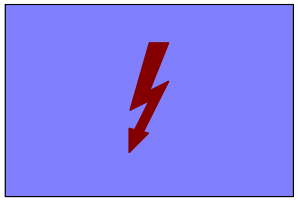
INA CONTROL & ALARM BOARD

Power

Power



File: power.kicad_sch

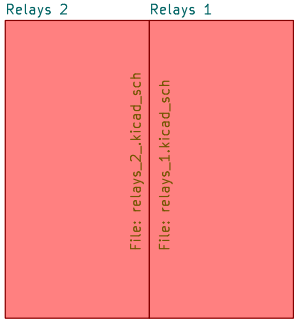
UART to USB

UART to USB

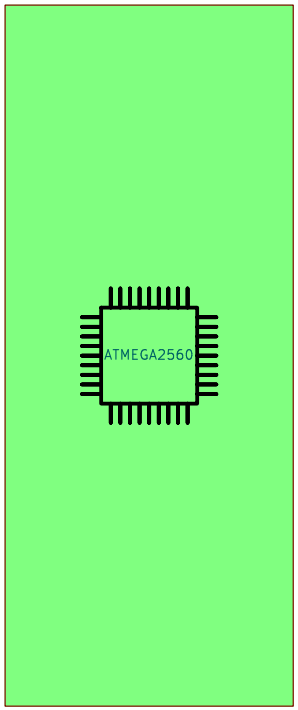
File: CP2102.kicad_sch

Relays

Relays 2 Relays 1



MCU



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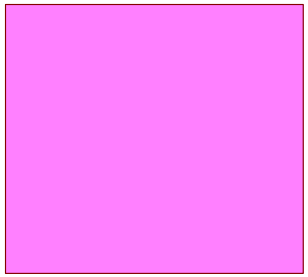
Current Sensors

Current Sensors



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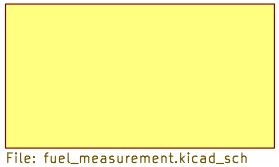
Fuel Measurement

