

[Spec Info](#)
 [Mechanical Data](#)
 [Cooling Data](#)
 [Motor Starting Curve](#)
 [Open Circuit Curve](#)
[Zero Power Factor Curve](#)
 [Reactive Capability Chart](#)
 [General Information](#)

Engine: 3512	Generator Frame: 1625	Selected Model	
Fuel: Diesel	Generator Arrangement: 2523850	Genset Rating (kW): 1500.0	Line Voltage: 400
Frequency: 50	Excitation Type: Permanent Magnet	Genset Rating (kVA): 1500.0	Phase Voltage: 230
Duty: STANDBY	Connection: SERIES STAR	Pwr. Factor: 1.0	Rated Current: 2165.1
		Application: EPG	Status: Current
			Version: 20232 /20232 /20232 /661153

Spec Information

Generator Specification	Generator Efficiency		
Frame: 1625 Type: SR5 No. of Bearings: 1 Winding Type: RANDOM WOUND Flywheel: 21 Connection: SERIESSTAR Housing: 00 Phases: 3 No. of Leads: 6 Poles: 4 Wires per Lead: 4 Sync Speed: 1500 Generator Pitch: 0.67	Per Unit Load	kW	Efficiency %
	0.25	375	94.1
	0.5	750	96.3
	0.75	1125	96.9
	1	1500	96.8

Reactances	Per Unit	Ohms
SUBTRANSIENT - DIRECT AXIS X''_d	0.1022	0.0109
SUBTRANSIENT - QUADRATURE AXIS X''_q	0.1275	0.0136
TRANSIENT - SATURATED X'_d	0.1959	0.0209
SYNCHRONOUS - DIRECT AXIS X_d	2.6091	0.2783
SYNCHRONOUS - QUADRATURE AXIS X_q	1.5656	0.1670
NEGATIVE SEQUENCE X_2	0.1153	0.0123
ZERO SEQUENCE X_0	0.0244	0.0026

Time Constants	Seconds
OPEN CIRCUIT TRANSIENT - DIRECT AXIS T'_{d0}	2.7700

SHORT CIRCUIT TRANSIENT - DIRECT AXIS T'_d	0.2450
OPEN CIRCUIT SUBTRANSIENT - DIRECT AXIS T''_{d0}	0.0450
SHORT CIRCUIT SUBTRANSIENT - DIRECT AXIS T''_d	0.0230
OPEN CIRCUIT SUBTRANSIENT - QUADRATURE AXIS T''_{q0}	0.2080
SHORT CIRCUIT SUBTRANSIENT - QUADRATURE AXIS T''_q	0.0200
EXCITER TIME CONSTANT T_e	0.0940
ARMATURE SHORT CIRCUIT T_a	0.0410

Short Circuit Ratio: 0.48	Stator Resistance = 0.0017Ohms	Field Resistance = 0.468 Ohms
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Voltage Regulation		Generator Excitation		
		No Load	Full Load, (rated) pf	
			Series	Parallel
Voltage level adjustment: +/-	5.0%			
Voltage regulation, steady state: +/-	0.5%			
Voltage regulation with 3% speed change: +/-	0.5%			
Waveform deviation line - line, no load: less than	2.0%	Excitation voltage: 11.5 Volts	31.2 Volts	Volts
Telephone influence factor: less than	50	Excitation current 1.2 Amps	2.7 Amps	Amps

[Top...](#)

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Generator Mechanical Information

Center of Gravity		
Dimension X	-880 mm	-34.6 IN.
Dimension Y	0 mm	0.0 IN.
Dimension Z	0 mm	0.0 IN.

