

# DS12R



EN | Installation and Operation Guide  
Self-Contained Control  
Panel



**BOSCH**

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## Contents

|            |  |           |
|------------|--|-----------|
| <b>1.0</b> | <b>Overview</b> .....                    | <b>4</b>  |
| 1.1        | Multi-Tenant System (MTS) Overview.....  | 4         |
| 1.2        | MTS Device Address.....                  | 4         |
| 1.3        | DS12R Overview .....                     | 4         |
| <b>2.0</b> | <b>Installation</b> .....                | <b>6</b>  |
| 2.1        | Mounting the DS12R.....                  | 6         |
| 2.2        | Wiring the DS12R.....                    | 7         |
| 2.2.1.     | System Wiring.....                       | 7         |
| 2.2.2.     | Input Wiring.....                        | 8         |
| 2.2.3.     | Output Wiring.....                       | 9         |
| 2.2.4.     | Wireless Receiver.....                   | 9         |
| <b>3.0</b> | <b>Programming</b> .....                 | <b>10</b> |
| 3.1        | Entering Programming Mode .....          | 10        |
| 3.2        | Changing Programming Values.....         | 10        |
| 3.3        | Exiting Programming Mode .....           | 10        |
| 3.4        | Checking Programmed Data.....            | 10        |
| 3.5        | Programming Wireless Devices.....        | 16        |
| 3.6        | Resetting Default Values .....           | 17        |
| 3.6.1.     | Reset the Master Code .....              | 17        |
| 3.6.2.     | Reset Programming Default Values.....    | 17        |
| 3.7        | Configuring the Working Mode .....       | 17        |
| 3.7.1.     | Configure as a Stand-alone System.....   | 17        |
| 3.7.2.     | Configure for use in an MTS system ..... | 17        |
| <b>4.0</b> | <b>Wireless Maintenance</b> .....        | <b>18</b> |
| 4.1        | Wireless Device Test Mode .....          | 18        |
| 4.2        | Low Battery Trouble.....                 | 18        |
| 4.3        | Supervisory Trouble .....                | 18        |
| <b>5.0</b> | <b>Specifications</b> .....              | <b>18</b> |
| <b>6.0</b> | <b>RS-485 Bus Address</b> .....          | <b>19</b> |

## 1.0 Overview

### 1.1 Multi-Tenant System (MTS) Overview

MTS is a distributed security system for monitoring and controlling a large number of small sites. Examples include apartment and condominium complexes, retail plazas, office buildings, and educational and hospital campuses.

A typical MTS installation consists of the following components:

- **MTSW Security Station Software:** MTSW is an application based on Microsoft® Windows that is installed on a PC and monitored by guard station personnel.
- **MTR Communication Receiver:** The MTR receives and handles alarm events from devices connected to the CAN RS-485 bus. MTR monitors and reports CAN bus status and other system internal events, and interfaces with MTSW to synchronize system data.
- **MTGW CAN RS-485 Bus Gateway:** The MTGW converts data back and forth from an RS-485 format to a Controller Area Network (CAN) bus format. The system supports up to 100 MTGWs on each CAN bus. The MTGW provides three RS-485 loops that support a total of 120 RS-485 devices spread across the three loops.
- **RS-485 Bus Devices:** Refer to *Table 1* for a list of supported RS-485 devices.

| RS-485 Device | Description                          |
|---------------|--------------------------------------|
| DS6R2         | 6-zone self-contained control panel  |
| DS12R         | 12-zone self-contained control panel |
| MT1-1         | Single-zone input device             |
| MT1-2         | Two-zone input device                |
| MT1-8         | 8-zone input device                  |
| MT2-8         | 8-output device                      |
| MT3-1         | Single-zone input/output device      |

Controller Area Network (CAN) wiring requirements are as follows:

- **CAN Bus Interface:** Connect the CAN bus to the MTR Communication Receiver with at least 1.5 mm (16 AWG) shielded twisted-pair wire; maximum length: 2000 m (6500 ft).
- **RS-485 Buses 1-3:** Use at least 1.0 mm (20 AWG) shielded twisted-pair wire for the RS-485 bus; maximum length: 1200 m (3900 ft). RS-485 bus wiring status is supervised.

### 1.2 MTS Device Address

You must assign an address to each device in the system. The address consists of at least four segments.

For example, in the address 1.2.5.3.6 :

- 1 = This segment identifies the number assigned to the MTR central receiver (01 to 99).
- 2 = This segment identifies the CAN bus number occupied by the MTGW (1 or 2).
- 5 = This segment identifies the MTGW's CAN bus address (1 to 100).
- 3 = This segment identifies the device's RS-485 address (1 to 120).
- 6 = This segment identifies the zone number of an input or output device connected to the RS-485 device.

To set the DIP switch address on this device, refer to Section 6.0 *RS-485 Bus Address* on page 19.

