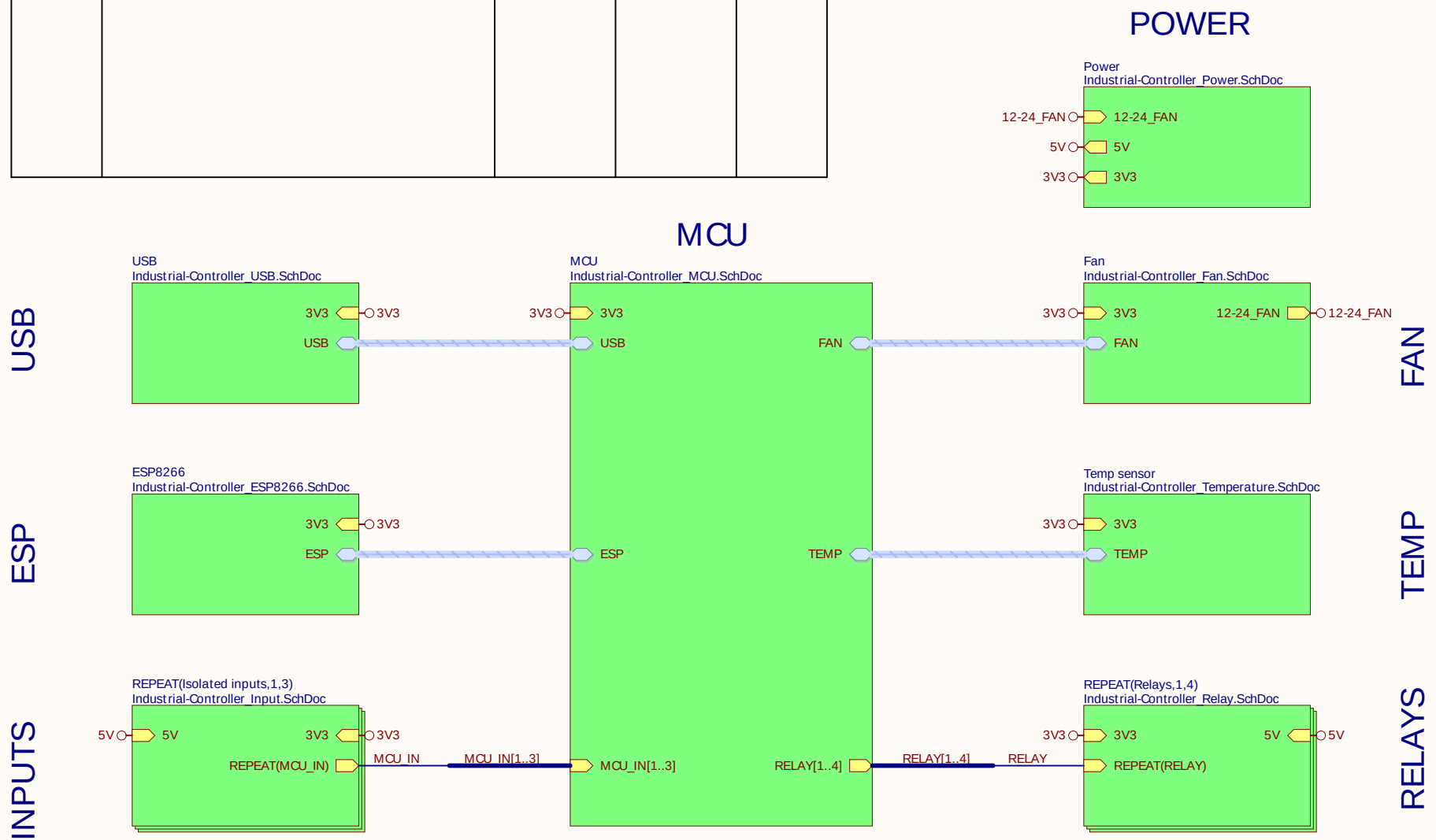
REVISION	DESCRIPTION	DATE	ECO	ENGINEER
0.1.0	Prototype	10/17/2022	0000	Podlesnyi V.S.



