

INSTALLATION AND OPERATING INSTRUCTIONS FOR RF-RM1 RADIO MODULE



1845 W. 205th Street,
Torrance, CA 90501-1510

GENERAL INFORMATION AND FEATURES:

- Operates from MDC-16, MDC-8, G-824 or separate power supply.
- Reports all codes in RF and Digital.
- Transmits 4-1 or 4-2 format.
- 4 wire hook up no coaxial cable needed.
- Mounted in a separate cabinet for easy remote installation.
- Easy programming in the MDC-16, MDC-8, and G-824

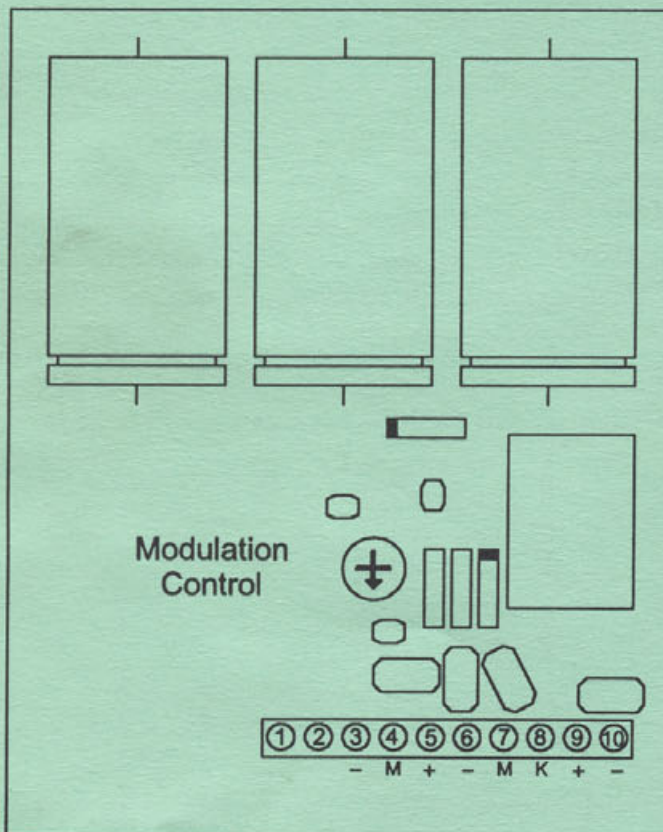


Fig. 1
RM1 Terminal Layout and Location

All point on the 10 position terminal board are not used for connection to the MDC-16.

The description of each is as follows:

1. Not used (future use).
2. Not used (future use).
3. An extra ground (negative) terminal.
4. Audio to transmitter modulation input.
5. +12V switched to transmitter.
6. Negative or -12V ground for transmitter.
7. Audio from Control.
8. Key from Control to turn on transmitter.
9. Continuous 12V DC from Control.
10. Negative or -12V ground from Control.

NOTE: Terminals 1 and Terminal 2 may be used as tie points. Terminal 3 as an extra ground.

Installation:

The RM1 unit is designed to be mounted in almost any manner. However, the main concern should be given to antenna location. Since the antenna is most critical in a RF system, the following points should be considered:

1. Height of antenna.
2. Type of building construction.
3. Room for antenna to extend vertically with no obstructions.
4. A route for cable from the MDC-16, MDC-8, and G-824 to the RM1.
5. Antenna must point up, not to the side.

After a mounting location has been selected and the cable from the MDC-16 has been run, connect RM1 as shown in chart 1 (for MDC-8 see chart 2, for G-824 see chart 3).

CHART 1 MDC-16

RM1 TERMINAL	NOTES	MDC-16 TERMINAL
1,2,3	(future use)	No connection
4	Green on RF Transmitter	No connection
5	Red on RF Transmitter	No connection
6	Black on RF Transmitter	No connection
7	Modulation	68
8	Key	63
9	+12V DC	6
10	- ground	5
No connection	Tie to ground on MDC-16	64 & 67

OPTEX MORSE

16 CHANNEL CONTROL
COMMUNICATOR
MODEL MDC-16C



UNDERWRITER LABORATORIES INC.

