

# WT-100, WT-100A

Universal Wireless Transmitters



## Installation Instructions

### 1. INTRODUCTION

The WT-100 and WT-100A are general purpose, battery powered single-input transmitters for use with Normally Open (N.O.) and Normally Closed (N.C.) sensors and inertial vibration detectors.

A reed switch built into both units can be used with a magnet (not supplied) to protect a door or a window. An on-board tamper switch triggers a tamper alert (Channel 2) if the front cover is removed from the base.

A special timing circuit saves the 9-volt battery power by limiting the transmitting time. When the WT-100 is triggered, it transmits for about 2 seconds, then inhibits itself for approximately one minute. If an input remains disturbed, the WT-100 will keep transmitting signals for a 2-second duration each minute, until the input reverts to the undisturbed state. The WT-100A is a single-shot (non-repeating) model that transmits only once upon each input trigger.

The LED lights during the transmission period. A special circuit continuously monitors the battery voltage. If this drops below about 7.5 Volts, the transmitter automatically transmits a low battery alert signal for 1-2 seconds, to activate a buzzer in the target receiver. Low battery signals are repeated at one-minute intervals for a few days, depending on the remaining amount of battery energy. The LED lights during each transmission, identifying the unit transmitting the low battery signal.

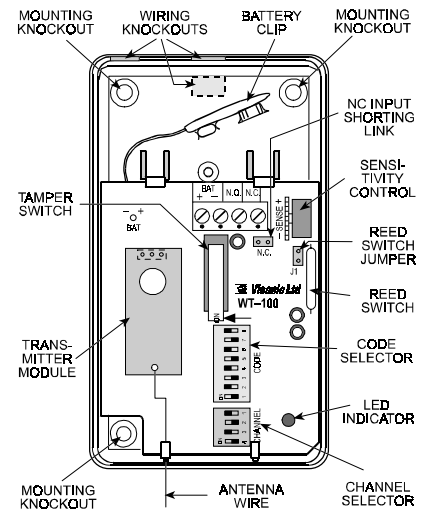


Figure 1. WT-100 and WT-100A

### 2. SPECIFICATIONS

**Frequency (MHz):** 315, 404, 418, 433.92 or other frequencies according to local requirements

**System Code:** 8-bit, 256 combinations, pulse width modulation

**Channel Codes:** 4 codes, DIP-switch selectable

**Transmission Cycle:** 2 seconds ON, 1 minute OFF, indicated by LED.

**Input Circuit:** N.C. / N.O. (N.C. input must be shorted by the N.C. jumper if not used).

**Input Response:** Adjustable, 5 to 30 ms

**Power Supply:** 9 VDC Alkaline or Lithium battery

**Current Consumption:** 10  $\mu$ A standby, 10 mA in operation

**Battery Supervision:** Automatic transmission of low battery alert code, which activates a buzzer in the receiver.

**Compliance with Standards:** Meets FCC Part 15, ETS 300-220 and MPT1349

**Operating Temperature:** 0°C to 49°C (32°F to 120°F).

**Dimensions:** 110 x 63 x 25 mm (4-5/16 x 2-1/2 x 1 in.).

**Weight:** 68 g (2.4 oz)

### 3. INSTALLATION

#### 3.1 Mounting

Open the case by removing the screw from the front cover. Mount the base with the printed circuit board in the selected location, using the mounting knockouts.

Be sure to mount the unit with the antenna wire hanging down. Route the wiring through any wiring knockout in the base.

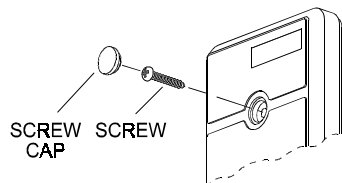


Figure 2. Front Cover Removal

#### 3.2 System Code Selection

The on-board CODE selector consists of an 8-position DIP switch with keys marked from 1 to 8 (see Fig. 3). Each key is set to either ON or OFF to create a unique digital code (256 possible combinations). This code serves as a **system code** or a **password** between the transmitter and the target receiver.

Select the desired system code by shifting the keys with a ball-point pen or a small screwdriver. All wireless units used in the system and the target receiver must be programmed with the same digital code.

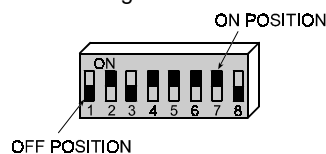


Figure 3. Code Selector

**Caution:** The factory test code combination 2, 4, 5, 6, 7 ON / 1, 3, 8 OFF must not be used. Also avoid codes which are often used: all keys ON, all keys OFF or alternating ON/OFF settings.

#### 3.3 Channel Selection

Each transmitter can be set to transmit one of four different "channel codes". The channel code is added to the system code to activate a specific output in a multi-output receiver. Channel codes are very useful for zoning purposes (activating various types of zones of an alarm control panel).

