

# marathon™

Generators

## MAGNAPOWER®

1425 – 4500 kW (60 Hz)

1500 – 4500 kVA (50 Hz)

480 – 13,800 Volts (60 Hz)

380 – 11,000 Volts (50 Hz)



ISO 9001:2008 Certified

A Regal Brand

**REGAL**

# 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

## Agency Certifications:

- UL recognized (up to 600 Volts)
- CSA certified

## Available Generator Ratings:

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

The MAGNAPOWER® generator from Marathon 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
1020FDL1100	1750	2000	2250	2250	2250
1020FDL1102	2000	2250	2500	2500	2500
1020FDL1104	2160	2510	2620	2680	2730
1020FDL1106	2250	2710	2800	2800	2800
1020FDL1108	2340	2800	2900	3000	3000
1030FDL1110	2530	3080	3260	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
1020FDM1180	2000	2250	2500	2500	2500
1020FDM1182	2250	2500	2800	2800	2800
1020FDM1184	2400	2800	3000	3000	3000
1030FDM1186	2650	3000	3000	3000	3000
1030FDM1188	2650	3000	3300	3350	3350
1030FDM1190	2800	3250	3420	3500	3500
1030FDM1192	2920	3340	3650	3680	3680
1040FDM1194	3300	3800	4150	4200	4200

**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
1020FDH1237	1000	1100	N/A	1250	N/A
1020FDH1239	1150	1350	N/A	1500	N/A
1020FDH1240	1425	1700	N/A	1850	N/A
1020FDH1242	1530	1840	N/A	2000	N/A
1020FDH1244	1750	2000	N/A	2180	N/A
1020FDH1246	1750	2090	N/A	2270	N/A
1020FDH1248	1780	2130	N/A	2330	N/A
1030FDH1250	1970	2350	N/A	2570	N/A
1030FDH1252	2100	2500	N/A	2700	N/A
1030FDH1254	2440	2800	N/A	3250	N/A
1040FDH1256	2500	3000	N/A	3250	N/A
1040FDH1258	2800	3300	N/A	3660	N/A
1040FDH1260	2800	3300	N/A	3660	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
1020FDL1100	1938	2225	2225	2225	2225
1020FDL1102	2000	2300	2300	2300	2300
1020FDL1104	2225	2550	2550	2550	2550
1020FDL1106	2250	2813	2850	2850	2850
1020FDL1108	2450	2900	2925	2925	2925
1030FDL1110	2625	3125	3263	3336	3338

**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
1020FDM1180	2156	2563	2750	2813	2813
1020FDM1182	2250	2625	2813	2875	2875
1020FDM1184	2500	2800	3000	3000	3000
1030FDM1186	2650	3000	3000	3000	3000
1030FDM1188	2650	3000	3300	3350	3350
1030FDM1190	2813	3250	3438	3500	3500
1030FDM1192	2938	3375	3650	3750	3750
1040FDM1194	3300	3800	4150	4250	4250

**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
1020FDH1237	1000	1100	N/A	1250	N/A
1020FDH1239	1150	1350	N/A	1500	N/A
1020FDH1240	1500	1750	N/A	1875	N/A
1020FDH1242	1775	2063	N/A	2188	N/A
1020FDH1244	1838	2175	N/A	2363	N/A
1020FDH1246	1900	2250	N/A	2425	N/A
1020FDH1248	1975	2375	N/A	2588	N/A
1030FDH1250	2150	2500	N/A	2813	N/A
1030FDH1252	2188	2550	N/A	2875	N/A
1030FDH1254	2500	2913	N/A	3200	N/A
1040FDH1256	2500	3125	N/A	3500	N/A
1040FDH1258	2888	3425	N/A	3750	N/A
1040FDH1260	2950	3650	N/A	4025	N/A

## 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 0.050 inch peak.

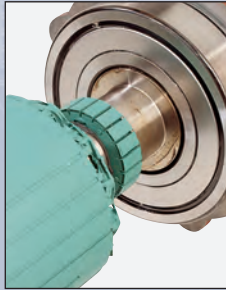


The DVR®2000E+ has the following features:

