

Bow Thruster Power Measurements

12/02/2023

Bow Thruster Sidepower SP 95 T-12V

Battery Lithium 12V 400AH

1. Initial battery condition.

Mastervolt battery monitor reading:

13.4 Volts; -14AH

2. Two bursts, 5 seconds and 6 seconds a couple of minutes apart.

Mastervolt battery monitor reading (at the battery) the same both times:

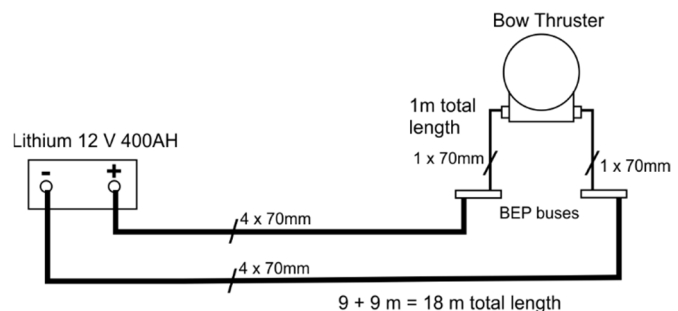
11.3 Volts 750 Amps

3. One burst, 4 seconds.

Multimeter across the +ve & -ve BEP buses adjacent to bow thruster. The reading was steady for the whole duration:

10.4 Volts.

4. Further estimates and conditions



- a) There is a total of about 18 meters of cable (+ve plus -ve) between battery and the BEP buses at the bow thruster. The cables are made up of $4 \times 70\text{mm}^2$ ($70\text{mm}^2 = 0.000281 \Omega/\text{m}$).

$$\text{Resistance} = 0.000281 \times 18 \times \frac{1}{4} = 0.00126 \Omega$$

$$\text{Voltage across BEP buses should be} = 11.3 - 750 \times 0.00126 = 10.35 \text{ Volts}$$

- b) There is another of 1.0 meter of positive plus negative single 70mm cable from the buses to the bow thruster terminals. Resistance = $0.000281 \times 1 = 0.000281 \Omega$

$$\text{Estimated voltage across bow thruster terminals} = 10.35 - 0.000281 \times 750 = 10.14 \text{ Volts}$$

- c) At no time during these tests did the motor casing get above slightly warm to touch.

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Product Specifications SP 95 T

Thrust at 10,5 / 21 V 95 kg / 209 lbs.
Power 6 kW / 8 Hp
Tunnel diameter 185 mm / 7,3"
Propulsion system Twin
Voltage 12 V or 24 V
Weight 31 kg / 68 lbs.
Boat size 38 - 55 foot
Current draw nom. 680 A (12 V) / 340 (24 V)
Min. battery CCA DIN 700 (12 V) / 350 (24 V)

Product Specifications SE 100/185 T (nominally the replacement for the SP 95 T)

Performance and specifications at one tunnel diameter depth* :

	At 10,5V/21V	At 12,0V/24V
Thrust	100kg/220lbs	< 116kg/256lbs.
Output power	6.3kW/8,4 Hp	< 7,8kW/10,5Hp
Average current draw	740A/340A	< 820A/375A
Continuous run time (20°C)	3 min	> 2,5 min.
Approx. long term run time	10% of time	6% of time
Min. battery CCA rating 12V/24V	750/400 CCA DIN	1425/760 CCA SAE
Sidepower fuse size:		ANL500/ANL325