Prizrak 5S/BT wiring diagram

Prizrak 5S

X1

Integrated button   LED   Micro-USB
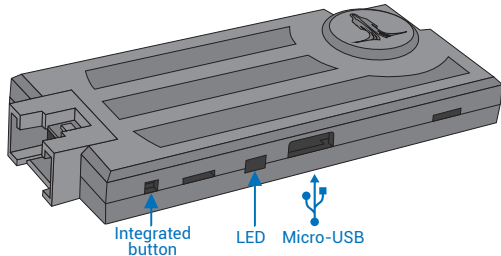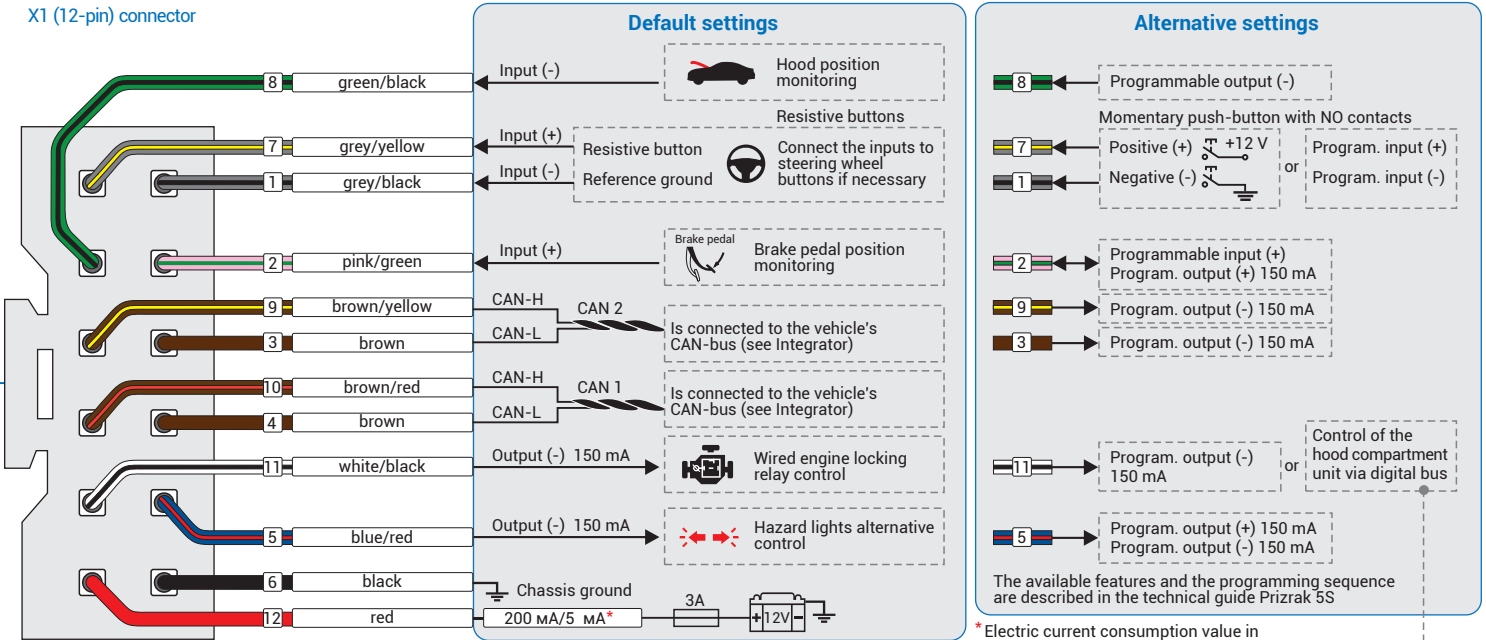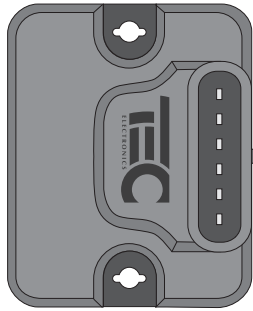
The Immobilizer system allows to use a smartphone instead of a radio tag. For this purpose, it is necessary to install the mobile app "Prizrak ID". The protective layer of the Bluetooth code must not be scratched off. To test the immobilizer system functionality an installer can use a temporary code which is valid until the vehicle hasn't travelled 10 km after installing the immobilizer system.
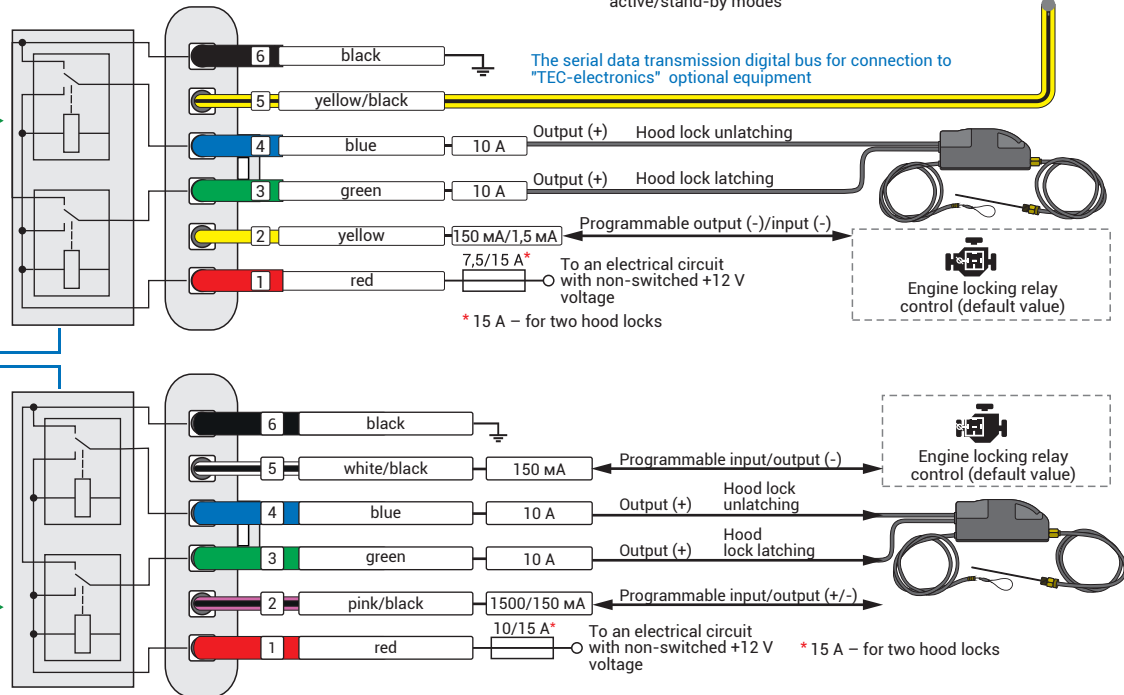
X1 (12-pin) connector

