

Tecomat SmartFox

Quick Installation Guide

Thank you for purchasing Tecomat SmartFox PLC. It's a new era of PLC with easy and intuitive programming features. Please go through the following steps to discover how to start using your PLC.

Power Supply Connection

Each PLC module requires power supply connection. Most of the PLC variants require 24V DC, some versions can run directly from 120V/230V AC mains. Look at the following table to discover appropriate voltage and terminal position according to your PLC model.

<i>Module type</i>	<i>24V DC</i>		<i>120V / 230V AC</i>	
	<i>Terminal +</i>	<i>Terminal -</i>	<i>Terminal L</i>	<i>Terminal N</i>
CP-5000	B1	B2		
CP-5002			B9	B8
CP-5003	B8	B9		

Network Connection

Most of the PLC modules have Ethernet interface with dynamic host configuration protocol (DHCP) enabled by default. Please plug-in Ethernet cable from your local network and PLC will configure it's network interface parameters automatically according to instructions from your network router.

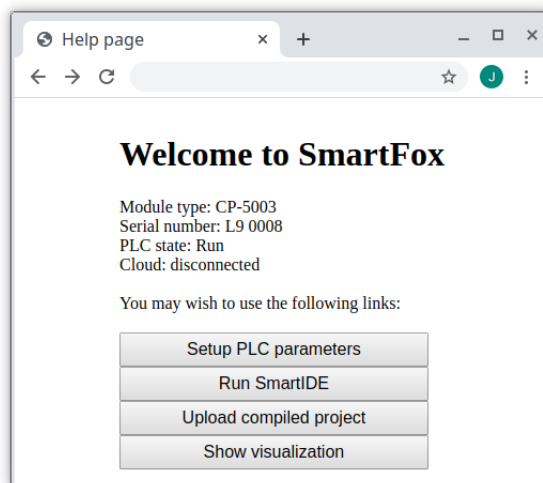
If your PLC is equipped with display, you can use arrow buttons UP and DOWN to show system menu and navigate to item "Ethernet". Press ENTER to open selected category. Here you can see or change current IP address, DHCP state and other parameters of the Ethernet interface.

By default SmartFox PLCs use MDNS protocol, so you don't need to know it's IP address to be able to open connection within your local network. Default name is "smartfox", you can use address "smartfox.local" instead of actual IP address of the PLC module. Please note that the operating system of the computer that is opening the connection should support MDNS protocol. If this is not working, please look at actual IP address in the system menu of the PLC and use this IP address for the connection.

Running the IDE

Tecomat SmartFox PLCs open a new era of easy and intuitive PLC programming. No programming knowledge is required for first steps, you will be able to make simple projects within minutes. These PLCs are being programmed by SmartIDE, intuitive tool that runs within your web browser. SmartIDE is tested with the latest versions of Chrome browser, so Chrome is the preferred environment, but it may also work in Firefox, Edge, Safari and probably others. SmartIDE can run on PC computers running Windows, Linux, MacOS, but also on tablet or even smart phone with Android or iOS operating system.

To connect to your SmartFox PLC, open web browser and to the address locator type "http://smartfox.local". You should see a web page from the PLC:



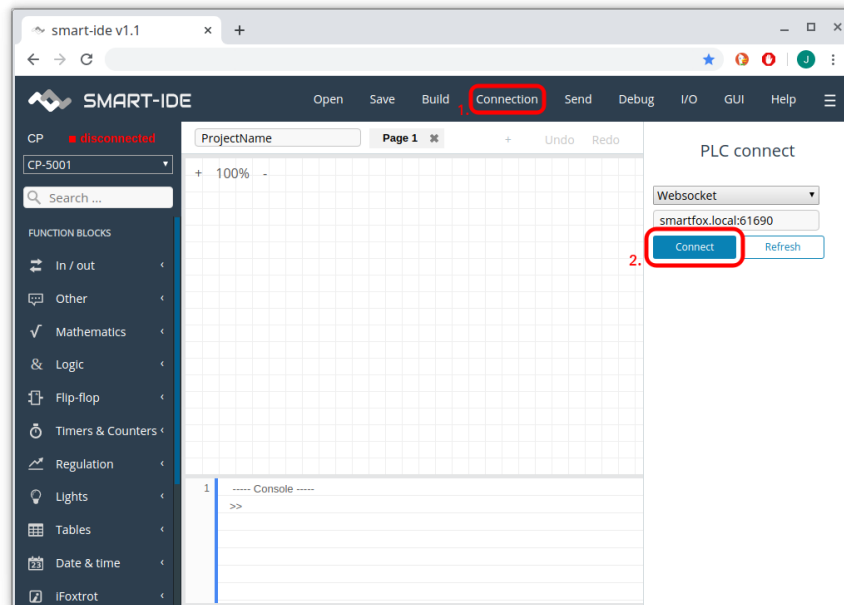
If you can see this page, it's a proof that the connection is working. In case of problem, please try to find actual IP address of the PLC and use it to open the page.

