Low Voltage Motors
AC/DC
1-1000 HP
0.75-750 kW
Durability, Reliability and Efficiency at the Heart of Industrial Operations
Small Machines Make A Big Impact
INDUSTRIAL PROCESSING COST SAVING CHALLENGE

Electric motors make an average of 70% total power cost.

$87k/ Hour

Average cost of unplanned downtime for a typical industrial processing plant.

Multiple suppliers, designs and specifications tying up resources.
Frequent unplanned maintenance disrupting operations requiring replacement motors onsite.
Older low efficient motors eating profits.
Higher Efficiency and Less Downtime

GE SOLUTION

$930k/Year

Energy savings uncovered during a plant motor audit and resulting frame agreement***

Frame agreements increase supply and specification efficiency freeing up resources.

Less unplanned maintenance and downtime with more robust motor designs.

1%+ energy efficiency gains translates to less than two year payback.
Application Considerations
TOTAL COST OF OWNERSHIP

CONSIDER LIFECYCLE OPERATING COSTS FIRST
The initial cost of an electric motor makes up 5% or less of the total cost of operation. So all aspects of the motor operation should be considered when purchasing motors.

Energy Consumption
Efficiency
Ease of Maintenance
Reliability
System Criticality
Lifecycle
Environmental Impact

WE ADDRESS THE MOST COMMON REASONS FOR MOTOR FAILURE

BEARINGS
- Heat
- Contamination
- Vibration
- Misalignment
- Lubrication Issues
- Electrical Discharge
- Stress, Load, Fatigue

STATOR WINDINGS
- Heat
- Load
- Inverters
- Contamination
- Voltage Issues

COMMON INDUSTRIAL APPLICATION REQUIREMENTS
Each petroleum, chemical, power generation, pulp/paper, mining, metal, mineral, water/wastewater, and general process application has unique torque, speed, voltage, enclosure, temperature, and industry standard requirements that must be designed into motors.

- Pumps
- Compressors
- Blowers
- Heat Exchangers
- Mixers
- Conveyors
- Crushers
- Augers

Energy Consumption
Efficiency
Ease of Maintenance
Reliability
System Criticality
Lifecycle
Environmental Impact
Durable and Reliable Technology

ALL LOW VOLTAGE MOTORS ARE NOT BUILT THE SAME

GEGARD™ INSULATION OFFERS ADDED PROTECTION IN SEVERE APPLICATIONS

Our Class H GEGARD insulation system is designed to excel in variable frequency drive applications where lesser designs often short circuit and cause overcurrent trips.

Larger Thermal Margin = Longer Motor Life

GUARDING AGAINST BEARING FAILURE

Common shaft currents create voltage spikes that reach bearings causing them to vibrate in operation. Over a short period, this vibration (fluting) will degrade bearings to the point of failure. We include bearing insulation for higher ratings and Aegis™ shaft grounding rings are optional on all ratings.

ROTATIONAL VARNISH APPLICATION

Motor coils are rotationally varnished with a “Trickle Treat” process while an electric current is passed through the windings to ensure a penetrating, thorough and even coating. This proven process fills air gaps that could cause corona inception damage during operation.

WIRE BONDING

Resin penetrates deep into tightly packed coil wire creating a strong bond that guards against end-turn vibration.

MOISTURE PROTECTION

Contaminants can’t penetrate carefully and tightly packed stator coils bonded by deep resin penetration into the slots.
## Product Portfolio

**RUGGED, RELIABLE AND EFFICIENT LOW VOLTAGE MOTORS**

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<th><strong>SEVERE DUTY IEC IE3</strong></th>
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This versatile and robust design is ideal for a wide range of challenging industrial applications and environments.

**MODELS**
- X$D Ultra
- X$D Ultra 841
- Energy $aver

**TECHNICAL CAPABILITIES**
- 0.75–300 HP, 900–3600 RPM
- 230/460, 460, 575 V, Freq. 60 Hz
- Alternate 50 Hz data on nameplate
- TEFC (IP55) and ODP
- Frame sizes: 143T–449T
- NEMA, UL, CSA, IEEE 45, IEEE 841, IEEE 112B, GM 7E-TA
- Division 2 applications
- C-Face and high-torque Design “C” models available.
- VFD ready with GEGARD Class H (X$D Ultra) or Class F (E$) insulation
- Five (X$D Ultra) or Three (E$) Year Warranty

Based on the X$D Ultra mechanical and electrical design for the global market. Ideal for extreme environments.

**MODEL**
- X$D Ultra 841 IEC

**TECHNICAL CAPABILITIES**
- 0.55–220 kW, 750–3000/900–3600 RPM
- 200 V, 400 V, 400/690, 690 V / 50 Hz
- Alternate 50 Hz data on nameplate
- TEFC (IP55)
- Frame size: 90S–280H
- IEC, IEEE 841, IEEE 45, ATEX, and IEC Exn
- Zone II, ABS
- VFD ready with GEGARD Class H insulation
- Five Year Warranty

This enclosure has been specially designed to contain any sparking for hazardous environments where volatile gases may be present.

**MODEL**
- X$D Ultra XP

**TECHNICAL CAPABILITIES**
- 1–300 HP, 900–3600 RPM
- 230/460, 575 V, Freq. 60 Hz
- Alternate 50 Hz data on nameplate
- TEFC (IP55)
- Frame sizes: 182T–286T
- NEMA, UL, CSA, IEEE 112B
- Division 1, Class I - Groups C, D
- Class II - Groups F, G
- Five Year Warranty

Optimized performance in metal processing, plastic extrusion, winders, test stands, crane and hoist and material handling.

