SGA

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www.sga-safety.ir

Be
Different.

ASR-1000
Installation Manual

Safety Cautions:

- It is necessary to install and operate only informed and trained people.
- Before starting the installation operation, read this instruction carefully.
- Avoid opening the sounder when it is power on in environments where there is a possibility of flammable gas.
- Before opening the sounder, make sure it is power off.

Content

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1 Introduction

ASR-1000 model sound alarm or siren is used in oil, gas, petrochemical industries and other industries where explosion proof requirements or protection against water and dust are required. One of the prominent features of this product is the ability to produce high volume sound level and the ability to receive different signals in order to produce sounds with different frequencies, selectable from 32 different tones.

2 Mechanical Features

1) Body Material:
    - Aluminum (Epoxy-Coated)
2) Body Color: Red
3) Dimension: Without Bracket: 429(W) x 142(H) x 283(D) mm
4) Weight: with mounting Bracket 4.7 Kg

3 Main Features

1) Selectable Tone:
    - 32 Tone-Selectable by Dip-Switch
    - 3 Stages-Selectable by 24 VDC
2. Sound Pressure Level: Maximum 117 dB
3. Sound Pressure Level Control: Included by Dip Switch (100% & 90% of Maximum sound pressure level)
4. Operating Voltage: 24 VDC/110 VAC/230 VAC
5. Power Consumption: Max 250 mA @ 24 VDC
6. Cable Entry: 2x M20
7. Accessories:
    - Sunshade: Model ASR-1000-SS
    - Mounting Bracket: ASR-1000-MB
8. Approvals:
    - ATEX: (Exd IIB+H2)
        - T4: -20 to +60 °C
    - Ingress Protection Rating: IP65
9. Environmental Condition:
    - Relative Humidity: 5 to 95% RH (Non-Condensing)

4 Ordering Numbers

ASR-1000-X-Y

ASR-1000	X: Voltage	Y: Polarized
	• 1: 24 VDC • 2:110 VAC • 3:230 VAC	• A: Non-polarized • B: Polarized

Accessories:

1) Sunshade: Model ASR-1000-SS
2) Mounting Bracket: ASR-1000-MB

5 Sounder Settings Adjustment:

ASR-1000 model audio alarm has various settings as follows:

- Adjusting the sound pressure level:

The sound level of the audio warning output can be adjusted by the dip switch (item 1:DIP6) according to Figure 1 & Table 3.

- Choosing Sounder Output Tones:

ASR-1000 voice alarm has the ability to select the type of output sound from among 32 different tones according to table 2. For this purpose, a Dip-Switch with 5 numbers according to (item 2: DIP1 to 5) Figure 1 is installed.

By choosing the Dip Switch arrangement according to Table 1, the output sound type for Tones 2 and 3 will also be done at the same time.

