

## Service

<b>Chassis ID</b> B13R 198320	<b>Path</b> 36/Diagnostics//Maidcom, connection with master control module (MCM)
<b>Model</b> B13R	<b>Identity</b> 172707803
<b>Publish date</b> 25/05/2023	<b>ID/Operation</b>

# Maidcom, connection with master control module (MCM)

## Contents

[Master control module \(MCM\)](#)

[Installation of Maidcom](#)

[Connection alternatives](#)

[Start of Maidcom](#)

[Start menu Maidcom](#)

[Language menu](#)

[Vehicle information](#)

[Fault log](#)

[MID view](#)

[Operation view](#)

[Function diagram view](#)

[Parameters](#)

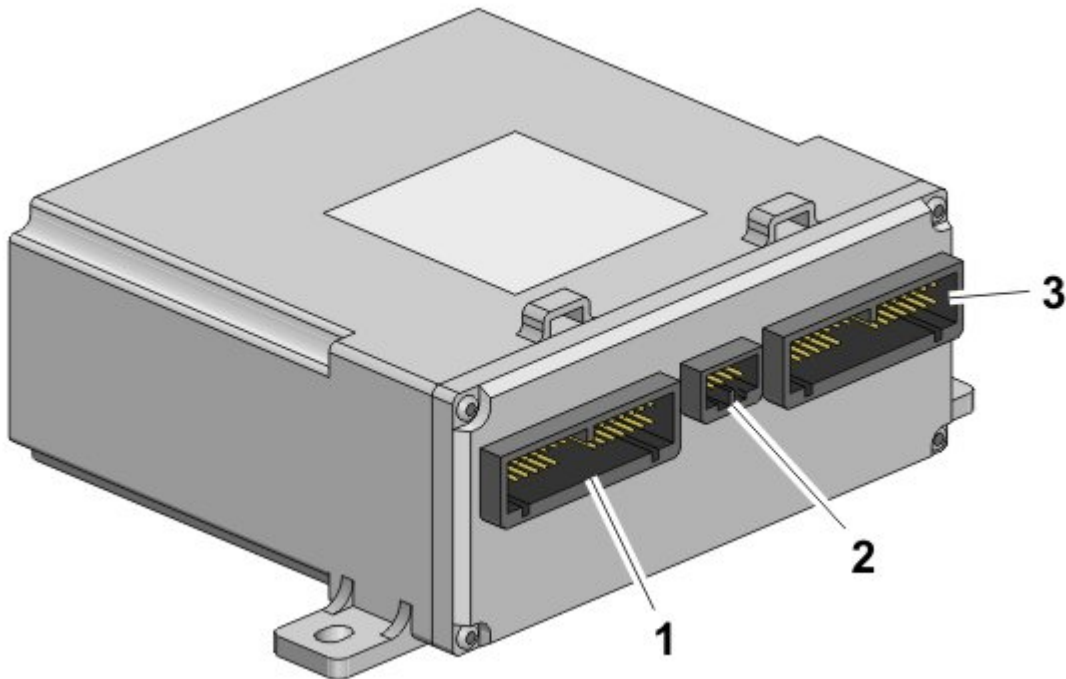
[Programming](#)

[If it doesn't work](#)

[Important links](#)

*Note: These instructions describe MCM and Maidcom on a general level. Terms and illustrations can vary from the current version. The essential information is, however, correct.*

## Master control module (MCM)



- . Master control module (MCM), connector, blue
- . Master control module (MCM), connector, green
- . Master control module (MCM), connector, green

MCM is a control unit for diagnostics and programming of the bus body functions. It contains software for all body nodes.

MCM is connected to the B-bus data link together with other body modules.

MCM is connected to the SAE J1587 data link together with other modules from the chassis electrical system.

MCM is connected to the D-Bus data link together with other body modules and the BBM.

MCM acts as the gateway for all communication between the rest of the vehicle and the body electrical system. This communication primarily goes through the BBM.

Get back to content menu:

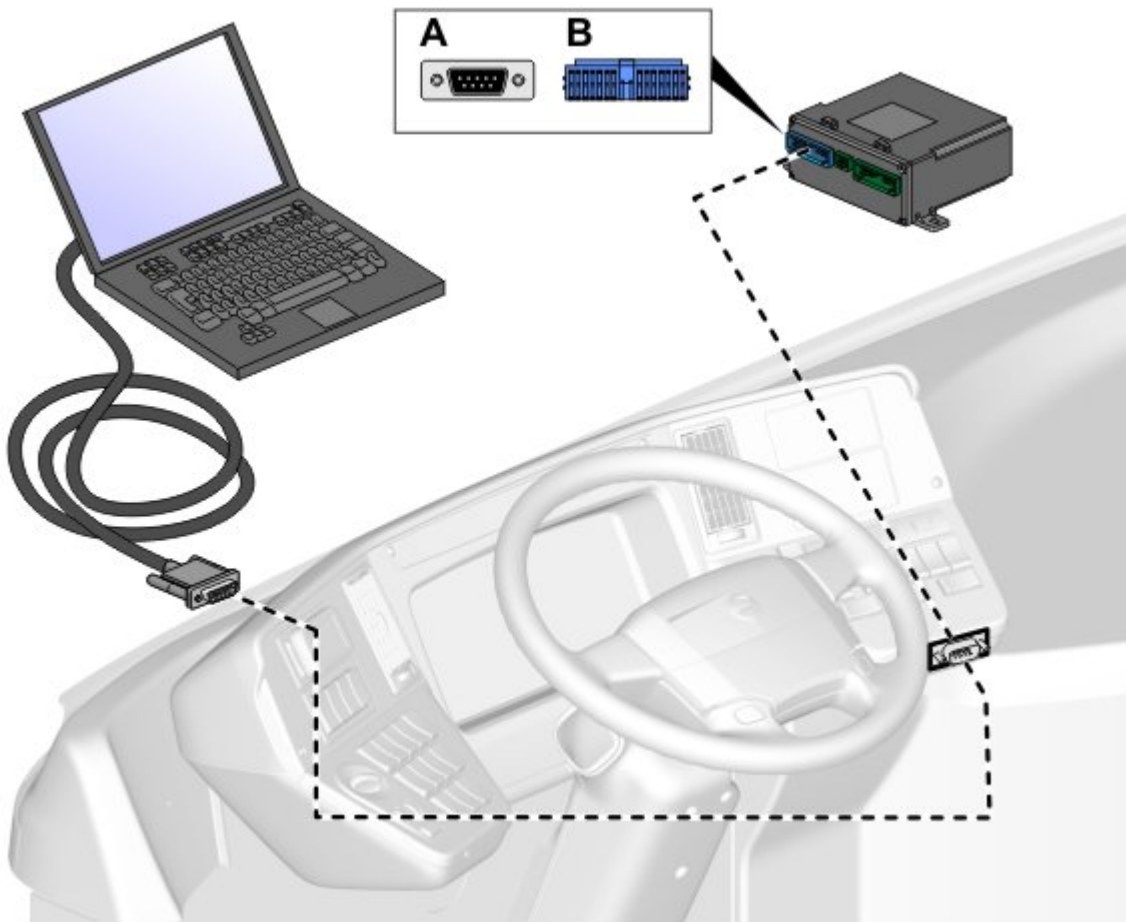
[Contents](#)

## Installation of Maidcom

See this installation quick guide:

[- Maidcom, installation quick guide](#)

## Connection alternatives



*Note: The connection to the vehicle MCM varies by bus model and variant. It's always located in the drivers area.*

The body system is diagnosed and programmed via MCM, by connecting the MCM to the PC's communication port or universal serial bus (USB).

MCM can only be connected via the body's data link connector. Connecting to the data link connector requires a straight RS232 cable with male-female connectors and also a universal serial bus (USB) to RS232 adapter if PC is not equipped with RS232 port (COM).

