

2024

Automation Browser Setup: Android-Touch Panel Edition



This document contains details and instructions to begin with the AutomationBrowser on all the SALZ Automation Panel PC product range.

The respective product groups can be clicked directly in the table of contents to access the index of the products in the group.

There is also a link to the data sheet available on the Internet as a PDF.

The text can then be marked in Acrobat Reader using the selection tool, copied and pasted into your own applications.

Further Information:

Website: www.salz-automation.com

Online Product Portfolio: [SALZ Automation Panel PC Product Portfolio](#)

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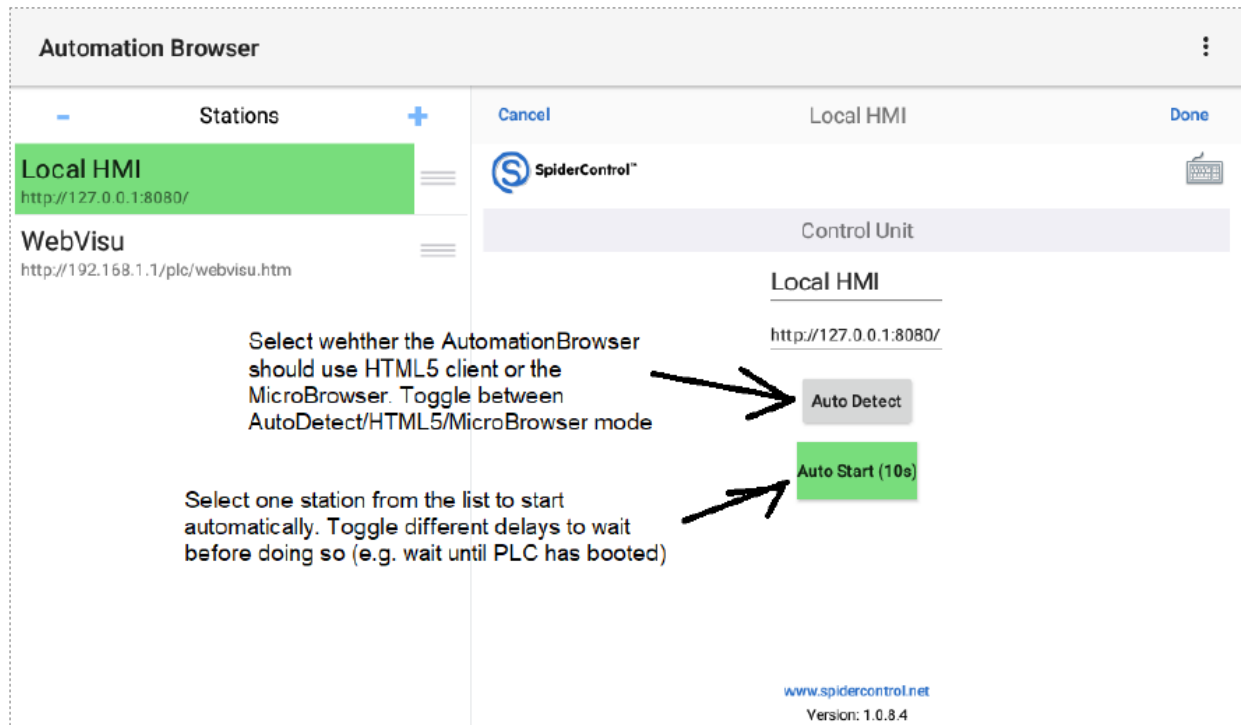
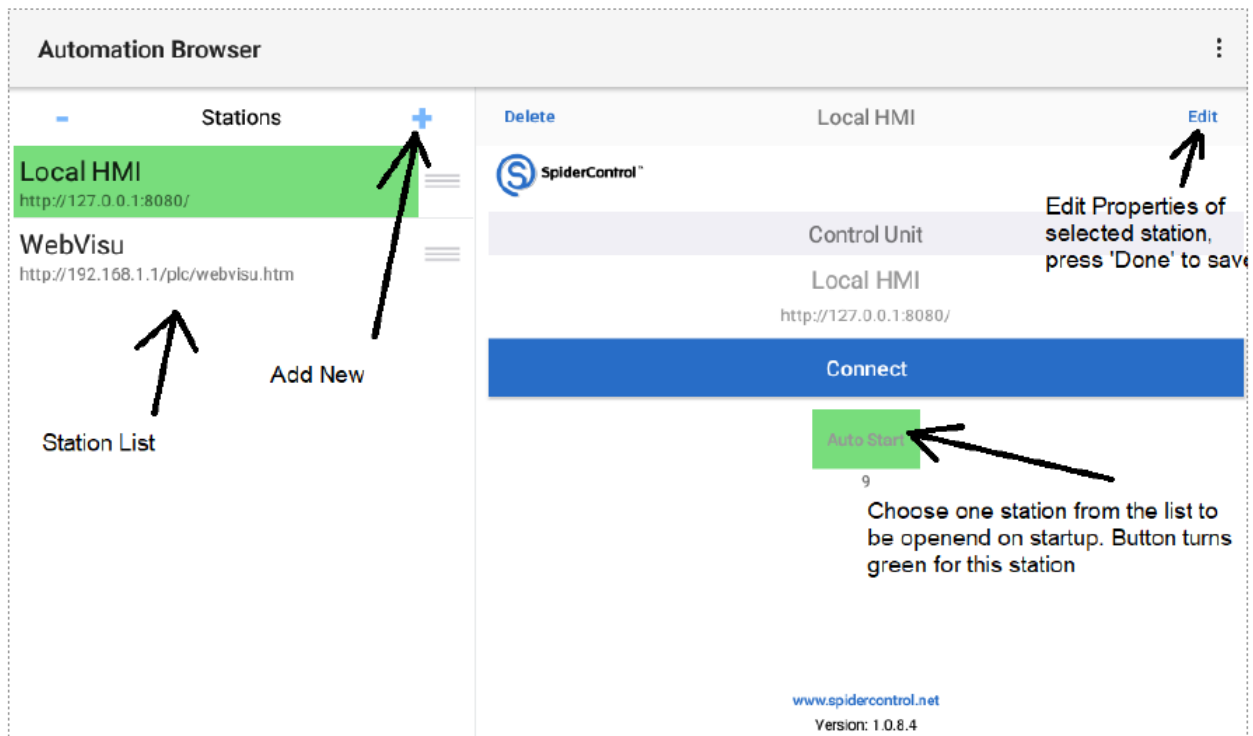
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Abbreviations