5.1 Terminal & Dip Switch:

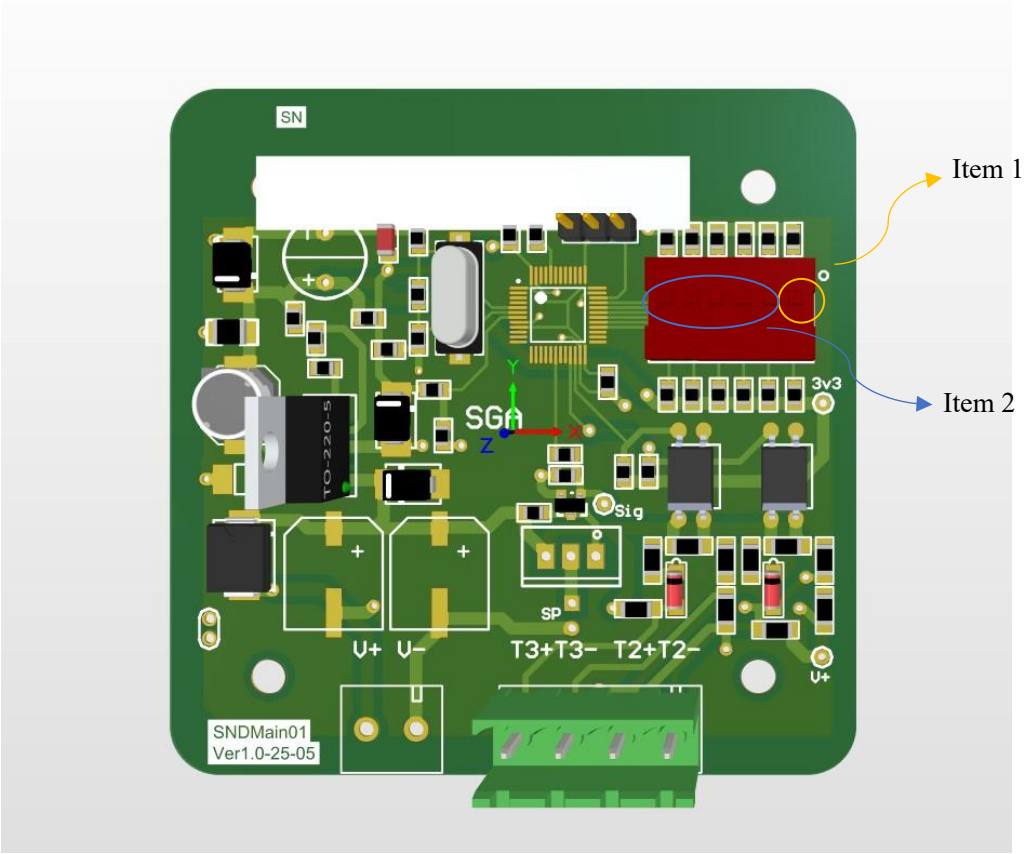


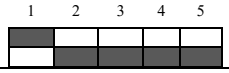
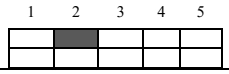
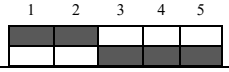
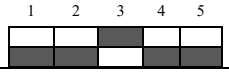
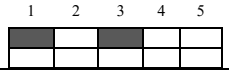
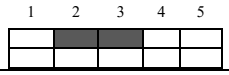
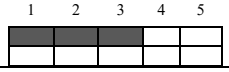
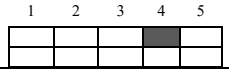
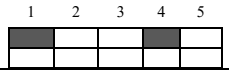
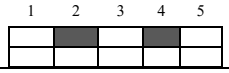
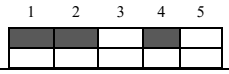
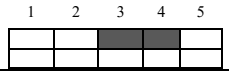
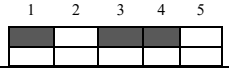
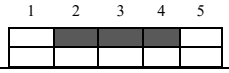
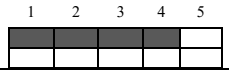
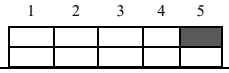
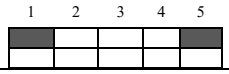
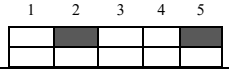
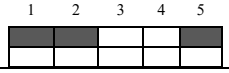
Figure 1: Electronic Board Schematic and Input Terminals

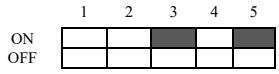
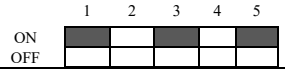
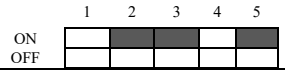
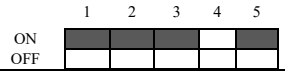
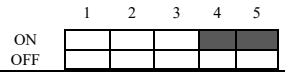
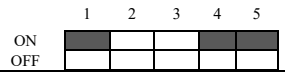
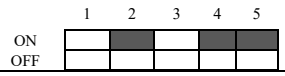
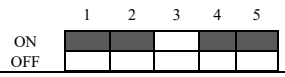
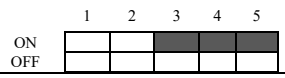
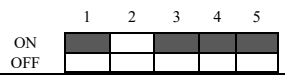
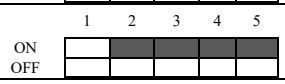
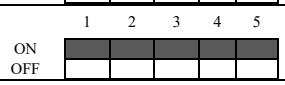
Item	Symbol	Configuration	Description
1	V+	Tone 1 +	Positive Voltage Input (24 VDC)
2	V-	Tone 1 -	Negative Voltage Input (0)
3	T2+	Tone 2 +	Input Tone 2 Positive
4	T2-	Tone 2 -	Input Tone 2 Negative
5	T3+	Tone 3 +	Input Tone 3 Positive
6	T3-	Tone 3 -	Input Tone 3 Negative

Table 1: Terminals and their numbering

5.2 Choosing Sounder Output Tones:

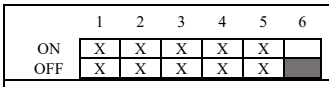
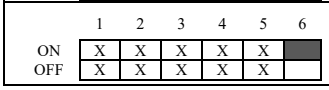
Table 2: Sounder Output Types and adjustment setting by Dip-switch

