
Installation and Operating Instructions

Optex Morse Inc.
1845 W. 205th St.
Torrance, CA 90501
310-533-1500
800-423-5669
800-877-6656

RF-8000

Slave Radio Transmitter

✓ Features List

- > 8 Channel slave radio transmitter
- > 4 digit account number & 2 digit report code (4 x 2)
- > Reporting by zone, low voltage report and restore codes
- > Programmable test feature
- > Transmission format - Varitech FSK 4-2
- > EEPROM storage

☐ Introduction

All major features of the RF-8000 are field programmable to fit the needs of most alarm installations. Memory is EEPROM for fast, easy programming with the RF-GKP hand held programmer that is ordered separately.

These units can be adapted to be used in conjunction with most control panels that supply a voltage trigger output with a range of ground to 20 volts DC. The RF-8000 has eight (8) inputs available, but the number of signals that may be transmitted from the RF-8000 is dependent upon the number of outputs supplied from your control panel. Since the RF-8000 is a slave type device, all inputs function as 24 hour type devices that may be programmed to transmit any two (2) digit reporting code.

↪ Specifications ↩

RF Output Signal Strength	2 watts @ 13.2 Vdc
Operating Voltage	10.2 - 14.0 Vdc
Current (Standby)	20 mA
Current (Transmitting)	450 mA to 550 mA
Voltage Range (Positive trigger)	3.0 - 20.0 Vdc (0.0 - 2.0 Vdc = restore)
Voltage Range (Negative trigger)	0 - 2.0 Vdc (3.0 - 20.0 Vdc = restore)
Zone Input Trigger Response Time	600 mS
Low Voltage Trip/Restore	Trip = 10.9 Vdc Restore = 11.0 Vdc
Low Voltage Trip/Restore Response Time	25 Seconds

🔧 Installation Tips 🛠️

Care must be taken when deciding the location on the premises to mount the transmitter. Optex Morse Inc. **highly** recommends that the transmitter be tested in the desired location before permanently mounting the unit.

The RF-8000 is designed to be mounted in almost any manner. However, the main concern should be given to the antenna location. Since the antenna is most critical in an RF installation, the following points should be considered:

- 1) Height of antenna.
- 2) Type of building construction.
- 3) Room for the antenna to extend vertically, with no obstruction.
- 4) Antenna must stand vertically and not to the side.
- 5) Read and understand antenna cutting chart.
- 6) Never mount antenna next to metal surface or metal cabinet.
- 7) If high gain antenna is used, keep cable as short as possible.
- 8) Test another mounting location before deciding to use a high gain antenna.

Should there be a need to remote the antenna from the transmitter, use the following co-ax cable and co-ax connectors:

eight feet or less	-	use RG-58
eight to twenty-five feet	-	use RG-8
transmitter	-	will require PL-259 (male ended)
antenna	-	will require SO-239 (female ended)

The modulation has been preset at the factory and should not be changed in the field without the properly calibrated test equipment. If re-calibration in the field is necessary, contact Optex Morse Inc. technical support. There are no user serviceable parts inside the radio transmitter and serious damage and a voided warranty may result if the transmitter case is removed.

The following equipment is necessary to properly test a radio transmitter:

- 1) Hand held scanner.
- 2) RF watt meter - Bird 42 or equivalent with 50 ohm dummy load.
- 3) Volt meter.
- 4) Linesmen test set.
- 5) Hand held frequency counter.

Contact Optex Morse Inc. technical support for more information on the above listed test equipment.

Memory Location Descriptions

There are twenty six (26) memory locations that will need to be programmed with a numeric and/or hexadecimal value with the exception of the locations marked not used. The following is a description of all twenty six memory locations. All of the locations will require a two digit entry.

