

WARNING: Carefully read following instructions and technical specification in this manual before installation. The system must be installed and used only according to this manual. The system is designed for vehicles with 12V power supply. It has to be connected to 12V output and to the ground. Neither producer or seller of the system is responsible for damages caused by incorrect installation, using or operating of this product. Unprofessional operation or modification of the system can damage the system alone, or the electric system of the vehicle and leads to warranty loss. For proper working of the system we recommend the installation to be made by authorized service.

SYSTEM DESCRIPTION

KEETEC TS 100-50 is a car alarm that was created by combining car alarms TS 50 and TS13. It is designed for vehicles with 12 V supply voltage and is used to monitor the doors, trunk, hood. In case of their disruption, system is reporting alarm by optical (indicator lights) and audible (siren) signaling. The system includes a built-in ultrasonic sensor with adjustable sensitivity, that in case of violation of vehicle interior reacts with alarm. When car alarm is activated, the system automatically blocks the starter circuit to prevent the unauthorized vehicle start up.

Car alarm can work in two modes. TS 100 and TS 50 and these modes can be set by function F10. See VI. Programming system functions section for setting procedure.

TS 100 mode: in this mode, car alarm is controlled by supplied remote controls or by the original remote controls from vehicle (version with EASY CAN module). Central locking outputs are used to control the central locking in the car.

TS 50 mode: in this mode, car alarm is controlled by the original remote controls from vehicle and is connected analogue. Outputs for control of central locking systems, when you set car alarm to TS 50, changes from outputs to inputs and are used to analog connect to central locking system, where car alarm gaining information about activation/deactivation. In the version with EASY CAN module, car alarm obtained these informations from the CAN BUS. In this mode, you can also use additional remote controls supplied with car alarm, but can only activate / deactivate the car alarm, without control the central locking system.

I. SYSTEM INSTALLATION - TS 100 MODE

Remove plastic covers of car dashboard. Find cables for car alarm connection. Use a digital multimeter to test the function of cables in vehicle, even if you're sure which function specific cable does have. After choosing the right cables, disconnect the car battery and connect the cable harness of car alarm to those cables according to the attached wiring schemes. Solder and isolate all connections. After finishing the installation of car alarm, connect the car battery and plug in a fuse to the fuse cover of the car alarm. Test correct functionality of the car alarm and the electrical installation of the car (ignition, direction lights). Mount the plastic covers back on to the dashboard.

Control unit and LED location

Place the control unit from the inner side of protection plastics of the car dashboard. Fix antenna of the control unit so as not touch the metal parts of the vehicle. Place the LED diode on a good visible place.

Caution: Outputs of control unit (except for the indicator lights output and central locking output) have maximum allowed current load of 300mA. To control greater current load, use additional devices (R1215, IMO 15). Directional lights can load up to 2x5A.

CONNECTOR CN1 (3PIN) - immobilization circuit

Contacts of immobilization relay (NC,NO,COM). Function F29 determine, which contacts will be connected. NC/COM or NO/COM. Current load up to 30A. **Black/white - COM**
Black - NC
Brown - NO

CONNECTOR CN2 (20PIN) - connector of inputs and outputs

Brown (+/-) - door contacts sensing (input wire)
Brown/black (-) trunk sensing (input wire)
Brown/yellow (-) engine compartment sensing - hood (input wire)
White/red (+/300mA) - default setting (F17) - siren output (+)
- optional (F17) - horn output (-)

White/blue (+/-) sequential output for optical signalisation (output wire)
Purple (-300mA) output for trunk open

Orange (+10A) output for directional (parking) lights (output wire). If function F9 is set to sequential optical signalisation, this wire serves as input of directional lights feedback control (see wire diagram)

Yellow (+) ignition +12V (input wire)
Gray (-300mA) - default setting (F21) - PAGER - output is active during alarm

- optional (F21) - immobilization output for motor blocking
Black (-) GND (input wire)
Red (+) power supply +12V (input wire)

Orange/brown CAN H input (input wire), (thinner wire diameter)

Orange/black (+) CAN L input (input wire), (thinner wire diameter)

Orange/black (+) trunk open sensing. Connect the wire to the wire of trunk opening motor on which +12V pulse appears when unlocking. When unlocking, car alarm automatically misses the trunk contact, ultrasonic and additional sensor. After closing the trunk, contact and sensors are guarded again after 4 seconds.

Brown/blue - NO contact of locking relay

Blue/white - COM contact of locking relay

Orange/blue - NC contact of locking relay

Brown/green - COM contact of locking relay

Green/white - COM contact of locking relay

Orange/green - NC contact of locking relay

CAUTION: In case, that outputs for central locking not working properly or not working at all, check setting of function F10, if car alarm is not set to TS 50 mode!

