Step 4. Connect (optional) an external switch to Connectorblock 2

An external switch can be connected to the contacts of Connectorblock 2. This switch then permits the following functions to be selected:

Always ON:	(SpeedSwitch active, RED LED is illuminated and the relay is activated)
Always OFF:	(SpeedSwitch not active, RED LED is off and the relay is not activated)
Automatic ON/OFF:	(default SpeedSwitch function)

Pin 2 is the central contact for Connectorblock 2.

Pins 1 and 2 connected: SpeedSwitch always ON
Pins 2 and 3 connected: SpeedSwitch always OFF
No connections / no external switch: default SpeedSwitch functionality.

Speed calculation:

The relationship between the frequency setting and the speed is as follows: V = F/P x 3600 where V is Vehicle-speed, F is frequency and P the number of pulses per kilometre. In practice: in a car that gives 5000 pulses per kilometre, the SpeedSwitch will be activated at its lowest setting (4 Hz)at 4/5000 x 3600 = 2.88 km/h.
A certain amount of hysteresis has been built into the SpeedSwitch to prevent it from switching too often. This means that the SpeedSwitch will cut out at a slightly lower frequency than the frequency set for it to cut in.

Characteristics

European certification:	e4 020928 (according to the European guideline 95/54/EC)
Dimensions:	L x W x H: 57 x 57 x 31 mm Weight: 72 gramms
Power supply:	9 – 15 Volt (red wire) and 18-30 Volt (orange wire)
Current drawn:	switched on, relay activated: 60 mA rest position, relay not activated: 20 mA
Frequency range:	± 5 Hz – 10 kHz
Maximum frequency API:	40 kHz
Switched current:	Max. 10 A (built-in relay with make/break contact)
Temperature	-20°C / +70°C

e 4
020928

manual
SpeedSwitch

Aim of the documentation

The aim of this document is to provide the user with all the information needed in order to install and to use the SpeedSwitch. For information on connection-points in the vehicle itself, we would like to refer to the section ‘Connection-points in the vehicle’ below.

Important notes

- Read this manual completely before proceeding with the installation of the SpeedSwitch!
- The installation of the SpeedSwitch should only be carried out by trained specialists!
- Observe all modern quality standards of the automotive industry!
- The SpeedSwitch should be installed in a dry place!
- The SpeedSwitch meets all the requirements of Commission Directive 95/54/EC for(motor) vehicles and electrical/electronic sub assemblies (ESA) to be fitted to a vehicle!

Function

Switches a 12 V (or 24 V) device on or off at a preset speed or number of revolutions (RPM). Connect to an electronic Vehicle-speedsignal or Engine-speedsignal in a vehicle.

Terms

The elements found in this document are established to inform the user. They may be modified without giving prior notice. Beijer Automotive BV can not be held responsible for any modifications made. Nor can Beijer Automotive BV be held responsible for any errors printed, or for any subsequential consequences. The manufacturer can not be held responsible for any damage or malfunction of any system or device, that could be caused by (improper) use of the SpeedSwitch.

Connection-points in the vehicle

Together with this SpeedSwitch you receive a one-time login for the internetsite www.in-car.nl where you can view vehicle-specific information which can be used to find the connection-points for the SpeedSwitch. The sticker that is placed at the bottom of page 2, contains the Username and Password that you need to login to the home-page of www.in-car.nl

Procedure:

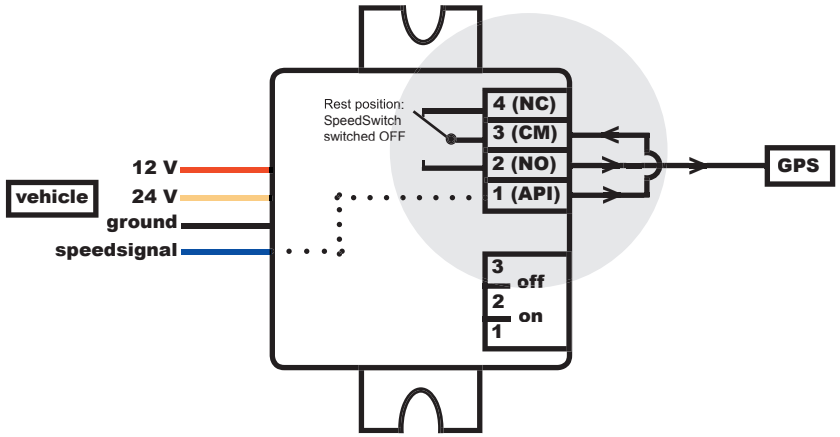
1. Collect the right specifications of your car: Manufacturer, Model, Type, Production year, etc.
2. Go to www.in-car.nl
3. Select the English language at the top of the page.
4. Fill in the codes that are printed on the sticker under the items *User:* and *Password:* .
   Then press Login. Note: the codes are case-sensitive!
5. Choose your Manufacturer and Model and press GO.
6. Choose the instruction that covers your car: it will be viewed on your screen.
7. Attention: the instruction can only be viewed once! Use the button ‘Printable version’ and print the instruction for your own convenience.

