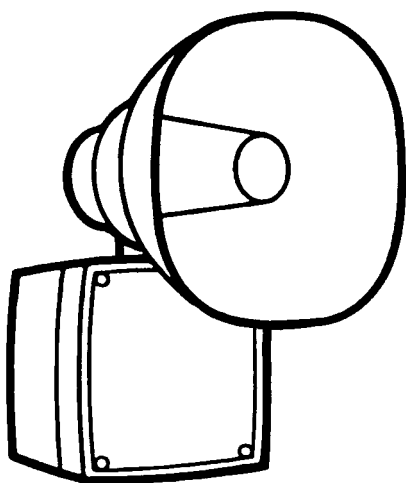


# 5531M and 5531MHV Adaptatone Installation Sheet



## Description

Edwards Adaptatone Millennium is intended for industrial applications where high audible output and microcomputer reliability are required. The Adaptatone Millennium series are UL and cUL Listed as Audible Signal Appliances for use in the hazardous locations listed in Table 1.

The Adaptatone operates from local power. It accommodates up to four normally-open contacts on its inputs. The tone that sounds in response to an active input is determined by setting miniature programming switches inside the unit. Table 6 has switch settings for setting tones.

Four tones may be programmed into the unit at any time. These tones operate on a pyramid-type priority system. The tone programmed on SW1 overrides the tones programmed on SW2, SW3, and SW4. The tone on SW2 overrides the tones programmed on SW3 and SW4. Likewise, the tone on SW3 overrides the tone programmed on SW4. The tone programmed on SW4 has the lowest priority and cannot override any other programmed tone.

Speaker direction and the output level are easily adjustable.

## Recording a Voice Message (5531MV Series)

**WARNING:** High voltage is present when product is energized.

1. Put switches A and B on the programming dipswitch in the proper position for the message to be recorded (Figure 6). For programming a message longer than five seconds, use Message Location 1.

Message Location	Start	Switch A Settings	Switch B Settings
1	0 Sec	CLOSED	CLOSED
2	5 Sec	OPEN	CLOSED
3	10 Sec	CLOSED	OPEN
4	15 Sec	OPEN	OPEN

2. Put switch PGM on the programming dipswitch in the "CLOSED" position for programming mode (Figure 6).
3. Press and hold the record button while speaking clearly into the microphone to record your message. Release the button when recording is complete.
4. To test the message, press and hold PLAY while in programming mode.

NOTE: This will play only the current location.

**WARNING:** High volume may cause harm to personnel in close proximity.

5. Adjust the volume as necessary. Set the main volume using the potentiometer on the main board (Figure 5 and Figure 6) and then set the voice volume using the potentiometer on the voice module board (Figure 6).

## Installation

The Adaptatone may be mounted to any flat surface or may be used as a freestanding unit mounted to a rigid pipe. The Adaptatone must be installed in accordance with the latest edition of the National Electrical Code or other regulations applicable to the country and locality of installation and by a trained and qualified electrician.

For catalog numbers ending in "AQ", 24 VAC power must be transformer isolated from mains or line power.

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**WARNING:** To prevent fire, shock and component damage, NO work, including circuit board removal, should be performed while the circuit is energized.

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**NOTE: Any kind of service or maintenance performed while unit is energized will void the warranty.**

1. Mount Adaptatone as shown in Figure 1.
  - a. **Flat Surface Mounting.** Secure unit to mounting surface using the (4) mounting holes in the mounting plate on the rear of the box. Use the #10 x 3" (76 mm) wood screws (furnished loose) or other hardware (not supplied) suitable for the mounting surface.
  - b. **Rigid Pipe Mounting.** Loosen the (4) cover screws from the signal box and lift off signal box cover.

NOTE: Cover screws are captive. Do not remove from cover.

Remove the center knockout in lower wall of box and mount box to a 1/2" (12.7 mm) conduit pipe using suitable connector.

2. Wire in accordance with the instructions in "Wiring."
3. Refer to Figure 5 and Table 6 and select desired tones. Set miniature programming switches on the input board.  
  
For input connected to IN1, set on SW1; IN2, set on SW2; IN3, set on SW3, and IN4, set on SW4, in order of priority desired.

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**WARNINGS:** HIGH VOLTAGE is present when product is energized.

High volume may cause harm to personnel in close proximity.

4. Adjust volume level, if desired, by turning potentiometer located on the main board (Figure 5 and Figure 6).

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**WARNING:** To ensure integrity of the Adaptatone assembly when adjusting the speaker direction, make sure threads in the enclosure remain fully engaged and do not turn speaker more than 360 degrees from the original factory installed position.