Pin	Wire color	Default settings		Alternative settings
8	green/black	Input (-)	Hood position monitoring	Programmable output (-)
7	grey/yellow	Input (+)	Resistive buttons — Resistive button / Connect the inputs to steering wheel buttons if necessary	Momentary push-button with NO contacts — Positive (+) +12 V / Program. input (+)
1	grey/black	Input (-)	Reference ground	Negative (-) or Program. input (-)
2	pink/green	Input (+)	Brake pedal position monitoring	Programmable input (+) / Program. output (+) 150 mA
9	brown/yellow	CAN-H CAN 2	Is connected to the vehicle's CAN-bus (see Integrator)	Program. output (-) 150 mA
3	brown	CAN-L		Program. output (-) 150 mA
10	brown/red	CAN-H CAN 1	Is connected to the vehicle's CAN-bus (see Integrator)	
4	brown	CAN-L		
11	white/black	Output (-) 150 mA	Wired engine locking relay control	Program. output (-) 150 mA or Control of the hood compartment unit via digital bus
5	blue/red	Output (-) 150 mA	Hazard lights alternative control	Program. output (+) 150 mA / Program. output (-) 150 mA
6	black	Chassis ground		
12	red	200 мА/5 мА* 3A +12V		

The available features and the programming sequence are described in the technical guide Prizrak 5S

*Electric current consumption value in active/stand-by modes

Hood compartment unit HCU-230

Pin	Wire color		
6	black		
5	yellow/black	The serial data transmission digital bus for connection to "TEC-electronics" optional equipment
4	blue	10 A	Output (+) Hood lock unlatching
3	green	10 A	Output (+) Hood lock latching
2	yellow	150 мА/1,5 мА	Programmable output (-)/input (-)
1	red	7,5/15 A*	To an electrical circuit with non-switched +12 V voltage

* 15 A – for two hood locks

Engine locking relay control (default value)