MMI	Man Machine Interface, e.g. a SpiderControl™ views displayed at a touch panel or browser.
*.prj	File extension for a SpiderControl™ project file generated by the SpiderControl™ EDITOR. A SpiderControl™ project comprises everything to form a MMI on a touch panel or in a browser.
View	A view is what the user of a MMI sees at one moment inside a window or a browser. A *.teq file implements a view.
TEQ (*.teq)	File extension for a SpiderControl™ view file generated by the SpiderControl™ EDITOR.
Painter	A painter is a graphic object, which is used by the SpiderControl™ EDITOR. This object is programmed in JAVA. Several painters were packed into a Applet which resides on a embedded system.
PPO	Stands for Process Point. A process point is a variable of the user application that should be made visible towards the MMI.
Container	A container is a local variable, which has a scope within the actual applet/view. Containers are used to exchange values between different painters in a view or between different views of the same applet

First Step

After the successful installation, the following Window appears:



1.1 The AutomationBrowser contains MicroBrowser and Chromium

The MicroBrowser is able to display

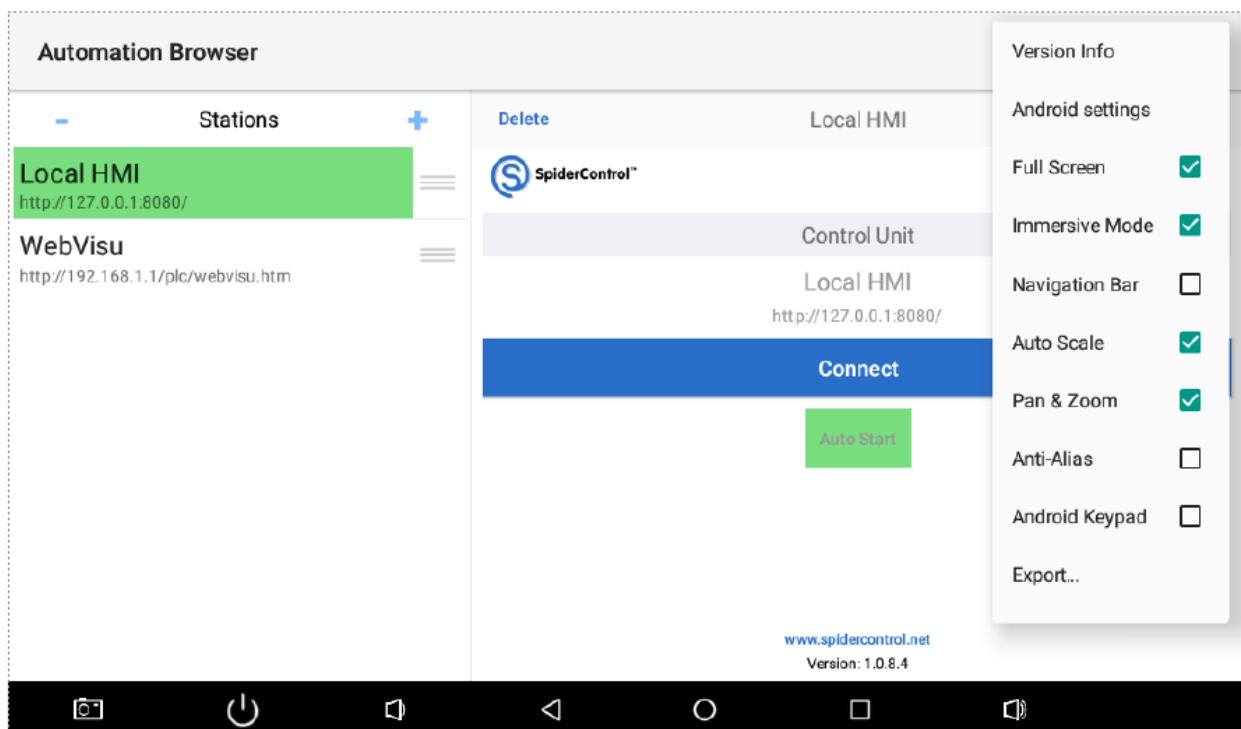
- All Web-HMI which are designed with SpiderControl PC HMI Editor or an OEM version of it
- CODESYS WebVisu V2.3
- CODESYS WebVisu V3.x

For all other content, the AutomationBrowser will use the integrated Chromium HTML5 Web-Client.

When opening an URL, the AutomationBrowser will first analyze the HTML page and then open automatically either the MicroBrowser or Chromium (when in Auto Mode). Older SpiderControl HMI projects as well as the CODESYS Webvisu V2.3 used Java Applets, which are no longer supported in any Browser. The MicroBrowser is able to display these HMI without a Java VM by using a native implementation. CODESYS Webvisu V3.x can be visualized both with the MicroBrowser as well as with Chromium HTML5. The MicroBrowser offers better performance as well as other possibilities, so for this type of HMI the AutomationBrowser will open Chromium when in Auto-Mode or the MicroBrowser when forced to MicroBrowser Mode.

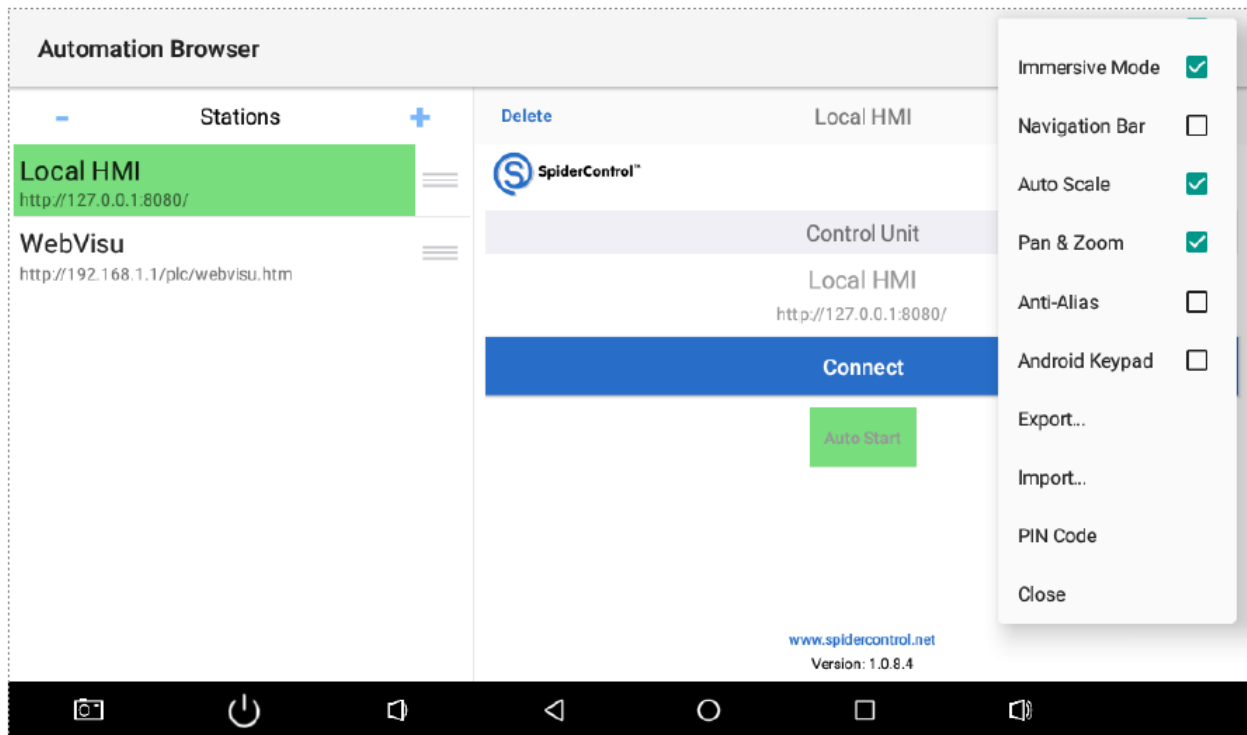
When you display a newer HTML5 based SpiderControl HMI, the Auto mode will open the MicroBrowser, but you can force it to use Chromium by selecting the HTML5 mode.

