

# TECHNICAL SPECIFICATION

**Type designation:** **AMG 0250DD04**  
**Application:** Diesel/Gas Engine Industrial Application Series  
**Site criteria:** Land use

## NOTES


## CONTENTS

### SECTION:

<b>1</b>	<b><i>PERFORMANCE DATA (Calculated values)</i></b>	<b>2</b>
<b>2</b>	<b><i>PERFORMANCE CURVES</i></b>	<b>3</b>
<b>3</b>	<b><i>CONFIGURATION AND SCOPE OF SUPPLY</i></b>	<b>7</b>
<b>4</b>	<b><i>ACCESSORIES</i></b>	<b>10</b>

### ENCLOSURES:

Item	Item NO.
Main dimension drawing	5854049
Rotor drawing	5854865
Main connection diagram	5856490
Connection instruction	5854831

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 <b>ABB Generators Ltd.</b>	Document identification	Lang.	Rev. ind.	Sheet	
	8AMG 5855431	en	B	1	


# 1 PERFORMANCE DATA (Calculated values)

## TYPE

Type designation: AMG 0250DD04

## PERFORMANCE DATA

Main standard	IEC 34							
Rated power factor	0.8							
Insulation class	H							
Temperature rise	H							
Ambient temperature	40 °C							
Altitude over sea level	≤ 1000 m							
Cooling/Protection	IC0A1/IP23							
Mounting arrangement	IM 2105 (IMB34) (one bearing, SAE flange, coupling disc, normal feet)							
Weight without/with PMG	610/620 kg (with SAE 3-11.5)							
Inertia without/with PMG	1.70/1.71 kgm <sup>2</sup>							
Direction of rotation (Facing drive end)	CW							
Maximum overspeed	2250 rpm							
Winding pitch	Two thirds (2/3)							
Stator winding resistance	0.0257 Ω per phase at 20°C series star connection							
Rotor winding resistance	1.83 Ω at 20°C							
Ex. Stator winding resistance	16.78 Ω at 20°C							
Ex. Rotor winding resistance	0.217 Ω at 20°C							
Total Harmonic Distortion	THD<3.5% at no load operation or rated Linear balanced load							
Voltage regulation	±1 %							
Cooling Air	0.21 m <sup>3</sup> /sec							
Telephone Interference	THF<2%				TIF<50			
Speed	1500 rpm				1800 rpm			
Frequency	50 Hz				60 Hz			
Voltage series star 3ph.	380/220	400/231	415/240	440/254	415/240	440/254	460/266	480/277
Voltage parallel star 3ph.	190/110	200/115	208/120	220/127	208/120	220/127	230/133	240/138
Voltage series delta 3ph.	220	230	240	254	240	254	266	277
Voltage parallel delta 3ph.	110	115	120	127	120	127	133	138
Rated continuous output	145 kVA	150 kVA	150 kVA	145 kVA	155 kVA	165 kVA	175 kVA	180 kVA
Rated efficiency	91.91%	92.08%	92.21%	92.36%	92.41%	92.59%	92.68%	92.79%
Xd(u)	1.743	1.627	1.512	1.3	1.874	1.775	1.722	1.627
Xd(s)	1.477	1.327	1.189	0.941	1.645	1.527	1.45	1.327
Xq(u)	0.883	0.825	0.766	0.659	0.95	0.9	0.873	0.825
X'd(u)	0.219	0.205	0.190	0.164	0.236	0.223	0.217	0.205
X'd(s)	0.199	0.186	0.173	0.149	0.215	0.203	0.197	0.186
X''d(u)	0.142	0.132	0.122	0.103	0.154	0.145	0.140	0.132
X''d(s)	0.129	0.120	0.111	0.094	0.140	0.132	0.127	0.120
X''q(u)	0.108	0.101	0.094	0.08	0.116	0.110	0.106	0.1
X''qs	0.098	0.092	0.085	0.073	0.105	0.100	0.097	0.091
X1(u)	0.047	0.044	0.041	0.035	0.051	0.048	0.046	0.044
X2(u)	0.089	0.083	0.077	0.066	0.094	0.089	0.087	0.082
X2(s)	0.08	0.075	0.07	0.06	0.086	0.081	0.079	0.074
X0(u)	0.011	0.01	0.009	0.008	0.011	0.011	0.01	0.01
Xp(s)	0.057	0.054	0.05	0.043	0.062	0.059	0.057	0.054
SCR (short circuit ratio), Ir0/Xd (u)	0.58	0.63	0.70	0.87	0.50	0.55	0.59	0.63
s=saturated value, u=unsaturated value, values are p.u. at rated voltage and power								
Td0'	1.472 s							
Td'	0.065 s							
Td''	0.0068 s							
Ta	0.009 s							
CE-Marking	Generator fulfills the requirements of Low Voltage Directive (2006/95/EC) Generator supplied to EEA-area will be CE-marked							