LISTED CENTRAL STATION BURGLAR ALARM,
FIRE ALARM AND BURGLARY WARNING
SYSTEM CONTROL UNIT

COMPLIES WITH PART 68: FCC RULES
FCC REGISTRATION NUMBER: AMZ9SM-67968-AL-R
RINGER EQUIVALENC: 0.0B

**CAUTION: INCORRECT CONNECTIONS
TO THE TERMINAL BLOCK
MAY DAMAGE EQUIPMENT**

NOTE: TERMINAL 57-62
CONTRACT RATING
125 VAC, 28 VDC,
5AMP 600VA MAX

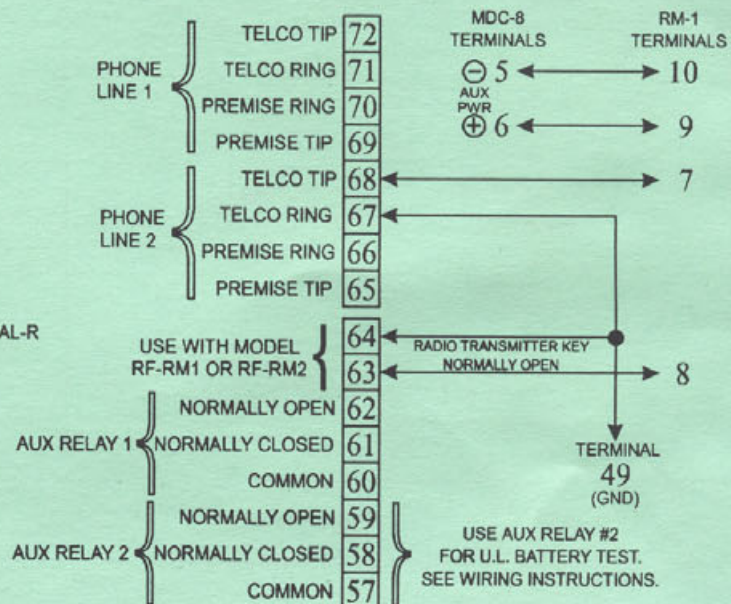


CHART 2 MDC-8

RM1 TERMINAL	NOTES	MDC-8 TERMINAL
1,2,3	(future use)	No connection
4	Green on RF Transmitter	No connection
5	Red on RF Transmitter	No connection
6	Black on RF Transmitter	No connection
7	Modulation	31
8	Key	32
9	+12V DC	3
10	- ground	4

OPTEX MORSE

8 CHANNEL CONTROL
COMMUNICATOR
MODEL MDC-8C



UNDERWRITERS LABORATORIES INC.

LISTED CENTRAL STATION FIRE ALARM
AND HOUSEHOLD FIRE AND BURGLARY
WARNING SYSTEM CONTROL UNIT

APPLICABLE UL STANDARDS

HOUSEHOLD BURGLAR ALARM SYS: UL 1023
HOUSEHOLD FIRE ALARM SYS: UL 985
COMMERCIAL FIRE ALARM SYS: UL 864
Ref: NFPA 71, 72A, 72B, AND 72C. Qualified
as a manual and automatic fire alarm system.
SEE MANUAL FOR ADDITIONAL
REQUIRED EQUIPMENT

**CAUTION: INCORRECT CONNECTIONS
TO THE TERMINAL BLOCK
MAY DAMAGE EQUIPMENT**

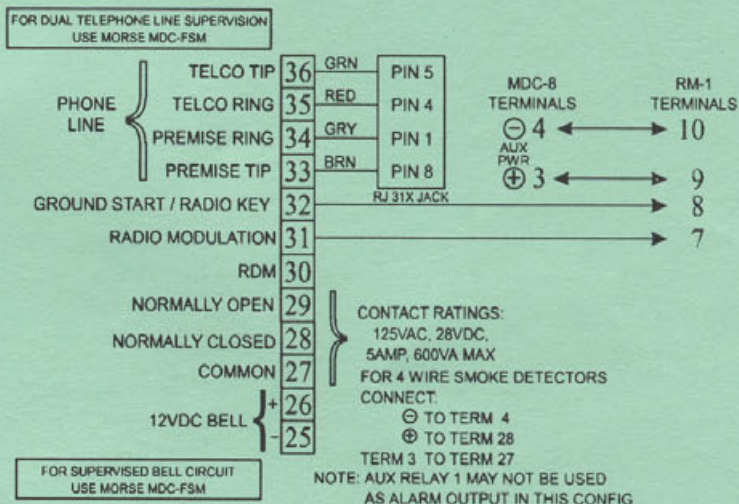
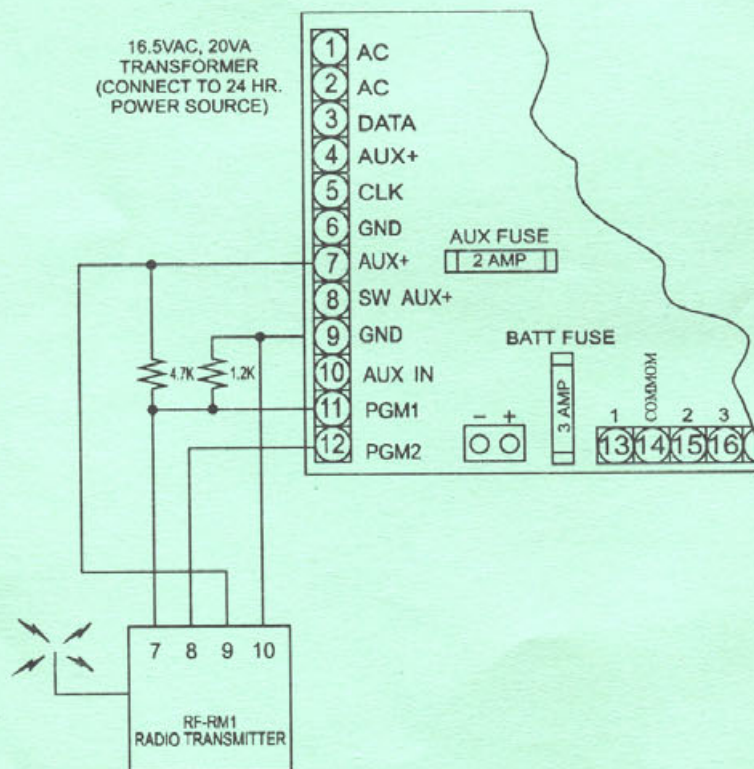