Now click on button "Run SmartIDE". This will redirect web browser to current stable version of the SmartIDE environment. Please note that SmartIDE resides on an external web server, so Internet connection is required in order to open it.

If SmartIDE is loaded, you are asked for your user name and password. SmartIDE is free of charge, but requires user authentication in order to run. If you don't have your password yet, please contact your SmartFox provider.

At the time of writing these lines, there may be a problem opening SmartIDE. In some cases, Chrome prefers https connection instead of http, but current version of PLC firmware can't handle it, this should be possible in future firmware versions. In this case Chrome shows an error page, reporting problem with security certificate. In this case please click with right mouse button in the page region and from the drop-down menu select the last option "Examine" to open the page with tools for developers. You can also press Ctrl+Shift+I to enter this mode. Then correct URL address from https back to http. Press down left mouse button over a reload icon next to the address line. Keep the button pressed and a context menu should appear. Select the last item "Clear cache and complete page reload". Now you should be connected with http protocol. Close developer panel and you are ready to use the IDE.

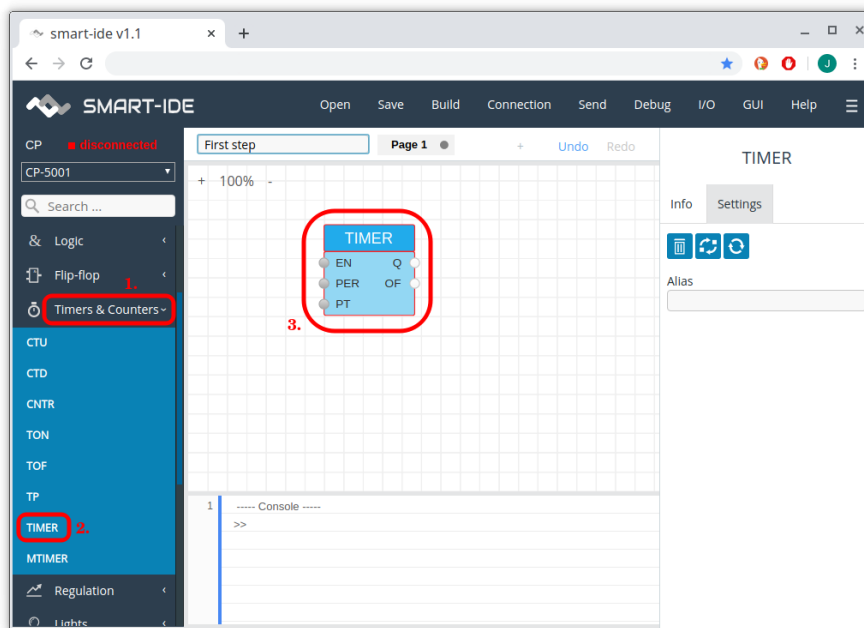
Now click on menu item "Connection" and in the right panel click on button "Connect". IDE should open connection to the PLC and show PLC status. If there was a problem with MDNS, you can replace "smartfox.local" with actual IP address of the PLC. If the IDE is run over http protocol (and not https) and PLC is connected to the local network, this should always work. Another option is to connect over Teco cloud, but cloud connection must be enabled in the PLC. With this option, you can connect to your PLC anywhere, even with the https connection.