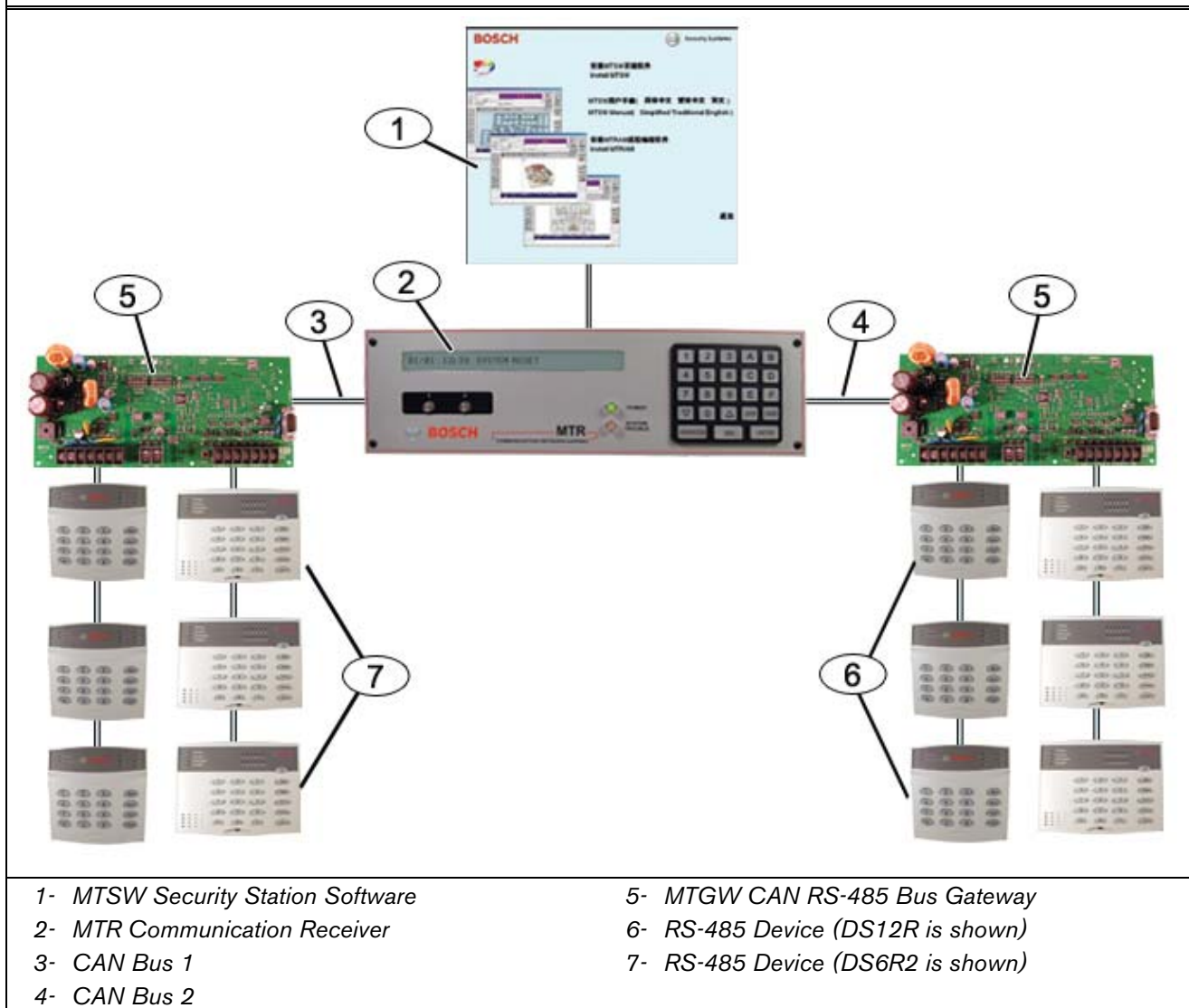
### 1.3 DS12R Overview

The DS12R is a self-contained, 12-zone control panel. Use it as a stand-alone security system, or connect it to a Multi-Tenant System (MTS). MTS combines individual apartment housing units into a single monitoring system.

The DS12R supports:

- 12 alarm input zones
- 1 alarm relay output
- 2 solid-state outputs
- 1 keyswitch input
- 1 master code
- 3 user PIN codes
- 1 duress code
- 1 door unlock code
- RF3212 and RF3212e Wireless Receiver
- RF3332 and RF3334 Key Fobs
- RF3332e and RF3334e Key Fobs

Figure 1: MTS System Overview



## 2.0 Installation



Install the DS12R as described in this document to avoid damage to the device.

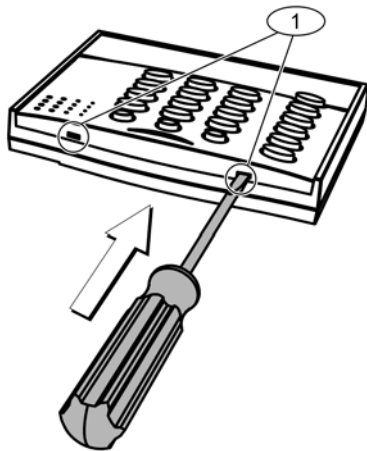
When installation is complete, perform a full system test.

### 2.1 Mounting the DS12R

You can mount the DS12R directly onto the intended surface (flush or semi-flush), or you can mount it on an electrical box.

1. To open the keypad, use a screwdriver to press the release tabs on the bottom of the keypad. Refer to *Figure 2*.

**Figure 2: Opening the DS12R**



1- Release tab

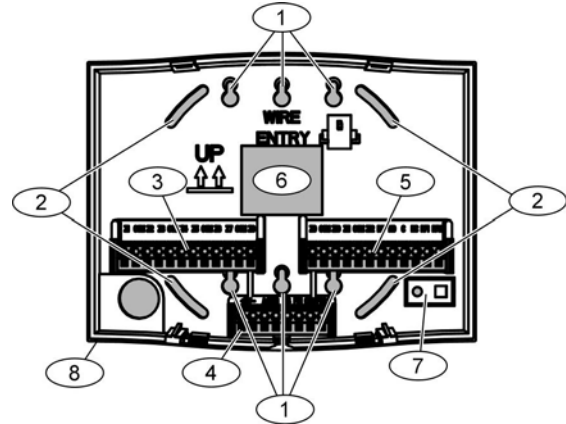
2. Mount the base on the intended surface or electrical box.

Refer to *Figure 3*.



The three terminal strips provided on the DS12R base slide in and out of their respective holders to facilitate installation.

**Figure 3: Mounting Holes**




- 1- Holes for surface-mounting
- 2- Holes for electrical box
- 3- Terminal Strip 1 (TS1)
- 4- Terminal Strip 2 (TS2)
- 5- Terminal Strip 3 (TS3)
- 6- Wire entrance
- 7- Tamper switch cover
- 8- Base




To use the wall tamper feature, remove the tamper switch cover, and then mount the DS12R flush against the wall.

## 2.2 Wiring the DS12R

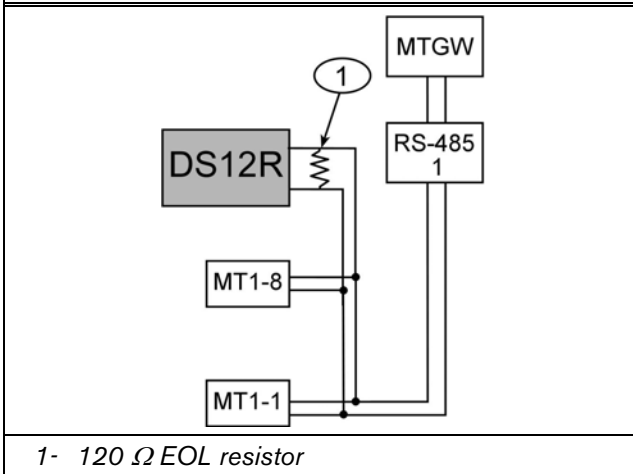
### 2.2.1. System Wiring

 **Warning:** Remove power from all devices before connecting or removing the DS12R.

Connect devices as shown in *Figure 4*. If the DS12R is the last device on the RS-485 bus, connect a 120 Ω end-of-line (EOL) resistor in parallel with the RS-485.

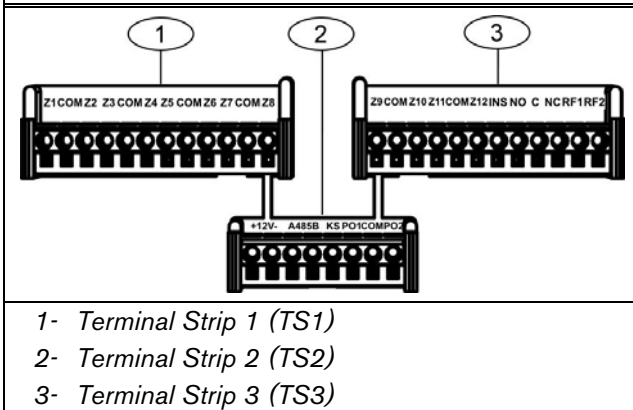
 Only the last device on the RS-485 bus requires a 120 Ω EOL resistor (included with the MTGW CAN-RS-485 BUS Gateway).

**Figure 4: System Wiring**



*Figure 5* shows the three DS12R terminal strips. Refer to *Table 2* for wiring connections.