1.2 Main Menu (Upper right 3 dots)



Android Settings:	Enter Android Settings to modify IP Address and other network related parameters. This is useful when the Automation Browser is in Home Screen mode and the user has no access to other Apps.
Full-screen:	Full-screen is only used to remove the status bar in the top of the screen
Immersive-Mode:	Immersive-Mode is used to remove both status bar and the task bar in the bottom of the screen (restore task bar with a swipe up from the bottom of the screen)
Navigation Bar:	This is only used in HTML 5 mode to show a control bar in the top of the screen, to navigate with previous and next buttons, to refresh the view or to come back in the home view
Auto-scale:	<ul style="list-style-type: none"> - MicroBrowser: The view will automatically de re-scaled to fit the screen (isotropic, keep width/height ratio) - HTML 5: It's not really re-scaled on the view, since it depends on the HTML page. But it will activate an option of the WebView control to fit the screen.
Pan & Zoom:	<ul style="list-style-type: none"> -MicroBrowser: enable/disable panning and zooming of the view. -HTML 5: Unused, this option is handled in the HTML code
Anti-Alias:	<ul style="list-style-type: none"> - MicroBrowser: Improve the rendering with anti-alias if the device does not already support this feature in hardware accelerator. In most devices we don't need to activate this option. - HTML 5: Unused
Android Keypad:	<ul style="list-style-type: none"> - MicroBrowser: Either show the Android Keypad to edit a value or use the Keypad/alpha pad TEQ files - HTML 5: Unused
Export:	Export station list in the into the Download/Automation Browser/MB_STATION.xml

Scroll the menu list for more...



Import:	Import station list from Download/Automation Browser/MB_STATION.xml
PIN Code:	PIN code is used to prevent any modification from operator user. The password is needed to change anything. This feature allows for locking up the operator panel to avoid a user to modify settings or to exit the App ('Kiosk Mode')
Close:	Close the menu

Extending the AutomationBrowser

The version that you have installed so far covers the basic functionality. If you need a customized behaviour, the AutomationBrowser can be extended with the SpiderPLC components. In the following, we present two examples of such extensions. If you have an application which could be solved using this approach, please contact us.

1.1. AutomationBrowser with seamless navigation from PLC to camera:

The SpiderControl AutomationBrowser allows for a seamless navigation from a HTML5 Webvisu on a PLC to a web-cam which is linked directly with its H264 / rtsp:// URL (which is supported by almost any webcam). A fully customized user interface in the control panel offers the option of providing a self-contained, consistent operation.

[Reference Video](#)

1.2. AutomationBrowser with programmable logic to jump, block touch and switch backlight:

The SpiderControl AutomationBrowser can be programmed with an integrated functional block logic to force a jump to a specific URL, to block the touch screen or to switch on/off the back light. The integrated SpiderPLC can be programmed with any standard Browser and connects to external PLC using standard protocols like OPC UA, Modbus, ISO-on-TCP and more. Like this, a Web-Panel can be used to display several Web-HMI's, but still be controlled by a connected PLC.

