



SCS 30/60

SENTRY COMMUNICATION SYSTEMS

RECEIVER/MUX

RM-100-RS

COMMUNICATION

Communication with the MPA 30/60 is via an RS485 two conductor shielded AWG #20 cable at 19,200 BAUD. Each RM-100-RS is polled a minimum of four times per second.

General Description and Operation

The RM-100-RS is a standard receiver and MUX combination. The following information applies to all receiver and MUX combinations.

The receiver portion operates as the first of twenty possible receivers and/or auxiliary units associated with the MUX portion of the combination. The RM-100-RS is activated by any of the three SCS transmitters. The receiver portion of the unit converts the 43 KHz ultrasonic signal from the transmitter to an electrical signal and conditions it for transmission to the MUX. Upon receiver activation the red LED on the faceplate will flash and will be visible up to fifty feet. The receiver portion also supports a normally open or normally closed dry contact reed relay with a current capacity rated at 10VA at 500 milliamperes. This relay can be used to control auxiliary equipment. In addition, the receiver supports a mosfet open drain that may be used to operate additional auxiliary equipment.

The MUX portion uses the same microprocessor controlled zone communication format as a MUX-100. It processes a momentary or latched contact closure and transmits that information to any of the master control and annunciator units (MPA-30/60) where the alarm signal is latched. The RM-100-RS also supports a 24 VDC local alarm output which drops low for 1/2 second upon reset from the master control and annunciator. The system communication and power lines are transient and short circuit protected.

PROGRAMMING

Programming is accomplished by setting a six position dipswitch to a separate address for each RM-100-RS using a six position BCD code. Fig. 1 shows a BCD code setting of the dipswitch for zone number 22.

COVERAGE

The range for reliable reception of the signal from any SCS transmitter is not more than 50 feet at any angle up to 70 degrees off-axis. At greater than 70 degrees, range is dependent on the room acoustics but generally decreases to about 30 feet. The range of the RM-100-RS may be adjusted by turning the 20K Ω clockwise to decrease and counterclockwise to increase sensitivity. NOTE: The 20K Ω pot is located on the receiver PC board and is the only field adjustment that may be required or should be made.

ELECTRICAL

The RM-100-RS operates at 24 VDC and requires 15 milliamperes quiescent current. The RM-100-RS is capable of supplying up to 500 milliamperes divided between the output to the MUX receiver and the local alarm output. All connections are made through removable screw clamp terminal blocks which will accept wires from AWG #22-#14. (See Fig. 2)

MECHANICAL

The RM-100-RS is 2.75x2.75x2.5 inches. It will fit into a standard 2 gang extra deep electrical outlet box. The RM-100-RS is the standard receiver and MUX combination. As such, the unit is mounted on a 2 gang stainless steel plate, operates with single frequency transition, supports a normally open relay and has a single transducer. The receiver and MUX combinations can support the various mechanical and electrical combination offered by Sentry Products, Inc. (See Fig. 3). These include multiple head configurations, variations in faceplate materials, weather resistant and high security options, as well as single and dual transmission frequencies, and audio capabilities. When designing a system be sure to sue the exact model designation for the desired receiver and MUX combination.

CONNECTIONS

System connections are by the seven pin terminal block located on the back of the RM-100-RS (See Fig. 2). System wiring includes a shielded twisted pair AWG #22 RS485 line for communication (Belden 8761, West Penn D291, or equivalent) and an AWG #14, #16 or #18 pair for system power.

Local connections are by the six pin terminal block on the back of the RM-100-RS (See Fig. 2). Local connections are only necessary if additional receivers or sensor devices are desired. Up to nineteen additional devices may be added to any receiver and MUX combination. A 2 to 6 conductor wire is necessary for local connections depending upon the additional equipment that is used with the RM-100-RS.

A latched local alarm output is also provided from the two pin terminal block on the back of the RM-100-RS (See Fig. 2).

TROUBLESHOOTING

Three LED's allow local monitoring of the operation of the RM-100-RS. The green LED on indicates proper communication with the master control and annunciation panel. The yellow LED on indicates a fault condition in the local wiring. The red LED comes on when the RM-100-RS is triggered into alarm.

MAINTENANCE

Normally no maintenance is required on the RM-100-RS. In the unlikely event of failure,

please consult the factory. In most cases, the unit can be repaired or replaced within 48 hours of receipt at factory.

ENGINEERING SPECIFICATION

The zone communicator and receiver combination must have the capability to function as a single unit and be mounted in a single 2 gang extra deep electrical outlet box. It must be able to support alarm contact closures of greater than 0.25 seconds. Communication must be via an RS485 two conductor shielded cable at 19,200 BAUD. The unit must have a latched local alarm output of 24 VDC. It must have the ability to reset the local alarm output and the duress devices by command. The dimensions shall not exceed 2.75x2.75x2.5 inches. All connections, both system and local, shall be via pluggable terminal blocks. One of sixty addresses must be selectable. The unit must be able to support up to nineteen other local devices.

In addition, the unit shall have a flashing red alarm LED that is visible up to fifty feet. It shall have a range of not more than fifty feet up to 70 degrees off-axis from any given transducer. It must be available in configurations that allow for cell, room, day-room, corridor, laundry, shower and outdoor areas. It must also have configurations that allow for both single and dual transmission frequencies, latching or momentary receiver alarm and audio monitoring if necessary.