

ADU-1

Audio Detector

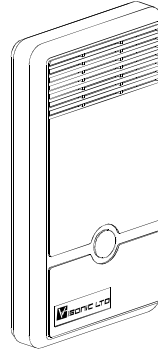


Installation Instructions

1. INTRODUCTION

1.1 Description

The **ADU-1** is a multipurpose selective audio detector designed to operate with alarm control panels, telephone dialers, wireless transmitters and remote control systems. Sounds caused by burglary, a crying baby or by people talking are detected by this unit's built-in sensitive condenser micro-phone, or by an optional external micro-phone positioned away from the unit. The detected audio signal is processed by the electronic circuitry, and, if it exceeds certain level and duration thresholds, an on-board relay is actuated. and remains energized for 5 to 7 seconds after the sound stops. The relay output can trigger a dialer, an alarm system or any other device.



In addition, an amplified signal output (SIG) is provided by the **ADU-1** to permit transmission of audio signals from the installation site over a telephone line (or by radio). As long as communication with the remote telephone is maintained by the automatic dialer, the remote responder can listen-in and decide whether the sound heard constitutes a real cause for alarm.

The **ADU-1** draws its operating power from the 12 VDC source of the host system. The main components of the unit are presented in Figure 1, and technical specifications are provided in Sec. 5.

1.2 Applications

- Adjustable audio sensor for alarm systems - the **ADU-1** can be integrated into an alarm system the same as any other detector. The SPDT output relay allows N.O. and N.C. configurations.
- Electronic baby sitter (with an automatic dialer) - The relay output is used for initiating communication **ADU-1** and the SIG output permits listening-in via the public telephone network or via a wireless transmitter.
- Voice-actuated remote control - the **ADU-1** may be used to turn on lights by clapping hands, opening doors by whistling and other similar tasks. If necessary, the built in relay can be wired to trigger an auxiliary bi-stable relay which controls the actual load.
- Monitoring remote sites for voice or noise - using the **ADU-1** as an eavesdropping device in unmanned electronically protected locations, to distinguish between false and true alarms by listening to sounds which occur on the premises.

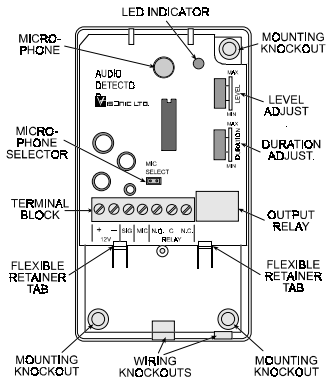


Figure 1. Printed Circuit Board Layout

2. SPECIFICATIONS

- AF Detection Limits:** 300 Hz - 10 kHz.
- Alarm Period:** Trigger duration + 5 to 7 s.
- SIG Output Level:** 1.5 - 2.5 Vp-p / 40 Ω
- Relay Contacts:** Form 1C, rated 1A /24V.
- Input Voltage:** 9- 16 VDC, protected against reverse polarity.

- Current Drain:** 2 mA quiescent. 45 mA when activated.
- Operating Temperatures:** -10 °C to 50 °C (14 °F to 122 °F).
- Dimensions (HxWxD):** 110 x 63 x 25 mm (4-5/16 x 2-1/2 x 1 in.).
- Weight:** 70 gr (2-1/2 oz).
- Color:** White.

3. INSTALLATION

3.1 Mechanical Mounting

- Unpack the **ADU-1** and save the nylon bag with the round plastic cap for later use.
- Remove the screw which secures the front cover to the case.
- Pierce two of the mounting knockouts and the wiring knockout (see Figure 1 for knockout locations).
- Secure the unit to the wall with 2 screws (use wall inserts if required).

3.2. Wiring

A practical example is given in Figure 2, where the **ADU-1** is wired to the Visonic Ltd. DL-125B automatic dialer. When the audio detector is triggered by a sound, its output relay triggers the communicator into action. The DL-125B may be wired to simultaneously switch on a VHF transmitter such as the Visonic Ltd. TR-4 or TR-7. The AUD input terminal of the DL-125B (and, optionally, the audio input of a Visonic Ltd. VHF transmitter) are permanently connected to the SIG output terminal of the **ADU-1**.

Once the DL-125B communicator has dialed the remote responder's telephone number, it starts sending sounds detected by the **ADU-1** over the telephone line.

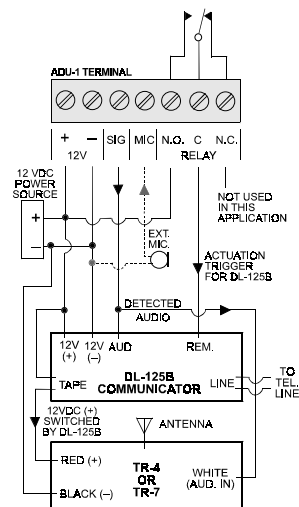


Figure 2. Wiring Suggestion

The transmission session lasts 45 seconds. If a VHF transmitter

is used, it is simultaneously triggered into transmission for 45 seconds, while its carrier is modulated by the detected sound. A remote receiver operating on the same VHF channel will receive the transmitted signal, provided that it is within the reception range.

