TECO Westinghouse

PRODUCTS OVERVIEW

MOTORS | CONTROLS | GEARBOXES | SERVICE

ANAB ACCREDITED ISO/IEC 17021 MANAGEMENT SYSTEMS CERTIFICATION BODY

SYSTEM CERTIFICATION ISO 14001:2015 SGS

STOCK MOTOR PRODUCTS

SINGLE PHASE (TEFC)

FARM DUTY
- 1/3 - 10 HP: 1800 RPM
- 115/ 230V through 2 HP, 230V for 3 HP and Above
- 1.15 Service Factor, Continuous Duty
- Manual Reset Overload Protection

HVAC
- NEMA Premium: ODP 1/4 - 3 HP: 3600, 1800 RPM
- NEMA Premium: TEFC 1/4 - 3 HP: 3600, 1800 RPM
- EPACT: TEFC 3 - 10 HP: 3600, 1800 RPM

MAX-HT™

- High Torque Crusher Motors
- 20 - 150 HP at 230/ 460V; 460V above 150 HP
- 100 - 900 HP at 2300/ 4160V
- TEFC (IP55)
- NEMA Design C: 1 - 200 HP; (Locked Rotor Torque 200% FLT)
- NEMA Design A: 250 HP & Up; (Locked Rotor Torque 200% FLT)
- CSA Certified for Class 1, Div 2, Groups B, C & D; Temp Code T3C; Class 2, Div 2, 440 Frame and Above
- High Strength Steel Shaft, AISI 4140 Material
- Suitable for Vertical Mounting for Vertical Impact Crushers

ROLLED STEEL MOTORS

- 1/3 - 40 HP (ODP)
- 1/3 - 10 HP (TEFC): 3600, 1800, 1200 RPM
- 230/ 460V, Useable on 200 & 208V Systems
- Motors 1/4 HP and Above are NEMA Premium Efficient
- Wound with Inverter Duty Wire
- 1.15 Service Factor, Continuous Duty Rated
- Multiple Mountings for 56 and 140T Frames; Dual Mountings on 180T and Larger

STAINLESS STEEL WASHDOWN MOTORS

- 3/4 - 10 HP: 3600, 1800 & 1200 RPM
- TEFC (IP56)
- All Stainless Steel Construction
- All Motors Come with a C-Face Kit
- UL Recognized and CSA Approved
- Self-Certified for Class 1, Div 2, Groups B, C & D; Temp Code T3C

ODP CAST IRON MOTORS

- 1 - 800 HP: 3600, 1800, 1200 RPM
- 230/ 460V through 125 HP, 460V for 150 HP and Larger
- Some Ratings are Available in 575V
- Suitable for Inverter Duty with 20:1 Variable Torque and 10:1 Constant Torque Speed Ranges
- All Cast Iron Construction
- UL Approved for Fire Pump Applications
- C & D Flanges Available

MAX-VH/VHP™/ MAX-VS/VSP™

- 7.5 - 800 HP: 1800, 1200 RPM
- Vertical Hollow and Solid Shaft, High Thrust Motors
- Weather Protected Type 1 (WPI) Enclosure
- Totally Enclosed Fan Cooled (TEFC) Enclosure
- Standard with Ball Type Non-Reversing Ratchet
- Multiple Coupling, Bases & Steady Bushing Options
- Wound with Inverter Duty Wire

MAX-PE™

- 1 - 200 HP: 3600, 1800, 1200 RPM
- Dual Rated for Both 60 & 50 Hz; 230/ 460 or 190/ 380V, 60Hz
- Meets or Exceeds NEMA Premium Efficiency Levels
- Cast Iron Frame and End Brackets
- Rolled Steel Terminal Box and Fan Cover
- UL Recognized, CSA Certified and CE Marked
- Footed C-Face and Round Body C-Face Stocked up to 100 HP

CLOSED COUPLED PUMP MOTORS (JM/JP)

- 1 - 50 HP
- 3600, 1800 & 1200 RPM
- CE Marked
- Meets NEMA Premium Efficiency Requirements
- TEFC Motors have Cast Iron Frames
- ODP Motors have Rolled Steel Frames
- UL Approved for Fire Pump Applications