Fuel Measurement



File: fuel_measurement.kicad_sch

Modbus

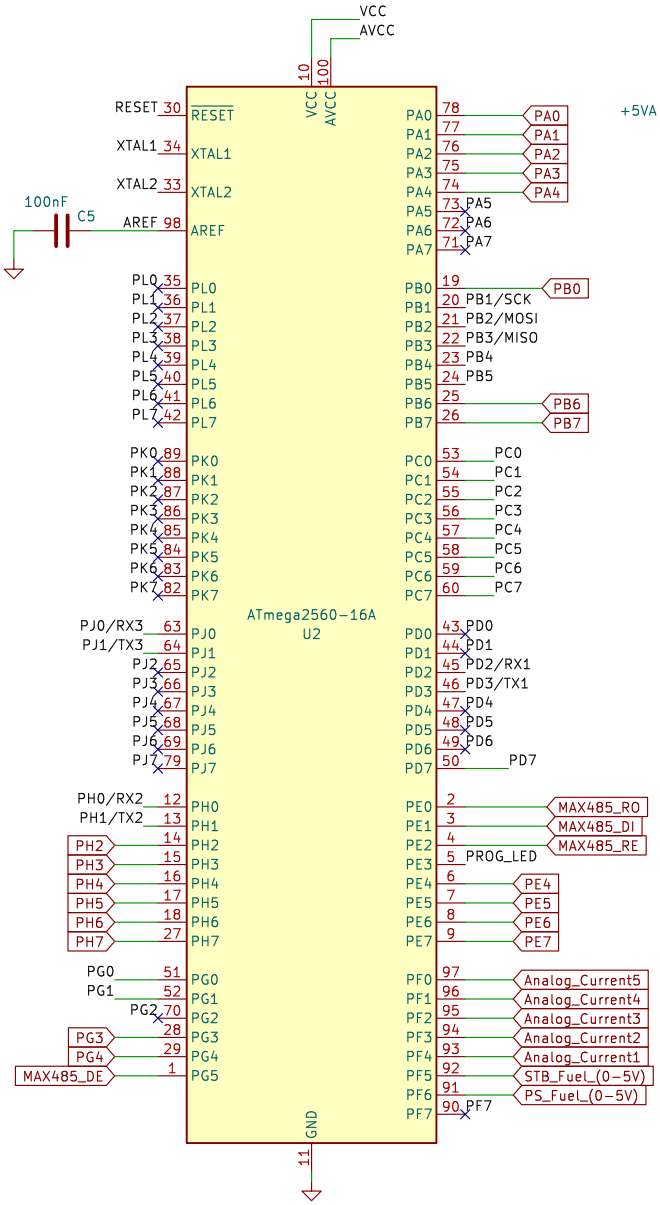
MAX485

File: max485.kicad_sch

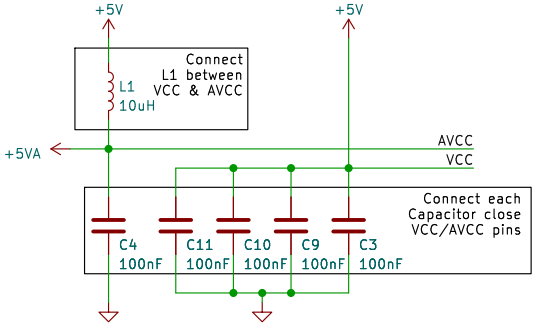
Designed by Emin Berk Ünal

OES Maritime Systems Eng. Ltd. Sti.		
Sheet: /		
File: HMI_Board_V2.kicad_sch		
Title: Main		
Size: A4	Date: 2023-05-16	**Rev: 2**
KiCad E.D.A. kicad 7.0.1		Id: 1/9