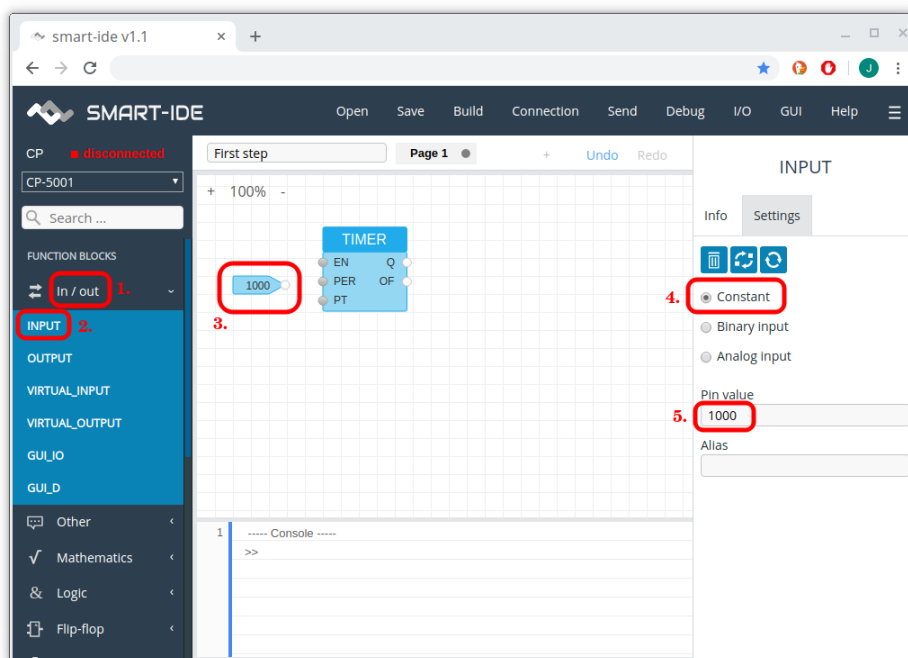
Creating a Simple Project

When SmartIDE is successfully connected to the PLC, it's a right time to start with our first simple project. The programming is based on using predefined blocks from the library and connecting their pins with nets. If a more complex or custom behaviour is required, there is a special block "SCRIPT", that can be used to write user program in a more traditional way using a text-based programming language.

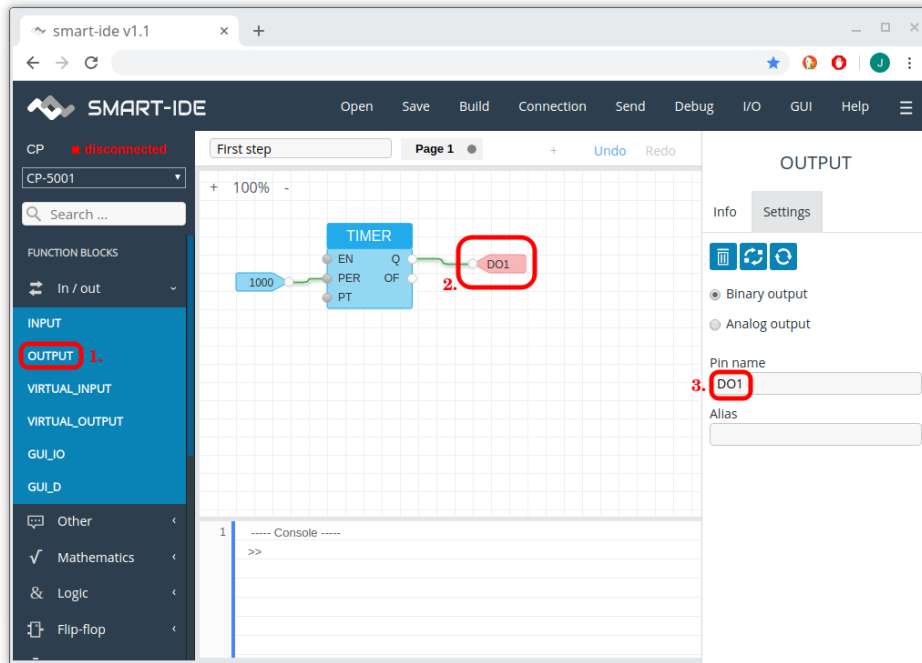
Let's start with a project name. Above the drawing surface, there is a field with text "ProjectName". This is the default name of a new project. Click here and replace the text with "First step", this will be the name of our new project. In the left panel, there is a library with function blocks. Click on the "Timers & counters" category and drag block "Timer" to the drawing surface.



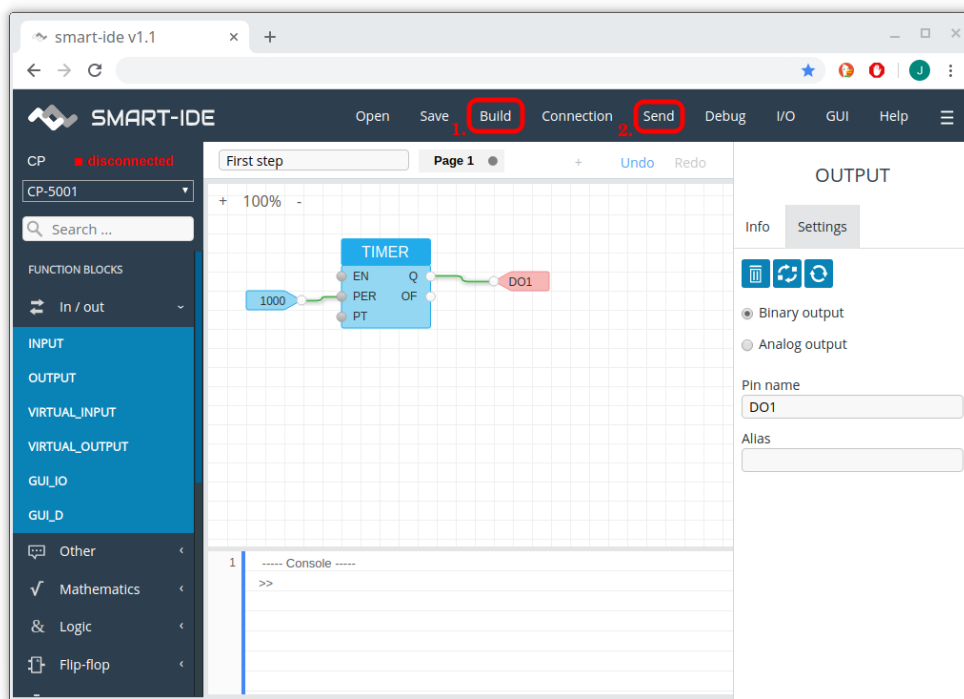
Block "Timer" can produce periodic pulses with desired period. We will use it to periodically click with the relay output. Now click on category "In / out" and drag block "INPUT" to the drawing surface. In the right panel, there are options of the selected block. Click on "Constant" and set value to 1000. We want our timer to work with period of 1000ms.



