

Intelligent CAN bus parking sensor control unit **DS-453**

The **DS-452** is a device that intelligently controls power supply (+12V, up to 10A) of the aftermarket front parking sensor on the basis of the signals read from digital **CAN-bus** vehicle network or analogue speedometer signal.

The parking sensor is enabled if the ignition is switched on and the configured conditions are met.

The front parking sensor is switched on and off depending on the vehicle speed, according to several programmed parameters:

- **switch ON speed** (V on),
- **switch OFF speed** (V off),
- **hold-on time** (V>V off),
- **switch-off time** (V=0km/h)

and the operation mode when ignition is switched on.

1. The front sensor is switched on if the vehicle speed is lower than the programmed **switch ON speed** (V on)
2. The front sensor is switched off if the vehicle speed is higher than the programmed **switch OFF speed** (V off) for a given **hold-on time** (0s., 1s., 2s., 5s.).
3. The front sensor is switched off if the vehicle is stopped (zero speed) for a time longer then **switch OFF time** (1s., 2s., 5s or does not switch off).
4. If the function described in (3) is enabled, according to the additional configuration parameter, then turning the ignition ON when the vehicle is stopped, enables or not the front sensor for a given time. If the function (3) is disabled, then turning the ignition ON when vehicle is stopped, the enables front sensor.

Moreover, front parking sensor is enabled if the reverse gear has been selected.

Examples of configuration:

switch ON speed	switch OFF speed	hold-ON time	switch-OFF time	Front parking sensor operation
10 km/h	25 km/h	0 seconds	does not switch off	The sensor switches on when the vehicle is stopped or if it goes slower than 10km/h. If the speed exceeds 25km/h, the parking sensor is immediately disabled. The difference between switch-on and switch-off speed avoids frequent toggling of the sensor, e.g. in the traffic jam.
10 km/h	25 km/h	0 seconds	5 seconds	The sensor switches on when the vehicle is stopped or if it goes slower than 10km/h. If the speed exceeds 25km/h, the parking sensor is immediately disabled. The difference between switch-on and switch-off speed avoids frequent toggling of the sensor, e.g. in the traffic jam. If the vehicle is stopped for longer then 5 seconds (switch-off time), the front sensor is switched off. The front sensor is switched on again, when the vehicle moves.
10 km/h	15 km/h	5 seconds	does not switch off	The sensor switches on when the vehicle is stopped or if it goes slower than 15km/h. If the speed exceeds 15km/h for at least 5 seconds (hold-on time), the parking sensor is disabled. Despite small difference between switch on and off threshold, the necessity to exceed speed for at least 5 seconds avoids frequent toggling of the sensor, e.g. in the traffic jam.
0 km/h	45 km/h	0 seconds	does not switch off	The sensor switches on when the vehicle is stopped. High switch-off speed guarantees, that the sensor remain enabled during all the drive in traffic jam.

The parameters as well as make and model of the vehicle in which the device is installed are programmed by a dedicated software on a PC computer with a mini USB cable.

The device can be configured in the **EOBD** mode, when it uses the standard diagnostic protocol to gain information from the vehicle. As a consequence it operates properly in most vehicles sold on European and USA markets.

The device can also work in analogue mode - it controls front parking sensor according to analogue ignition signal, speedometer signal pulses and reverse light signal. The dedicated wires for analogue mode are in the connector J2.

The device require to enter scale factor - number of pulses per 1 meter in order to calculate correctly the vehicle speed from speedometer pulses (1-50, typical scale is 2/8/12/16/42)