Title: Overview			MRobot, LCC nab. reki Karpovki, d. 5/3E Saint-Petersburg, 197022 Ph: +7 (911) 701-51-99
Project: Industrial PLC			
Size A	Number: 0000-0000	Revision 0.1.0	Engineer: Podlesnyi Vasilii
Date: 23.10.2022 Time: 11:58:37		Sheet 2 of 21	
File: Industrial-Controller_Overview.SchDoc			

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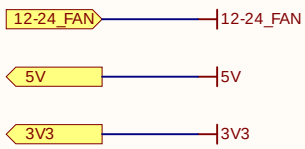

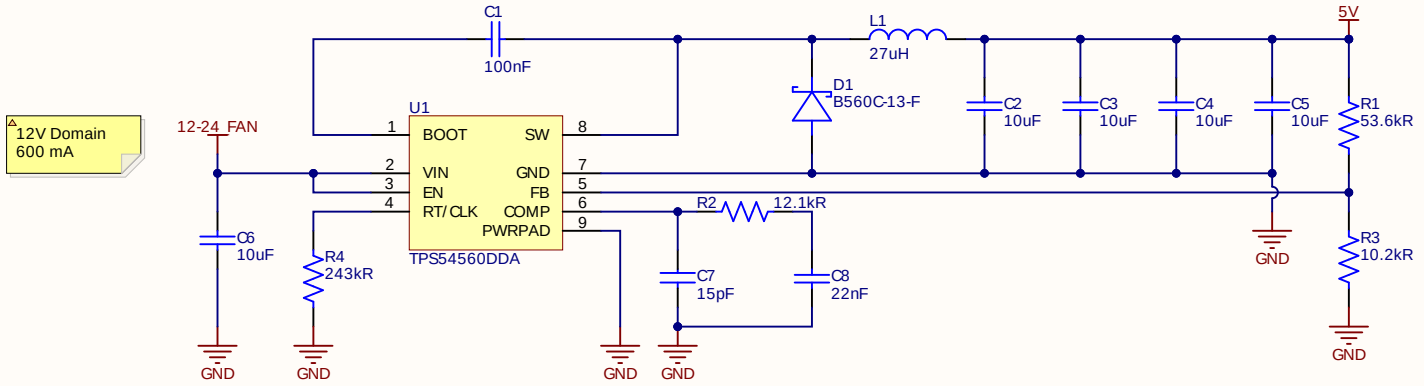

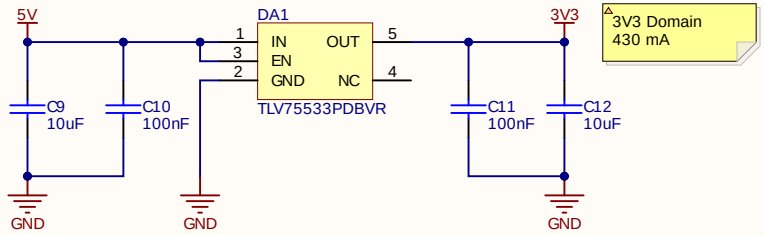

5V domain
1.2A

Inductor ripple current:
Iout max = 1.2A
L = 22 uH
Vin max = 24B
V out = 5B
f = 400 kHz

dIL = 0.37 A = 30% I outmax

Inrush current:
Cout = 40 uF
Vout = 5 V
tss = 3 ms

Iinrush = 0.07A

Inductor peak current:
Iout max = 1.2 A
dIL = 0.37 A
Iinrush = 0.07A

IL peak = 1.2A + 0.37A/2 + 0.07A= 1.46 A

Inductor saturation current:
IL peak = 1.5 A

IL sat= 1.5 * IL peak = 1.5 * 1.5 A = 2.2 A

Cout:
dVout = 1%Vout = 0.05 V
dIL = 30%Iout = 0.45 A
f = 400 kHz

Cout = 2.8 uF

Title: Power			MRobot, LCC nab. reki Karpovki, d. 5/3E Saint-Petersburg, 197022 Ph: +7 (911) 701-51-99
Project: Industrial PLC			
Size A	Number: 0000-0000	Revision 0.1.0	Engineer: Podlesnyi Vasilii
Date: 23.10.2022 Time: 11:58:38		Sheet 3 of 21	
File: Industrial-Controller_Power.SchDoc			

