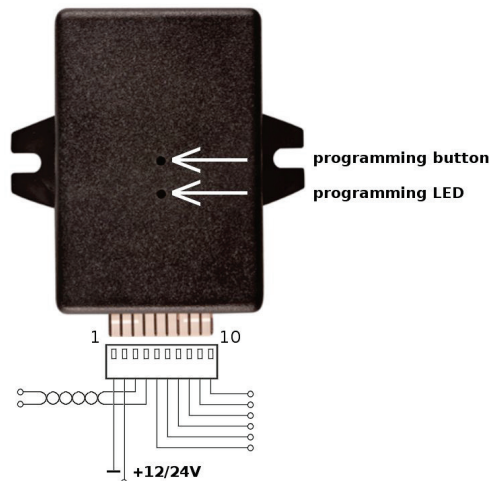
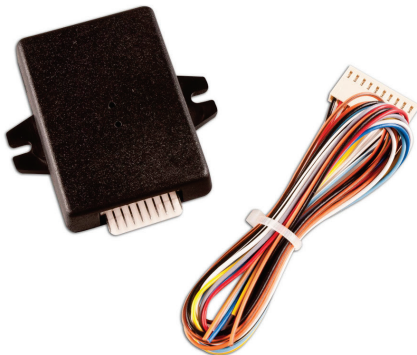


# MCB-02 module installation

The module is intended for connection to a CAN-BUS data interface in motor vehicles with a 12/24 V voltage and a negative ground connected to chassis. The module converts digital information to analogue form, thus providing interconnectivity to the inputs of Athos, Nestor and other car alarms.



## Installation:

The module is intended for professional installation and therefore we recommend having it installed by a professional service. Improper installation may result in damage to your car. The manufacturer shall not be held responsible for damage caused by improper installation or misuse. The product is not intended for installation in an engine compartment.

**Important notice:** Different versions of the same kind of car can have different bus signal formats, so before installation, check that the characteristics of the CAN-BUS signals for that particular car are compatible with the CAN BUS module.

Disconnecting the battery before the installation is recommended. If your vehicle is equipped with an airbag, nobody should be inside during manipulation of the battery (disconnecting, connecting). Keep in mind that some car equipment's memory functions (e.g. a radio) can be erased when the battery is disconnected.

Bond newly installed wires to the original bundles. For crimped connections use tools designed exclusively for this purpose. If possible, try to avoid drilling into metal parts of the vehicle during installation. Before you start drilling holes, make sure that you will not damage other parts of the vehicle. When the installation is finished, attach the module through the hole in its upper part using a wire tie.

## Module programming: (CAN-BUS converter)

If you want the module to function properly, it is necessary to select the type of vehicle in which it is to be used. The programming is carried out by setting a corresponding programming number (see below) which you will find in the attached table using the PRG button and an LED on the top side of the module. Use an item which is thin and not too sharp (a pin, toothpick, etc) to press the PRG button.

1. Press and hold the button for 5 seconds until the LED lights up. Release the button within 2 seconds and the LED will fade. Thus you have started the CAN-BUS interface set-up process.
2. The LED starts flashing and thus indicates the first digit of the programming number. You can confirm it by pressing the button after the corresponding number of flashes. The LED subsequently starts indicating the second digit which you can confirm after the corresponding number of flashes again. Then the LED starts to indicate the third digit, which you can confirm, as well as the previous ones. All 3 positions can range from 1 to 9.

When you confirm the third digit of the requested programming number, the data is stored in an EEPROM memory. This should be confirmed by one long flash of the LED.

## Example of module programming for the Volvo XC-70:

You can find out in the table that the Volvo XC-70 corresponds to programming number 151.

1. Press and hold the button for 5 seconds, until the LED lights up. Release the button within 2 seconds and the LED will fade.
2. The LED will start flashing and thus indicates the first digit of the programming number. After **one** flash briefly press the programming button. The LED will start flashing and indicating the second digit. Press the button again after the **fifth** flash. The LED starts indicating by flashing the third digit. Press the button again after the first flash.
3. The module saves the requested programming number into an EEPROM memory, which is **confirmed by one long flash** of the LED.

