

# MAGNAPOWER®



## *Generator Ratings:*

*kW 1425 – kW 4500 (60 Hz)*  
*kVA 1500 – kVA 4500 (50 Hz)*  
*Volts 480 – 13,800 (60Hz)*  
*380 – 11,000 (50 Hz)*



## MARATHON ELECTRIC

GENERATORS

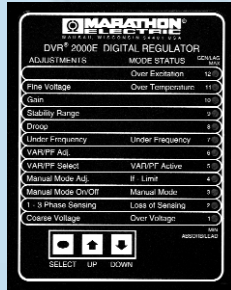
ISO 9001:2000 Certified

## DVR® 2000E Patented PMG Powered Digital Voltage Regulator...

is an encapsulated design for reliable operation in all environments. Fully tested to withstand 20g's in all planes and vibration to 0.035 inch peak, this regulator includes:

- 1/4% regulation; adjustable volts/hertz
- underspeed protection; single or three-phase RMS sensing; paralleling; loss of sensing protection; and over excitation protection.

The regulator is conveniently mounted in a low voltage control section within the conduit box to facilitate external adjustments.



## Heavy-Duty Shielded Ball Bearings...

are designed for a minimum B-10 life of 40,000 hours. The bearings are protected on each side by cast-iron bearing caps to prevent contamination from entering the bearing.

Extended grease and relief fittings make bearing regreasing easy. As a result of the superior single piece lamination construction, the MAGNAPOWER® does not require insulated bearings. MAGNAPOWER® generators are available in single or two bearing construction.



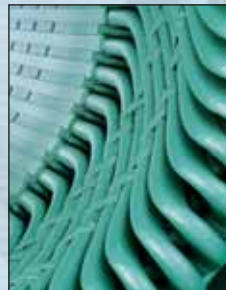
## Rotor Construction...

a Marathon Electric exclusive, features single piece rotor laminations and an amortisseur winding. The copper field winding is layer wound with thermo setting epoxy for high mechanical and electrical integrity and has an overcoat of tropical insulation for added environmental protection.



## High Voltage Insulation System (11.0 kV – 13.8 kV Models)...

utilizes advanced materials resulting in superior performance. The turn insulation is a calcined muscovite mica with an epoxy resin providing excellent voltage surge protection. The ground wall tape is an uncalcined muscovite mica tape with low binder content. This results in good voltage endurance and greater tape porosity enabling complete resin impregnation during the VPI process. The slot section of the coil is wrapped with a low resistance conducting tape to provide corona protection. The coil end turns utilize a semiconductive gradient tape and a protective tape system ensuring optimal voltage de-stressing and superior environmental protection. The entire stator assembly incorporates form wound coils and is vacuum pressure impregnated (VPI) with anhydride epoxy resin, well known for its excellent electrical and mechanical properties. Finally, an overcoat of tropical insulation is applied for added environmental protection.



## Low And Medium Voltage System...also incorporates form wound coils and VPI insulation systems.

## Rugged Construction...

assures low vibration and long life. Internal frame supports, external girth rings, and rigid mounting feet are welded to the rolled steel plate to form a strong, unitized frame.

## Brushless Exciter ...

is mounted outboard of the bearing for ease of inspection and maintenance. The rotating rectifier assembly utilizes 1000 volt rectifiers and a surge suppressor for protection from induced voltage spikes.



## Permanent Magnet Generator (PMG) Excitation System...

provides 300%–60 Hz (250%–50 Hz) short circuit excitation support for a minimum of 10 seconds and isolates the regulator power circuit from load disturbances. The PMG is mounted outboard of the bearing for ease of inspection and maintenance.



## Conduit Box...

assembly is optimized for customer flexibility. Various access panels and a low voltage control section are provided. The external load leads can enter the conduit box from the top, bottom, or side. Furthermore, the conduit box is designed to accept various auxiliary devices (potential and current transformers, etc.) while maintaining a compact generator outline. All models are equipped with an end-mounted conduit box as standard.

## Conduit Box Options...

optional conduit box designs are available to meet customer requirements.



# Product Features

## Standard Features:

- All designs utilize form wound coils
- Single and two bearing configurations
- SAE adaptations and drive discs for single bearing
- Ball bearings (40,000 hour B-10 life)
- Digital voltage regulation (0.25%)
- Permanent magnet generator
- Two thirds pitch design
- Stator RTDs (2 per phase) on medium & high voltage
- VPI insulation system
- 6 leads with 4 busbars

## Optional Features:

- Space heater
- IP23 dripcover
- Customer specified pitch
- Voltage regulator options
- NEC Class 1, Group D, Division 2
- Bearing RTDs
- Custom conduit boxes and mounting feet
- Air filters
- Stator RTDs (2 per phase) on low voltage

## Generator Design Specifications:

- High grade Class F insulation system for 6600–13,800 V
- High grade Class H insulation system for 480–4160 V
- Vibration limits to NEMA MG-1
- 300%–60 Hz (250%–50 Hz) short circuit current for 10 seconds
- Harmonic content less than 5%
- Deviation factor less than 5%
- TIF less than 50