<u>Location</u>	<u>Description</u>
00	This value will determine the <u>first two digits of the subscriber account code</u> . The first digit (left) will be the thousands digit and the second digit (right) will be the hundreds digit. Value : 00 - FF
01	This value will determine the last <u>two digits of the subscriber account code</u> . The first digit (left) will be the tens digit and the second digit will be the units digit. Value : 00 - FF
02 thru 16 (even numbers)	These are the <u>alarm report codes</u> that will be transmitted to the central station when that zone detects an alarm activation. Value : 00 - FE (FF = disabled)
03 thru 17 (odd numbers)	These are the <u>alarm restore report codes</u> that will be transmitted to the central station after the circuit that activated an alarm is restored to a normal condition. Value : 00 - FE (FF = disabled)
18	This memory location is not used and is reserved for future use.
19	This memory location is not used and is reserved for future use.
20	This <u>low voltage report code</u> that will be transmitted to the central station when the RF-8000 recognizes the power input voltage drop below 10.9 Vdc for approximately 25 seconds. Value : 00 - FE (FF = disabled)
21	This <u>low voltage restore report code</u> that will be transmitted to the central station when the RF-8000 recognizes the input voltage return to above 11.0 Vdc for approximately 25 seconds. Value : 00 - FE (FF = disabled)
22	This is the <u>self test report code</u> that will be transmitted to the central station when the self test time interval has arrived. Value : 00 - FE (FF = disabled)

23

The value entered in this location will determine either the hourly time interval or the daily interval that the test code will be transmitted to the central station. The test code will be sent at the same time unconditionally, regardless if there has been an activation on any of the eight zones. The setting of the time (in hours) that the self code will be transmitted may be selected in location 24.

Value : 01 - 99 hours (00 = disabled)

or

Value : D1 - D9 days (D0 = disabled)

Away + 3 + 1 = D1 (once every day)

Away + 3 + 2 = D2 (once every two days)

Away + 3 + 3 = D3 (once every three days)

Away + 3 + 4 = D4 (once every four days)

Away + 3 + 5 = D5 (once every five days)

Away + 3 + 6 = D6 (once every six days)

Away + 3 + 7 = D7 (once every seven days)

Away + 3 + 8 = D8 (once every eight days)

Away + 3 + 9 = D9 (once every nine days)

24

The value entered in this location can be used to determine the time of day that the self test code will be transmitted. This timing period begins when the programmer is removed or on power up of transmitter. An example, the programmer is removed or power is restored at 1:00pm and a value of three is entered in this location. The self test code would then be transmitted at 4:00pm daily if the time interval (see memory location 23) is set for 24 or D1.

Value : 00 - 99 (00 = no delay)

25

This memory location will determine the number of communication attempts for all reporting functions that the transmitter is programmed to send. If six (6) or greater is entered, the number maximum attempts will be defaulted to five (5).

Value : 01 - 05

26

This memory location will determine how each zone will be activated to create an alarm condition. For a positive voltage trigger (applying 3.0 to 20 vdc), you would fill in each zone location with a zero. For a negative voltage trip (lowering voltage to 2 vdc or less), you would need to add up the value for each zone location and, if necessary, convert that net value to hexadecimal. You may inter-mix positive voltage trips with negative voltage trips by each transmitter, that is to say, certain zones may use a negative voltage trip while other zones are using a positive voltage trip.

To Begin Programming

Connect the RF-GKP keypad to the program cable and then insert the six pin programming connector to the socket labeled J1 on the RF-8000 with power removed from the transmitter. Once the connection has been made, apply power to the transmitter. At this time the green LED on the RF-GKP should be on and the display will read:

00 : XX

(XX = data programmed into the transmitter)

The left two digits represent the memory location and the right two digits will display the program data. All memory used locations will require a two digit entry. These entries may use a numeric, hexadecimal or a combination of both. To program hexadecimal values, use the following chart:

Away + 0 = A

Away + 1 = B

Away + 2 = C

Away + 3 = D

Away + 4 = E

Away + 5 = F

After the desired two digit value has been entered, the **UP-ARROW [↑]** key **must** be pressed to store your selection into the EEPROM and this action will automatically advance to the next numeric memory location. If, after you have entered in your selection and the **UP-ARROW [↑]** has been pressed and you wish to change the entry, you may press either the **[STAY]** key once to move in reverse or press the **POUND [#]** key continuously until the desired memory location is displayed and re-enter the new information followed by the **UP-ARROW [↑]** key. Continue in the same mode as described in the above example until all the memory locations have been programmed with the desired information.