MAX-EI®

- 3/4 - 800 HP: 3600, 1800, 1200, 900 RPM
- NEMA Premium Efficiency, 500 HP and Below
- 230/ 460V through 125 HP, 460V for 150 HP and Larger
- Some 575V Stocked through 125 HP
- CSA and UL Approved for Inverter Duty per NEMA MG-1, Part 31
- CSA Certified for Class 1, Div 2, Groups B, C & D; Temp Code T3C; Class 2, Div 2, 440 Frames and Larger
- Footed C-Face and Round Body C-Face Stocked up to 300 HP

OIL WELL PUMP MOTORS

- 5 - 125 HP (ODP): 1200 RPM
- 75 - 100 HP (TEFC): 1200 RPM
- 230/ 460V Only, 60 Hz
- Open Drip Proof (IP22) with Rodent Screens
- Totally Enclosed Fan Cooled (TEFC) Enclosure
- NEMA Design D, High Slip (Min. 5%)
- Standard with Klixon Temperature Limiting Device
- All Cast Iron Construction

MAX-E2/841®

- 1 - 500 HP: 3600, 1800, 1200, 900 RPM
- Meets or Exceeds IEEE 841 Standards
- INPRO™ Seals - VBXX - IP65
- All Cast Iron Construction
- CSA Certified for Class 1, Div 2, Groups B, C & D; Temp Code T3C; Class 2, Div 2, 440 Frame and Above
- CSA and UL Approved for Inverter Duty per NEMA MG-1, Part 31
- Footed C-Face and Round Body C-Face Stocked Up to 100 HP

GLOBAL SERIES® MEDIUM VOLTAGE

- WPI Enclosure, 100 - 1000 HP in Stock
- TEFC Enclosure, 100 - 2000 HP in Stock
- 2300/ 4160V Dual Voltage
- Vacuum Pressure Impregnated Form Wound Coils
- 120V Space Heater and 100 Ohm (Pt) Winding RTD's 2/ Phase
- TEFC Design Meets the NEMA Premium Standards
- Multiple Modifications Available for Customization

EXPLOSION PROOF (Division 1, Zone 1)

- 1 - 400 HP: 3600, 1800, 1200 RPM
- Class 1, Group D; Class 2, Groups E, F & G
- Class 1, Group C and D on 20 HP and Below
- Wound with Inverter Duty Wire
- UL Approved for Inverter Duty
- Footed C-Face and Round Body C-Face Stocked up to 100 HP

FIRE PUMP MOTORS

- Horizontal: ODP Rolled Steel, NEMA Premium Efficiency; 1 - 40 HP
- Horizontal: ODP Cast Iron, NEMA Premium Efficiency; 1 - 400 HP
- VHS, WPI, 7.5 - 400 HP
- 3600, 1800, or 1200 RPM
- 50/60 Hz, 230/ 460V (460V Only Above 150 HP)
- Safety Red Paint Available as an Option

CONTROLS PRODUCTS

L510 MICRODRIVE

- 1/4 - 3 HP, 115/ 230/ 460V
- V/Hz with Auto-Torque Boost or Sensorless Vector
- Built-in Modbus and BACnet Protocols
- PID Control
- 5 Digit Operators Keypad with Built-in Speed POT
- Din Rail Mountable (with Mounting Kit)

F510 FAN AND PUMP DRIVE

- 1 - 250 HP (VT), 230/ 460V
- Plenum Rated
- PID Capabilities with Sleep Mode, Engineering Units, Diagnostics
- Master/ Follower Controls
- V/Hz, Sensorless Vector, Permanent Magnet Sensorless Vector
- Standard LCD Keypad with Real-time Clock and Copy Capabilities
- PLC Functionality
- Built-in Modbus, Metasys, or BACnet Protocols

E510 COMPACT DRIVE

- 1/2 - 75 HP, 230/ 460V
- V/Hz, Sensorless Vector, Permanent Magnet Sensorless Vector
- Conformal PCB Coating
- PLC Functionality
- 5 Digit LED Removable Keypad with Speed POT
- Built-in Dynamic Braking Transistor for Ratings up to 25 HP
- Built-in Modbus & BACnet
- Removable Keypad for Remote Mounting
- NEMA 1 Conduit Kit Included as Standard (Frame 1-4)

E510 NEMA 4/4X/12 - INDOOR USE ONLY

- 1/2 - 25 HP, 230/ 460V
- V/Hz or Sensorless Vector Control
- Integral Disconnect Switch Included on N4FS Models
- PLC Functionality
- 5 Digit LED Display
- Built-in Dynamic Braking Transistor
- PID Control

