

COREPOWER® Systems

Brushless Power Generation



1331-2

300 amp Starter-Generator Unit (SGU)

Size (SGU only)

6.41 In Diameter x 7.85 In L
(162.8 mm Diameter x 199.38 mm L)

Size (overall)

6.78 In Diameter x 12.23 In L
(172.2 mm Diameter x 310.62 mm L)

Weight (SGU only)

26 lbs (11.79 kg) nominal

Weight (overall)

31 lbs (14.06 kg) nominal

POWER

- Starting Torque: 25 ft-lbs
- Output: 9,700W AC

SAFETY

- Electrically isolated windings eliminate potential for heavy current faults to aircraft structure
- Ground fault detection without added transformers when used with 1332-X PCU

CERTIFICATION

- DO-160E
- FAA TSO *Pending*

FEATURES

- Full rated power at engine ground idle
- 20,000 hours MTBF
 - 4,000-hour Scheduled Maintenance Interval
- Reduces engine gearbox stress
- Reduces battery stress
- Brushless design reduces total lifecycle cost
- Rated start torque is programmable from 5 ft-lbs to 25 ft-lbs
- Programmable start assist torque vs. speed profile
- Soft start current control
 - Reduces electrical bus under-voltage transient associated with engine start
- Programmable cutoff speed (4,000 to 6,000 rpm)
- Motoring start capability; including ability to initiate engine starts at accessory gearbox speeds from -180 rpm to engine start cutoff speed
- Able to execute three consecutive engine start attempts or motoring cranks
- Quick attach/detach clamp mounting
- MIL-C-38999 series III connectors

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COREPOWER® Technology Comparison

Performance Parameter	Traditional Brushed Starter-Generator	SGU 300 amp
Weight (starter only)	32 pounds (300 amps) 38 pounds (400 amps)	26 pounds
Reliability: MTTR MTBF	500 hours 4,000 hours	4,000 hours (bearings only) 20,000 hours
Efficiency	<70%	>75% (SGU + PCU)
Performance at Idle	Significantly derated at idle or oversized generator needed to compensate	Rated power available at idle speed
In-Service Cost	1X	≈ 0.4X
Initial System Cost	1X (S-G + GCU + contactor + GF transformer + current monitor + cable)	1.6X (SGU + PCU + cable)
Start Stresses	Very high initial torque and limited ability to tailor torque curve	Soft start and tailored torque curve
Thermal Management	Much higher power loss in machine—requires high capacity blower	Relatively low power loss in machine—low capacity blower is sufficient
Battery & Electrical System Impact	High peak inrush current, requires over-sized battery and causes severe bus under-voltage transient	Controlled inrush current, allows use of lighter battery and significantly reduces bus under-voltage transient

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