aerosoft™

OMSI 2 Add-on

Citybus 0405

Manual



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OMSI 2 - Add-on Citybus O405

Manual

Add-On for

OMSI 2

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A word from the creator

Thank you for purchasing the Citybus O405 add-on. From the first steps of the 3D model to the final polishing, over a year went by, and a lot of sweat and love went into making it. I tried my best to make the bus as realistic as possible, but unfortunately, perfection isn't really obtainable – we can only fight to get as close as possible to it.

However, I'd like to thank the OMSI community for showing their support through the forums, and for helping me fix most visual bugs. If it wasn't for you guys, the project would've ben finished long ago, but to a much lower degree of quality. So I'd like to take this opportunity to say a big thank you to everyone that, by posting their opinions and input, helped the project grow and, in the meantime, gave me a bit of motivation.

Also, I'd like to give special credit to the following people:

- 181 201-5, for providing me with pictures for the cash-table
- Florian Wolf, for his excellent bug reports and opinions, and providing me with pictures for making the steering wheel texture (something that was changed around 7 times through the development of the bus)
- Morphi, for his excellent gearbox script
- Msnbl13, for sending me tons of pictures from an SSB O405, and providing me with oppinions from real O405 drivers
- Perotinus, for inspiring me to make buses for OMSI again, and for his immense knowledge of everything bus-related;
- PoweredByCNG, for the awesome recordings used to make the sounds, and for his input during development;

I hope driving this bus gives you many hours of enjoyment! And maybe even a moment or two of nostalgia.

Introduction

The O405 was a rear-engined standard line bus manufactured between 1984 and 2001. It enjoyed great success all over the world thanks to its impressive reliability and build quality - having seen service in all parts of Europe, Australia, Russia and, to a much smaller extent, in the UK and China. Even today, despite being slowly taken out of service, O405s still populate the world in either their standard form or as a chassis with different bodies, with manfacturers like Camo (Portugal), Hispano Carrocera (Spain), PMC and Volgren (Australia) and Optare (UK) choosing this robust platform to build upon. One noteworthy example is the Alexander-bodied Cityranger, the only example of an O405G existing in the UK.

The O405 was part of the last generation of buses built in Germany according to the VöV SL-II standard and, as such, measurements like height, lenght and wheelbase were established for all manufacturers to follow. As a result, the O405 was one of the last buses to be built with a high-floor configuration, being succeded by the O405N in 1991 that featured a low-entry design.

The OMSI version of the bus doesn't follow any particular operator specifications. Instead, customization options like destination blinds, ticket machines and door variations are offered to better fit different configurations.

It follows the specifications of an 1987 model as it would've rolled out of the factory, being equipped with a naturally-aspirated, 6 cylinder OM447h engine that produces 205 PS and a four-speed gearbox with retarder. The O405G is powered by a slightly more powerful 240 PS engine and a shorter axle ratio.

System requirements

- OMSI 2 – The Omnibussimulator min. 2.2.032
- Operating system Windows Vista / 7 / 8 / 8.1 / 10
- Processor (CPU): min. 2.8 GHz
- RAM: 4 GB or higher
- Free hard disk space min. 400 MB
- Graphic card min. 1024 MB (DirectX: 9.0 or higher)
- Internet connection and user account required for Steam

Please note: OMSI 2 - The Omnibus Simulator must be installed in advance for the add-on to operate. A Steam internet connection is required for the online activation.

Technical specifications (O405)

Length: 11,575 mm

Width: 2500 mm

Height: 3,060 mm

Engine: OM447h with 205 PS

Gearbox: W3E with retarder

Maximum speed: 85 km/h

Empty weight: 9800 kg

Gross weight: 17.600 kg

Seats: 40

Standing places: 45

In this section the standard operations of the bus will be described. If you're familiar with any of the VöV-spec buses, the dashboard will certainly be a familiar sight to you and, other than some specific functionalities to this model, it shouldn't present a challenge to understand. In the sections below, you'll find diagrams with numbers and a list of the corresponding function.

Firstly though, you should get in the bus. You can operate the doors from the outside by opening the service flap on the side of the doors and clicking the button just next to the washer fluid bottle. If the doors have no air pressure in the system you can also push them open.



