

SAT-8/TD-800

8-Zone Multi-Purpose Transmitter

Installation and Programming

Guide

PIMA

FOR BETTER PROTECTION



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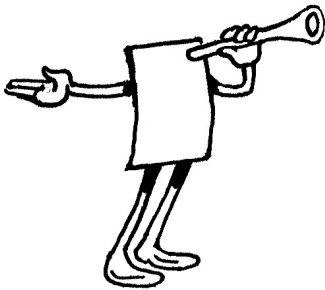
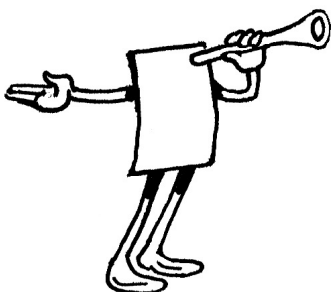


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Introduction

General

The SAT-8 is a multi-purpose, stand-alone, events encoder alarm that incorporates a long range VHF/UHF radio transmitter. SAT-8 can be used to connect any non-PIMA control panel to a Central Monitoring Station (CMS) by long range radio. The SAT-8 can also be used as a stand-alone radio alarm-signaling panel (e.g., connecting thermostats of sensitive cooling systems). The SAT-8 uses PIMA's VHF/UHF transmitters that support two frequencies for improved load balance and are equipped with various protocols to support different CMS.

The SAT-8 can be programmed in the field. The transmitter frequencies as well as the different transmission parameters can be programmed directly by connecting a PC (with COMAX Download software and a DPR-44 adapter.) The SAT-8 and transmitter need be programmed separately.

For better performance, it is advised to install the SAT-8 within a closed metal box. PIMA offers such a complete set. The TD-800 includes a SAT-8 assembled in a closed metal box with TAMPER protection with a Power Supply (P/S) and backup battery connection (not included.)

The system can be used with either a UHF or VHF transmitter. Note that the UHF and VHF transmitters use different antenna connectors.

The SAT-8 has a built-in encoder, automatic battery check, and automatic transmission check.

Features

- ◆ **Eight Inputs:** The SAT-8 has eight inputs with their active & restore events.
- ◆ **Up to 28 different Events:** The SAT-8 includes the following events:
 - ❖ Input trigger and restore (16 events)
 - ❖ Swinging input blocked (8 events)
 - ❖ Low voltage and voltage restore (2 events)
 - ❖ Manual and automatic test (2 events)
- ◆ **Swinging Input Blocking:** When an input is generating 16 consecutive signals, for a period of four minutes, it is regarded as Swinging Input and it is blocked until no signal is detected, at that input, for a period of 10 minutes.

The input is blocked so the CMS radio network is not jammed by the transmitter. When an input is blocked, an event code is sent to the CMS.
- ◆ **Transmission LED:** A transmission LED is turned ON every time the SAT-8 is transmitting information.
- ◆ **Auto Test Mode:** A periodic transmission test is performed as programmed.
- ◆ **Manual Test Mode:** A manual transmission test can be performed by pressing the TEST button.
- ◆ **Low Voltage Test:** The SAT-8 is monitoring the battery voltage and when it drops beneath 11 Vdc, a low voltage event is sent to the CMS.

Benefits

- ◆ **Easy installation and maintenance:** The SAT-8 is fully programmable in the field by a laptop PC with COMAX software and a DPR-44 adapter.

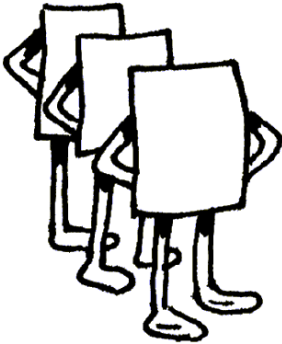
Parameters that can be programmed:

 - ❖ Transmitter Frequencies
 - ❖ Radio Format
 - ❖ Account Number
 - ❖ Frames Per Transmission
 - ❖ Transmission Intervals
 - ❖ Auto Test Interval
 - ❖ Event Frequency Select
 - ❖ Report Code for all events

- ◆ **Frequency load balance:** The two working frequencies of the installed VHF/UHF transmitter are fully utilized by the SAT-8. Each event can be assigned with either frequency. This option enables different scenarios where two frequencies are required (e.g., the first frequency is used for emergency events transmission while the second frequency is used for testing). The control's relay output is used for changing frequencies.