**Figure 5: DS12R Terminal Strips**



**Table 2: Terminal Wiring**

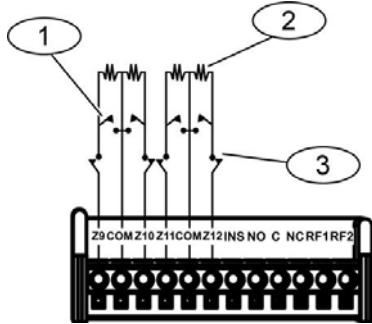
| Terminal Strip 1 (TS1) |                                |
|------------------------|--------------------------------|
| Label                  | Description                    |
| Z1                     | Zone 1                         |
| COM                    | Common (earth ground)          |
| Z2                     | Zone 2                         |
| Z3                     | Zone 3                         |
| COM                    | Common (earth ground)          |
| Z4                     | Zone 4                         |
| Z5                     | Zone 5                         |
| COM                    | Common (earth ground)          |
| Z6                     | Zone 6                         |
| Z7                     | Zone 7                         |
| COM                    | Common (earth ground)          |
| Z8                     | Zone 8                         |
| Terminal Strip 2 (TS2) |                                |
| Label                  | Description                    |
| +                      | Power + (12 VDC)               |
| -                      | Power - (common)               |
| A                      | RS-485 A Terminal              |
| B                      | RS-485 B Terminal              |
| KS                     | Keyswitch input                |
| P01                    | Solid State Output 1           |
| COM                    | Solid State Output Common      |
| P02                    | Solid State Output 2           |
| Terminal Strip 3 (TS3) |                                |
| Label                  | Description                    |
| Z9                     | Zone 9                         |
| COM                    | Common (earth ground)          |
| Z10                    | Zone 10                        |
| Z11                    | Zone 11                        |
| COM                    | Common (earth ground)          |
| Z12                    | Zone 12                        |
| INS                    | Instant zone                   |
| NO                     | Alarm output (normally open)   |
| C                      | Alarm output (common)          |
| NC                     | Alarm output (normally closed) |
| RF1                    | RF receiver interface          |
| RF2                    | RF receiver interface          |

### 2.2.2. Input Wiring

#### Typical Zone Wiring

The DS12R supports zones wired with normally-open (NO) or normally-closed (NC) contacts. Terminate each zone with a 47 kΩ EOL resistor. Refer to *Figure 6*.

**Figure 6: Typical Zone Wiring**

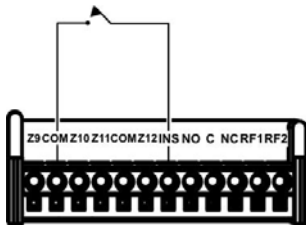


- 1- Normally-open (NO) contact
- 2- EOL resistor
- 3- Normally-closed (NC) contact

#### Instant Zone Wiring

You can change any Entry/Exit Delay zone to an Instant zone by closing a switch between the INS terminal and the zone's COM terminal. The Entry/Exit Delay zone returns to the programmed delay when the switch is open. Refer to *Figure 7*.

**Figure 7: Instant Zone Wiring**



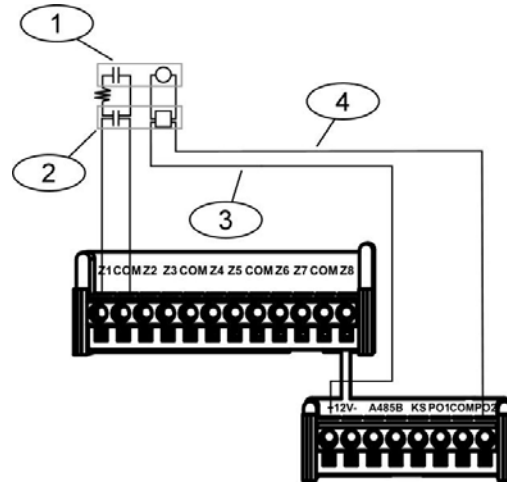
#### Smoke Detector Wiring

The DS12R supports four-wire smoke detectors. *Figure 8* shows a smoke detector connected to an end-of-line (EOL) relay module. *Figure 9* shows an EOL resistor connected to a smoke detector.



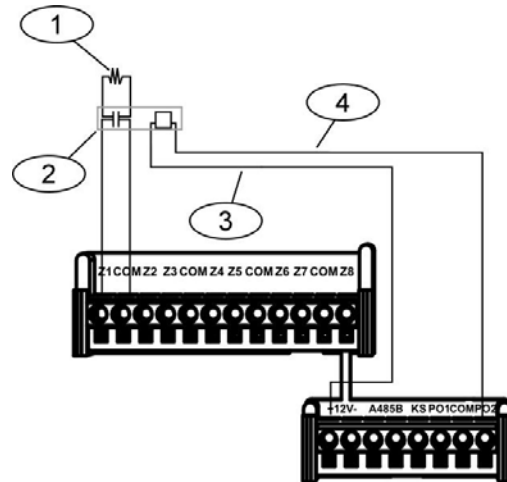
The total current draw of the four-wire smoke detectors and the EOL relay module must not exceed 250 mA.

**Figure 8: Smoke Detector with EOL Relay Module**



- 1- D275 EOL Relay Module
- 2- Smoke Detector
- 3- +12VDC
- 4- -12VDC

**Figure 9: Smoke Detector with EOL Resistor**



- 1- EOL Resistor
- 2- Smoke Detector
- 3- +12 VDC
- 4- -12 VDC

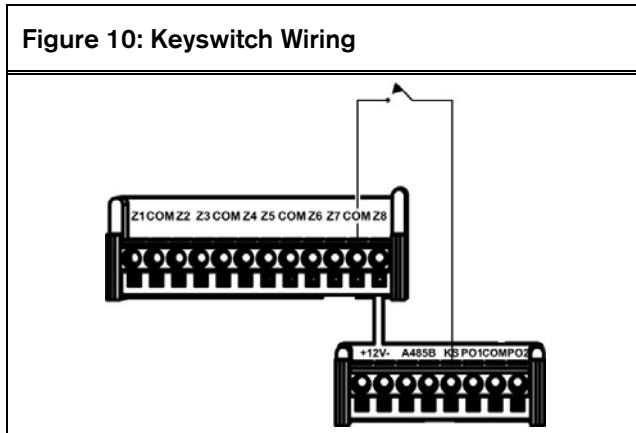


### Keyswitch Wiring

Depending on programming settings, you can use a keyswitch to arm or disarm the DS12R:

- If Program Address 47 is set to **1**, closing the keyswitch for one second or more arms the system.
- If Program Address 47 is set to **2**, the keyswitch must remain closed to arm the system. The system disarms when the keyswitch is open for more than one sec.

Refer to *Figure 10*.



**Figure 10: Keyswitch Wiring**

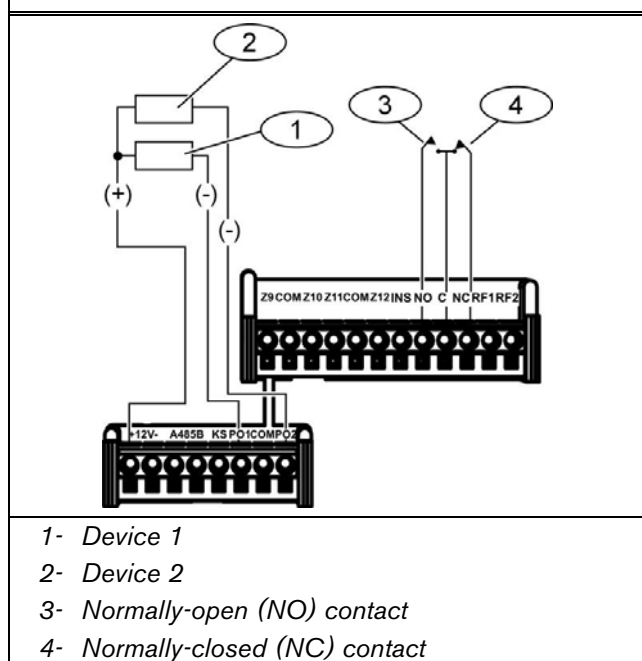
### 2.2.3. Output Wiring

The DS12R has Form C (NO/C/NC) contacts rated for 3 A at 28 VDC.