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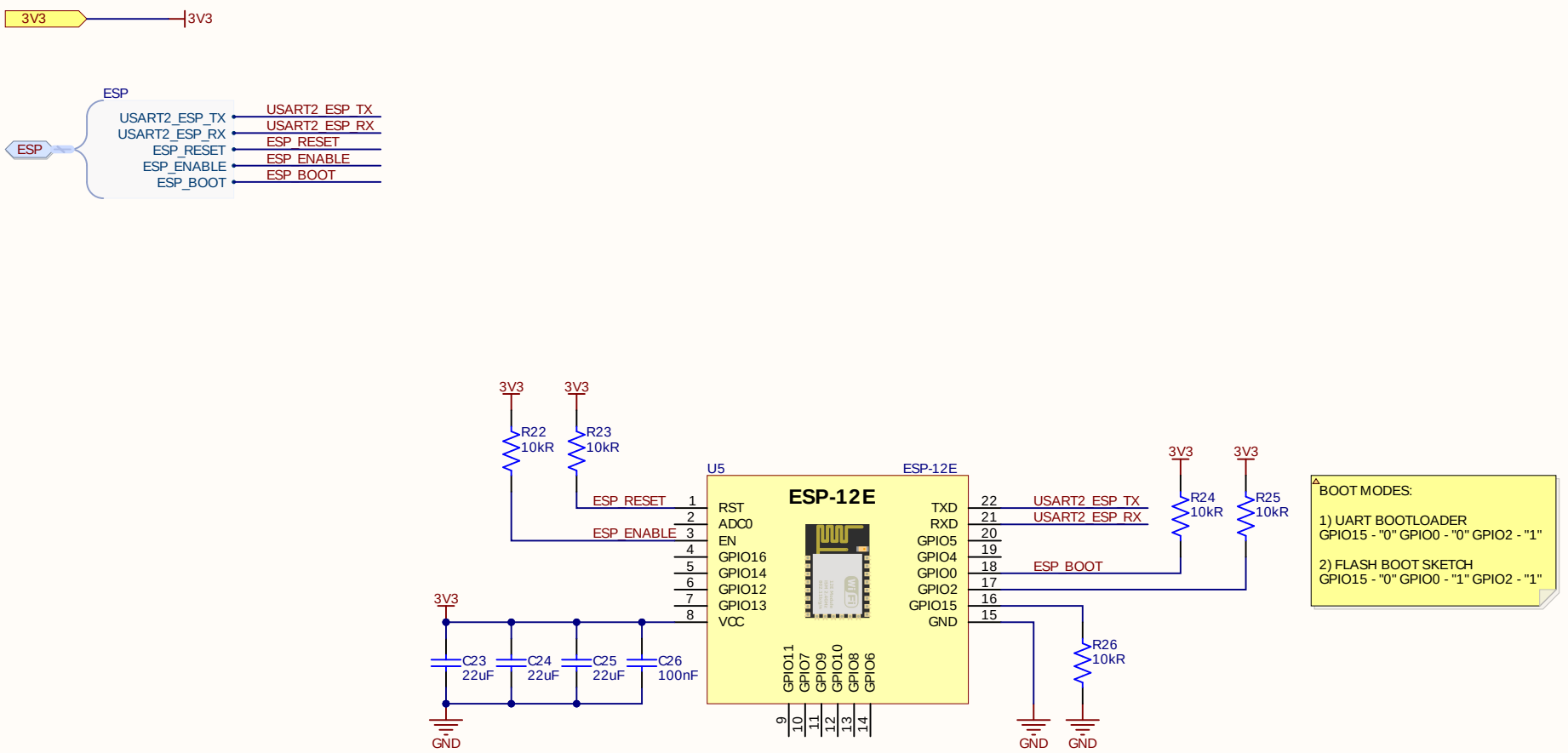

Title: ESP8266			MRobot, LCC nab. reki Karpovki, d. 5/3E Saint-Petersburg, 197022 Ph: +7 (911) 701-51-99
Project: Industrial PLC			
Size A	Number: 0000-0000	Revision 0.1.0	Engineer: Podlesnyi Vasilii
Date: 23.10.2022 Time: 11:58:38		Sheet 13 of 21	
File: Industrial-Controller_ESP8266.SchDoc			