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5. To adjust speaker direction, loosen large star nut (Figure 1) and turn speaker to the approximate desired position. Retighten nut and turn speaker slightly clockwise until locked into place.

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**WARNINGS:** To ensure integrity of the enclosure: Ensure the cover gasket, part number P-007549-0069, is adhered into groove at cover perimeter before replacing the signal box cover.

Ensure that the (4) collar gaskets, part number P-041930-0362, are in place on each cover screw before securing the signal box cover.

When securing cover, start screws by hand, making sure they are threaded into tapped holes in housing bosses before securing with a screwdriver. Torque signal box cover screws to a minimum of 20 in-lbs. This ensures the required tight fit.

---

6. Tightly secure the signal box cover using (4) retained cover screws.
7. Torque signal box cover screws to a minimum of 20 in-lbs.
8. Verify operability.

## Wiring

1. Install wires through a knockout hole in the bottom of the box from a raceway that is, with its connections to the 1/2" conduit knockout hole, approved for the same degree of protection and enclosure type needed by the application. Use the provided plastic tie-wrap, on the barrier to the electronics, to separate incoming power leads from signal and tone initiating leads, per NEC (Figure 4).

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**WARNING:** To prevent fire and shock, wire the Adaptatone only as described in this installation instruction.

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2. Wire as follows referring to Figure 4.

If Edwards Signal Actuator catalog number 5538-4 is used to manually initiate tones, connect its four normally-open switches to the Tone Generator as shown on instructions provided with the Signal Actuator unit.

- a. Connect green and yellow-striped earth-ground wires to earth-ground.
- b. Select the appropriate method for wiring to the input board from Figure 7 - Figure 11 models with 24 V input boards and Figure 12 and Figure 13 for models with 120 V input board. Connect the Adaptatone as shown.
- c. Connect incoming power to wire leads using a butt splice or other method listed, certified, or otherwise approved by local authorities. Leads are both black for -AQ and -N5 models and are black and white for -Y6 models.
- d. Optional. Connect external 24 VDC battery (not supplied) in series with separate diode assembly part 2600010 (supplied) to TB1 terminals 3 and 4 on the main board as shown in Figure 3 and marked on the diode assembly.

**NOTE:** Terminal Block TB1 can be unplugged from the main board to complete wiring as shown in Figure 2 and Figure 3.

## Maintenance and testing

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**WARNINGS:** To prevent fire, shock and component damage, NO work, including circuit board removal, should be performed while the circuit is energized.

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**NOTE: Any kind of service or maintenance performed while unit is energized will void the warranty.**

Examine the unit semi-annually for accumulation of dirt. Clean if necessary.

The Adaptatone should be tested annually or as required by the authority having jurisdiction to ensure continuous service.