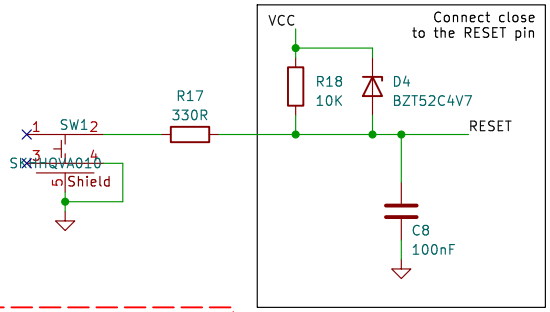
ATmega2560-16A



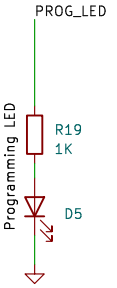
Power Decoupling



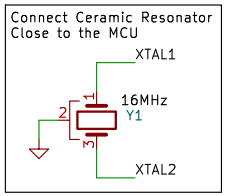
External RESET



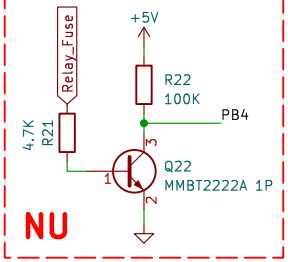
Programming LED



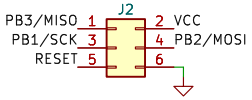
Ceramic Resonator



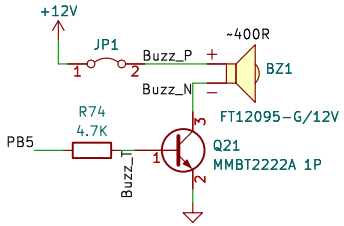
Relay Power Fuse Control



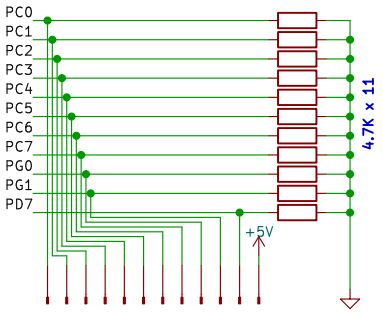
ISP Programmer



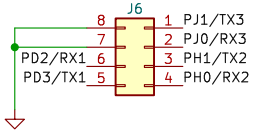
Buzzer



Input Surface Connectors



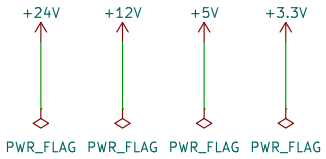
UART Connector

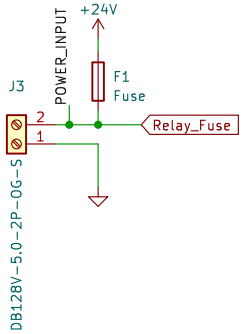


Designed by Emin Berk Ünal

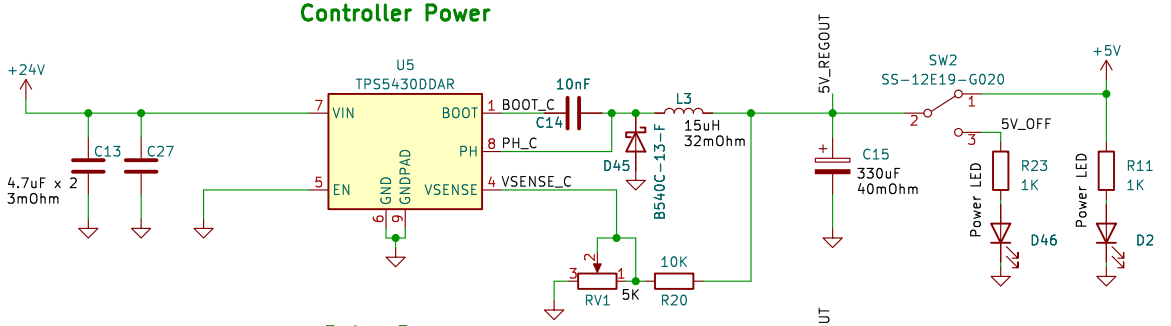
OES Maritime Systems Eng. Ltd. Sti.		
Sheet: /ATMEGA2560/		
File: atmega2560.kicad_sch		
Title: MCU		
Size: A4	Date: 2023-05-16	**Rev: 2**
KiCad E.D.A. kicad 7.0.1		Id: 1/9