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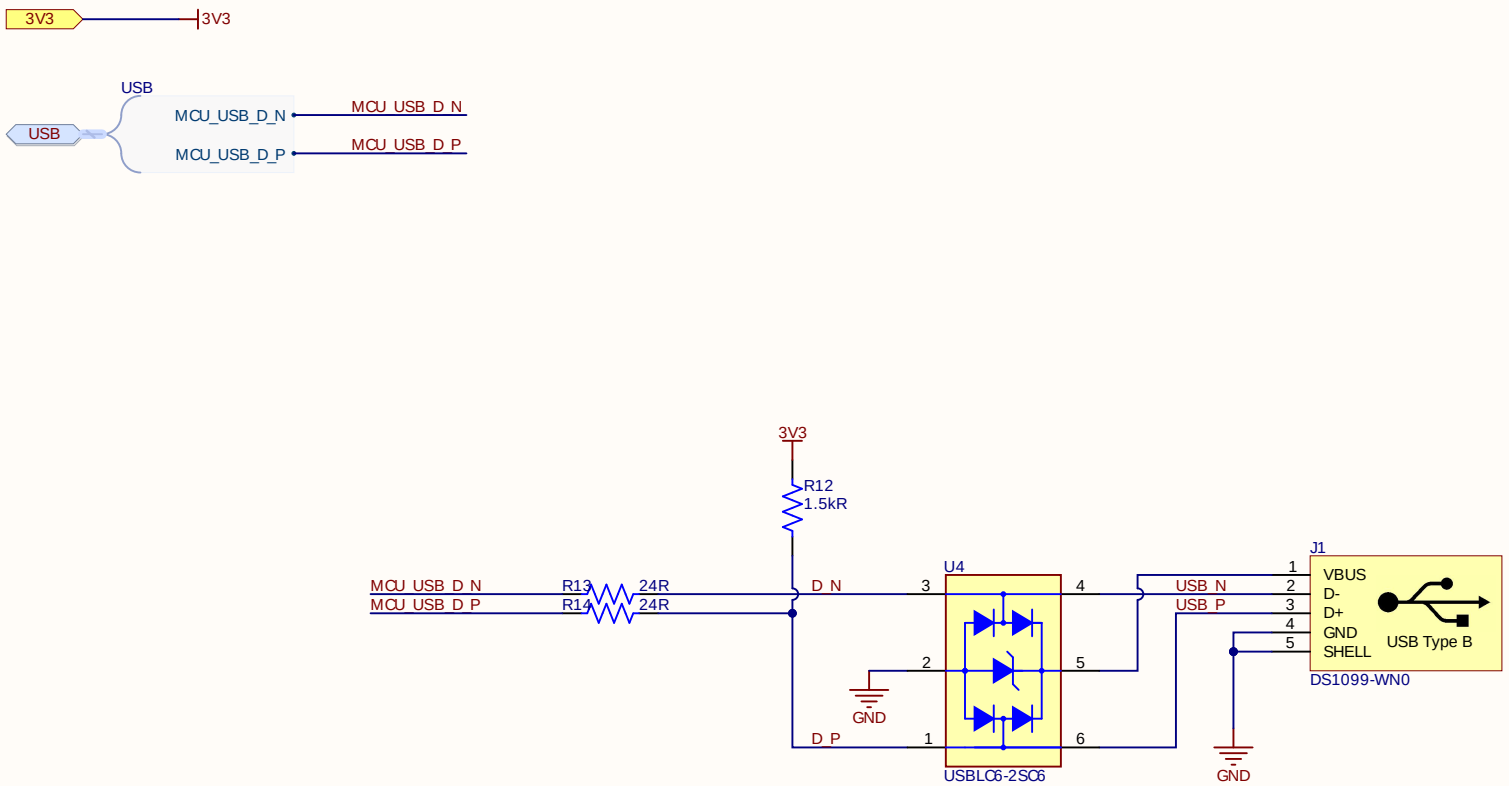

Title: USB			MRobot, LCC nab. reki Karpovki, d. 5/3E Saint-Petersburg, 197022 Ph: +7 (911) 701-51-99
Project: Industrial PLC			
Size A	Number: 0000-0000	Revision 0.1.0	Engineer: Podlesnyi Vasilii
Date: 23.10.2022 Time: 11:58:38		Sheet 14 of 21	
File: Industrial-Controller_USB.SchDoc			