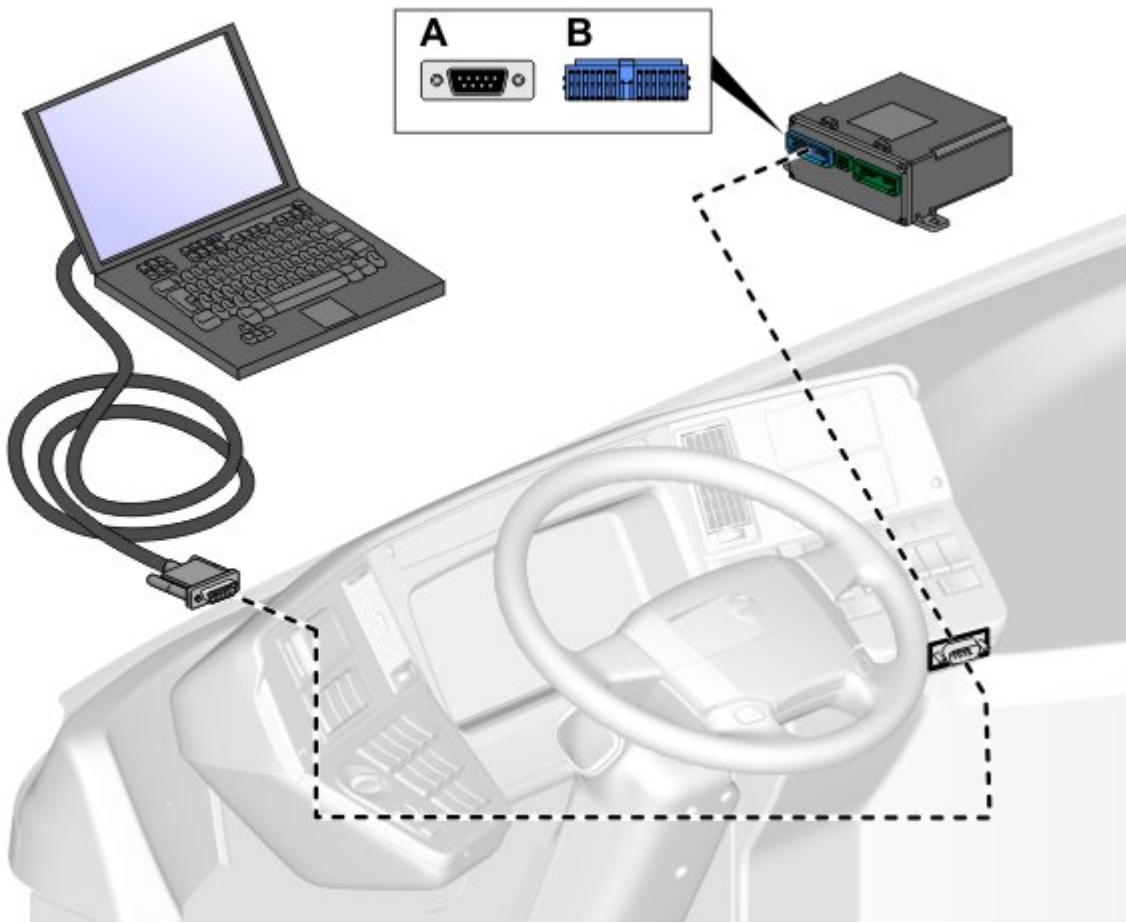
Drivers for the adapter may need to be installed on the computer.

MCM has four different access levels that are password protected. Level one stands for access to all functions and level four for the most limited.

Get back to content menu:

[Contents](#)

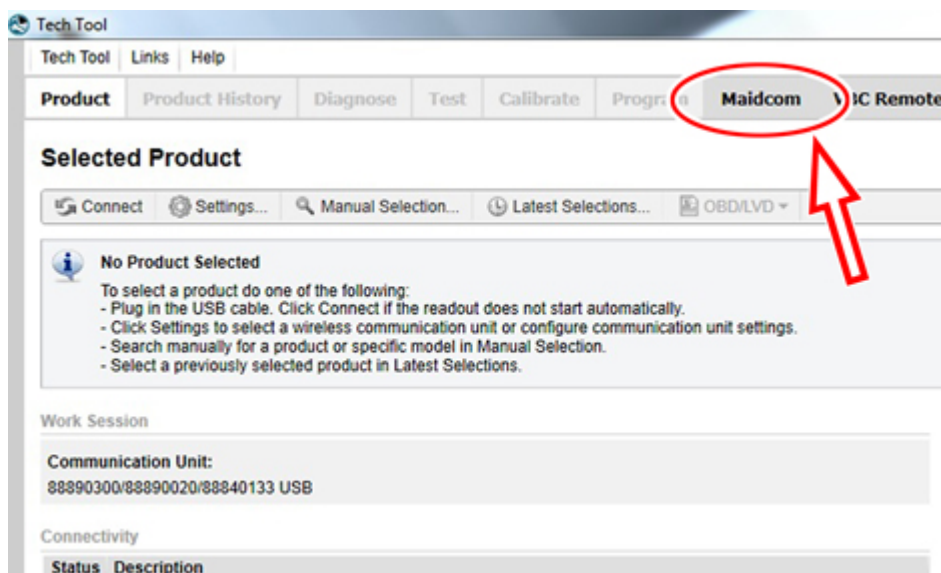
## Start of Maidcom



Connect the computer to the interface for MCM.

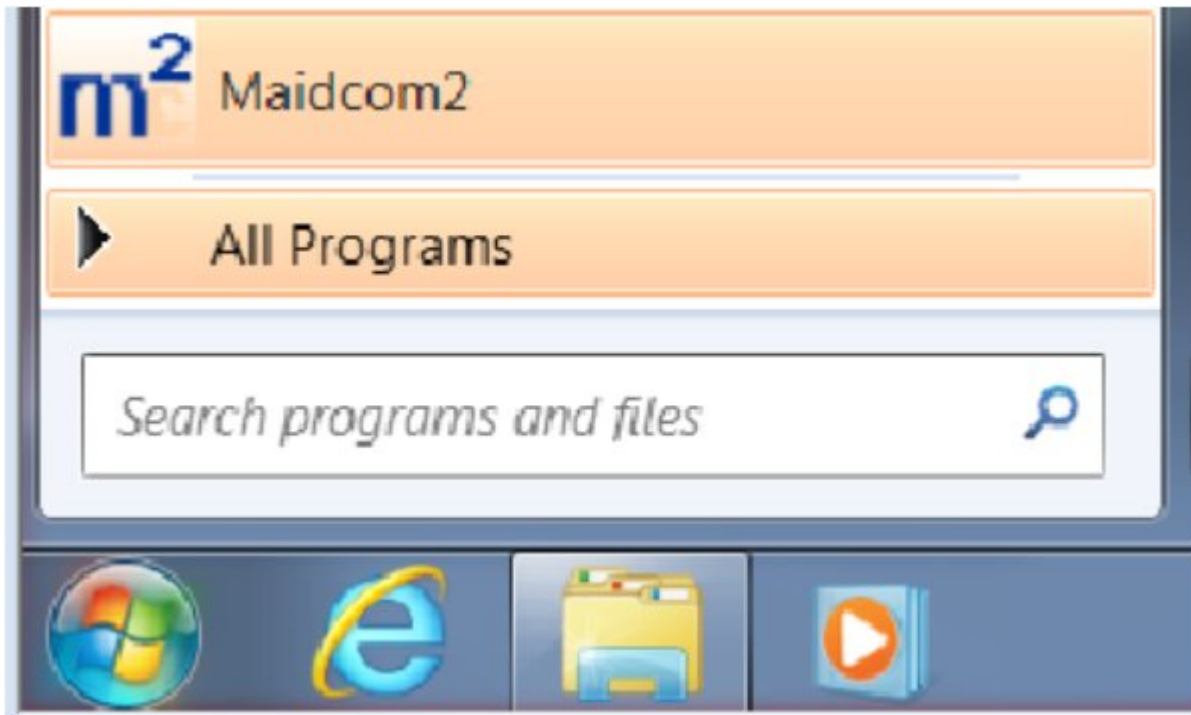
## In Tech Tool

Log in to the Tech Tool application on your computer and click “Maidcom”.