 <b>ABB Generators Ltd.</b>	Document identification	Lang.	Rev. ind.	Sheet
	8AMG 5855431	en	B	2

## 2 PERFORMANCE CURVES

### THREE PHASE EFFICIENCY CURVES, 50 Hz/380–440 V

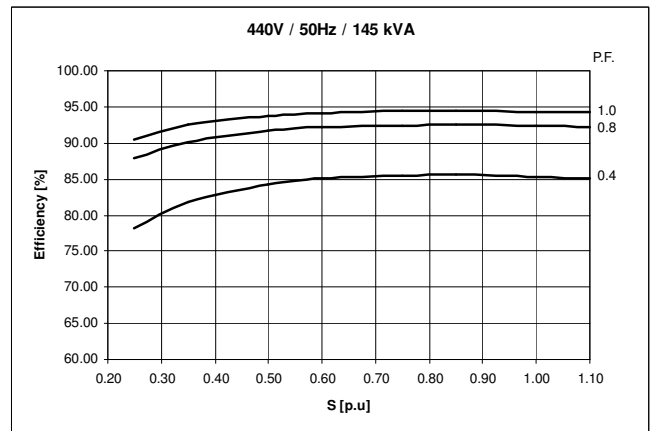
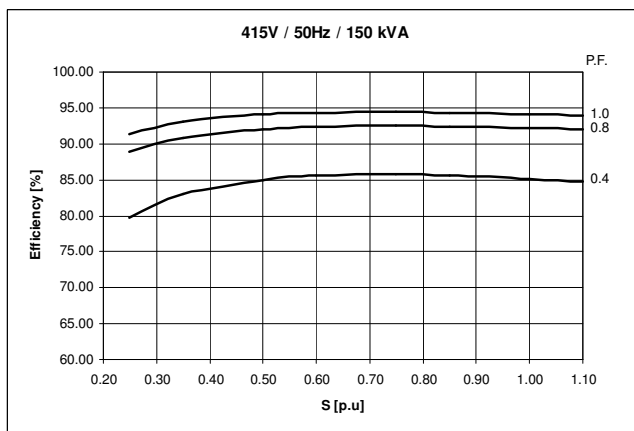
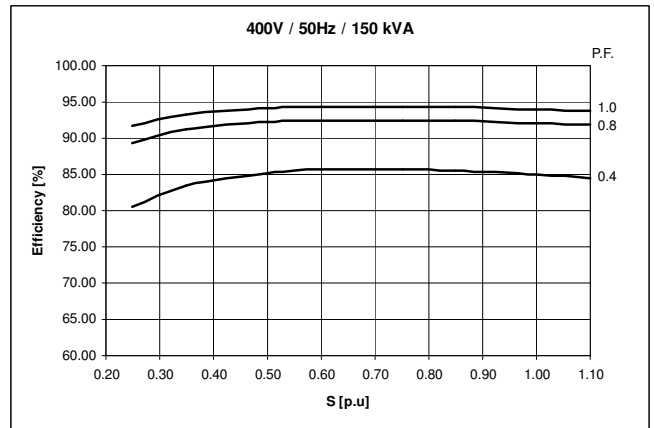
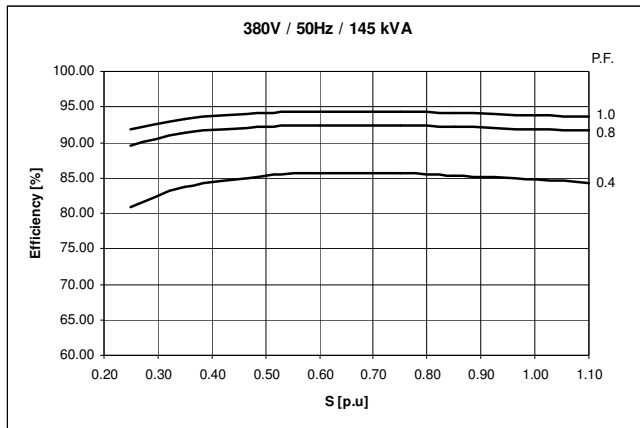


