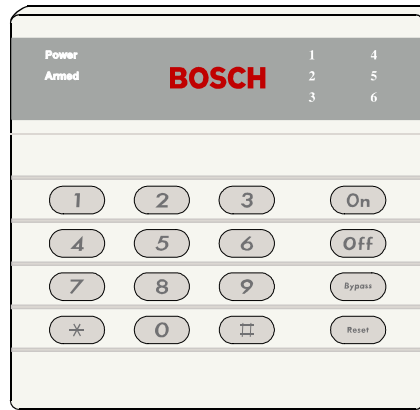


Installation Instructions for the DS6MX Six Zone Control Panel



1.0 General Information

The DS6MX is a compact six zone keypad and control panel in one package. It can be used as a stand-alone alarm system or connected to a DS7400Xi Control/Communicator for integrating individual apartment housing units into a large building monitoring system.

The DS6MX has six alarm input zones, one alarm relay output, two solid state outputs and a keyswitch input. One Master Code, three user PIN codes, one Duress Code and one door unlock code are available on the unit.

The DS6MX also supports the use of RF3332, RF3332E, RF3334, and RF3334E wireless keyfobs for arming and disarming the panel (requires the use of a RF3212 or RF3212E receiver).

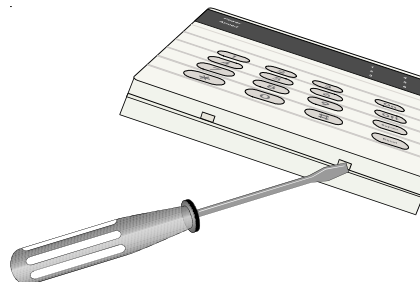
2.0 Specifications

DS6MX Specifications	
Description	DS6MX Six Zone Control Panel
Dimensions (H x W x D)	11.8 cm x 12.4 cm x 3 cm (4.7 in. x 4.9 in. x 1.2 in.)
Weight	0.5 kg (1 lb)
Operating Temperature	-20°C to +50°C (-4°F to +122°F) 0 to 85% relative humidity (non-condensing)
Operating Voltage	8.5-15 VDC
Operating Current	30 mA Standby, 100 mA Alarm. Using Programmable Outputs will add up to an additional 500 mA
Number of Zones	Six (6) Normally Open (NO) or Normally Closed (NC) Zones. All zones may be set for Instant, Delay, 24-hour and Follower. In addition, Zone 6 may be set for Request-to-Exit (REX)
Zone Response Time	500 ms
Zone End-of-Line (EOL)	10k ohm
Output Relay	Normally Open (NO) or Normally Closed (NC). Contacts rated for 3 A @ 28 VDC or 120 VAC
Solid State Outputs	Two DC Current Sink Outputs. 250 mA current sink maximum per output at 0.1 VDC saturation. The operating voltage cannot exceed 15 VDC
Compatible Receivers & Panels	RF3212, RF3212E Receiver & DS7400Xi Control Panel (Requires China ROM Version 4.04 or later)
Tamper	Cover and Wall Tamper built in. Wall Tamper use requires that the DS6MX be surface mounted

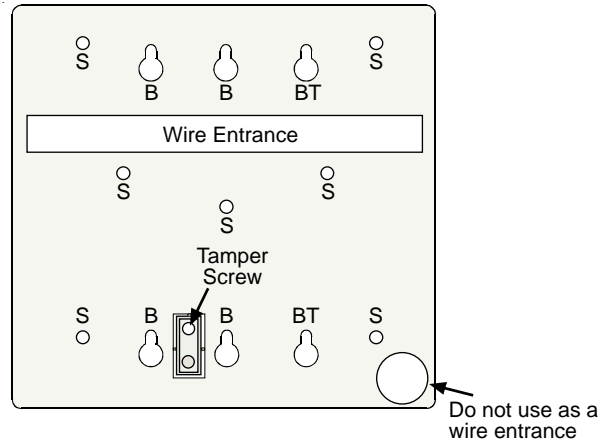
3.0 Installation

The DS6MX may be surface mounted, semi-flush mounted or mounted to a suitable electrical connection box.