A510 HEAVY DUTY DRIVE

- 1 - 250 HP (CT), 230/ 460/ 575-690V
- 1 - 270 HP (VT), 230/ 460/ 575-690V
- V/Hz, Sensor Vector Closed Loop, Sensorless Vector, Permanent Magnet Sensor Vector, Permanent Magnet Sensorless Vector
- LCD Keypad with Copy Capabilities
- Extensive Diagnostics and Monitoring
- PLC Functionality
- Advanced Regeneration Load Handling
- Wide Range of Applications

EQ7 MULTI-PURPOSE DRIVE

- 1 - 1000 HP (VT), 230/ 460V
- 1 - 900 HP (CT), 230/ 460V
- V/F Dynamic Torque, Sensorless, Sensor, and PI Vector
- Robust Design and Wide Capabilities
- LED/ LCD Keypad with Extensive Monitoring, Copy, and Diagnostic Capabilities
- Conformal Coating and Tin-Plated DC Bus
- UL Approved Single Phase Input Operation

N3 COMPACT DRIVE

- 1/2 - 75 HP, 230/ 460VAC
- Removable LED Keypad with Built-in Speed POT
- PID Control with Sleep Mode
- V/F or Sensorless Vector Control
- 0 - 400 Hz Speed
- Din Rail Mountable
- Built-in Modbus (Requires Interface Module)
- NEMA 1 Kit Included as Standard (Frame 1-3)

TEAMMASTER™ MV SOFT STARTER

- 500 - 6000 HP, 2300 - 7200V
- Heavy Duty with Across the Line (ATL) Rated Bypass
- Can Operate as a Soft Starter or ATL starter
- Current, Torque, HP, or Voltage Modes of Start Up
- Kick Start Capabilities
- LCD Keypad with Copy Capabilities on Door as Standard

TEAMMASTER™ LV SOFT STARTER

- 10 - 1000 HP, 208 - 575V
- Crusher Duty Panels
- Bypass with ATL Start
- Adaptive Control
- Door Mounted LCD Keypad
  - Monitor, Program, and Troubleshoot
  - Copy Capabilities
- Custom Engineered Packages
- Supplied as NEMA 1, NEMA 3R, or Chassis Configuration

CUSTOM PACKAGED VFDS

- Optional Cabinets with Fused Disconnects or Circuit Breakers
  - NEMA 1, 12, 3R are Standard (NEMA 4 by Request)
  - 208, 230, and 460V Standard (Packages at 380, 415, 575, and 600V Available on Request)
  - Wall or Floor Mounting Door; Mounted Control Devices Packaged Drives with Bypass
  - 2 or 3 Contactor Bypass
  - Circuit Breaker or Fused Disconnect
  - Input/ Output Reactors and DV/ DT Filters
  - All Features as Shown with Optional Cabinets

M+I PACKAGES

Additional 5% Discount When Purchasing Matching Motor and Inverter as a Set

- Premium Efficient Motors and Inverter Combination Packages
- Packages Developed for Both Constant or Variable Torque Applications
- Motors – 900 through 3600RPM; 230,460V
  - Rolled Steel and Cast Iron ODP: 143T through 5009B
  - Max-E1® Type AEHE, AEHH8N through 800 HP
- Inverters – 230VAC: 1-125 HP; 460VAC: 1-800 HP
  - EQ7 or A510 Drives for Constant Torque Applications
  - EQ7 or F510 Drives for Variable Torque Applications
- **5 Year Warranty Valid on All Combination Packages**

GEAR REDUCER PRODUCTS

NMRV/ NMRV-P

- Fractional - 20 HP*
- Aluminum Units are Supplied Complete with Synthetic Oil and Allow for Universal Mounting Positions, with No Need to Modify Lubricant Quantity
- Excellent Mechanical Strength and Particularly Lightweight
- Loading Capacity in Accordance with: ISO 14521, DIN 3996, BS 721, AGMA 6034, ISO 6336, DIN 3990, DIN 743, ISO 281

HW+NMRV-P/ NMRV+NMRV-P

- Helical Worm - Fractional - 3 HP*
- Double Worm - Fractional - 2 HP*
- Available with Pre-Stage Unit: PC for NMRV Series, HW for NMRV-P Series
- Worm Gear Reducers are Available with Different Combinations: NMRV/ NMRV, NMRV/ NMRV-P, NMRV-P/ NMRV-P, NMRV-P/ NMRV