Hood compartment unit HCU-230/BT

Pin	Wire color		
6	black		
5	white/black	150 мА	Programmable input/output (-)
4	blue	10 A	Output (+) Hood lock unlatching
3	green	10 A	Output (+) Hood lock latching
2	pink/black	1500/150 мА	Programmable input/output (+/-)
1	red	10/15 A*	To an electrical circuit with non-switched +12 V voltage

* 15 A – for two hood locks

Engine locking relay control (default value)

The immobilizer installation sequence

1. Connect the immobilizer to the vehicle's wiring in accordance with the immobilizer wiring diagram.
2. Make sure all vehicle electronic modules and wire connectors are plugged in.
3. Supply power to the immobilizer, wait for intermittent beeps. Reset the immobilizer to default values if it doesn't emit any sound.
4. Interface the immobilizer with the vehicle by performing a special interfacing procedure which depends on a vehicle. Usually a vehicle group and subgroup is identified automatically after cycling the ignition ON and off, arming and disarming the vehicle from the factory remote. The interfacing procedure for a certain car may be find out in the Integrator (https://int.tecel.ru/).
5. Change the factory PIN-code.
6. Inform the vehicle's owner which particular button has been assigned as the programming button and make a note in the user's guide.

! • It is possible to perform all necessary settings in TECprog by connecting the immobilizer to a computer either before interfacing the module with a vehicle or after the interfacing procedure is complete.
• The immobilizer will pair with the HCU-230/BT module after a special registration procedure is complete (see the HCU-230/BT technical guide).

Resetting to defaults (if the immobilizer is installed on a vehicle)

1. Disconnect the immobilizer from power source.
2. Press and hold the integrated button. Holding the button connect the immobilizer to the power source, it will start beeping continuously.
3. Release the button, wait until the module stops beeping.
4. Switch the vehicle's ignition ON and enter PIN-code, wait for the confirmatory trill.
5. Intermittent beeps followed after the confirmatory trill indicate that the module has been reset to default values.
6. Disconnect the module from power.

Changing PIN-code

1. Turn the vehicle's ignition ON. Enter the existing PIN-code combination (the default PIN-code "2" is entered with the programming button), wait for the confirmatory trill.
2. Press and release the programming button 14 times. The module will emit one beep to confirm that the «PIN-code change» mode has been successfully entered.
3. Set up a PIN-code. Any button of the vehicle that responds with beep when being pressed can be used to set up the new PIN-code combination. Wait for confirmation with 1 short beep.
4. Repeat the new PIN-code. Wait for confirmation:
• two beeps and trill: the PIN-code has been changed, the immobilizer will exit the programming mode.
• a long warning beep – the PIN-code hasn't been changed due to an error while entering the new PIN-code, repeat the procedure starting from the step №4. If you'd like to exit the programming mode and leave the existing PIN-code unchanged-just turn the ignition off.

! It is impossible to setup PIN-code "1"- a single press on one button.

Resetting to default values (the immobilizer is not installed on a vehicle).

1. Press and hold the built in progrmming button. Still holding the PB plug the device in (supply power to it). The immobilizer will be emitting continuous beeps.
2. Release the button, wait until the short beeps are terminated.
3. If the vehicle hasn't covered 10 km after the installation and the factory PIN-code «2» hasn't been changed then enter the PIN-code «2» with the built-in PB. Otherwise enter the PUK-code with the integrated PB-trill will be heard.
4. Wait for continuous beeps signifying that the module is now reset to the factory default settings.
5. Disconnect the immobilizer from power.

! Only the vehicle owner is permitted to scratch off the protective layer on the plastic card and enter PUK-code.

Hardware features configuration menu (the code to enter the menu — «10», ten presses on the programming button, confirmation — 3 short beeps)

