



# X\$DUltra®841

NEMA Premium<sup>®</sup> Extra Severe Duty Motors 143-449 Frame <sup>3</sup>/4-250 HP

a product of ecomagination<sup>™</sup>

### GE sets the standard...

#### We are dedicated to the future.

Since Edison's time at the leading edge of discovery, GE's mission has remained steadfast: to not only meet the world's changing needs, but to anticipate them.

With **ecomagination**, GE imagines and builds innovative solutions that help customers meet environmental challenges and improve their operating performance, while also benefiting the company and the world. As a global leader in energy, technology, manufacturing and infrastructure, GE is uniquely suited to help solve environmental dilemmas – today and for generations to come.

#### X\$D Ultra® 841 meets these challenges.



#### Improved Customer Operating Performance

• The X\$D Ultra® 841 meets or exceeds the IEEE 841-2001 Standard. With an advanced insulation and bearing system, a test report of each motor to ensure performance, 5 year warranty and all the advanced features that come with it, the X\$D Ultra® 841 is the most durable and reliable motor you can buy.

#### Improved Customer Environmental Performance

- Replacing one 100HP 1800 RPM Pre-EPAct motor (rewound once) with GE's X\$D Ultra® 841 for one year would save enough energy to power 2 US households for the same period.
- If a US Industrial user replaced one 100HP 1800RPM Pre-EPAct motor with an X\$D Ultra®, greenhouse gas emissions could be reduced by as much as 20 tons per year.



## ...with powerful features.



#### **Superior Performance**

The X\$D Ultra® 841 meets or exceeds NEMA Premium® Nominal efficiencies and exceeds all NEMA Premium® minimum guaranteed efficiencies. Each motor comes with its own test report demonstrating performance compliant with the IEEE 841-2001 specification.

- Overall vibration is 0.04 inches per second vs 0.08 inches (0.06 for 8 pole) per second per IEEE 841. This helps to extend the life of the motor and the connected equipment.
- Total shaft runout is 0.001" for shafts diameters 0.875" to 1.625" inclusive and 0.0015" for shaft diameters greater than 1.625" for ball bearing machines.
- GEGARD2000<sup>™</sup> insulation system features Class H insulation materials (except Class F leads) and exceeds the requirements of NEMA MG1-31 for motors operating on a variable frequency drive.
- Meets NEMA design B starting currents.







#### **Bearings**

GE's Six Star Bearing System<sup>™</sup> assures the maximum possible bearing life when combined with a maintenance program. For optimum performance the same over-sized bearing is used on both ends of the motor.

- An Inpro/Seal<sup>®</sup> is integrated to both the drive-end and opposite drive-end ensuring IP55 protection of the bearing system per IEEE 841-2001 specification.
- Fully charged lubrication system with a temperature resistant polyurea grease suitable for a wide temperature range (-40° to +130° C).
- An oversized single-shielded bearing is open towards the grease cavity for maximum lubricant circulation.
- 130,000 hours minimum for direct-drive loads, and 26,280 for L10 belt-driven loads.
- Low temperature rise designs (15% cooler on average than IEEE 841-2001 specification) increase bearing life.
- A gasketed cast-iron bearing inner cap retains lubricant and protects the bearing system and interior of the motor from contaminants.
- Finned endshield for improved heat dissipation and long bearing life (320-449 frame)



#### **Proven Reliability**

For years severe duty motors from GE have proven their performance and reliability in the most demanding process industry environments.

- A 5 year warranty comes standard with every X\$D Ultra® 841 motor.
  (60 months operational/66 months maximum from shipment).
- Cast-in vibration pads provide five point vibration probe mounting (four radial, one axial).
- In an internal test, an X\$D Ultra® 841 motor continued to operate after being subjected to 1,000,000 plug reversals.
- Rugged cast iron frame, conduit box, endshields and fan cover.
- Foot flatness tolerance of 0.005 inches provides easy alignment to connected equipment and further accentuates the benefit of 0.04 ips vibration.
- Draft Angle on top of all mounting feet is 1.5° or less to ensure secure mounting is achieved.