1. Dashboard
2. Air flow controls/misc switches
3. Cash table / ticket machine
4. Overhead
5. Steering wheel position knobs – the left one controls height and the right one controls tilt.

Dashboard



Dashboard – gauges (red)

6. Front air pressure gauge (top) and rear air pressure gauge (bottom). The red needle represents the available air pressure in the tanks and the white needle represents pressure application.
7. Oil pressure gauge
8. Fuel tank level
9. Gearbox temperature
10. RPM Gauge. This gauge can be replaced with an engine coolant temperature gauge, depending on the dashboard variant being used.
11. Tachograph with integrated odometer and clock
12. Parking Brake

Dashboard – lights (yellow)

1. Low air pressure warning light: this light will appear every time the air pressure in one of the tanks is below 6 bar. If the light appears while parked, simply turn the engine on and wait for the air pressure to build up before driving again. If it doesn't rise up, or if it lights up during driving, this might indicate a leak in the system.
2. Parking brake light - will also light if air pressure is too low
3. Gearbox central lubrication system
4. Low oil pressure warning light
5. Engine coolant warning light: this will light up if the coolant temperature rises above 105 C.
6. ASR Override/Active light: it will illuminate if the ASR (traction control) system has been disabled or if it detects wheel spin under acceleration, thus removing power from the wheels to improve traction.
7. Battery light: indicates that the battery is discharging. If it is lit while the engine is running it might indicate a failure with the generator/ alternator.
8. High beams indicator light
9. Blinkers indicator light
10. Stop request indicator light
11. EDC failure warning light
12. Buggy request indicator light: this can be requested from the exterior or by the driver using the corresponding switch – only available in automatic door control
13. Block heater engaged indicator light
14. Drive-ready indicator light: iluminates at speeds under 5kph, when all of the doors are closed and the stop-brake is off. Indicates to the driver that the bus is ready to set off.
15. Rear door open warning light
16. Defroster active indicator light: it will illuminate if any of the defroster systems are running
17. Articulation angle warning light: indicates that the bus is reaching a dangerous articulation angle, which might damage the linkage between the front and the rear of the bus. If the bus reaches an even higher angle after the warning was lit, the stop brake will engage and can only be deactivated by pressing the corresponding switch in the side panel

18. Stop Brake engaged warning light
19. ABS/ASR Malfunction warning light: this will light up when there's a failure in either of the systems, or if the ASR system has been deactivated by the driver
20. ABS Active

Dashboard – switches (blue)

1. Retarder switch: this operates the gearbox retarder, toggling it on or off
2. Direct retarder mode: this toggles between the modes for the retarder – off means the retarder will only engage when the brake pedal is depressed, the on position will engage the retarder when the driver steps off the accelerator pedal
3. Front fog lights switch
4. Driver light switch
5. Interior light switches: 5.1 operates the front light, just behind the driver cabin, 5.2 operates the main section of the lights and 5.3 operates the trailer lights. In the 12m version of the bus, only 5.1 and 5.2 are available, and they operate all of the lights of the bus.
6. Front door wing lock: this switch has three positions – up locks the front wing of the doors, down locks the rear wing, and middle (off) disables the lock, operating both wings at the same time. It is only available in manual door control
7. Block heater switch: turning this on will pre-heat the engine block, useful for starting the engine in cold temperatures
8. Heater fan controls: 8.1 and 8.3 operate the heater units along the floor of the bus, and 8.2 controls the unit in the front of the bus, just right of the driver.
9. Driver heater control: diverts air flow to the vents above the driver
10. School bus mode switch: when engaged, the warning hazards will turn on when any of the doors are open. This is cancelled by turning on the left turn signal
11. ASR override switch: this will deactivate the traction control system
12. Buggy Request switch: used to block the rear doors in the open position. This switch is only available in automatic door control mode
13. Defroster switches: 13.1 controls the front defroster, 13.2 controls the right defroster just above the doors and 13.3 controls the driver-side windows defroster

