

# EIGHT CHANNELS HOPPING CODE RECEIVER CH8H

This microprocessor controlled 20 channels receiver is designed to operate with large number of hopping code transmitters in wireless alarms and access control systems. It operates with all 433.92 MHz band Elmes made KEELOO® coded hand transmitters, wireless motion detectors PTX and wireless magnet contacts CTX offering highest level of security and low battery identification. The receiver features 8 galvanic separated NO/NC relay outputs with front panel LED channel indication, signal control output S and TAMPER switch. Most of the receiver features are user set and programmable allowing flexibility of application. Following, are standard Elmes transmitters specified for operation with the CH8H receiver: UMB100H, AN200H, DWB100H, DWM50H, DW200H, CH4H, CH4H200, CH8H-200, PTX50, GBX1, CTX3H, CTX4H, and RP501 (except when set to operate with radio link testing).

Each receiver channel may have pre-programmed any number of Elmes transmitters with total number operating with one CH8H receiver not exceeding 40. Programming 41st would erase 1st, etc. In case of need to erase transmitter from the CH20H memory, deleting the entire receiver's memory is necessary and memorizing the remaining transmitters again. Multi channel hand transmitters and RP501 transmitter programmed to the receiver control adjacent channels respective to the number of channels used in the transmitter. The PTX50 and CTX4H detectors signal alarm state in any user-selected channel (1 to 8) while TAMPER signal is automatically programmed to dedicated channel 8. Along with universal hopping code receiver application in wireless security and access control, the CH8H may also be used as:

wireless detector's interface to any alarm control panel arming system on/off by UMB100H hand transmitter programmed to channel no 1 and monitoring alarm signals from Elmes wireless transmitters such as CTX, GBX, PTX and RP501;

- calling in and wireless panic button control panel in a system, with many users having hand transmitters (e.g. AN200H) as personal wireless call in or panic button. Any hand transmitter activated by the user triggers alarm in the receiver lasting until reset made by the use of big red button on the receiver's front panel. Two channel hand transmitters used as wireless panic buttons may have one button used for quiet calling function while the other used for loud panic alarm function. **OPERATION FEATURES** 

Activating transmitter programmed to the receiver results in setting on respective channel relay output and illuminates the channel LED. Depending on user programming, as described in point 2 of the programming procedures, the following modes of the receiver's relay outputs setting are possible:

Momentary (pulse) mode lasting from 0.5s up to 4 h. Output S generates two pulses on any relay set and one pulse on reset (see subcl. 2d). Operating with RP501 1. transmitter in radio relay mode or with the CTX4H, the receiver's outputs are set opened for as long as the transmitter's inputs are opened.

2 Latching (on-off) mode set on and off by consecutive signals from the transmitter. In this mode, operating with RP501 transmitter in radio relay mode or with the CTX4H, the receiver's outputs are set opened for as long as the transmitter's input are opened or, in case of CTX4H, for as long as the magnet stays away from the CTX housing.

The receiver monitors battery state in Elmes transmitters type PTX50, CTX and RP501, Detected low battery in one of the transmitters will be indicated by blinking of the front panel big LED. Number of LED pulses in a series corresponds to number of channel where the low battery has been detected. Additionally, on jumper JP2 set to open, the signalling output S is set shorted to ground. After replacing battery and activating transmitter low battery indication sets off automatically.

## **INSTALLATION & OPTIONAL SETTING**

#### CH8H wiring diagram:

Receiver CH8H operates indoors with temperature range 0 to +40°C. Installation place should be dry and far from any electromagnetic power lines, radio transmitters, metal screening and other devices that may cause interference reducing operation range. Minimum spacing of two metres is required if two receivers are installed at the same place. Placing receiver close to ground level may reduce operating range. Practical tests should be taken prior to firm installation to determine exact operation range. Wire antenna should be let loose downwards and not glued to wall. Setting relay output to NO (normally opened) is made by solder joints made for each relay on pc board soldering side, under relays. Factory setting for channels 1 to 8 is NC type (normally closed). On power supply cut off or receiver & detector's tamper alarm the 8<sup>th</sup> relay output sets off indicating TAMPER alarm.

Setting the channel's on/off signal output S (jumper JP2 closed):

- on jumper JP1 closed signalling is active for all 8 channels,

- on jumper JP1 opened signalling is active for channel no 1 only.

### **PROGRAMMING PROCEDURES**

Programming is made with front panel taken off and the use of PRG switch on the receiver's board.

1. Learning transmitter(s) to receiver's memory (maximum 40).

- a) Press receiver's PRG switch for less than 2 seconds. The receiver's central LED switches to red and the first channel set on LED illuminates,
- b) Shortly pressing the PRG switch select the required channel for programming transmitter to,
- c) Press the PRG switch until the receiver's LED switches to green,
- d) Depending on type of programmed transmitter proceed as follows:
- for hand transmitters double press the transmitter's switch. For multi channel transmitters press switch number respectively to number of channels to program, example: double pressing the 3<sup>rd</sup> switch in four ch. transmitter CH4H will program first three channels. The fourth channel will not be active in this receiver.
- for the PTX50 detector set the detector internal transmission channel selector to 1 and activate two transmissions by moving hand in front of the detector,
- for the CTX3H, CTX4H wireless contacts activate double transmission by double quickly moving magnet in and out of the CTX housing, - for the RP501 transmitter (operation with radio link testing is not allowed) - set the required mode of operation and activate transmission by opening any of its four inputs respectively to number of channels required, example: activating input 2 will program input 1 and 2, while 3 and 4 will not be programmed.
- e) Slowly blinking LED in the receiver will indicate end of the procedure.

### 2. Setting the outputs' set on time in selected channel.

a) Press receiver's PRG switch for more than 2 and less than 8 seconds. LED switches to red and next to green. The first channel LED illuminates.

b) Pressing the PRG switch select (illuminating LED indicates selected ch.) required channel for programming its output momentary set on time:

c) Press the PRG switch for longer than 2s, till the receiver's LED switches to red.

d) Shortly press PRG switch and the LED switches to green (counting of set on time is started). When desired set on time has lapsed (up to 4 hours) press the PRG switch again. The LED lights red and after next 2s blinking receiver's LED indicates end of the procedure.

NOTE! To program latching (on/off) output mode of selected channel press the PRG switch three times at subcl. 2d with less than 2s intervals.

### 3. Deleting all transmitters from the receiver's memory.

Press receiver's PRG switch for more than 8 seconds (the receiver's LED switches to red and next to green), until the receiver LED starts blinking and then release the switch. Memory of the receiver is cleared but the channels' programmed modes of operation remain unchanged. To learn new transmitter(s) to the receiver's memory follow procedure 1 above.

Note: programming errors are indicated by fast blinking LED. If no programming steps are made for more than 30s, the receiver sets the mode off automatically.

#### SPECIFICATION

- 8 channels with NO/NC user set galvanic isolated relay outputs, LED front panel indication and up to 40 code hopping 434MHz band transmitters memory,
- external siren output S, TAMPER switch signalling tamper alarm in dedicated channel 8 and transmitter's low battery monitoring,
- power supply: 12VDC with 180mA maximal current on all relay outputs set on, relay output rating: 1A/24VDC or 0,5A/125VAC.
  - Elmes Electronic declares that the product has been manufactured and tested to comply to the following standards:

EN 60950-1 :2001 electric safety, EN 301 489-1 V1.4.1 (2002-08) EMC for radio equipment, EN 301 489-3 V1.2.1 (2002-08) EMC for Short Range Devices, EN 300 220-3 V1.1.1 (2000-09) EMC and Radio Spectrum Matters.

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