H SERIES

- Fractional - 75 HP*
- Cases in G200 Gray Cast Iron for High Strength and Optimized with Fem Analysis
- Excellent Mechanical Strength, Particularly Suitable to Support High Axial Loads and High Reliability
- Load Capacity Calculated to ISO 6336 and Verified According to AGMA 2001

HA SERIES

- Fractional - 5 HP*
- Cases in Die-Cast Aluminum Alloy
- Excellent Mechanical Strength while Being Particularly Lightweight
- Load Capacity Calculated to ISO 6336 and Verified According to AGMA 2001

B SERIES

- Fractional - 75 HP*
- Gleason Spiral Bevel Gear Pairs with Run-In Profile, Mounted as Second Reduction Stage for a Higher Resistance
- High-Strength Casings Optimized with FEM Analysis and Input and Output Flanges of Grey Cast-Iron G200 to Ensure Top Level Performances and High Reliability
- Load Capacity Calculated and Verified According to ISO 6336 and AGMA 2001

BA SERIES

- Fractional - 5 HP*
- Universal Casing
- Hypoid Bevel Gears for Size A40 and A50, Gleason Bevel Gear Pairs for Size A70, all with Run-in profile
- Excellent Mechanical Strength while Being Particularly Lightweight
- Load Capacity Calculated and Verified According to ISO 6336 and AGMA 2001

S SERIES

- Fractional - 30 HP*
- Universal Casing
- Cases in G200 Grey Cast Iron for High Strength and Optimized with FEM Analysis
- Load Capacity Calculated TI ISO 6336 and Verified According to AGMA 2001

PBH SERIES

- BH Units Fractional - 3 HP - 1500 HP*
- PH Units Fractional - 3 HP - 7800 HP*
- Cast Iron Casing, Rigid, and with Great Lubricant Capacity to Enhance Thermal Capacity
- Casing Split in Two Parts, with Reduced and Direct Maintenance
- Ground Helical Cylindrical Gear Pairs
- Gleason Spiral Bevel Gear Pairs Accurately Run-in

* HP range shown assumes a 4 pole motor operating at 60 Hz, where the largest rating is for the smallest ratio available; and the smallest HP rating is for the largest ratio available per gearbox type. Thermal horsepower limits need to be taken into consideration when determining an appropriate gearbox for a particular application.

MAC CENTERS

MAC
MOTOVARIO ASSEMBLY CENTRE

- Skilled assembly by factory-trained technicians that comply to TWMC/ Motovario quality standards.
- Short lead times from a local source you trust.
- Modular parts system offers faster manufacturing and flexibility for easy competitor interchange.

*Seeking new MAC partners in these regions. Contact your TWMC representative to apply.

TECO Westinghouse
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ENGINEERED PRODUCTS

WORLD SERIES®

- 250 – 30,000 HP AC Induction Motors
- Thermalastic® Epoxy Insulation System
- Rugged Thru-Bolt Construction and End Rings
- Copper or Copper Alloy Rotor Bars
- Anti-Friction or Spherically-Seated, Self-Aligning, Split-Sleeve Bearings
- High Efficiency Designs for Reduced Life-Cycle Costs
- API 541, PAM, and Marine Duty Designs Available
- Horizontal and Vertical Configurations

SG MOTORS FROM STOCK

- 800 – 3000 HP Induction Motors Available from Stock
- 2, 4, 6, 8 Pole
- 2300/ 4160V; WP2 Enclosure
- Ideal for H-Pump or Reciprocation Applications
- Suitable for Class 1, Div 2, Groups B, C & D; Temp Code T3C
- Bi-directional, F1 and F2
- Inverter Duty Design
- Anti-friction or Spherically-Seated, Self-Aligning, Split-Sleeve Bearings
- Air Filters and Differential Pressure Switch Included

SYNCHRONOUS MOTORS

- 1000 – 100,000 HP
- Anti-Friction or Spherically-Seated, Self-Aligning, Split-Sleeve Bearings
- Brush or Brushless Excitation
- Thermalastic® Epoxy Insulation System
- High-Speed and Slow-Speed Designs Available
- VFD Applications Available
- Special Mill and Marine Duty Designs Available
- API 46 Designs Available