3.1 Open the case by pressing the release tabs on the bottom of the case with a screwdriver.



3.2 Mount the base to a suitable surface or electrical box.



3.3 Mounting options:

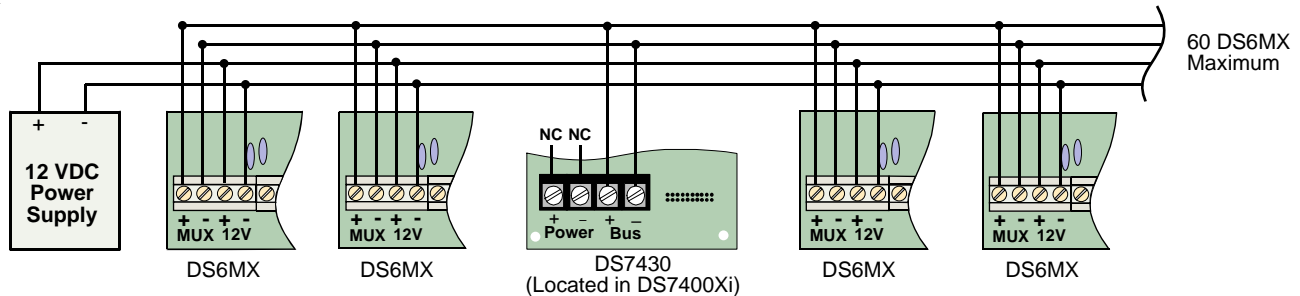
- Use any of the holes marked "S" for surface mounting.
- Use any of the holes marked "B" or "BT" for mounting to an electrical box.

Note: *If the tamper function is desired, the DS6MX must be surface mounted or, if a single gang electrical box is used, it must be mounted using the holes marked "BT". A screw must be placed through the hole marked "Tamper Screw" and secured to the mounting surface.*

4.0 Wiring

4.1 Mux and Power wiring

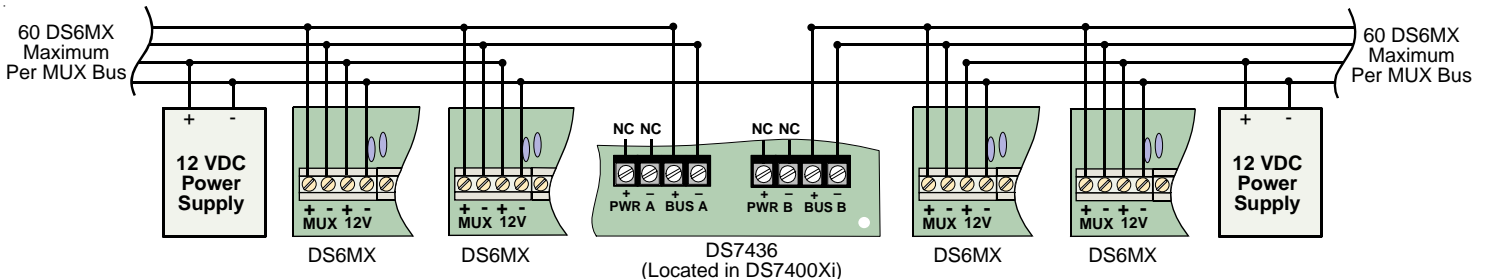
- Wire the MUX Bus and Power Supply as shown below when using a DS7430 MUX Module in the DS7400Xi:



Do not connect the 12 VDC Power Supply to the DS7430 power terminals. Damage to the equipment may occur. If using more than one Power Supply, the negative (-) terminals of the supplies must be connected together.

- To calculate the current required for the 12 VDC Power supply, use the following formula:
 $(\text{Number of DS6MX Panels} \times 100 \text{ mA}) + (\text{Number of PO1 outputs used} \times 250 \text{ mA}) + (\text{Number of PO2 outputs used} \times 250 \text{ mA}) = \text{Total mA}$
Example: You have 6 DS6MX Panels. Three will use both the PO1 and PO2 outputs. Three will use the PO1 output only.
 $(6 \times 100 \text{ mA}) + (6 \times 250 \text{ mA}) + (3 \times 250 \text{ mA}) = 2850 \text{ mA} = 2.85 \text{ Amps}$
 In this example you should use a 3 Amp Power Supply.

- Wire the MUX Bus and Power Supply as shown below when using a DS7436 MUX Module in the DS7400Xi:

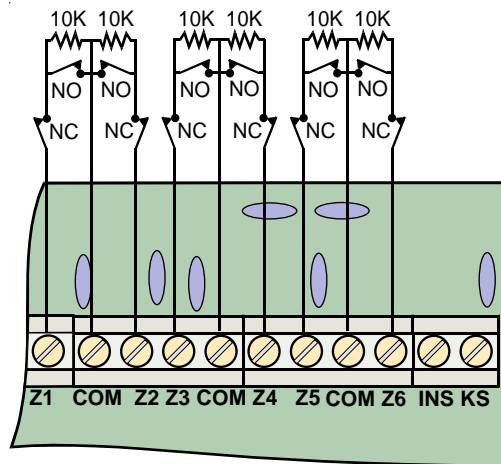


Do not connect the 12 VDC Power Supply to the DS7436 power terminals. Damage to the equipment may occur. If using more than one Power Supply, the negative (-) terminals of the supplies must be connected together.