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8AMG 5855431

Lang.

en

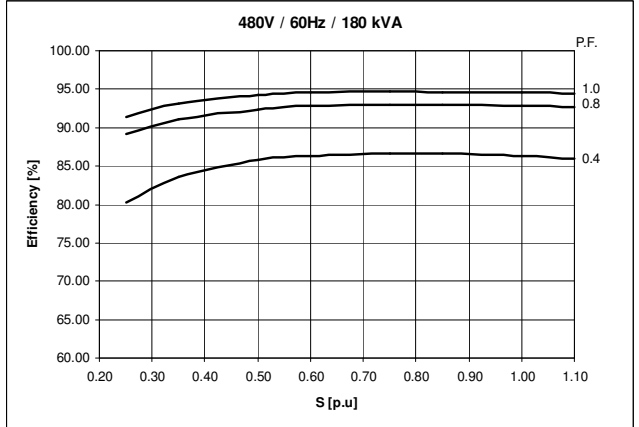
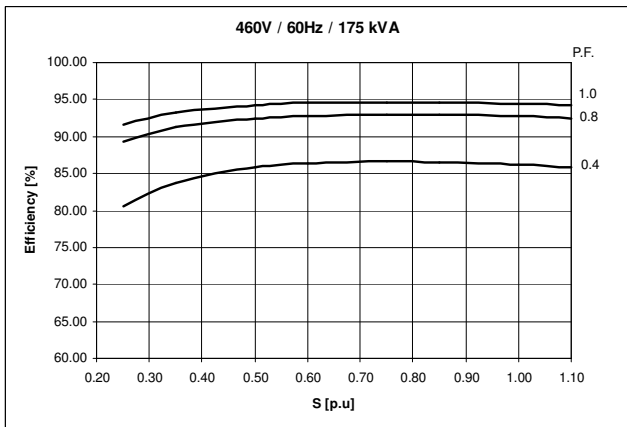
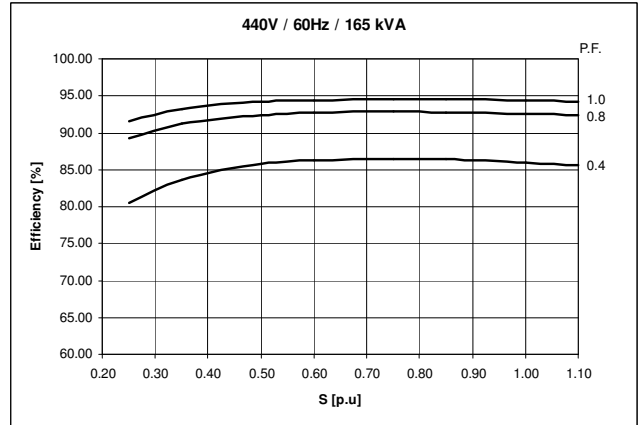
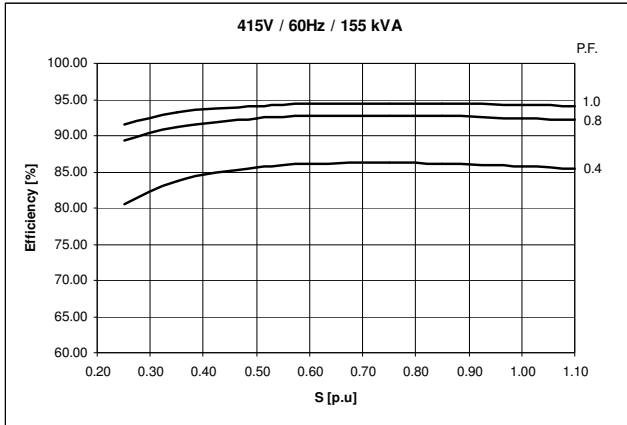
Rev. ind.