As shown in the wiring diagram, it is possible to connect an optional external microphone to the ADU-1. **When installing such a microphone, be sure to use a shielded cable and to connect the shield to the ADU-1 (-) terminal !**

Note: The ADU-1 can also operate with the Visonic Ltd. DL-425 digital communicator.

If you wish to disable the internal microphone, remove the MIC SELECT jumper from across the two pins on the printed circuit board and install it on a single pin, to prevent it from getting lost.

3.3. Adjustment and Test

Before placement of the ADU-1 into regular service, you must adjust its controls to respond to certain sound patterns, and to remain unaffected by other sounds. Two controls are available:

- **LEVEL control:** when set to MIN, this potentiometer allows low level sounds to trigger the detector. This means that at MIN position, the device's sensitivity is at maximum! When the potentiometer is set to MAX, only a high-level sounds will trigger the detector.
- **Duration Control:** when set to MIN, this potentiometer allows a short duration sound to trigger the detector. When the potentiometer is set to MAX, only a long-duration sounds will trigger the detector.

To adjust your ADU-1 detector, proceed as follows:

- A. Power up the detector .
- B. As a starting point, set the LEVEL potentiometer to MAX and the DURATION potentiometer to MIN.

C. Ask an assistant to stand where a particular sound is expected to originate, and to simulate that sound. Watch the red LED indicator located behind the front grille.

Note: whenever the detector responds to the sound, the LED illuminates for as long as the detector is activated and stays illuminated 5 to 7 seconds after the sound stops.

D. If there is no response, start rotating the LEVEL control towards MIN, until the LED responds to the sound by illuminating. Leave the potentiometer in this position.

E. Ask your assistant to produce the sound repeatedly, while you are rotating the DURATION control slowly towards MAX. Stop rotating when the sound ceases to trigger the detector. Back up a little until the detector responds once more. Leave the potentiometer in this position.

F. Verify that the detector does not respond to environmental sounds that are not considered an alarm. Readjust the two controls if necessary. When through adjusting the detector, reposition the front cover with the grille at the top. Secure with the screw and insert the plastic cap over the screw (Fig. 3).

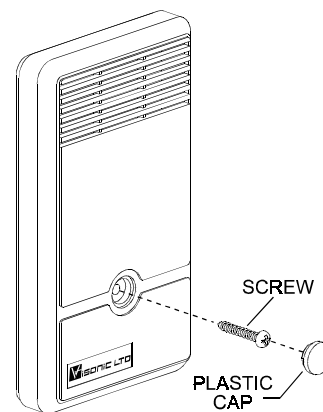


Figure 3. Securing Screw and Cap

WARRANTY

Visonic Ltd. and/or its subsidiaries and its affiliates ("the Manufacturer") warrants its products hereinafter referred to as "the Product" or "Products" to be in conformance with its own plans and specifications and to be free of defects in materials and workmanship under normal use and service for a period of twelve months from the date of shipment by the Manufacturer. The Manufacturer's obligations shall be limited within the warranty period, at its option, to repair or replace the product or any part thereof. The Manufacturer shall not be responsible for dismantling and/or reinstallation charges. To exercise the warranty the product must be returned to the Manufacturer freight prepaid and insured.

This warranty does not apply in the following cases: improper installation, misuse, failure to follow installation and operating instructions, alteration, abuse, accident or tampering, and repair by anyone other than the Manufacturer.

This warranty is exclusive and expressly in lieu of all other warranties, obligations or liabilities, whether written, oral, express or implied, including any warranty of merchantability or fitness for a particular purpose, or otherwise. In no case shall the Manufacturer be liable to anyone for any consequential or incidental damages for breach of this warranty or any other warranties whatsoever, as aforesaid.

This warranty shall not be modified, varied or extended, and the Manufacturer does not authorize any person to act on its behalf in the modification, variation or extension of this warranty. This warranty shall apply to the Product only. All products, accessories or attachments of others used in conjunction with the Product, including batteries, shall be covered solely by their own warranty, if any. The Manufacturer shall not be liable for any damage or loss whatsoever, whether directly, indirectly, incidentally, consequentially or otherwise, caused by the malfunction of the Product due to products, accessories, or attachments of others, including batteries, used in conjunction with the Products.

The Manufacturer does not represent that its Product may not be compromised and/or circumvented, or that the Product will prevent any death, personal and/or bodily injury and/or damage to property resulting from burglary, robbery, fire or otherwise, or that the Product will in all cases provide adequate warning or protection. User understands that a properly installed and maintained alarm may only reduce the risk of events such as burglary, robbery, and fire without warning, but it is not insurance or a guarantee that such will not occur or that there will be no death, personal damage and/or damage to property as a result.

The Manufacturer shall have no liability for any death, personal and/or bodily injury and/or damage to property or other loss whether direct, indirect, incidental, consequential or otherwise, based on a claim that the Product failed to function. However, if the Manufacturer is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, the Manufacturer's maximum liability shall not in any case exceed the purchase price of the Product, which shall be fixed as liquidated damages and not as a penalty, and shall be the complete and exclusive remedy against the Manufacturer.

Warning: The user should follow the installation and operation instructions and among other things test the Product and the whole system at least once a week. For various reasons, including, but not limited to, changes in environmental conditions, electric or electronic disruptions and tampering, the Product may not perform as expected. The user is advised to take all necessary precautions for his /her safety and the protection of his/her property.

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