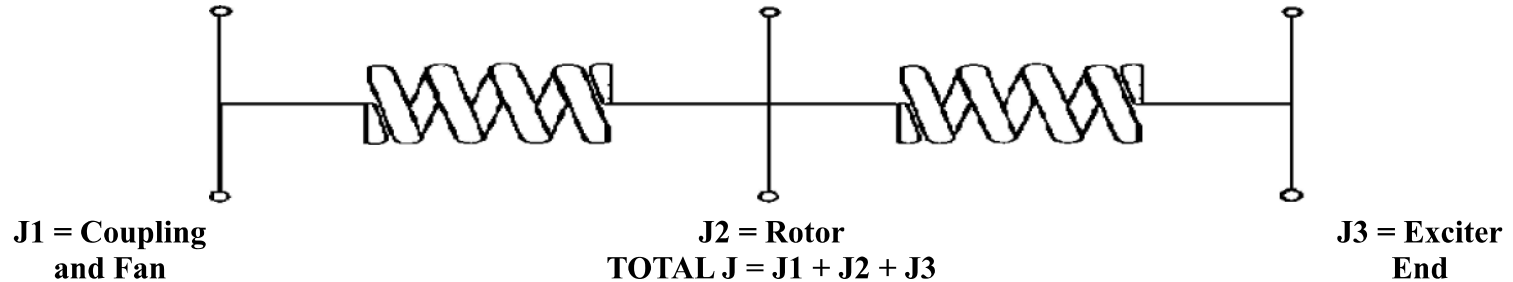
- "X" is measured from driven end of generator and parallel to rotor. Towards engine fan is positive. See General Information for details
- "Y" is measured vertically from rotor center line. Up is positive.

- "Z" is measured to left and right of rotor center line. To the right is positive.

Generator WT = 3730 kg * Rotor WT = 1432 kg * Stator WT = 1861 kg
 8,223 LB 3,157 LB 4,103 LB

Rotor Balance = 0.0508 mm deflection PTP
 Overspeed Capacity = 150% of synchronous speed

Generator Torsional Data



K1 = Shaft Stiffness between J1 + J2 (Diameter 1)

K2 = Shaft Stiffness between J2 + J3 (Diameter 2)

J1	K1	Min Shaft Dia 1	J2	K2	Min Shaft Dia 2	J3
58.4 LB IN. s ²	217.7 MLB IN./rad	7.8 IN.	314.5 LB IN. s ²	53.2 MLB IN./rad	5.9 IN.	10.3 LB IN. s ²
6.603 N m s ²	24.6 MN m/rad	198 mm	35.538 N m s ²	6.01 MN m/rad	151 mm	1.161 N m s ²
			Total J			
			383.3 LB IN. s ²			
			43.302 N m s ²			

[Top...](#)

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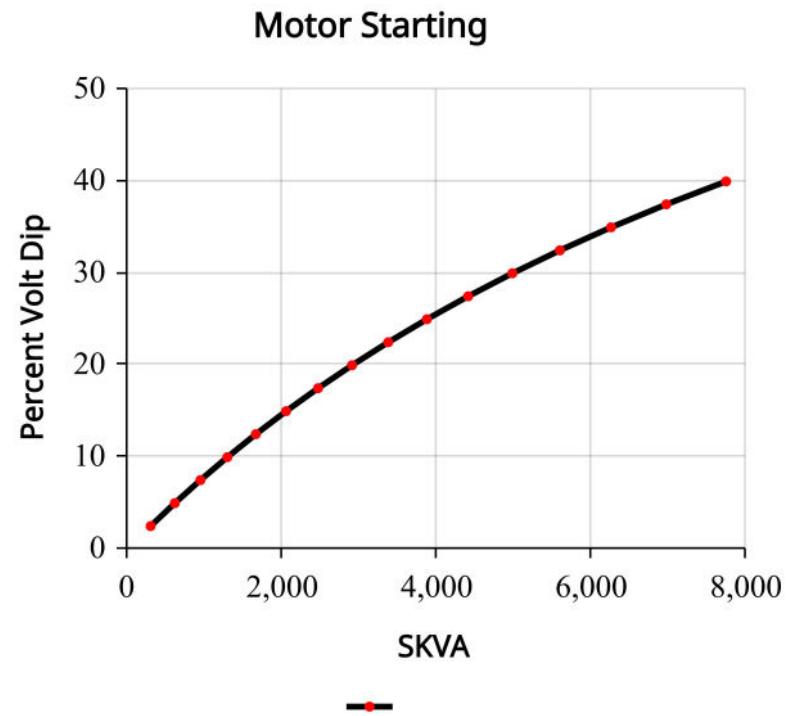
Generator Cooling Requirements - Temperature - Insulation Data			
Cooling Requirements:		Temperature Data: (Ambient 40 °C)	
Heat Dissipated: 49.6 kW		Stator Rise:	80 °C
Air Flow: 150 m ³ /min		Rotor Rise:	80 °C
Insulation Class: H			
Insulation Reg. as shipped: 100MΩ minimum at 40 °C			
Thermal Limits of Generator			
Frequency:	50 Hz		
Line to Line Voltage:	400 Volts		
B BR 80/40	1600 kVA		
F BR -105/40	1820 kVA		
H BR - 125/40	2000 kVA		
F PR - 130/40	2000 kVA		
H PR - 150/40	2120 kVA		
H PR27 - 163/27	2200 kVA		