Note: While the RF-GKP is connected to the RF-8000, normal operation of the transmitter will be suspended. If both the test report code and time interval are programmed into the transmitter, this test code will be transmitted to the central station and the timing sequence will commence once the RF-GKP is disconnected.

To View the Contents of the EEPROM

To move forward in the program, press the **POUND [#]** key. Every time the **POUND [#]** key is pressed, the programmer will automatically advance to the next numeric memory location. When location 26 is displayed and the next time the **POUND [#]** key is pressed, the programmer will automatically revert to memory location **00**.

To move in reverse in the program, press the **[STAY]** key. Again, with each press of the **[STAY]** key, this action will move you further in reverse through the program.

Programming Sheet

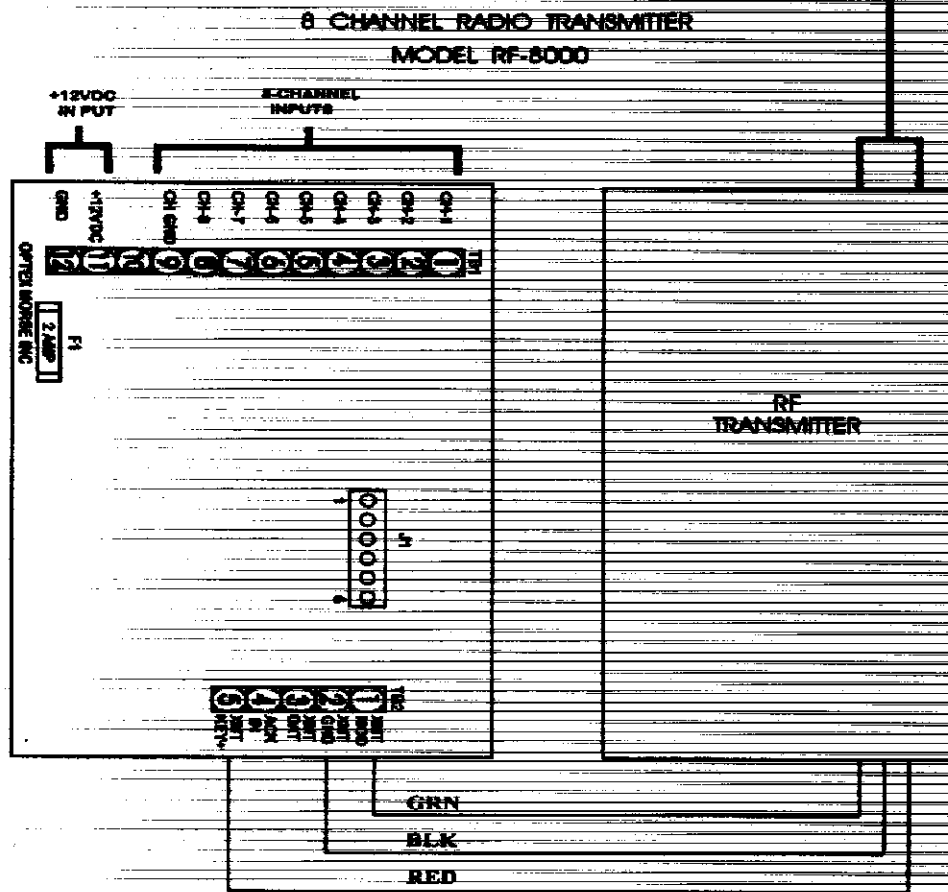
Location	Description	Entry Digit	
		Left	Right
00	Account Number (thousands - hundreds)	[]	[]
01	Account Number (tens - units)	[]	[]
02	Zone 1 Alarm Code*	[]	[]
03	Zone 1 Restore Code*	[]	[]
04	Zone 2 Alarm Code*	[]	[]
05	Zone 2 Restore Code*	[]	[]
06	Zone 3 Alarm Code*	[]	[]
07	Zone 3 Restore Code*	[]	[]
08	Zone 4 Alarm Code*	[]	[]
09	Zone 4 Restore Code*	[]	[]
10	Zone 5 Alarm Code*	[]	[]
11	Zone 5 Restore Code*	[]	[]
12	Zone 6 Alarm Code*	[]	[]
13	Zone 6 Restore Code*	[]	[]
14	Zone 7 Alarm Code*	[]	[]
15	Zone 7 Restore Code*	[]	[]
16	Zone 8 Alarm Code*	[]	[]
17	Zone 8 Restore Code*	[]	[]
18	Not Used - Future Use	[X]	[X]