I f

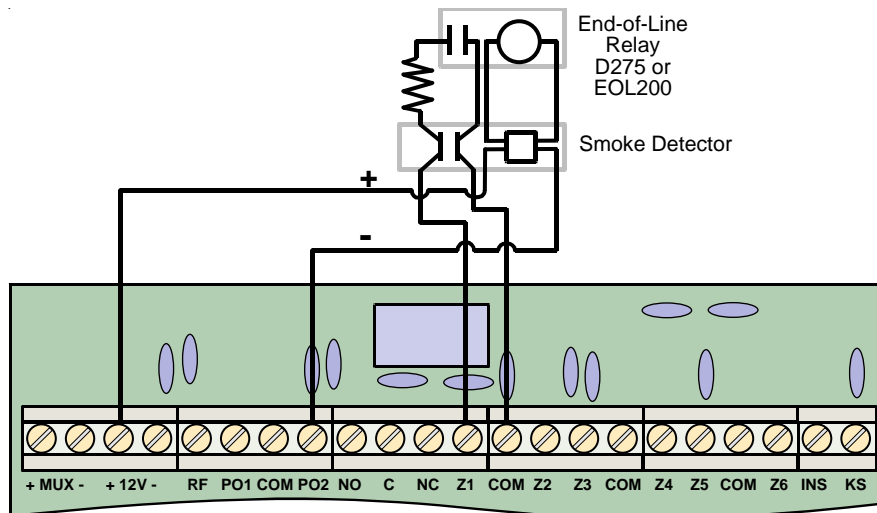
4.2 Zone wiring

- Zones may be wired with Normally Open (NO) or Normally Closed (NC) contacts. Each zone must be terminated with a 10k ohm End-of-Line (EOL) resistor.

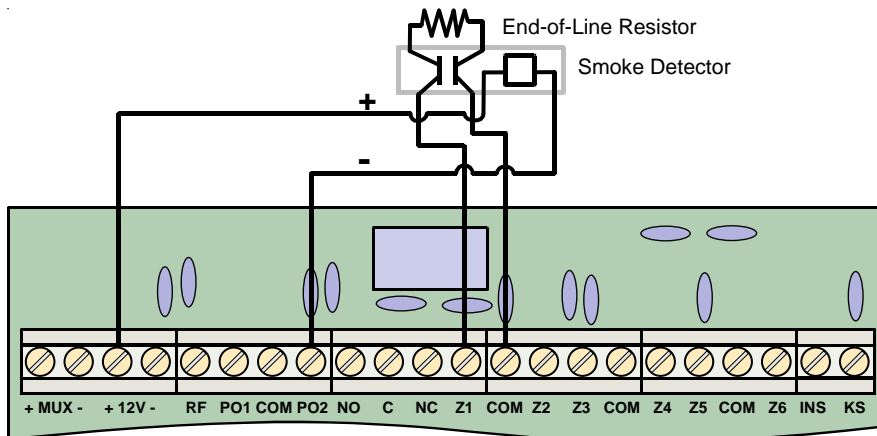


4.3 Smoke Detector wiring

- The DS6MX has the capacity to use 4-wire smoke detectors.
- A smoke detector with an End-of-Line Relay is wired as shown below.



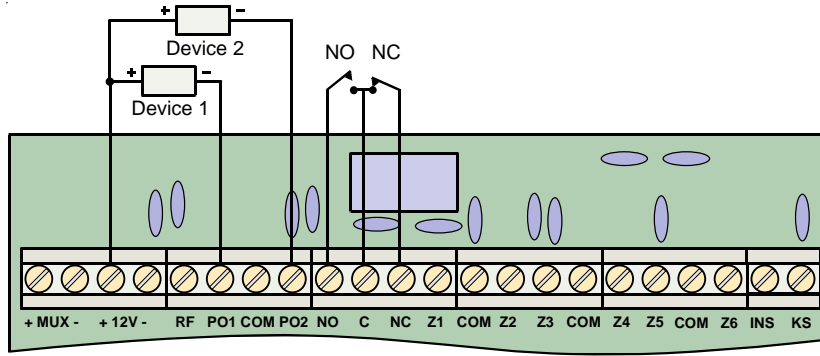
- A smoke detector with an End-of-Line resistor is wired as shown below.