Two solid-state current sinks can be used for devices with a current draw of up to 250 mA for each device. Refer to *Figure 11*.

The operating voltage for attached relays cannot exceed 15 VDC. Refer to Program Addresses 44 and 45 in *Table 3* on page 13 for output options.

**Figure 11: Output Wiring**

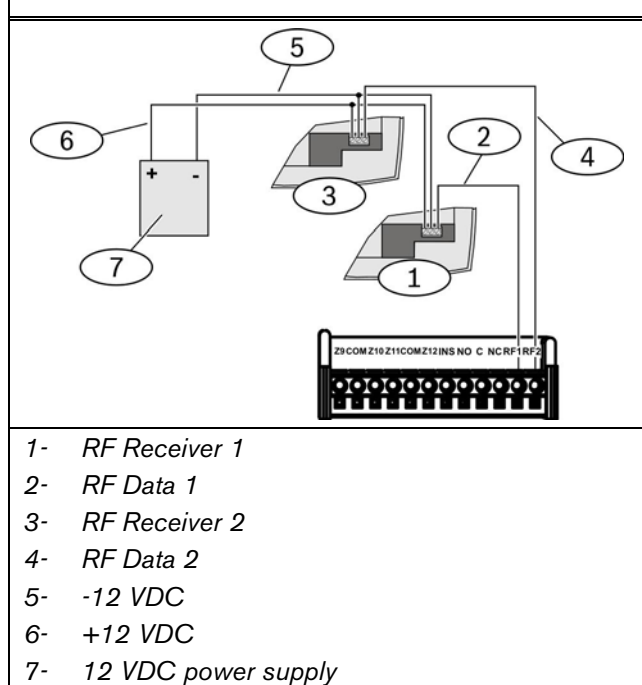


### 2.2.4. Wireless Receiver

An RF3212 or RF3212e Receiver is required to use key fobs and wireless devices with the system.

Refer to *Figure 12*.

**Figure 12: Wireless Receiver Wiring**



## 3.0 Programming



Use the Master Code for programming. The three User Codes cannot be used to program the DS12R.

The default Master Code is **1234**. If you forget the Master Code, reset the DS12R to its default values. Refer to *Section 3.6 Resetting Default Values* on page 17

### 3.1 Entering Programming Mode

1. Enter the Master Code.
2. Press and hold the [PROGRAM] key for 3 sec.  
The keypad beeps and the Armed, Perimeter, and Trouble LEDs flash quickly to indicate that you entered Programming Mode.

### 3.2 Changing Programming Values

1. Enter the programming address (**x** or **xx**), then press [\*].  
Addresses 0 through 9 require only one digit. Addresses 10 through 99 require two digits.
2. Enter the desired value.  
The programming value can be from one digit to nine digits in length, depending on the address. A beep indicates the input is accepted. Refer to *Table 3* beginning on page 11.
3. Repeat *Steps 1* and *2* to program other addresses.



If you make an incorrect entry before completing the number, press [#] to clear the previous entry, and then re-enter it.

If you enter the wrong digits and complete the number, press [#] and re-enter the program address number and the program value.



**Example 1:** To change the Master Code (Program Address 0) to **3345**, enter the address, press [\*], then enter the desired value: [0][\*][3][3][4][5].

**Example 2:** To enable the Quick Arm function (Program Address 46): [4][6][\*][2].

### 3.3 Exiting Programming Mode

Press and hold [PROGRAM] for 3 sec to exit from Programming Mode. The keypad beeps and the Armed, Perimeter, and Trouble LEDs turn off, indicating that you exited from Programming Mode.

### 3.4 Checking Programmed Data

Press [C] to page down for the next bit digit of the current value. Press [A] to page up for the previous bit digit of the current value.

**Table 3: Programming Values**

| Program Address | Description               | Factory Default Value | Program Value   |
|-----------------|---------------------------|-----------------------|---|
| 0               | Master Code               | 1234                  | 0001 to 9999 (0000 is not allowed)  |
| 1               | User Code 1               | 1000                  | 0001 to 9999 (0000 = disable)   |
| 2               | User Code 2               | 0000                  | 0001 to 9999 (0000 = disable)   |
| 3               | User Code 3               | 0000                  | 0001 to 9999 (0000 = disable)   |
| 4               | Alarm Time                | 180                   | 000 to 999 (0 sec to 999 sec)   |
| 5               | Exit Delay Time           | 090                   | 000 to 999 (0 sec to 999 sec)   |
| 6               | Entry Delay time          | 090                   | 000 to 999 (0 sec to 999 sec)   |
| 7               | Zone 1 Type <sup>1</sup>  | 2                     | 1 = Instant<br>2 = Delay <sup>2</sup><br>3 = 24-hour<br>4 = Follower<br>5 = Silent zone<br>6 = Perimeter instant zone<br>7 = Perimeter delay zone |
| 8               | Zone 2 Type <sup>1</sup>  | 4                     | 1 = Instant<br>2 = Delay <sup>2</sup><br>3 = 24-hour<br>4 = Follower<br>5 = Silent zone<br>6 = Perimeter instant zone<br>7 = Perimeter delay zone |
| 9               | Zone 3 Type <sup>1</sup>  | 1                     | 1 = Instant<br>2 = Delay <sup>2</sup><br>3 = 24-hour<br>4 = Follower<br>5 = Silent zone<br>6 = Perimeter instant zone<br>7 = Perimeter delay zone |
| 10              | Zone 4 Type <sup>1</sup>  | 1                     | 1 = Instant<br>2 = Delay <sup>2</sup><br>3 = 24-hour<br>4 = Follower<br>5 = Silent zone<br>6 = Perimeter instant zone<br>7 = Perimeter delay zone |
| 11              | Zone 5 Type <sup>1</sup>  | 1                     | 1 = Instant<br>2 = Delay <sup>2</sup><br>3 = 24-hour<br>4 = Follower<br>5 = Silent zone<br>6 = Perimeter instant zone<br>7 = Perimeter delay zone |
| 12              | Zone 6 Type <sup>1</sup>  | 1                     | 1 = Instant<br>2 = Delay <sup>2</sup><br>3 = 24-hour<br>4 = Follower<br>5 = Silent zone<br>6 = Perimeter instant zone<br>7 = Perimeter delay zone |
| 13              | Zone 7 Type <sup>1</sup>  | 1                     | 1 = Instant<br>2 = Delay <sup>2</sup><br>3 = 24-hour<br>4 = Follower<br>5 = Silent zone<br>6 = Perimeter instant zone<br>7 = Perimeter delay zone |
| 14              | Zone 8 Type <sup>1</sup>  | 1                     | 1 = Instant<br>2 = Delay <sup>2</sup><br>3 = 24-hour<br>4 = Follower<br>5 = Silent zone<br>6 = Perimeter instant zone<br>7 = Perimeter delay zone |
| 15              | Zone 9 Type <sup>1</sup>  | 1                     | 1 = Instant<br>2 = Delay <sup>2</sup><br>3 = 24-hour<br>4 = Follower<br>5 = Silent zone<br>6 = Perimeter instant zone<br>7 = Perimeter delay zone |
| 16              | Zone 10 Type <sup>1</sup> | 1                     | 1 = Instant<br>2 = Delay <sup>2</sup><br>3 = 24-hour<br>4 = Follower<br>5 = Silent zone<br>6 = Perimeter instant zone<br>7 = Perimeter delay zone |

<sup>1</sup> Refer to *Table 4* on page 15 for descriptions of the zone types.