**MODEL**
- A$D Ultra

**TECHNICAL CAPABILITIES**
- 1.5–300 HP, 1800 RPM
- 230/460, 460, 575 V, Freq. 60 Hz
- TEFC, TEBC, TENV (IP55)
- Frame sizes: 143TC–449T
- NEMA, IEEE 841, IEEE 112B
- VFD ready with GEGARD Class H insulation
- Five Year Warranty
## Proven Technology

**LARGE INSTALLED BASE IN EXTREME INVERTER-DUTY APPLICATIONS**

### Heat Exchanger
**NEMA IE3**

- **Stable, Reliable, Efficient**

Specially rated and ideally suited for harsh outdoor heat exchange applications.

**Model**
- **XSD Ultra 661**

**Technical Capabilities**
- 0.75–300 HP, 900–3600 RPM
- 460, 575 V, Freq. 60 Hz
- TEFC (IP55)
- Frame sizes: 184T–449
- NEMA, UL, CSA, API 661, IEEE 841, IEEE 45, GM 7E-TA, IEEE 112B
- CE, ATEX Zone 2
- Division 2 application
- VFD ready with GEGARD
- Class H insulation
- Five Year Warranty

### Vertical Pump
**NEMA IE3**

- **Inverter-Duty and Efficient**

Combines extra severe duty engineering with advanced thrust and cooling technologies.

**Models**
- **Ultra Series Vertical**
- **Large Custom Vertical**

**Technical Capabilities**
- 3-1000 HP, 600-3600 RPM
- 460, 575, 2300/4160 V
- 60Hz or 50Hz
- WPI and TEFC Enclosures
- Hollow and Solid Shaft
- Normal, High, and Extra High Thrusts
- Frame Size: 182-5013
- API 610 12th Edition
- P-Base mountings
- VFD ready with GEGARD
- Class H insulation
- Three Year Warranty

### Medium Voltage
**NEMA**

- **Severe Duty, Long Lasting**

Designed to operate in extreme Petrochemical, Power Generation, Mining and general process environments and applications.

**Models**
- **Quantum LMV**
- **Ultra Series MV**

**Technical Capabilities**
- 100-800 HP, 900-3600 RPM
- 460, 575, 2300/4000 V, Freq. 60 Hz
- TEFC
- Available in IEEE 841 config.
- Frame sizes: 444-5013
- NEMA, CSA, IEEE 112B, AEx nA
- API 547 and 541, Division 2, Zone 2
- Class F insulation
- Three Year or Five Year Warranty (IEEE 841)

### Direct Current

- **Reliable Workhorses**

A reliable lifeline to driven equipment and backbone for production and operation.

**Models**
- **Kinamatic**
- **CD6000 Series**
- **Mill Duty**

**Technical Capabilities**
- 1–500 HP, 300–3600 RPM
- Armature voltage: 180, 240, 500
- Field voltage: 300/150, 240/120
- DPFG, DPFG-BV, TE, Explosion proof
- TREC coils on large frames
- Two Year Warranty

**(CD6000 Series)**
- 500–2000 HP, 300–1750 RPM
- Armature & Field voltage: 230, 460
- Meets AIST standard
Discover. Configure. Purchase.

Website
The latest information on custom and standard rotating machines.

e-Catalog
GE motors on your computer
Auto-update online.
Can be viewed offline.

PC Store
Find a distributor.
Download data packs.
Access support library.

Manufacturing
Monterrey, Mexico
Employs over 500 people.
ISO9000-2008 facility
YouTube Virtual Tour

Services
CARING FOR YOUR NEEDS
At GE, we understand that the goals of your organization are demanding, and evolving. To help you meet these goals here at GE Power Conversion we provide a service that goes beyond just waiting for your call.
We offer a comprehensive range of aftermarket services including replacement units, field services, spares, service agreements, unit upgrades and technical support. Our mission is to satisfy our customers aftermarket needs.

INSTALLATION & COMMISSIONING
Installing with confidence. Our team of field service engineers are on hand to ensure your assets go into active service functioning efficiently.

TRAINING PROGRAMS
Through our in-depth training modules we provide our customers with the knowledge and skills to operate and maintain equipment in the field.

ENHANCED TECHNICAL SUPPORT
We offer enhanced technical support to customers with service agreements. Our enhanced technical support agreements are designed to suit your specific needs including the availability of 24/7 on-call technical assistance, remote support and immediate mobilization to emergencies.

SPARES AND CONSUMABLES
The GE Parts team is available to advise the appropriate spares and consumable parts for you to hold in stock. For those emergencies - the team will provide the parts you need on time and at the quality you expect.

DIAGNOSTICS AND SPECIALIZED
Delivering state of the art test and diagnostic services, our specialist field engineers will apply our in house analysis tools to analyse the asset’s performance. Working with you to resolve issues on installations in the field efficiently and reliably.

UNIT UPGRADES
To extend the life of your asset, our engineering design team will provide you with suitable upgrade options aligned to meet your technical specification and requirements to improve.

www.gepowerconversion.com
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* http://energy.gov/eere/amo/downloads/optimizing-your-motor-driven-system
** https://iac.university/technicalDocs/prodman.pdf (Page 67)
*** Large pulp and paper producer motor audit results 2014
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