

Company Name: _____

Company Number: _____

2021 MATE ROV COMPETITION

Excite, Educate, Empower: Students Engineering Solutions to Global Problems

RANGER CLASS Non-ROV Device Power Specifications and Independent Sensors SAFETY CHECK LIST.

Companies must bring this check list with them to their safety inspection.

In 2021 only the power connector for the Seabin and device deployed into the drain pipe qualify as a non-ROV device.

	ELEC-NRD-001: Non-ROV devices can be powered from the surface or from batteries onboard the device. Power is limited to 12 VDC maximum and 6 amps maximum.
	ELEC-NRD-002: The device to inspect the pipe may contain cameras, thrusters and motors.
	ELEC-NRD-003: If powered from the surface, the device must have a 7.5 amp fuse within 30 cm of the point of connection to the power source.

	<ul style="list-style-type: none"> The battery holder must be mounted in a manner that will allow the end cap to freely open if pressure develops inside the housing.
	ELEC-NRD-005: An SID must be submitted for a Non-ROV device that uses electrical power.

	ELEC-NRD-004: Onboard power is allowed for non-ROV devices. If onboard batteries are being used, the following specifications must be met:
	<ul style="list-style-type: none"> Batteries must be primary (non-rechargeable).
	<ul style="list-style-type: none"> AAA, AA, A, A23, C, D or 9V alkaline batteries are allowed. Alkaline batteries only.
	<ul style="list-style-type: none"> Batteries are mounted in a manner that they are not loose inside the container.
	<ul style="list-style-type: none"> A fuse (7.5 amps max) must be installed within 5 cm of the battery positive terminal.
	<ul style="list-style-type: none"> The enclosure housing must be designed so that it will open if the pressure inside the housing is greater than the outside pressure
	<ul style="list-style-type: none"> Any pressure relief plug MUST be at least 2.5 cm in diameter.
	<ul style="list-style-type: none"> The enclosure housing must be designed so that it will release pressure if pressure inside the housing is greater than the outside pressure. Under no condition should the housing be built with fasteners to hold the device together if there is no pressure release valve.

Independent Sensors	
	ELEC-IS-001: Independent sensors must be powered from the surface; no onboard batteries are allowed.
	ELEC-IS-002: Companies may use USB to connect their sensor to a computer. Companies may also use surface battery packs (limited to 12 volts maximum) or the MATE supply to provide power for their independent sensor.
	ELEC-IS-003: The independent sensor may only contain the intended sensor; thrusters, cameras, or other systems MAY NOT be attached.
	ELEC-IS-004: Companies that use an independent sensor must provide a 3 amp (or less) fast blow fuse on the positive side of their connection.
	ELEC-IS-005: An SID must be submitted for an independent sensor that uses electrical power.