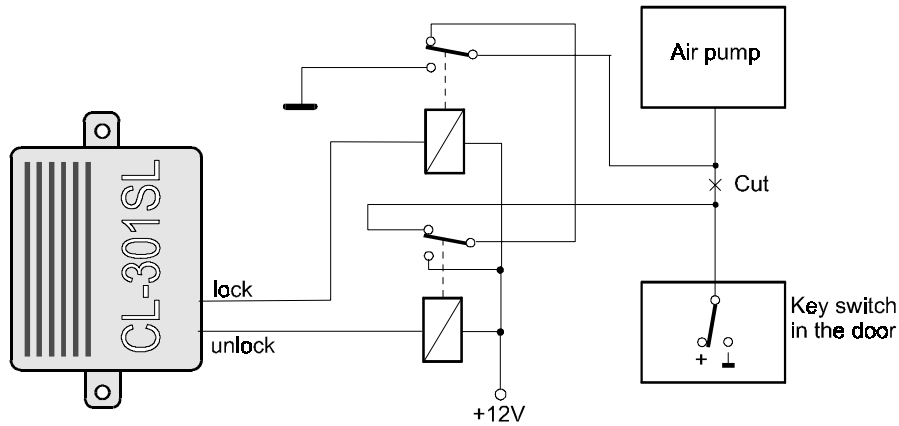
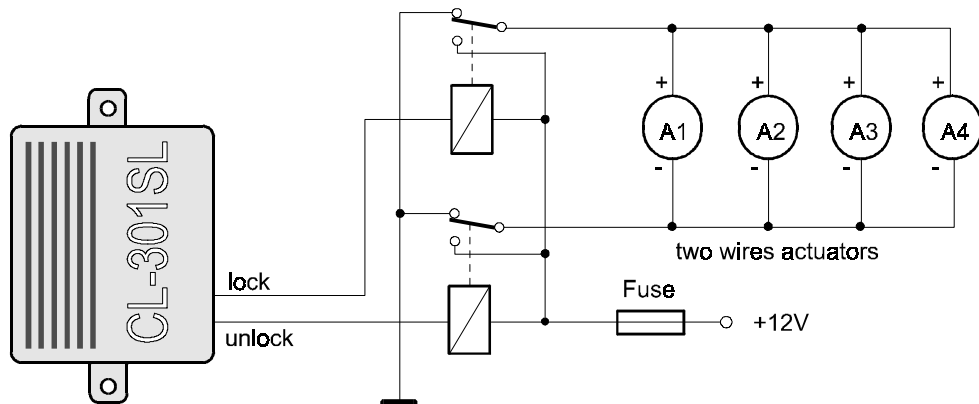


**Pneumatic central locking system:** Program duration of output pulses 4 seconds.



**Simplified additional installation of central locking system:** When manual operation of the whole system from the driver's door is not requested, you can use the following easy solution. Install two-wires actuator (recommended type CM-2) to each door of your car. Connect them as shown in the following diagram. Program duration of CL-301SL output pulses 0.3 seconds. This way all actuators are operated with the remote control.



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## REMOTE CONTROL FOR CENTRAL LOCKING CL-301SL