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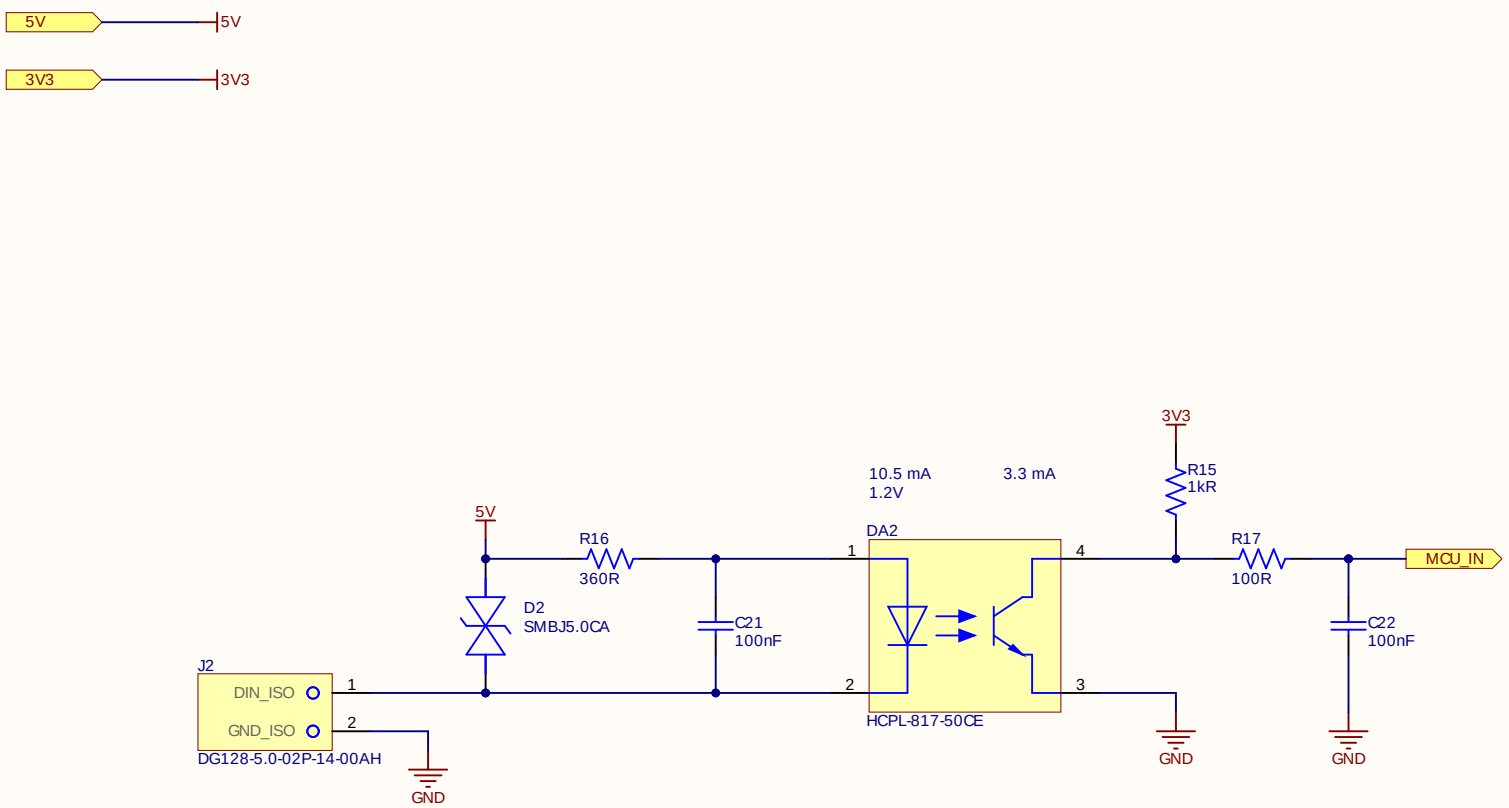

Title: Isolated inputs			MRobot, LCC nab. reki Karpovki, d. 5/3E Saint-Petersburg, 197022 Ph: +7 (911) 701-51-99
Project: Industrial PLC			
Size A	Number: 0000-0000	Revision 0.1.0	Engineer: Podlesnyi Vasilii
Date: 23.10.2022 Time: 11:58:38		Sheet 17 of 21	
File: Industrial-Controller_Input.SchDoc			

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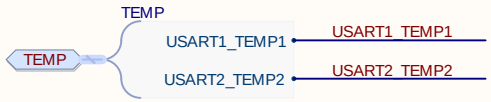

