RC200 OLD RUN TIMER

433MHZ RADIO MOTOR CONTROL

OBSOLETE

NOTE: This equipment LH8TX-S435 and LH8RP-S435 has been tested and found to comply with limits for a class B digital device, according to part 15 of FCC rules.
These limits are designed to provide reasonable protection against harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is advised to try and correct the situation by taking one or more of the following measures:

D Reorientate the receiving device
A Increase the distance between the equipment and the receiver
S Connect the equipment to a socket which is on a different branch circuit than the receiver
S Consult your dealer or an experienced radio/TV technician for help

Description

The (X) 200 radio control system consists of one or more transmitters and one or more receivers which can be combined to meet the specific needs of a wide variety of systems.
The (X) 200 control has a highly reliable and **secure rolling code** system that uses an algorithm to recognize only specific variations of the original transmitted code. The receiver is able to memorize **24 different codes in its non volatile memory.** This allows a receiver to be activated by multiple transmitters.

Use

The (x) 200 radio control can be used with Type 3.5, Type 5 and Type 6 120VAC SIMU motors. One RC200 is required for each motor unless used with SIMU group control relays (RI2, RI3, and GI2). Each RC200 receiver can be controlled individually from 1 channel (1 button on a transmitter) when the code is programmed into the RC200 in sequencing mode (open-stop-close-stop..). using dip switch SW1(on/on). Groups of RC200 receivers can be controlled together by programming one button as an open for all receivers in a group using dip switch SW1 (on/off) and one button on the transmitter as close using dip switch SW1 (off/on).

Transmitters

TRAN202	Two channel transmitter	2 Buttons
TRAN204	Four channel transmitter	4 Buttons
TRAN212	Twelve channel transmitter	4 Buttons and A-B-C slide switch
TRANWS200	Four channel wall-switch transmitter	4 Buttons

Receivers

RC200	Motor control receiver in surface external box
RC210	Motor control receiver recessable in plastic 3 gang switch box (interior only)
RC201	12/24VDC 2 channel dry contact output receiver

Installation

The receiver bracket should be mounted to the wall with the included screws. The receiver can then be slid onto the bracket. If mounted in an exposed location, the receiver must be mounted with holes marked A and B (see fig. 9) facing down. Receivers should not be mounted within 5 feet of each other. Do not mount the receiver in a metal box, near metal, or near EMI sources. It is recommended that the range of the unit be tested before permanently wiring the receiver. If range is poor, often relocating the receiver by a few feet can drastically improve the reception. If the receiver must be installed in a metal box or located in a remote location, the antenna can be remotely located. Connect the shield of a coaxial cable to terminal 12 and the center conductor to terminal 13. Run the cable to a clear location near where the transmitter will be used and strip the shielding off the last 17cm (exact length of antenna supplied with unit)

Electrical connections

- **IMPORTANT!: For installation by a qualified electrician in accordance with local electrical codes.**
- **CAUTION: RISK OF ELECTRICAL SHOCK.** Disconnect power before installing.
- High voltage 120VAC wires must pass through the holes marked "A" (see fig. 9)
- Low voltage wires must pass through the holes marked "B" (see fig. 9) and must be routed separately from the high voltage wires.

Terminals

1-2 Ground (Motor Green)
3 Hot 120 VAC 60HZ
4 Neutral
5 Motor direction 1 (Motor Black)
6 Motor direction 2 (Motor Red)
7 Motor common (Motor White)
8-9 N.C. low voltage input for safety device. Jumper must be installed if safety device not used
10-11 N.O. low voltage input with sequencing function (open-stop-close-stop-open...) for single throw, single pole low voltage switch (Ref# SPBS.W)
12 Antenna ground
13 Antenna connection for 17cm wire supplied with receiver. The antenna can be remotely located using 50 Ohm coaxial cable as described above in "Installation"

TECHNICAL SPECIFICATIONS

Receiver

- Reception frequency.....433.92MHz
- Local emission.....<2nW
- Antenna input impedance.....50 Ohms
- Sensitivity.....1uV
- Power supply.....120VAC 50-60Hz
- Operating temperature range.....-20 C...+60 C

Transmitter

- Carrier frequency.....433.92MHz
- Carrier frequency tolerance.....+75MHz
- Band width.....>25kHz
- Power supply (alkaline battery GP23A).....12V+10%
- Maximum power consumption.....25mA
- Operating temperature range.....-10 C...+55 C

Troubleshooting

Problem: No response from the receiver
Solutions if led PW is off - Check fuse
- Confirm that 120VAC is supplied to terminals 3 and 4