## Available Generator Ratings:

- Voltage: 480–13,800 (60 Hz)  
380–11,000 (50 Hz)
- Poles: 4

The MAGNAPOWER® generator from Marathon Electric offers powerful performance, reliable power generation, and easy installation. MAGNAPOWER® provides application flexibility to meet the unique requirements of remote prime power applications. MAGNAPOWER® is the ideal generator choice for prime power needs including:

- Reciprocating and Turbine Prime Movers
- Distributed Power Generation
- Utility Applications
- Heavy Industry Power
- Oil and Gas Industry
- Cogeneration



With Panel Open



With Door Open



Low Voltage with  
Rear Cover Removed



High Voltage with  
Rear Cover Removed



**kW**  
Ratings

**60 Hertz**  
Three Phase,  
6 Leads

480Y Volts  
1800 RPM  
0.8 Power Factor  
40°C Ambient

**MAGNAPOWER®** Low Voltage

Model Number	kW Continuous Duty			kW Standby Duty	
	NEMA B 80°C R/R	NEMA F 105°C R/R	NEMA H 125°C R/R	NEMA F 130°C R/R	NEMA H 150°C R/R
1020FDL1002	1750	2000	2250	2250	2250
1020FDL1003	2000	2250	2500	2500	2500
1020FDL1004	2250	2500	2800	2800	2800
1030FDL1005	2500	2800	3000	3000	3000
1030FDL1006	2500	3000	3000	3000	3000
1030FDL1008	2500	3000	3250	3350	3350

**kW**  
Ratings

**60 Hertz**  
Three Phase,  
6 Leads

4160Y Volts  
1800 RPM  
0.8 Power Factor  
40°C Ambient

**MAGNAPOWER®** Medium Voltage

Model Number	kW Continuous Duty			kW Standby Duty	
	NEMA B 80°C R/R	NEMA F 105°C R/R	NEMA H 125°C R/R	NEMA F 130°C R/R	NEMA H 150°C R/R
1020FDM1210	2000	2250	2500	2500	2500
1020FDM1211	2250	2500	2800	2800	2800
1020FDM1204	2500	2800	3000	3000	3000
1030FDM1206	2650	3000	3000	3000	3000
1030FDM1208	2650	3000	3300	3350	3350
1030FDM1219	2800	3250	3420	3500	3600
1030FDM1220	2920	3340	3650	3720	4000
1040FDM1221	3300	3800	4150	4240	4500

**kW**  
Ratings

**60 Hertz**  
Three Phase,  
6 Leads

13,800Y Volts  
1800 RPM  
0.8 Power Factor  
40°C Ambient

**MAGNAPOWER®** High Voltage

Model Number	kW Continuous Duty			kW Standby Duty	
	NEMA B 80°C R/R	NEMA F 105°C R/R	NEMA H 125°C R/R	NEMA F 130°C R/R	NEMA H 150°C R/R
1020FDH5580	1425	1700	N/A	1850	N/A
1020FDH5582	1700	2000	N/A	2050	N/A
1020FDH5584	1750	2000	N/A	2250	N/A
1030FDH1414	2000	2250	N/A	2500	N/A
1030FDH1428	2250	2500	N/A	2800	N/A
1030FDH1429	2500	2800	N/A	3000	N/A
1040FDH1459	2800	3000	N/A	3250	N/A
1040FDH1460	2800	3130	N/A	3480	N/A
1040FDH1461	2880	3300	N/A	3680	N/A

**kVA**  
Ratings

**50 Hertz**  
Three Phase,  
6 Leads

380Y Volts  
1500 RPM  
0.8 Power Factor  
40°C Ambient

**MAGNAPOWER®** Low Voltage

Model Number	kVA Continuous Duty			kVA Standby Duty	
	NEMA B 80°C R/R	NEMA F 105°C R/R	NEMA H 125°C R/R	NEMA F 130°C R/R	NEMA H 150°C R/R
1020FDL1002	1750	2000	2250	2250	2250
1020FDL1003	2000	2250	2500	2500	2500
1020FDL1004	2250	2500	2800	2800	2800
1030FDL1005	2500	2800	3000	3000	3000
1030FDL1006	2625	3000	3100	3100	3100
1030FDL1008	2625	3000	3250	3350	3350

**kVA**  
Ratings

**50 Hertz**  
Three Phase,  
6 Leads

3300Y Volts  
1500 RPM  
0.8 Power Factor  
40°C Ambient

**MAGNAPOWER®** Medium Voltage

Model Number	kVA Continuous Duty			kVA Standby Duty	
	NEMA B 80°C R/R	NEMA F 105°C R/R	NEMA H 125°C R/R	NEMA F 130°C R/R	NEMA H 150°C R/R
1020FDM1210	2000	2250	2500	2500	2500
1020FDM1211	2250	2500	2800	2800	2800
1020FDM1204	2500	2800	3000	3000	3000
1030FDM1206	2650	3000	3000	3000	3000
1030FDM1208	2650	3000	3300	3350	3350
1030FDM1219	2800	3250	3420	3500	3600
1030FDM1220	2920	3340	3650	3720	4000
1040FDM1221	3300	3800	4150	4240	4500