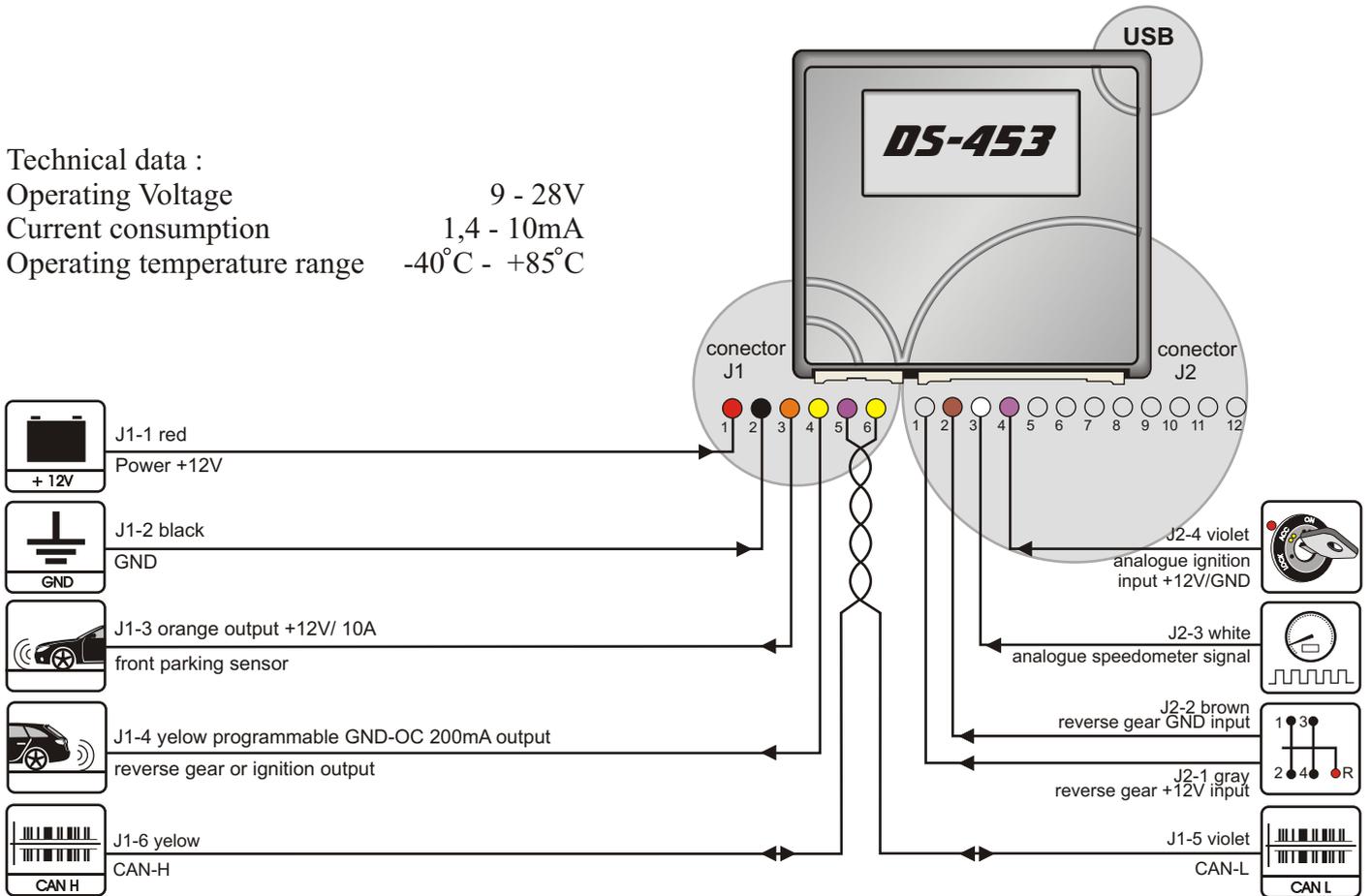
Moreover, the device has one programmable OC output (J1-4), switched to GND (max 200mA), which can signal detection the "ignition on" or "reverse gear" conditions (on CAN bus or by analogue signals).

The PC software panel hac controls signalling the state of the device: 2 lamps displaying the state of outputs, display of vehicle speed read from CAN bus or measured from speedometer pulses, ignition signal read from CAN bus, analogue ignition signal, reverse gear signal read from CANbus, analogue reverse gear signals. There is a CANbus traffic lamp signalling correct reception of CAN bus frames.

DS-453 WIRING DIAGRAM

Technical data :

Operating Voltage 9 - 28V
 Current consumption 1,4 - 10mA
 Operating temperature range -40°C - +85°C



CAN bus connection :

A. If DS-452 is configured for a given vehicle make and model, it should be installed, according to wiring diagrams of **TYTAN** vehicle security systems by **DIGITAL SYSTEMS** company www.digitalsystems.com.pl

B. If the **EOBD** mode is configured, the CAN-bus wires should be connected to the vehicle OBD diagnostic socket:

- CAN-H to pin 6
- CAN-L to pin 14