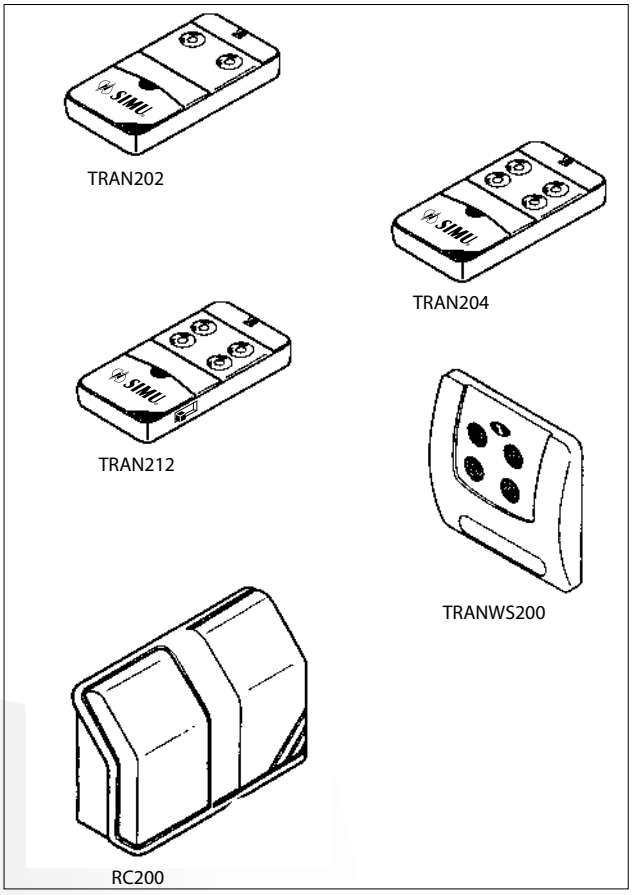
Soultions if led PW is on - Confirm that the receiver code has been memorized (see MEMORIZING TRANSMITTER CODES WITH THE RECEIVER on reverse side of this page)
- Make sure you have generated a code for that button on the transmitter (see SETTING CODES IN THE TRANSMITTERS on the reverse side of this page)

Problem: Receiver only switches in one direction
Solutions - Make sure the jumper is in terminals 8-9 if no safety device is used.
- If the jumper is in terminals 8-9 and the receiver still switches in just one direction, the transmitter code may have been memorized as either an up or down signal. Delete the transmitter's code from the receiver memory (see ERRASING RECEIVER MEMORY on the reverse side of this page). Then with dip switch 1 and 2 on, have the receiver memorize the transmitter's code again (see MEMORIZING TRANSMITTER CODES WITH THE RECEIVER on the reverse side of this page)
- Check limit settings on the motor.

Problem: Motor stops/receiver turns off before the motor reaches the limit.
Solution - The timed run on the receiver is set too low. Increase the run time by following the instructions in the paragraph "Run time programming (SW1) on page 2.

Problem: The receiver will not memorize a code from a button on the transmitter
Solutions - Make sure the transmitter has generated a code for that button (see SETTING CODES IN THE TRANSMITTER on the reverse side of this page)
- If the led LD is on continuosly, the receiver memory is full (has 24 codes memorized). Delete some of the codes (see ERASING RECEIVER MEMORY on the reverse side of this page)

Problem: Range is poor
Solutions - Make sure the receiver is as far as possible from other receivers, metal objects, EMI sources (floresent lights, transformers, computers, etc...) Try the receiver in different locations if possible before hard wiring.
- If the receiver is mounted in a metal enclosure or in a remote location from where the transmitters will be used with metal or other dense material in the line of sight, the receiver's antenna can be remotely located nearer to the area the transmitters will be used in (see Installation on this page).



SIMU U.S Inc.,
6100 Broken Sound Parkway N.W., #14
Boca Raton, FL 33487
Phone: 561-995-0335 FAX: 561-995-7502

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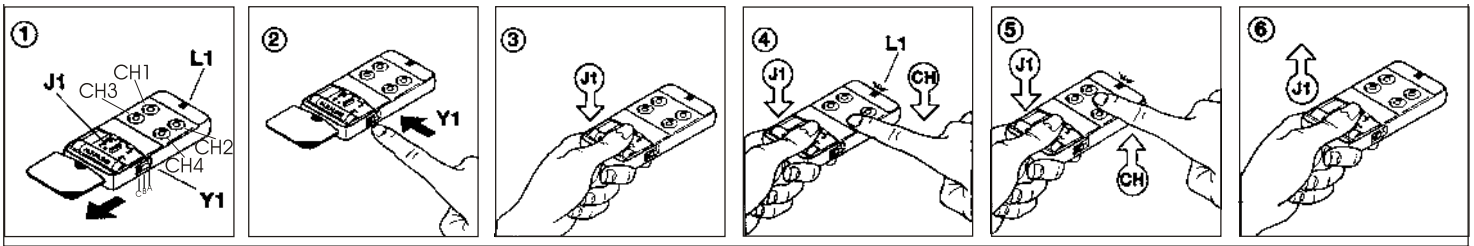
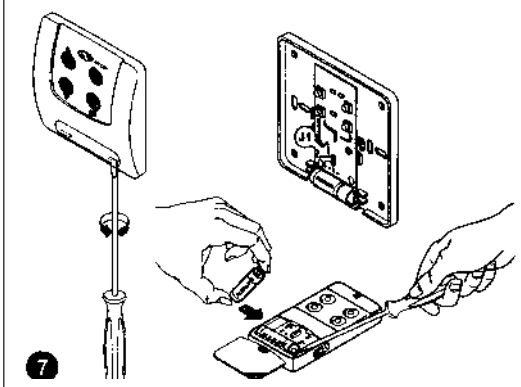
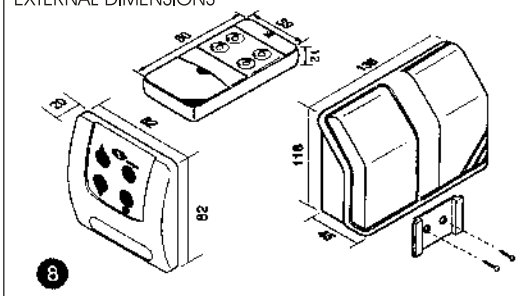
SETTING THE TRANSMITTER CODE