[Top...](#)

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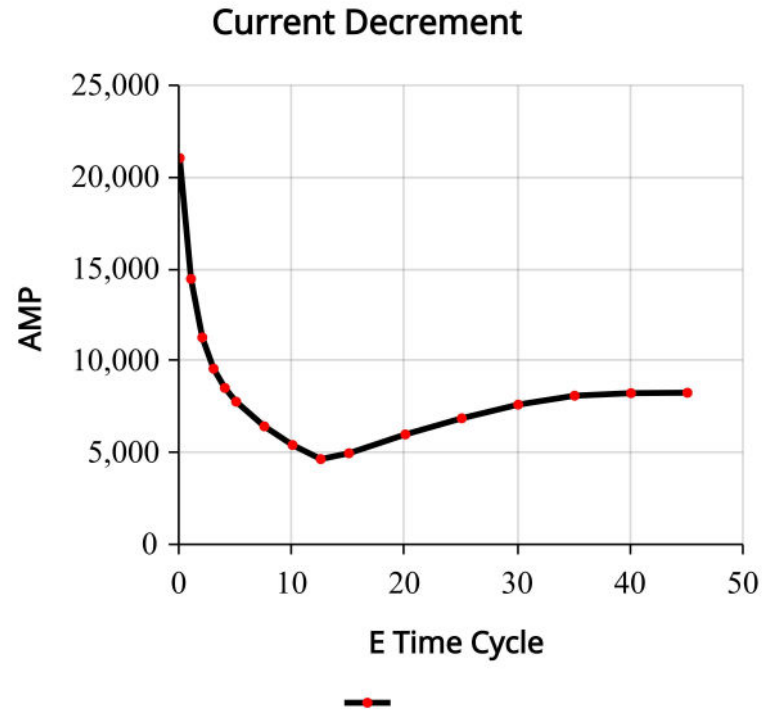
Starting Capability & Current Decrement
Motor Starting Capability (0.4 pf)

SKVA Percent Volt Dip	
298	2.5
611	5.0
942	7.5
1,291	10.0
1,659	12.5
2,050	15.0
2,464	17.5
2,904	20.0
3,372	22.5
3,872	25.0
4,406	27.5
4,978	30.0
5,593	32.5
6,255	35.0
6,970	37.5
7,744	40.0



Current Decrement Data

E Time Cycle	AMP
0.0	21,091
1.0	14,514
2.0	11,323
3.0	9,622
4.0	8,574
5.0	7,826
7.5	6,481
10.0	5,466
12.5	4,699
15.0	5,017
20.0	6,041
25.0	6,921
30.0	7,665
35.0	8,151
40.0	8,290
45.0	8,313



Instantaneous 3 Phase Fault Current: 21091 Amps

Instantaneous Line - Line Fault Current: 17163 Amps

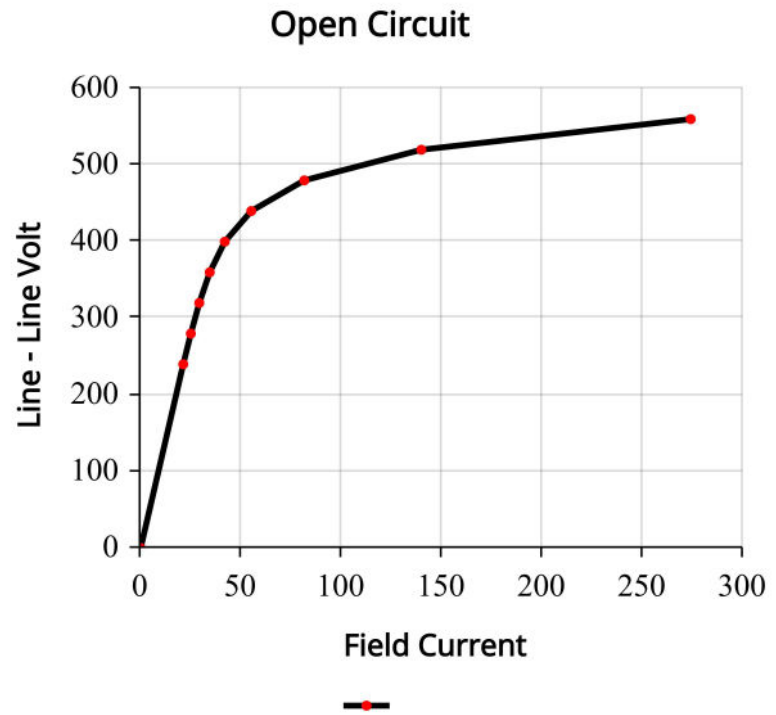
Instantaneous Line - Neutral Fault Current: 26732 Amps