CHART 3 G-824

RM1 TERMINAL	NOTES	G-824 TERMINAL
1,2,3		
4		
5		
6		
7	Modulation	11
8	Key	12
9	+12V DC	7
10	- ground	9

NOTE: A 4.7K resistor must be connected between terminals 7 & 11, and a 1.2K resistor must be connected between terminals 9 & 11 of control panel.



RF Installation Notes:

1. The modulation control is set at the factory and should only be adjusted using proper calibrated test equipment. If this is necessary the maximum modulation level is 4 KC, 3.5 KC is the factory set point. Power output is 2 watts at 12V DC measured with an RF watt meter into a 59 ohm dummy load. Also there are no user serviceable parts inside the RF transmitter unit. Serious damage and voided warranty may result if the transmitter case is removed.
2. For proper operation of any RF system periodic frequency checks should be made. This test requires a frequency counter or service monitor and is very simple test. Equipment operating in the 450-470 band must be within $\pm .0005\%$ of center frequency; for example:

Center frequency of 460.000 MHz must be
within 460.0023 MHz and 459.9977 MHz

NOTE: Before attempting to adjust transmitter frequency call Optex Morse Inc. for assistance.
3. Antenna mounting and matching is most important and here are some tips:
 - Read and understand cutting chart supplied with each antenna.
 - Never mount next to an all metal surface - as this deforms the normal signal pattern.
 - Never try to cut antenna rod to a wattmeter or field strength meter.
 - If a high gain remote antenna is used keep cable as short as possible.
At 450 MHz frequencies a loss of .5 watts will occur with only 25 feet of RG8 cable.
 - All antennas used in telemetry are vertically polarized and must have elements upon and down, not side to side.
4. If a prospective radio site seems to have trouble getting a usable signal to the receiver try another location on site before going to gain remote antenna. Quite often all possible improvement will be lost in antenna cable.
5. The RM1 may be used to remote the RF transmitter from one of Optex's other RF units, i.e. V2460 or V2489. Simply run a 3 conductor cable from the existing V2460 to the new location of the RM1. Connect the cable from the terminals of the V2460 and to the RM1. Before removing the wires on the V2460 note the color and pin number.
6. The RM1 is designed to work with the MDC-16 and MDC-8 however, it may be used as a remote located transmitter for other Optex RF units. No other transmitter is recommended for operation with the MDC-16 or MDC-8. DO NOT mount any RF transmitter inside the MDC-16 or MDC-8 cabinet as unstable operation will result.
7. If the RM1 is powered from an auxiliary power supply the only terminals that change in their use are 9 & 10. Terminal 9 is connected to the +12V DC and terminal 10 ties

to the -12V DC (negative) from the auxiliary power supply. Terminal 10 also must be connected to terminal 5 on the MDC-16 and terminal 4 on the MDC-8. This provides a common ground return for the RM1.

NOTE: For complete programming information refer to, 3440-0171 for the MDC-16CE, 3440-0179 for the MDC-8 and 3440-0241 for the G-824.

ORDERING INFORMATION:

<u>MODEL NO.</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
RF-RM1	7130-1003	RF Adapter
RF-1106	5200-0056	Spare RF Transmitter
RF-1306	7130-1306	UHF Whip Antenna
RF-1308	7130-1308	UHF Yagi Antenna

UNDERWRITERS LABORATORIES COMPLIANCE REQUIREMENT RF-RM1 RADIO MODULE

Model RF-RM1 transmitter is intended for use with models MDC-8C and MDC-16C (DACT) units. This transmitter provides one-way long range RF transmission to the Model RF-1000 Receiver which is used in conjunction with the listed Varitech V-300 DACR Receiver. The V-300 Receiver must include a V-9995 Universal Line Card for RF applications.

This system is suitable for the following applications:

1. Central Station Fire Alarm Services. Only one phone line is required on the MDC-8C and MDC-16C control units when they are used in conjunction with the Model RF-RM1 one way long range RF transmitter and Model RF-1000 one-way RF Receiver. The interconnection between the RF-RM1 and the MDC-8C or MDC-16C must be through conduit. The length of the conduit must be 30 feet or less.
2. Grade A Central Station Burglar Alarm Service, when the one-way long range RF transmission is used in conjunction with one telephone line of the DACT and a listed local bell installed at the protected premise.
3. Grade B Police Connect Service, when the one-way long range RF transmission is used in conjunction with a telephone line of the DACT unit and a listed bell installed at the protected premise.