#### **Inverter Duty Application**

The GEGARD2000<sup>™</sup> insulation system exceeds both the IEEE 841-2001 specification and the requirements of NEMA MG1-31. It has the ability to withstand repeated 0.1 microsecond rise time/2000 volt spikes for 460 and 575 line voltages.

- Every X\$D Ultra® 841 is compatible for inverter duty out of the box and an optional shaft encoder can be installed for true closed-loop control.
- Opposite drive end shaft is drilled and tapped to accommodate an optional stub shaft adapter. This supports a tether style encoder on 4 pole and slower motors.
- Infinite:1 variable torque speed range and 20:1 constant torque\* speed range is stamped on the nameplate.
- \* 2 pole motors have a 4:1 constant torque speed range



#### Superior Corrosion Protection

The motor frame, fan cover, endshield and conduit box are cast iron for severe duty. Rotor surfaces are coated to resist interior rust which helps maintain performance.

- Epoxy ester paint system meets IEEE 841-2001 specification paint requirements and stands up to corrosive environments.
- Non-sparking corrosion resistant, bidirectional fan\* is quiet and energy efficient.
- \* 2 pole are unidirectional (404-449 frame).
- Brass combination breather/drains allow condensation to drain from motor.
- Corrosion resistant SAE Grade 5 hardware is rugged and designed for ease of motor service.
- Embossed 316 stainless steel nameplate stamped with over 30 motor specification details and all applicable standards.
- Leads are sleeved and are compatible with an oil mist lubrication system.

#### Safety

GE has added features which make this product safe to install, operate and maintain.

- Safer lifting is possible with a 4-point lifting system versus a single eyebolt.
- Cast-in lifting lugs eliminate eyebolts that may strip, shear, get lost, or be improperly selected.
- Grease inlet fitting at 12 o'clock and outlet fitting at 8 o'clock position, which promotes safer regreasing.
- A silicon bronze box lug ground terminal is located in the conduit box. And an additional ground terminal post is located on the drive-end endshield for greater operational safety.
- Fan covers on frames 324-449 have axial mounting bolts for more rugged installation.

#### Serviceability

Even the best motors need service. Our design engineers have made improvements to help make service easy.

- An oversized gasketed conduit box, containing permanently labeled non-wicking Class F leads (with ring terminals), makes connection and installation easy.
- Dual mounting holes for application versatlity and reduced inventory.
- Stator core centered in frame for easy conversion to F2 mounting.
- Embossed nameplate with superior operational and maintenance information.