The total current draw of the 4-wire smoke detectors and End-of-Line relay cannot exceed 250 mA.

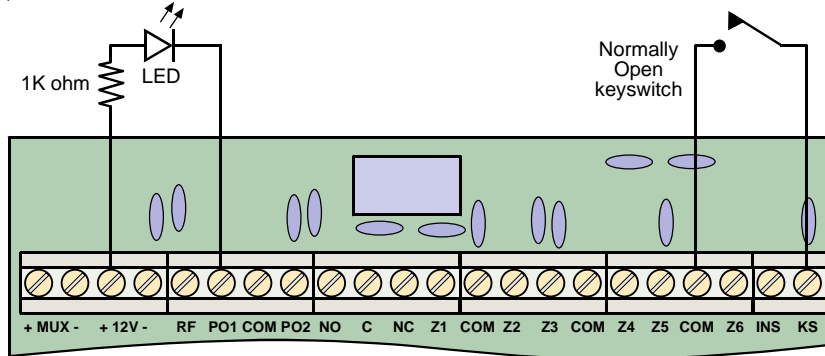
4.4 Output wiring

- The DS6MX provides Form "C" (NO/C/NC) contacts rated for 3 A @ 28 VDC or 120 VAC.
- Two solid state current sinks may be used for devices with a current draw of 250 mA maximum. The operating voltage cannot exceed 15 VDC. See Programming Addresses 26 and 27 for output options. (See *Table 1* page 6).



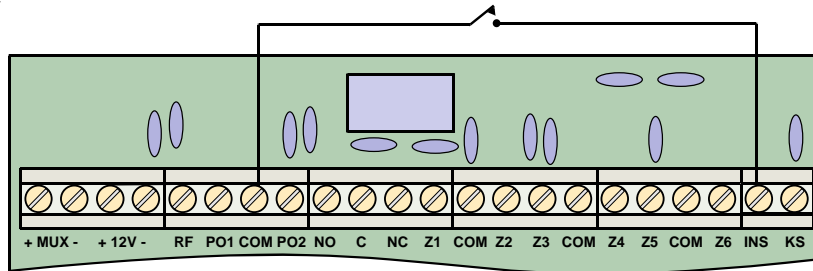
4.5 Keyswitch wiring

- The DS6MX may be armed and disarmed (depending on the program settings) using a keyswitch. If Program Address 29 is set to 1, closing the keyswitch for one second or more will arm the system. If Program Address 29 is set to 2, the keyswitch must remain closed to arm the system. When the keyswitch is opened for more than 1 second the system will disarm.



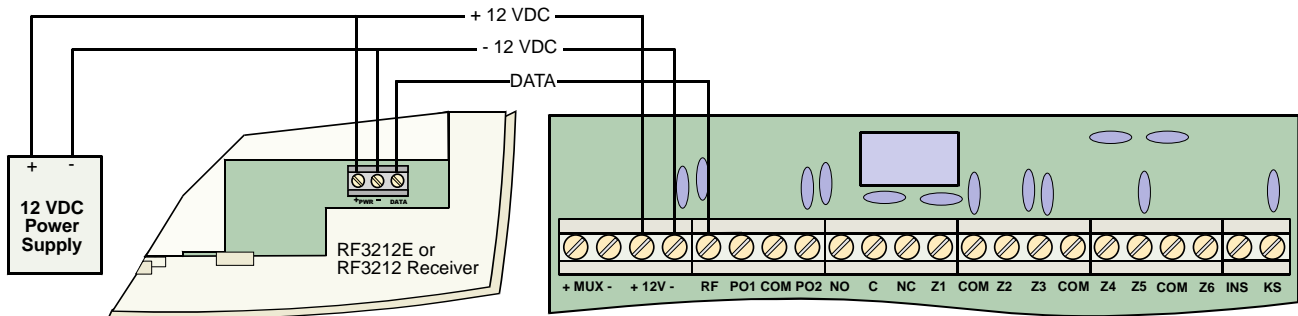
4.6 Instant Zone

- Any Entry/Exit delay zones may be changed to Instant zones by closing a switch between INS and COM. The Entry/Exit zones will return to the programmed delay when the switch is opened.



4.7 Wireless Receiver

- Keyfobs and Wireless sensors may be used with the system. This requires the use of an RF3212 or RF3212E Wireless Receiver.