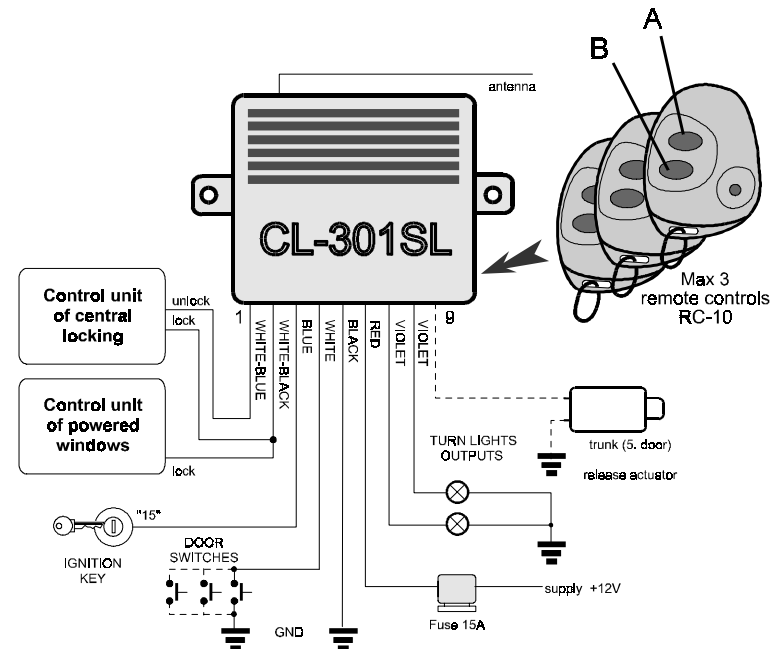
**Description:** The CL-301SL can be connected to various kinds of central locking systems. It also provides a separate signal to release a trunk (or a 5th door). The CL-301SL offers an economical solution for remote control, especially for cars equipped with an immobilizer from the manufacturer.

The receiver unit is controlled by a remote RF control. Communication is protected by a special "HOPPING" digital code that is changed after each transmission. Additional protection is offered by an ANTI-SCAN feature. This type of system provides a much higher safety level than other systems using only a fix code. An optional re-lock function checks if the car was entered within 1 minute after unlocking. If not, it will lock automatically again. This prevents the car from being accidentally unlocked and left unprotected. Protection of accidental locking while driving is also an optional function of this device.

There are two remote controls in each CL-301SL set. The device can be operated with a maximum of three remote controls. A new remote control can be added to the CL-301SL when necessary (in learning mode of the receiver unit). The CL-301SL is preset by the manufacturer to interface with an electromechanical central locking system which requests negative control signals. However, optional signal settings can be easily set.

### Specifications:

operating voltage	10 - 16VDC
stand by consumption	8mA
built-in fuse	15A
working distance	up to 20m
working frequency	433.92MHz
coding system	digital floating code, max. 3 remote control
built in transmitter type	TX-9
built in receiver type	REC-5
output signals	negative pulses (GND), max. 200mA, programmable duration (0.3 - 4 - 60 sec.). Manufacture initial setting 2 sec.
turn indicators outputs	2 x +12V/5A
trunk (5. door) release output	pulse +12V/15A, duration 0.5 sec.



**Installation:** Examine the central locking system of your car and identify the necessary signals of the car wire harness at first. Disconnect the battery before starting the installation. Keep in mind that if your car has memory functions, they may be erased if you disconnect the battery. Refer to the car owners' manual before disconnecting the battery. The lock signal can also be used for automatic closing of powered windows.

**Wiring:**

**White/blue** = unlock output, **white/black** = lock output. These outputs provide signals to control the door lock system. The maximum output current for either of these wires is 200mA ( NPN transistors switching to the GND). Connect these wires to the corresponding inputs of the control unit of the locking system. If the control unit is not equipped with extra inputs for remote control, you can connect the output wires of the CL-301SL to inputs for position sensors of the front door actuators. See "Examples of CL-301SL use for different central locking systems" if your locking system needs other types of control signals.

**Blue** = input of +12V signal from the ignition key. This wire should be connected to the ignition key switch (terminal 15). This signal will prevent an accidental locking while driving and resets the re-lock function (if used). If you connect the blue wire to the GND, the accidental locking protection will be canceled.

**White** = door switch input (negative triggered). This signal controls the re-lock function. We recommend door switches be installed to all doors of your car when you use the re-lock function. This function is optional. Connect the white wire to the GND to disable the re-lock function.

**Black** = GND Supply. Connect this wire to the original GND point in the car.

**Red** = Positive Supply (the wire with a fuse 15A). It should be connected directly to the positive terminal of the battery cable.