B

Sheet

3

### THREE PHASE EFFICIENCY CURVES, 60 Hz/415–480 V



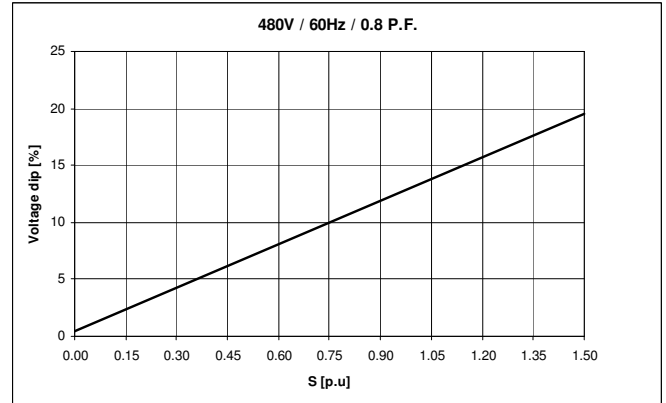
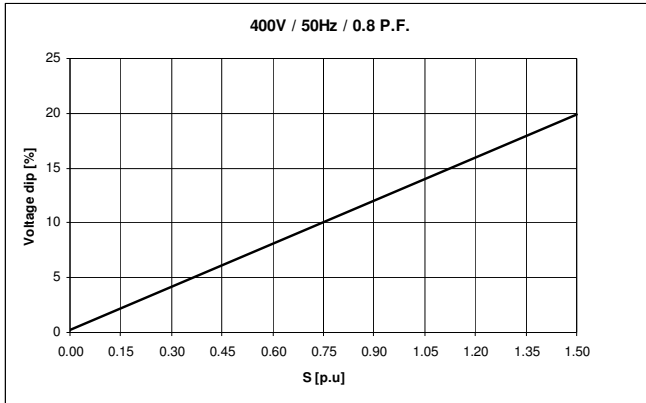
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Document identification  
**8AMG 5855431**

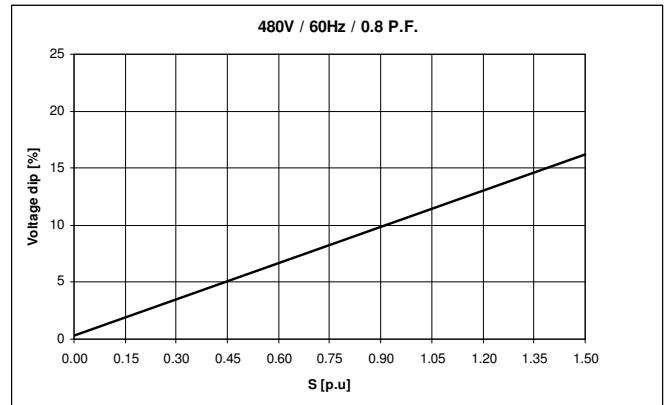
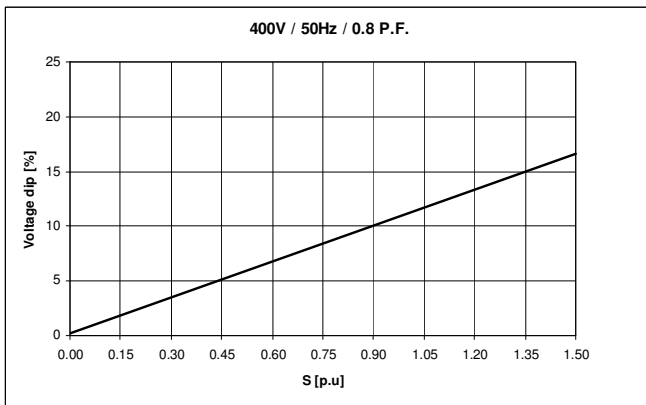
Lang.	Rev. ind.	Sheet
en	B	4