5.0 Programming Functions

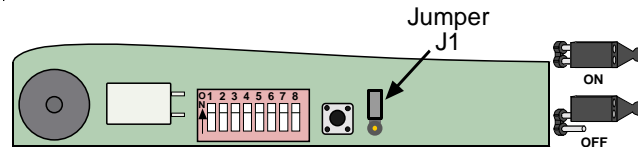
Step	Operation	Important Note
1	Enter Master Code[x][x][x][x]	Only the Master Code can be used to enter the Programming Mode. The three User Codes cannot be used to program.
2	Press [*] for 3 sec. to enter the Programming Mode	There will be a 1 sec. beep and the 6 Zone LED's will flash quickly to indicate that you have entered the Programming Mode.
3	Enter the Programming address[x] or [x][x] then press [*]	Addresses 0 through 9 only require 1 digit. Addresses 10 through 45 require 2 digits.
4	Enter the Programming value of[x] to [x][x] [x][x][x][x][x][x][x]	The Programming value may be as little as 1 digit or as many as 9 digits depending on the address. A 1 sec. beep will confirm that the input has been accepted. If you make a mistake, press [#]. This will return you to step 3.
5	Repeat items 3 and 4 to program other addresses	
6	Press [*] for 3 sec. to exit Programming Mode.	1 sec. beep and the 6 Zone LED's off will indicate that you have quit the Programming Mode.

Note: The factory set default Master Code is [1][2][3][4]. If you forget the Master Code, you may use the following procedure to reset the master code to the factory default value.



The following procedure will reset only the master code in the DS6MX to it's factory default values. Use this procedure only if you have forgotten the Master Code.

1. Remove the 12 VDC Power from the DS6MX.
2. Place Jumper J1 across both pins (ON).
3. Reconnect the 12 VDC to the DS6MX.
4. Remove the J1 Jumper (OFF).



Note: For each address you must enter the allowable program value described in the table. If an incorrect entry is made (not the number length, only value), you can press [#] to clear your previous entry and re-enter again. To repeat entries return to steps 3 and 4.

Example 1: To change the master code to 3345 after entering the programming mode: [0]+[*]+[3]+[3]+[4]+[5]

Example 2: To change the quick arm function after entering programming mode: [2]+[8]+[*]+[1]

After finished the programming, Press [*] for 3 sec. to leave the programmer's mode. One long beep and the 6 Zone LED's will turn off to indicate you have left the programmer's mode.

Note: The DS6MX will automatically exit the programmer's mode after 3 min. if there is no activity (no key pressed).

Programming Addresses

Program Address	Description	Factory Default Value See Note 3	Allowable Program Value
0	Master Code	1234	0001 - 9999 (0000 is not allowed)
1	User Code # 1	1000	0001 - 9999 (0000=disable / turn off)
2	User Code # 2	0000	0001 - 9999 (0000=disable / turn off)
3	User Code # 3	0000	0001 - 9999 (0000=disable / turn off)
4	Alarm time	180	000 - 999 (0-999 second)
5	Exit delay time	090	000 - 999 (0-999 second). See Note 1
6	Entry delay time	090	000 - 999 (0-999 second). See Note 1
7	Zone 1 Type	2	1=Instant 2=Delay 3=24 hour 4=Follower. See Note 2
8	Zone 1 Bypass	2	1=Bypass allowed 2=No Bypass allowed. See Note 2
9	Zone 1 Shunt	2	1=Zone Shunt allowed 2=No Zone Shunt