[Top...](#)

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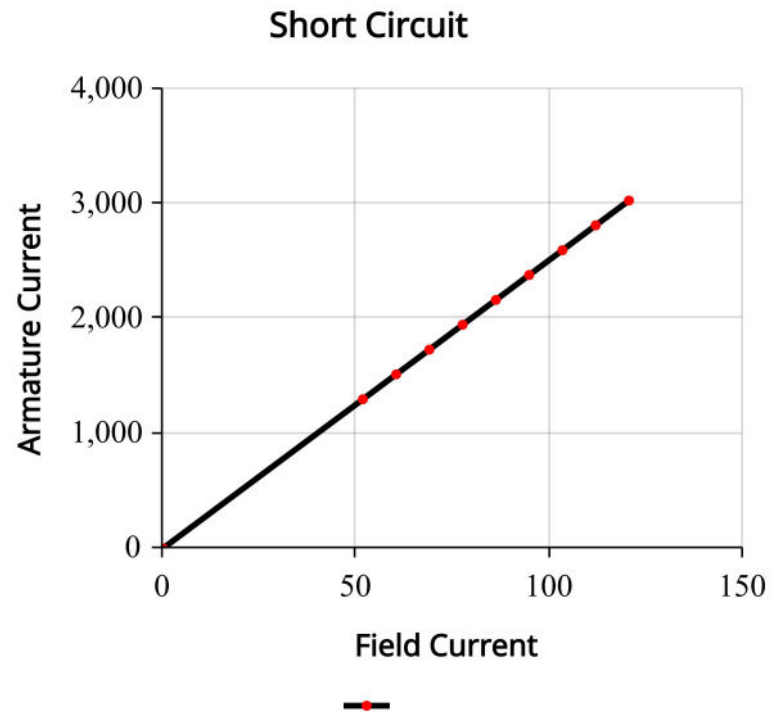
Generator Output Characteristic Curves
Open Circuit Curve

Field Current	Line - Line Volt
0.0	0
21.2	240
25.0	280
29.2	320
34.4	360
41.9	400
55.1	440
81.5	480
139.8	520
274.0	560



Short Circuit Curve

Field Current	Armature Current
0.0	0
51.7	1,299
60.3	1,516
68.9	1,732
77.5	1,949
86.1	2,165
94.7	2,382
103.3	2,598
111.9	2,815
120.5	3,031



[Top...](#)

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Phase Voltage: 230

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Excitation Type: Permanent Magnet

