STAMFORD

S0L1-S - Technical Data Sheet

Standards

Stamford industrial alternators meet the requirements of the relevant parts of the IEC EN 60034 and the relevant section of other international standards such as BS5000, VDE 0530, NEMA MG1-32, IEC34, CSA C22.2-100 and AS1359. Other standards and certifications can be considered on request.

Quality Assurance

Alternators are manufactured using production procedures having a quality assurance level to BS EN ISO 9001.

Excitation and Voltage Regulators

Excitation System	
AVR Type	**AVR Power**
VITA01	Self-Excited
Voltage Regulation	± 0.5%
No Load Excitation Voltage (V)	12 V
Full Load Excitation Voltage (V)	56 V

STAMFORD

S0L1-S Winding 06

Electrical Data		
Insulation System	Class H	
Stator Winding	Double Layer Concentric	
Winding Pitch	Two Thirds	
Winding Leads	4	
Winding Number	06	
Number of Poles	4	
IP Rating	IP 23	
RFI Suppression	EN 61000-6-2 & EN 61000-6-4, refer to factory for others	
Waveform Distortion	NO LOAD < 2.5% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%	
Short Circuit Ratio	1/Xd	
Steady State X/R Ratio	N/A	
	60 Hz	
Telephone Interference	TIF<75	
Voltage Series	240	240
Power Factor	0.8	1.0
kVA Base Rating (Class H)	12	13
Saturated Values in Per Unit at Base Ratings and Voltages		
Xd Dir. Axis Synchronous	1.719	1.862
X'd Dir. Axis Transient	0.091	0.099
X"d Dir. Axis Subtransient	0.081	0.088
Xq Quad. Axis Reactance	0.754	0.817
X"q Quad. Axis Subtransient	0.134	0.145
XL Stator Leakage Reactance	0.049	0.053
X2 Negative Sequence Reactance	0.176	0.191
X0 Zero Sequence Reactance	0.061	0.066
Unsaturated Values in Per Unit at Base Ratings and Voltages		
Xd Dir. Axis Synchronous	2.063	2.235
X'd Dir. Axis Transient	0.105	0.113
X"d Dir. Axis Subtransient	0.095	0.103
Xq Quad. Axis Reactance	0.777	0.841
X"q Quad. Axis Subtransient	0.161	0.174
XL Stator Leakage Reactance	0.055	0.060
X2 Negative Sequence Reactance	0.211	0.229
X0 Zero Sequence Reactance	0.071	0.077
Time Constants (Seconds)		
T'd TRANSIENT TIME CONST.	0.015	
T''d SUB-TRANSTIME CONST.	0.001	
T'do O.C. FIELD TIME CONST.	0.429	
Ta ARMATURE TIME CONST.	0.009	