Dip switch arrangement	Stage 1	Sound Pressure Level dB	Sound Description	Stage 2	Stage 3
	T1	115	Continuous 1000Hz Toxic Gas Alarm	31	11
	T2	114	Alternating 800/1000Hz at 0.25s intervals	17	5
	T3	114	Slow Whoop 500/1200Hz at 0.3Hz with 0.5s gap repeated	2	5
	T4	113	Sweeping 800/1000 at 1Hz	6	5
	T5	112	Continuous at 2400Hz	3	27
	T6	109	Sweeping 2400/2900Hz at 7Hz	7	5
	T7	107	Sweeping 2400/2900Hz at 1Hz	10	5
	T8	115	Siren 500/1200/500Hz at 0.3Hz	2	5
	T9	114	Sawtooth 1200/500Hz at 1Hz	15	2
	T10	111	Alternating 2400/2900Hz at 2 Hz	7	5
	T11	114	Intermittent 1000Hz at 0.5Hz General alarm	31	1
	T12	114	Alternating 800/1000Hz at 0.875Hz	4	5
	T13	114	Intermittent 2400Hz at 1Hz	15	5
	T14	115	Intermittent 800Hz 0.25s on 1s off	4	5
	T15	116	Continuous at 800Hz	2	5
	T16	111	Intermittent 660Hz 150mS on, 150mS off	18	5
	T17	109	Alternating 544Hz (100mS) / 440Hz (400mS)	2	27
	T18	111	Intermittent 660Hz 1.8s on, 1.8s off	2	5
	T19	112	1400Hz to 1600Hz sweep up over 1s 1600Hz to 1400Hz sweep down over 0,5s	2	5
	T20	113	Continuous 660Hz	2	5

Dip switch arrangement	Stage 1	Sound Pressure Level dB	Sound Description	Stage 2	Stage 3
	T21	108	Alternating 554/440Hz at 1Hz	2	5
	T22	112	Intermittent 554Hz at 0.875Hz	2	5
	T23	114	800Hz pulsing at 2 Hz	6	5
	T24	116	Sweeping 800/1000Hz at 50Hz	29	5
	T25	110	Sweeping 2400/2900Hz at 50Hz	29	5
	T26	111	Simulated bell sound	2	1
	T27	110	Continuous 554Hz	26	5
	T28	109	Continuous 440Hz	2	5
	T29	116	Sweeping 800/1000Hz at 7Hz	7	5
	T30	111	420Hz repeating 0.62 5s on, 0.625s off Australian alert signal	32	5
	T31	116	1200/500Hz at 1 Hz Prepare to Abandon Platform	11	1
	T32	117	Sweeping 500/1200Hz 3.75s on, 0.25s off 15Hz	26	1

5.3 Adjusting the sound pressure level

Table 3: sound level and adjustment setting by Dip-switch

	Sound Level Up To 117 db
	Sound Level ~ 96 db

6 Installation instruction

Installing the Sounder on site or opening or operating the cover of the installed Sounder should only be done by an approved user or our company's installation and repair person. Failure to do so may cause fire, explosion, or other serious personal injury and property damage. Also, please work only after checking the presence of residual explosive gases or flammable materials around and disconnecting the power supply.

6.1 Swivel Mounting Bracket Installation

According to the type of installation base and its ability to be adjusted in different directions (vertical angle), it is possible to install the Sounder on the ceiling, wall, and on a two-inch pipe base.