<sup>2</sup> The DS12R has only one Entry Delay Timer and One Exit Delay timer. Any zone programmed to "Delay" follows these timers.

**Table 3: Programming Values (continued)**

| Program Address  | Description                 | Factory Default Value | Program Value  |
|--|-----------------------------|-----------------------|--|
| 17   | Zone 11 Type <sup>1</sup>   | 1                     | 1 = Instant<br>2 = Delay <sup>2</sup><br>3 = 24-hour<br>4 = Follower<br>5 = Silent zone<br>6 = Perimeter instant zone<br>7 = Perimeter delay zone            |
| 18   | Zone 12 Type <sup>1</sup>   | 3                     | 1 = Instant<br>2 = Delay <sup>2</sup><br>3 = 24-hour<br>4 = Follower<br>5 = Silent zone<br>6 = Perimeter instant zone<br>7 = Perimeter delay zone<br>8 = REX |
| 19   | Zone 1 Bypass <sup>3</sup>  | 2                     | 1 = Bypass allowed<br>2 = No bypass allowed  |
| 20   | Zone 2 Bypass <sup>3</sup>  | 2                     | 1 = Bypass allowed<br>2 = No bypass allowed  |
| 21   | Zone 3 Bypass <sup>3</sup>  | 2                     | 1 = Bypass allowed<br>2 = No bypass allowed  |
| 22   | Zone 4 Bypass <sup>3</sup>  | 2                     | 1 = Bypass allowed<br>2 = No bypass allowed  |
| 23   | Zone 5 Bypass <sup>3</sup>  | 2                     | 1 = Bypass allowed<br>2 = No bypass allowed  |
| 24   | Zone 6 Bypass <sup>3</sup>  | 2                     | 1 = Bypass allowed<br>2 = No bypass allowed  |
| 25   | Zone 7 Bypass <sup>3</sup>  | 2                     | 1 = Bypass allowed<br>2 = No bypass allowed  |
| 26   | Zone 8 Bypass <sup>3</sup>  | 2                     | 1 = Bypass allowed<br>2 = No bypass allowed  |
| 27   | Zone 9 Bypass <sup>3</sup>  | 2                     | 1 = Bypass allowed<br>2 = No bypass allowed  |
| 28   | Zone 10 Bypass <sup>3</sup> | 2                     | 1 = Bypass allowed<br>2 = No bypass allowed  |
| 29   | Zone 11 Bypass <sup>3</sup> | 2                     | 1 = Bypass allowed<br>2 = No bypass allowed  |
| 30   | Zone 12 Bypass <sup>3</sup> | 2                     | 1 = Bypass allowed<br>2 = No bypass allowed  |
| 31   | Zone 1 Swinger Bypass       | 2                     | 1 = Zone swinger bypass allowed<br>2 = No zone swinger bypass allowed  |
| 32   | Zone 2 Swinger Bypass       | 2                     | 1 = Zone swinger bypass allowed<br>2 = No zone swinger bypass allowed  |
| 33   | Zone 3 Swinger Bypass       | 2                     | 1 = Zone swinger bypass allowed<br>2 = No zone swinger bypass allowed  |
| 34   | Zone 4 Swinger Bypass       | 2                     | 1 = Zone swinger bypass allowed<br>2 = No zone swinger bypass allowed  |
| 35   | Zone 5 Swinger Bypass       | 2                     | 1 = Zone swinger bypass allowed<br>2 = No zone swinger bypass allowed  |
| 36   | Zone 6 Swinger Bypass       | 2                     | 1 = Zone swinger bypass allowed<br>2 = No zone swinger bypass allowed  |
| 37   | Zone 7 Swinger Bypass       | 2                     | 1 = Zone swinger bypass allowed<br>2 = No zone swinger bypass allowed  |
| <p>1 Refer to <i>Table 4</i> on page 15 for descriptions of the zone types.</p> <p>2 The DS12R has only one Entry Delay Timer and one Exit Delay timer. Any zone programmed to "Delay" follows these timers.</p> <p>3 If a zone is programmed to 24-hour, bypass is not allowed.</p> |                             |                       |  |

**Table 3: Programming Values (continued)**

| Program Address | Description                       | Factory Default Value | Program Value   |
|-----------------|-----------------------------------|-----------------------|---|
| 38              | Zone 8 Swinger Bypass             | 2                     | 1 = Zone swinger bypass allowed<br>2 = No zone swinger bypass allowed                     |
| 39              | Zone 9 Swinger Bypass             | 2                     | 1 = Zone swinger bypass allowed<br>2 = No zone swinger bypass allowed                     |
| 40              | Zone 10 Swinger Bypass            | 2                     | 1 = Zone swinger bypass allowed<br>2 = No zone swinger bypass                             |
| 41              | Zone 11 Swinger Bypass            | 2                     | 1 = Zone shunt allowed<br>2 = No zone shunt allowed                                       |
| 42              | Zone 12 Swinger Bypass            | 2                     | 1 = Zone swinger bypass allowed<br>2 = No zone swinger bypass allowed                     |
| 43              | Built-in Buzzer (Alarm Sound)     | 1                     | 0 = Off<br>1 = On   |
| 44              | Solid State Output 1 <sup>1</sup> | 1                     | 1 = Follows armed state<br>2 = Follows alarm output                                       |
| 45              | Solid State Output 2 <sup>2</sup> | 1                     | 1 = Follows fire reset<br>2 = Follows zone status<br>3 = Follows unlock <sup>3</sup> code |
| 46              | Quick Arm                         | 2                     | 1 = Enable Quick Arm<br>2 = Disable Quick Arm   |
| 47              | Keyswitch Input <sup>4</sup>      | 1                     | 1 = Allow arm only<br>2 = Allow arm or disarm   |
| 48              | Panic Key [C] Enable              | 0                     | 0 = Off<br>1 = On   |
| 49              | Fire Key [A] Enable               | 0                     | 0 = Off<br>1 = On   |
| 50              | Special Emergency Key [B] Enable  | 0                     | 0 = Off<br>1 = On   |
| 51              | Relay Function                    | 0                     | 0 = Follows alarm<br>1 = Follows Unlock User code   |
| 52              | Duress User Code <sup>5</sup>     | 0000                  | 0001 to 9999 (0000 = disable)   |
| 53              | Door Unlock Code                  | 0000                  | 0001 to 9999 (0000 = disable)   |
| 54              | Door Unlock Time                  | 000                   | 000 to 999 (1 sec to 999 sec) 000 = disable   |
| 55              | RF Key Fob Enable (up to six)     | 0                     | 0 = Disable<br>1 = Enable   |
| 56              | RF Supervisory Trouble            | 1                     | 1 = Report supervisory trouble after 12 h<br>2 = Report supervisory trouble after 24 h    |
| 57 <sup>6</sup> | RF Zone 1 Device 1 ID Number      | 00000000              | 00000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers      |

1 This output is normally open, but drops to 0 V when the system is armed or an alarm occurs. If this output drops to 0 V after an alarm occurs, it remains active for the time defined in Program Address 4 (Alarm Time)

2 When this output is programmed to the Fire Reset function, the output is normally open (NO) at 0 V during Fire Reset. If this output is programmed to follow Zone Alarm, it remains active for the entire time that a zone remains in alarm.