## ...with a complete selection.

НР	RPM	Frame	460V	575V	НР	RPM	Frame	460V	575V
0.75	1200	143T	M354	M355	30	3600	286TS	M9446	M9579
	900	145T	M8901			1800	286T	M9447	M9580
						1200	326T	M9448	M9581
1	3600	143T	M8903	M8904		900	364T	M9449	M9582
	1800	143T	M352	M353					
	1200	145T	M363	M364	40	3600	324TS	M9450	M9583
	900	182T	M9413	M9482		1800	324T	M9451	M9584
4 5	7000	1477	N40005	N4000C		1200	3641	M9452	M9585
1.5	3600	1431	M8905	M260		900	3651	M9453	19586
	1200	1451 102T	M0414	M0/102	50	7600	72670	ΜΟΔΕΔ	M0507
	900	1021 184T	M0/15	M9403	50	1800	32013 326T	M9434 M0/55	M0588
	900	1041	119413	119405		1200	365T	M9/156	M9589
2	3600	143T	M8907	M8908		900	<u>404</u> т	M9457	M9590
-	1800	145T	M361	M362		500	4041	119497	115550
	1200	184T	M9416	M9486	60	3600	364TS	M9458	M9591
	900	213T	M9417	M9487		1800	364T	M9459	M9592
						1200	404T	M9460	M9593
3	3600	182T	M9418	M9488		900	405T	M9461	M9594
	1800	182T	M9419	M9489					
	1200	213T	M9420	M9490	75	3600	365TS	M9462	M8917
	900	215T	M9421	M9491		1800	365T	M9463	M9596
						1200	405T	M9464	M9597
5	3600	184T	M9422	M9492		900	444T	M9465	M9598
	1800	184T	M9423	M9493					
	1200	215T	M9424	M9494	100	3600	405TS	M9466/M8975	M8918
	900	254T	M9425	M9495		1800	405T	M9467	M9693
7 5	7000	017T	MOUSC	N4040C		1200	4441	M9468	× MOCOF
7.5	3600	2131	M9426	M9496		900	4451	M9469	19992
	1200	2131	M0/20	M04097	125	7600	μμμτς	M0/170/M9076	M0010
	900	254T	Mg/29	M9490	125	1800	44413 ////T	MQ/i71	MQ607
	500	2301	115425	119499		1200	4441 445T	M9471	M9698
10	3600	215T	M9430	M9563		900	447T	M9473	M9699
	1800	215T	M9431	M9564		500			115055
	1200	256T	M9432	M9565	150	3600	445TS	M9474/M8977	M8920
	900	284T	M9433	M9566		1800	445T	M9475	M9384
						1200	447T	M9476	M9385
15	3600	254T	M9434	M9567		900	449T	M8937	M8938
	1800	254T	M9435	M9568					
	1200	284T	M9436	M9569	200	3600	447TS	M9477/M8978	M8939
	900	286T	M9437	M9570		1800	447T	M9478	M9387
						1200	449T	M8940	M8941
20	3600	256T	M9438	M9571		900	449T	M8942	*
	1800	2561	M9439	M95/2	252	7000	1.4.OTC	NAOO 47 /NAOO 70	M00///
	1200	2861	M9440	M9573	250	3600	44915	M8943/M8979	M8944
	900	3241	1⊻19441	19574		1800	4491	148945	™8946
25	3600	284TS	M9442	M9575		* For ra	tinas not listed	consult your local GF	representative
	1800	284T	M9443	M9576			<u>.</u>	<u>j</u> j j j j j	
	1200	324T	M9444	M9577					
	900	326T	M9445	M9578					