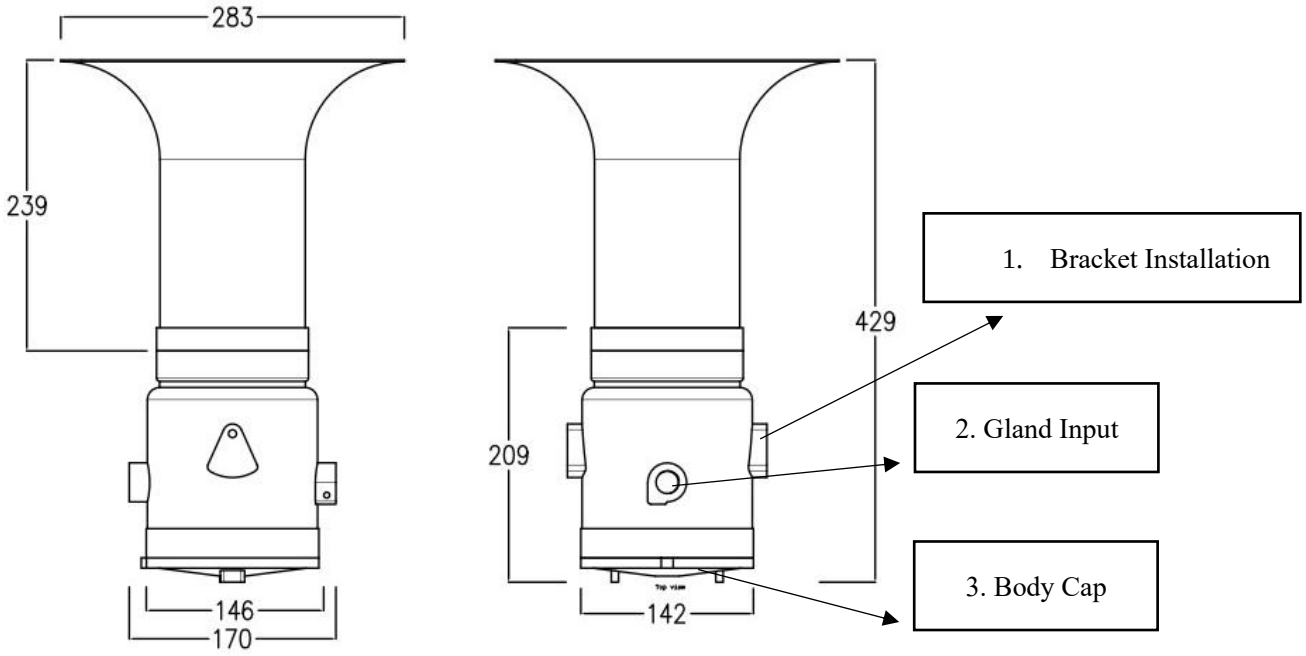


Figure 2: Outline drawing and Sounder parts

6.2 Installing Sounder on Swivel Mounting Bracket

According to Figure 3, the audio alarm body is installed on the adjustable base by a bracket and is connected to the audio alarm body by two screws (No. 3)

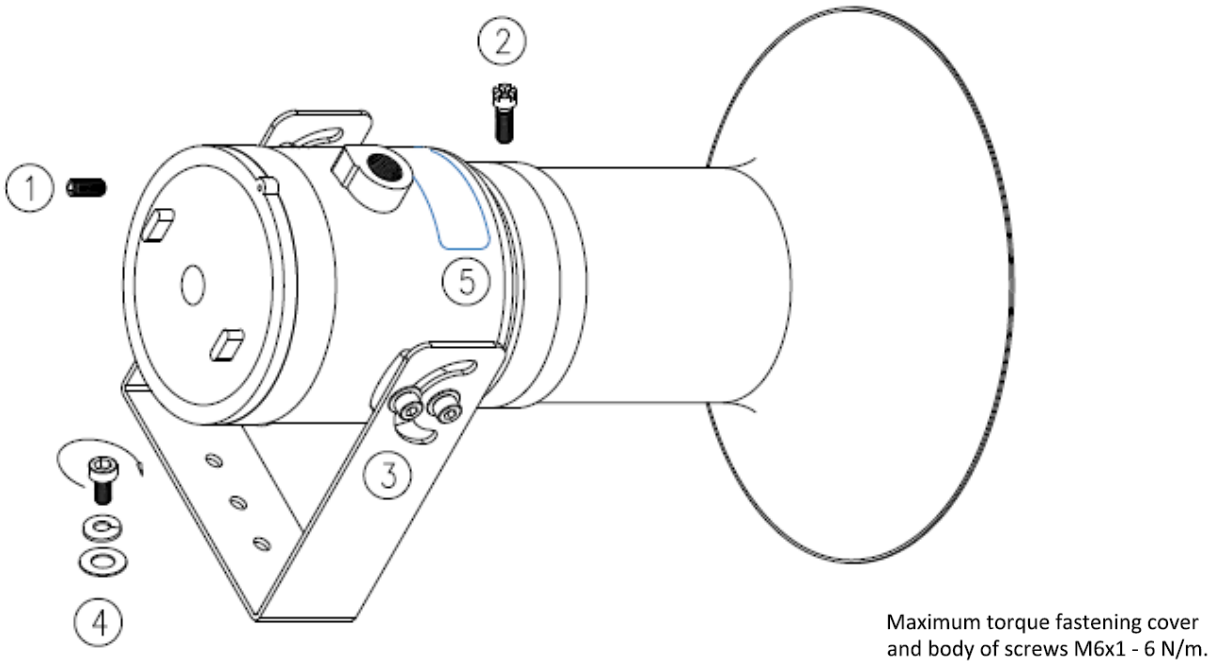


Figure 3: Swivel Mounting Bracket

1. 1 n° Stud Screw 4x10, stainless steel grade A2-70 for lockable cover and body
2. 4 n° Stud Screw M4x8, stainless steel grade A2-70 for lockable translation and cap1
3. 4 n° Stud Screw M8x10, stainless steel grade A2-70 for lockable bracket and body
4. 3 n° Screws M8x30, steel grade 8.8 with Lock nut +Flat+Spring washer for connection bracket to structure
5. Label

6.2.1 Preparation

- Ensure all components listed in the parts list are available: stud screws, lock nuts, flat washers, and spring washers.
- Verify that the mounting surface (ceiling, wall, or 2-inch pipe base) is clean and structurally sound.

6.2.2 Bracket Attachment to Structure

- Position the swivel mounting bracket on the desired surface.
- Use 3 pcs M8×30 steel grade 8.8 screws with lock nuts, flat washers, and spring washers (Part ④) to secure the bracket to the structure. Tighten firmly.

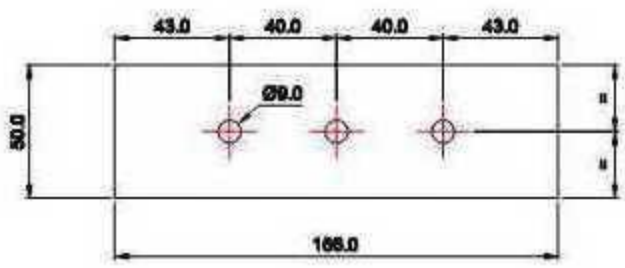


Figure 4: Bracket Attachment to Structure

6.2.3 Bracket Connection to Sounder Body

- Align the bracket with the sounder body.
- Insert 4 pcs M8×10 stainless steel grade A2-70 screws (Part ③) to lock the bracket to the body.