3 A user can enter the Door Unlock Code to unlock a door that is controlled by Program Address 45 (Solid State Output 2) or Programming Address 51 (Relay Function). If Programming Address 45 = 3, the output drops to 0 V after the Door Unlock code is entered. If Programming Address 51 = 1, the relay activates after the Door Unlock code is entered.

4 Turn and hold the keyswitch for at least 1 sec to start the arming sequence. If Program Address 47 is set to 2, a continuous switch or dry contact can be used.

5 If the Duress code is entered, the control panel disarms normally, but sends a silent alarm to the central station. Use this feature to allow a user in danger to activate a silent alarm discretely. This code must be unique.

6 If an RF ID is entered for Addresses 57 to 80, the zone is a wireless zone. The DS12R ignores the wired zone.

**Table 3: Programming Values (continued)**

| Program Address | Description                   | Factory Default Value | Program Value   |
|-----------------|-------------------------------|-----------------------|---|
| 58 <sup>1</sup> | RF Zone 1 Device 2 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 59 <sup>1</sup> | RF Zone 2 Device 1 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 60 <sup>1</sup> | RF Zone 2 Device 2 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 61 <sup>1</sup> | RF Zone 3 Device 1 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 62 <sup>1</sup> | RF Zone 3 Device 2 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 63 <sup>1</sup> | RF Zone 4 Device 1 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 64 <sup>1</sup> | RF Zone 4 Device 2 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 65 <sup>1</sup> | RF Zone 5 Device 1 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 66 <sup>1</sup> | RF Zone 5 Device 2 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 67 <sup>1</sup> | RF Zone 6 Device 1 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 68 <sup>1</sup> | RF Zone 6 Device 2 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 69 <sup>1</sup> | RF Zone 7 Device 1 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 70 <sup>1</sup> | RF Zone 7 Device 2 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 71 <sup>1</sup> | RF Zone 8 Device 1 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 72 <sup>1</sup> | RF Zone 8 Device 2 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 73 <sup>1</sup> | RF Zone 9 Device 1 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 74 <sup>1</sup> | RF Zone 9 Device 2 ID Number  | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 75 <sup>1</sup> | RF Zone 10 Device 1 ID Number | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 76 <sup>1</sup> | RF Zone 10 Device 2 ID Number | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 77 <sup>1</sup> | RF Zone 11 Device 1 ID Number | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 78 <sup>1</sup> | RF Zone 11 Device 2 ID Number | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 79 <sup>1</sup> | RF Zone 12 Device 1 ID Number | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |
| 80 <sup>1</sup> | RF Zone 12 Device 2 ID Number | 000000000             | 000000000 = Disabled (zone is hard wired)<br>Allows 000000001 to 999999999 ID numbers |

<sup>1</sup> If an RF ID is entered for Addresses 57 to 80, the zone is a wireless zone. The DS12R ignores the wired zone.

**Table 3: Programming Values (continued)**

| Program Address | Description                      | Factory Default Value | Program Value  |
|-----------------|----------------------------------|-----------------------|--|
| 81              | RF Key fob 1 ID Number           | 000000000             | 000000000 = Disabled<br>Allows 000000001 to 999999999 ID numbers   |
| 82              | RF Key fob 2 ID Number           | 000000000             | 000000000 = Disabled<br>Allows 000000001 to 999999999 ID numbers   |
| 83              | RF Key fob 3 ID Number           | 000000000             | 000000000 = Disabled<br>Allows 000000001 to 999999999 ID numbers   |
| 84              | RF Key fob 4 ID Number           | 000000000             | 000000000 = Disabled<br>Allows 000000001 to 999999999 ID numbers   |
| 85              | RF Key fob 5 ID Number           | 000000000             | 000000000 = Disabled<br>Allows 000000001 to 999999999 ID numbers   |
| 86              | RF Key fob 6 ID Number           | 000000000             | 000000000 = Disabled<br>Allows 000000001 to 999999999 ID numbers   |
| 87              | Send trouble report              | 0                     | 0 = Disabled<br>1 = Enabled  |
| 99              | Return to factory default values | 18                    | Enter this value to return all values except the Master Code to the factory default values. Use this function for installation and maintenance. Refer to <i>Section 3.6 Resetting Default Values</i> on page 17. to return the Master Code to its default value. |

**Table 4: Zone Types**

| Type                  | Description  |
|-----------------------|--|
| Instant               | When the system is armed, faulting an Instant zone causes an alarm.  |
| Delay                 | When the system is armed, faulting this zone causes an alarm after the Entry or Exit Delay time setting expires.   |
| 24-hour               | This zone is always active. Faulting this zone always causes an alarm.   |
| Follower              | When the system is armed and a Delay zone is not faulted, faulting this zone causes an alarm. If a Delay zone is faulted, an alarm occurs after the delay time.  |
| Silent Zone           | When the system is armed, faulting a Silent zone causes a Silent alarm. The keypad is silent and shows no alarm output, but the DS12R sends an alarm event to the central station.   |
| Perimeter Zone        | When the perimeter is armed, faulting a Perimeter zone causes an alarm.  |
| Perimeter Delay Zone  | When the perimeter is armed, faulting this zone causes an alarm after the Entry or Exit Delay time setting expires.  |
| Bypass                | If a zone is programmed for Bypass, it does not cause an alarm when it is faulted. If a system is force armed, the zone that is bypassed is not active. The bypass condition clears when the system is disarmed. A 24-hour zone type cannot be bypassed. All other zone types can be bypassed. |
| Swinger Bypass        | If a zone is programmed for Swinger Bypass, it causes an alarm only the first time it is faulted. All other faults during this armed period are ignored. The Swinger Bypass clears when the system is disarmed.  |
| Request-to-exit (REX) | When this zone is disarmed, activating this input activates the output programmed to follow the Door Unlock Time setting.<br>If Zone 12 is programmed to 8=REX, Door Unlock activates after Zone 12 is activated.  |

### 3.5 Programming Wireless Devices

The DS12R supports two RF3212 or RF3212e Wireless Receivers. Mount the receivers up to 20 m (65.7 ft) from the DS12R.

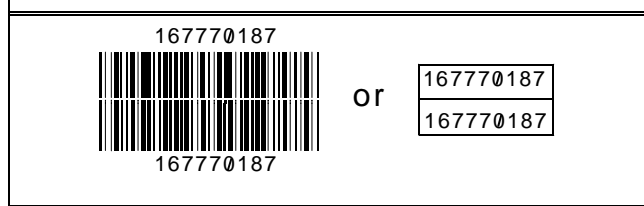
The DS12R supports up to 6 key fobs and 24 wireless devices, including motion detectors, smoke detectors, and door contacts.

