



## Specification Sheet for WorldWide Electric DDD4112, Three-Phase

CONTROL SYSTEM	SELF-EXCITED				P.M.G.-EXCITED			
AUTOMATIC VOLTAGE REGULATOR	AGR440				AGR321		AGR341	
VOLTAGE REGULATION	$\pm 1.0\%$				$\pm 0.5\%$		$\pm 1.0\%$	
	WITH 4% ENGINE GOVERNING							
SUSTAINED SHORT CIRCUIT	NONE – SELF-EXCITED MACHINES CANNOT SUPPLY A SHORT-CIRCUIT CURRENT				SEE SHORT-CIRCUIT DECREMENT CURVES			
INSULATION SYSTEM	CLASS H							
PROTECTION	IP23							
RATED POWER FACTOR	0.8							
STATOR WINDING	DOUBLE LAYER LAP							
WINDING PITCH	TWO-THIRDS							
NUMBER OF WINDING LEADS	12							
STATOR WINDING RESISTANCE	0.0124 $\Omega$ /PHASE @ 22°C WIRED AS HIGH WYE (SERIES STAR)							
ROTOR WINDING RESISTANCE	1.05 $\Omega$ @ 22°C							
EXCITER STATOR RESISTANCE	18 $\Omega$ @ 22°C							
EXCITER ROTOR RESISTANCE	0.068 $\Omega$ /PHASE @ 22°C							
R.F.I. SUPPRESSION	BS EN 61000-6-2 & BS EN 61000-6-4, VDE 0875G, VDE 0875N. Consult the factory for others.							
WAVEFORM DISTORTION	NO LOAD < 1.5% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%							
MAXIMUM OVERSPEED	2250 Rev/Min							
BEARING DRIVE END	BALL. 6317 (ISO)							
BEARING NON-DRIVE END	BALL. 6314 (ISO)							
	1 BEARING				2 BEARING			
WEIGHT COMP. GENERATOR	940 kg				950 kg			
WEIGHT WOUND STATOR	415 kg				415 kg			
WEIGHT WOUND ROTOR	361 kg				338 kg			
WR <sup>2</sup> INERTIA	4.0771 kgm <sup>2</sup>				3.8783 kgm <sup>2</sup>			
SHIPPING WEIGHTS in a crate	1010 kg				1010 kg			
PACKING CRATE SIZE	155 x 87 x 107 (cm)				155 x 87 x 107 (cm)			
	50 Hz				60 Hz			
TELEPHONE INTERFERENCE	THF < 2%				TIF < 50			
COOLING AIR	0.8 m <sup>3</sup> /sec, 1700 CFM				0.99 m <sup>3</sup> /sec, 2100 CFM			
HIGH WYE (SERIES STAR), VAC	380/220	400/231	415/240	440/254	416/240	440/254	460/266	480/277
LOW WYE (PARALLEL STAR), VAC	190/110	200/115	208/120	220/127	208/120	220/127	230/133	240/138
HIGH (SERIES) DELTA, VAC	220/110	230/115	240/120	254/127	240/120	254/127	266/133	277/138
KVA BASE RATING FOR REACTANCE VALUES	300	300	300	290	344	360	375	375
X <sub>d</sub> DIR. AXIS SYNCHRONOUS	3.16	2.85	2.65	2.28	3.60	3.37	3.21	2.95
X' <sub>d</sub> DIR. AXIS TRANSIENT	0.20	0.18	0.17	0.15	0.22	0.21	0.20	0.18
X'' <sub>d</sub> DIR. AXIS SUBTRANSIENT	0.14	0.13	0.12	0.10	0.15	0.14	0.14	0.12
X <sub>q</sub> QUAD. AXIS REACTANCE	2.66	2.40	2.23	1.92	3.09	2.89	2.75	2.53
X'' <sub>q</sub> QUAD. AXIS SUBTRANSIENT	0.39	0.36	0.33	0.28	0.40	0.38	0.36	0.33
X <sub>L</sub> LEAKAGE REACTANCE	0.07	0.06	0.06	0.05	0.09	0.09	0.08	0.07
X <sub>2</sub> NEGATIVE SEQUENCE	0.26	0.24	0.22	0.19	0.28	0.27	0.25	0.23
X <sub>0</sub> ZERO SEQUENCE	0.10	0.09	0.08	0.07	0.10	0.09	0.09	0.08
REACTANCES ARE SATURATED. VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED.								
T' <sub>d</sub> TRANSIENT TIME CONST.	0.08 s							
T'' <sub>d</sub> SUB-TRANSTIME CONST.	0.019 s							
T' <sub>do</sub> O.C. FIELD TIME CONST.	1.7 s							
T <sub>a</sub> ARMATURE TIME CONST.	0.018 s							
SHORT CIRCUIT RATIO	1/X <sub>d</sub>							

### 50Hz RATINGS

Class	F				H				Standby							
Temp Rise	105°C R/R (40°C)				125°C R/R (40°C)				150°C R/R (40°C)				163°C R/R (27°C)			
High Wye (Series Star) Voltage	380	400	415	440	380	400	415	440	380	400	415	440	380	400	415	440
Low Wye (Parallel Star) Voltage	190	200	208	220	190	200	208	220	190	200	208	220	190	200	208	220
High (Series) Delta Voltage	220	230	240	254	220	230	240	254	220	230	240	254	220	230	240	254
KVA Output	280	280	280	270	300	300	300	290	320	320	320	310	330	330	330	320
kW Output	224	224	224	216	240	240	240	232	256	256	256	248	264	264	264	256
Efficiency, %	93.1	93.4	93.5	93.8	92.7	93.0	93.2	93.6	92.3	92.7	92.9	93.3	92.1	92.5	92.7	93.2
kW Input	241	240	240	230	259	258	258	248	277	276	276	266	287	285	285	275

### 60Hz RATINGS

Class	F				H				Standby							
Temp Rise	105°C R/R (40°C)				125°C R/R (40°C)				150°C R/R (40°C)				163°C R/R (27°C)			
High Wye (Series Star) Voltage	416	440	460	480	416	440	460	480	416	440	460	480	416	440	460	480
Low Wye (Parallel Star) Voltage	208	220	230	240	208	220	230	240	208	220	230	240	208	220	230	240
High (Series) Delta Voltage	240	254	266	277	240	254	266	277	240	254	266	277	240	254	266	277
KVA Output	315	335	345	345	344	360	375	375	365	385	400	400	375	395	415	415
kW Output	252	268	276	276	275	288	300	300	292	308	320	320	300	316	332	332
Efficiency, %	93.3	93.3	93.4	93.6	92.9	93.0	93.1	93.3	92.5	92.6	92.7	93.0	92.4	92.5	92.5	92.8
kW Input	270	287	296	295	296	310	322	322	316	333	345	344	325	342	359	358