Skybrake CAN to analog interface

Installation manual



DEVICE DESCRIPTION

- Button (searching) the button, that starts car searching mode or enables LED diode flashing (which shows device's mode).
- LED diode (on the rear side panel) shows device's mode **OUTPUTS:**
- Driver Door active, when driver door is opened
- Doors active, when any door, boot or hood is opened
- Ignition active, when ignition is switched on
- Alarm active, when alarm condition appears (two outputs of opposite polarization)
- Armed active, when car is locked (two outputs of opposite polarization)
- CAN-bus active active, when CAN-bus is not in sleep mode **INPUTS**:
- External signal input when shorted to ground, alarm can be activated
- CAN High and CAN Low CAN-bus line
- +12V and GND power supply
- Computer connection input for device programming and configuration (dedicated cable needed)

PINOUT DESCRIPTION:

- 1. +12V
- 2. GND
- 3. CAN-Low
- 4. CAN-High
- 5. Driver Door output (GND)
- 6. Alarm output (+)
- 7. Alarm output (GND)

- 8. Armed output (+)
- 9. External signal input
- 10. Computer connection
- 11. CAN-bus active output (GND)
- 12. Armed output (GND)
- 13. Ignition output (+)
- 14. Doors output (GND)

CAR MODEL RECOGNITION

To make CAN interface to recognize the particular car model, searching procedure must be performed. Do the following steps:

- 1. Connect CAN-bus wires according to installation diagram.
- 2. Turn the ignition on!
- 3. Connect the power supply to the CAN interface LED will ligth in red for 3 seconds.
- 4. While LED lights red, press and hold the device's button for about 2 seconds.
- 5. Release the device's button, immediately after LED lights green.

If car model recognition procedure is run on the device for the first time, steps 4 and 5 may be skipped.

Then car model recognition begins - LED is flashing red during the procedure. The car model recognition procedure can take up to 1 minute.

If car model is recognized, LED lights green. To make sure if right car model had been recognized, car testing can be performed. When LED lights green, all CAN interface outputs are being activated according to car's detectors conditions:

- Doors [14], when any door, boot or hood are opened,

- Driver door [5], when driver door is opened,
- Ignition [13], when ignition key is on ACC,
- Armed [8] and [12], when car is locked with remote's button,
- Alarm [6] and [7], when hazard lights flashing.

The state of output can be checked with i.e. voltmeter or electrical probe.

Test all CAN interface outputs to be sure if right car model had been recognized. If it had, turn the device's power off and then, after 5 seconds, turn it on. CAN interface starts in the work mode.

If while testing CAN interface outputs do not follow the car state, car model recognition procedure should be continued. To continue recognition - press and release device's button. LED will start flashing red again (recognition is in progress).

If none car model is recognized (the car's model is not supported by CAN interface), after searching LED lights red. After next 30 seconds, car model recognition restarts.

If, after car recognition, LED blinks red and green in turns - CAN-bus wires are not connected properly. Possible causes:

- CAN H and CAN L wires connected wrong way round,

- ignition turned off while car recognation,

- connected car wires are not CAN-bus wires.

WORK MODE

When in work mode, CAN interface outputs are activated and deactivated following the car state:

- Doors [14], when any door, boot or hood are opened,

- Driver door [5], when driver door is opened,

- Ignition [13], when ignition key is on ACC,

- Armed [8] and [12], when car is locked with remote's button,

- Alarm [6] and [7], when, in armed mode, any of protected sectors is violated.

In work mode and armed mode LED blinks green - once every second when CAN-bus is active or once every 4 seconds when CAN-bus sleeps. To save the power LED blinks for only one minute after device's power is on. If you want LED to blink longer -press device's button.

When CAN-bus gets sleep, CAN interface enters low-power "idle mode".

ARMED MODE

The device enters armed mode after car is closed - when remote's "lock" button is pressed and then doors are locked, by default¹. Remote's buttons are ignored when ignition is on².

If, in armed mode, one of following events is detected, the Alarm outputs will be activated. The events are^3 :

- opening the driver door,
- opening the passenger door,
- opening the rear-left door,
- opening the rear-right door,
- opening the boot (except of opening with remote),
- opening the hood,
- switching the ignition on,
- opening the central lock without use of remote,
- hazard lights flashing,
- external signal input shorted to ground,
- power on.

You can freely select the events while configuration.

Alarm will not be activated in 10 seconds from entering armed mode (events are ignored).

The alarm lines are activated for 30 seconds⁴ by default. Alarm lines are deactivated prematurely if remote's "unlock" button⁵ is pressed (leaving armed mode).

 $^{1\;}$ other settings are possible (use the programmer on PC computer)

² other settings are possible (use the programmer on PC computer)

³ other settings are possible (use the programmer on PC computer)

⁴ other settings are possible (use the programmer on PC computer)

⁵ other settings are possible (use the programmer on PC computer)

CONFIGURATION WITH PROGRAMMER APPLICATION

CAN interface can be configured with the "Configurator" - the application for PC computer. Connect CAN interface to the PC computer's COM port with dedicated RS232 cable (USB to RS232 converter is also supported).

DEVICE STATUS

To connect the device to the PC computer, on the "Device status" page select proper COM port and press "Connect" button.

When the device is connected to the PC computer, device's firmware version number and supported car model is shown. All information about changes of the car's or the device's state are updated and displayed systematically. In the top right corner of application window (against a background of photograph), when the device is connected, icons indicating the car state are shown and systematically updated.

When "Enable test mode" button is pressed, the application controls the device's outputs. Test mode allows to check if all outputs works properly (i.e. there is no short circuit). Consecutive pressing the test mode buttons enables and disables particular outputs.

DEVICE CONFIGURATION

When CAN interface is connected to the application, "Device configuration" page may be selected. All the configuration is entered in several steps:

car make and model,

- the event (or sequence of events) that makes the device goes to the armed mode (remote's button and central lock, only remote's button or only central lock); not all ways of arming are available for all car models,

the time alarm is activated for (the time, "Alarm" outputs are activated for),

- events, that triggers the alarm (protected sectors, see "Armed mode" section) -you can freely choose which events trigger the alarm and which do not;

- it is possible to separate "DOORS" and "DRIVER DOOR" lines, i.e. only "DRIVER DOOR" line will be activated if driver door is opened ("DOORS" output will not be activated if driver door is opened). Function can be set by application v.1.3 or newer.

- can activate outputs "DOORS", "DRIVER DOOR" and "IGNITION" only when alarm is triggered. In that case these outputs will not be activated if device is not armed. Function can be set by application v.1.3 or newer.

- can pulsate outputs ALARM (+), ALARM (-) and ARMED (+) - all the inputs can be configured independently. If configured so, the outputs of CAN interface pulsate when active. ALARM (+) and ALARM (-) pulsate outputs are designed to connect relay for indicators or horn. ARMED (+) pulsate output is designed to connect LED diode (through resistor), which signalizes armed mode with kinds of pulses.

- after "Finish" button on the last screen is pressed, the configuration will be stored to the device.

There is "Get default settings" button on each configuration page. When pressed, default settings for this page will be selected.

There is "Get device's current settings" button on each configuration page. When pressed, device's current settings for this page will be selected.

TECHNICAL SPECIFICATION

Supply voltage	.6V – 18V
Operating temperature	40+85°C
Power consumption - work mode	. 4 mA
Power consumption - idle mode	. 2 mA
Maximum output load	0,5A

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