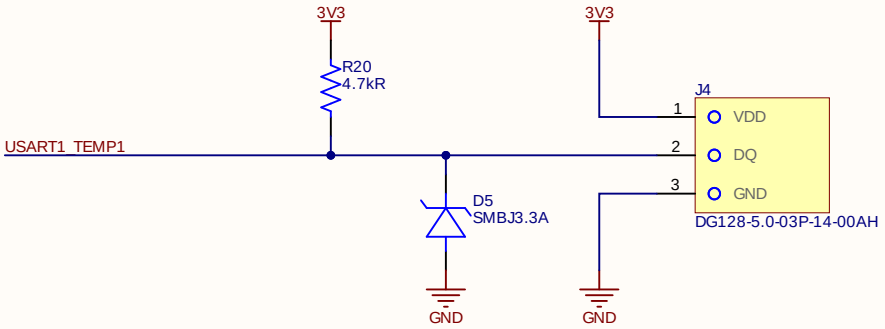

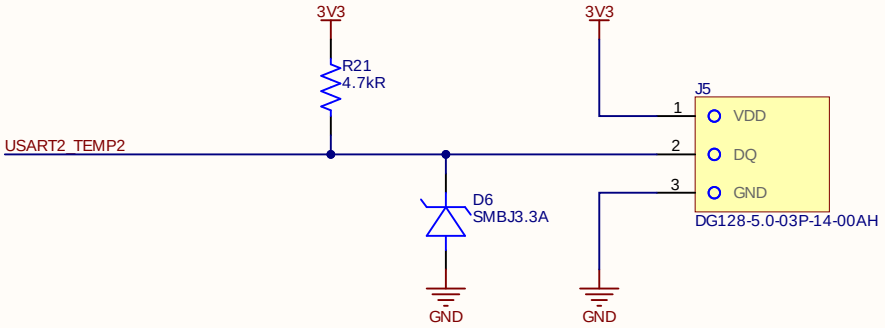

Title: Temp sensor			MRobot, LCC nab. reki Karpovki, d. 5/3E Saint-Petersburg, 197022 Ph: +7 (911) 701-51-99
Project: Industrial PLC			
Size A	Number: 0000-0000	Revision 0.1.0	Engineer: Podlesnyi Vasilii
Date: 23.10.2022 Time: 11:58:38		Sheet 18 of 21	
File: Industrial-Controller_Temperature.SchDoc			

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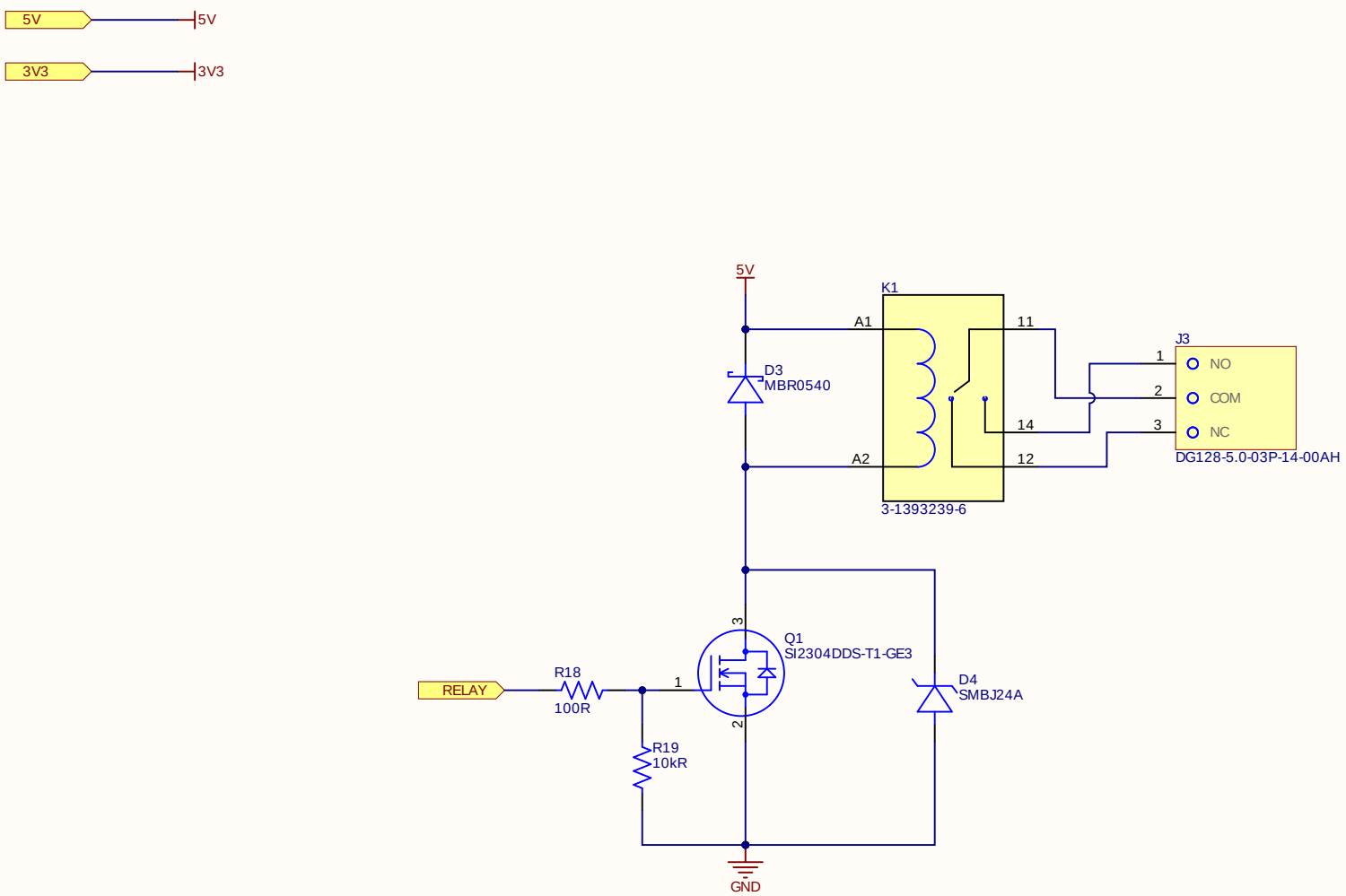