Power Flags

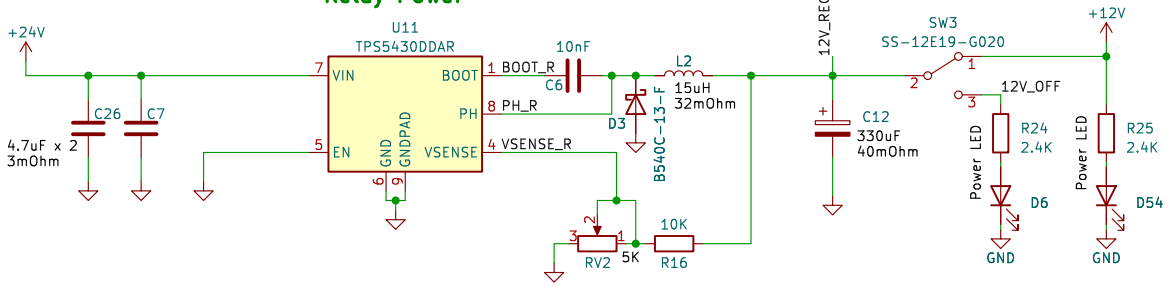




Controller Power

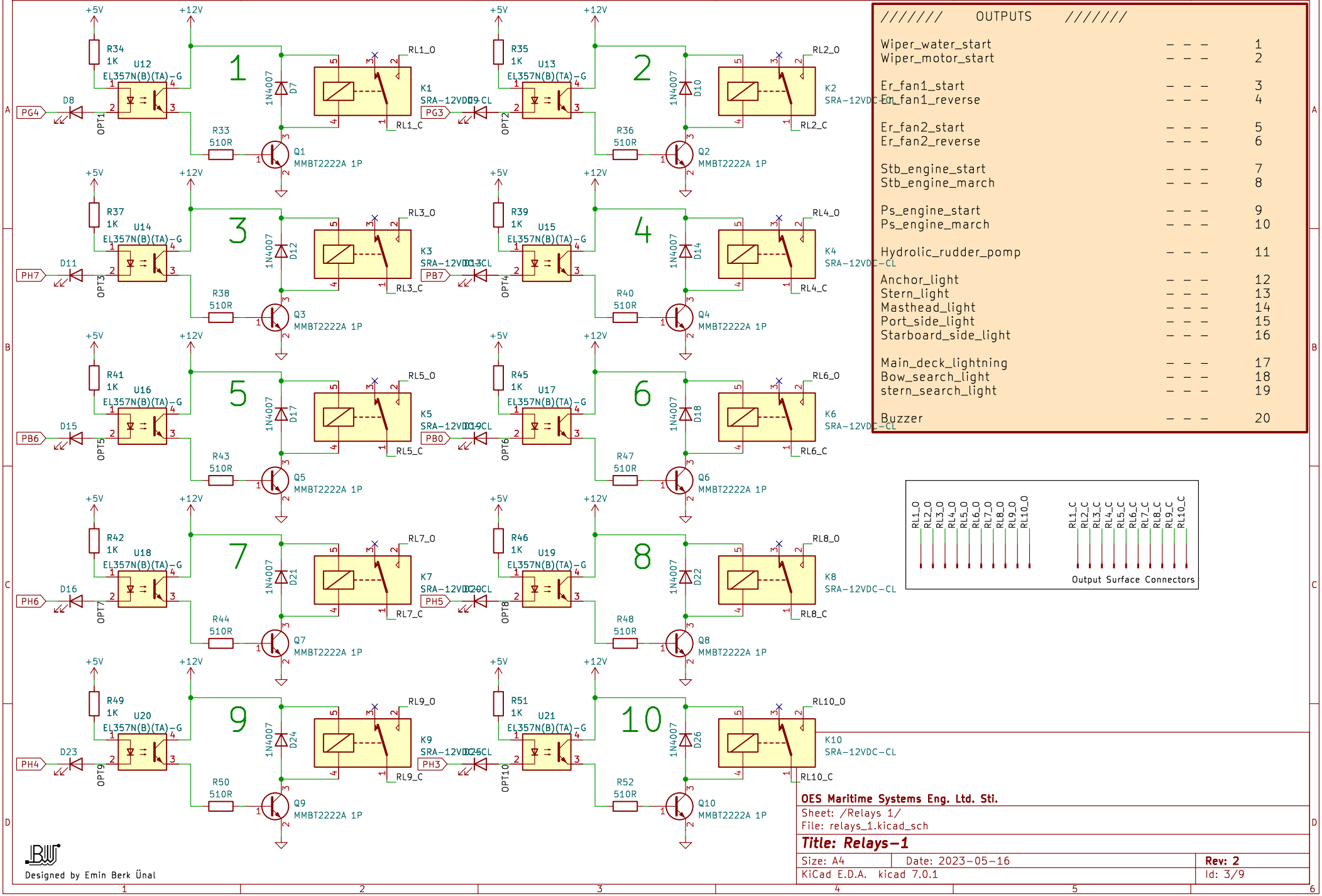


Relay Power



Designed by Emin Berk Ünal

OES Maritime Systems Eng. Ltd. Sti.		
Sheet: /Power/ File: power.kicad_sch		
Title: Power		
Size: A4	Date: 2023-05-16	**Rev: 2**
KiCad E.D.A. kicad 7.0.1		Id: 2/9



/////// OUTPUTS ///////		
Wiper_water_start	– – –	1
Wiper_motor_start	– – –	2
Er_fan1_start	– – –	3
Er_fan1_reverse	– – –	4
Er_fan2_start	– – –	5
Er_fan2_reverse	– – –	6
Stb_engine_start	– – –	7
Stb_engine_march	– – –	8
Ps_engine_start	– – –	9
Ps_engine_march	– – –	10
Hydrolic_rudder_pomp	– – –	11
Anchor_light	– – –	12
Stern_light	– – –	13
Masthead_light	– – –	14
Port_side_light	– – –	15
Starboard_side_light	– – –	16
Main_deck_lightning	– – –	17
Bow_search_light	– – –	18
stern_search_light	– – –	19
Buzzer	– – –	20