STAMFORD

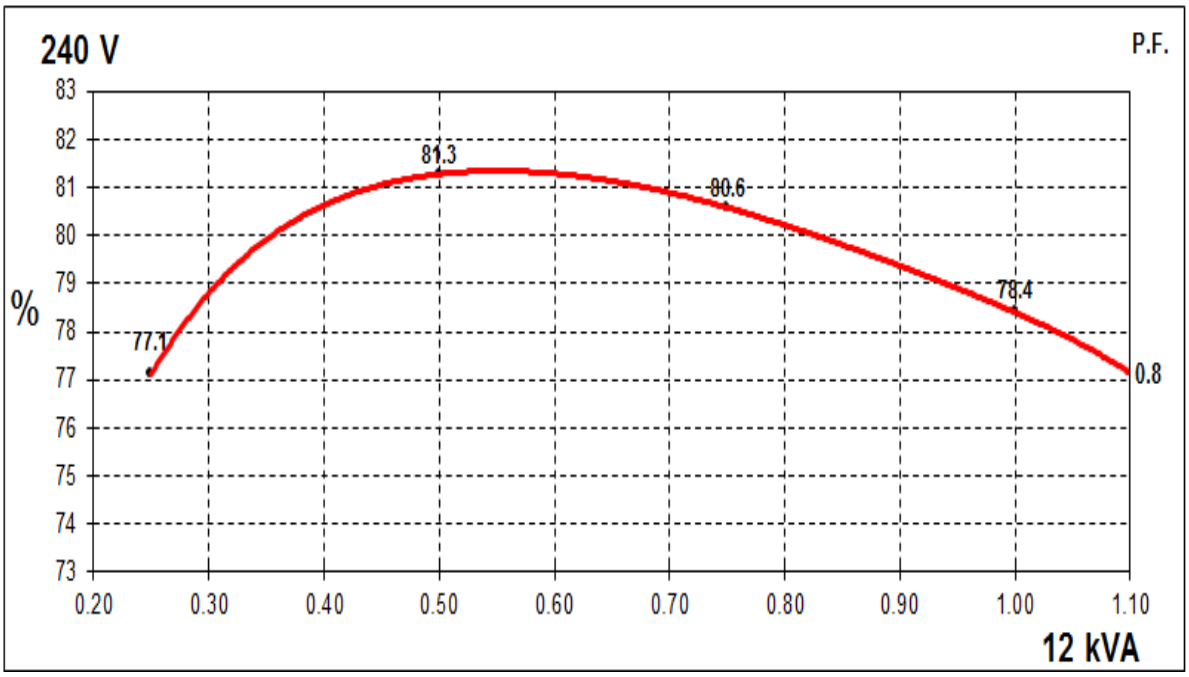
S0L1-S Winding 06

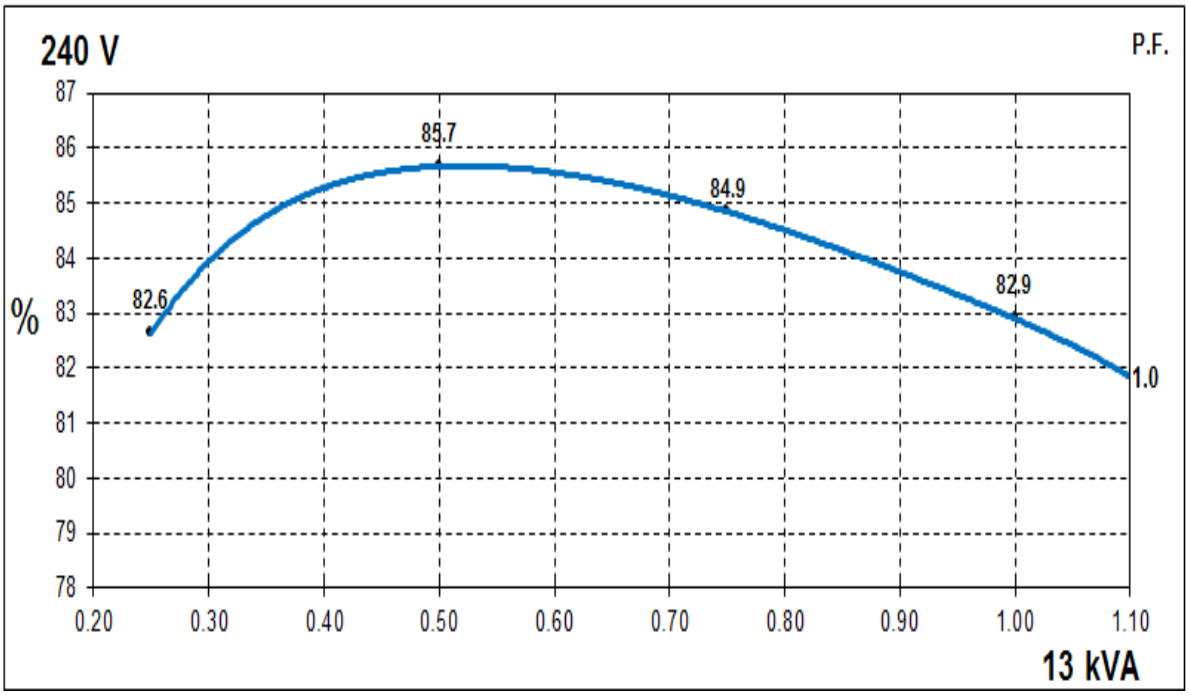
Resistances in Ohms (Ω) at 22°C	
Stator Winding Resistance (Ra)	0.191 Ω per phase series connected
Rotor Winding Resistance (Rf)	0.524 Ω
Exciter Stator Winding Resistance	17.638 Ω
Exciter Rotor Winding Resistance	0.101 Ω per phase
Positive Sequence Resistance (R1)	0.239 Ω
Negative Sequence Resistance (R2)	0.275 Ω
Zero Sequence Resistance (R0)	0.239 Ω
Aux Winding Resistance	N/A