14. Rear fog light button
15. Key: inserting the key will turn on the battery, turning it one notch to the right will engage the low-beam headlights, and turning it all the way to the right will engage the driving lights
16. Engine stop button
17. Engine start button
18. Hazard/4-way blinkers button
19. Stop brake switch: pushing it down will engage the stop brake, pushing it up will release it. This is mandatory in automatic door control mode, as the doors will only operate when it's engaged.
20. Door controls: in manual door control mode, 20.1 and 20.2 operate the front and rear doors respectively. In the articulated version, 20.2 operates the middle doors and 20.3 opens the rear doors. In automatic door control mode, 20.1 operates the front wing of the front doors, and 20.2 the rear wing. 20.3 releases both of the rear doors, which will open if a passenger wishes to exit the bus
21. Gear selector buttons

Ticket machine operation

Eurofare

The Eurofare is the version marketed for Europe of its more popular cousin, the A90. As such, all of the menus and labels are in English, and its operation is actually quite different from the A90, seen mostly in Germany. Below is a diagram of all the buttons in the Eurofare, which will be referenced in the next section of the manual.



After starting the battery, the machine will turn on automatically. After loading, you are presented with the main menu, which contains the date and time. Before being able to print tickets, the driver has to enter the line and route number by pressing the FUNCTION (1) button, and then using the keypad to input them. If an invalid route is entered, it will return to the main menu. This check can be overridden if nothing is entered in the line and route selection, however the tickets will be printed with no information regarding stops.

If a valid route is loaded, the display will change to show the current line number, the route number and the destination in the upper line and the current bus stop in the lower line. This machine is not yet capable of automatic station forwarding and, as such, the driver is required to switch the stops manually using the STAGE (4) buttons.

To print a ticket, it is required to select the type of the ticket first, by pressing either the button labeled DIRECT (5 - standard fare) or the button labeled SPEC (6 - day tickets).

After selecting one of these modes, the display will change and in the upper line will be displayed Dir (after pressing DIRECT) or Spec (after pressing SPEC)

If DIRECT was selected, you then need to press the 1ZONE (7), 2ZONE (8) or 3ZONE (9) buttons. In real life, these select the amount of zones the passenger will travel. However, due to some limitations in the OMSI ticket system, 1ZONE prints a short-haul ticket and 2ZONE prints a standard ticket. The 3ZONE button can be selected, but it will act as a standard ticket.

When either of these buttons are pressed, the upper line will display Dir along with the number of zones that the passenger is travelling. Next to it is the price for that ticket. The lower line of the display will change to include the current bus stop, and the bus stop that the passenger is travelling to. This will change according to the ZONE button selected.

If the passenger is requesting a child ticket, pressing the CHILD (11) button will change the ticket type. The ticket name and price will also be displayed in the upper line.

After the correct ticket was selected, you can print it by pressing the green ISSUE (12) button.

For day tickets, it is first required to select the SPEC (6) mode, then pressing the 1DAY (10) button. You can also print a child day ticket by then pressing the CHILD (11) button. The lower line will be empty though, as day tickets are usually accepted along the entire line.

At the end of the line, you can switch to the reverse route by pressing the + (3) button. When you finish the shift, you can turn off the ticket printer and return to the main menu by pressing the ANNUL (2) button.

Optima

The Optima is a modern ticket printer and is quite popular, being used by bus operators all over the world. It features a touch-screen display, automatic station forwarding and a text display for the passenger. Despite all of this, it's quite a simple machine to operate.

After the battery is enabled, the ticket machine will turn on automatically. After the initial loading, you'll be presented with the main menu. Before printing tickets, you'll have to enter the line and route numbers by pressing the green Dienst Anmeldung button, and then using the keypad. If an invalid route is entered, it will return to the main menu. This check can be overridden if nothing is entered in the line and route selection, however the tickets will be printed with no information regarding stops.

