

## DSchmidt Technologies DTMFRLYB Owner's Manual

### Overview

The DTMFRLYB is an electronic 'combination lock' that will decode DTMF audio signals (0-9, A-D, #, \*) and if a sequence decoded matches the stored sequence, an on-board relay will be activated. The relay can be configured to turn on for 1 - 9999 seconds (duration mode) each time a code is received, or it can be configured to turn on and off (toggle mode) with each code received. The 'combination' sequence is stored in non-volatile memory. A red STATUS LED shows when a DTMF tone is detected, and a green RELAY LED shows when the relay is activated.

### Features

- Assembled and tested.
- Wide power input voltage range (7 - 24 VDC). Current draw is 10mA non-activated, 90mA activated
- Terminal blocks for power and relay hookup
- Combination can be 1 to 50 DTMF tones in length
- In toggle mode you have a separate code for turning the relay ON or OFF
- In toggle mode you can choose to have the current relay status saved in memory in case of power failure
- In duration mode, the duration can be set from 1-9999 seconds in length
- Simple one button programming, Program MODE, 'combination', and relay duration using a DTMF source
- 5A rated SPDT on board relay

### Hookup

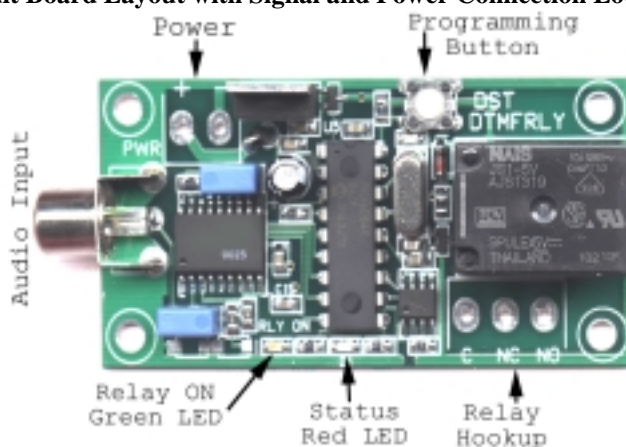
Hookup your **filtered** DC power supply to the power connections – note polarity on PC board. The DTMF-RLY will accept voltage inputs ranging from 7 to 24 VDC. For voltages above 15VDC, a heat sink on the voltage regulator is recommended. Please make sure your power connections and voltage are correct before powering the unit!

The user must hook up the audio input to the desired source. The on-board phono jack accepts line level audio input (10mV to 5V range). Connect this jack directly to your audio source. **DO NOT CONNECT A TELEPHONE LINE DIRECTLY TO THIS JACK!** The voltage levels from a telephone line are too great to be used directly. If you wish to hook this product to your phone line, you will need to do so using a 1:1 isolation transformer (also known as a 600:600 phone transformer). This will electrically isolate the DTMF-RLY. See schematic for a sample circuit.

Hook your switched load to the relay contacts on the board

**Note: Picture does not show optional screw terminal blocks. Terminal block equipped product is identical.**

### Circuit Board Layout with Signal and Power Connection Locations



### PROGRAMMING THE UNIT

#### FOR TOGGLE MODE, START HERE (Mode 1 or 2)

1. Press and hold the *Programming Button* until the red STATUS LED lights. Release button. The unit now waits for you to program the desired mode of operation.

2. **Press '2' on your DTMF source if you wish to have the unit remember the relay status** in case of a power failure. (If the relay is turned on and you lose power, when the power is restored, the relay will again be turned on)

**Press '1' on your DTMF source if you DO NOT want the unit to remember the relay status** in case of a power failure. (If the relay is turned on and you lose power, when the power is restored, the relay will be OFF)

After choosing your desired mode of operation, the STATUS LED will blink.

3. **Now program your 'ON' code.** Play DTMF tones into the audio input of the DTMFRLYB in the combination that you wish it to remember (maximum of 50 DTMF tones). The STATUS LED will turn off and on for each successful tone detected.

If you wish to enter less than 50 DTMF tones and are finished entering your desired code, press the *Programming Button* momentarily. The red STATUS LED will blink and remain on. (Note: You must enter at least one DTMF tone. If you enter 50 DTMF tones, the STATUS LED will automatically blink and remain on after the 50th tone).

4. **Now it is time to program your 'OFF' code.** Play DTMF tones into the audio input of the DTMFRLYB in the combination that you wish it to remember (maximum of 50 DTMF tones). The red STATUS LED will turn off and on for each successful tone detected.