Technical Specifications

- ◆ Environment:
 - Temperature: -10° to +50° C
 - Humidity: 75% non-condensing
- ◆ Operating Voltage: 9 to 14 Vdc (12Vdc nominal)
- ◆ Current Consumption:
 - standby: 15mA
 - transmit: 1.5A
- ◆ Inputs: Eight inputs (zones)
 - Voltage (Open): 12V
 - Current (Closed): 1mA
 - Signal Sensitivity: 500mSec
- ◆ Frequency Range:
 - VHF Low: 136 – 156MHz
 - VHF High: 154 – 174MHz
 - UHF Low: 400 – 435MHz
 - UHF Mid: 435 – 470MHz
 - UHF High: 470 – 500MHz
- ◆ Bandwidth: 12.5kHz
- ◆ Output Power:
 - VHF: Up to 5W±1dB at 50Ω load
 - UHF: Up to 2.5W±1dB at 50Ω load
- ◆ Frequency Stability: 2 PPM MAX at -10° to +50°C
- ◆ Carrier Modulation: FM at 2.5kHz; maximum frequency shift
- ◆ Enclosure Dimensions
 - SAT-8: cm 11 W x 11 H x 6 D ; Weight : 440 gr.
 - Transmitter Unit: cm 14 W x 14.5 H x 6 D; Weight: 129 gr.
 - Metal Box (TD-800): cm 23 W x 30 H x 10 D; Weight: 2.64 Kg.
- ◆ "Watchdog" and Power on Reset
- ◆ Surge and ESD Protection



Installation and Programming

SAT-8 Installation

The SAT-8 box includes the control panel and the transmitter.

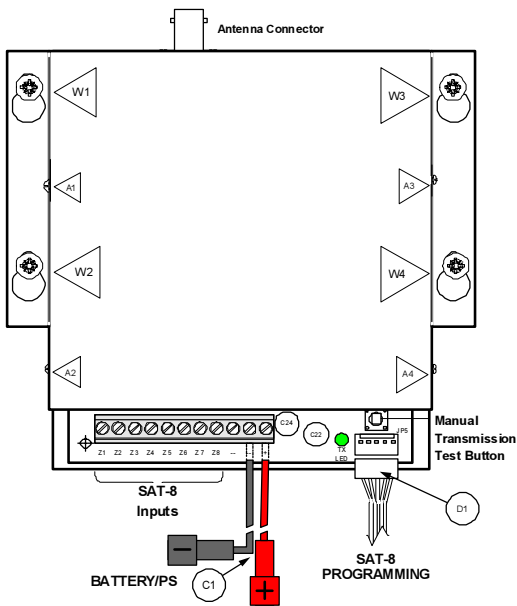


Figure 1 - SAT-8 Installation

1,2,3...

- 1 Mount the SAT-8 to the wall using four screws as seen in Figure 1
- 2 Connect the eight inputs as required
- 3 Connect the antenna to the transmitter
- 4 Connect the panel to a constant power source (e.g., battery)
- 5 Program the SAT-8 and the transmitter (when required) as described below



IMPORTANT!

For better performance, it is advised to install the SAT-8 within a closed metal box. PIMA's complete set, TD-800, is described on page 11. The metal box is used as an antenna. Alternatively, the SAT-8 can be installed with an antenna reflector.

SAT-8 Programming

The SAT-8 contains the transmitter unit and the control PCB. The transmitter frequencies and the SAT-8 parameters are programmed separately:

To program the SAT-8 you will need the following:

- ◆ A PC (or laptop) with Windows operating system¹
- ◆ COMAX application (version 1.2. 4 and up)²
- ◆ DPR-44 programming adapter

Programming the Transmitter

**NOTE:**

With most installations, the Transmitter frequencies will be pre-programmed.

1,2,3...