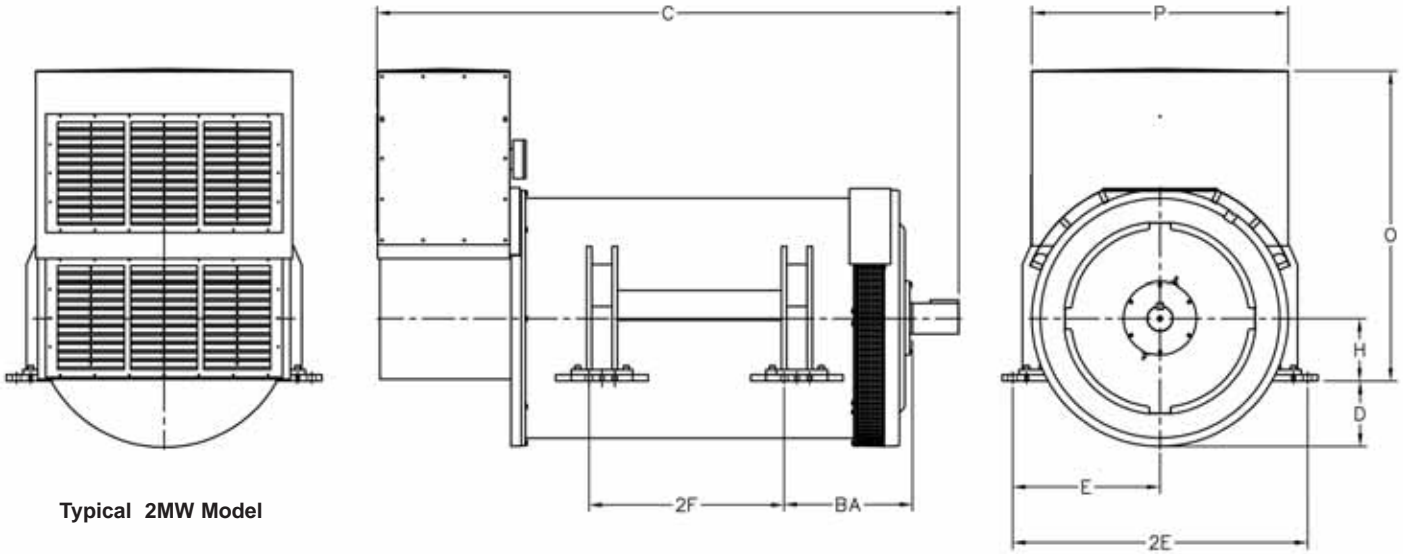
**kVA**  
Ratings

**50 Hertz**  
Three Phase,  
6 Leads

11,000Y Volts  
1500 RPM  
0.8 Power Factor  
40°C Ambient

**MAGNAPOWER®** High Voltage

Model Number	kVA Continuous Duty			kVA Standby Duty	
	NEMA B 80°C R/R	NEMA F 105°C R/R	NEMA H 125°C R/R	NEMA F 130°C R/R	NEMA H 150°C R/R
1020FDH5580	1500	1750	N/A	1875	N/A
1020FDH5582	1750	2025	N/A	2150	N/A
1020FDH5584	1800	2100	N/A	2250	N/A
1030FDH1439	2000	2250	N/A	2500	N/A
1030FDH1452	2250	2500	N/A	2800	N/A
1030FDH1447	2500	2800	N/A	3000	N/A
1040FDH1459	2800	3000	N/A	3250	N/A
1040FDH1460	2840	3250	N/A	3600	N/A
1040FDH1461	3000	3440	N/A	3825	N/A



## Dimensions in inches and (millimeters)

**MAGNAPOWER®**

ALL DIMENSIONS ARE APPROXIMATE: Contact factory for full dimensional data

Frame Size	BA	C	D	E	2E	2F	H	O	P
1020	25.03 (636)	107.89 (2740)	12.78 (325)	28.75 (730)	57.50 (1460)	31.00 (787)	12.25 (311)	60.47 (1536)	50.00 (1270)
1030	25.03 (636)	113.36 (2879)	12.78 (325)	28.75 (730)	57.50 (1460)	38.00 (965)	12.25 (311)	60.47 (1536)	50.00 (1270)
1040	23.51 (597)	127.07 (3228)	12.78 (325)	28.75 (730)	57.50 (1460)	45.00 (1143)	12.25 (311)	63.29 (1608)	63.54 (1614)

Note: Connection boxes shown are furnished as standard product. Consult factory for optional connection boxes.

### Marathon Electric: The experts in your field

As an independent manufacturer with more than fifty years of experience as a leading supplier to the generator market, Marathon Electric is dedicated to designing and manufacturing the highest quality electrical products.

Marathon's commitment to long term customer support and an intensive product development program means you get more:

- Design & Application Experience
- Advanced Testing Facilities
- Technical Support Staff
- Broad Product Line



*Your Independent Power Source  
for the 21<sup>st</sup> Century!*

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SB551G 6323J/1000/11-08/SK/RG