DC MOTORS

- Ratings up to 35,000 HP for the Metals, Mining, Marine, and Special Application Markets
- Special Insulation Coatings to Maintain High Insulation Resistance over Life of the Motor
- "Balanced Spring" Commutator to Assure Long Brush Life and Minimal Maintenance
- Rugged Armature Featuring Keyless Fits
- Rugged Spiders Smoothly Transmit Torque
- Heavy-Duty Stators Offer Proven, Long Lasting Reliability
- Spherically-Seated, Self-Aligning, Split-Sleeve Bearings

WOUND ROTOR MOTORS

- Available from 25 – 20,000 HP
- Continuously Rated Slip Rings and Brushgear
- Heavy-Duty Rotor Construction for Dependable Service
- Thermalastic® Epoxy Insulation System
- Advanced Bearing System for Reliable Performance
- Rugged Frame Construction for Strength and Reliability
- Brush Lifting and Short Circuiting Devices Available
- Secondary Control Also Available

PAM MOTORS

- Multispeed, Squirrel Cage Induction Motor with a Single Winding
- Ideal for ID, FD, and PA Fan Applications
- Lighter, Smaller and More Efficient than a Two-Winding Motor for Comparable Rating and Applications
- Longer Rotor Life Due to Less Heating During Starting
- Power Savings at Reduced Loads

VERSABRIDGE®

- 1000 – 40,000 HP; 2300 - 13,800V
- Scalable Modular Power Electronics Building Blocks
- NEMA 1 or NEMA 3R
- Advanced 2 Phase Liquid Cooling
- Water or Considerable HVAC Not Required
- User Serviceable
- Fuseless & Filterless
- Patented Universal Design
- Proven Topology
- Film Caps (Long Life)
- Standard Components
- Sealed Power Cubes

COMPLETE SYSTEM SUPPLY

- Complete System Solutions Available
  - AC Electric Motors
  - Medium Voltage Drives
  - Switchgear
  - Synchronous Transfer
  - Motor Control Centers
  - Electrical Houses
  - System Studies

TECO Westinghouse

SERVICE

LARGE MOTOR SERVICE

- Repair and Refurbish all Brands of Large Motors
- Engineering Studies and Evaluations
- Expert Field Service and Technical Assistance
- Redesign and Uprate of Westinghouse and TWMC Motors
- Repairs Using OEM Materials and Processes for Longer Life
- Engineered Solutions to Large Motor Problems
- High Voltage (to 13.8kV) Repairs with Global VPI
- Dual Frequency Load Testing
- Finder's Fee Incentives Available
- Service Division Hotline: 888-754-5006

QUICK TURN REWINDS

- Full Rush Overtime Medium and High Voltage Rewinds Performed with Deliveries Ranging from 17 – 27 days
- All Manufactures' Motors
- In-House Coil Manufacturing
- Thermalastic® Epoxy Insulation System
- ISO 9001 Quality System
- Finder's Fee Incentives Available

CONTROL WHEELS

- Convert Other OEM Unsupported Control Wheels to a TWMC Design
- On-Site Troubleshooting, Repairs, and Rebuilds
- In Stock Renewal Parts
- Finder's Fee Incentives Available

EXCITER CONTROL PANELS

- Replace Outdated Analog Controls with a Modern Digital System Using the Same Panel Space
- Superior Control and Accuracy of Voltage, VAR, and Power Factor Regulation
- Enhanced System Response
- Advanced Motor Protection
- Reliable System Operation
- Finder's Fee Incentives Available

RENEWAL PARTS

- Renewal Parts for Over 500,000 Westinghouse and TECO-Westinghouse Form Wound/ High Voltage Motors Built in Pittsburgh, PA; Buffalo, NY; and Round Rock, TX.
- Engineered Replacement Components
  - AC Rotors and Stators
  - DC Armatures, Field Frames, and Commutators
  - Field Pole Assemblies
  - Replacement and Improved Design Cooling Packages (WPII, TEWAC, and TEAAC)
  - VersaBridge® MVD Components

TECO-Westinghouse is a leading manufacturer of electric motors and variable frequency drives. We offer a full line of induction, synchronous and DC motors & generators available from ¼ HP to 100,000 HP, as well as a wide variety of low and medium voltage variable frequency drives and motor controls. We can also test medium voltage drives (MVDs) and motors as a package in our Round Rock, Texas factory. Additionally, we supply switchgear, system studies and aftermarket services such as engineering studies, genuine Westinghouse renewal parts, and large motor and MVD repairs.

TECO Westinghouse

www.tecowestinghouse.com