## Description of module wires:

1/ Black	Ground
2/ Red	+12/24 V
3/ Orange/brown (orange/white)	CAN L
4/ Orange/green (orange/black)	CAN H
5/ Blue	ignition key signal output; +12/24 V, 300 mA
6/ Grey	open door information output, GND, 200 mA
7/ White/yellow	open boot information output, GND, 200 mA
8/ White	open bonnet information output, GND, 200 mA
9/ White/black	arming impulse output, GND, 200 mA
10/ White/blue	disarming impulse output, GND, 200 mA

The CAN H and CAN L access points description can be downloaded from [www.jablotron.com/files/canbus/mcb-02\\_en.pdf](http://www.jablotron.com/files/canbus/mcb-02_en.pdf)

The firmware allowing the selection of brands and models is regularly updated. Up-to-date information about supported vehicle models can be found at [www.jablotron.com](http://www.jablotron.com) in the Car Alarm product range section in the MCB-02 product description (a sub-section of Product Range). In the case that a new model is added, the new software version can be downloaded into the module through a BL-MCB Bootloader device. First you download an up-to-date software version from [www.jablotron.com](http://www.jablotron.com) (section Download) to your computer. Then you connect a BL-MCB Bootloader to your computer via a USB interface, run the MCB-Link program and connect the MCB-02 module. Then you simply transfer the new version to the module using the program. A successful transfer is then confirmed on the screen. More detailed information is available in the BL-MCB Bootloader manual.

## Specifications:

Supply voltage	12/24 V (10 - 32 V) DC
Current consumption	8 mA
Operational temperature range	-40 to +85 °C
Dimensions without wiring	17x 47x66 mm
Weight	34 g
Comply with	ECE Regulation No: 010.04

This product is identical to the type certified by the Ministry of Transport of the Czech Republic under E8 10R-04 6951.



JABLOTRON ALARMS a.s. hereby declares that the MCB-02 is in a compliance with the relevant Union harmonisation legislation: Directives No: 2014/30/EU, 2011/65/EU. The original of the conformity assessment can be found at [www.jablotron.com](http://www.jablotron.com) - Section Downloads.



Note: Although the product does not contain any harmful substances, do not throw it away with ordinary waste. Dispose of it at an electronic waste collection point instead.

Product manufactured and service provided by:

**JABLOTRON**  
CREATING ALARMS

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# MCB-02 car alarm output module mode

The MCB-02 cooperates with the data BUS of Jablotron car alarms. And it also serves as an output module which outputs the functions of those car alarms. To use this mode programs in the interval of 451 to 488 have been prepared.

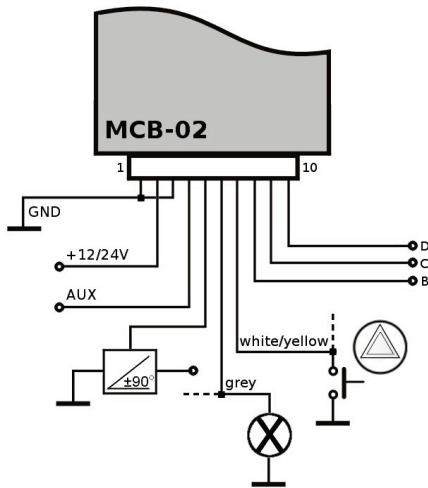
## Output mode for powering of external (supplementary) devices:

Choose any mentioned program then the blue wire starts providing power for supplementary detectors. The voltage on the blue wire appears when the alarm is fully set. The output voltage is 12V even if the car alarm is installed in a car with 24V circuits.