Figure 1: Mounting the Adaptatone

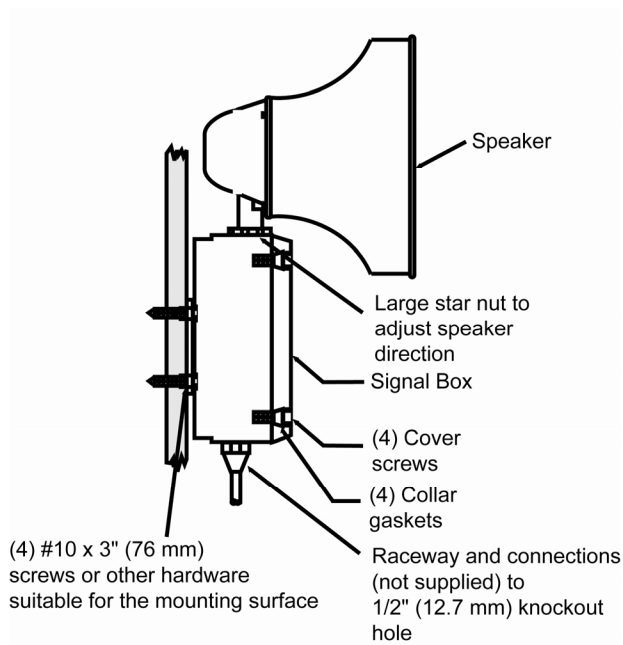


Figure 2: Terminal block TB1

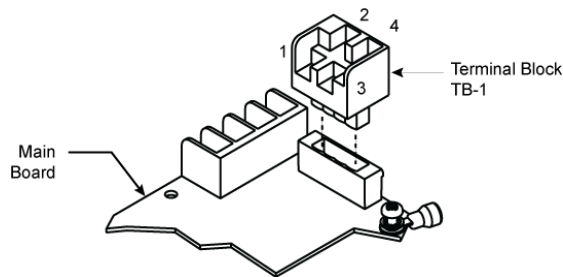


Figure 3: Wiring to terminal block TB1 input circuit

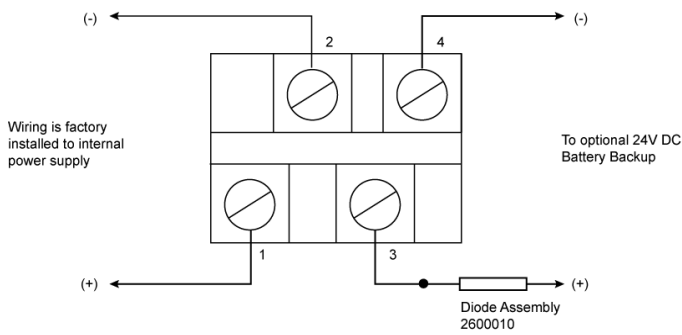


Figure 4: Wiring the Adaptatone

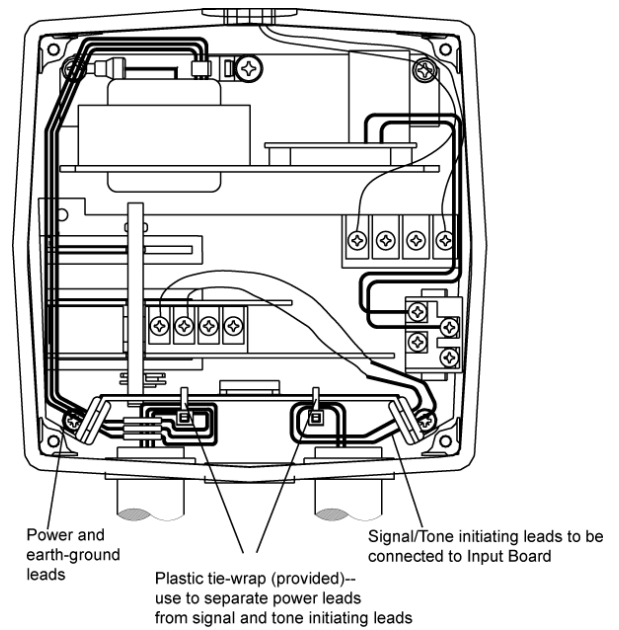


Figure 5: PC board locations

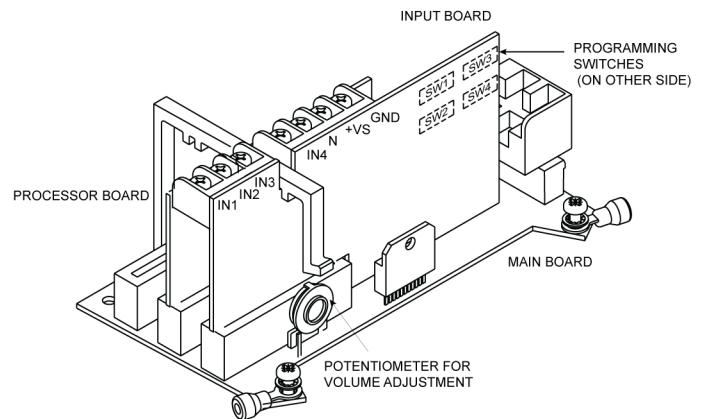


Figure 6: PC board locations (voice messaging models)

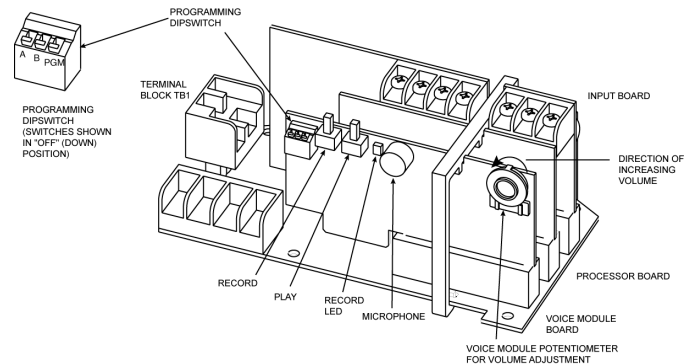


Figure 7: Installing with multiple dry relay contacts to 24 V input board method 1 (Refer to Applications Engineering for compatibility with earlier versions of Adaptatone)