# TRANSIENT VOLTAGE REGULATION CURVES

## Load application (Shunt excitation):



## Load application (Auxiliary winding or PMG excitation):



## Load rejection (Shunt excitation):

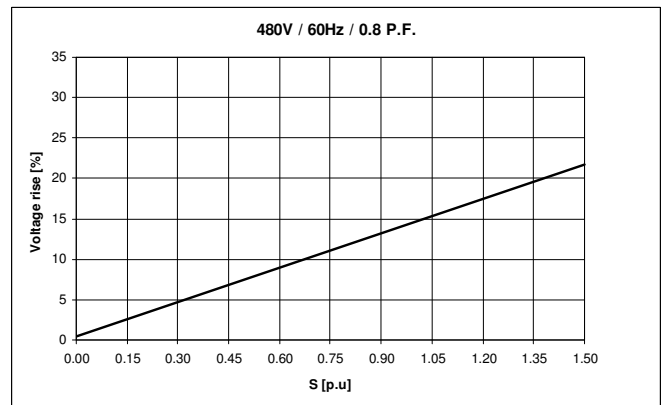
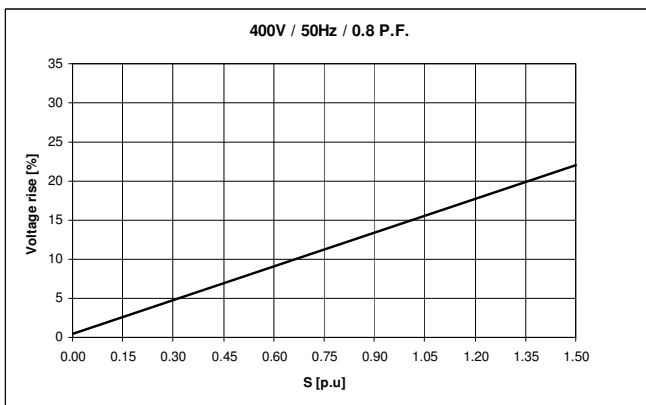


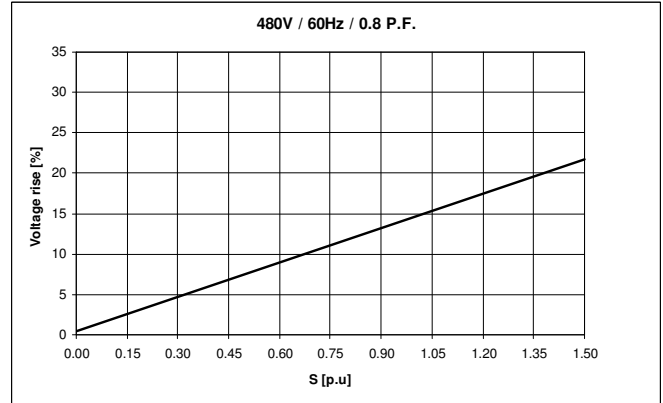
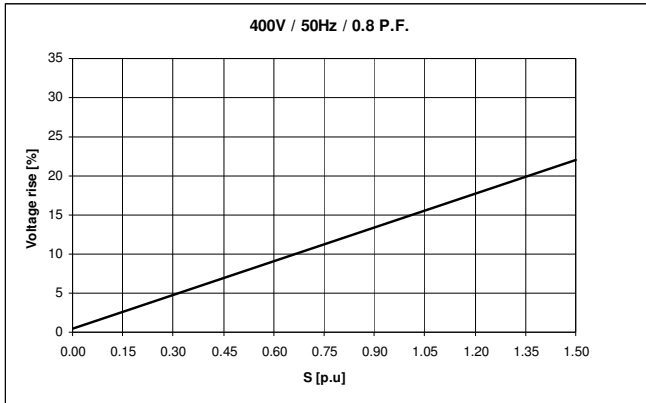
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Document identification  
8AMG 5855431