Pwr. Factor: 1.0

Rated Current: 2165.1

Duty: STANDBY

Connection: SERIES STAR

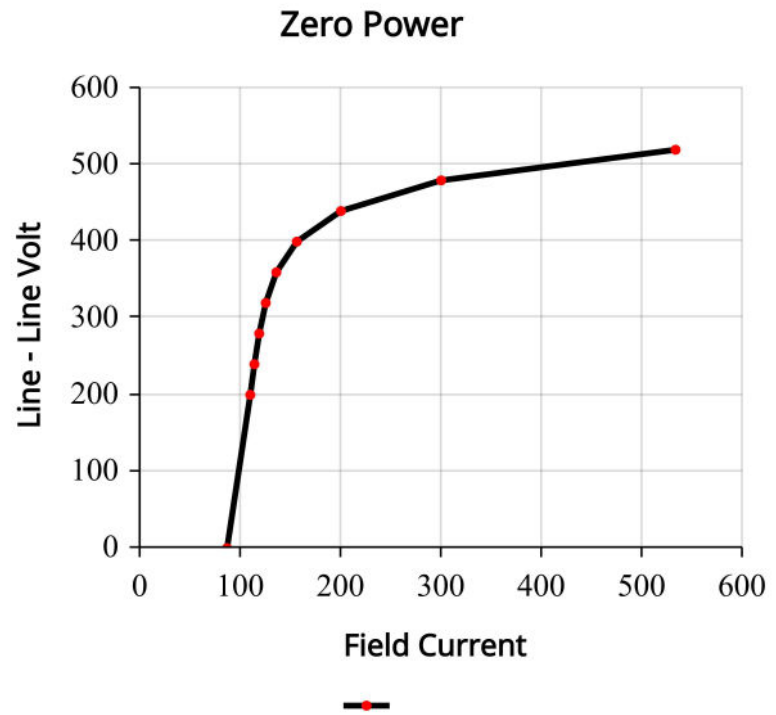
Application: EPG

Status: Current

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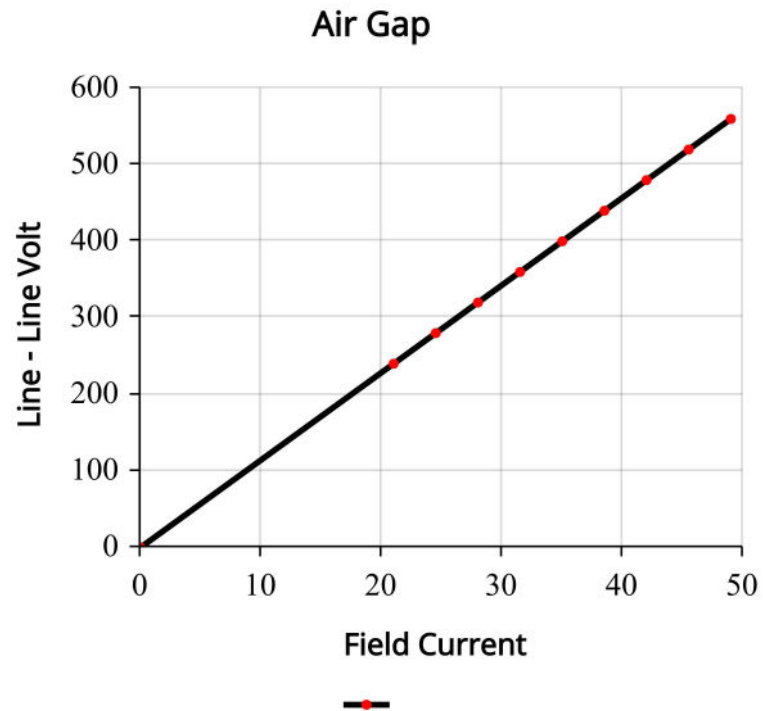
Generator Output Characteristic Curves
Zero Power Factor Curve

Field Current Line - Line Volt	
86.1	0
109.2	200
113.3	240
118.1	280
124.6	320
135.2	360
155.6	400
199.5	440
299.4	480
532.9	520



Air Gap Curve

Field Current Line - Line Volt	
0.0	0
21.0	240
24.5	280
28.0	320
31.5	360
35.0	400
38.5	440
42.0	480
45.5	520
49.0	560



[Top...](#)