## Output mode as an optical indicator

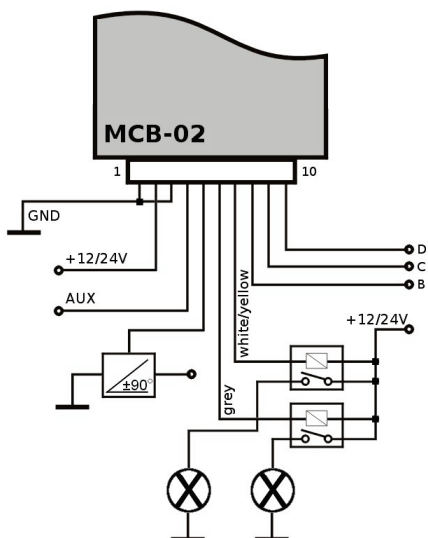
The second digit in the program from 5 to 7 is a choice of the three functions and defines the behaviour of the grey and white/yellow wires. Those options set up the optical indication of the car alarm when set, unset and alarmed.

**Value 5. Control by switching warning lights (button mode)** – at the first impulse of programmable output A (yellow/white wire) flashing turns on, the next impulse terminates flashing. It requires the connection of one directional light as feedback for flash counting (grey wire).



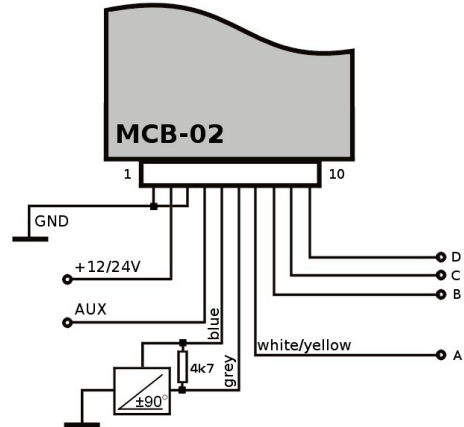
**Value 6. Control by switching warning lights (switch mode)** – If it would flash then programmable output A is switched on. It requires the connection of one directional light as feedback for flash counting (grey wire).

**Value 7. Direct control of turning lights** – programmable output A switches on when the turning lights should light. In this mode the grey wire has the same function so by each wire one relay can be controlled (left and right side of turning lights).



## Delayed activation of supplementary detectors

The second digit has the **value 8** for this function. It can be used for cars where the tilt detector is installed and they don't change their position (pneumatic shock absorbers) after the car alarm has been set. So a delay reaction is required. The grey wire is connected to the output of this detector in this case (car tilt). Programmable output A switches on when the grey wire is activated (car tilting), if a 5 minute time period from setting the car alarm has expired. This time can be changed by the MCB-Link application (1 – 15 min). It is necessary to put a 4k7 resistor between the blue and grey wires.



## Programmable output functions (B,C,D):

The third value of the program is chosen as one of the 8 combinations and defines the behaviour of the white (B), white/black (C) and white/blue (D) wire:

	Outputs' function		
	B	C	D
1	Double press in unset mode	Locking*	Unlocking*
2	Double press in set mode	Locking*	Unlocking*
3	AUX A**	Locking*	Unlocking*
4	AUX B**	Locking*	Unlocking*
5	Double press in unset mode	AUX A**	AUX B**
6	Double press in set mode	AUX A**	AUX B**
7	AUX A**	Double press in set mode	Double press in unset mode
8	AUX B**	Double press in set mode	Double press in unset mode

\* Locking and unlocking pulses are delayed, by connection with particular outputs of the car alarm - you can get double pulses for central locking

\*\* AUX A/B function is available only with Athos GSM car alarms (controlling of supplementary devices).

## Wire descriptions:

- 1/ Black vehicle ground
- 2/ Red +12/24 V
- 3/ Orange/brown (orange/white) vehicle ground
- 4/ Orange/green (orange/black) car alarm BUS AUX
- 5/ Blue output for powering external detectors: +12 V, 25 mA
- 6/ Grey input for optical indication or supplementary detector
- 7/ White/yellow programmable output A, GND, 200 mA
- 8/ White programmable output B, GND, 200 mA
- 9/ White/black programmable output C, GND, 200 mA
- 10/ White/blue programmable output D, GND, 200 mA