### 460 Typical Volt Performance Data

										75%	50%			101010-00	
HP 3/4	FL Spd 1150	NP FLA 1.4	12.5	RVA CODE	FLT 3.4	175	275	80.0	78.5	81.4	TR:7	63.5	3/4 LOAD PF 54.4	1/2 LOAD PF 41.9	0.6
3/4	850	1.9	12.5	P	4.6	1000	1000	72.0	70.0	72.2	67.4	52.5	43.7	33.4	1.0
1	1750	1.5	15.0	N	3.0	275	300	86.5	85.5	87.1	85.1	76.0	68.0	55.0	0.4
1	1155 875	1.8	15.0	N	4.6	170	265	82.5	81.5 78.5	83.4 79.6	80.9 75.6	62.5 52.5	53.5	41.1	0.8
1.5	3530	2.0	20.0	M	2.2	175	250	87.5	86.5	89.6	88.7	81.0	74.2	61.8	0.6
1.5	1740 1175	2.1	20.0	M. M	4.5 6.7	250 165	280 250	86.5 87.5	85.5 86.5	87.6 88.3	86.3 86.5	77.5 68.0	69.9 59.6	56.9 46.8	0.8 1.0
1.5	870	3.2	20.0	M	9.0	130	210	80.0	78.5	80.5	77.1	55.5	46.7	35.6	1.6
2	3515 1730	2.7	25.0 25.0	L	3.0 6.1	170 235	240 270	86.5 86.5	85.5 85.5	89.2 88.0	88.6 87.3	80.5 80.0	73.2 72.9	60.4 60.2	0.8 0.9
2	1170	3.0	25.0	L	9.0	160	240	88.5	87.5	88.8	87.4	69.5	61.4	48.6	1.2
3	3530	3.8	32.0	K	4.5	160	230	89.5	85.5	91.4	90.8	82.0	76.5	65.2	1.9
3	1760	4.2	32.0	K	8.9 13.4	215	250	89.5	88.5	89.8	88.8	75.5	68.7	56.2	1.5
3	875	5.3	32.0	ĸ	18.0	130	205	86.5	85.5	86.4	84.8	61.0	53.1	41.3	2.5
5	3540 1755	6.2 6.6	46.0 46.0	J	7.4 15.0	150 185	215	90.2 89.5	89.5 88.5	91.3 90.5	90.3 90.1	84.0 79.5	79.3 74.2	69.2 63.4	1.5 2.0
5	1175	7.1	46.0	J	22.4	150	215	89.5	88.5	90.2	89.7	74.0	68.2	56.5	2.5
7.5	3535	8.0	46.0 63.5	H	29.8	130	205	91.0	90.2	89.6 91.4	88.1 90.7	90.5	56.8 88.6	82.8	3.5
7.5	1770	9.1	63.5	Н	22.3	175	215	91.7	91.0	92.1	91.7	84.5	81.6	73.4	2.2
7.5	880	11.5	63.5	н	44.8	125	200	89.5	88.5	90.1	89.2	68.0	60.5	47.9	4.6
10 10	3525 1765	11.2 12.0	81.0 81.0	Н	14.9 29.7	135 165	200	91.0 91.7	90.2 91.0	91.9 92.3	91.8 92.2	92.0 85.0	90.6 82.1	86.5 74 3	1.8 2.9
10	1170	13.0	81.0	н	44.8	150	200	91.0	90.2	92.0	91.8	79.0	73.6	62.8	3.9
10	3550	13.7	81.0	H G	22.2	125	200	90.2	91.0	91.0	91.0	75.5 87.5	70.2	59.3 81.0	4.2 2.8
15	1770	18.0	116.0	G	44.5	160	200	92.4	91.7	93.0	92.9	84.5	81.1	72.4	4.3
15	880	20.3	116.0	G	89.5	125	200	90.2	89.5	92.9	92.5	76.5	71.6	61.1	5.0
20	3550 1770	22.6	145.0 145.0	G	29.6	130 150	200	92.4	91.7	93.3 93.6	93.4 93.8	89.5 86.5	89.6 84 3	87.2 77.5	2.5
20	1180	25.8	145.0	G	88.8	135	200	91.7	91.0	93.1	92.9	79.0	74.3	63.9	7.4
20 25	875 3555	29.8 27.8	145.0 182.5	G	119.8 36.9	125 130	200	91.0 93.0	90.2	91.8 93.4	91.2 93.1	69.0 90.5	60.6 89.6	48.9 85.4	11.4 3.9
25	1775	29.6	182.5	G	73.9	150	200	93.6	93.0	94.0	93.9	84.5	81.5	73.2	6.9
25	875	37.0	182.5	G	111.4	125	200	93.0	92.4	93.3	92.9	69.5	61.7	50.2	9.7 13.7
30 30	3550	33.2 35.1	217.5	G	44.4 88.7	130	200	93.0	92.4	93.6 94.1	93.4 94.2	91.0 85.5	89.8 82.4	85.9 74.7	4.5 7.8
30	1175	38.2	217.5	G	133.8	135	200	93.0	92.4	93.6	93.3	79.0	72.9	62.8	11.1