If a valid route is entered, you'll be presented with a different screen. The diagram below numbers the different sections and their functions:



1. Next 6 bus stops. The top one is the closest, while the bottom one is the furthest.
2. Ticket selection buttons: these buttons will display the ticket names, and pressing them will select the corresponding ticket. On the screen to right the name of the ticket is shown, with the price under it. Below, the current and target bus stop will be displayed. Pressing the green button will print the selected ticket. The passenger will also be shown the ticket name and price.
3. Information screen: this displays information about the selected ticket. This screen is blank unless a ticket is selected.
4. Stop control buttons: these buttons are used to go one bus stop forward (4.1), one stop backward (4.2) or to switch to the return service trip (4.3)
5. Function buttons: the Linie Wechsel (5.1) button will bring you to the line/route input screen, the Dienst Ende (5.2) will end the current trip and return to the main menu, the BAR button (5.3) will print the selected ticket and the arrow button (5.4) will cancel the ticket selection.

This machine also features a night-mode function – between the hours of 8PM and 7AM the screens will become slightly darker with a different color contrast to lower the brightness and, thus, reducing stress on the driver's eyes.

Dashboard – side console



1. Timer/thermometer: pressing the clock button will toggle between these functions
2. Smog mode: this will close the vents pulling air from the outside, and the ventilation system will work with the air inside the cabin only.
3. Passenger air conditioning: opens the vents to flow heated air into the passenger compartment
4. Passenger vents: opens the vents to flow fresh air into the passenger compartment.
5. Front airflow direction controls
6. Articulation warning override switch: if the articulation angle exceeds 45 degrees, the stop brake will automatically engage. Pressing this switch will disengage the stop brake – but beware not to increase the articulation angle, as this might cause a joint malfunction.
7. Air control knob: select whether to draw fresh air from the outside or warm air from the inside for the front vents.
8. Handbook
9. Schedule/destination list

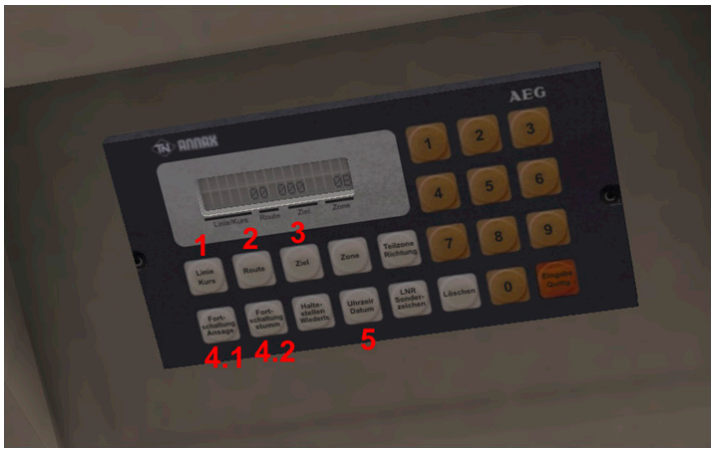
Dashboard – overhead



1. Sun visors
2. Sun visors
3. Radio
4. Destination display (three possible controllers, please see below how to operate each one)

ANNAX controller

The ANNAX controller is a bit different to the standard IBIS controller, but this difference is merely cosmetic as they share all of the functions.



The Linie/Kurs (1) chooses the line, the Route (2) button chooses the route and the Ziel (3) chooses the destination. Pressing the 4.1 or 4.2 buttons will scroll through the bus stops of the route. This feature only works with a valid route loaded. The Uhrzeit/Datum button (5) displays the current time and date.

The upper line of the display will usually display the current bus stop, and the bottom line will display the current line, route and destination selected.

Rollblind controller

The roll blind controller is also very simple to operate, featuring selectors for the line and destination display. The left one (1) is the line, and the right one (2) is the destination selector. They can be operated via the buttons above and below the corresponding scroll wheel.



The two buttons on the bottom of the controller manage all of the functions. As the roll blinds are completely automatic, the START (3) button will change the roll blinds to their selection. If any of the roll blinds gets out of sync, the SYNC (4) button will revert all of them to their first position. The START button will illuminate when any of the blinds are in transit, including after pressing the SYNC button.

LAWO controller

The LAWO controller is a modern unit mated to a dot-matrix type display. Its operation is quite different to most modern controllers so, below is a diagram that will be referenced in the next paragraph.



