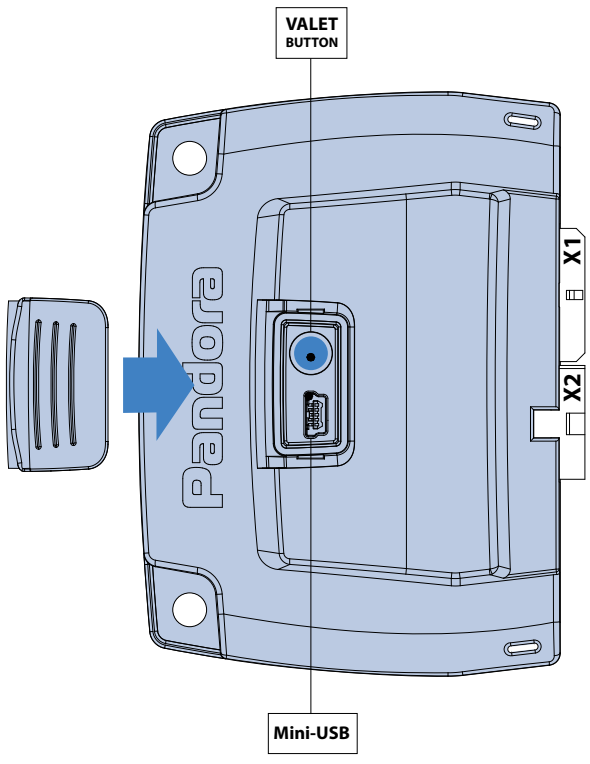
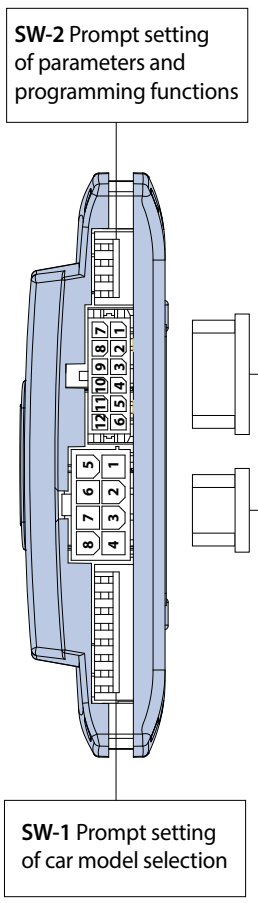
Pandora TCM-6

CAN-module for connecting of trailer lighting

WARNING!
When the system installation is finished, program car model via DIP-switches for correct module operation with your car.



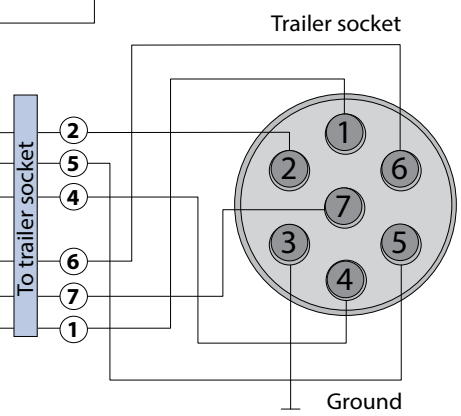


X-1 Main socket

1	Grey	(–)	**INP** • ARMED MODE STATUS
2	Blue	(+) R=47k	**INP** • REVERSING LAMP/REAR FOG LAMPS
3	Brown	(+) R=47k	**INP** • RIGHT/ALL MARKER LIGHTS
4	Green	(+) R=47k	**INP** • RIGHT TURN SIGNALS LAMP
5	Orange/Black		**CAN-LOW**
6	Black		**GROND**
7	Purple	(+) 3A	**SIREN**
8	Red/White	(+) R=47k	**INP** • STOP LAMPS
9	Brown/White	(+) R=47k	**INP** • LEFT MARKER LIGHTS
10	Yellow	(+) R=47k	**INP** • LEFT TURN SIGNALS LAMP
11	Orange/White		**CAN-HIGH**
12	Red	(+) Fuse 3A	**POWER +12V**

X-2 Socket of relay outputs to control lighting equipment

1	Red	(+) Fuse 20A	**TRAILER POWER +12V**
2	Blue		**TO REVERSING LAMP**
3	Brown		**TO RIGHT MARKER LIGHTS**
4	Green		**TO RIGHT TURN SIGNALS**
5	Red	(+) Fuse 20A	**TRAILER POWER +12V**
6	Red/White		**TO STOP LAMP**
7	Brown/White		**TO LEFT MARKER LIGHTS**
8	Yellow		**TO LEFT TURN SIGNALS**



Module operation

Module receives information about car lighting status from original digital bus and activates corresponding analogue output connected to the socket of trailer, repeating original systems operation.

