OpenPLC

Runtime setup

Raspberry Pi
Pi - F5 / T5

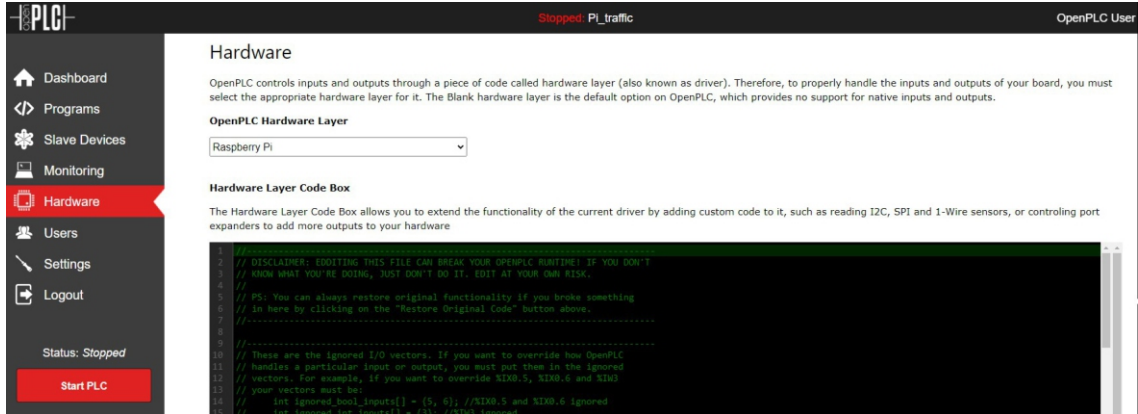## 1. Raspberry Pi - F5 / Pi - T5

Install OpenPLC on Raspberry Pi:
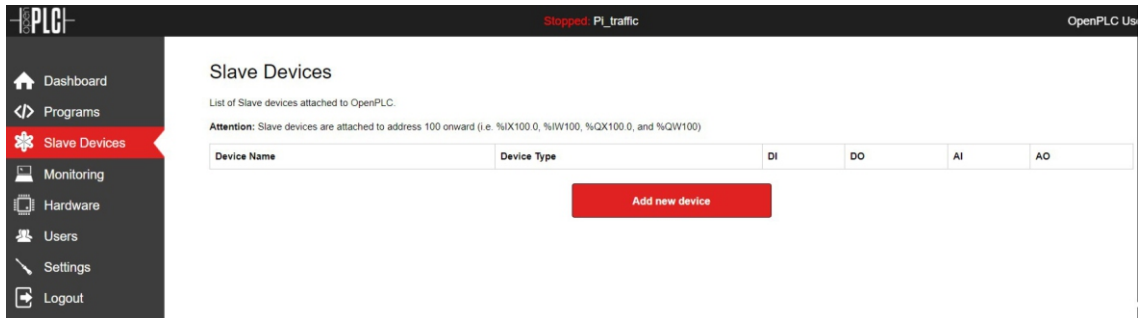
OpenPLC Home site for Raspberry: https://www.openplcproject.com/runtime/raspberry-pi/
Copy raspberrypi.cpp (in downloaded zip file) to /home/pi/OpenPLC_v3/webserver/core/hardware_layers

Start Runtime in web browser with IP address (Pi or PC connected to Pi IP).

Hardware setup to: Raspberry Pi

Slave Device to: no device

Inputs and Outputs default setting:

DI - digital inputs   (5,6,16,17,18,19,26,27) ....%IX0.0 - %IX0.7
DO - digital ouputs   (23,22,25,24,13,12,21,20) ......%QX0.0 - %QX0.7
AI   - analog inputs   (A0,A1,A2,A3) ....%IW0 - %IW3

