elmes® electronic

FOUR CHANNEL CODE HOPPING WIRELESS CONTROL SET CH4H (GB)

The set consists of four channel radio receiver (12VDC, 80mA) and one hand transmitter designed for use in radio remote control and access control systems. The system uses *KEELOQ*® hopping code technology allowing highest level of security with encryption keys and code combination programmable but read-protected. The keys can only be verified by receiver after programming operation. All Elmes made 433,92 MHz band *KEELOQ*® encoded hand transmitters as well as Elmes wireless motion detectors PTX, GBX and wireless magnet contacts CTX can be programmed to the receiver that features 4 galvanic separated NO/NC relay outputs with internal LED indication for each channel, signalling output S and TAMPER switch. Most of the receiver's features are user selected offering flexibility in application. Following, are standard Elmes transmitters capable of operation with the CH4H/CH4H200 receiver: UMB100H, AN200H, DWM50H, DWB100H, DW200H, CH4H, CH4H200, CH8H200, CH32H, PTX50, GBX1, CTX3H, CTX4H, RP501.

Each receiver channel may have pre-programmed any number of Elmes transmitters while total number operating with one CH4H receiver can not exceed 40. Programming 41st would erase 1st, etc. The receiver's memory must be cleared in case of need to eliminate one transmitter lost or stolen from the receiver's memory. Multi channel hand transmitters and RP501 transmitter programmed to the receiver control adjacent receiver channels respective to the number of channel used in the transmitter. The PTX50 detector and the CTX4H wireless magnet contact may be programmed to any user selected channel 1…4 while its TAMPER alarm is automatically set to dedicated channel 4.

Operation

Activating transmitter programmed to the receiver results in setting on respective channel relay output. Depending on user programming, as described in sub-close 2 of the programming procedures, two modes of the receiver's relay outputs operation are possible: temporary output switching lasting from 0.5s up to 4h on each signal received from transmitter and bistable outputs switching in on-off mode activated by consecutive signals received from the transmitter.

Signal output S (OC type), depending on user-selected jumper's JP1 and JP2 states operates as described below:

	JP2 closed	JP2 opened
JP1 closed	two pulses (shorting to ground) are generated on any relay set, one pulse – on any relay reset	if one of the transmitters signals low battery state the S output is permanently shorted to ground
JP1 opened	pulses are only generated for relay in channel 1	

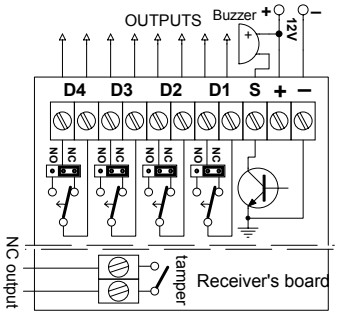
JP3- duration of the pulses at output S (jumper shorted – 0.25s, jumper opened – 0.5s).

Low battery monitoring. This function is supported for Elmes transmitters type PTX50, CTX and RP501. Blinking of the receiver's large bicolour LED indicates detected low battery in one of the transmitters. Number of blinks corresponds to number of channel with detected low battery transmitter. Additionally, signal output S is shorted to ground if jumper JP1 remains closed. When battery is replaced and the transmitter is activated the low battery indication sets off automatically.

Tamper alarm. Opening of the receiver's housing or opening housing of the PTX50 and CTX4H transmitters used in the system will result in relay output switching and TAMPER alarming in channel 4.

Wireless control panel operation mode: the receiver may be applied as a wireless control panel in a simple alarm system. This mode is activated with jumper **JP4** set opened. For more information please see enclosed CH4H control panel manual.

Installation (as shown on fig. 1) **Fig.1**



The CH4H receiver is designed to operate indoors with ambient temperature range from 0 to +40°C. Place of installation should be dry and far from any electromagnetic power lines, radio transmitters, metal screening and other devices that may cause interference and reduce operation range. The receiver should be installed 2 to 3 metres above floor lever and minimum spacing of two metres is required if more than one receiver is installed at the same place. Placing receiver close to ground or under the ground level may result in great reduction of operating range. Practical test should be taken prior to firm installation to determine exact operation range. Receiver's wire antenna should be let loose downwards.

Setting relay outputs to NO type is user made with jumpers 1..4 placed close to relays.

PROGRAMMING PROCEDURES

Programming is made with front panel taken off and the use of programming 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. Receiver's central LED switches to red and channel no 1 LED will illuminate,
b) shortly pressing the PRG switch (for less than 2 seconds) select the required channel for the transmitter,
c) press the PRG switch for more than 2 seconds, so as the main receiver's LED changes to green,
d) depending on type of programmed transmitter proceed as follows:

- **hand transmitter** – double press the transmitter's switch. In multi channel transmitters press switch number respectively to number of channels to program, example: double pressing the 3rd switch in four ch. transmitter CH4H will program first three channels to the receiver. The fourth channel will not be active in this receiver.
- **PTX50 detector** – first set the detector's internal transmission channel selector to channel no 1 and close housing to deactivate tamper switch and then activate two transmissions by moving hand in front of the detector,
- **CTX3H and CTX4H wireless contacts** – activate two transmissions by moving magnet in and out of the CTX housing,
- **RP501 transmitter** – set the transmitter's 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 to the receiver while inputs 3 and 4 will not be programmed. **RP501 operation with radio link testing mode is not allowed.**

e) the receiver's LED blinking green will indicate end of the procedure.

2. Setting the receiver's relay outputs set time:

a) press receiver's PRG switch for more than 2 and less than 8 seconds, LED switches to red and again to green indicating entering this programming mode (channel no 1 LED is on and ready for programming set time),
b) shortly pressing the PRG switch (for less than 2 seconds) select the required channel,
c) press PRG switch for more than 2 seconds until the receiver's LED switches to red,
d) press PRG switch and the receiver's LED switches to green indicating start of the channel output set time counting. When required set time has lapsed (maximum 4 hours) press the PRG switch again ending the procedure – LED switches to red.
e) after two seconds the receiver's LED blinking green will confirm end of the procedure.

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

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

Hold pressed the receiver's PRG switch for longer than 8s - the receiver's LED switches to red and after two seconds to green. After next six seconds the receiver LED starts blinking. Release the switch. Transmitter memory of the receiver is now 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 in red. If no steps are taken for more than 30s the programming mode is set off automatically.

CE 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**. (CE0470!)**

Limited Warranty: this product carries one year warranty as from the date of purchase. The warranty is limited to the replacement of faulty original parts or repair defects of improper manufacture. Damage, faulty use or improper handling by the user or installer as well as any changes in product's hardware or software caused by the user violets the warranty and all due repair costs will be charged. Elmes Electronic shall not bear liability for any personal or material damage resulting from any of its products direct, indirect or partial failure to operate properly.

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