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Phase Voltage: 230

Frequency: 50

Excitation Type: Permanent Magnet

Pwr. Factor: 1.0

Rated Current: 2165.1

Duty: STANDBY

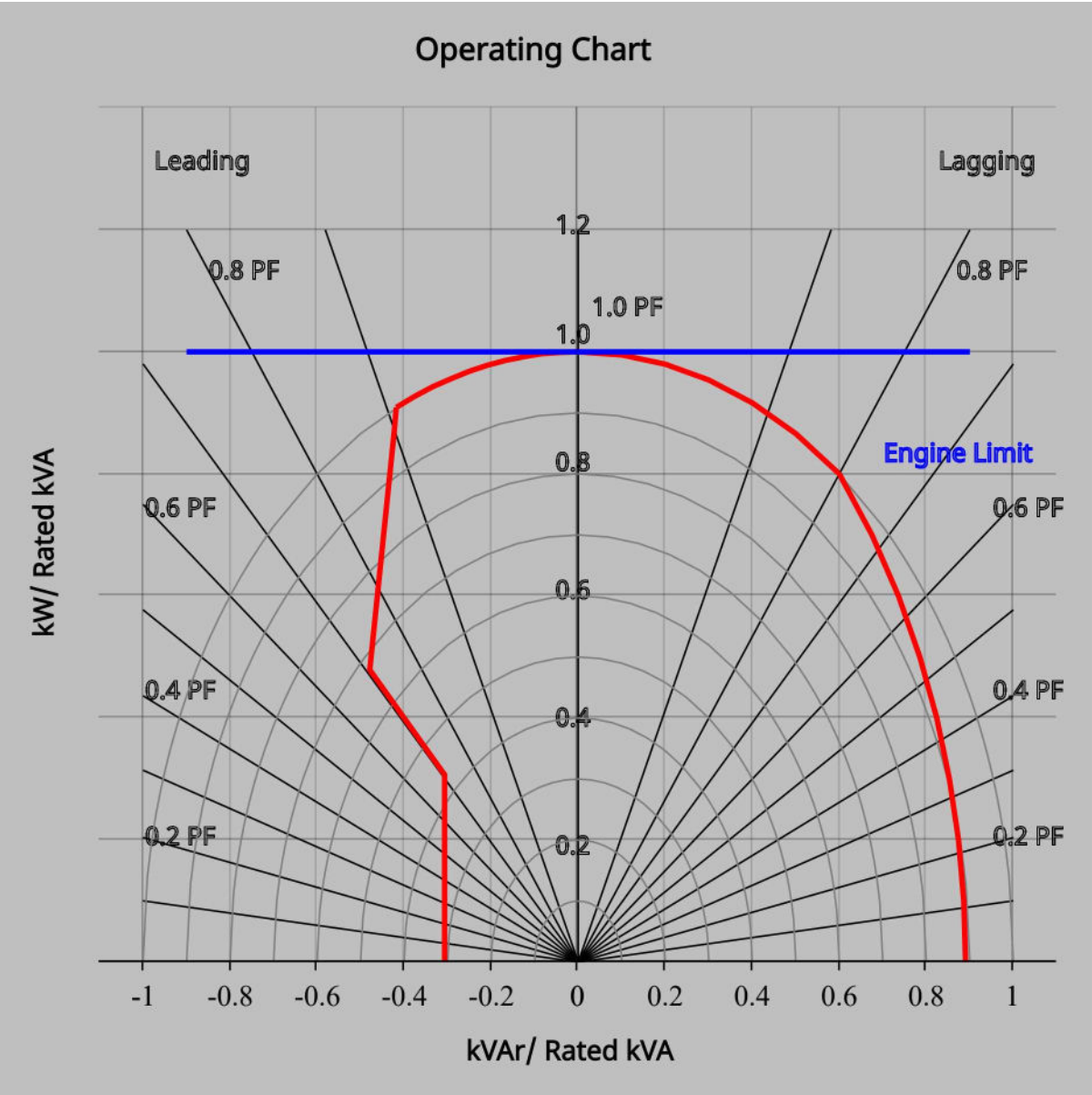
Connection: SERIES STAR

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Reactive Capability Curve



[Top...](#)

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Frequency: 50 **Excitation Type:** Permanent Magnet **Pwr. Factor:** 1.0 **Rated Current:** 2165.1
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General Information

DM7825 Caterpillar SR5 Generators (50 Hz, 60 Hz)
Data for 1400, 1600, 1700, 1800 and 1900 frames Caterpillar SR5
generators built by Leroy Somer - USA and Leroy Somer ☐ France.

Refer to DM7821 for explanation of all generator data in Technical
Marketing Information (TMI) except generator efficiency for which the
explanation is given below.

GENERATOR EFFICIENCY

Generator efficiency is the percentage of engine flywheel (or other
prime mover) power that is converted into electrical output. The
generator efficiency shown is calculated by the summation of all
losses method, and is determined in accordance with the IEC Standard
60034. The efficiency considers only the generator. There is no
consideration of engine or parasitic losses here.

Refer to DM7829 for low and medium voltage protective setting values and
limits.

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