Raspberry Pi - F5 / T5		
Digital Inputs	**Location**	**Type**
5	%IX0.0	BOOL
6	%IX0.1	BOOL
16	%IX0.2	BOOL
17	%IX0.3	BOOL
18	%IX0.4	BOOL
19	%IX0.5	BOOL
26	%IX0.6	BOOL
27	%IX0.7	BOOL
Analog Inputs	**Location**	**Type**
A0	%Iw0	UINT
A1	%IW1	UINT
A2	%IW2	UINT
A3	%IW3	UINT
Outputs		
23	%QX0.0	BOOL
22	%QX0.1	BOOL
25	%QX0.2	BOOL
24	%QX0.3	BOOL
13	%QX0.4	BOOL
12	%QX0.5	BOOL
21	%QX0.6	BOOL
20	%QX0.7	BOOL

Settings: default

Uploaded programs list.

Uploaded program is running.

2. Raspberry Pi test program Pi - F5 / Pi -T5

Pi_LED ×

Description: [ ]   Class Filter: All

| #	Name	Class	Type	Location	Initial Value	Option	D
1	out_23	Local	BOOL	%QX0.0	false		
2	out_22	Local	BOOL	%QX0.1	false		
3	out_25	Local	BOOL	%QX0.2	false		
4	out_24	Local	BOOL	%QX0.3	false		
5	out_13	Local	BOOL	%QX0.4	false		
6	out_12	Local	BOOL	%QX0.5	false		
7	out_21	Local	BOOL	%QX0.6	false		
8	out_20	Local	BOOL	%QX0.7	false		
9	inp_a5	Local	BOOL	%IX0.0	false		5
10	inp_a6	Local	BOOL	%IX0.1	false		5
11	inp_a16	Local	BOOL	%IX0.2	false		5
12	inp_a17	Local	BOOL	%IX0.3	false		5
13	inp_a18	Local	BOOL	%IX0.4	false		5
14	inp_a19	Local	BOOL	%IX0.5	false		5
15	inp_a26	Local	BOOL	%IX0.6	false		5
16	inp_a27	Local	BOOL	%IX0.7	false		5
17	TOF0	Local	TOF				
18	TOF1	Local	TOF				
19	TOF2	Local	TOF				
20	TOF3	Local	TOF				
21	TOF4	Local	TOF				
22	TOF5	Local	TOF				
23	TOF6	Local	TOF				
24	TOF7	Local	TOF				
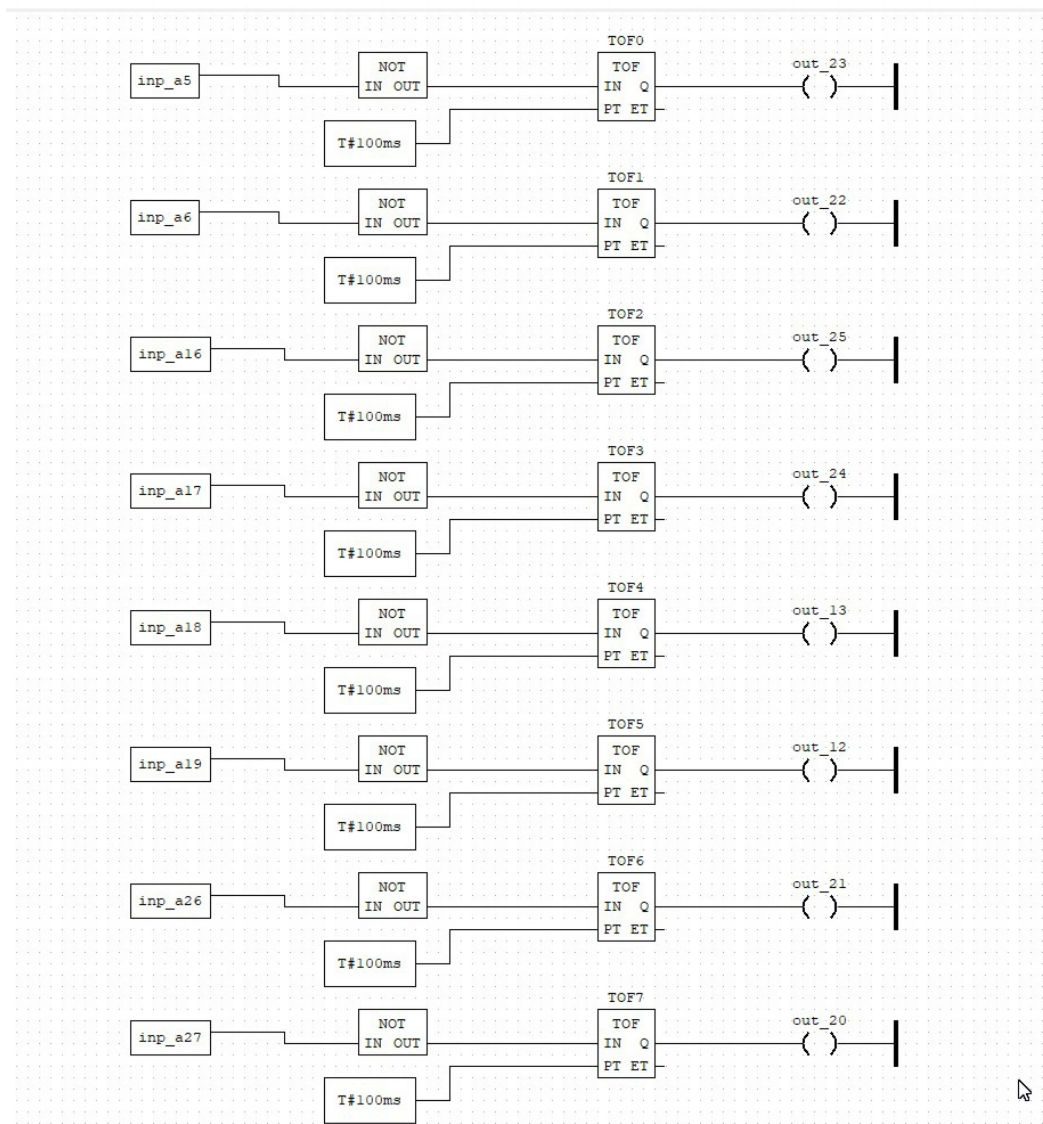
Connect inp_a27 to GND and LED on out_20 will start to light for 100ms. Same for all other.