BATTERY REPLACEMENT



EXTERNAL DIMENSIONS



PROGRAMMING

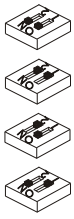
SETTING CODES IN THE TRANSMITTERS (Fig. 1-6)

1) Open the access door (Fig. 1)
2) (Only on 12 channel transmitter) Select block of channels with ABC slide switch Y1 (Fig.2)
   Y1 in position A = channels 1-4
   Y1 in position B = channels 5-8
   Y1 in position C = channels 9-12
3) Press button J1 (Fig3)
4) While holding down button J1, press one of the transmitter buttons CH and the light L1 will start flashing (Fig 4.)
5) Release the transmitter button CH and the light L1 will continue flashing (Fig5)
6) Release the button J1 and the light will go out (Fig 6) That transmitter button CH now has its code programmed.
7) Repeat steps 3-4-5-6 for each of the buttons CH on the transmitter.
8) If using a 12 channel transmitter (4 buttons CH and ABC slide switch Y1), repeat steps 2-3-4-5-6-7 with the slide switch Y1 in each position. (A-B-C)

MEMORIZING TRANSMITTER CODES WITH THE RECEIVER (Fig 9)

IMPORTANT: It is recommended for the receiver memory to be cleared before memorizing transmitter codes for the first time. Press buttons P1 and P2 simultaneously for 5 seconds until led LD flashes rapidly.

Dipswitch SW1 functions



DIP1 ON / DIP2 ON
Memorized code control in sequencing function. OPEN-STOP-CLOSE-STOP-OPEN.....

DIP1 OFF / DIP2 OFF
Receiver will not memorize codes in this position

DIP1 ON / DIP2 OFF
Memorized code will give up command

DIP1 OFF / DIP2 ON
Memorized code will give down command

1) Using SW1 select the function to be associated with that button on the transmitter. (ON/ON) Is standard for individual control.
2) Press button P1 and the LED labeled LD will start to flash
3) While holding down button P1, bring the transmitter within 6 inches of the receiver and press the transmitter button CH you wish the receiver to memorize. The LED LD will flash faster
4) Release the transmitter button CH and the receiver button P1. The receiver has memorized the code for that button on the transmitter.
5) Repeat steps 1-2-3-4 for all other transmitter buttons you wish the receiver to memorize.
6) When finished programming the receiver move both dipswitches on SW1 to the off position.

* If the receiver will not memorize a code it could be due to:
- The memory is full (24 codes memorized) and led LD remains lit. If this is the case, a new code can be memorized only after one is erased or the whole memory is cleared. (See "ERASING RECEIVER MEMORY BELOW)
- The code is already in memory
- You have not generated a code for that button on the transmitter. (See "SETTING CODES IN TRANSMITTERS" ABOVE)

ERASING RECEIVER MEMORY

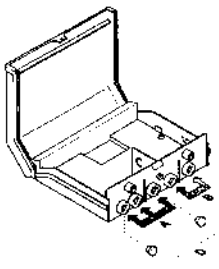
To erase a single transmitter button's code from receiver memory
1) Press and hold button P2 and the led LD will flash slowly
2) Press the button of the receiver you wish to erase and hold for 3 seconds until led LD flashes faster. The code is erased.
3) Repeat steps 1 and 2 for each button on all receivers you want to erase from the receiver's memory.

To erase the entire memory of a receiver
1) press and hold buttons P1 and P2 for at least 5 seconds until led LD flashes rapidly. The whole memory is cleared.

WIRING DIAGRAM

9

A: Entry holes for 120VAC
B: Entry holes for low voltage wiring and antenna
D: Hole plugs
PW: Power light
SW : Function selection switch
P1: Memorize button
LD: Signal LED
P2: Delete button
TL: Run cycle time adjustment
1: Ground (Green)
2: Ground (Green)
3: Neutral
4: Hot 120VAC
5: Direction 1 (Black)
6: Direction 2 (Red)
7: Common (White)
***8&9:** N. C. Reversing Sensor
10&11: Remote Override Switch (SPBS)
12: Coax Antenna Connection (not supplied)
13: Standard Antenna (supplied with unit)



NOTE: If you are not using a safety device a jumper wire must be connected to terminals 8 & 9.
DO NOT CUT ANTENNA WIRE SUPPLIED WITH THIS UNIT.

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