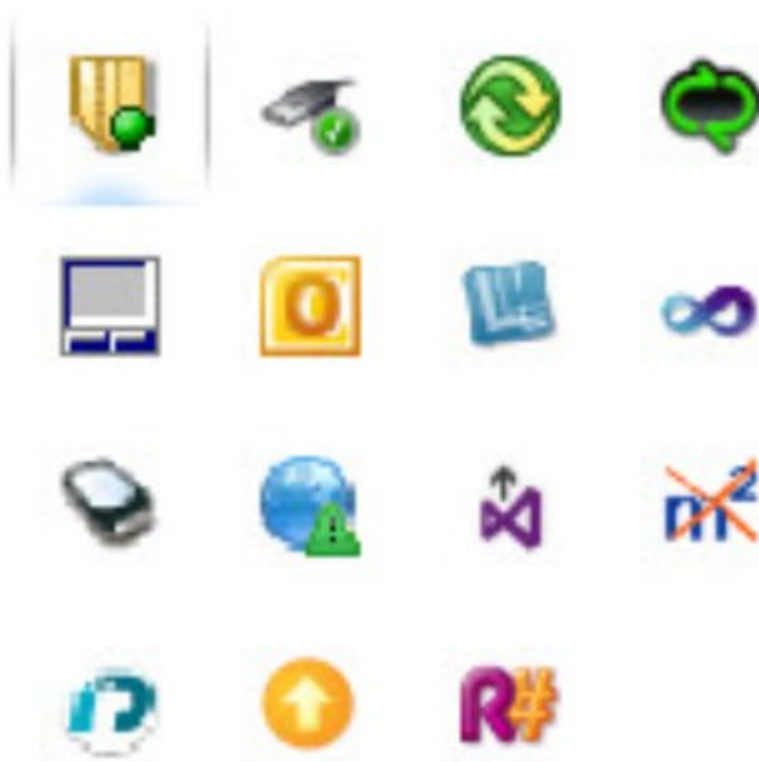


## In standalone

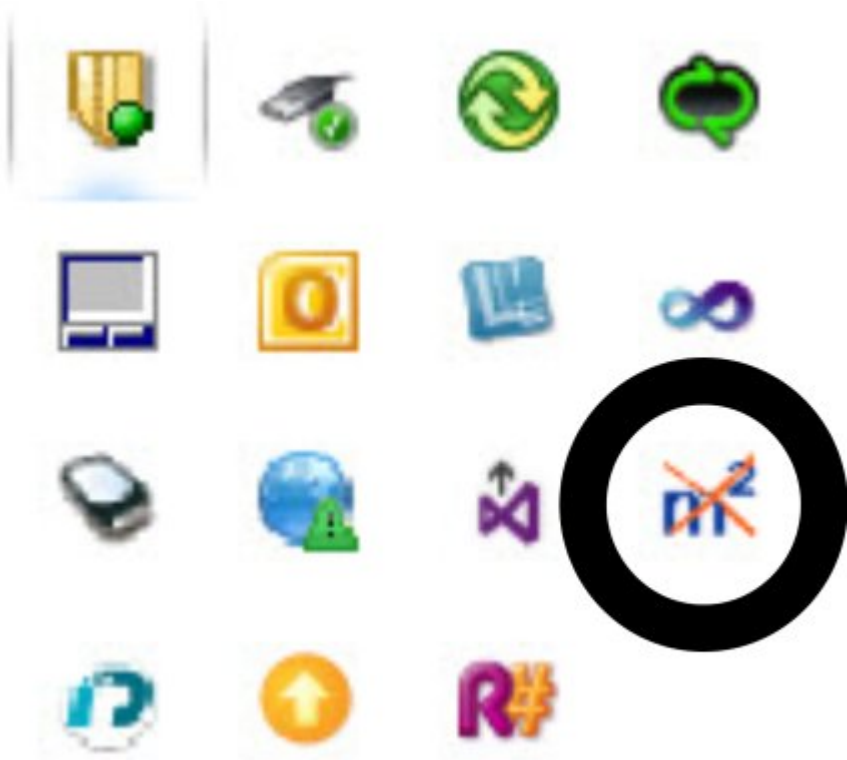
Find Maidcom and click it via start button on computer (lower left-hand corner of the screen).



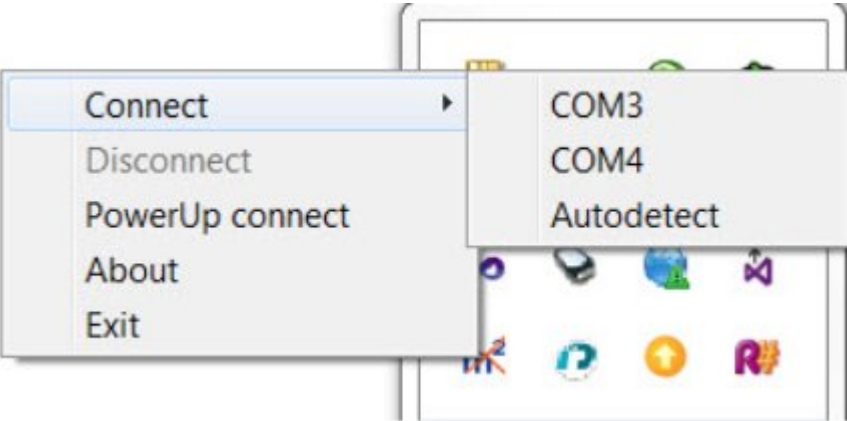
Click and show the icons in the taskbar (usually in the lower right-hand corner of the screen).



Right-click the symbol for Maidcom.



Select Autodetect.



The symbol shows that Maidcom is running.





Open browser

In order to connect to MCM, you need to open your browser, Internet Explorer and enter the URL:  
<http://localhost:49555/cp/html/start.html>

If this URL doesn't work, try to type it like this:  
<http://localhost:49555/>

Get back to content menu:

[Contents](#)

## Start menu Maidcom

**VOLVO**

Volvo Bus On-board WEB-Service

**Chassis: B7R\_104854 VBC**  
**Body: BO\_04\_07926**  
2005-03-17/09:11:16

- + Language (English)
- Vehicle information
  - MasterID information
  - Body ECU info
  - Body component list
- + Fault log
- + MID view
- + Operation diagram view
- + Parameters
- + Programming
- + Help
- + Exit

**MasterID, 210:**

1	Boothloader PN	70361865-P01
2	Hardware PN	70329278
3	Hardware SN	182267
4	Manufacturer data	Hardware ID: Gate06 Test OK 03.01.2005_12:00

**Software**

5	Vehicle ID	B7R_104854
6	MasterID, MID 210 SSW	SS-70361340-P01
7	Common Pages	CP-70369667
8	CECM-B, MID 188 SSW	BS-70378617-P01- B7R_104854
9	B-Bus Application	BA_B7R_104854
10	B-Bus Parameters	BB_B7R_104854

This is the start page.

When connection to MCM has taken place and when typing in *Vehicle information*, a check is made of the software in  
Copyright to this documentation belongs to the Volvo Group. No reproduction, copying, change, amendment or other similar disposal is entitled without prior written consent by the Volvo Group

The information contained herein is current at the time of its original distribution, but is subject to change. The reader is advised that printed copies are uncontrolled.



all body modules.

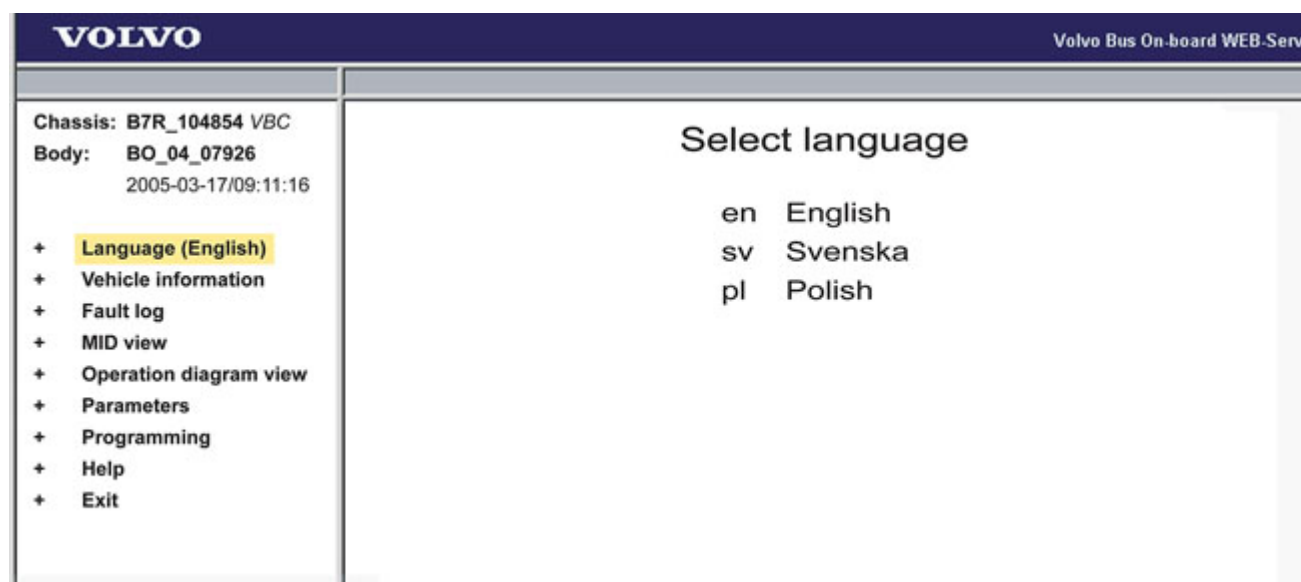
Links to the different submenus are located in the left-hand side of the application.

These menus are covered in more detail later in the document.

Get back to content menu:

[Contents](#)

## Language menu



By clicking *Language* in the menu to the left, language can be chosen.

Besides English, there are two other languages depending on which market the bus is used in.