(Note - * FF programmed disables the reporting capability)

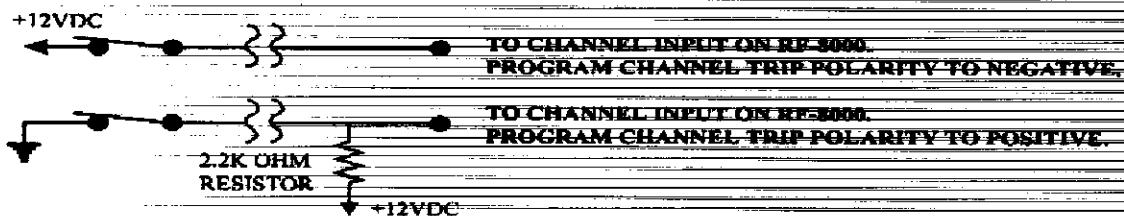
<u>Location</u>	<u>Description</u>	<u>Entry Digit</u>	
		<u>Left</u>	<u>Right</u>
19	Not Used - Future Use	[X]	[X]
20	Low Voltage Report Code*	[]	[]
21	Low Voltage Restore Code*	[]	[]
22	Self Test Code*	[]	[]
23	Test Time Intervals (01 - 99 hours)(00 = disabled) or (D1 - D9 days) (D0 = disabled)	[]	[]
24	Time of Day for Self Test (00 - 99)	[]	[]
25	Number of Radio Attempts Value 01 - 05 (00 = disabled)	[]	[]
26	Channel 1 - 8 Trip Polarity		
Zone 1	Positive trigger add 0 Negative trigger add 1		→
Zone 2	Positive trigger add 0 Negative trigger add 2		→
Zone 3	Positive trigger add 0 Negative trigger add 4		→
Zone 4	Positive trigger add 0 Negative trigger add 8		→
Zone 5	Positive trigger add 0 Negative trigger add 1		
Zone 6	Positive trigger add 0 Negative trigger add 2		
Zone 7	Positive trigger add 0 Negative trigger add 4		
Zone 8	Positive trigger add 0 Negative trigger add 8		
	Total value for memory location 26	[]	[]
		sum of zones 5-8	sum of zones 1-4

(Note - * FF programmed disables the reporting capability)

Wiring Diagram



NORMALLY CLOSED CONTACTS MAY BE USED TO TRIGGER THE RF-8000. MAKE CONNECTIONS AS SHOWN BELOW PAYING CAREFUL ATTENTION TO POLARITY AND PROGRAMMING.



3400-0133 REV. A 3/16/93

Ordering Information

RF-8000	70243	Eight channel slave radio transmitter mounted in cabinet.
RF-1306	7130-1306	Whip style antenna.
RF-1308	7130-1308	Yagi antenna with 8db gain.
RF-GKP	70245	GENESYS Icon style keypad used as a programmer.