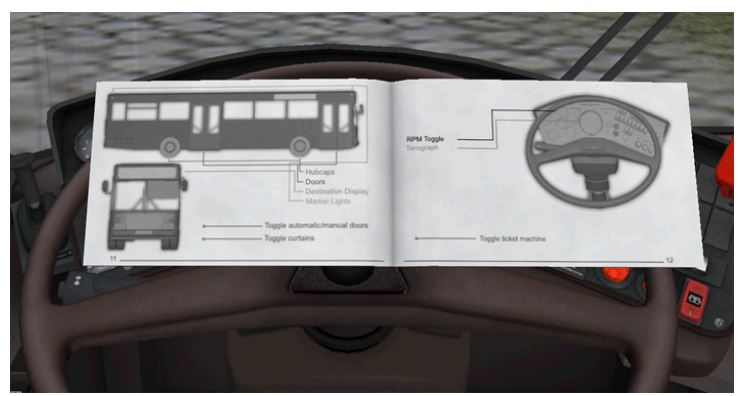
After switching on the battery, the controller will power on automatically. For standard operations, changing the route/line is a very straight forward operation. Pressing L (4) will bring you to the line selection screen, in which you'll be able to input the line using the keypad. If a valid line number is entered, the main display will then update to show the new line number in the third line of the display and the destination codes for route 01 and route 02 in the second line, respectively A and B. Pressing either the A or B buttons (2 or 3) will change the destination to the code you choose.

However, manually entering destination codes is also possible. By pressing the MODE (1) button, the screen will display the functions menu. This has two pages that can be scrolled through using the MODE button again. To choose a function, simply press the corresponding button in the keypad. To manually enter a destination, press MODE (1) twice to scroll to the second page, then press 1 in the keypad to select the "Sonderziel" function. You can then input the destination code you choose.

In the first MODE screen, you can also turn on/off the backlight for the screen and keys by pressing 1 and 2 respectively. From the main menu, you can also check if there are any messages by pressing the M (5) button.

Handbook

If you wish to change any of the features that were loaded with the bus, you can do so by using the provided handbook. Simply clicking it (8 on the DASHBOARD – SIDE CONSOLE diagram) will open it just above the steering wheel.



To use it, simply click on the text of what you wish to change – changes should occur seamlessly with no loading times. However, it might be necessary to re-enter the line/destination codes if you change the ticket printer or the destination display.

A note about the door system: when switching door modes, please make sure all off the doors are closed and the stop brake is disengaged. When switching from automatic to manual door control, it might be necessary to engage and then disengage the stop brake for the rear doors to work properly.

Creating your own repaints

Experienced users can create their own colour customizations with the OMSI Repaint Tool. You can find the templates and schemes needed for that under "OMSI 2\Addons\O405\Templates."
Some models have also been provided in .obj format.

Appendix 1 : .cti variables

This section of the manual describes the variables to be used in the .cti file to define new repaints – variables will be loaded as you set them, but in-game customization will still be available. Please take a look at the provided .cti files to use as an example, and change it to your liking using the table below:

[setvar]	Numbers Possible	Description
vis_doorglazed	0 / 1	0 – Standard doors 1 – Glazed doors
vis_hubcaps	0 / 1 / 2	0 – No hubcaps 1 – Modern hubcaps 2 – Classic hubcaps
vis_mkrlight	0 / 1	0 – Older style single top rear light with top marker lights 1 – Newer style split top rear light with no top marker lights
use_ticketprinter	0 / 1	0 – Eurofare 1 - Optima
use_tacho	0 / 1	0 – Classic tachograph 1 – New tachograph
dest_select	0 / 1 / 2 / 3	0 – ANNAX 1 – LAWO 2 – Black Roll Band 3 – White Roll Band
use_curtains	0 / 1	0 – No curtains 1 – Visible curtains
use_narrowfonts	0 / 1	0 – Standard line number fonts (LAWO only) 1 – Narrow line number fonts (LAWO only)
use_dash	0 / 1	0 – Dashboard with RPM gauge 1 – Dashboard with engine temperature gauge
doorop_cti	0 / 1	0 – Manual door control 1 – Automatic door control

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