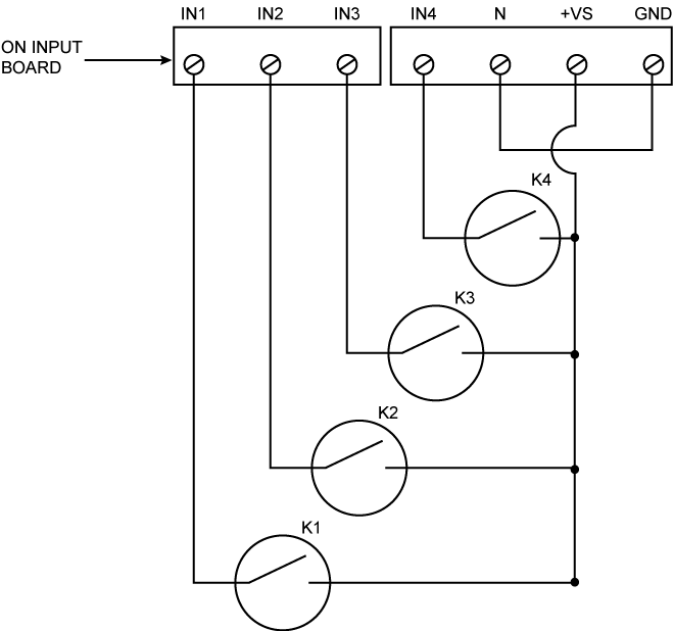


Figure 8: Installing with multiple dry relay contacts method 2, 24V input board

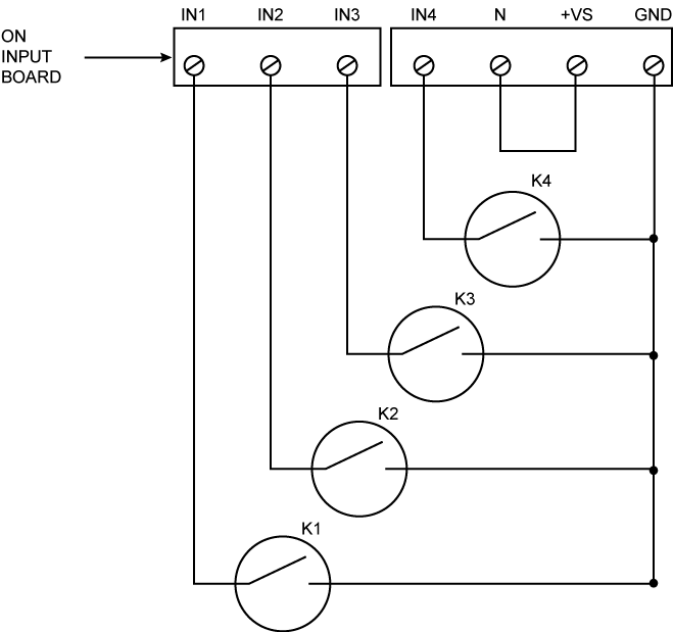


Figure 9: Installing with an open collector transistor, 24 V input board

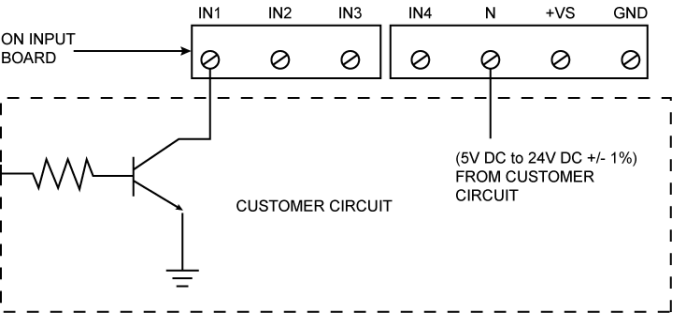


Figure 10: Connecting to a "B" Version Adaptatone, 24 V input board (maximum 5 "M" versions)