Now drag the bullet of our block "1000" to the bullet of timer's "PER" input to connect them with a net. From the left panel, drag block "OUTPUT" to the drawing surface. In the right panel, set pin name to "DO1". This should be the first relay output of our PLC. Drag the bullet of our block "DO1" to the bullet of timer's "Q" output.



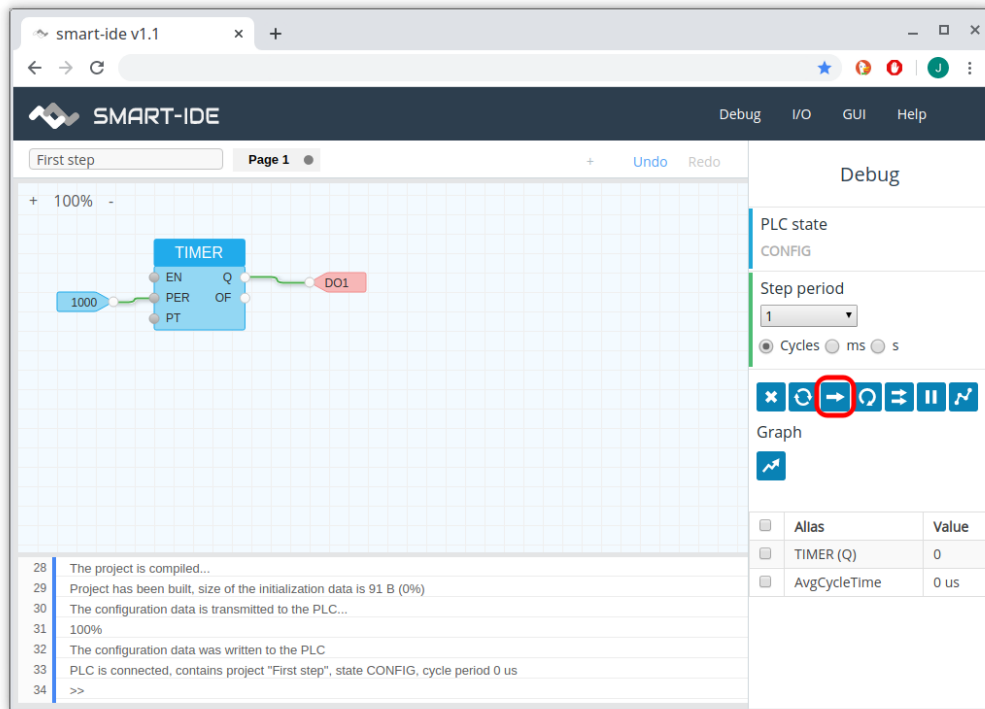
Now we have a timer that generates periodic 1s pulses, that feed relay output. It's a time to test our project. Click on the "Build" item in the top menu, the project should be compiled. If you are not connected to the PLC, click on the "Connect" button in the right panel. Now click on the "Send" item and the project should be sent to the PLC.



If there is a message that the compiled project doesn't agree with the project in PLC, please click "Build" and "Send" again. Now the debugger is being open and we are ready to test our work.

Click on the arrow button to run PLC. Now the timer output net turns red and green periodically according to the actual timer output value. If your PLC is equipped with a relay

output, you should hear it's clicks. If the output values stop changing during the debug session, please click the arrow button again to ask PLC to send debug information.



When you are done, click the cross button in the debug panel to close the debugger. Now you can modify or save your project.

Conclusion

Congratulations, you have successfully managed your first SmartFox PLC project! Now you can examine the function block library and program your PLC according to your needs. Good luck!