Mechanical data		
Cooling Air	0.07 m³/sec (50Hz)	
Shaft and Keys	All alternator rotors are dynamically balanced to better than BS6861: Part 1 Grade 2.5 for minimum vibration in operation.	
Bearing	1 Bearing	2 Bearing
Weight Comp. Alternator	92 kg	104 kg
Weight Wound Stator	35.6 kg	35.6 kg
Weight Wound Rotor	30.053 kg	31.168 kg
Moment of Inertia	0.0801 kgm2	0.0805 kgm2
Shipping weight in a Crate	130 kg	142 kg
Packing Crate Size	930X590X760 mm	930X590X760 mm
Maximum Over Speed	2250 RPM for two minutes	
Bearing Drive End	-	BALL. 6309-2RS (ISO)
Bearing Non-Drive End	Ball Bearing, 6305-2RS1	Ball Bearing, 6305-2RS1

S0L1-S - Technical Data Sheet

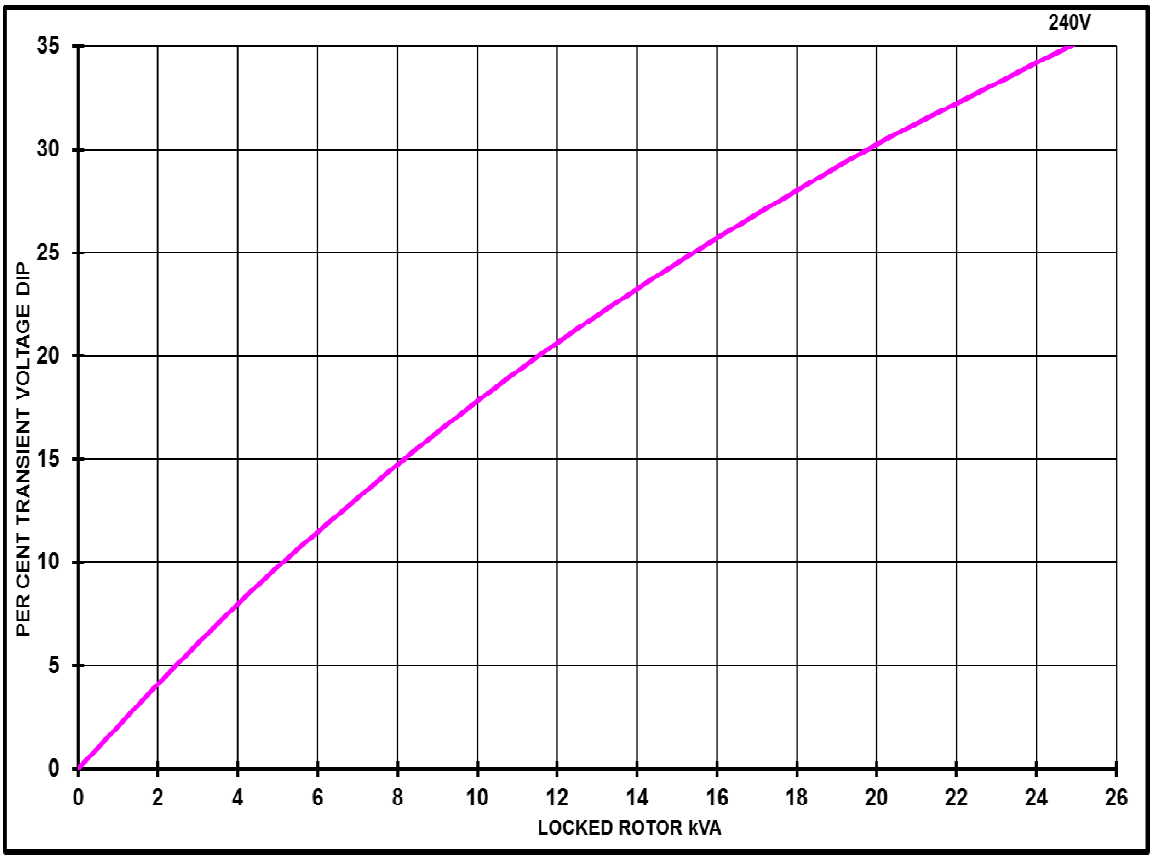
60Hz





S0L1-S - Technical Data Sheet

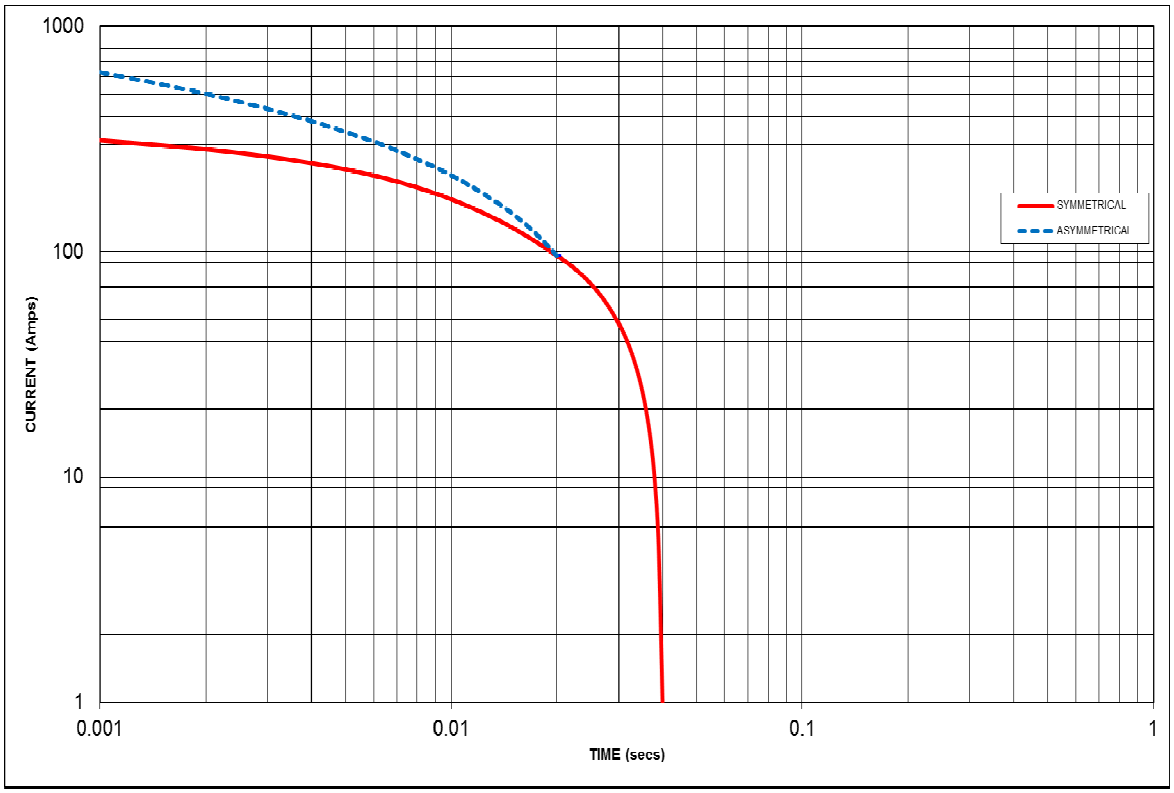
60Hz



Transient Voltage Dip Scaling Factor		Transient Voltage Rise Scaling Factor
PF	Factor	For voltage rise multiply voltage dip by 1.25
< 0.5	1.00	
0.5	0.97	
0.6	0.93	
0.7	0.90	
0.8	0.85	
0.9	0.83	
1.0	0.80	

Winding 06 (no Auxiliary winding) will not provide sustained short circuit capability.