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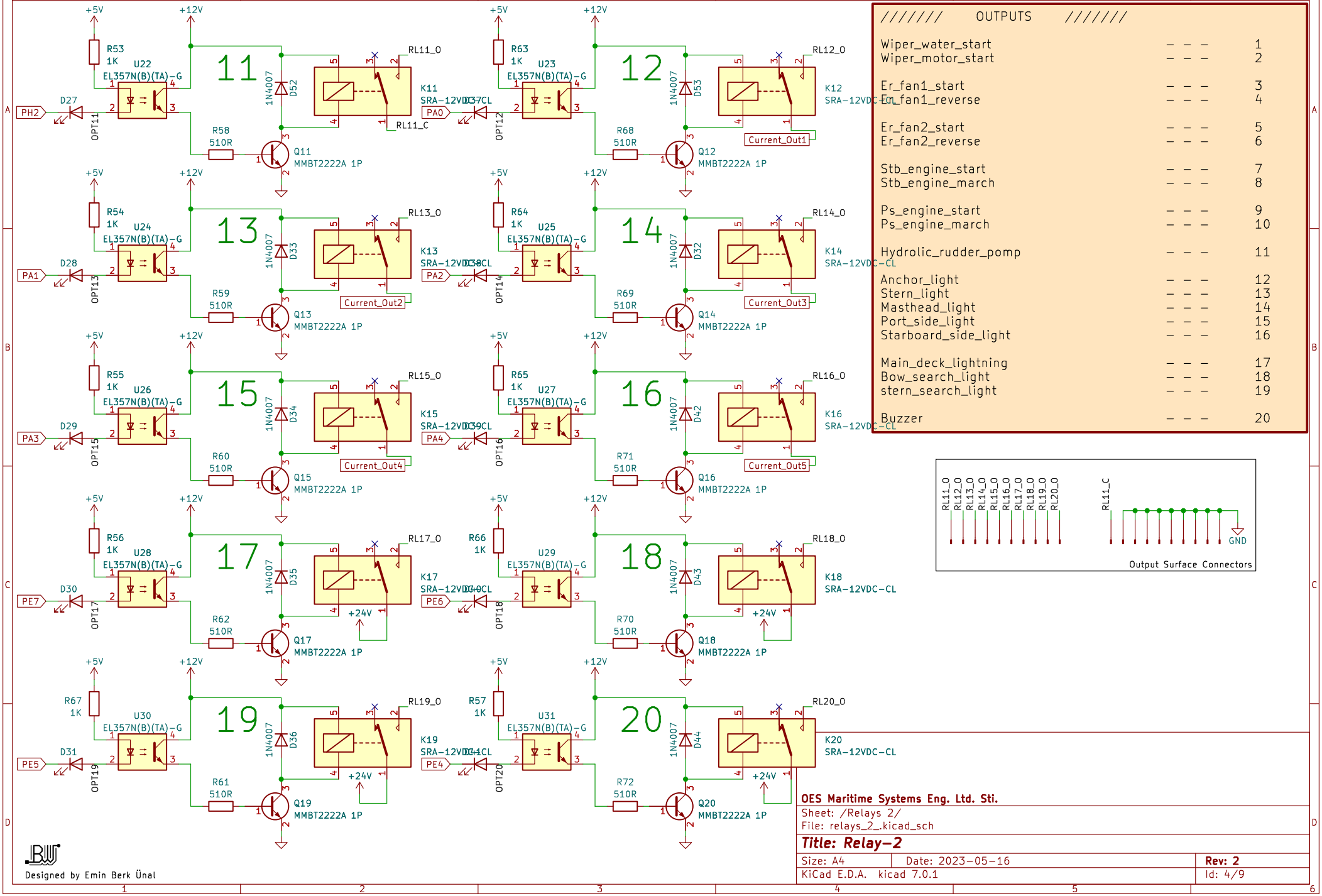
OES Maritime Systems Eng. Ltd. Sti.