[Reference Video](#)

1.3 HTTP/HTTPS:

The Automation Browser supports both http and https URL, with or without credentials.

`http://[user:password@]hostname/...`

`https://[user:password@]hostname/...`

If credentials are not specified in the URL and the server prompts for HTTP authentication, it will show an authentication dialog, to enter the username and password.

If you choose "Save Password" in this dialog, it will still show the authentication dialog the next time, to allow the user to use the stored information or enter another username/password.

If credentials are specified in the URL, the HTTP authentication dialog will not be displayed, unless the credentials are wrong.

In that case, you will have to update or clear the credentials from the URL.

If the server uses as untrusted SSL certificate or self-made certificate, the user will be prompted to accept it and continue loading the page, or not.

Press YES (ALWAYS) to permanently save your choice.

Press CLEAR DATA in the Android Settings of the app, to restore the default settings and clear all stored credentials.

1.4 VNC URL:

VNC URL is something like vnc://192.168.1.123/

vnc://hostname[:port]/[bpp[:depth]]/[password]

Optional parameters:

- port, default is 5900
- bpp is either 8, 16 (565) or 32 (888), 0 use default parameter from server
- depth is optional and depends on the bpp. Supported values are 16.15 (555), 8.6 (64 colors) or 8.3 (8 colors)
- password if need must be defined after the pixel format, to use default pixel format, use bpp 0
- If supported on the VNC server side, the best choice is 16 bpp (565), for example

vnc://192.168.1.2/16/password

Notes:

- A Floating Button is used to open and close the Android Keypad,
- The Floating Button is visible only if Android Keypad option is enabled in the menu.
- A long press on the Floating Button moves the button.
- The Auto-Start in MicroBrowser mode is recommended to be used instead of Auto detection
- If the connection is lost and the Auto Start is defined with a delay (3s or more), it will return to the countdown page

1.5 RTSP URL for video streaming:

rtsp://[user:password@]hostname/[live0][?caching=MILLISECONDS]

Depending on the camera you will have to specify /live0, /live1, ... or something like that, after the hostname

The optional network caching parameter in the rtsp URL, allows you to reduce the latency from the live stream, but may cause artifacts or refresh issues if the parameter is too short

The default value is 200 ms, for example, to set 50 ms

rtsp://192.168.1.123/live0?caching=50

1.6 Auto-Start mode:

* Without countdown (start immediately)

1) Auto start with auto detection will shortly show the setup page and open either the MicroBrowser or HTML5 view

2) Auto start with MicroBrowser will directly jump to the MicroBrowser if the server is reachable (*)

3) Auto start with HTML5 will directly jump to the WebView, if the server is reachable

(*) If the server is not reachable or if the connection is lost, it will jump to the setup page.

* With a countdown of N seconds (Auto Start 3s, 10s, 15s, 30s, 45s, 60s, 90s or 120s) on startup

1) Auto start with auto detection will shortly show the setup page and either open the MicroBrowser or HTML5 view after a delay of N seconds

2) Auto start with MicroBrowser will jump to the MicroBrowser view if the server is reachable after a delay of N seconds (**)

3) Auto start with HTML5 will jump to the WebView, if the server is reachable after a delay of N seconds

(**) If the server is not reachable or if the connection is lost, it will do endless retries every 10 seconds.

To abort the endless retries and return to the setup page, press 5 times in the top-left corner.

Or press the back button if available.

Instead of showing the loading message "Loading...", you can set a boot image to show on startup, loaded from

/sdcard/Download/bootscreen.png

1.7 Single Station mode:

Single station mode is used to directly start the specified URL in the XML app setting file, skipping the setup page.

It's a mode where the end user will not see the setup page.

File: automb.xml

```
<settings>
```

```
<name>My Visu</name>
```

```
<start_url>http://localhost/Visu.html</start_url>  
<start_mode>MicroBrowser</start_mode>  
<auto_start_delay_sec>3</auto_start_delay_sec>  
<use_android_keypad>>false</use_android_keypad>  
</settings>
```

--> Procedure with loading file from External Storage

- 1) Export files from Automation Browser into external storage (USB, SD card, ...)
- 2) Copy automb.xml into:

```
<ExternalStorage>/Download/AutomationBrowser/automb.xml
```

(for Android < 10)

```
<ExternalStorage>/Android/data/net.spidercontrol.automb/files/automb.xml (for  
Android >= 10)
```

(The folder should already exist on the external storage)

- 3) Import files in Automation Browser (menu)

Once the XML file has been loaded with <start_url>, it will automatically start with the specified URL and settings.