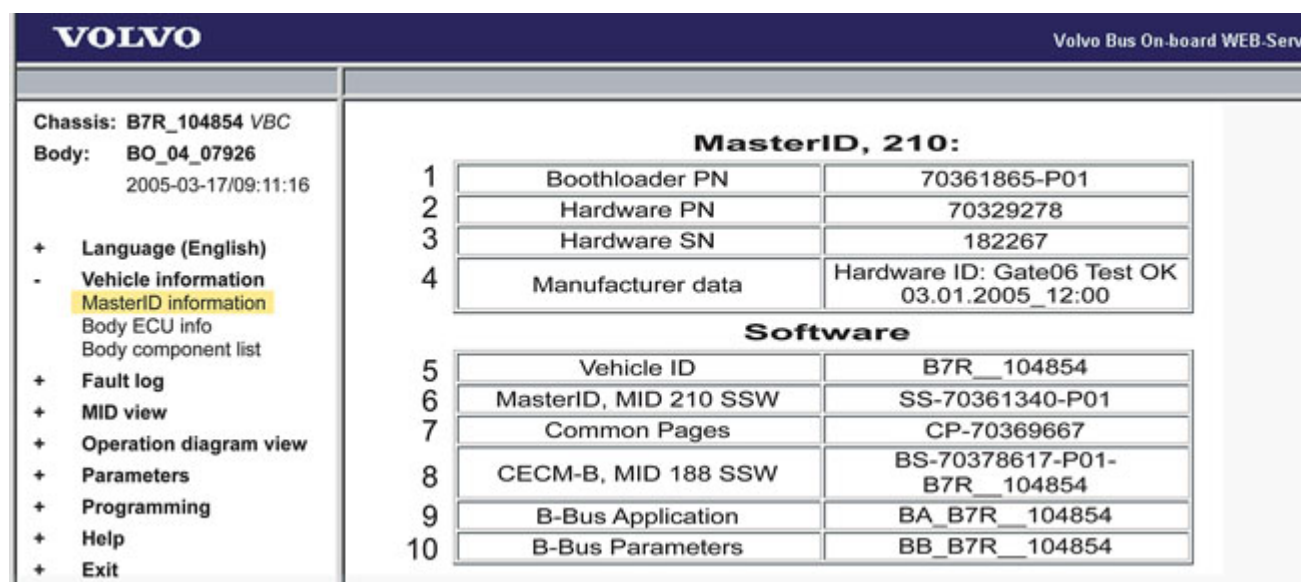
Get back to content menu:

[Contents](#)

## Vehicle information

After selecting the *Vehicle information* menu, there are three further submenus.

## MCM information/MasterID information



Copyright to this documentation belongs to the Volvo Group. No reproduction, copying, change, amendment or other similar disposal is entitled without prior written consent by the Volvo Group

The information contained herein is current at the time of its original distribution, but is subject to change. The reader is advised that printed copies are uncontrolled.

The first submenu shows information about MCM (This is also Maidcom start page):

- . Part number for Bootloader, the file used for software download
- . The hardware MCM part number
- . Hardware serial number
- . The date on which Bootloader was installed and tested.
- . Chassis type and number
- . The system software part number
- . Type of software component
- . Type of system software for MCM
- . Body application for chassis number
- . Body parameters for chassis number

## Body ECU info

VOLVO

Volvo Bus On-board WEB-Server

Body ECU info

Chassis: B7R\_104854 VBC  
Body: BO\_04\_07926  
2005-03-17/09:11:16

+ Language (English)

- Vehicle information

MasterID information

Body ECU info

Body component list

+ Fault log

+ MID view

+ Operation diagram view

+ Parameters

+ Programming

+ Help

+ Exit

Body ECU info

BBUS stat:N(\_N\_\_\_\_)

ECU address	ECU name	Location	HW part number	HW serial number	PBL part number	SSW part number	ECU Type	State
36	A36	SidePanelDriverSide	70361720	4510015	22380000	70378617	CECM	1
59	A59	SidePanelDriverSide	20585155	4500199	70350376	70361323	IOA005	1
50	A50	In left switch panel	20585160	5010021	70350376	70361324	IOB006	1
47	A47	In left switch panel	20585160	5010019	70350376	70361324	IOB006	1
49	A49	In left switch panel	20585160	5010020	70350376	70361324	IOB006	1
41	A41	In dashboard	20585155	4500186	70350376	70361323	IOB005	1
42	A43	In dashboard	20585155	4500187	70350376	70361323	IOB005	1
43	A43	By front door	20585155	5030135	70350376	70361323	IOB005	1
45	A45	By middle door	20585155	5020035	70350376	70361323	IOB005	1
51	A51	Air duct left front	70350491	4450051	70350376	70350493	IOB006	1
52	A52	Air duct right front	20585160	5020154	70350376	70361324	IOB006	1
54	A54	Air duct left rear	20585160	5020148	70350376	70361324	IOB006	1
55	A55	Roof front right	20585155	4490132	70350376	70361323	IOB006	1
58	A58	Electric centre	70350491	4500007	70350376	70350493	IOB006	1

Body ECU info menu contains the address, names and location of the different modules.

In addition, it contains the hardware's part number, its serial number, PBL (Bootloader) part number, the System software's part number, and the type of module and its status.

Illustration above indicates that the module has the correct software ("State=1"). "State 0" indicates that its software is deficient and "State error" means that it is not responding.

In a case where the software is deficient the software is normally updated at the next start-up.

The different modules in the system are currently MCM, I/O-A, I/O-B, I/E-A and I/E-B.

## Body component list

**VOLVO**
Volvo Bus On-board WEB-Server

Body component list

Chassis: B7R\_104854 VBC  
Body: BO\_04\_07926  
2005-03-17/09:11:16

+ Language (English)  
- Vehicle information  
MasterID information  
Body ECU info  
**Body component list**  
+ Fault log  
+ MID view  
+ Operation diagram view  
+ Parameters  
+ Programming  
+ Help  
+ Exit

Body component list

Body Component list

Vehicle: B7R\_\_104854 Body: BO\_04\_07926

MID 188 = CECM-B

Component	Component ID	
Hardware	07361720	P01
systemsw	70378617	P01
funcspec	20413089	P01
funcspec	20456403	P01
funcspec	20714898	P02
funcspec	20773243	P01
funcspec	70329018	P01
funcspec	20593439	P01
funcspec	20525278	P01
funcspec	20576241	P01
funcspec	20573850	P05
funcspec	20715624	P02
funcspec	20577445	P01
funcspec	20715326	P02
funcspec	20767344	P01
funcspec	20563575	P03
funcspec	70369637	P02
funcspec	20576240	P02
funcspec	70369651	P02
funcspec	20574433	P01

The *Body component list* submenu shows information about the body software part numbers in the system.

The columns “Component” and “Component ID” shows different part number of the body.

“Hardware” is the part number for the control unit hardware.

“System SW” is the part number for the control unit software.

“Funcspec” is the part number for the control unit function file.

“I/O config” is the part number for the I/O configuration file.

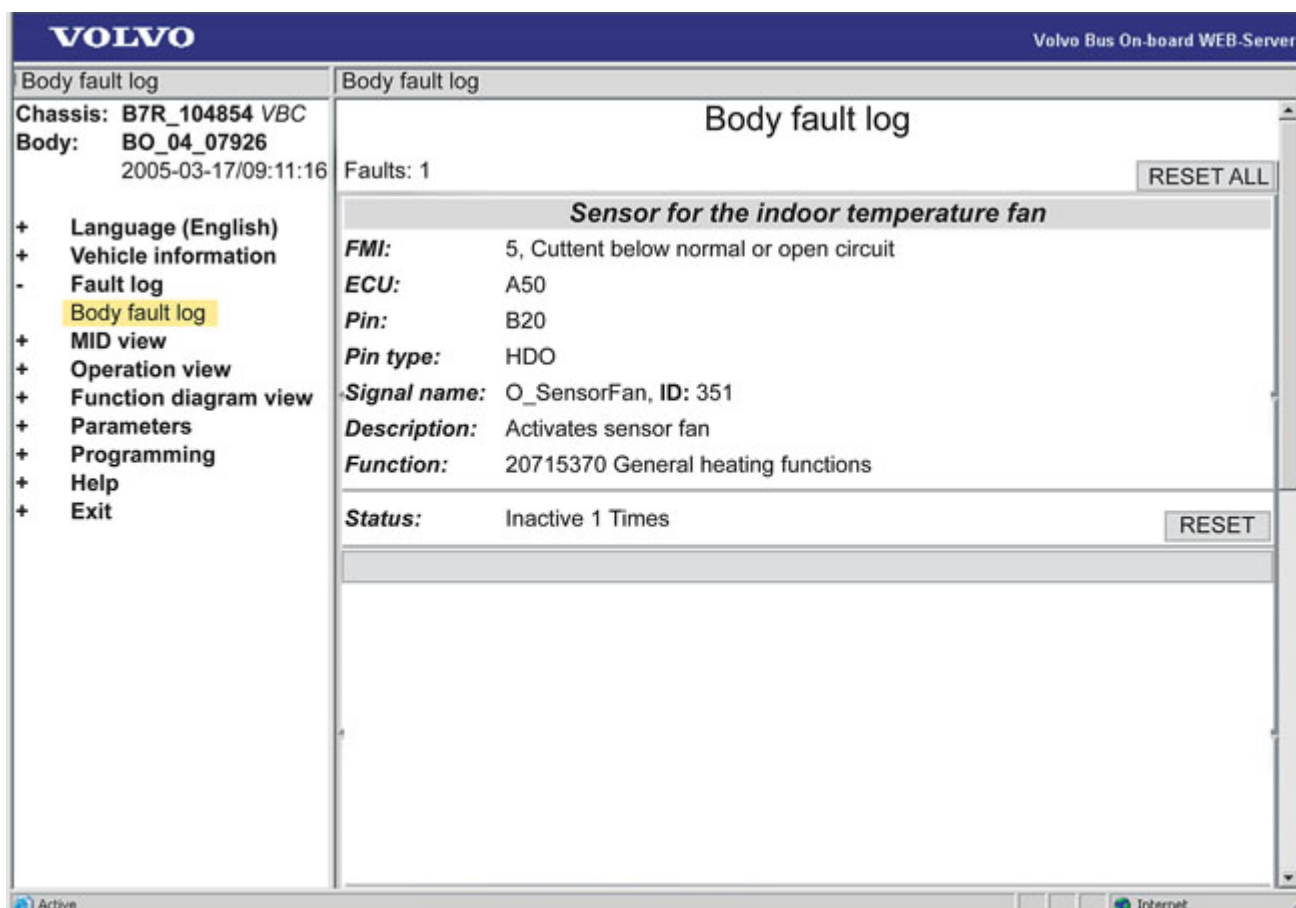
The information to the right shows which version it concerns, i.e. P01 is version 1 and P02 is version two and so on.

