

# SYSTEM INTEGRATION DIAGRAM (SID)

\* FLUID POWER IS NOT USED

## TOPSIDE

**Power Entry:** Anderson Powerpole (MATE Power Supply) → F1 (25A Fast Blow Fuse) → SW1 (Emergency Stop) → Power Meter.

**DC-DC Conversion:** DC-DC Converter (12V IN, 7V OUT) → LX200V20EVB Topside (7V IN, OFDM).

**Monitoring & Control:** Monitor PSU (110VAC IN, DC OUT) → Monitor (DC IN, HDMI). Computer PSU (110VAC IN, DC OUT) → Computer (DC IN, HDMI, WIFI, BLE). Controller (BLE).

**TETHER:** Router (Ethernet, PSU IN, WIFI), Ethernet Switch (PORT 1-5), MUX Ethernet Switch (PORT 1-5), MUX Carrier Board (UART, Ethernet, USB), USB Camera (USB).

## AQUATIC

**MUREX ESC Carrier:** MUREX ESCs 8x (12V IN, 3.3V IN, BLDC OUT, UART).

**Sensors & Cameras:** IP Camera 1, IP Camera 2 (12V IN, Ethernet), Blue Robotics T200 8x (Phases IN).

**Power & Control:** LX200V20EVB Aquatic (OFDM, Ethernet, 12V IN), MUREX Power Board (12V IN, 5V OUT, 3.3V OUT), Murata DCDC (12V IN, 5V OUT), Pico (5V IN, PWM).

**Actuators:** M4 Servo (PWM), M3 Servo (PWM), M2 Servo (PWM), M1 Servo (PWM).

**ROV Full Load Amps (FLA) in water = 24.8A**  
Fuse size selected based upon FLA = 25A ATO

ELEC-008R Requirements	
8 thrusters	2.5A each = 20A
3 cameras	0.2A each = 0.6A
8 ESCs	0.05A each = 0.4A
1 ethernet switch	0.1A = 0.1A
1 control board	0.2A = 0.2A
4 servos	0.8A each = 3.2A
2 PLC modules	0.1A each = 0.2A
<b>Total Amps</b>	<b>24.7A * 150% = 37.1A</b>
<b>Fuse Selected:</b>	<b>25A ATO</b>

SID Legend	
Blue Line	110VAC
Brown Line	PSUs DC
Red Line	12VDC
Purple Line	Ethernet
Orange Line	3.3VDC
Green Line	PWM
Yellow Line	5VDC
Black Line	GND
Pink Line	UART (MASCP)
Teal Line	BLDC Phases
Dashed Green Line	Wireless
Light Green Line	7VDC

**MUREX ROV V3**  
**SYSTEM INTEGRATION DIAGRAM (SID)**

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**MUREX ROBOTICS**  
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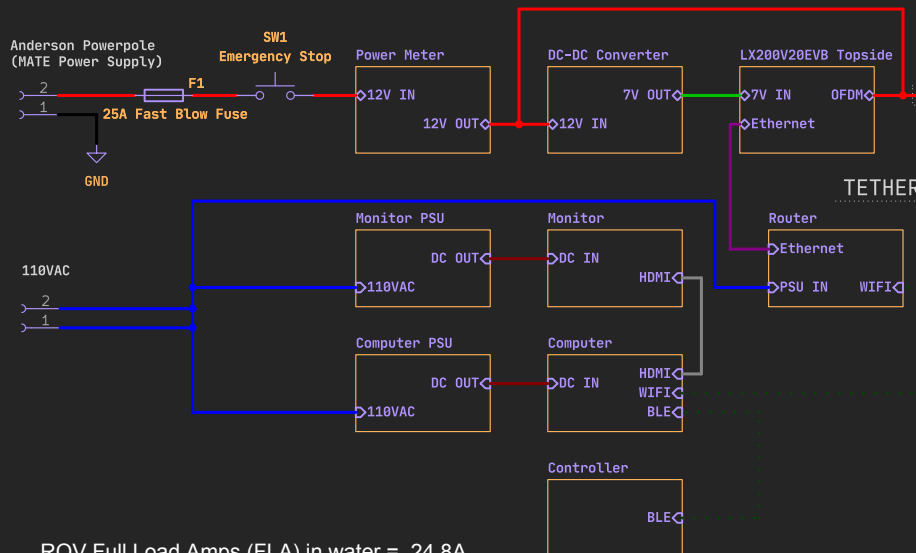
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**Title: System Integration Diagram**

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## ELEC-008R Requirements

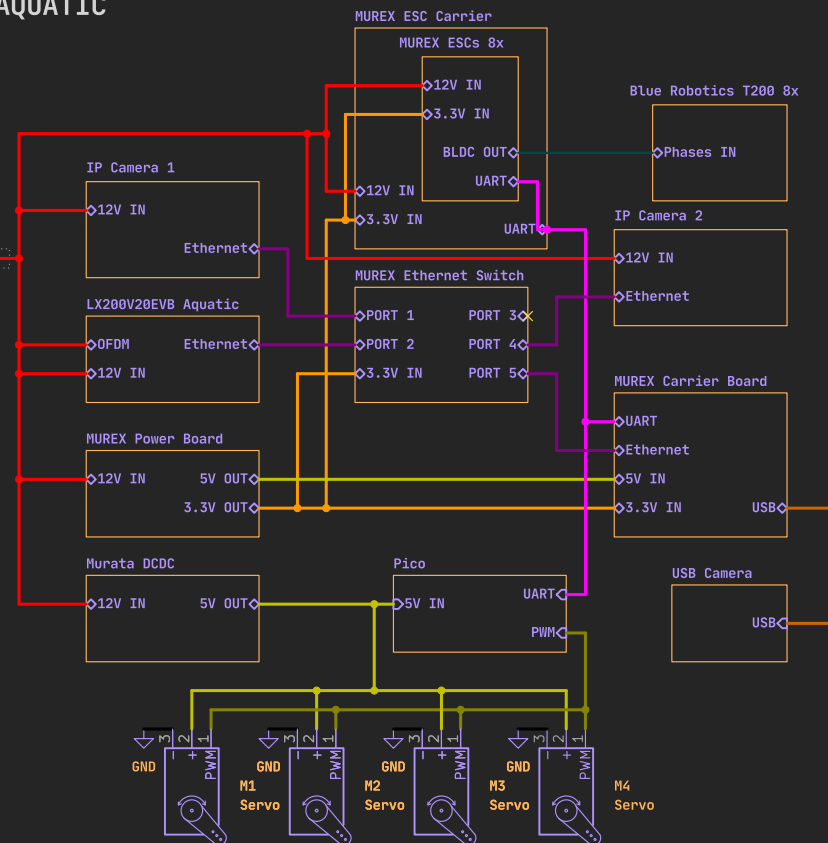
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### SID Legend

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	110VAC		USB
	PSUs DC		5VDC
	12VDC		GND
	Ethernet		UART (MASCSP)
	3.3VDC		BLDC Phases
	PWM		Wireless
			7VDC

## AQUATIC



MUREX ROV V3  
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