№	Menu option name	Default*	Available value. Notes
1	Vehicle make	—	It is adjusted avtopmatically but may be setup manually if needed
2	Wired engine locking type	2	1 — normally open (NO) relay control; **2 — normally closed (NC) relay control**; 3 — control over hood compartment unit HCU-230 via digital bus (output №11, white/black wire)
3	Engine locking via CAN-bus	2	1 — enabled in Prizrak; **2 — disabled**; 3 — enabled in CAN-relay implant
4	Vehicle's engine locking at safe speed	1	1 — disabled. The engine is locked regardless of vehicle's speed; 2 — at speed 30 km/h and slower; 3 — when the vehicle is completely stopped
5	Engine start permit prior to authentication	1	**1 — enabled**; 2 — disabled
6	Inputs adjustment for analog buttons connection	—	The inputs are connected to: 1 — to the resistive buttons (steering wheel buttons); 2 — the input №1 to a posistive button; the input №7 to a negative button. In case if the value «2» is selected, the inputs may be used as the universal programmable inputs
7	Hazard lights control algorithm	4	1 — hazard lights are controlled by pulse signal; 2 — hazard lights are controlled by status signal; 3 — hazard lights are controlled by connecting to hazard lights lamps; **4 — are controlled via CAN-bus**
8	Central door locking system control algorithm	4	1 — control via a single wire (considering the CDL status); 2 — control via a single wire (regardless of CDL status); 3 — double wire control; **4 — control via CAN-bus**
9	Hood lock automatic latching	1	**1 — ON**; 2 — OFF
10	«Comfort feature» operation duration	3	Values range from 1 to 6, where 1-10 seconds.....**3-30 seconds**
11	Vehicle's CDL unlocking blockage if a tag is out of range	1	**1 — OFF**; 2 — ON (constant radio tag search); 3 — ON, only if «Maximum protection in dangerous places is engaged»
12	Speed monitoring for Immobilizer and AntiHiJack	1	**1 — ON**; 2 — OFF; Determines operation of the engine locking algorithm for Immobilizer and AntiHiJack
13	Quantity of brake pedal presses before AntiHiJack feature will trigger	3	Values range from 1 to 7. The settings of this feature are ignored if the feature «Vehicle's engine locking at safe speed» is ON
14	Embedded electro-mechanical relay adjustment of «CAN-relay Implant»	3	1 — normally open (NO); 2 — normally closed (NC); **3 — not used**
15	«CAN-relay Implant» diagnostic	—	1 — ready for operation; 2 — not registered; 3 — registration procedure is running; 4 — registration failed; 5 — no communication with CAN-relay; 6 — CAN-relay firmware update required; 7 — Error in connection to CAN-bus
16	Can-relay implant reset to default values	—	In order to reset CAN-relay to factory values: • press the programming button once; • wait for the confirmatory trill. The alarm will inform about the option status by a series of 2 beeps and LED flashes. 1 — registered; 2 — not registered (reset to default values).
17	A CAN-bus selection via which is carried out control over CAN-relay Implant	1	**1 — CAN-relay is automatically searched on every available CAN-bus**; 2 — CAN-relay is searched on CAN1; 3 — CAN-relay is searched on CAN2

Programmable inputs/outputs configuration (the code to enter the menu — «11», eleven presses on the programming button, confirmation — 6 short beeps)

№	Wire color and connection description (output №)	Mode	Default*	Selected value. Note
1	Grey/black input feature adjustment (1)	Input (-)	6	**Wired button.** May be assigned one of the programmable inputs features
2	Pink/green lead adjustment (2)		1	**1 — Programmable input (+)**; 2 — Programmable output (+)
3	Pink/green lead feature adjustment (2)	Input (+) or output (+)	1	Brake pedal position monitoring. To this input may be assigned any feature from the table «Programmable inputs features». The output will be automatically configured for «Vehicle's CDL unlocking blockage if a tag is not in range (NO relay control)» feature (refer to the «Programmable outputs features», the feature №30, in case if the option №2 of this menu is setup for the value «2»; After this it is possible to assign any feater to this output
4	Brown (3) and brown/yellow (9) leads operating mode		1	**1 — CAN-bus CAN-2**; 2 — Programmable output (-)
5	Adjustment of the brown lead (3)	CAN-bus or output (-)	—	**Data-bus CAN2 (L).** Depends on the option №4 setting. If the option №4 is setup for value «2»then the output will automatically configure for feature «The output is not used» (refer to the table «Programmable outputs feature», the option №0). After that it will be possible to assign to this output any feature from the «Programmable outputs» table
6	Adjustment of the brown/yellow lead (9)		—	**Data-bus CAN2 (H).** Depends on the option №4 setting. If the option №4 is setup for value «2» then the output will automatically configure for feature «The output is not used» (refer to the table «Programmable outputs features», the option №0). After that it will be possible to assign to this output any feature from the «Programmable outputs» table
7	Adjustment of the blue/red lead (5)	Выход (-) or Output (+)	32	**Hazard lights alternative control.** It is possible to assign any feature from the table «Programmable outputs features»
8	Blue/red lead (5) polarity adjustment		2	1 — **Programmable output (+)**; 2 — Programmable output (-)
9	Blue/yellow input (7) feature adjustment	Input (+)	6	**Wired button.** It is possible to assign any feature from the table «Programmable inputs features»
10	Green/black lead (8) operating mode adjustment	Input (-) or output (-)	1	**1 — Programmable input (-)**; 2 — Programmable output (-)
11	Green/black lead (8) feature adjustment		2	**Hood position monitoring.** It is possible to assign any feature from the table «Programmable inputs features». The lead will be automatically configured for «Vehicle's CDL unlocking blockage if a tag is not in range (NC relay control)» feature (refer to the «Programmable outputs features», the option №31), if the option №10 is setup for value «2». After that it will be possible to assign any feature from the «Programmable outputs features» if needed
12	White/black output (11) feature configuration	Output (-)	2	**1 — HCU module control via tp-bus**; 2 - programmable output
13	White/black output function (11)		35	**Wired engine blocking.** Can be assigned any feature from the list of features for programmable outputs