Sheet: /Relays 1/
File: relays_1.kicad_sch

Title: Relays–1

Size: A4	Date: 2023-05-16	**Rev: 2**
KiCad E.D.A. kicad 7.0.1		Id: 3/9



/////// OUTPUTS ///////		
Wiper_water_start	– – –	1
Wiper_motor_start	– – –	2
Er_fan1_start	– – –	3
Er_fan1_reverse	– – –	4
Er_fan2_start	– – –	5
Er_fan2_reverse	– – –	6
Stb_engine_start	– – –	7
Stb_engine_march	– – –	8
Ps_engine_start	– – –	9
Ps_engine_march	– – –	10
Hydrolic_rudder_pomp	– – –	11
Anchor_light	– – –	12
Stern_light	– – –	13
Masthead_light	– – –	14
Port_side_light	– – –	15
Starboard_side_light	– – –	16
Main_deck_lightning	– – –	17
Bow_search_light	– – –	18
stern_search_light	– – –	19
Buzzer	– – –	20

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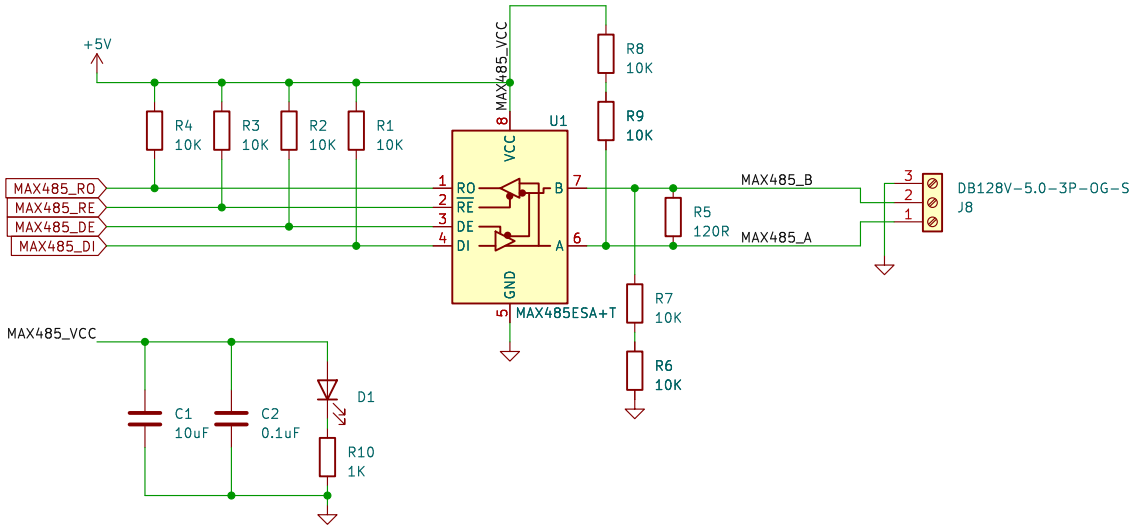
Sheet: /Relays 2/
File: relays_2_.kicad_sch