Get back to content menu:

[Contents](#)

## Fault log

### Body fault log



The *Body fault information* menu can read out both active and inactive error codes.

Provides information about the component in question. In this case, Sensor for the indoor temperature fan.

FMI: Provides information about the type of fault. In this case FMI 5, which indicates that the current is lower than normal, alternatively an open circuit.

ECU: Which module that generated the fault code.

Pin: The module pin number.

Pin type: Type of signal. In this case HDO, High Digital Output

Signal name: O\_SensorFan, which means output to the fan sensor.

Signal ID: Only used by Design Department

Description: Functional description. In this case for activation of the fan sensor.

Function: Information about in which menu this function is found.

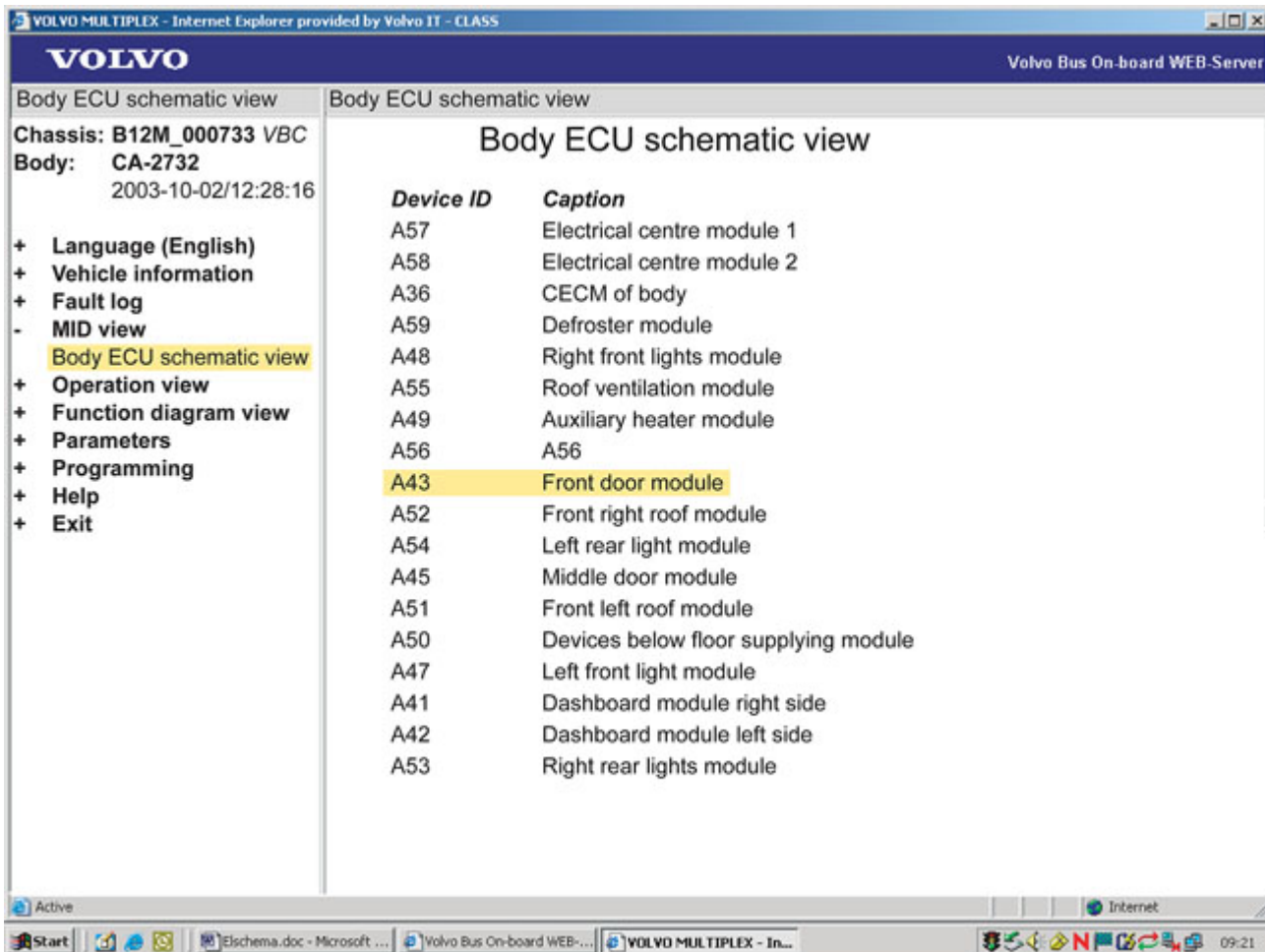
Status: Shows if the fault code is active/inactive and how many times the fault has occurred.

Reset button: For deleting inactive fault codes.

Get back to content menu:

[Contents](#)

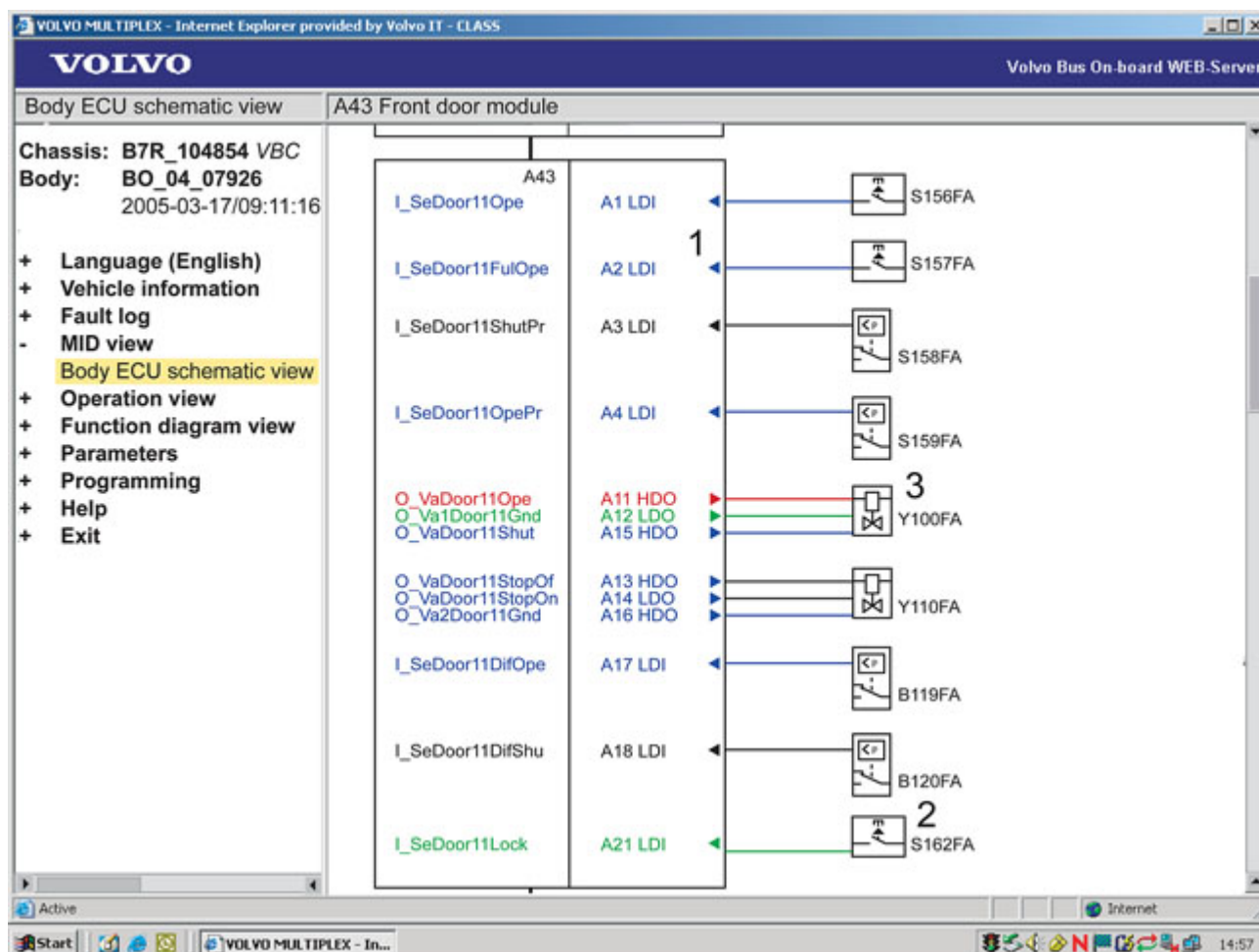
## MID view



Under the menu *MID view* is a register of all modules in the system. Here is A43, Front door module, selected.