If you wish to enter less than 50 DTMF tones and are finished entering your desired code, press the *Programming Button* momentarily. The STATUS LED will blink and **TURN OFF**. (Note: You must enter at least one DTMF tone. If you enter 50 DTMF tones, the STATUS LED will automatically blink and remain on after the 50th tone).

**After programming the 'OFF' code the unit is ready for operation.**

#### **FOR DELAY MODE, START HERE (Mode 3)**

1. Press and hold the *Programming Button* until the red STATUS LED lights. Release button. The unit now waits for you to program the desired mode of operation.

**Press '3' on your DTMF source to chose the DELAY mode of operation.** After choosing your desired mode of operation, the red STATUS LED will blink.

2. **Now program your 'ON' code.** Play DTMF tones into the audio input of the DTMFRLYB in the combination that you wish it to remember (maximum of 50 DTMF tones). The red STATUS LED will turn off and on for each successful tone detected.

If you wish to enter less than 50 DTMF tones and are finished entering your desired code, press the *Programming Button* momentarily. The red STATUS LED will blink and remain on. (Note: You must enter at least one DTMF tone. If you enter 50 DTMF tones, the red STATUS LED will automatically blink and remain on after the 50th tone).

3. Enter the 4 digit amount of time you wish to have the relay turn on by feeding in the duration in seconds, thousands digit first.

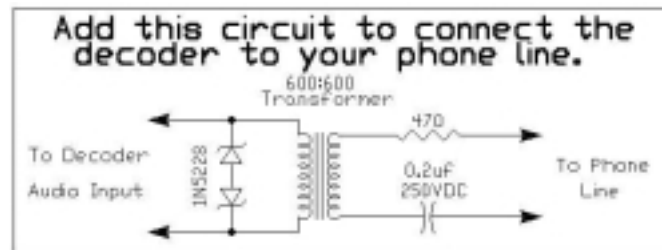
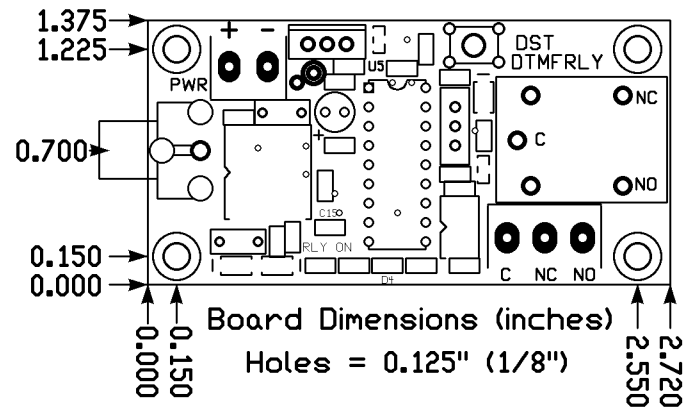
**For example:   for 5 seconds, enter 0005  
                  for 1 minute, enter 0060  
                  for 1 hour,    enter 3600**

(Note 1: Minimum on duration is 1 second. If you enter 0000 seconds, 1 second is selected)

(Note 2: 'A', 'B', 'C', 'D', '\*' and '#' DTMF tones detected as relay durations are interpreted as a 0.)

After the 4 digit *ON TIME* is entered, the STATUS LED will blink and remain off.

**The unit is now ready for operation.**



#### Assembled/Tested Products: WARRANTY

DSchmidt Technologies expressly warrants that it will either repair or replace the DTMFRLYB if it proves to be defective in design, material, or workmanship within ninety (90) days from the buyer's date of purchase.

For warranty repair or replacement, the defective DTMFRLYB must be returned within ninety (90) days to DSchmidt Technologies by insured mail and accompanied by proof of purchase. A repaired or replacement DTMFRLYB shall be warranted as above for the balance of the original product Warranty Period or thirty (30) days, whichever is longest.

DSchmidt Technologies shall have no obligation with respect to any Product which has been modified or altered. In no event shall DSchmidt Technologies be liable for consequential damages, losses, or expenses arising out of this transaction. The return of the purchase price or the repair or replacement of the product shall be the buyer's sole remedy hereunder.

This limited warranty is DSchmidt Technologies sole warranty. DSchmidt Technologies makes no other warranty of any kind whatsoever, express or implied. All implied warranties of merchantability and/or fitness for a particular purpose are hereby disclaimed by DSchmidt Technologies.

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