Title: Relays			MRobot, LCC nab. reki Karpovki, d. 5/3E Saint-Petersburg, 197022 Ph: +7 (911) 701-51-99
Project: Industrial PLC			
Size A	Number: 0000-0000	Revision 0.1.0	Engineer: Podlesnyi Vasilii
Date: 23.10.2022 Time: 11:58:38		Sheet 19 of 21	
File: Industrial-Controller_Relay.SchDoc			

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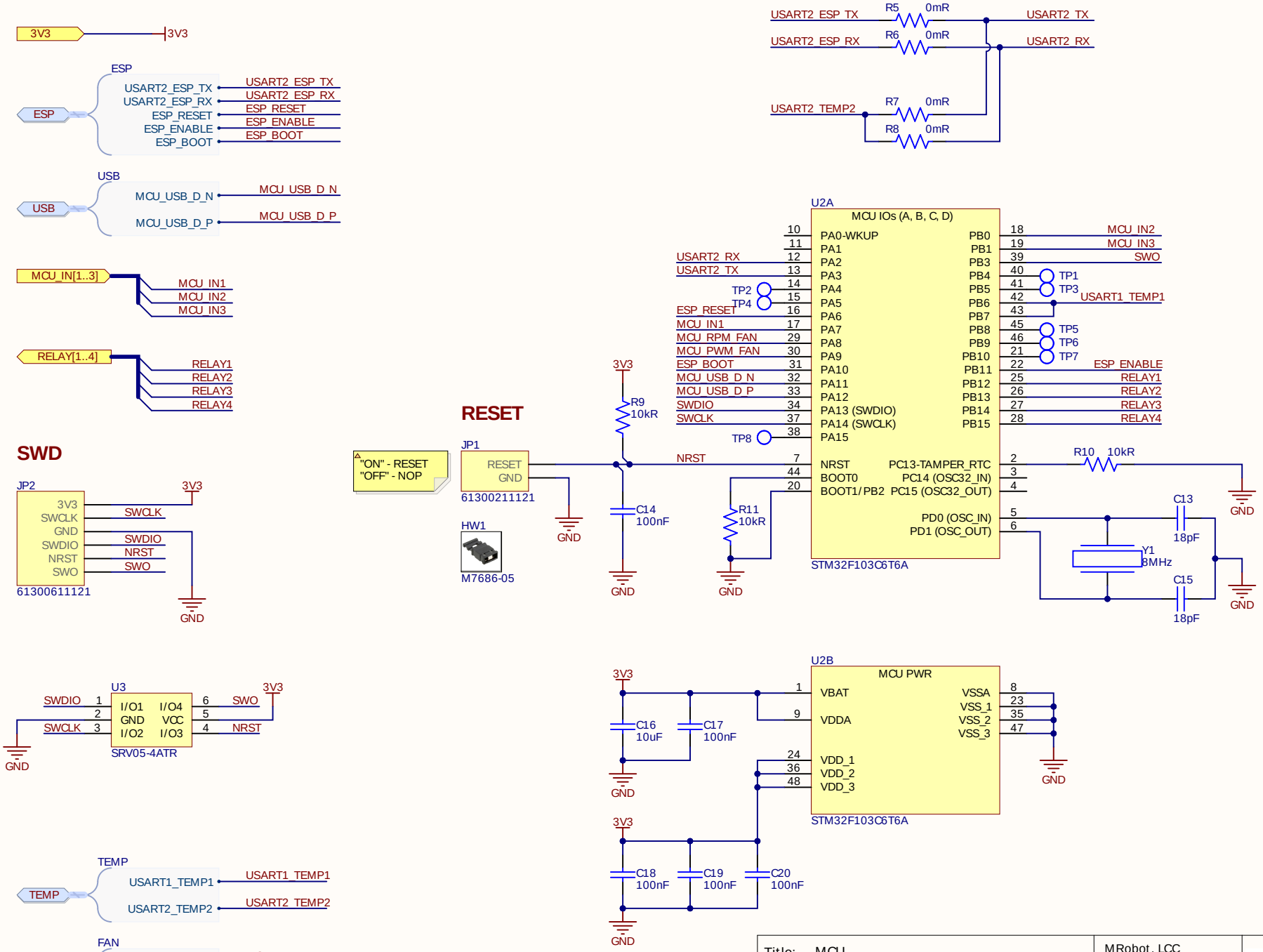