Before you start

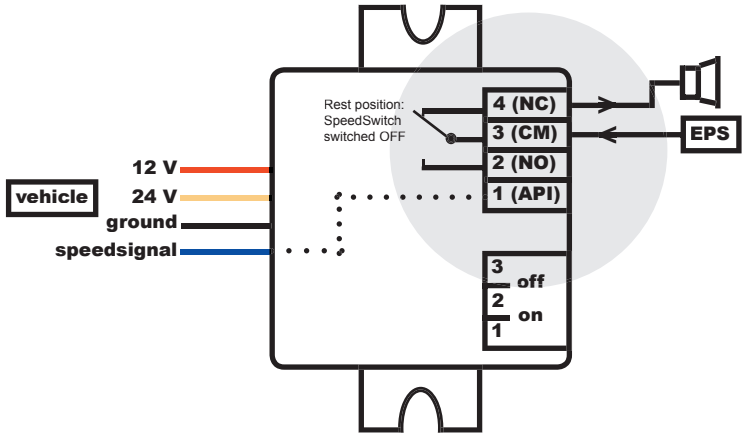
- The back cover of the casing is provided separately so that the connector blocks are easily accessible and visible. After the connections have been made, the cover can simply be pressed into place on the casing. If necessary, the cover can be removed subsequently with a small screwdriver or a knife blade.
- Make sure that you have tightened the screws for the contacts that are not in use. This prevents them from coming loose and potentially causing short circuits on the circuit board!
- Always make soldered connections!
- Insulate the wires that are not used!

Applications

Make-contact: speedsignal interruption at standstill
(above a preset (rolling-) speed, the vehicle speedsignal is connected with the GPS navigation system)



Break-contact: parking-aid-system (EPS) in frontbumper
(above a preset (parking-) speed, a signalwire to the loudspeaker is interrupted)



www.in-car.nl

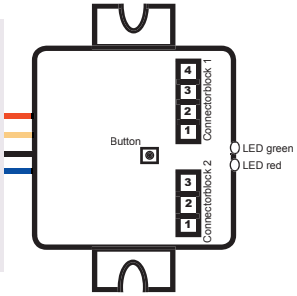
Username and Password:

Note 1
The SpeedSwitch is equipped with a RED and a GREEN LED. To adjust the SpeedSwitch in a proper way, only the functioning of the GREEN LED is important. Only when optional an external switch is connected to Connectorblock 2, the functioning of the RED LED becomes important. The GREEN LED shows the program-mode and the status. The RED LED shows whether the relay is engaged.

Note 2
The potentiometer on the circuit board is preset by the manufacturer and does not need adjustment, unless this is advised by Beijer Automotive.

Installation in 4 steps!

Step 1. Determine with the examples which Relaycontact you are going to use: a Make- or Breakcontact.
Step 2. Supply the SpeedSwitch with a good ground (black), a switched ignition (red or orange) and a speed-or RPM-signal (blue).
Step 3. Determine the desired switch moment with the button on the circuit board.
Step 4. Connect (optional) an external switch to Connectorblock 2.



Step 1. Determine which Relaycontact (Make- or Breakcontact) you are going to use and make the specific connections on Connectorblock 1

Pin 1 "API": is a filtered and amplified 1:1 output signal (e.g. speed or revs signal) with a peak value of 10 V (standard API output).

Pin 2. "NO": ***Make-contact*** (Normally open). This is the relay contact that is not connected to the central relay contact (pin 3 "CM") in the rest position. When the SpeedSwitch is activated (the frequency being supplied is higher than the preset frequency and the GREEN LED is illuminated), this contact is connected to the central relay contact (pin 3 "CM").

Pin 3. "CM": ***Central relay-contact*** (Common).

Pin 4. "NC": ***Break-contact*** (Normally Closed). This is the relay contact that is connected to the central relay contact (pin 3 "CM") in the rest position. When the SpeedSwitch is activated (the frequency being supplied is higher than the preset frequency and the GREEN LED is illuminated), this contact is interrupted from the central relay contact (pin 3 "CM").

Step 2. Supply the SpeedSwitch with the necessary input-signals

Red: 12Volt *switched* ignition (+15), or
Orange: 24Volt *switched* ignition (+15).
Black: Ground.
Blue: Vehicle-speedsignal or Engine-speedsignal, at least 1,5 Volt (peak/peak) square wave or sine wave.

Step 3. Determine the desired switch moment with the button on the circuit board

To set the desired switch moment in the SpeedSwitch, the program mode must be activated. To realise this press the button centrally on the circuit board. The GREEN LED will start to blink. Now you must drive the desired speed or bring the engine to the desired revolutions (RPM) on which you want the SpeedSwitch to switch. Press the button again, the green LED will turn off after which the desired switch moment is set and the SpeedSwitch leaves the program mode.