3. Analog inputs - sample program for color sensor
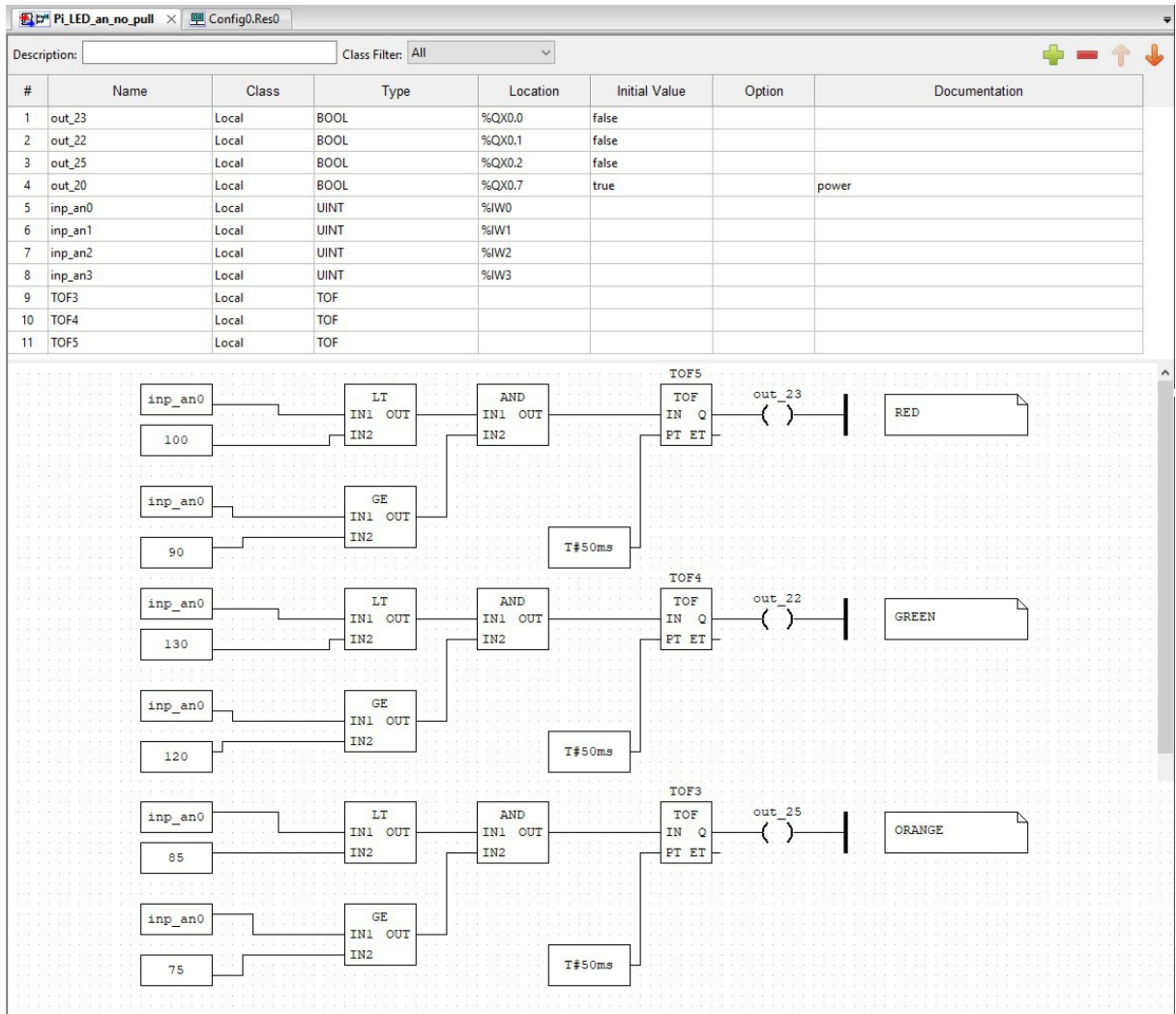
4. Removing PULL UP resistors