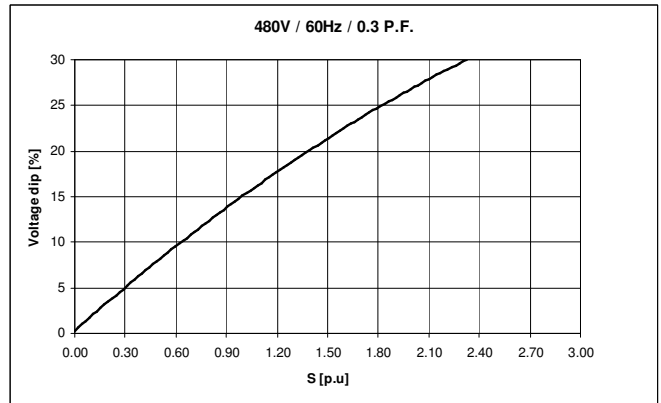
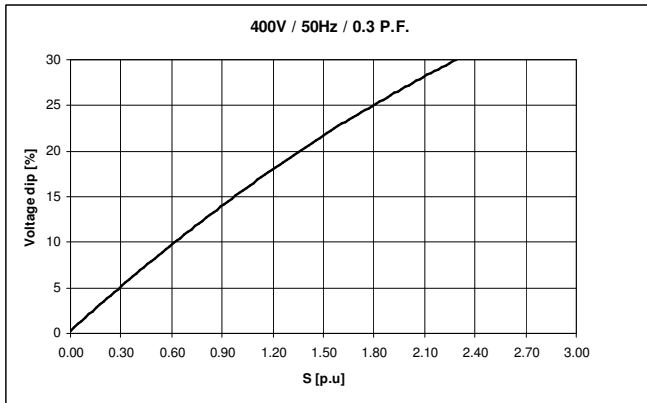
Lang.	Rev. ind.	Sheet
en	B	5

# TRANSIENT VOLTAGE REGULATION CURVES

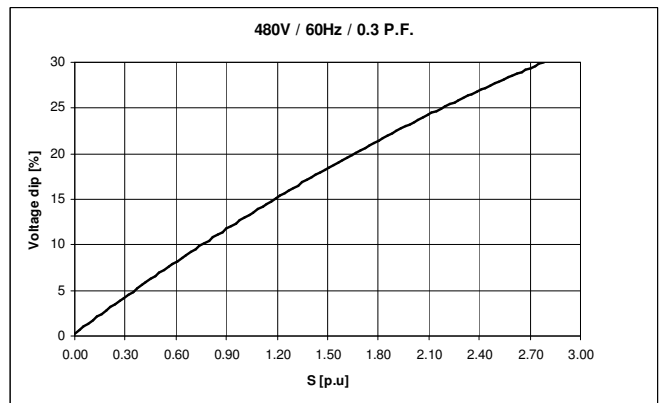
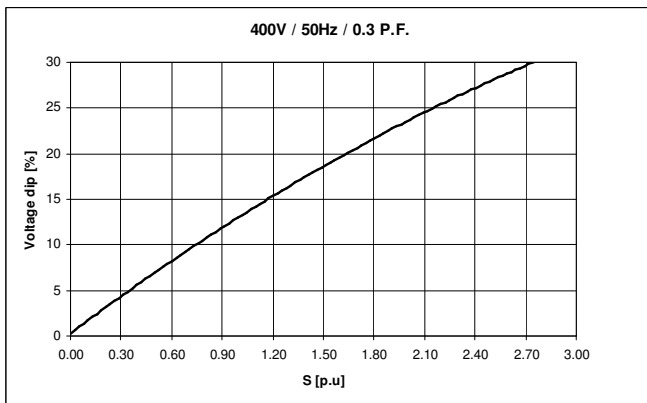
## Load rejection (Auxiliary winding or PMG excitation):



## Locked Rotor Motor Starting Curve (Shunt excitation):




## Locked Rotor Motor Starting Curve (Auxiliary winding or PMG excitation):



### Note1

S [P.U.] = S/S(Rated), S stands for the actual operation capacity, S(Rated) stands for the generator rated output capacity.