CONNECTOR CN3 (14PIN) - EASY CAN MODULE CONNECTION

Connector for connection of EASY CAN module. By connecting the module, you can obtain informations from the CAN BUS about door and trunk open, closing and opening of the vehicle via the remote control, turn on the ignition (if these informations are available on CAN BUS)

CONNECTOR CN4 (2PIN) - ultrasonic sensor connection (red)

Connector for ultrasonic sensor connection (marked with red)

CONNECTOR CN5 (2PIN) - ultrasonic sensor connection (white)

Connector for ultrasonic sensor connection (marked with white).

CONNECTOR CN6 (3PIN) - valet button with LED connection

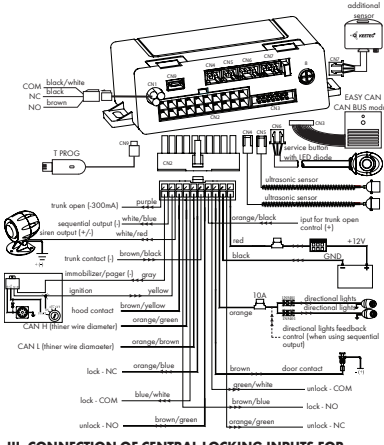
Connector server for valet switch connection. Place LED diode on a good visible place.

CONNECTOR CN7 (3PIN) - dual zone sensor connection

Connector for connection of additional dual zone sensor (LSK2, MWS 2)

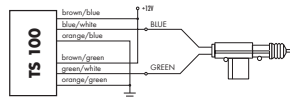
8 - ultrasonic sensor sensitivity adjustment
CN9 - connection of car alarm to the PC via programming cable T PROG

II. WIRING DIAGRAM FOR TS 100 MODE

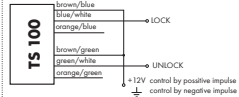


III. CONNECTION OF CENTRAL LOCKING INPUTS FOR TS100 MODE

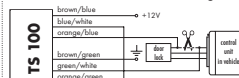
Direct control of actuators



Control of central locking system by negative/positive impulse



Connection of pneumatic central locking system



IV. SERVICE MODE

1. Turn ON ignition and press service button 2x within 10 seconds.
2. Turn OFF ignition. If security mode is not active, siren beeps twice and LED diode shine permanently. Service mode is now activated. If the security mode is active (function F19), enter service mode by enter 4 digits PIN code. LED diode starts to flashing slowly.
- if the LED will flash so many times which is the value of first PIN number, push the service button one time. LED will start to flash again.
- if the LED will flash so many times which is the value of second PIN number, push the service button one time. LED will start to flash again.
- if the LED will flash so many times which is the value of third PIN number, push the service button one time. LED will start to flash again.
- if the LED will flash so many times which is the value of fourth PIN number, push the service button one time. LED will start to flash again.
if you entered PIN code correctly, siren beeps twice and LED is turn ON permanently. Service mode is active.
Deactivation of service mode
Turn ON ignition and press the service button 2x within 10 seconds. Turn OFF ignition. Siren beeps twice and LED diode turns OFF. Service mode is deactivated.

VI. PROGRAMMING SYSTEM FUNCTIONS

When programming functions, follow these steps:

1. Activate service mode and turn ON ignition.
2. Press service button 7x within 10 seconds and turn OFF ignition, LED starts flashing.
3. Press service button so many times which is the value of function you want to change, within 20 seconds. After each push of service button siren beeps once. If the number of function is greater than 10, push service button fro 3 seconds. For example, if you want to set function No.13, press service button for 3 sec., after release button siren beeps 2 times. Press service button 3 times, after each push siren beeps once. After turning the ignition ON, siren will sound 1 or 2 times, depending on which setting was set. If you want to set function No.25, press the service button for 3 seconds. After releasing the button, siren beeps twice. Press the button again for 3 seconds. After releasing the button, siren beeps twice. Press the service button 5 times. Siren beeps after each push of button.
4. Turn ignition ON. Siren will sound 1 or 2 times, depending on which setting was set.
5. You can finish programming by turning the ignition ON and by pressing the button once, or wait 20 seconds. System is now in service mode.

