

WHOI DSL JASON II ROV SYSTEM POWER SUPPLY REQUIREMENTS

Last update: 14-Sep-11 CLT
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Subsystem	Volts	Phase	Freq (Hz)	³ Circuit Breaker (A)	Typical Operating Current (A)	No-Load Current (A)	¹ Start-up Inrush Current (A)	² KVA calc'd from Typical Operating Current	⁶ KVA calc'd from Circuit Breaker Size
Van Jetway ⁵	480	3	60	100	65			54	83
Van Hotel	480	3	60	60	45			37	50
Effer	480	3	60	100	90		287	75	83
Dynacon	480	3	60	300	228	68	700	190	249
Subtotal KVA								356	466
Safe operating marging (%)								30%	
⁴Total required KVA								463	

¹The startup inrush current is shown for those devices with large motors. No values indicate negligible inrush current. Further, any generator needs to be able to ride-through the inrush for the few milliseconds it lasts.

²The KVA calculation using Typical Operating Current. The calculation is $V \cdot I \cdot \sqrt{3} / 1000$.

³These are the typical circuit breaker values which most vessels use for our subsystems.

⁴If a stand alone generator is used, a circuit breaker panel needs to be provided with circuit breakers as shown above for each subsystem. Further, the panel needs to be able to accommodate the large input and output cables and should be watertight if located in any exposed environment.

⁵The Tool Van uses 480VAC single phase to power lights, outlets, and it's AC unit. This could be provided by the ship, but as designed, this comes off the Van Jetway feed.

⁶The KVA calculation using Circuit Breaker amperage. The calculation is $V \cdot I \cdot \sqrt{3} / 1000$.

Update History

26 Sep 2006 created to size out a 60Hz generator for the 50Hz German vessel R/V Merian
 2006. new Effer power pack put into service, replacing the smaller original unit. Motor is 75HP
 2008. new control vans built, redistributing some of the A/C load
 20 March 2010 new Effer inrush is 287 amps, replacing the original 174 amps. C.Agee.
 30 Jun 2011. no change in values, just some text cleanup. CLT
 14 Sep 2011. no change in values, added KVA calcs based on circuit breaker size. CLT