- 1 Disconnect the power cords from the SAT-8 (see item C1 in Figure 1)
- 2 Locate screws A1 to A4 on the SAT-8 assembly (see Figure 1); remove the screws and remove the SAT-8 cover
- 3 Disconnect the DATA cable from the transmitter's DATA PORT (see item D2 in Figure 2)
- 4 Connect the DPR-44 to the transmitter programming port (as seen in Figure 2). One end of cable P1 (Molex) to the transmitter and the RJ11 end to the DPR-44.

**IMPORTANT!**

Ensure you connect the Molex connector to the transmitter as drawn on the label.

- 5 Connect the DPR-44 to the PC parallel port (usually marked as LPT1)
- 6 Start the PC and run the COMAX application
- 7 Log in and create/open a transmitter file³

¹ The supported Operating systems are: Windows 98 SE, ME, NT4 (SP4), 2000, and Windows XP

² The COMAX application can be download freely from PIMA's web site at: <http://www.pima-alarms.com>

- 8 Enter the desired frequency(s) and download them to the transmitter
- 9 Verify the programming by reading the transmitter data

**NOTE:**

If verify fails, check that the Molex connector is connected as drawn on the transmitter label.

- 10 Remove the programming cable (P1) from the transmitter
- 11 Reconnect the DATA cable (D2) to the transmitter DATA PORT
- 12 Install the SAT-8 cover and secure it with four screws
- 13 Reconnect the power cord to the SAT-8

**IMPORTANT!**

Manual Transmission Test can be performed **ONLY** if the SAT-8 parameters are programmed.

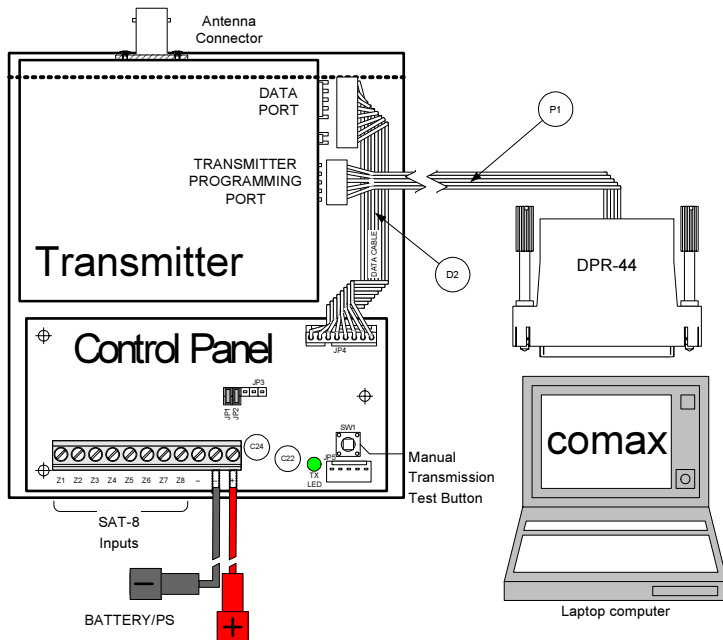


Figure 2 - SAT-8 with Cover Open

³ For more information on using the COMAX application, please refer to the COMAX User Manual

Programming the SAT-8 Parameters

1,2,3...

- 1 If not done so, disconnect the power cords from the SAT-8 (see item C1 in Figure 3)
- 2 Connect the DPR-44 to JP5 on SAT-8 panel (as seen in Figure 3). One end of cable P1 (Molex) to JP5 and the RJ11 end to the DPR-44.



IMPORTANT!
Ensure you connect the Molex connector to the transmitter as drawn on the label.