Table 1: Programming Addresses

Continued on next page

Program Address	Description	Factory Default Value	Allowable Program Value
10	Zone 2 Type	4	1=Instant 2=Delay 3=24 hour 4=Follower. See Note 2
11	Zone 2 Bypass	2	1=Bypass allowed 2=No Bypass allowed. See Note 2
12	Zone 2 Shunt	2	1=Zone Shunt allowed 2=No Zone Shunt
13	Zone 3 Type	1	1=Instant 2=Delay 3=24 hour 4=Follower. See Note 2
14	Zone 3 Bypass	2	1=Bypass allowed 2=No Bypass allowed. See Note 2
15	Zone 3 Shunt	2	1=Zone Shunt allowed 2=No Zone Shunt
16	Zone 4 Type	1	1=Instant 2=Delay 3=24 hour 4=Follower. See Note 2
17	Zone 4 Bypass	2	1=Bypass allowed 2=No Bypass allowed. See Note 2
18	Zone 4 Shunt	2	1=Zone Shunt allowed 2=No Zone Shunt
19	Zone 5 Type	1	1=Instant 2=Delay 3=24 hour 4=Follower. See Note 2
20	Zone 5 Bypass	2	1=Bypass allowed 2=No Bypass allowed. See Note 2
21	Zone 5 Shunt	2	1=Zone Shunt allowed 2=No Zone Shunt
22	Zone 6 Type	3	1=Instant 2=Delay 3=24 hour 4=Follower 5=REX. . See Notes 2 and 7
23	Zone 6 Bypass	2	1=Bypass allowed 2=No Bypass allowed. See Note 2
24	Zone 6 Shunt	2	1=Zone Shunt allowed 2=No Zone Shunt
25	Alarm sound (Piezo)	1	0=Off 1=On
26	Solid State Output 1	1	1=Follows Armed State 2=Follows Zone Alarm. See Note 5
27	Solid State Output 2	1	1=Follows Fire Reset 2=Follows Alarm Output 3=Follows Unlock code. See Note 6
28	Quick Arm	2	1=Quick Arm ON 2=Quick Arm Off
29	Key Switch Input	1	1=Allow Arm Only 2=Allows Arm / Disarm. See Note 4
30	Panic Key Enable	0	0=OFF 1=ON
31	Relay Function	0	0=Follows Alarm 1=Follows UnLock User code
32	Duress User Code	0000	0000 - 9999, (0000 = disable / turn off). See Note 8
33	Door Unlock User Code	0000	0000 - 9999, (0000 = disable / turn off). See Note 9
34	Door Unlock Time	000	000 - 999, (0 - 999 seconds) 000 = disabled / turn off
35	RF Key fob Enable	0	0=disable 1=onekey fob 2=two keyfobs 3=three keyfobs
36	RF Supervisory Trouble	1	1 = Report Supervisory Trouble after 12 hours. 2 = Report Supervisory Trouble after 24 hours.
37	RF Zone 1 ID Number	000000000	000000000 = Disabled (Zone is hard wired) 000000001 - 999999999 ID numbers are allowed
38	RF Zone 2 ID Number	000000000	000000000 = Disabled (Zone is hard wired) 000000001 - 999999999 ID numbers are allowed
39	RF Zone 3 ID Number	000000000	000000000 = Disabled (Zone is hard wired) 000000001 - 999999999 ID numbers are allowed
40	RF Zone 4 ID Number	000000000	000000000 = Disabled (Zone is hard wired) 000000001 - 999999999 ID numbers are allowed
41	RF Zone 5 ID Number	000000000	000000000 = Disabled (Zone is hard wired) 000000001 - 999999999 ID numbers are allowed
42	RF Zone 6 ID Number	000000000	000000000 = Disabled (Zone is hard wired) 000000001 - 999999999 ID numbers are allowed
43	RF Keyfob 1 ID Number	000000000	000000000 = Disabled 000000001 - 999999999 ID numbers are allowed
44	RF Keyfob 2 ID Number	000000000	000000000 = Disabled 000000001 - 999999999 ID numbers are allowed
45	RF Keyfob 3 ID Number	000000000	000000000 = Disabled 000000001 - 999999999 ID numbers are allowed

Table 1: Programming Addresses continued

Notes:

- 1) There is only One Entry Delay Timer and One Exit Delay timer. Any Zone programmed to type Delay will follow these timers.
- 2) If a Zone is programmed to type 24-hour, Bypass programming is not allowed.
- 3) All Default values are factory defaults.

- 4) Arm sequence will start after 1 sec. of the Key switch input being pulled low (0 V). If using a Momentary Key Switch, it must be closed a minimum of 1 sec. to start the arming sequence. If programming address 29 = 2, a continuous switch or input contact must be used.
- 5) Solid State Output 1. This output will be normally floating (open) and pulled low (0 V) when following either the Alarm state or the Armed state
- 6) Solid State Output 2. When programmed to Fire Reset function, this output will be normally pulled low (0 V) and will be floating (open) during Fire Reset. If programmed to Follow Zone Alarm, Output 2 will remain active for the entire time that a zone is in Alarm.
- 7) If Zone 6's Type is programmed to 5=REX, Door Unlock will activate after Zone 6 is triggered.
- 8) If the Duress code is entered the panel will disarm normally but will send a silent alarm to the control panel. For use when the user is in danger and someone demands you to disarm your system. This code must be different from any of the other PINs.
- 9) The Unlock is provided to allow the user to unlock a door. After pressing the [Unlock Code] + [*] keys, the Solid State Output 2 (if Solid State Output 2 is programmed to 3 = Follows Unlock code) will pull output low (0V) and / or the Relay will activate (if Relay Function is programmed to 1 = Follows Un-Lock User code). After the Door Unlock Time, Solid Output 2 and / or the Relay will return to their normal state. The Door unlock code must be different from the Master code.
- 10) If an RF ID is programmed into address 37-42 the system will ignore the hardwiring for that zone.