## Body ECU schematic view





By clicking A43, *Front door module*, we are directly linked to a diagram, which shows all input/output signals for the selected module.

Arrows (1) show if it is an input or output signal, in this case the code I\_SeDoor11FulOpe, which is the sensor that activates pin A2 when the door is fully open and thereby breaks the opening function. We can see that the function is activated by an LDI pin (Low Digital Input), which means that it is a ground signal that activates the pin.

The different colours shown on the input/output signals indicate the status of each signal:

Green = TRUE (active)

Blue = FALSE (inactive)

Brown = Signal value is not available (example, module don't have power supply).

Black = Not used in this bus specification

Red = Error

We can, for example, see that door lock (2) S162FA has activated pin A21 (Green) and that there is some sort of error in the command to the door solenoid valve (3) Y100FA since the output signal is missing from pin A11 (Red). Further, we can see that the sensor for open door (1) is waiting for the command, which will not be activated until the door is fully open (Blue).

Get back to content menu:

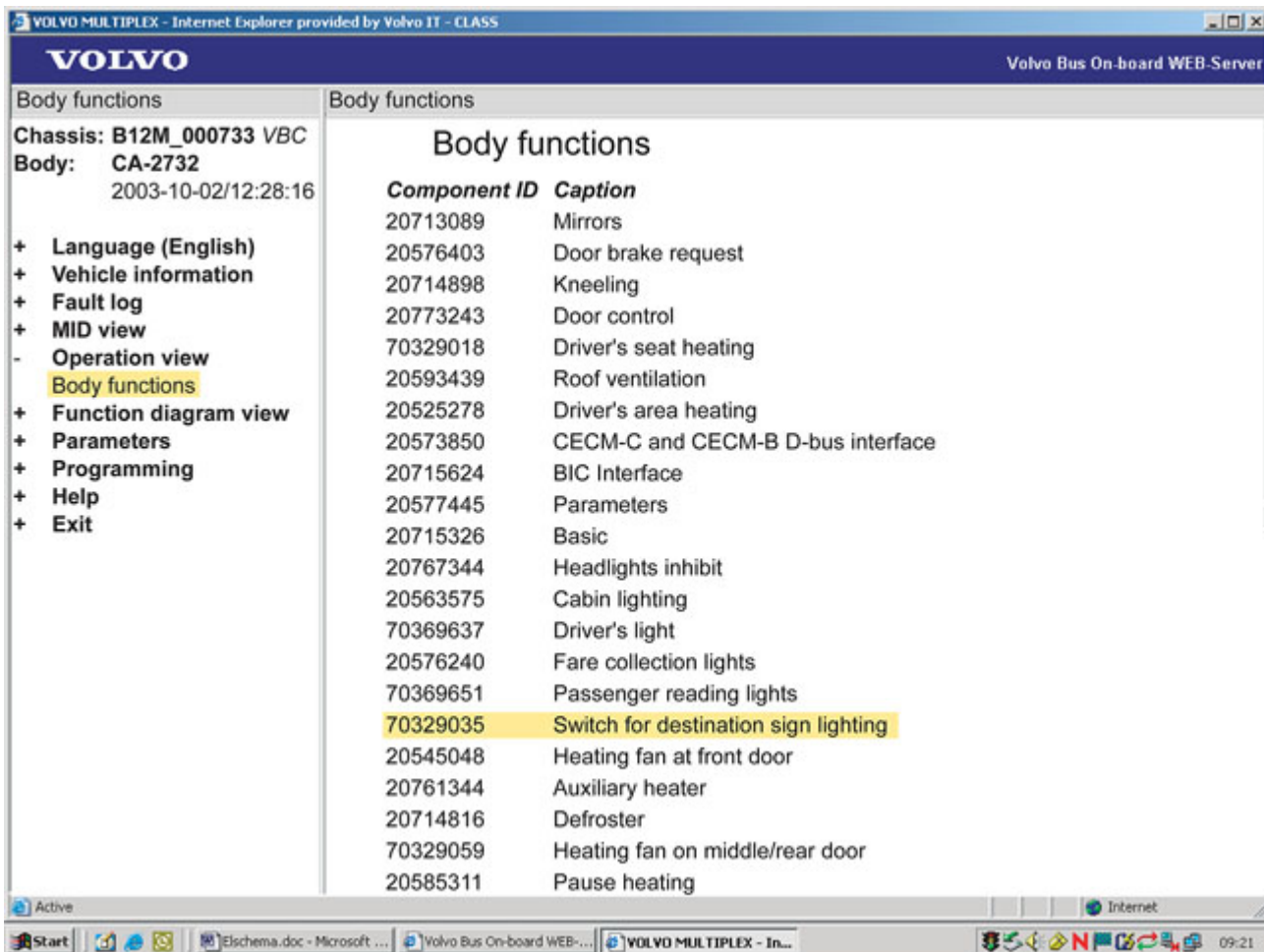
[Contents](#)

## Operation view

### Body functions

Copyright to this documentation belongs to the Volvo Group. No reproduction, copying, change, amendment or other similar disposal is entitled without prior written consent by the Volvo Group

The information contained herein is current at the time of its original distribution, but is subject to change. The reader is advised that printed copies are uncontrolled.



Under *Body functions* menu is shown a register over all functions in the system. By clicking on the function, we are directly linked to a diagram, which shows all input/output signals of the specific function.

In this case, function 70329035 "Switch for destination sign" is selected.



**VOLVO MULTIPLEX - Internet Explorer provided by Volvo IT - CLASS**

**VOLVO** Volvo Bus On-board WEB-Server

Body functions

Chassis: B7R\_104854 VBC  
Body: BO\_04\_07926  
2005-03-17/09:11:16

- + Language (English)
- + Vehicle information
- + Fault log
- + MID view
- + Operation view
- + **Body functions**
- Function diagram view
- Body logic view
- + Parameters
- + Programming
- + Help
- + Exit

70329035 Switch for destination sign lighting

**Inputs** Light switch for destination plate on dashboard

**Outputs** E119F Front destination sign lighting  
E119M Side destination sign lighting  
E119R Rear destination sign lighting

**Preconditions** Main switch on. The battery voltage must be above 22V.  
The destination lights are at the front (E119F), side (E119M) and rear (E119R) of the bus. They are switched on when the main lighting switch or the feed switch on the dashboard (in the chassis electrical system) is in position 1 or 2, when the cabin lighting is switched on (see the Cabin Lighting function) or when the parameter B\_LCDESTSIGN is chosen.

**Activations** Not applicable

**Operation** The function can be terminated accordingly: main lighting switch or feed switch set to position 0, cabin lighting switched off or main switch off.

**Termination** position 0, cabin lighting switched off or main switch off.

**Diagnostics** N/A

Active

Start | Elschema.doc - Microsoft ... | Volvo Bus On-board WEB-... | VOLVO MULTIPLEX - In... | 09:21

- . Input\_Switch Destination sign lighting (LDI)
- . Output\_ Destination sign lighting Front (HDO)
- . Output\_ Destination sign lighting Back (HDO)

The selected function contains a function diagram that shows the input/output signals for the selected function, the conditions, activation, function, inactivation and diagnostics.