- Three regulation modes: Single or three phase Automatic Voltage Regulation (AVR) or Field Current Regulation (FCR) modes
- Adjustable soft start in AVR mode
- Under frequency (volts/hertz) regulation
- Single or three phase generator current (RMS) sensing (with optional CTs)
- True three-phase power metering
- Generator paralleling with reactive droop and reactive differential compensation
- Front-panel 4-digit human-machine interface (HMI) for configuration and monitoring
- Windows® based software for configuration and monitoring
- MODBUS protocol via RS232
- Controller Area Network (CAN) interface for metering and control
- Regulator 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® has very low self induced shaft currents and for this reason does not require insulated bearings. MAGNAPOWER® generators are available in single or two bearing construction (1020 frame).



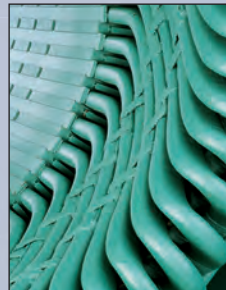
## Rotor Construction...

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...

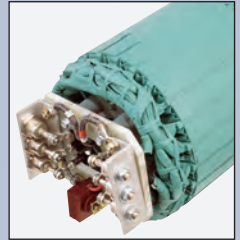
also incorporates form wound coils and VPI insulation systems.

## 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.

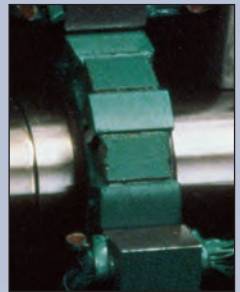
## Brushless Exciter...

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.

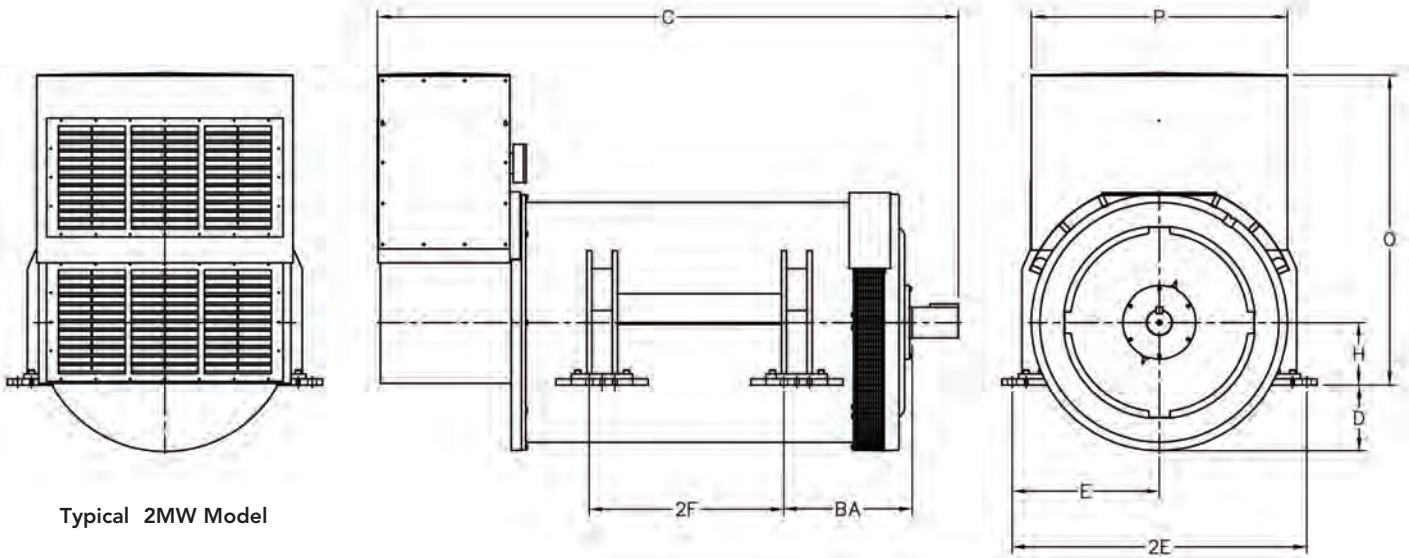


## Conduit Box...

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.



Typical 2MW Model

## Dimensions in inches and (millimeters)



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: 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 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

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