5.1 Zone types:

- **Instant:** When the DS6MX is Armed, violation of an Instant zone will cause an immediate Alarm.
- **Delay:** When the DS6MX is Armed violation of this zone will cause an Alarm after expiration of the Entry or Exit Delay time setting. There is only One Entry Delay Timer and One Exit Delay timer. Any Zone programmed to type Delay will follow these timers.
- **Follower:** A Follower zone is typically an internal (inside the protected area) detection zone that under normal operating conditions (zone is the first or the only zone violated) would respond as an Instant zone and cause an immediate alarm. The term Follower means that it can "Follow" the programmed type of the Delay zone. In this case, if an Entry Delay zone is violated first and then the Follower zone is violated second but still during the Entry Delay time, a follower zone will also act as an Entry Delay zone until the system is disarmed. If the system is not disarmed during the Entry Delay time an alarm will occur as normal. The Entry Delay timer is not extended under this situation.

Example 1

Entry Delay Zone time is programmed to be 30 seconds. First, Zone 1 (the delay Zone) is violated. The entry delay time starts running. Then Zone 2 (the follower Zone) is violated. No Alarm occurs when Zone 2 is violated and the Entry Delay timer continues to run down. If the system is disarmed before expiration of Delay timer there is no Alarm. If the system is not disarmed before the Entry Delay time expires then the system goes into the Alarm.

Example 2

Entry Delay Zone time is programmed to be 30 seconds. First Zone 2 (the Follower Zone) is violated. Since there is No Entry delay timer running, an Immediate (Instant) Alarm occurs.

Programming of the DS6MX panel should allow any Zone to be programmed as a Follower zone. However, any zone programmed as a Follower can only follow a Delay Zone, which means it can or will follow any Delay zone. So if two zones are programmed to be type = delay, and one Zone is programmed to be type = Follower it may follow either Delay zone if activated first.

- **24-Hour:** Active at all times, DS6MX Armed or Disarmed. Any violation will cause an Alarm. Typically used for fire applications.
- **REX:** Active at all times, Armed or Disarmed. Triggering this input will activate the output programmed to follow the Unlock code and timer setting.
- **Bypass:** Bypassing a Zone/s will cause the panel to ignore the zone/s during this arming period. The Zone/s bypass will clear when the DS6MX is disarmed. Any Zone may be bypassed if it isn't configured as a 24-hour Zone.
- **Shunt:** If a zone is programmed for Zone Shunt, only the first zone triggered will alarm the DS6MX. All additional triggers during this Armed period will be ignored. Shunt will clear when the DS6MX changes arming state.

6.0 Programming wireless keyfobs and detectors

The DS6MX can support one RF3212 or RF3212E receiver. The receiver can be remotely mounted up to 20 m (65 ft.) from the DS6MX. The wireless interface will allow up to six RF sensor/devices (PIR, PIR/Microwave, Door Contacts, and Smoke Detectors) to be connected to the system and assigned to a Zone function type.

Each wireless device will have a unique ID code attached to the device in the form of a two part bar code sticker or a number set as shown here:

To enter the transmitters nine digit ID code into the system will require you to manually key in the device ID during programming mode. During Installer programming mode the use of RF keyfobs can be enabled (Program Address 35) by selecting the number of keyfobs. If the value 0 is entered it will clear all keyfobs from memory. Use Program Addresses 37-42 for wireless detectors and Program Addresses 43-45 for keyfobs. The Master Code will not support the use of a keyfob. You must have one other user for each keyfob. All exit delay and entry delay times will apply as if the DS6MX was armed / disarmed using a standard User code.



6.1 Test Mode

The test mode is for checking the signal strength of the RF receiver. The DS6MX will display if the location of the receiver is good, marginal or should be relocated.

Procedure for entering Test mode: (only during Disarm state)

1. Enter Master code
2. Press [#] for 3 seconds. (Zone LED's 4, 5 and 6 will flash quickly in sync to indicate you have entered test mode).
3. Test mode can be exited by pressing [#] for 3 sec. or it will exit automatically after 3 minutes. The LED's will return to their previous condition after exiting test mode.