6.2.4 Cap and Cover Installation

- Use 4 pcs M4×8 stainless steel grade A2-70 screws (Part ②) to secure the translation section and cap.
- Use 1 pc 4×10 stainless steel grade A2-70 screw (Part ①) for the lockable cover.

6.2.5 Final Tightening

- Tighten all M6×1 screws to a maximum torque of 6 N·m.
- Verify that the bracket allows adjustment in the vertical direction and that the unit is firmly secured.

6.3 Opening Sounder Head

After installing the gland and inserting the cable (it is possible to install the gland in two directions up and down), in order to wire the sound alarm, according to Figure No. 3, open one screw on the cover with an Allen wrench and the cover part is separated from the body.
Then according to paragraph 7, the required wiring is done.

6.4 Adjusting Viewing Angle

The angle of the sound warning can be adjusted in the vertical axis.
If you need to adjust the tilt in the vertical axis, use the screws installed on both sides of the sound alarm, according to Figure No. 5

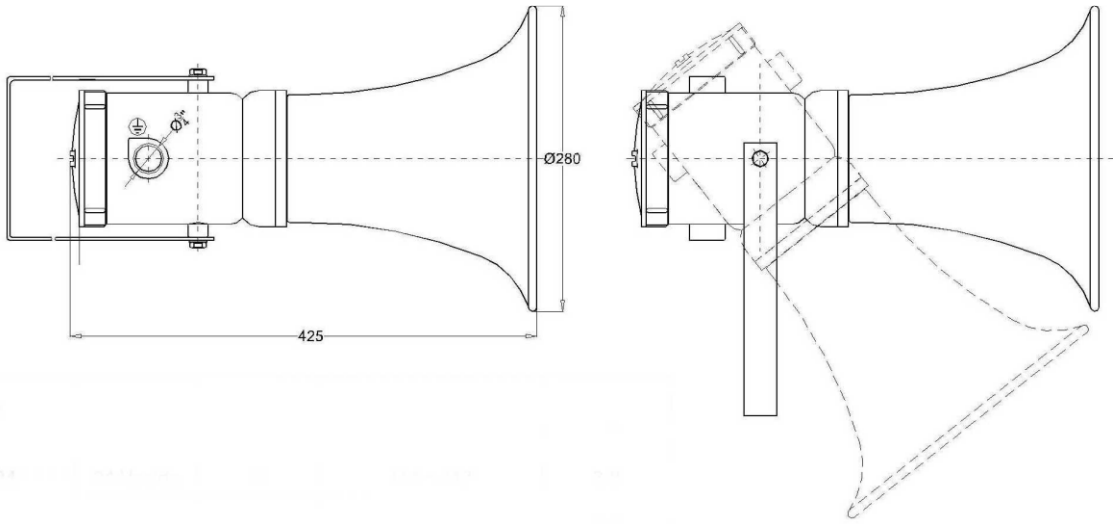
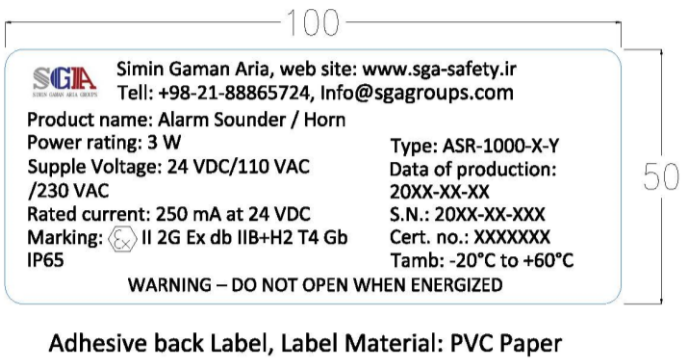


Figure 5 : Adjusting Viewing Angle

6.5 Label



Adhesive back Label, Label Material: PVC Paper

Figure 6 : Label

6.6 Terminal Wiring Diagram

The ASR-1000 audio alarm is now available in three different Wiring models as described as follow: all featuring six terminals, in all three models (and two sub models), Tone 1 input must be active to power the device, and Line Monitoring can be applied to this input. The terminals for Tone 1 are Terminals 1 and 2.

6.6.1 Model Type A (Wet Contacts with Line Monitoring)

- In this model, the inputs for Tone 2 and Tone 3 must be independently connected to a 24VDC source.
- Terminals for Tone 2: 3 (+24V) and 4 (GND)
- Terminals for Tone 3: 5 (+24V) and 6 (GND)
- This is the only model that supports Line Monitoring on Tone 2 and Tone 3 inputs as well.
- All tone activation inputs (Tones 1, 2, and 3) are wet contacts.