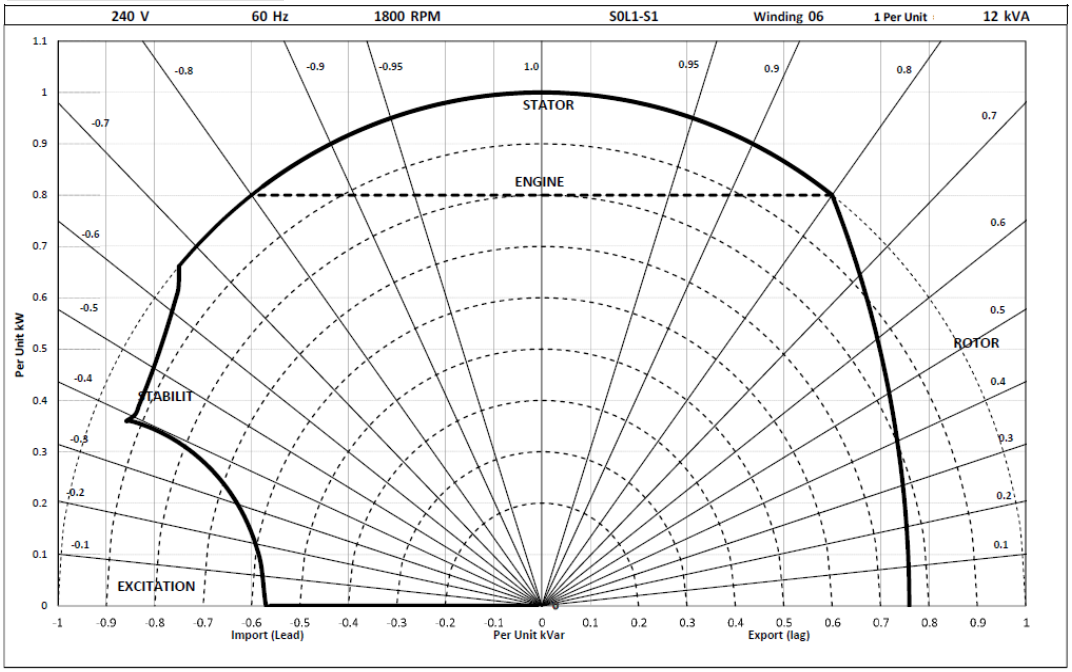
60Hz



Sustained Short Circuit - N/A

Typical Alternator Operating Chart

240V/60Hz



STAMFORD

S0L1-S Winding 06

RATINGS AT 0.8/1.0 POWER FACTOR

.1-S - Technical Data Sheet

	Class - Temp Rise	Standby - 163/27°C		Standby - 150/40°C		Cont. H - 125/40°C		Cont. F - 105/40°C	
60 Hz	Series (V)	240	240	240	240	240	240	240	240
	Power Factor	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0
	kVA	13.1	14.1	12.7	13.7	12.0	13.0	10.8	11.7
	kW	10.5	14.1	10.2	13.7	9.6	13.0	8.6	11.7
	Efficiency (%)	77.3	82.0	77.7	82.3	78.4	82.9	79.4	83.7
	kW Input	13.6	17.2	13.1	16.6	12.2	15.7	10.9	14.0

De-Rates

All values tabulated above are subject to the following reductions:

- 3% for every 500 meters by which the operating altitude exceeds 1000 meters above mean sea level
- 3% for every 5°C by which the operational ambient temperature exceeds 40°C
- For any other operating conditions impacting the cooling circuit please refer to applications

Note: Requirement for operating in an ambient exceeding 60°C and altitude exceeding 4000 meters must be referred to applications.

Dimensional and Torsional Drawing

For dimensional and torsional information please refer to the alternator General Arrangement and rotor drawings available on our website (http://stamford-avk.com/)

Note: Continuous development of our products means that the information contained in our data sheets can change without notice, and specifications should always be confirmed with Cummins Generator Technologies prior to purchase.

Follow us @stamfordavk

Cummins Generator Technologies

View our videos at youtube.com/stamfordavk

news.stamford-avk.com

For Applications Support:
applications@cummins.com

For Customer Service:
service-engineers@stamford-avk.com

For General Enquiries:
info@cumminsgeneratortechnologies.com

Generator Technologies