	<b>ABB Generators Ltd.</b>	Document identification	Lang.	Rev. ind.	Sheet
		8AMG 5855431	en	B	6

### 3 CONFIGURATION AND SCOPE OF SUPPLY

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#### GENERAL

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The generator is designed to operate together with a diesel or gas engine.

#### CONSTRUCTION

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The stator frame is a rigid cast steel structure construction. The stator core is built of thin electric sheet steel laminations which are insulated on both sides with heat-resistant inorganic resin.

The rotor consists of a shaft and a star shape rotor core. The shaft is machined of rolled steel. Special heat treatment is used if shaft operates under heavy conditions. The poles are manufactured of 0.5 mm sheet steel. The pole laminations are pressed and welded together with steel bars. These bars are then welded to the end plates. Rotor balancing is done acc. to ISO 1940/1. The standard balancing quality grade is G2.5.

All windings are completely vacuum pressure impregnated with high quality resin. The windings are provided with very strong bracing which withstands all expected mechanical and electrical shocks and vibrations as well as chemicals.

The stator frame, core support and end-shields are made of cast steel. They are welded and bolted together.

#### MAIN TERMINAL SPACE

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Protection class IP44, Integrated into the top module of the generator.

Supply cable entries: Closed terminal box. Cable inlet to the main terminal box to be done by the customer.

Twelve (12) leads T1 – T12 brought into the terminal box to enable internal series star, parallel star, series delta and parallel delta connection, Main terminals U, V, W and neutral point N in the main terminal box for external connection

Terminal marking acc. To IEC.

Max. internal air temperature 60 °C.

Designed for continuous current load.

#### FOUNDATION

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The machine can be mounted using shimming, machined blocks, chock fast or on grouted sole plates or bed plate. Before using other mountings, contact us.

#### CONTROL SYSTEMS

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##### General

Brushless excitation. The excitation power to the AVR is supplied by an auxiliary winding wound into the stator slots.

##### Automatic Voltage Regulator System


Standard voltage regulation system based on EA 63-5 AVR.

Mounted inside the main terminal box.

Analog type AVR.

Functions:

- a) 1-channel AVR.
- b) Excitation power from auxiliary winding.
- c) Voltage set-point adjustment (local).
- d) U/f limiter.
- e) Paralleling operation.

	ABB Generators Ltd.	Document identification	Lang.	Rev. ind.	Sheet
		8AMG 5855431	en	B	7



Total losses (applicable to machines with ratings >150 kW or kVA)	+10 % of the total losses
Peak value of short-circuit current under specified conditions	±30 % of the value in the technical specification
Steady short-circuit current at specified excitation	±15 % of the value in the technical specification
Moment of inertia	±10 % of the value in the technical specification

### **SURFACE TREATMENT**

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Grade: C2, Standard color

Surface treatment C2 according to the ISO 12944 standard, for standard industrial environment.

### **ORDER CONFIRMATION DOCUMENTATION**

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Main dimension drawing Documentation language is English.

Rotor drawing. Units in drawings [mm].

Main Connection diagram.

Connection instruction.

User's manual.

	<b>ABB Generators Ltd.</b>	Document identification	Lang.	Rev. ind.	Sheet
		8AMG 5855431	en	B	9

## 4 ACCESSORIES

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### OPTIONAL ACCESSORIES

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No pc/pcs	Item	Note
1	Anti-condensation heater	
1	Current transformer	For parallel operation with other generators
3	PT100 for stator winding	
1	PTC sensor (triple)	
1	PMG	



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Document identification

8AMG 5855431

Lang.

en

Rev. ind.

B

Sheet

10