Engine Cooling Fan & SiC Controller

The 1068000G1 is a 610 Vdc silicon carbide (SiC) based, air-cooled inverter and motor controller integrated onto an electric Engine Cooling Fan. The design utilizes GE's SiC MOSFETs which enable an all-in-one Controller/Inverter/Fan solution, eliminating the traditional Fan with separate Motor Drive Inverter and its related coolant hoses and interconnecting cables. The SiC devices yield high power density and reduced size and weight for the cooling subsystem. Advanced thermal management technologies are employed to enable reliable operation in the high temperature environment. This Integrated Engine Cooling Fan solution allows the elimination of hydraulic motors and related pumps and hoses, or gear boxes and drive shafts in mechanically driven Fan solutions.

Features:

- Best-in-Class SiC MOSFETs
- Digitally Controlled Operation
- Fault Reporting over CANBus
- High Efficiency
- Reduced weight versus Silicon
- High Reliability
- MIL-PRF-GCS600AVDC Input
- Overcurrent & Overvoltage Protection.
- EMI – MIL-STD-461F
- 90°C ambient air temperature
- Derating – NAVMAT-P-4855-1
- AEC-Q101 SiC device qualification
- Submergible (up to 2 meters water)
- Nuclear Event Detection

Physical: (See ICD 1068001)

Weight	(Controller): 9.52kg (21 lbs.)
	(EMI): 3.75 kg (8.25 lbs)
Dimensions	(Controller): 122mm (H) x 223mm (Dia) (4.8" x 8.77")
	(EMI):173mm x 168mm x 111mm (6.8" x 6.6" x 4.4")
Connector:	MIL-C-38999
Mounting:	Mounts to top of Main Cooling Fan

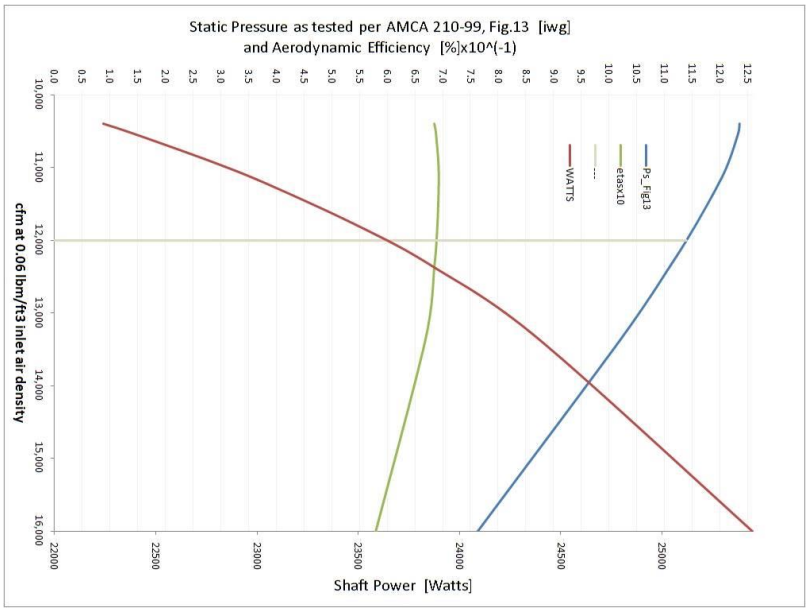
Environmental:

Operating Temperature: -46°C to +90°C ambient
Temperature Shock: MIL-STD-810G,
Shock: MIL-STD-810G,
Vibration: MIL-STD-810G Method 514.4, Procedure I category 20, ground vehicles
Humidity: MIL-STD-810G,
Immersion: MIL-STD-810G, 2 meters for 2 hours

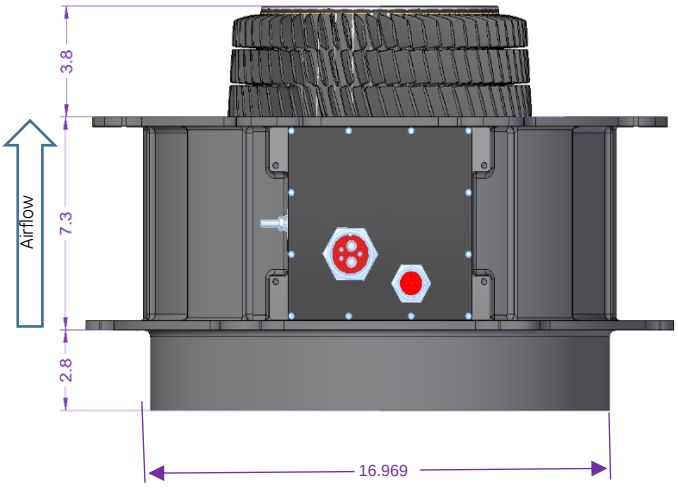
Electrical I/O:

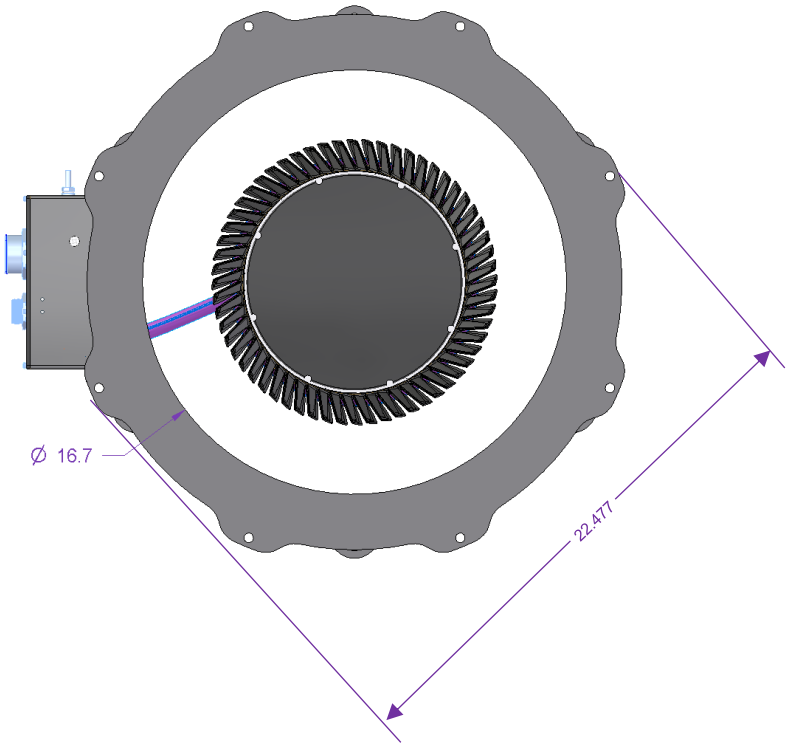
Part Number	Input Voltage	Output Voltage	Output Current (A)	Output Power (W)	J1-A:HVIL	J2-A: 28Vdc Control
					J1-B: +305Vdc	J2-B 28Vdc Cont. RTN
					J1-C: HVIL RTN	J2-C: CANBus High
1068000G1	610 VDC	Variable Freq 3 phase AC	50A (RMS)	25.25 kW	J1-D: -305Vdc	J2-D: CANBus Low

Fan Curves



Mechanical Outline





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