You can assign up to two wireless devices to a zone. Refer to *Table 5*.

| RF Zone | Program Address | Wireless Device |
|---------|-----------------|-----------------|
| 1       | 57              | Device 1        |
|         | 58              | Device 2        |
| 2       | 59              | Device 1        |
|         | 60              | Device 2        |
| 3       | 61              | Device 1        |
|         | 62              | Device 2        |
| 4       | 63              | Device 1        |
|         | 64              | Device 2        |
| 5       | 65              | Device 1        |
|         | 66              | Device 2        |
| 6       | 67              | Device 1        |
|         | 68              | Device 2        |
| 7       | 69              | Device 1        |
|         | 70              | Device 2        |
| 8       | 71              | Device 1        |
|         | 72              | Device 2        |
| 9       | 73              | Device 1        |
|         | 74              | Device 2        |
| 10      | 75              | Device 1        |
|         | 76              | Device 2        |
| 11      | 77              | Device 1        |
|         | 78              | Device 2        |
| 12      | 79              | Device 1        |
|         | 80              | Device 2        |
| N/A     | 81              | Key fob 1       |
| N/A     | 82              | Key fob 2       |
| N/A     | 83              | Key fob 3       |
| N/A     | 84              | Key fob 4       |
| N/A     | 85              | Key fob 5       |
| N/A     | 86              | Key fob 6       |

Each wireless device is labeled with a unique, nine-digit identification number (ID). Refer to *Figure 13*.

**Figure 13: Device Identification Number (ID)**



To add a wireless device to the system:

1. Enter Programming Mode.
2. Select the appropriate program address. Refer to *Table 5*.
3. Enter the nine-digit ID for the wireless device.
4. For key fobs, set Program Address 55 to 1. This setting enables up to six key fobs.

**i** You cannot assign the Master Code to a key fob. Assign each key fob to a different user. All Exit Delay and Entry Delay times operate as if the DS12R is armed or disarmed using a standard user code.



### 3.6 Resetting Default Values

#### 3.6.1. Reset the Master Code

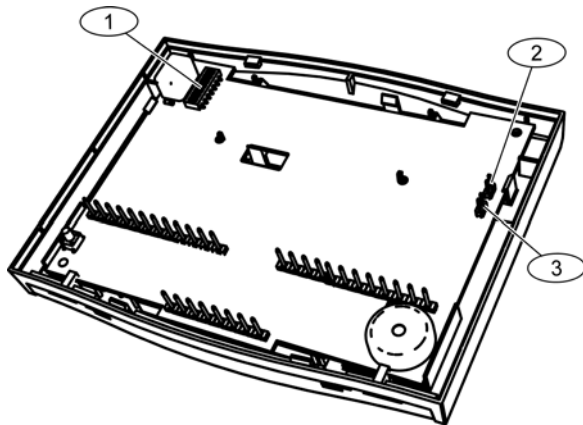


**Warning:** Remove power from all devices before connecting or removing the DS12R.

1. Remove power from the DS12R.
2. Place the jumper across the PROG P1 jumper pins (ON).

Refer to *Figure 14*.

**Figure 14: DS12R PCB**



- 1- RS-485 DIP Switches
- 2- PROG P1 Jumper
- 3- SMODE P3 Jumper

3. Reapply power to the DS12R.
4. Remove the jumper (OFF).

#### 3.6.2. Reset Programming Default Values

1. Enter Programming Mode.
2. Enter [9][9][\*] Program Address 99.
3. Enter **18** for the programming value ([1][8]).
4. Press and hold [PROGRAM] for 3 sec to exit from Programming Mode.

The DS12R resets all programming values to the original factory defaults.

### 3.7 Configuring the Working Mode

The DS12R can be used as stand-alone system or as a component of an MTS system.

#### 3.7.1. Configure as a Stand-alone System

1. Remove power from the DS12R.
2. Place the jumper across the SMODE P3 jumper pins (ON).
3. Reapply power to the DS12R. Refer to *Figure 14*.

#### 3.7.2. Configure for use in an MTS system

1. Remove power from the DS12R.
2. Remove the jumper across the PROG P3 jumper pins (OFF).
3. Reapply power to the DS12R. Refer to *Figure 14*.

## 4.0 Wireless Maintenance

### 4.1 Wireless Device Test Mode



Disarm the system before using Test Mode. The DS12R ignores all zone input while in Test Mode. All keys function normally.

Use Test Mode to check the signal strength of the wireless receiver. The DS12R LEDs indicate if the location of the receiver is acceptable, marginal, or out of range.

To enter Test Mode:

1. Enter the Master Code.
2. Press and hold [#] for three seconds. Zone LEDs 7–12 flash quickly to indicate that you entered Test Mode.  
Zone LEDs 1, 2, 3, 4, 5, and 6 indicate signal strength  
Refer to *Table 6* to interpret LED indications.

| RF Receiver | LED         | Signal Strength                |
|-------------|-------------|--------------------------------|
| 1           | 1           | Poor, relocate RF receiver     |
|             | 1 and 2     | Marginal, relocate RF receiver |
|             | 1, 2, and 3 | Good                           |
| 2           | 4           | Poor, relocate RF receiver     |
|             | 4 and 5     | Marginal, relocate RF receiver |
|             | 4, 5, and 6 | Good                           |

3. To exit from Test Mode:
  - Press and hold [#] for 3 sec, or
  - Wait 3 min for the DS12R to exit automatically from Test Mode.

The LEDs return to their previous condition after Test Mode is finished.

### 4.2 Low Battery Trouble

The DS12R beeps twice every minute when it receives a low battery signal from the wireless receiver. The LED for the zone with the low battery condition flashes once each second.

If [RESET] is pressed, the DS12R ignores the low battery condition for up to eight hours. If, after eight hours, the low battery condition is still present, the DS12R beeps again.

### 4.3 Supervisory Trouble

You can program the DS12R to ignore Supervisory Trouble conditions for 12 or 24 hours. After the programmed time, the DS12R beeps once each minute. The corresponding zone LED flashes once each second. When the supervisory condition clears, the flashing and beeping stop.

Program Address 56 sets the Supervisory Trouble time. Refer to *Table 3* beginning on page 11.

## 5.0 Specifications

|                                |  |
|--------------------------------|--|
| Dimensions:                    | 17.0 cm x 13.0 cm x 3.2 cm<br>(6.7 in. X 5.1 in. x 1.3 in.)  |
| Weight:                        | 0.35 kg (12.3 oz)  |
| Operating Temperature:         | -10°C to + 50°C<br>(-4°F to +122°F)  |
| Relative Humidity :            | 0 to 93% non-condensing  |
| Operating Voltage:             | 9 VDC to 15 VDC  |
| Zones:                         | Normally-open (NO) or normally-closed (NC) zones.  |
| Zone Response Time:            | 500 ms   |
| Zone EOL Resistor:             | 47 kΩ  |
| Output Relay:                  | Normally open (NO) or normally closed (NC). Contacts rated for 3 A at 28 VDC   |
| Solid State Outputs:           | Two DC current sink outputs. 250 mA current sink maximum per output at 0.1 VDC saturation. The operating voltage must not exceed 15 VDC. |
| Compatible Wireless Receivers: | RF3212 and RF3212e   |
| Tamper:                        | Built-in cover and wall tamper   |

## 6.0 RS-485 Bus Address

Assign a unique address to each device connected to the RS-485 bus.