Pressing back button will close the app.

In this mode, you don't see the standard station list, menu, config, etc... To restore the standard mode, remove the XML file from external storage (or remove the external storage)

--> Procedure with loading file from Internal Storage

- 1) Export files from Automation Browser into internal storage
- 2) Copy automb.xml into:

```
<InternalStorage>/Download/AutomationBrowser/automb.xml
```

(for Android < 10)

```
<InternalStorage>/Android/data/net.spidercontrol.automb/files/automb.xml
```

(for Android >= 10)

(The folder should already exist on the internal storage)

- 3) Import files in Automation Browser (menu)

To restore the standard mode, remove the XML file (automb.xml) from internal storage

All settings that can be defined in XML file:

```
<settings>
<name>My Visu</name>
<start_url>http://192.168.1.123/Visu.html</start_url><start_mode>MicroBrowser</start_mode>
<auto_start_delay_sec>3</auto_start_delay_sec>
<show_navig_bar>>false</show_navig_bar>
<full_screen>>true</full_screen>
<immersive>>false</immersive>
<auto_scale>>true</auto_scale>
<pan_zoom>>true</pan_zoom>
<use_android_keypad>>false</use_android_keypad><use_external_storage>>false</use_external_storage>
<pin_code></pin_code>
</settings>
```

<start_mode> is either an integer or a string

0: Auto (not supported for auto start) 1: HTML5

2: MicroBrowser

1.8 Frameset in HTML file:

Only few configurations are supported to see either 2, 3, 4 or 6 frames An URL can be defined for each frame, either a http URL for HTML5 WebView or a RTSP URL for video streaming,

something like:

File: frameset2.html

```
<FRAMESET cols="50%,50%">
<FRAME src="http://192.168.1.20/html/frame1.html">
<FRAME src="http://192.168.1.20/html/frame2.html">
</FRAMESET>
```

File: frameset4.html

```
<FRAMESET rows="50%,50%" cols="50%,50%">
```

```
<FRAME src="http://192.168.1.20/html/frame1.html">
<FRAME src="http://192.168.1.20/html/frame2.html">
<FRAME src="rtsp://192.168.1.10/live0">
<FRAME src="rtsp://192.168.1.11/live1">
</FRAMESET>
```

File: frameset3.html

```
<FRAMESET cols="50%,50%">
<FRAME src="http://192.168.1.20/Visu.html">
<FRAMESET rows="50%,50%">
<FRAME src="rtsp://192.168.1.5:8554/live1">
<FRAME src="rtsp://192.168.1.6:8554/live1">
</FRAMESET>
</FRAMESET>
```

File: frameset6.html

```
<FRAMESET rows="50%,50%" cols="33%,33%,33%">
<FRAME src="rtsp://192.168.1.101/live1"> <FRAME src="rtsp://192.168.1.102/live1">
<FRAME src="rtsp://192.168.1.103/live1"> <FRAME src="rtsp://192.168.1.104/live1">
<FRAME src="rtsp://192.168.1.105/live1"> <FRAME src="rtsp://192.168.1.106/live1">
</FRAMESET>
```

Note: frame size in px or percent are not supported yet

1.9 Home screen:

After having installed the Automation Browser Home Screen edition, press the Android Home button. So, you will

be asked to choose for the default launcher (*). Press the Home button again to see the ALWAYS option.

Once you have chosen the Automation Browser (ALWAYS), it will automatically be launched on the next start

and you will no longer see the default Android Home screen (Desktop)!

To find this option again, you will have to clear the "Open defaults" setting of the Automation Browser app

Open Android Settings (app menu in the top right corner) and depending on Android version you will have to go either.

- * Apps > Automation Browser > Open by default > CLEAR DEFAULTS
- * Storage & USB > Apps > Automation Browser > (i) icon > Open by default > CLEAR DEFAULTS

Then, press on the Android Home button again.

(*) If you don't see the popup to select the default launcher, it is probably because another launcher is already selected as default.

In that case you will have to clear the "Open defaults" settings in the current launcher app. The name of the app is often something like "Launcher" or "Google Now Launcher".