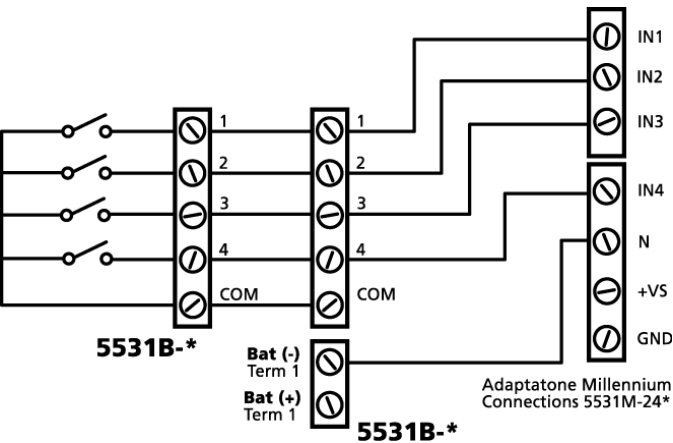
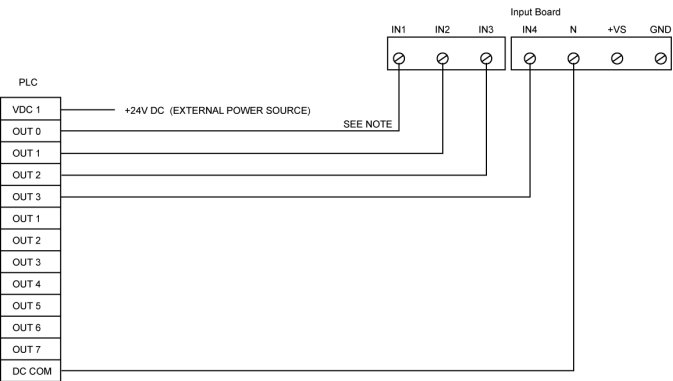
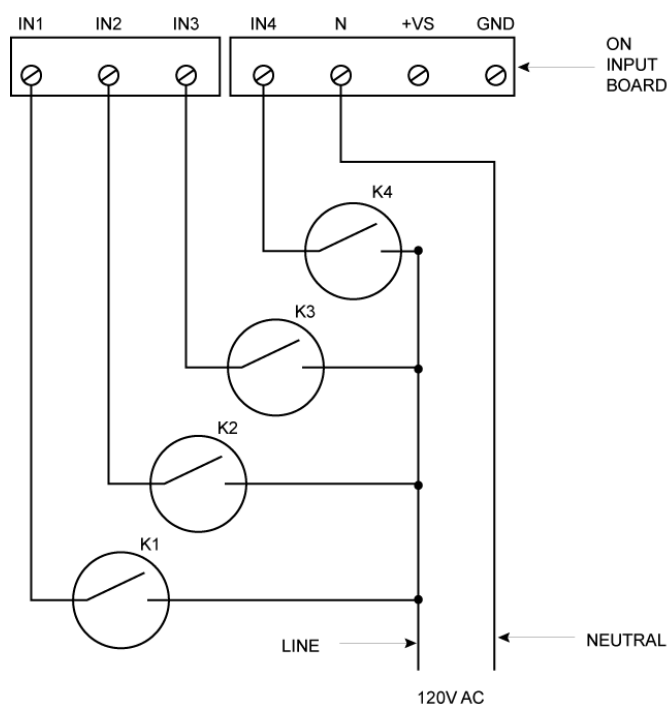


Figure 11: Connecting 24 V input board to a PLC. See Table 5



NOTE: IN1 can be connected to a 24V DC priority signal for activation of external audio signal connected to Audio Input Board.

**Figure 12: Installing with multiple dry contacts, 120 V input board**



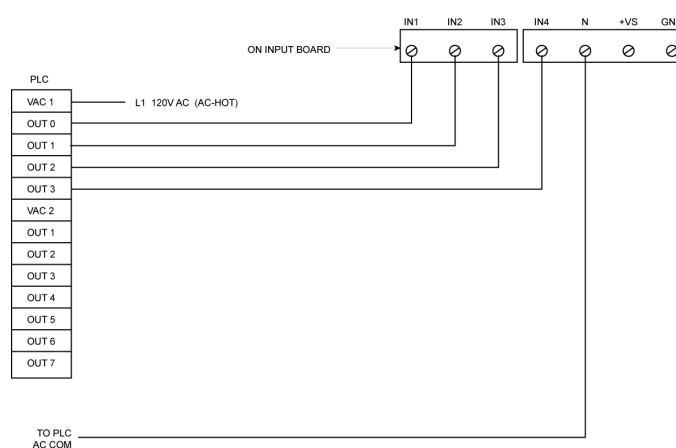
## Specifications

Voltage	Refer to Table 2 and Table 3
Current	Refer to Table 2 and Table 3
Dimensions	Refer to Table 4 on page 6
Weight	9 lb (4.1 kg)
Hazardous locations Ambient temp.	-31 to 104°F (-35 to +40°C)
Non-hazardous locations Variable ambient temp	-40 to 151°F (-40 to +66°C)