- 3 Connect the DPR-44 to the PC parallel port (usually marked as LPT1)
- 4 Start the PC and run the COMAX application

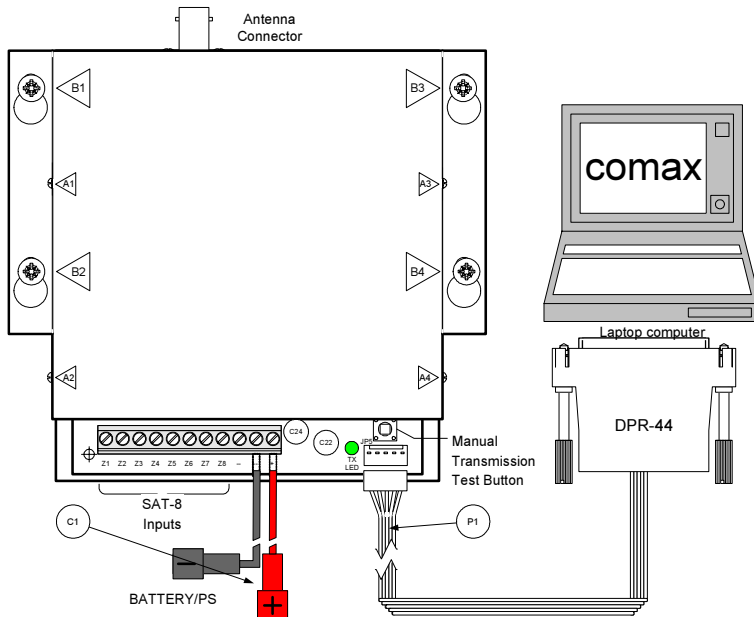


Figure 3 - SAT-8 Programming

- 5 Log in and create/open a SAT-8 file⁴
- 6 Edit the parameters as required and download them to the SAT-8
- 7 Verify the programming by reading the SAT-8 data
- 8 Remove the Programming Cable from the SAT-8
- 9 Reconnect the power cord to the SAT-8
- 10 Reconnect the Antenna



IMPORTANT!

Manual Transmission Test can be performed **ONLY** if the Transmitter frequencies are programmed and the antenna is connected.

- 11 Perform a Manual Transmission Test by pressing the test button (see Figure 3)

TD-800

For better performance, it is advised to install the SAT-8 within a closed metal box. PIMA offers such a complete set. The TD-800 includes a SAT-8 assembled in a closed metal box with a Power Supply (P/S) protecting TAMPER and a backup battery connection (battery not included.)

⁴ For more information on using the COMAX application, please refer to the COMAX User Manual

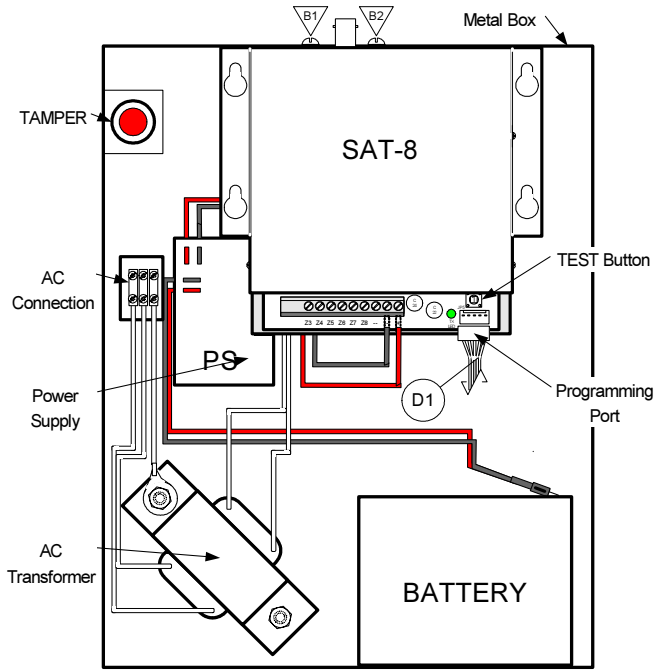


Figure 4 - TD-800

When TD-800 is used, follow these steps to remove the SAT-8 for maintenance and transmitter programming:

1,2,3...

- 1 Open the TD-800 box and locate the SAT-8 (see Figure 4)
- 2 Disconnect the power cords from the SAT-8
- 3 Remove the SAT-8 antenna
- 4 Remove the two screws (B1 & B2) holding the SAT-8 in the box and gently remove the SAT-8 (see Figure 4)

To reassemble the TD-800, simply follow the above steps in reverse order.



NOTE:

The SAT-8 does not need to be removed for programming its parameters. Simply locate the JP5 connector, connect DPR-44 to it and follow the steps on page 10.

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