If digital car bus does not contain information about lighting equipment statuses from digital bus - analogue inputs should be connected directly to lamps and LED panels of car lighting. High-resistance analogue inputs does not influence on original car lighting operation.

This module analizes lighting equipment integrity and trailer electric circuits, then informs the owner with sound signal about the failure of lamps/circuits of trailer lighting. If a lamp was failed, the series of 5 short beeps will be emitted via the system's base unit instead of switching lamp of when sending command to switch it on/off.

WARNING!!! For correct operation of this function, 'teach' the module for specific trailer configuration before using the function. To do this:

1. Connect the trailer with obviously working lamps of lighting equipment.
2. Switch on control function of lamps integrity (move switch of S2 of unit SW2 to the 'Down').
3. Cotrol correct position of all switches of SW1 and SW2 units.
4. Press VALET button and hold it until module emits sound signal.
5. Settings will apply and will be saved; at the same time processing of all lamps will be performed and the current configuration of trailer lighting will be recorded into the system's memory.

Trailer security features can be performed via TCM-6 module:
If a car is armed via Pandora system, when trailer is switched off, alarm notification will be sent to the digital car bus for 'Trunk' security zone.

This module is equipped with a power output to the external siren for alarm signal in case of unauthorized switching off trailer.

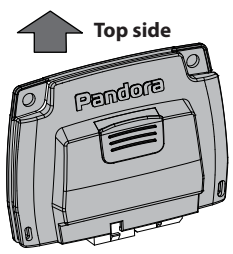
If this module cannot read original security system status from digital car bus, connect analog input of security system status to control security feature of TCM-6 module. If there is negative potential on this input, security feature of this module is switched off (trailer is not armed).

The company manufacturer constantly work on improving the products, on expansion of a number of supported digital bus protocols, periodically releasing new versions of software that can be updated by user.

To update module software and expand a number of supported cars, connect the module to the computer via standard mini-USB cable.

The newest version of the software can be downloaded from the website **pandorainfo.com**

Base unit layout



Body of TCM-6 module is sealed partially and intended to be installed inside a car interior. Recommended base unit layout is showned on the picture. Secure the base unit with self-tapping screws that are in the system set or via plastic ties or double sided adhesive tape on the polymer foam basis.

Installation

TCM-6 module is intended to be installed on cars wih on-board voltage of 12V. Connection should be performed in accordance with installation scheme.

WARNING!!! DO NOT connect the system to the wiring of another car type or to a voltage different from 12V.

WARNING!!! DO NOT exclude fuses that are nominally provided in security system when connecting to the car wiring.

WARNING!!! DO NOT connect security system that has damaged output cables.

WARNING!!! To install the system components, select places that exclude their mechanical damage or aggressive liquids and water seeping on them.

WARNING!!! Module of trailer lighting connection is a maintenance-free device. DO NOT disassemble the body. In case of failure, repair should be performed in authorized workshops.

Wire 6 (Black) (Ground) of X-1 Main socket should be connected to the car body in a grounding spot or to a reliable conductor, connected to car body or to any grounded device. The wire should be connected FIRST during installation.

Wire 12 (Red) (Power supply) of X-1 Main socket should be connected to reliable conductor with constant voltage of 12V and this voltage does not disappear when switching on/off the ignition, arming/disarming.

Wire 5 (Orange-black) (CAN-Low) of X-1 Main socket should be connected to the digital car bus to Low line.

Wire 11 (Orange-white) (CAN-High) of X-1 Main socket should be connected to the digital car bus to High line.

Connect X-2 socket pins to the trailer socket in accordance with the scheme.

If it is necessary to connect additional siren, connect positive pin of the siren to **Wire 7** (Purple) of X-1 Main socket (the permissible load current is 3A). The second pin of the siren should be connected in the gronding spot.

If lamps statuses of car lighting cannot be read partially or fully by TCM-6 module when connecting to the digital bus, use positive high resistance analog input of X-1 Main socket.