**Table 1: Operating temperature codes**

Catalog number	Class I, Div. 2 Groups A, B, C, D	Class II, Div. 2, Groups F, G Class III, Div. 1 and 2
5531M-24AQ	135°C (T4)	100°C (T5)
5531M-24N5		
5531M-120N5*		
5531MHV-24AQ		
5531MV-24N5		
5531MV-120N5*		
5531M-24Y6	180°C (T3A)	100°C (T5)
5531M-120Y6*		
5531MHV-24Y6		
5531MHV-120Y6*		
5531MV-24Y6		

**Figure 13: Connection from a PLC to input board, 120 V input board. See Table 5**



**Table 2: Input board**

Catalog number	Voltage	Current
5531M-24AQ	24 VDC	6 mA
5531M-24N5		
5531M-24Y6		
5531MHV-24AQ		
5531MHV-24Y6		
5531MV-24N5		
5531MV-24Y6		
5531M-120N5	120V 50/60 Hz	13 mA
5531M-120Y6		
5531MHV-120Y6		
5531MV-120N5		

**Table 3: Main power**

Catalog number	Voltage	Standby current	Tone on current
5531M-24AQ	24 VDC	0.10 A	0.74 A
	24 VAC 50/60 Hz	0.10 A	1.3 A
5531M-24N5	120 VAC 50/60 Hz	0.10 A	0.36 A
5531MV-24N5			
5531M-24Y6	125 VDC	0.10 A	0.21 A
5531MV-24Y6	250 VDC	0.02 A	0.10 A
	120 VAC 50/60 Hz	0.10 A	0.32 A
	240 VAC 50/60 Hz	0.10 A	0.20 A
5531M-120N5	120 VAC 50/60 Hz	0.10	0.38 A
5531MV-120N5			
5531M-120Y6	125 VDC	0.10 A	0.20 A
	250 VDC	0.02 A	0.10 A
	120 VAC 50/60 Hz	0.10 A	0.31 A
	240 VAC 50/60 Hz	0.10 A	0.20 A

Catalog number	Voltage	Standby current	Tone on current
5531MHV-24AQ	24 VDC	0.10 A	1.5 A
	24 VAC 50/60 Hz	0.10 A	2.3 A
5531MHV-24Y6	125 VDC	0.10 A	0.39 A
	250 VDC	0.02 A	0.19 A
	120 VAC 50/60 Hz	0.10 A	0.56 A
	240 VAC 50/60 Hz	0.10 A	0.34 A
5531MHV-120Y6	125 VDC	0.10 A	0.40 A
	250 VDC	0.02 A	0.20 A
	120 VAC 50/60 Hz	0.10 A	0.62 A
	240 VAC 50/60 Hz	0.10 A	0.37 A

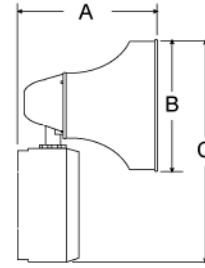


Table 4: Dimensions

	5531M	5531MHV
A	8 7/8" (225 mm)	11 1/2" (292 mm)
B	8 1/4" (210 mm)	9 3/4" (248 mm)
C	13" (330 mm)	14 1/4" (362 mm)

Table 5: PLC compatibility: PLC output to meet following product input parameters. Refer to Figure 9 and Figure 12.

Catalog number	Operating voltage	Max. off state leakage current	Continuous on current	Surge (inrush/duration)
5531M-24AQ	24 VDC only	2 mA	740 mA	8 A / 4 mS
5531M-24N5	120 VAC 50/60 Hz	2 mA	360 mA	2.82 A / 4 mS
5531MV-24N5				
5531M-120N5	120 VAC 50/60 Hz	5 mA	380 mA	2.82 A / 4 mS
5531MV-120N5				
5531MHV-24AQ	24 VDC only	2 mA	1500 mA	8 A / 4 mS
Input board circuit	24 VDC	2 mA	6 mA	--
Input board circuit	120 VAC 50/60 Hz	5 mA	13 mA	--