Some sensors will work better if no PULL UP resistor (COLOR) is connected to the inputs. If you decide to remove the PUL UP sensor, we recommend that you do so only at one or max. two inputs. If the input does not have a PULL UP or PULL DOWN resistor, the input will have a floating signal between 0 - 3.3V until we connect a sensor to it.
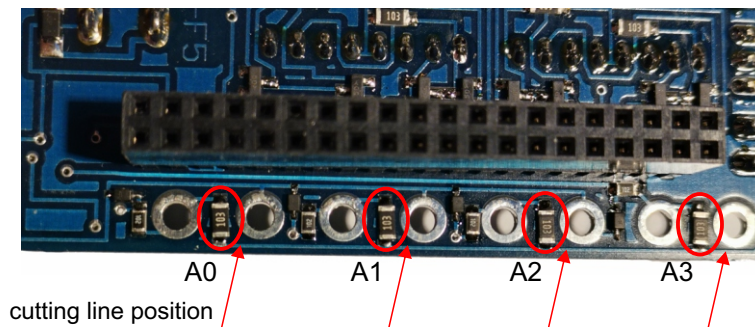
PULL UP resistors

You can remove the PULL UP resistors by desoldering them, or by cutting the wire to which they are connected. If you want to remove the resistor for the A0 input, cut the line only at the position next to the resistor. If you want to remove the resistors for inputs A0 and A1 you have to cut the lines in both places next to the PULL UP resistors. The same goes for the other resistors you want to remove.