**2x Violet** = turn indicator (blinkers) outputs - these two wires provide power for the left and right blinkers as a visual indication of locking, unlocking and trunk (5. door) releasing. Connect one of the violet wires to the left blinker and the other violet wire to the right blinker.

**The trunk (5th door) release output** provides a positive voltage pulse (+12V, max. 15A), for a duration of 0.5 seconds. This signal is suitable for an actuator with mechanical return to starting position. The connecting wire is a part of the actuator. Plug the end of actuator wire equipped with a connector pin in to the empty slot of the CL-301SL wire-harness connector (position 9) when you install the releasing device.

*Note: The wire coming directly from the CL-301SL unit is the remote control antenna. The location of this wire will effect the remote control working distance. Ideally, the wire should be near a window.*

**Operation:** Each pressing of remote control button **A** will lock or unlock the car (according to the initial position of the locks). If both buttons **A** and **B** are pressed, the trunk (5th door) will be released (door locks will not be influenced). Locking of the car is indicated by one flash of the blinkers. Unlocking is indicated by two flashes and trunk (5th door) releasing is indicated by three flashes. Doors can not be locked with remote control while the ignition key is ON.

**Re-lock function:** If the car is not entered (neither door switch nor ignition key input is triggered) within one minute after unlocking, the CL-301SL will automatically generate a lock instruction. (Connecting the white wire to the GND instead of to the door switches will disable this function)

**Confirmation of Control Code Validity:** If the receiver unit receives an invalid signal from remote control (for example: if there was an attempt to scan the code by a car thief, or, while rare, as may happen after the remote control battery has been disconnected for a long time) then the receiver will not respond to the signal from the remote control. In this case, the system will ask for a confirmation of the control code. To provide confirmation, open the car by the key, put ignition key to On position and press any button on the remote control. Now the remote controller should work as usual.

**Maintenance:** There is no special maintenance required. If the distance from your car at which the locking system can be operated decreases, then replace the remote control battery. Normal life time of a good quality battery should be about one year. A suitable replacement battery is BAT6.

**Adding of a new remote control:** There are two remote controls in each CL-301SL set. The receiver unit can be operated with a maximum of three remote controls. To add an additional remote control or to replace an original one (in the case one is lost) perform the following procedure.

**Entering of Learn Mode:** First, switch off ignition key and disconnect the power to the CL-301SL by removing the fuse. Then, open the control unit housing. Press and hold the button marked "Learn Code" inside the unit and reconnect the power while still holding down the button. The blinkers will flash four times and you can now release the button. Now the receiver unit is in learning mode, ready to learn new codes or to program output pulse duration.

**Remote control codes learning:** You should activate all the remote controls one by one (button **A**) which you want accepted by the receiver when CL-301SL is in learn mode. The receiver unit will store each remote control code in its memory (confirmed by a blinker flash). Keep in mind that only three controls can be taught. If you try to teach a fourth control, the first one will be forgotten and so on. If you activate only one control in learning mode, you will be able to control the car only with this one controller.

**Duration of output pulses programming:** Switch the ignition key to the ON position when the CL-301SL is in the learning mode. Now use one of the remote controls, which is accepted by the receiver, to program. Each short pressing of the remote control button will change the duration of the CL-301SL output pulses. Topical duration is indicated by the blinkers. When the desired duration is programmed, switch off the ignition key. The 60 sec. locking pulse can be used for powered windows control.

Number of flashes	lock pulse	open pulse
1	0.3s	0.3s
2	4s	4s
3	60s	0.3s
4	60s	4s

**To exit the learning mode,** disconnect the CL-301SL power for two minutes.

*Note: All the settings and codes are stored in non voltage memory, so the receiver unit will remember them even if the power is disconnected. Duration of trunk (5th door) release output pulse is fixed (0.5 sec.).*

**Examples of the CL-301SL use for different central locking systems:** If your locking system needs another kind of control signal, install a couple of over-switching relays (or CR-2S unit) to the CL-301SL outputs. The relay coils consumption must be under 200 mA. See following diagrams for different locking systems.

**System with positive control inputs:**