Car model selection and prompt parameters setting

Car model can be selected via SW-1 DIP-switches.
Each number of digital car bus protocols matches specific number of switches.

For example:

HUMMER H2

See combination of SW1 unit switches location at the back.

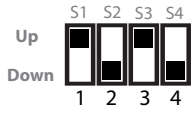
4 parameters in the system can be set promptly via SW-2 DIP-switches. Each parameter matches a specific switch:

- **Switch S1** - Trailer security features
  Up - Off
  Down - On

- **Switch S2** - Control over lamp status
  Up - Off
  Down - On

- **Switch S3** - Arming analog input
  Up - Off
  Down - On

- **Switch S4** - Relay mode of right marker light
  Up - Use right marker light relay to control right marker lights
  Down - Use right marker light relay to control fog lamp.



WARNING!!! To apply and save the settings of car model and set parameters:

1. After setting the switches to the desired state, press VALET button and hold until the module emits sound signal.
2. The settings are applied.

Specifications

Parameter	Value
Current consumption, мА	no more than 1,5
Operating temperature, °C	from -40 to +85
Nominal switching current, A (constantly)	10
Max switching current, A (up to 1 minute)	20
Dimensions, mm	57x24x9,4

Date of production _____
(stamp)

Packager _____

pandorainfo.com

Made in Russia
20a, Kirova str., Kaluga, Russia

ПОДДЕРЖИВАЕМЫЕ МАРКИ АВТОМОБИЛЕЙ, КОДЫ И СОСТОЯНИЯ БЛОКА ПЕРЕКЛЮЧАТЕЛЕЙ SW1

Переключатели	Код	Марка автомобиля
AUDI		
1 2 3 4 5 6 7 8	**1113**	A3
1 2 3 4 5 6 7 8	**1412**	A4/S4(с 2008г.) A5/S5(с 2007г.) Q5(с 2008г.)
1 2 3 4 5 6 7 8	**1122**	A8 (с 2010г.) A7 (с 2011г.) A6 (с 2011г.)
BMW		
1 2 3 4 5 6 7 8	**5111**	1(с 2004г.) 5 (E60)(с 2003г.) 7 (E65)(с 2005г.) X1 X5 (E70)(с 2005г.) X6 (E71)(с 2008г.)
CHEVROLET		
1 2 3 4 5 6 7 8	**1313**	Cruze(с 2009г.)
1 2 3 4 5 6 7 8	**1314**	Captiva(с 2007г.)
HONDA		
1 2 3 4 5 6 7 8	**2611**	Pilot
1 2 3 4 5 6 7 8	**2613**	CR-V
HYUNDAI		
1 2 3 4 5 6 7 8	**3111**	Santa Fe II (keyless)
1 2 3 4 5 6 7 8	**3112**	Ix35 Solaris Family Sonata IV
INFINITI		
1 2 3 4 5 6 7 8	**2311**	EX FX QX
KIA		
1 2 3 4 5 6 7 8	**3112**	Sportage III
1 2 3 4 5 6 7 8	**3211**	Sorento
1 2 3 4 5 6 7 8	**3213**	Mohave
LAND ROVER		
1 2 3 4 5 6 7 8	**1611**	FreeLander 2(с 2007г.)
MAZDA		
1 2 3 4 5 6 7 8	**2415**	3 6 CX-7(с 2007г.)
MITSUBISHI		
1 2 3 4 5 6 7 8	**2211**	Outlander Lancer X ASX
NISSAN		
1 2 3 4 5 6 7 8	**2311**	Juke Murano Qashqai X-trial Patrol(с 2010г.)
OPEL		
1 2 3 4 5 6 7 8	**1313**	Astra J Insignia Meriva (с 2011г.)
PORSCHE		
1 2 3 4 5 6 7 8	**1112**	Cayenne(с 2006г.)
1 2 3 4 5 6 7 8	**1122**	Cayenne(с 2010г.) Panamera(с 2009г.)
SKODA		
1 2 3 4 5 6 7 8	**1113**	Octavia II Superb II Yeti
VOLKSWAGEN		
1 2 3 4 5 6 7 8	**1113**	Amarok Cross golf Golf 6 Passat B6 Passat B7 Tiguan
1 2 3 4 5 6 7 8	**1112**	Touareg
1 2 3 4 5 6 7 8	**1122**	Touareg new (с 2011г.)
VOLVO		
1 2 3 4 5 6 7 8	**1511**	S40 S60(с 2005г.) XC90