PROGRAMMING TABLE FOR TS 100 MODE

Prog. menu	Function	Factory settings	Adjustable
		1 tone of siren	2 tones of siren
F1	silent / loud activation	silent	loud
F2	central locking system lock when ignition turned on	off	on
F3	input activation delay	8 sec.	40 sec.
F4	system actuator reminder	off	on
F5	door contacts input polarity	"-" input	"+" input
F6	double lock pulse	off	on
F7	double unlock pulse	off	on
F8	sequential output polarity	"-" output	"+" output
F9	optical signalization	normal	sequential
F10	car alarm mode	TS 50	TS 100
F11	anti carjack mode	on	off
F12	automatic activation of immobilization output (after 5 min.)	off	on
F13	unlocking time	0,5 sec.	3,5 sec.
F14	locking time	some as unlocking	20 sec.
F15	automatic activation after last door closing	off	on
F16	lock of central locking after automatic reactivation	off	on
F17	siren output	siren (+)	horn (-)
F18	siren type	normal	coded
F19	security mode	off	on

Prog. menu	Function	Factory settings	Adjustable
		1 tone of siren	2 tones of siren
F20	automatic reactivation after 30 seconds	off	on
F21	Output No.1	pager	immobilizer
F22	optical signalization when activate/deactivate	on	off
F23	lock check when signal sent	prohibited	allowed
F24	CAN BUS activation/deactivation	allowed	prohibited
F25	ultrasonic sensors	allowed	prohibited
F26	PANIC alarm by original remote	prohibited	allowed
F29	immobilization relay	NO	NC
F30	system reset	reset (except F10)	

VI. FUNCTIONS DESCRIPTION

F1. SILENT / LOUD ACTIVATION

PRE-SET: when activate / deactivate the siren does not sound.

ADJUSTABLE: when activate / deactivate the siren beeps

F2. CENTRAL LOCKING SYSTEM LOCK WHEN IGNITION TURNED ON

PRE-SET: central locking system does not lock when ignition turn ON
ADJUSTABLE: when ignition is turned ON, central locking system locks after 20 seconds
Note: when using EASY CAN module, central locking will lock after crossing the speed of 5 km/h (check in the EASY CAN list of supported vehicles if the vehicle has a speed signal and set the code 912 of speed output to the switching)

F3. INPUT ACTIVATION DELAY

PRE-SET: inputs are active after 8 seconds after activation of the system
ADJUSTABLE: inputs are active after 40 seconds after activation of the system

F4. SYSTEM ACTIVATION REMINDER

PRE-SET: reminder is turned OFF
ADJUSTABLE: when ignition is OFF and after last door is closed siren sounds 2x after 10 seconds.

F5. DOOR CONTACTS INPUT POLARITY

PRE-SET: input for door contacts react on negative (-) impulse.
ADJUSTABLE: input for door contacts react on positive (+) impulse.

F6. DOUBLE LOCK IMPULSE

PRE-SET: double lock impulse is turned OFF
ADJUSTABLE: double lock impulse is turned ON

F7. DOUBLE UNLOCK IMPULSE

PRE-SET: double unlock impulse is turned OFF
ADJUSTABLE: double unlock impulse is turned ON

F8. SEQUENTIAL OUTPUT POLARITY

PRE-SET: negative polarity on sequential output (- 300 mA)
ADJUSTABLE: positive polarity on sequential output (+ 300 mA)

F9. OPTICAL SIGNALIZATION

PRE-SET: for optical signalization, power outputs for directional indicators are active
ADJUSTABLE: for optical signalization, sequential output for directional indicators is active. In this case, power output for directional lights serves for control of directional lights function.

F10. CAR ALARM MODE

PRE-SET: TS 50 - car alarm is controlled via original remote control of vehicle
ADJUSTABLE: TS 100 - car alarm is controlled via remote control of car alarm

F11. ANTI CAR-JACK MODE

PRE-SET: function is allowed
ADJUSTABLE: function is prohibited

F12. AUTOMATIC ACTIVATION OF IMMOBILIZATION OUTPUT

PRE-SET: automatic activation is turned OFF
ADJUSTABLE: after turning ignition OFF, immobilization output activate after 5 minutes.

For turn OFF this output, press unlock button on remote control or use emergency deactivation.

F13. UNLOCKING TIME

PRE-SET: unlock impulse is 0,5 sec.
ADJUSTABLE: unlock impulse is 3,5 sec. (It is not possible to set double unlock impulse)

F14. LOCKING TIME

PRE-SET: some as unlocking time
ADJUSTABLE: 20 seconds

F15. AUTOMATIC ACTIVATION AFTER LAST DOOR CLOSING

PRE-SET: function is prohibited
ADJUSTABLE: after turning OFF ignition and closing last door, system is automatically activated after 30 seconds.