Table 6: Tone programming

Tone	SW 4-6	SW 4-5	SW 4-4	SW 4-3	SW 4-2	SW4-1	Description	Hex
No Tone	OFF	OFF	OFF	OFF	OFF	OFF		00
Ding-Dong	OFF	OFF	OFF	OFF	OFF	ON	Percussive pairs of 700 and 570 Hz tones, each damped to 0	01
Warble	OFF	OFF	OFF	OFF	ON	OFF	575 and 770 Hz alternately, 87 ms each	02
Siren	OFF	OFF	OFF	OFF	ON	ON	600 – 1250 Hz up and down sweep in 8 s and repeat	03
Stutter	OFF	OFF	OFF	ON	OFF	OFF	Percussive 470 Hz, 83 ms on, 109 ms off	04
Slow Whoop	OFF	OFF	OFF	ON	OFF	ON	600 – 1250 Hz upward sweep in 4 s and repeat	05
Beep	OFF	OFF	OFF	ON	ON	OFF	470 Hz, 0.55 s on, 0.55 s off	06
Chime 1	OFF	OFF	OFF	ON	ON	ON	700 Hz percussive repeat at 1 Hz	07
Fast Whoop	OFF	OFF	ON	OFF	OFF	OFF	600 – 1250 Hz upward in 1 s and repeat	08
Hi/Lo	OFF	OFF	ON	OFF	OFF	ON	780 to 600 Hz alternately, 0.52 s each	09
Rapid Siren	OFF	OFF	ON	OFF	ON	OFF	600 – 1250 Hz up and down sweep in 0.25 s and repeat	0A
Yeow	OFF	OFF	ON	OFF	ON	ON	1250 – 600 Hz downward sweep in 1.6 s and repeat	0B
Horn	OFF	OFF	ON	ON	OFF	OFF	470 Hz continuous	0C
Air Horn	OFF	OFF	ON	ON	OFF	ON	370 Hz continuous	0D
Dual Tone	OFF	OFF	ON	ON	ON	OFF	470 – 500 Hz, 0.4 to 0.5 s cycle	0E
Chime 2	OFF	OFF	ON	ON	ON	ON	575 Hz percussive repeat at 1 Hz	0F
Westminster	OFF	ON	OFF	OFF	OFF	OFF	Two measures, 411 Hz, 520 Hz, 407 Hz, 312 Hz	10
Three Blind Mice	OFF	ON	OFF	OFF	OFF	ON	Four measures, 787 Hz, 714 Hz, 625 Hz, 952 Hz, 333 Hz	11
Phasor	OFF	ON	OFF	OFF	ON	OFF	416 – 625 Hz up and down sweep in 13 ms and repeat	12
Telephone	OFF	ON	OFF	OFF	ON	ON	570 and 770 Hz alternately, 50 ms each for 1.2s, 1.5s delay and repeat	13
Staircase	OFF	ON	OFF	ON	OFF	OFF	440 – 2000 Hz up and down steps, 750 ms delay and repeat	14
3 Tone Alert	OFF	ON	OFF	ON	OFF	ON	463 Hz, 641 Hz, and 896 Hz, 200 ms each, 1 s delay and repeat	15
RESERVED	OFF	ON	OFF	ON	ON	OFF	RESERVED	16