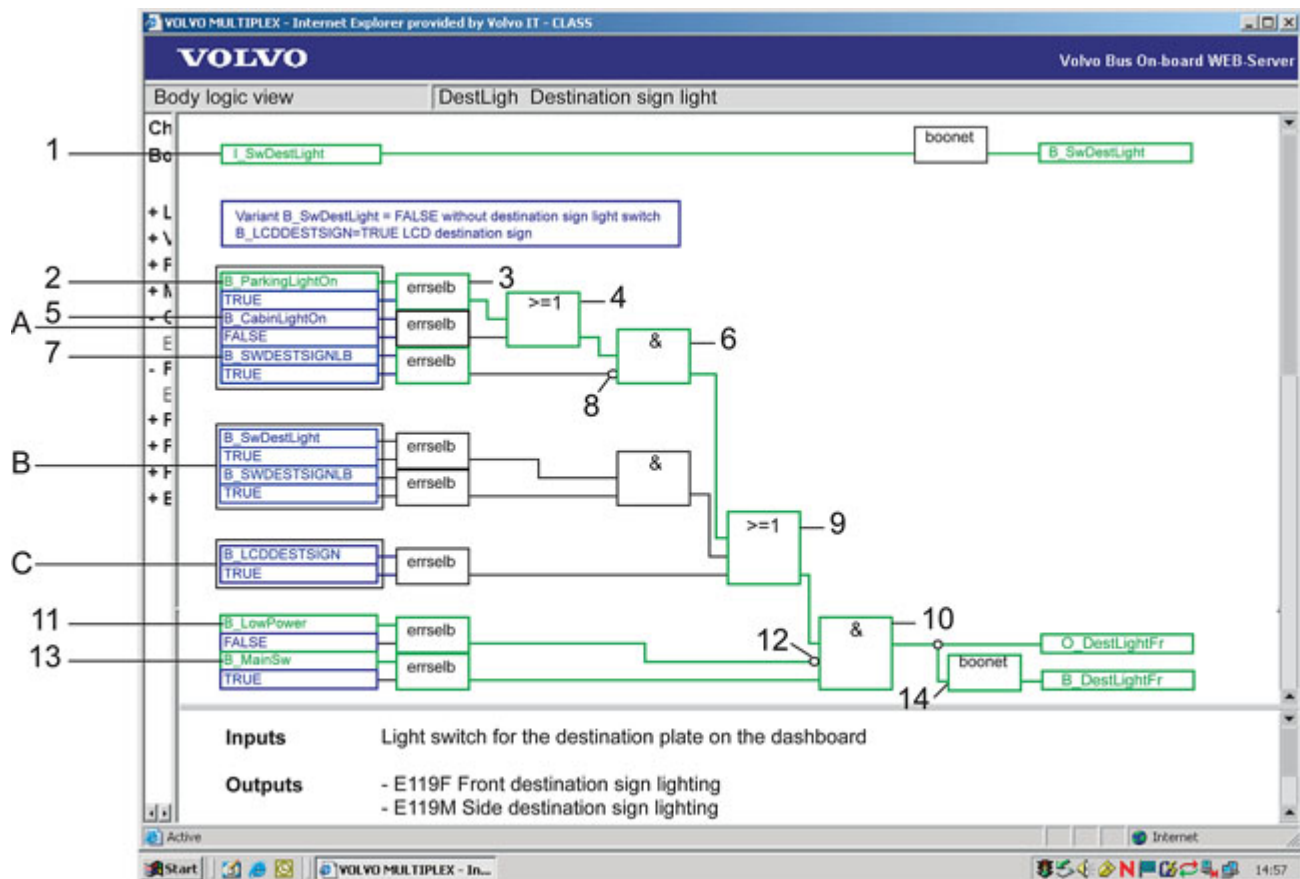
The components and control units that are connected to the selected function are shown at the top of the menu.

Get back to content menu:

[Contents](#)

## Function diagram view

## Body logic view



As previously mentioned, the terms TRUE and FALSE are used with these types of electronics/logic. TRUE is used when a circuit is active, i.e. a one (1) and FALSE when a circuit is inactive i.e. a zero (0). One should be aware of the fact that a one (1) is not always a 24-V signal, it can equally well be a ground signal depending on the pin mode, which has been chosen by the designer for a particular pin. One should therefore use the body function diagram to find out the type of signal, e.g., LDI or HDI on the pin that activates the circuit to be fault traced, before one uses the body logic view.

To be able to read certain body logic views, among others the door logic, the password for "user1" for old buses with Master unit, and "BODY1" since EU6, which are equipped with MCM, is required. This menu gives you access to the body logic, that is the various software gates used to control the various functions. Also this example uses the destination sign lighting. As before, one can fault trace the function by observing the colour changes in the logic.

At the top of the logic view (1), we see I\_SwDestLight (first letter "I" stands for Input). This is the variant where the sign lighting is controlled by a separate switch. When the switch is activated the signal passes through the Boonet block and changes name to B\_SwDestLight, where the letter B indicates that a software message is sent on the B-bus link. The Boonet block changes the signal to a software message. The signal B\_SwDestLight is then used by both logic block A and B, but in different ways.

In logic, block A we can see message (2) B\_ParkingLightOn, which is the message activated when the switch for the bus parking light is switched on. This signal reaches the block errselb (3), which is a fault management block.

In cases where this signal is not valid for some reason, the system uses the lower, pre-programmed value, in this case TRUE, i.e. activate the function. The pre-programmed values can be either TRUE or FALSE, depending on its function.

The signal goes onward into an "Or" block (4),  $\geq 1$ . In this type of block, it is sufficient that any of the two input signals is a "One" for it to be activated. Naturally there are "Or" blocks that can have more than two inputs.

If we look at the value below (5) B\_CabinLightOn, which is a B-bus message from the bus's interior lighting, we can see that this value also goes into the "Or" block. In this way, the signal lighting can be activated either by the bus's parking lights or the bus's interior lighting.

After this signal has passed through the "Or" block it ends up in an "And" block (6), &. This type of block required ones in all inputs in order to be activated.

The last message in this group is parameter B\_SWDESTSIGNLB (7) is written in upper case letters. This indicates that it is a programmable parameter. Also this parameter is sent out on the B-bus link and reaches the "And" block. When parameter B\_SWDESTSIGNLB is inactivated, it gives a zero (0) and as we already know that all input values for an "And" block must be ones, an inverter block (8) that changes zeros to ones, is required.

This leads to the "And" block getting two ones and therefore can be controlled by the bus parking lights or inner lighting. The situation will naturally be the opposite if this parameter is activated, leading to the inverting block (8) changing the one value to a zero causing the "And" block to receive only a single one (1) so that it cannot be activated by the bus parking light/inner lighting.

Our signal now goes on to the next "Or" block (9), where it is sufficient with an input one and on to the next "And" block (10).

As mentioned earlier, it is required that all input signals to an "And" block must be ones to activate the function.

The next one comes from the B-bus link via B\_LowPower (11), which, if the battery voltage exceeds 22 volts, gives a zero that is inverted to a one in inverter block (12). The last one (13) B\_MainSw is activated when the main switch on the dashboard is activated. The "And" block (10) is now activated and lights the front destination sign lighting with O\_DestLightF and also sends a signal to Boonet (14) which in turn distributes the message B\_DestLightF on the B-bus link. If we then look at the logic block B, we find again the parameter B\_SWDESTSIGNB, which when activated gives a one to its "And" block at the same time as switch B\_SwDestLight and therefore activates the signal to the "Or" block (9).

Logic block C functions in such a way that if parameter B\_LCDDESTSIGN is activated, it will supply a one to the "Or" block (9).

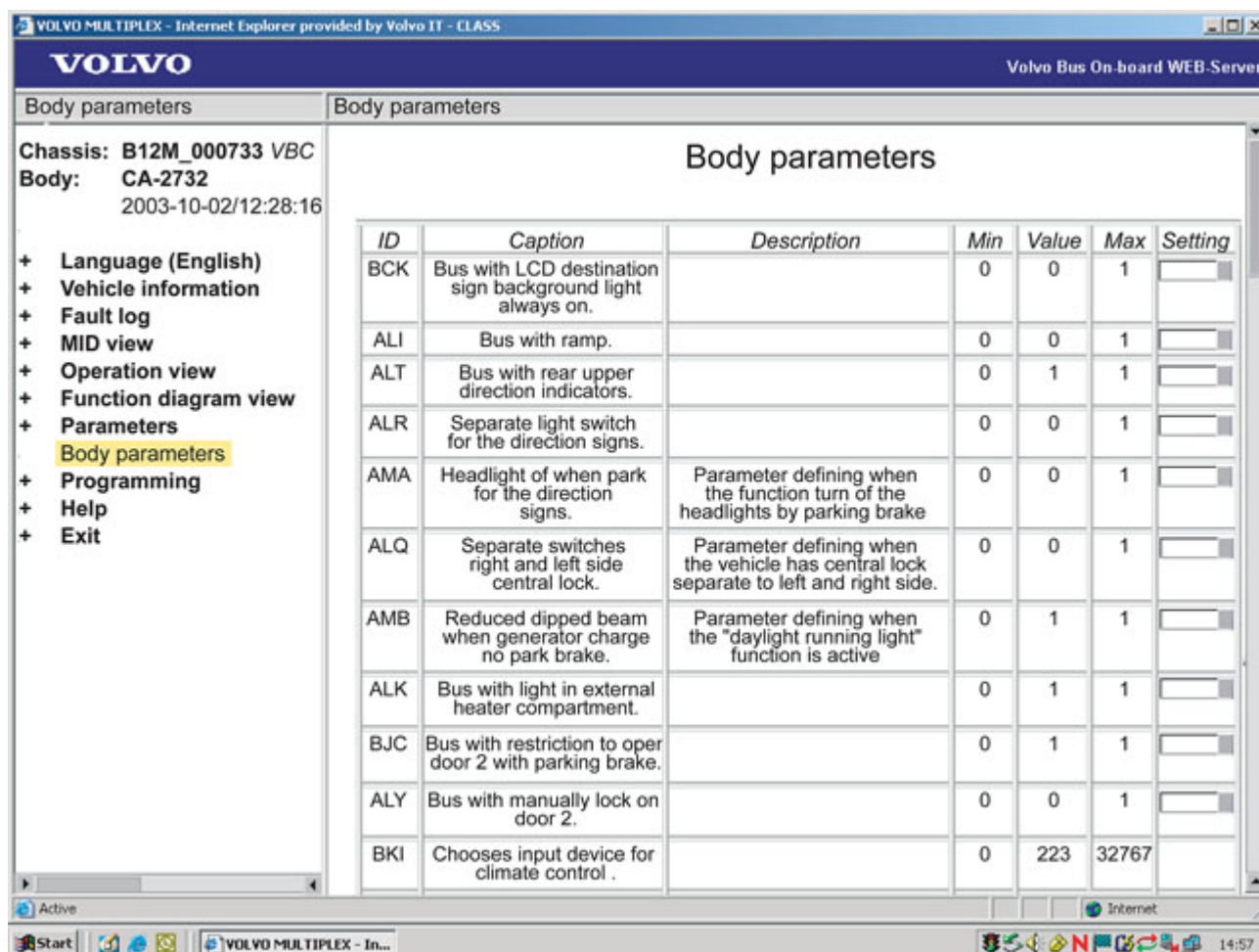
The remaining logic is otherwise the same as above.