F16. LOCK OF CENTRAL LOCKING AFTER AUTOMATIC REACTIVATION

PRE-SET: function is prohibited
ADJUSTABLE: after ignition turned OFF and last door is closed, system is automatically activated after 30 sec. and locking the central locking system

F17. SIREN OUTPUT

PRE-SET: siren output is permanent - siren (+)
ADJUSTABLE: siren output is discontinuous - horn (-)

F18. SIREN TYPE

PRE-SET: normal siren
 ADJUSTABLE: coded siren
F19. SECURITY MODE
 PRE-SET: security mode is deactivated
 ADJUSTABLE: security mode is active. It is necessary to enter PIN code when security mode is active for programming system function or for emergency deactivation of system

F20. AUTOMATIC REACTION

PRE-SET: function is allowed. If you do not open any door after deactivation, system automatically activate after 30 seconds. If function F16 is turned on, central locking system will lock itself when automatic reactivation is active.
 ADJUSTABLE: function is prohibited

F21. OUTPUT NO.1

PRE-SET: pager output is active throughout the duration of an alarm
 ADJUSTABLE: immobilization output - output is active after alarm activation

F22. OPTICAL SIGNALIZATION WHEN ACTIVATE/DEACTIVATE

PRE-SET: optical signalization is allowed
 ADJUSTABLE: optical signalization is prohibited
F23. LOCK CHECK WHEN SIGNAL JAMMING
 PRE-SET: function is prohibited

ADJUSTABLE: function is allowed - system is checking presence of jamming signal for 10 seconds after closing doors. If system detects jamming signal, siren beeps 3 times.

F24. CAN BUS ACTIVATION/DEACTIVATION

PRE-SET: function is allowed - system is activate/deactivate via CAN BUS
 ADJUSTABLE: function is prohibited

F25. ULTRASONIC SENSOR

PRE-SET: ultrasonic sensor is activated
 ADJUSTABLE: ultrasonic sensor is deactivated

F26. PANIC ALARM BY ORIGINAL REMOTE CONTROL

PRE-SET: if you press lock button for 3 times within 5 seconds, PANIC alarm is active. Function is available only for CAN BUS connection of supported vehicles!
 ADJUSTABLE: PANIC alarm is prohibited

F29. IMMOBILIZATION RELAY

PRE-SET: NO - immobilization circuit is using contacts marked NO and COM. When car alarm is deactivated, these contacts are permanent linked.
 ADJUSTABLE: NC - immobilization circuit is using contacts marked NC and COM. When car alarm is deactivated, these contacts are permanent linked.

F30. SYSTEM RESET

System is reset and set to default factory settings, **except function F10!**

VII. EMERGENCY DEACTIVATION

1. open driver door and turn ignition ON.
 2. press the service button so many times, which is value of first digit of PIN code within 10 seconds and turn ignition OFF. If security mode is disabled, siren beeps twice, directional lights flashes twice and now system is deactivated. If security mode is active (function F19), enter by 4 digits PIN code. LED starts flashing slowly.

- if the LED will flash so many times which is the value of first PIN number, push the service button one time. LED will start to flash again.
 - if the LED will flash so many times which is the value of second PIN number, push the service button one time. LED will start to flash again.
 - if the LED will flash so many times which is the value of third PIN number, push the service button one time. LED will start to flash again.
 - if the LED will flash so many times which is the value of fourth PIN number, push the service button one time. LED will start to flash again.
 - if you entered correct PIN code, siren beeps twice and directional lights flashes twice. System is now deactivated.

VIII. PIN CODE CHANGE

1. Turn ignition ON and press service button 10 times within 10 seconds.
 2. Turn ignition OFF. If security mode is deactivated, now you are in programming PIN code menu. If security mode is active (function F19), enter it by entering 4 digits PIN code. LED diode starts flashes slowly.

- if the LED will flash so many times which is the value of first PIN number, push the service button one time. LED will start to flash again.
 - if the LED will flash so many times which is the value of second PIN number, push the service button one time. LED will start to flash again.
 - if the LED will flash so many times which is the value of third PIN number, push the service button one time. LED will start to flash again.
 - if the LED will flash so many times which is the value of fourth PIN number, push the service button one time.
 - if you entered correct PIN code, siren beeps once and LED diode turns OFF. Now you are in PIN code programming menu.

