, when in mode P1 or P5, long press the selector button to change the number of seconds or minutes, respectively.

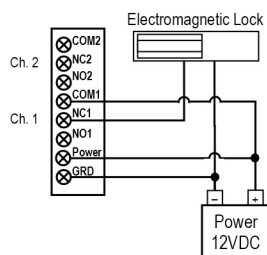
LED Indicator:

	Flashing every 3~5 seconds – receiver powered on and in operation
	A valid RF signal has been received
	Flashing – number shows current channel to be programmed
	Flash 2 times – new code has been learned or all codes for that channel have been deleted
	Slow flashing – in programming mode, shows that the attempted code has previously been learned Flash 2 times – exit programming mode
	Flashing – in programming mode, shows the number of codes (0~99) already learned for the selected channel
	Steady – signal strength / site survey test mode. Display number will change to indicate relative signal strength (0~99) when a transmitter button is pressed.
	In output programming mode – number indicates the current mode
	In output programming mode when either P1 or P5 has been selected – number indicates the output time in seconds or minutes, respectively

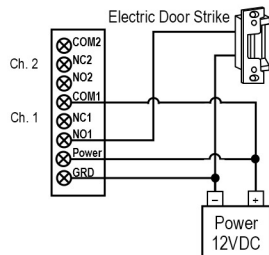
ENFORCER One- and Two-Channel 917MHz RF Receivers

Sample Applications:

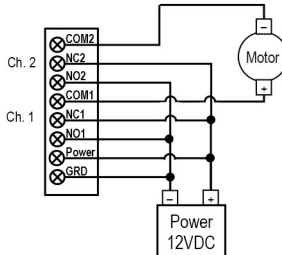
Typical N.C. Application



Typical N.O. Application



Forward/Reverse, 2 Relays



Specifications:

Model		HL-951R1-SQ	HL-951R2-SQ
Operating frequency		917MHz*	
Memory capacity		99 transmitter button codes per channel	
Operating voltage		10~24 VAC, 9~48 VDC	
Operating current	Standby	8mA@12VDC / 5mA@24VDC / 3mA@48VDC (typical)	
	Active	100mA@12VDC / 50mA@24VDC / 25mA@48VDC per channel	
Relay Output	Type	Independent, sequence, access control	
	Modes	1~99 sec momentary (default, 1s), 1~99 min momentary, toggle, latch, follow (validity)	
Relay contacts	Number	1	2
	Rating	Form C 10A@14VDC	
Digital Display		2-Digit, 7-segment LED	
Connectors		Screw terminals, +, -, with NO/NC/COM per relay	
Operating temperature		-40°~167° F (-40°~75° C)	
Dimensions		3 ¹⁵ / ₁₆ "x2 ¹ / ₂ "x1 ³ / ₁₆ " (100x63x30 mm)	

*868.35MHz  versions also available

California Proposition 65 Warning: These products may contain chemicals which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

FCC COMPLIANCE STATEMENT

FCC ID: K4E951T4

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 UNDESIRABLE OPERATION.

Notice: The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

IMPORTANT NOTE: To comply with the FCC RF exposure compliance requirements, no change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user's authority to operate the device.

WARRANTY: This SECO-LARM product is warranted against defects in material and workmanship while used in normal service for one (1) year from the date of sale to the original customer. SECO-LARM's obligation is limited to the repair or replacement of any defective part if the unit is returned, transportation prepaid, to SECO-LARM. This Warranty is void if damage is caused by or attributed to acts of God, physical or electrical misuse or abuse, neglect, repair or alteration, improper or abnormal usage, or faulty installation, or if for any other reason SECO-LARM determines that such equipment is not operating properly as a result of causes other than defects in material and workmanship. The sole obligation of SECO-LARM and the purchaser's exclusive remedy, shall be limited to the replacement or repair only, at SECO-LARM's option. In no event shall SECO-LARM be liable for any special, collateral, incidental, or consequential personal or property damage of any kind to the purchaser or anyone else.

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