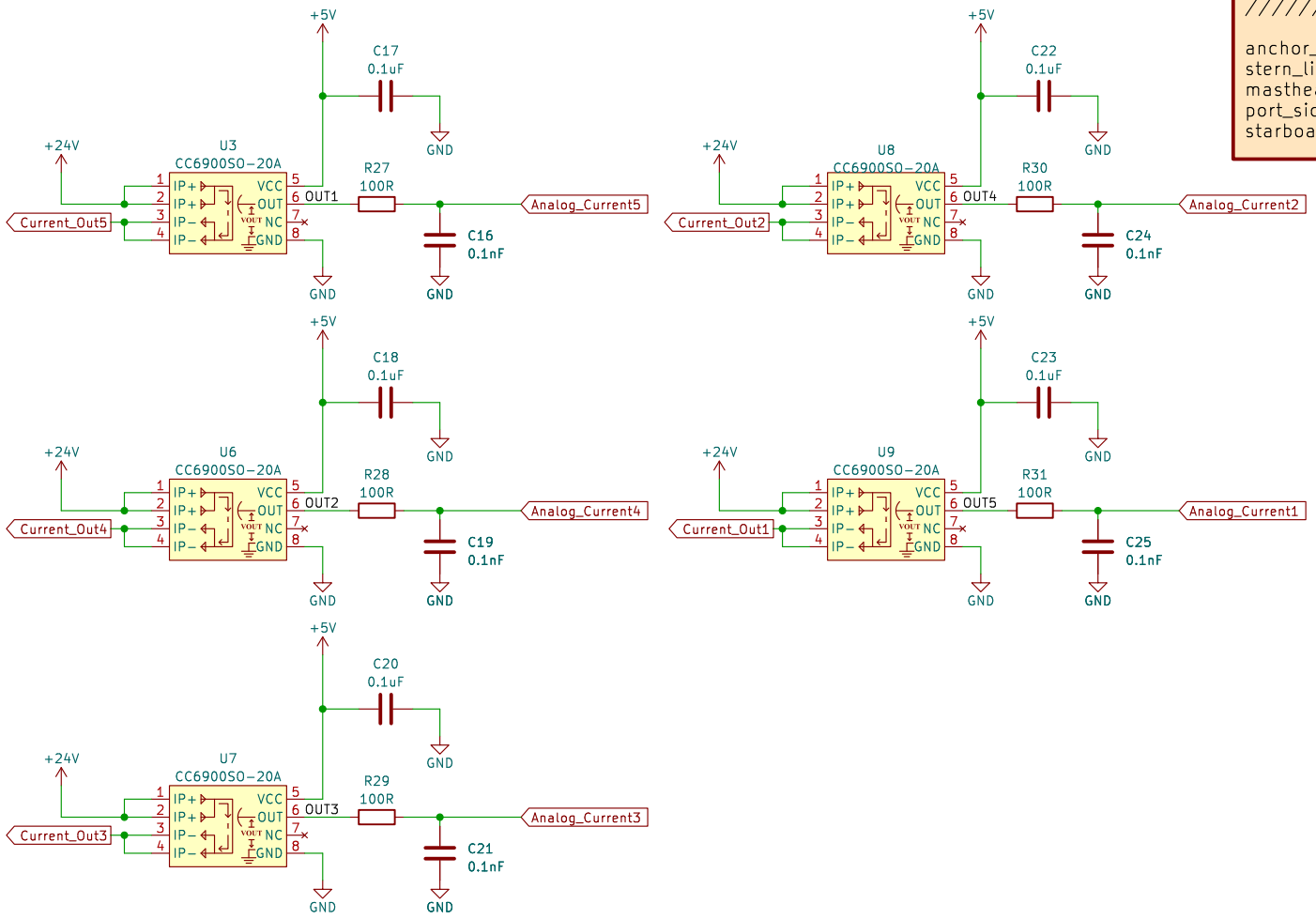
Title: Relay–2

Size: A4	Date: 2023–05–16	**Rev: 2**
KiCad E.D.A. kicad 7.0.1		Id: 4/9



Designed by Emin Berk Ünal

OES Maritime Systems Eng. Ltd. Sti.		
Sheet: /MAX485/		
File: max485.kicad_sch		
Title: RS485		
Size: A4	Date: 2023-05-16	**Rev: 2**
KiCad E.D.A. kicad 7.0.1		Id: 5/9



/////// ANALOG INPUTS ///////		
anchor_light_current	– – –	A0 / PF0
stern_light_current	– – –	A1 / PF1
masthead_light_current	– – –	A2 / PF2
port_side_light_current	– – –	A3 / PF3
starboard_side_light_current	– – –	A4 / PF4