3. Press the service button. LED starts flash slowly and you can enter new PIN code.
 - if the LED will flash so many times which is the new value of first PIN number, press service button once. First digit of new PIN code is save. LED will start to flash again.
 - if the LED will flash so many times which is the new value of second PIN number, press service button once. Second digit of new PIN code is save. LED will start to flash again.
 - if the LED will flash so many times which is the new value of third PIN number, press service button once. Third digit of new PIN code is save. LED will start to flash again.
 - if the LED will flash so many times which is the new value of fourth PIN number, press service button once. Fourth digit of new PIN code is save. LED will start to flash again.
 - 5 seconds after fourth digit is entered, LED diode automatically display new PIN code by the number of flashes. Display first digit of code, 2 sec. pause, display second digit of code, 2 sec. pause etc...
 4. Turn ignition ON or system will automatically ends programming of new PIN code after 10 seconds from displaying the new PIN code.

PIN CODE RESET

Disconnect system from power. Disconnect the jumper in the control unit and connect the system to the power supply. Within 3 seconds, connect the jumper in the control unit. PIN code is set to the default setting (4321).

IX. PROGRAMMING REMOTE CONTROLS

1. Turn ignition ON and press service button 5 times within 8 seconds. Turn ignition OFF. If security mode is not active, siren beeps 5 times, system is now set to programming mode and LED starts flash. If security mode is active (function F19), enter it by 4 digits PIN code. LED starts flash slowly.
 - if the LED will flash so many times which is the value of first PIN number, push the service button one time. LED will start to flash again.
 - if the LED will flash so many times which is the value of second PIN number, push the service button one time. LED will start to flash again.
 - if the LED will flash so many times which is the value of third PIN number, push the service button one time. LED will start to flash again.
 - if the LED will flash so many times which is the value of fourth PIN number, push the service button one time.
 If you entered correct PIN code, siren beeps 5 times and now you enter to the programming mode. LED starts flash fast.
 2. Press any button on remote control within 5 seconds. If you dont press any of button within 5 seconds or ignition will be turned ON, system automatically ends programming.
 3. Siren confirms programming by short beep. Depending on which controller was programmed, so many times siren beeps. Successful programming of first remote control siren confirms by one beep, second remote control siren confirms by two beeps, etc...
 4. If you want to program new remote control, you must also re-program all remotes, which are already programmed in system.
 5. System allows you to program up to 10 remote controls. When programming new remotes system automatically erase already programmed remotes.

X. SETTING THE INTENSITY OF CAR-JAMMING CONTROL

Intensity of car-jamming control when system activation can be set in 5 levels: Level 1, 3, 6, 9, 11. The most sensitive level is 1 (factory set).
 Intensity set:
 1. Activate service mode and turn ignition ON.
 2. Press service button 3 times within 5 sec. and turn ignition OFF, siren beeps 3 times and LED diode flashing.
 3. Press service button, siren beeps once. Save new settings by turning ignition ON, and siren beeps so many times, which is the new value of intensity. If you want to change the settings, proceed from point 2.
 4. Exit service mode.

XI. PROGRAMMING CAR ALARM VIA PC

It is possible to program TS 100-50 car alarm via PC. To connect car alarm with PC and set parameters via PC, you need T PROG programming cable and KEETEC TS100-50 PC Setup, which must be installed before alarm connection. After installation of T PROG cable and TS100-50 PC Setup software is everything ready for programming.

TS 100-50 programming process:

- connect car alarm to the power supply
 - connect car alarm with PC using T PROG cable
 - run KEETEC TS 100 - 50 PC Setup
 - select COM port, which is allocated to the programming cable T PROG and select the language
 - click on **Load** to view actual settings of car alarm
 - change settings of car alarm and click on **Apply**. New values will be saved to car alarm and system is now programmed.
 - if you want to set car alarm to factory settings, click on **Default** and after loading factory settings values, save them by clicking on **Apply**
 - it is possible to set security PIN code via PC Setup. Click on **Load** to load actual PIN code

- enter new PIN code to the window **New**
 - enter same digits to the window **Confirm** and click on **Apply**
 - end programming by click on **End**

Car Alarm TS 100-50 contains the memory of events, in which triggered alarms are recorded. The memory stores the last 20 alarms. Alarms memory can be seen in programming software KEETEC TS 100 - 50 PC Setup.

Memory of events TS 100-50:

- connect car alarm to power supply 12V
 - connect car alarm with PC using T PROG cable
 - run KEETEC TS 100 - 50 PC Setup
 - select COM port, which is allocated to the programming cable T PROG and select the language
 - click on **List of events** and then on **All Event** or **Current Event** according to if you want to see all alarms or last one.
 - memory of events can be erased by click on **Clear**

TECHNICAL PARAMETERS	
Power supply	12V +/- 25%
Working temperature	from -30°C to 70°C
Current consumption (stand-by)	10mA
Working frequency	433,92 MHz
Alarm duration	30 seconds