| Address | DIP Switch Number<br>● = DIP switch ON |   |   |   |   |   |   |
|---------|--|---|---|---|---|---|---|
|         | 0                                      | 1 | 2 | 3 | 4 | 5 | 6 |
| 001     |  |   |   |   |   |   | ● |
| 002     |  |   |   |   |   | ● |   |
| 003     |  |   |   |   |   | ● | ● |
| 004     |  |   |   |   | ● |   |   |
| 005     |  |   |   |   | ● |   | ● |
| 006     |  |   |   |   | ● | ● |   |
| 007     |  |   |   |   | ● | ● | ● |
| 008     |  |   |   | ● |   |   |   |
| 009     |  |   |   | ● |   |   | ● |
| 010     |  |   |   | ● |   | ● |   |
| 011     |  |   |   | ● |   | ● | ● |
| 012     |  |   |   | ● | ● |   |   |
| 013     |  |   |   | ● | ● |   | ● |
| 014     |  |   |   | ● | ● | ● |   |
| 015     |  |   |   | ● | ● | ● | ● |
| 016     |  |   | ● |   |   |   |   |
| 017     |  |   | ● |   |   |   | ● |
| 018     |  |   | ● |   |   | ● |   |
| 019     |  |   | ● |   |   | ● | ● |
| 020     |  |   | ● |   | ● |   |   |
| 021     |  |   | ● |   | ● |   | ● |
| 022     |  |   | ● |   | ● | ● |   |
| 023     |  |   | ● |   | ● | ● | ● |
| 024     |  |   | ● | ● |   |   |   |
| 025     |  |   | ● | ● |   |   | ● |
| 026     |  |   | ● | ● |   | ● |   |
| 027     |  |   | ● | ● |   | ● | ● |
| 028     |  |   | ● | ● | ● |   |   |
| 029     |  |   | ● | ● | ● |   | ● |
| 030     |  |   | ● | ● | ● | ● |   |
| 031     |  |   | ● | ● | ● | ● | ● |
| 032     |  | ● |   |   |   |   |   |
| 033     |  | ● |   |   |   |   | ● |
| 034     |  | ● |   |   |   | ● |   |
| 035     |  | ● |   |   |   | ● | ● |
| 036     |  | ● |   |   | ● |   |   |
| 037     |  | ● |   |   | ● |   | ● |
| 038     |  | ● |   |   | ● | ● |   |
| 039     |  | ● |   |   | ● | ● | ● |
| 040     |  | ● |   | ● |   |   |   |

| Address | DIP Switch Number<br>● = DIP switch ON |   |   |   |   |   |   |
|---------|--|---|---|---|---|---|---|
|         | 0                                      | 1 | 2 | 3 | 4 | 5 | 6 |
| 041     |  | ● |   | ● |   |   | ● |
| 042     |  | ● |   | ● |   | ● |   |
| 043     |  | ● |   | ● |   | ● | ● |
| 044     |  | ● |   | ● | ● |   |   |
| 045     |  | ● |   | ● | ● |   | ● |
| 046     |  | ● |   | ● | ● | ● |   |
| 047     |  | ● |   | ● | ● | ● | ● |
| 048     |  | ● | ● |   |   |   |   |
| 049     |  | ● | ● |   |   |   | ● |
| 050     |  | ● | ● |   |   | ● |   |
| 051     |  | ● | ● |   |   | ● | ● |
| 052     |  | ● | ● |   | ● |   |   |
| 053     |  | ● | ● |   | ● |   | ● |
| 054     |  | ● | ● |   | ● | ● |   |
| 055     |  | ● | ● |   | ● | ● | ● |
| 056     |  | ● | ● | ● |   |   |   |
| 057     |  | ● | ● | ● |   |   | ● |
| 058     |  | ● | ● | ● |   | ● |   |
| 059     |  | ● | ● | ● |   | ● | ● |
| 060     |  | ● | ● | ● | ● |   |   |
| 061     |  | ● | ● | ● | ● |   | ● |
| 062     |  | ● | ● | ● | ● | ● |   |
| 063     |  | ● | ● | ● | ● | ● | ● |
| 064     | ●                                      |   |   |   |   |   |   |
| 065     | ●                                      |   |   |   |   |   | ● |
| 066     | ●                                      |   |   |   |   | ● |   |
| 067     | ●                                      |   |   |   |   | ● | ● |
| 068     | ●                                      |   |   |   | ● |   |   |
| 069     | ●                                      |   |   |   | ● |   | ● |
| 070     | ●                                      |   |   |   | ● | ● |   |
| 071     | ●                                      |   |   |   | ● | ● | ● |
| 072     | ●                                      |   |   | ● |   |   |   |
| 073     | ●                                      |   |   | ● |   |   | ● |
| 074     | ●                                      |   |   | ● |   | ● |   |
| 075     | ●                                      |   |   | ● |   | ● | ● |
| 076     | ●                                      |   |   | ● | ● |   |   |
| 077     | ●                                      |   |   | ● | ● |   | ● |
| 078     | ●                                      |   |   | ● | ● | ● |   |
| 079     | ●                                      |   |   | ● | ● | ● | ● |
| 080     | ●                                      |   | ● |   |   |   |   |

| Address | DIP Switch Number<br>● = DIP switch ON |   |   |   |   |   |   |
|---------|--|---|---|---|---|---|---|
|         | 0                                      | 1 | 2 | 3 | 4 | 5 | 6 |
| 081     | ●                                      |   | ● |   |   |   | ● |
| 082     | ●                                      |   | ● |   |   | ● |   |
| 083     | ●                                      |   | ● |   |   | ● | ● |
| 084     | ●                                      |   | ● |   | ● |   |   |
| 085     | ●                                      |   | ● |   | ● |   | ● |
| 086     | ●                                      |   | ● |   | ● | ● |   |
| 087     | ●                                      |   | ● |   | ● | ● | ● |
| 088     | ●                                      |   | ● | ● |   |   |   |
| 089     | ●                                      |   | ● | ● |   |   | ● |
| 090     | ●                                      |   | ● | ● |   | ● |   |
| 091     | ●                                      |   | ● | ● |   | ● | ● |
| 092     | ●                                      |   | ● | ● | ● |   |   |
| 093     | ●                                      |   | ● | ● | ● |   | ● |
| 094     | ●                                      |   | ● | ● | ● | ● |   |
| 095     | ●                                      |   | ● | ● | ● | ● | ● |
| 096     | ●                                      | ● |   |   |   |   |   |
| 097     | ●                                      | ● |   |   |   |   | ● |
| 098     | ●                                      | ● |   |   |   | ● |   |
| 099     | ●                                      | ● |   |   |   | ● | ● |
| 100     | ●                                      | ● |   |   | ● |   |   |
| 101     | ●                                      | ● |   |   | ● |   | ● |
| 102     | ●                                      | ● |   |   | ● | ● |   |
| 103     | ●                                      | ● |   |   | ● | ● | ● |
| 104     | ●                                      | ● |   | ● |   |   |   |
| 105     | ●                                      | ● |   | ● |   |   | ● |
| 106     | ●                                      | ● |   | ● |   | ● |   |
| 107     | ●                                      | ● |   | ● |   | ● | ● |
| 108     | ●                                      | ● |   | ● | ● |   |   |
| 109     | ●                                      | ● |   | ● | ● |   | ● |
| 110     | ●                                      | ● |   | ● | ● | ● |   |
| 111     | ●                                      | ● |   | ● | ● | ● | ● |
| 112     | ●                                      | ● | ● |   |   |   |   |
| 113     | ●                                      | ● | ● |   |   |   | ● |
| 114     | ●                                      | ● | ● |   |   | ● |   |
| 115     | ●                                      | ● | ● |   |   | ● | ● |
| 116     | ●                                      | ● | ● |   | ● |   |   |
| 117     | ●                                      | ● | ● |   | ● |   | ● |
| 118     | ●                                      | ● | ● |   | ● | ● |   |
| 119     | ●                                      | ● | ● |   | ● | ● | ● |
| 120     | ●                                      | ● | ● | ● |   |   |   |

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