When in test mode the DS6MX will display the signal strength on three of the Zone LED's. If Zone 1 is on then relocate RF receiver. If Zone 1 and Zone 2 are on the location is marginal and you should relocate the receiver to prevent problems. If Zone 1, Zone 2 and Zone 3 LED's are on then the receiver is in a good location. The DS6MX will ignore all Zone inputs while in test mode.

Note: During the test mode, all keys function normally except when [#] is held for 3 seconds. After 3 min., if the [#] key is not held for 3 sec., the DS6MX will exit the test mode.

6.2 Low Battery Trouble

When the DS6MX receives a low battery signal from the RF receiver it will beep twice every minute and flashes the LED of the Zone with the low battery condition at a rate of once per second. If the Reset button is pressed the DS6MX will ignore this condition for up to 8 hours. If after 8 hours the low battery condition is still present the DS6MX will start its beeping/display again.

Note: Pressing the reset button can not silence the RF280 Smoke Detector with a sounder.

6.3 Supervisory Trouble

The DS6MX can be programmed to ignore the supervisory trouble for 12 or 24-hours. After 12 or 24-hours the DS6MX will begin to flash the Zone LED of the missing unit and beep once per minute. The LED will flash once per second. Once the supervisory condition clears it will stop.

7.0 Connecting to a DS7400Xi

To connect the DS6MX to a DS7400XI, you must select an address using the DIP switches. Each DS6MX occupies two multiplex zones. Use the chart below to select which zones you wish to use. Do not use zones 001-008.

Consult the DS7400Xi control panel's installation guide for multiplex zone (point) programming information. The zone programming for the DS6MX is the same as a DS7460.

● = SWITCH ON (CLOSED)

ZONE (POINT) ADDRESS	SWITCH NUMBER							
	1	2	3	4	5	6	7	8
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					●	●		●
041/042					●	●		●
043/044					●	●		●
045/046					●	●		●
047/048					●	●		●
049/050					●	●		●
051/052					●	●		●
053/054					●	●		●
055/056					●	●		●
057/058					●	●		●
059/060					●	●		●
061/062					●	●		●
063/064					●	●		●

Do not use Addresses 001-008

In the switch settings chart ● = ON

ZONE (POINT) ADDRESS	SWITCH NUMBER							
	1	2	3	4	5	6	7	8
065/066	●							●
067/068	●							●
069/070	●					●		●
071/072	●					●	●	●
073/074	●					●	●	●
075/076	●					●	●	●
077/078	●					●	●	●
079/080	●					●	●	●
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	●					●	●	●
121/122	●					●	●	●
123/124	●					●	●	●
125/126	●					●	●	●
127/128	●					●	●	●

ZONE (POINT) ADDRESS	SWITCH NUMBER							
	1	2	3	4	5	6	7	8
129/130	●							●
131/132	●							●
133/134	●							●
135/136	●							●
137/138	●							●
139/140	●							●
141/142	●							●
143/144	●							●
145/146	●							●
147/148	●							●
149/150	●							●
151/152	●							●
153/154	●							●
155/156	●							●
157/158	●							●
159/160	●							●
161/162	●							●
163/164	●							●
165/166	●							●
167/168	●							●
169/170	●							●
171/172	●							●
173/174	●							●
175/176	●							●
177/178	●							●
179/180	●							●
181/182	●							●
183/184	●							●
185/186	●							●
187/188	●							●
189/190	●							●
191/192	●							●

ZONE (POINT) ADDRESS	SWITCH NUMBER							
	1	2	3	4	5	6	7	8
193/194	●	●						●
195/196	●	●						●
197/198	●	●						●
199/200	●	●						●
201/202	●	●						●
203/204	●	●						●
205/206	●	●						●
207/208	●	●						●
209/210	●	●						●
211/212	●	●						●
213/214	●	●						●
215/216	●	●						●
217/218	●	●						●
219/220	●	●						●
221/222	●	●						●
223/224	●	●						●
225/226	●	●						●
227/228	●	●						●
229/230	●	●						●
231/232	●	●						●
233/234	●	●						●
235/236	●	●						●
237/238	●	●						●
239/240	●	●						●
241/242	●	●						●
243/244	●	●						●
245/246	●	●						●
247/248	●	●						●
249/250	●	●						●
251/252	●	●						●
253/254	●	●						●
255/256	●	●						●