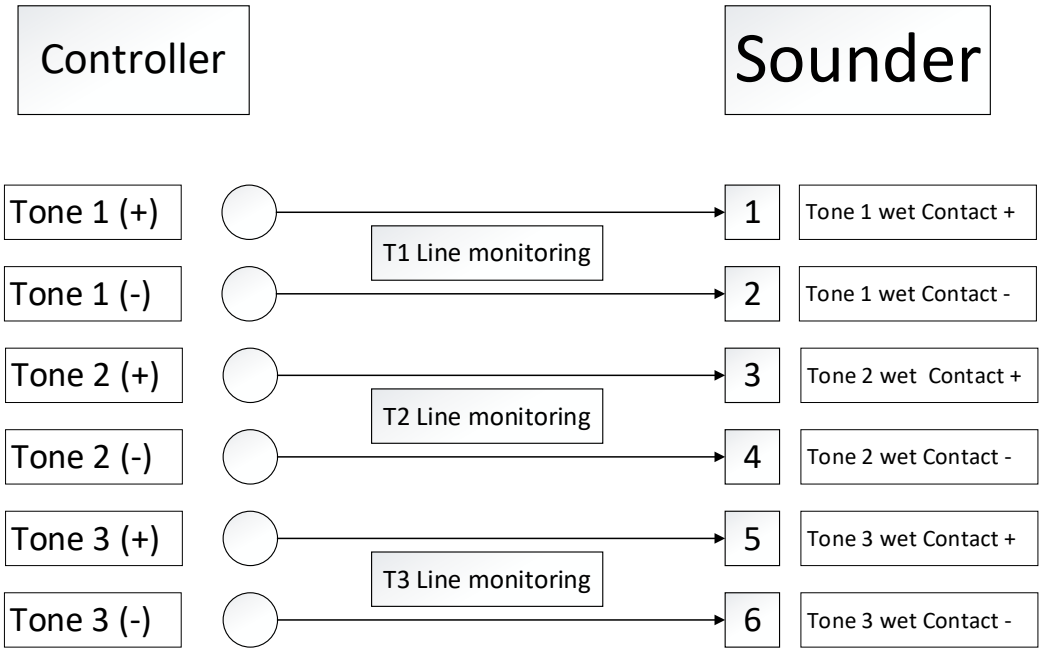


Figure 7 : Wiring Wet Contacts with Line Monitoring

Additionally, Model Type A includes two sub-models.

These sub-models allow a Type A device to operate similarly to Models B and C.

In these sub-models:

• One pole is taken from the common terminal,

• And the other pole is taken from the contact terminal.

With this arrangement, the system can use one wet input along with two dry contact inputs to activate all three tones, providing full access to Tones 1, 2, and 3.

Type A first sub-model:

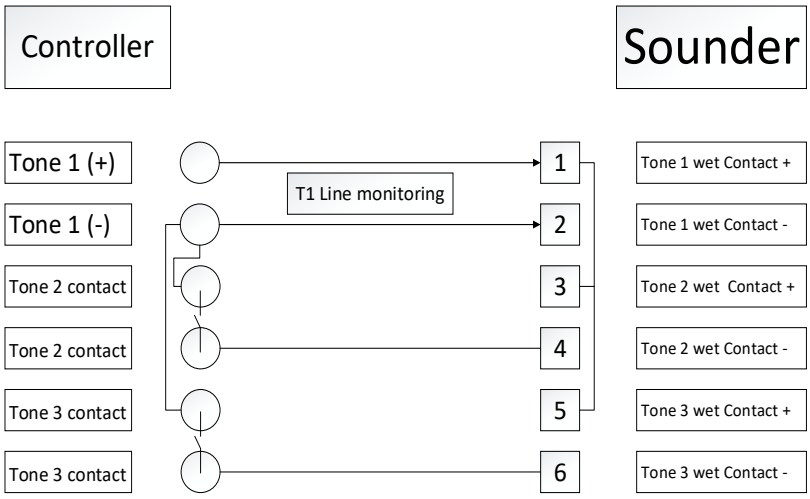


Figure 8 : Wiring Wet Contacts with Line Monitoring Model B

Type A second sub-model:

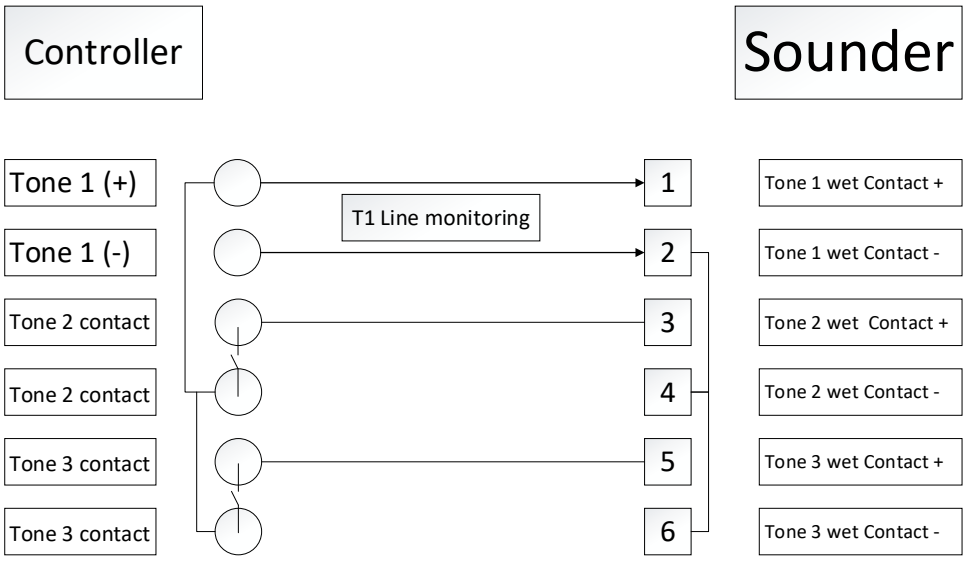


Figure 9 : Wiring Wet Contacts with Line Monitoring Model C

6.6.2 Model Type B (Dry Contacts without Line Monitoring on Tones 2 and 3)

- In this model, there is no need to connect the negative (GND) for Tone 2 and Tone 3.
- To activate:
  - Tone 2: Apply +24V to Terminal 3.
  - Tone 3: Apply +24V to Terminal 5.
- Terminals 4 and 6 are not required to be connected.
- Line Monitoring is not supported for Tone 2 and 3 in this model.
- Tone 2 and 3 inputs use dry contacts in this configuration.

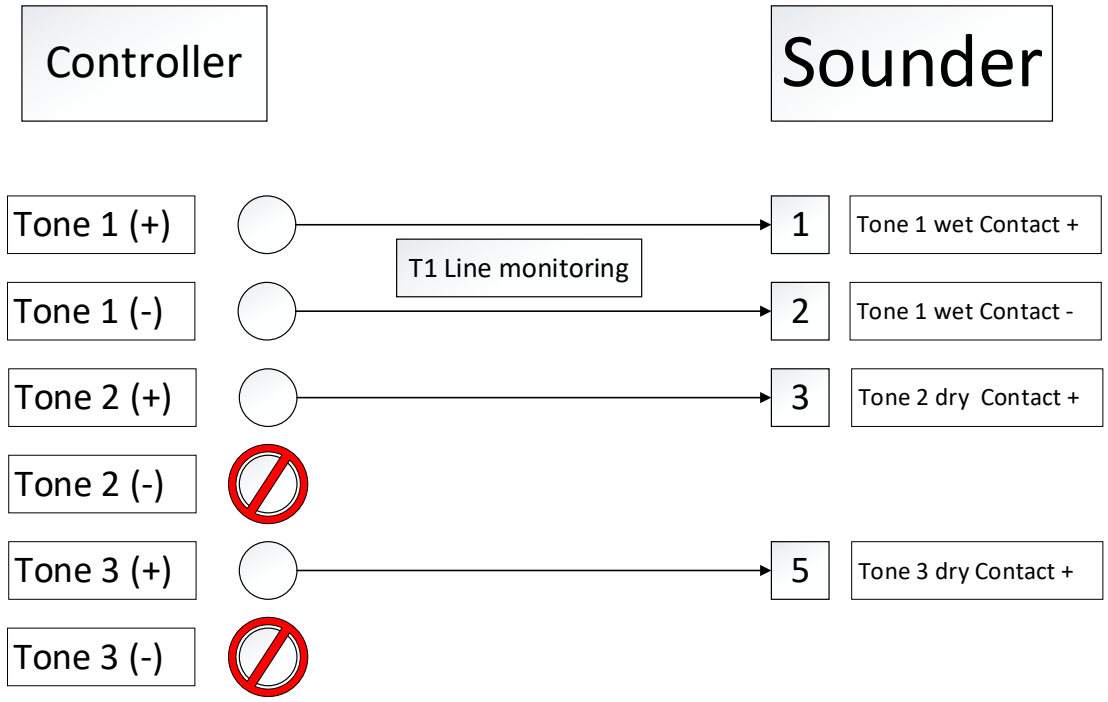


Figure 10 : Wiring Dry Contacts without Line Monitoring on Tones 2 and 3

6.6.3 Model Type C (Dry Contacts with Internal Ground Reference)

- In this model, there is no need to apply +24V for Tone 2 and Tone 3.
- Activation is similar to Model B, and all other details remain identical to Type B.
- Line Monitoring is only available on Tone 1.
- Tone inputs for Tone 2 and 3 also use dry contacts.