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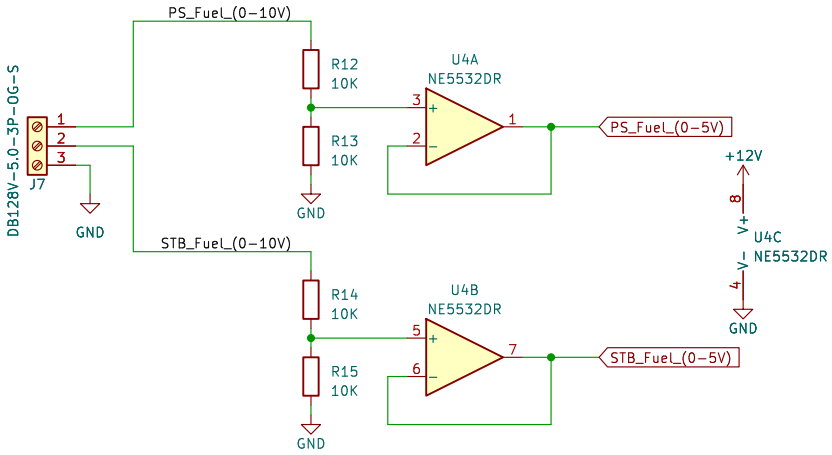
OES Maritime Systems Eng. Ltd. Sti.

Sheet: /Current Sensors/
File: current_sensors.kicad_sch

Title: Current Sensing

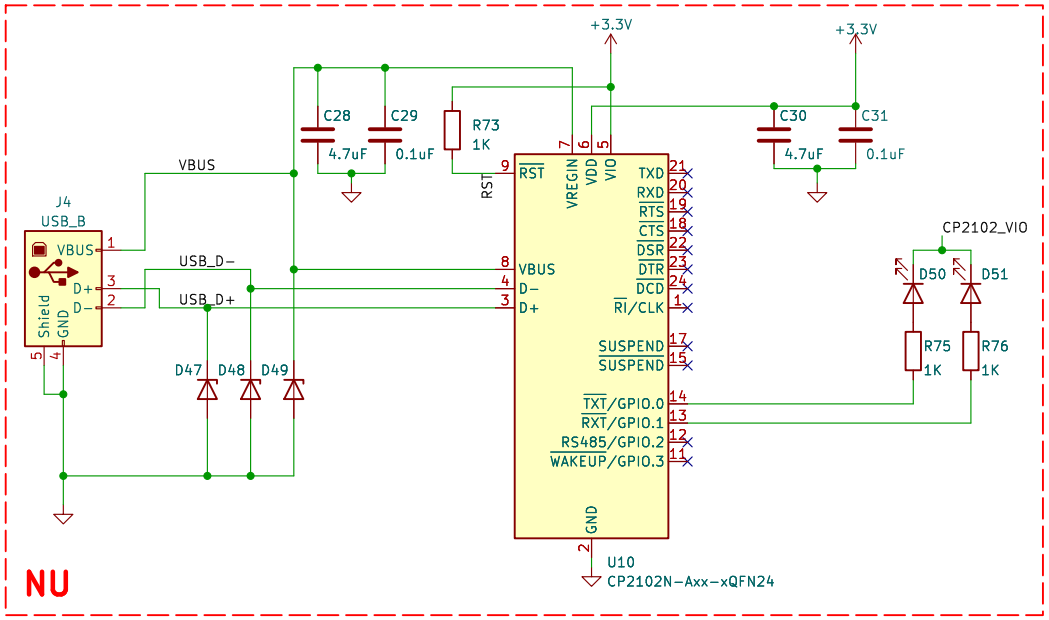
Size: A4	Date: 2023-05-16	**Rev: 2**
KiCad E.D.A. kicad 7.0.1		Id: 6/9

///////	ANALOG INPUTS	///////
fuel_oil_ps_analog	- - -	A5 / PF5
fuel_oil_str_analog	- - -	A6 / PF6



Designed by Emin Berk Ünal

OES Maritime Systems Eng. Ltd. Sti.		
Sheet: /Fuel Measurement/ File: fuel_measurement.kicad_sch		
Title: Fuel Measurement		
Size: A4	Date: 2023-05-16	**Rev: 2**
KiCad E.D.A. kicad 7.0.1		Id: 7/9



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OES Maritime Systems Eng. Ltd. Sti.		
Sheet: /UART to USB/		
File: CP2102.kicad_sch		
Title: USB Communication		
Size: A4	Date: 2023-05-16	**Rev: 2**
KiCad E.D.A. kicad 7.0.1		Id: 8/9