Tone	SW 4-6	SW 4-5	SW 4-4	SW 4-3	SW 4-2	SW4-1	Description	Hex
RESERVED	OFF	ON	OFF	ON	ON	ON	RESERVED	17
RESERVED	OFF	ON	ON	OFF	OFF	OFF	RESERVED	18
RESERVED	OFF	ON	ON	OFF	OFF	ON	RESERVED	19
RESERVED	OFF	ON	ON	OFF	ON	OFF	RESERVED	1A
NFPA Whoop	OFF	ON	ON	OFF	ON	ON	Three 422 – 775 Hz upward sweeps, 850 ms each, 1 s delay and repeat	1B
3 Pulse Horn*	OFF	ON	ON	ON	OFF	OFF	470 Hz, 3 0.5 s pulses separated by 0.5 s followed by 1.5 s delay and repeat	1C
3 Pulse Air Horn*	OFF	ON	ON	ON	OFF	ON	370 Hz, 3 0.5 s pulses separated by 0.5 s followed by 1.5 s delay and repeat	1D
3 Pulse Dual Tone*	OFF	ON	ON	ON	ON	OFF	450 – 500 Hz, 0.4 to 0.5 s cycle, 3 0.5s pulses separated by 0.5 s followed by 1.5 s delay and repeat	1E
3 Pulse Chime 2*	OFF	ON	ON	ON	ON	ON	575 Hz, 3 0.5 s pulses separated by 0.5 s followed by 1.5 s delay and repeat	1F
European Police	ON	OFF	OFF	OFF	OFF	OFF	969 Hz and 800 Hz alternately 0.250 s each	20
European Fire	ON	OFF	OFF	OFF	OFF	ON	982 Hz and 864 Hz downward sweep in 0.134 s	21
European Slow Whoop	ON	OFF	OFF	OFF	ON	OFF	658 – 1312 Hz upward sweep in 3 s followed by 0.5 s delay and repeat	22
European General	ON	OFF	OFF	OFF	ON	ON	1087 Hz for 0.5 s followed by 0.5 s delay and repeat	23
European Toxic	ON	OFF	OFF	ON	OFF	OFF	982 Hz continuous	24
European Police 2	ON	OFF	OFF	ON	OFF	ON	554 Hz and 440 Hz alternately, 0.8 s each	25
European Stutter	ON	OFF	OFF	ON	ON	OFF	3876 Hz for 0.146 s followed by 0.102 s delay and repeat	26
European Sweep	ON	OFF	OFF	ON	ON	ON	1315 Hz – 413 Hz downward sweep in 1.17 s and repeat	27
Telephone 2	ON	OFF	ON	OFF	OFF	OFF	Alternate tones at 567 Hz and 326 Hz	28
Buzzer	ON	OFF	ON	OFF	OFF	ON	1315 Hz and 746 Hz alternating for 0.003 s each	29
Genesis Horn Cont	ON	OFF	ON	OFF	ON	OFF	Continuous Genesis horn	2A
Genesis Horn Temp	ON	OFF	ON	OFF	ON	ON	Temporal Genesis horn	2B
Warning 1	ON	OFF	ON	ON	OFF	OFF	1207 Hz and 493 Hz, alternately 0.002 s each	2C
Warning 2	ON	OFF	ON	ON	OFF	ON	2336 Hz and 493 Hz, alternately 0.005 s each	2D
Warning 2 Beep	ON	OFF	ON	ON	ON	OFF	0.500 s of 2336 Hz and 493 Hz each alternating for 0.005 s followed by 1 s delay	2E
Caution	ON	OFF	ON	ON	ON	ON	453 Hz for 0.040 s, 235 Hz for 0.020 s, 235 Hz for 0.160 s, 260 Hz for 0.050 s, 260 Hz for 0.1009 s, 235 Hz for 0.050 s	2F
Multi-tone	ON	ON	OFF	OFF	OFF	OFF	376, 357, 352, 382, 355, 375, 384, 375 and 364 Hz alternately on for 0.050 s	30
Attention	ON	ON	OFF	OFF	OFF	ON	2232, 4545, 3704, 2777, 4347, 3704, 2500 Hz alternately on for 0.003 s	31
High Freq. Steady Alert	ON	ON	OFF	OFF	ON	OFF	2500 Hz continuous	32
High Freq. Fast Siren	ON	ON	OFF	OFF	ON	ON	2500 – 3048 Hz up and down sweep in 0.130 s	33
High Freq. Slow Siren	ON	ON	OFF	ON	OFF	OFF	2500 – 3048 Hz up and down sweep in 0.500 s	34
DIN PFEER	ON	ON	OFF	ON	OFF	ON	Ramp downward from 1336 Hz to 522 Hz in 1.2 s and repeat	35
NF S 32 001	ON	ON	OFF	ON	ON	OFF	584 Hz for 0.100 s and 461 Hz for 0.400 s	36
Ode to Joy	ON	ON	OFF	ON	ON	ON	6.45 s of melody followed by 1 s delay and repeat	37
Twinkle Little Star	ON	ON	ON	OFF	OFF	OFF	13.2 s of melody followed by 1 s delay and repeat	38
Dueling Banjos	ON	ON	ON	OFF	OFF	ON	10.84 s of melody followed by 1 s delay and repeat	39
La Cucaracha	ON	ON	ON	OFF	ON	OFF	7.10 s of melody followed by 1 s delay and repeat	3A
Yellow Rose of TX	ON	ON	ON	OFF	ON	ON	19.34 s of melody followed by 1 s delay and repeat	3B
*3 Pulse Tones are for Evacuation Use Only								

**CAUTION:** The use of evacuation signals on this product, that is not specifically listed for fire alarm use, is subject to the approval of the authority having jurisdiction.

## Regulatory information

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Edwards Signaling	Edwards, A Division of UTC Fire & Security Americas Corporation, Inc. 8985 Town Center Parkway, Bradenton, FL 34202, USA
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UL and cUL Rated	Audible Signal Appliance
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## Contact information

For contact information, see [www.edwardssignaling.com](http://www.edwardssignaling.com).