The channel code selector consists of a 4-position DIP switch, with keys marked from 1 to 4. The code is selected by switching the corresponding key(s) to ON. You may select more than one channel code for simultaneous activation of several channel outputs at the receiver.

**Note:** Channel 2 code is transmitted automatically as a tamper alert whenever the front cover is removed.

Setting all four-channel keys to OFF will activate the buzzer at the receiver (same as low battery alert) and none of the receiver's channel outputs.

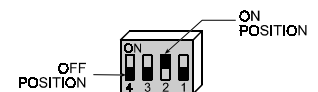


Figure 4. Selecting Channel 2

#### 3.4 Input Sensitivity Adjustment

Input sensitivity for vibration detectors is adjusted with the **SENS.** potentiometer. The sensitivity is at maximum (response time about 5 ms) with the control knob rotated fully towards **[+]** and at minimum (response time about 30 ms) with the control knob rotated fully towards **[-]**. If you are not using a vibration detector, set the control fully towards **[-]**.

### 3.5 Wiring

Normally closed sensors and inertial vibration detectors are wired in series between the terminals marked **N.C.**

**Note:** If the **N.C.** input is not used, it must be shorted by installing a jumper on the **N.C.** header below the terminal block (Fig. 1).

Normally open alarm contacts should be wired in parallel with the terminals marked **N.O.**

Visonic Ltd. low current SRN-2000C/PC series PIR detectors may be powered from the 1st (+) and 2nd (-) terminals from the left. When using the same battery for the transmitter and the PIR detector, low-battery supervision is obtained for both units.

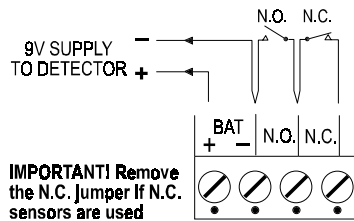


Figure 5. Terminal Block Wiring

To use the reed switch, remove the reed switch jumper "J1" (located near the reed switch).

### 3.6 Battery Installation

**Note:** Before installing the battery, use some masking tape to temporarily keep the tamper switch lever down. This will prevent the unit from continuously transmitting a tamper alert while the front cover is removed for testing.

The units are powered by a 9-volt alkaline or lithium battery. For proper operation, use only an alkaline or lithium battery.

Snap the battery clip onto the battery terminals and put the battery in place (above the PC board).

### 3.7 Testing

- A. Select the desired **system** code as instructed in Section 3.2.
- B. Select a **channel** code as instructed in Section 3.3.
- C. Activate the sensor connected to the transmitter input.  
**Note:** If a vibration detector is used, adjust the sensitivity with the **SENSE** control (see Section 3.4).
- D. Verify that the transmitter LED lights during transmission.
- E. **WT-100:** Leave the sensor input disturbed for several minutes. Verify that the unit repeats the transmission for approximately 2 seconds each minute.  
**WT-100A:** As with WT-100, but verify transmission only once.
- F. Check whether the receiver's LED lights steadily, indicating good detection of the RF signal.
- G. Verify that the receiver's corresponding relay energizes while receiving a signal.
- H. Restore the transmitter's input to its undisturbed state, set all 4 channel switches to OFF and initiate a transmission. This should cause the low-battery alert buzzer at the receiver to sound (provided that a buzzer is connected to the receiver).
- I. Re-select the desired channel code with the four channel switches.
- J. Remove the masking tape used to hold down the tamper switch lever. The transmission triggered by the tamper switch should cause channel 2 relay of the receiver to energize.
- K. Carefully position the front cover hole over the LED. Secure the front cover to the base with the screw and insert the plastic cap into the hole (Fig. 2).

## 4. MISCELLANEOUS COMMENTS

### 4.1 Product Limitations

Visonic Ltd. wireless systems are very reliable and are tested to high standards. However, due to low transmitting power and limited range (required by FCC and other regulatory authorities), there are some limitations to be considered:

- A. A receiver may be blocked by radio signals sent on or near its operating frequency, regardless of the digital code used.
- B. A receiver responds to one transmitted signal at a time.
- C. Wireless equipment should be tested regularly to determine whether there are sources of interference and to protect against faults.

### 4.2 Compliance with Standards

The user is cautioned that changes or modifications to the unit, not expressly approved by Visonic Ltd., could void the user's FCC or other authority to operate the equipment.

The 315 MHz model of this device contains RF module RFT-1A, which complies with Part 15 of the FCC Rules and RSS-210 of Industry and Science Canada. Operation is subject to these two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation.

The 433.92 MHz model complies with CE requirements for Europe and bears the CE mark and certification.

#### 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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