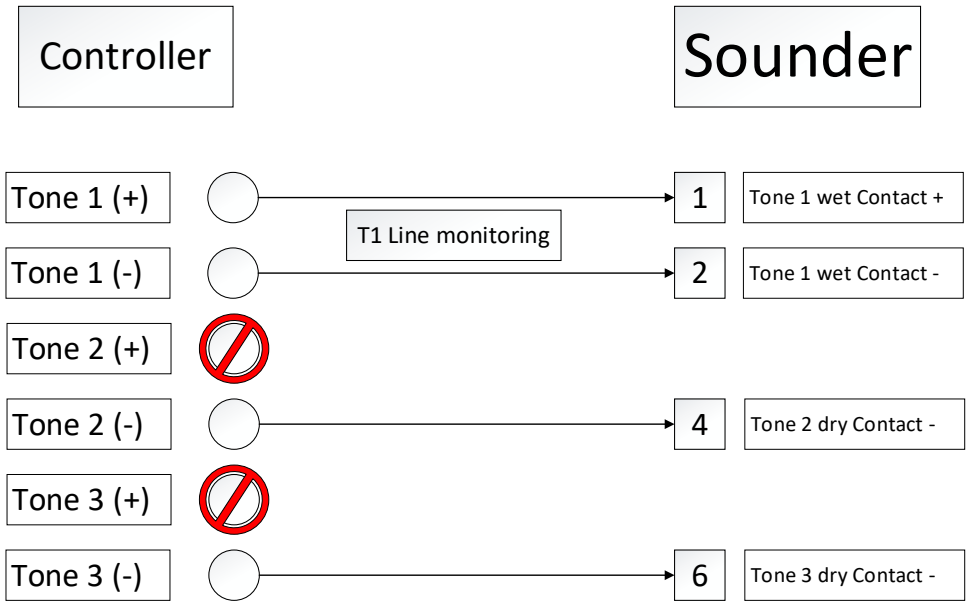


Figure 11 : Wiring Dry Contacts with Internal Ground Reference

Note: In all models, Tone 1 must remain active during the activation of Tone 2 or Tone 3, as the required current for all tones is sourced from the main Tone 1 input.

7 Drawings and Dimensions

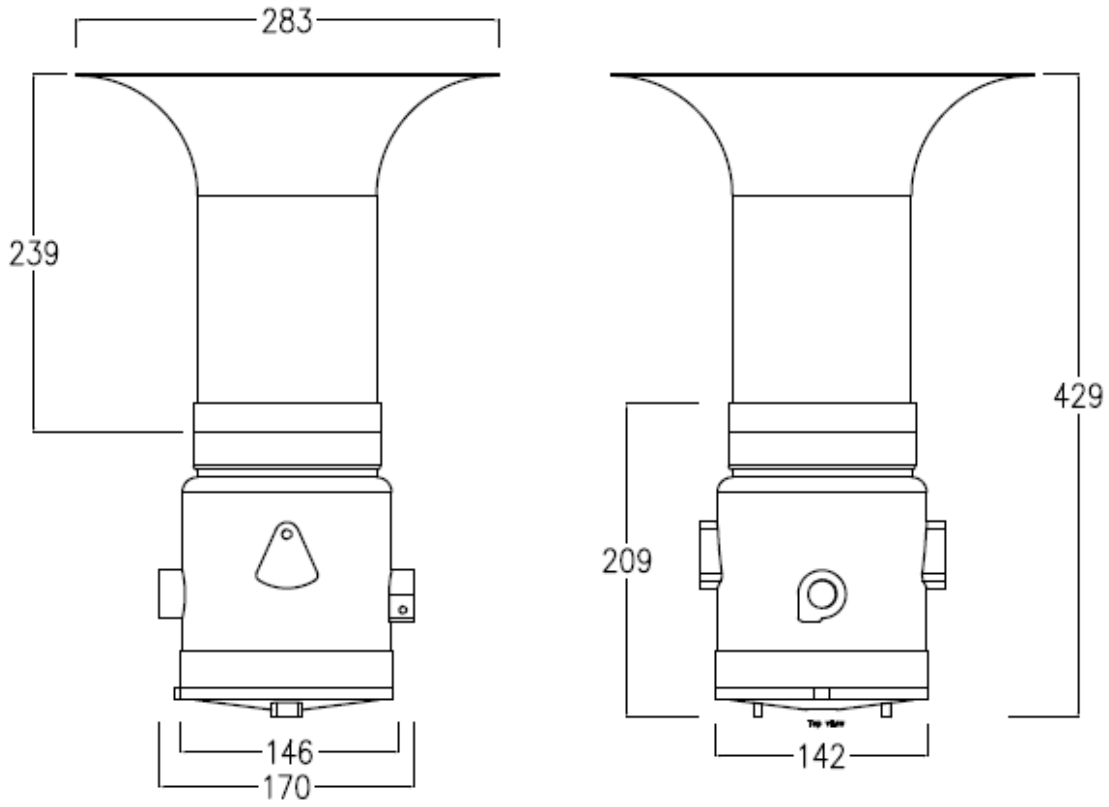


Figure 12: overall dimensions of Sounder