Title: MCU			MRobot, LCC nab. reki Karpovki, d. 5/ 3E Saint-Petersburg, 197022 Ph: +7 (911) 701-51-99
Project: Industrial PLC			
Size A	Number: 0000-0000	Revision 0.1.0	Engineer: Podlesnyi Vasilii
Date: 23.10.2022 Time: 11:58:38		Sheet 19 of 21	
File: Industrial-Controller_MCU.SchDoc			

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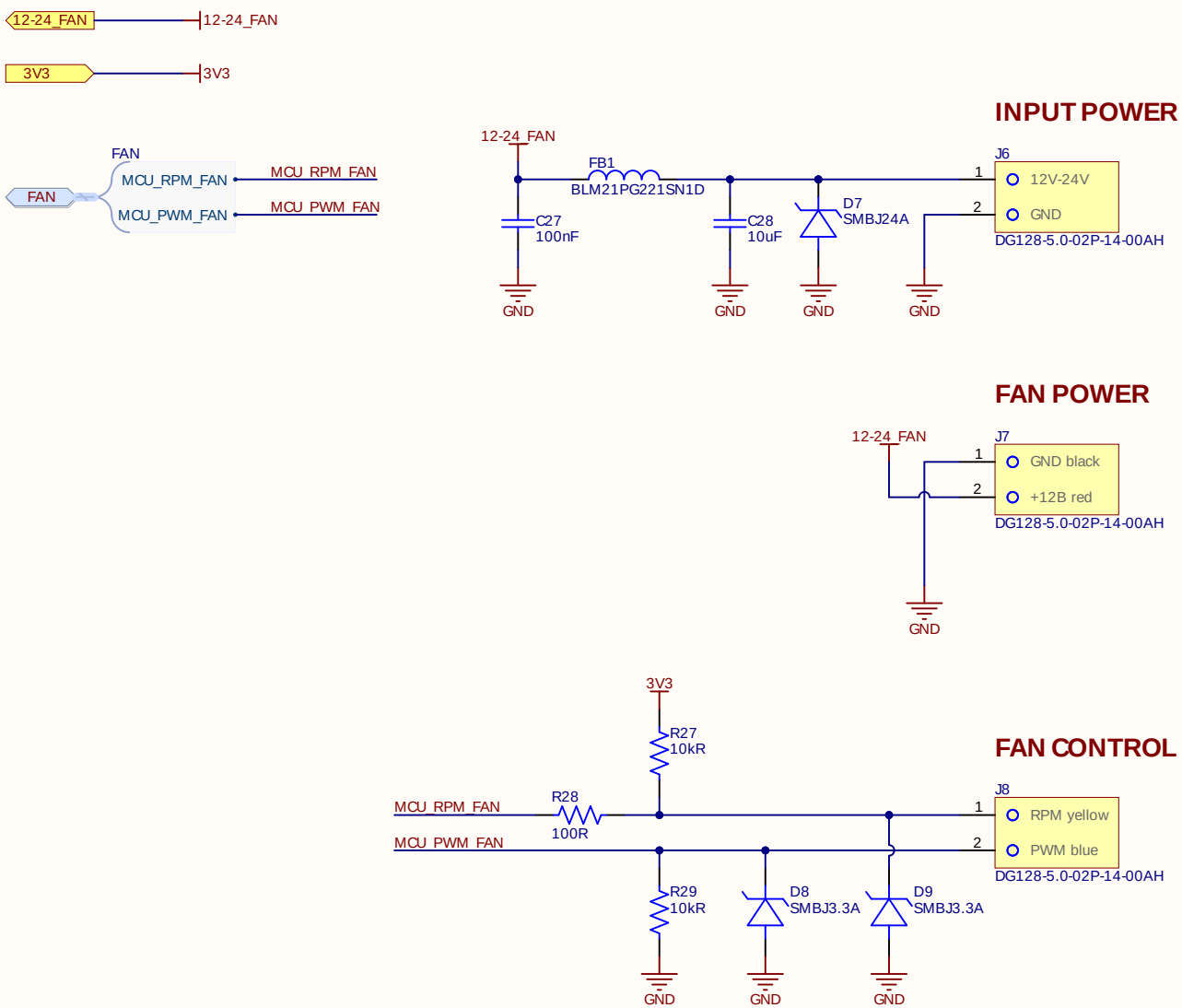

Title: Fan			MRobot, LCC nab. reki Karpovki, d. 5/3E Saint-Petersburg, 197022 Ph: +7 (911) 701-51-99
Project: Industrial PLC			
Size A	Number: 0000-0000	Revision 0.1.0	Engineer: Podlesnyi Vasilii
Date: 23.10.2022 Time: 11:58:38		Sheet 20 of 21	
File: Industrial-Controller_Fan.SchDoc			

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