Get back to content menu:

[Contents](#)

## Parameters

### Body parameters



ID	Parameter abbreviation
Caption	Parameter name
Description	Parameter function
Min	Parameter min. value
Value	Parameter current value
Max	Parameter max. value
Setting	Box means that it's programmable using the PC.

By clicking "Body parameters", it is possible to read off all parameters and reprogram certain parameters. The number of parameters naturally varies on the specification of the bus, number of the functions, etc.

When the parameter has a box under setting (1), it means that the parameter is programmable using the PC. This type of parameter is programmed by entering the desired value (in this case activated, a one or inactivated a zero) in the setting box.

Box (2) contains the minimum and maximum values for the parameter.

Box (3) contains the current value for the parameter. The parameters for the destination sign lighting can be found under BCK and ALR. When both of these parameters are inactivated (zero), we know from earlier experience that the destination signs are lit when either the parking light or the bus inner lighting is activated. We also know that when parameter BCK is activated, the destination sign lighting is lit by the main circuit breaker. In the other case, if parameter ALR is activated, a separate switch is required.

The parameter BKI (4) is a fixed parameter for selecting control of air conditioning. The different options for control are, for example, BIC, AIC or some other option, depending on the bus's specification. Changing this parameter requires a change in the system's software.

The different values that can be selected are from 0 through 32767. The value 32767 is 215 (2 increased by 15,  $(2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 = 32767)$ ).

The current parameter 223 is the binary code (0000000011011111 = 223) which, when programmed in, gives a constant inside temperature of 22 °C. Depending on their specification, certain buses can have the following arrangement of BKL parameters: Control via AIC = 0 Control via BIC = 1

Fixed temperature 22°C = 3

With this parameter arrangement, no updating of the software is required, but the parameter value may be changed by entering one of the above named values.

Get back to content menu:

## Contents

# Programming

During software download, MCM is programmed which then updates all body modules automatically. When the bus is started MCM checks the software in the bus different modules. If software in any module is different than in MCM, then this software is updated automatically by MCM.

It is necessary to reprogram MCM in case MCM unit is replaced or its software has been updated.

Start up Maidcom. See: [Start of Maidcom](#)

In order to start the Bootloader in standalone mode (outside Tech Tool), you need to open your browser, internet explorer and enter the URL:

http://localhost:49555/start bl.html

Download software from "Software and Documents", ([Important links](#)).

Install the software.

Disconnect the PC from MCM and switch off the main current; wait for 20 seconds and then switch the main current on again. Connect the PC again. Wait until the main menu is shown on the screen again and then go to the *Vehicle information* menu to check that all modules have status "1".

Get back to content menu:

## Contents

## If it doesn't work

## Username and password verification

*Note: All newer buses (equipped with MCM) have unique password for each single bus, when an older bus uses common username and password to connect with the old version of MCM – Master ID.*

When using Bootloader, to download software use username as “user1” password as “fqYos”.

Password "BODY1" is used only for logic view.

It can be found in VDA+ and Impact.

To access VDA+ and Impact, log in to Trucks Portal is required:

<https://grouptruckportal.volvo.com>

## VDA+

Select "VDA+" from the portal.

Select "Components" in menu "VDA".

Fill in "Chassis number" and "Chassis-ID" and then "Search".

Select "Body, cab and interior".

In the list that appears, correct username and password is shown.

*Note: Always use password witch correspond with Bus body compilation date. It shall be the latest date.*

To verify that this is the latest username and password:

Select "VDA" in the top menu, then "History" and then "Technical history".

Fill in "Chassis number" and "Chassis-ID" and then "Search".

Latest version by date should be used.

<input type="checkbox"/>	8000	MASTERID PWD LEVEL1	user3;TUC8b
<input type="checkbox"/>	8000	MASTERID PWD LEVEL1	BODY1;MT14/WMG
<input type="checkbox"/>	8000	MASTERID PWD LEVEL1	user2;/RDo9

## Impact

Select "Impact" from the portal.

Select "Components" in the top menu.

Fill in the "Chassis number".

Select function group "800" and click "Search".

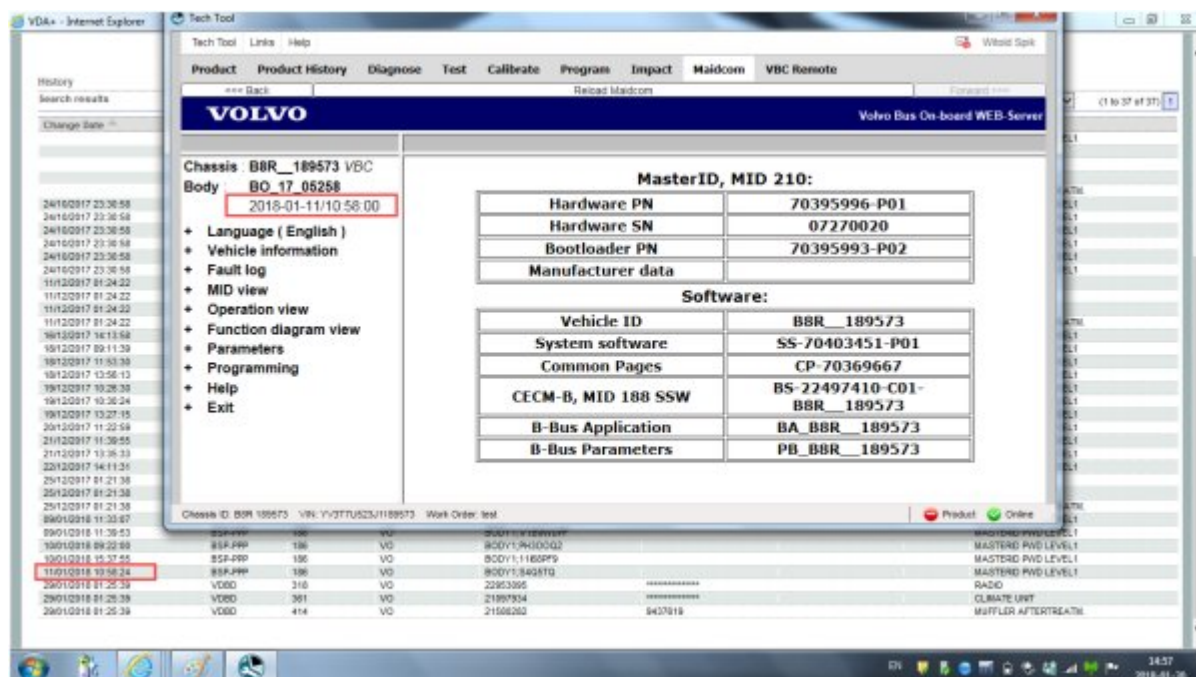
Click the current vehicle.

In the list that appears, correct username and password is shown.

NAMS			
BSP-PPP	186	VO	BODY1;MFRDPLW
VDBD	305	VO	20846320

## Software dates





Date and time (when the software was created) must be the same when comparing VDA and MCM. In this case, the password will not work.

If the software version of the bus is older than the one in the VDA, try downloading new body software from “Software and Documents”, ([Important links](#)).

If the software version of the bus is newer than that of the VDA, VDA must be updated to obtain the correct password. Send an Argus for action in this case.

Get back to content menu:

[Contents](#)

## Important links

Wiring diagrams for Body can be found in Impact.

To what:	Link/Address
Maidcom, installation quick guide	<a href="#">- Maidcom, installation quick guide</a>
Master control module (MCM), signal description	<a href="#">Master control module (MCM), signal description</a>
Download bodywork software.	<a href="#">- Download bodywork software</a>
Software and Documents	<a href="https://volvogroup.sharepoint.com/sites/app-volvobuses-software-documents">https://volvogroup.sharepoint.com/sites/app-volvobuses-software-documents</a>
Group Trucks Portal	<a href="https://grouptrucksportal.volvo.com">https://grouptrucksportal.volvo.com</a>
Connect to MCM in standalone mode	<a href="http://localhost:49555/cp/html/start.html">http://localhost:49555/cp/html/start.html</a> <a href="http://localhost:49555/">http://localhost:49555/</a>
Bootloader	<a href="http://localhost:49555/start_bl.html">http://localhost:49555/start_bl.html</a>