Programmable outputs features

№	Feature name	№	Feature name	№	Feature name
0	The output is not used	13	The engine is running	26	Gas pedal locking (NC relay control)
1	«Armed» status	14	Engine RPM	27	Service/valet mode
2	Pulse when «Arming»	15	Gear lever position	28	Pulse to latch aftermarket pin door blockers
3	Pulse when «Disarming»	16	The vehicle is moving	29	Pulse to unlatch aftermarket pin door blockers
4	Pulse after owner's authentication	17	Front parking sensors control (power supply)	30	Vehicle's CDL unlocking blockage if a tag is not in range (NO relay control)
5	Vehicle's OEM alarm panic status	18	Rear parking sensors control (power suply)	31	Vehicle's CDL unlocking blockage if a tag is not in range (NC relay control)
6	Panic to a pager	19	Vehicle speed	32	Alternative hazard lights control
7	Panic/warning pulses to vehicle's klaxon	20	Brake pedal	33	Pulse to «lock» the CDL (lock/unlock for single wire control) — alternative control
8	Doors, hood and trunk	21	Parking brake	34	Pulse to unlock the CDL — alternative control
9	Sensors ignoring	22	Parking lights	35	Wired engine locking
10	Vehicle's OEM button pressure	23	Timer channel («Comfort»)	36	—
11	Ignition	24	Starter or diagnostics bus locking (NC relay control)	37	Engine locking by engine start/stop button push imitation
12	ACC	25	Hood lock latching	38	An external beeper control

Programmable inputs features

№	Feature name	№	Feature name	№	Feature name
1	Brake pedal status monitoring	3	Driver's door PIN-switch input	5	Speed monitoring
2	Hood status monitoring	4	Hood lock latching with HCU-230	6	Wired button(s)

User settings adjustment (the code to enter the menu — «12», twelve presses on the programming button, confirmation — 4 short beeps)

№	Option name	Default*	Available values. Notes
1	Immobilizer	1	**1 — ON**; 2 — OFF
2	AntiHiJack	1	**1 — ON**; 2 — OFF
3	Travel distance before AntiHiJack will trigger	1	Range from 1 to 10. **1 means 100 meters**, 3-300 meters
4	Audible confirmation after authentication	1	**1 — ON**; 2 — OFF
5	Service (valet) mode automatic disabling	1	**1 — ON**; 2 — OFF
6	CDL latching when driving off	2	1 — ON; **2 — OFF**
7	—	2	1 — ON; **2 — OFF**
8	Autoimatic windows, side mirrors, power sunroof closure («Comfort»)	4	1 — Windows closure; 2 — windows and side mirrors closure; 3 — windows and sunroof closure; **4 — windows, sunroof closure, side morrors folding**; 5 — OFF (closure is not performed)
9	Authentication methods (PUK-code entry required)	1 or 3	**1 — radio tag (for Prizrak 5S/Slim and Prizrak 5S/2Slim)**; 2 — PIN-code; **3 — radio tag or PIN-code (for Prizrak 5S)**; 4 — radio tag and PIN-code
10	New radio tags registration	—	The number of beeps (when the brake pedal is pressed) indicate the total number of registered radio tags (from 0 to 8)
11	Radio-tags detection quality check	—	Allows to determine the best zones for a tag detection
12	AntiHiJack feature automatic deactivation with a radio tag	2	1 — ON; **2 — OFF**
13	Deleting smartphone tags from memory	—	From 1 to 4. The number of beeps is equal to the number of registered smartphone-tags