30 40	890 3575	42.2	217.5 290.0	G	177.2 58.8	125 125	200	92.4 94.1	91.7	93.9 94.0	93.3 92.9	72.0 85.0	64.1 77.3	52.4 68.0	15.1 12.0
40	1785	50.8	290.0	G	117.8	140	200	94.5	94.1	94.5	93.9	78.0	71.1	60.0	16.4
40	890	49.4 55.9	290.0	G	236.4	135	200	93.0	93.6	94.6 94.1	94.2 93.5	72.0	64.3	52.5	20.1
50 50	3570 1780	57.3 63.9	362.5	G	73.5 147.4	120 140	200	94.5 94.5	94.1 94.1	94.6 94.6	93.8 94.1	86.5 77.5	80.0 70.7	71.6 59.7	13.2 20.6
50	1185	62.2	362.5	G	221.3	135	200	94.1	93.6	94.7	94.5	80.0	73.9	63.3	18.4
50 60	885 3570	66.6 70.4	362.5 435.0	G	297.3 88.3	125	200	93.0 95.0	92.4	94.2 94.8	93.8 93.9	75.5 84.0	68.0 76.2	56.2 66.7	22.8 18.4
60	1780	71.2	435.0	G	177.1	140	200	95.0	94.5	95.1	94.7	83.0	77.6	67.9	19.5
60	885	78.9	435.0	G	356.8	125	200	93.0	94.5	94.5	94.0	76.5	68.7	57.1	26.5
75 75	3580 1785	85.2 86.6	542.5 542.5	G	110.1	105 140	200	95.8 95.4	95.4	95.6 95.7	94.8 95.5	86.0 85.0	78.5 80.7	69.0 72.1	21.6
75	1190	89.6	542.5	G	330.5	135	200	95.0	94.5	95.4	95.0	82.5	77.7	68.7	23.1
100	890 3570	94.0	542.5	G	442.2	125	200	94.5	94.1	95.2 95.7	94.7 95.5	79.0 91.0	73.1 87.1	62.9 82.0	27.6 17.4
100	3570	108.0	725.0	G	147.0	105	200	95.4	95.0	95.7	95.5	91.0	87.1	82.0	17.4
100	1195	119.0	725.0	G	440.2	125	200	95.0	95.4	96.0 95.4	95.8 94.8	84.5	79.6	71.0	29.0
100 125	890 3580	125.0 139.0	725.0	G	590.0 183.3	125	200	94.5 95.4	94.1	95.3 95.8	94.9 95.3	79.0 88.0	72.9	62.7 74.3	37.0 29.9
125	3580	136.0	907.5	G	183.3	100	200	95.4	95.0	96.0	95.6	90.0	85.7	80.0	23.8
125 125	1780 1190	144.0 150.0	907.5 907.5	G	368.4 550.7	110 125	200 200	95.8 95.4	95.4 95.0	95.8 95.5	95.4 95.0	85.0 81.5	80.9 76.2	72.8 66.5	34.2 41.6
125	890	155.0	907.5	G	737.7	120	200	95.0	94.5	95.4	95.1	79.5	73.5	63.5	45.0
150	3580	162.0	1,085.0	G	219.9	100	200	95.8	95.4	96.3	95.9 96.0	90.5	86.5	81.0	29.1 27.4
150	1790	170.0	1,085.0	G	439.7	110	200	96.2 95.8	95.8	96.5 95.8	96.1 95.5	86.0 85.5	81.6 81.1	73.2	40.7
150	890	184.0	1,085.0	G	885.0	120	200	95.0	94.5	95.8	95.6	80.5	75.3	65.9	49.4
200 200	3580 3580	214.0 214.0	1,450.0 1,450.0	G	293.3 293.2	100 100	200 200	95.8 95.8	95.4 95.4	95.8 95.9	95.3 95.4	91.5 91.5	88.3 88.3	84.1 83.8	31.5 32.2
200	1790	220.0	1,450.0	G	586.1	100	200	96.5	96.2	96.8	96.5	88.0	84.9	78.3	44.2
200	890	229.0	1,450.0	G	1,180.6	120	200	95.8 95.4	95.4 95.0	96.0 95.7	95.8 95.5	85.5 79.5	81.6 73.7	73.8 63.6	51.7 71.6
250	3575	265.0	1,825.0	G	366.9	70	175	95.8	95.4	96.1	95.9	92.0	89.8	86.9 86.9	32.6
250	1790	280.0	1,825.0	G	732.7	80	175	96.2	95.8	96.1	95.5	87.0	83.6	76.5	59.9

Actual performance data for particular ratings can be found through using EliteNet™



GE Motors - Fort Wayne, IN 46802