MOTOR AND DRIVE COMBINATION PACKAGES

Effective 07-08-18
Supercedes 03-24-17

www.tecowestinghouse.com or call 1-800-USE-TECO

Premium Efficient Motor and Drive Combination Packages developed for both constant and variable torque applications

APPLICABLE MOTORS

- Rolled Steel and Cast Iron ODP
  - 143T through 5009B Frame
  - 1 to 500 HP
  - 1200, 1800, and 3600 RPM
- MAX-E1® type AEHE, AEHH8N
  - 143T through 6808B Frame
  - 1 to 800 HP
  - 900, 1200, 1800, and 3600 RPM
  - 230VAC to 125 HP, 460VAC to 800 HP

APPLICABLE VARIABLE FREQUENCY DRIVES PRODUCTS

- EQ7 or A510 Drives for Constant Torque Applications
- EQ7 or F510 Drives for Variable Torque Applications
- 230VAC to 125 HP, 460VAC to 800 HP

- Single Source Reliability
- Contact your local TECO representative for additional discounts and warranties when purchasing matching motor and drive sets
- Select any combination of ODP or MAX-E1® premium Efficient Motors with any power-matched A510, F510, or EQ7 VFD
HVAC SINGLE PHASE ODP

BSGS39, NEMA PREMIUM [SP/SPH]

APPLICATIONS:

- Fans
- Pumps
- Compressors
- Air Conditioning Blowers
- Heating
- Ventilation

FEATURES:

- Output Range: 1/4 - 3 HP
- Speed: 3600 & 1800 RPM
- Enclosure: Open Drip Proof (IP22)
- Voltage: 115/208/230V (Tri-Voltage)
- Single Phase, 60 Hz; 1.15 Service Factor for 115V & 230V or 1.0 Service Factor for 208V
- Capacitor Start, Capacitor Run
- Class F Insulation
- Automatic Reset Overload
- Class B Temperature Rise
- Designed for 40°C Ambient Temperature (1)
- Designed for 3300 ft. Elevation (2)
- Bi-Directional Rotation
- Rolled Steel Frame
- Cast Aluminum Terminal Box
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Lacquer Top Coat
- Paint Color: Blue - Munsell 5 PB 3/8
- Double Shielded Bearings Pre-Packed with Lithium Base Grease
- No Terminals; Lead End Peel-Off Insulation
- Grounding Terminal Inside Main Box
- Stainless Steel Nameplate
- Motors are UL Recognized for United States and Canada

EXTRAS/OPTIONS:

Please refer to the modifications document for common modifications that can be performed.

Notes:

1. Consult a Stock Product Application Specialist for suitability in higher ambient environments.
2. Consult a Stock Product Application Specialist for suitability at higher elevations.
3. Motor subject to availability.
HVAC SINGLE PHASE TEFC

BEGS39, NEMA PREMIUM (1/4 HP - 3 HP) [SPT/SPHT]
BEGS19, ENERGY EFFICIENT (3 HP - 10 HP) [ST]

APPLICATIONS:

- Fans
- Pumps
- Compressors
- Air Conditioning Blowers
- Heating
- Ventilation

FEATURES:

- Output Range: 1/4 - 10 HP
- Speed: 3600 & 1800 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP44)
- Voltage: 115/208/230V (Tri-Voltage); 3 HP and Larger are 208-230V
- Single Phase, 60 Hz; 1.15 Service Factor for 115V & 230V or 1.0 Service Factor for 208V
- Capacitor Start, Capacitor Run
- Class F Insulation
- Automatic Reset Overload
- Class B Temperature Rise
- Designed for 40°C Ambient Temperature
- Designed for 3300 ft. Elevation
- Bi-Directional Rotation
- Rolled Steel Frame
- Cast Aluminum Terminal Box
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Lacquer Top Coat
- Paint Color: Blue - Munsell 5 PB 3/8
- Double Shielded Bearings Pre-Packed with Lithium Base Grease
- No Terminals; Lead End Peel-Off Insulation
- Grounding Terminal Inside Main Box
- Stainless Steel Nameplate
- Motors are UL Recognized for United States and Canada

EXTRAS/ OPTIONS:

- Please refer to the modifications document for common modifications that can be performed.

Notes:

(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability at higher elevations.
(3) Motor subject to availability.
FARM DUTY SINGLE PHASE

BEGCFD, HIGH EFFICIENCY (1/3 HP - 1 HP) [S]
BECCDFD, HIGH EFFICIENCY (1.5 HP) [S]
BECSFD, HIGH EFFICIENCY (2 HP -10 HP) [S]

APPLICATIONS:
- Fans & Blowers
- Pumps
- Compressors
- Farm Equipment
- Machine Tools

FEATURES:
- Output Range: 1/3 - 10 HP
- Speed: 1800 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP44)
- Voltage: 115/230V (3 HP and Larger are 230V Only)
- Single Phase, 60 Hz, 1.15 Service Factor (Continuous)
- Definite Purpose High Torque Farm Duty Design
- Capacitor Start, Induction Run - 1/3 HP to 1.5 HP
- Capacitor Start, Permanent Split Capacitor Run - 2 HP to 10 HP
- Class B Insulation from 1/3 HP to 3 HP
- Class F Insulation from 5 HP to 10 HP
- Manual Reset Overload with Outside Rubber Boot
- Class B Temperature Rise
- Designed for 40˚C Ambient Temperature\(^{(1)}\)
- Designed for 3300 ft. Elevation\(^{(2)}\)
- Bi-Directional Rotation
- Rolled Steel Frame for 1/3 - 1 HP
- Cast Iron Frame for 1.5 - 10 HP
- Rolled Steel Terminal Box
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Green - Munsell 5G 4/4
- Double Shielded Bearings Pre-Packed with MULTEMP SRL (Non-regreasable)
- Rubber Dust Flinger on DE
- Grounding Terminal Inside Main Box
- Stainless Steel Nameplate Frames 143T and Larger
- Motors are U.L. Recognized and CSA Approved

EXTRAS/ OPTIONS:
- Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability in higher elevations.
(3) Motor subject to availability.
APPLICATIONS:

- Oil Well Pumps
- Any Applications Requiring NEMA Design D Torques

FEATURES:

- Output Range: 5 - 125 HP
- Speed: 1200 RPM
- Enclosure: Open Drip Proof (IP22)
- Voltage: 230/460/796V
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous)
- Class F Insulation
- Class B Temperature Rise
- NEMA Design D Torques
- Cast Iron Frame, End Brackets and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box with additional Foot Grounding Provision
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F2 Mounted, F1 Available with Modification
- Designed for 40°C Ambient Temperature
- Designed for 3300 ft. Elevation
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: White - Munsell N9.5
- Double Shielded Bearings Pre-Packed with MULTEMP SRL for F# 280T and Smaller (Non-regreasable)
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM for F# 320T and Larger
- Labyrinth Type Metal Flinger on Both Ends for Frames F# 320T and Larger
- Cast Iron Inner and Outer Bearing Caps for F# 324T and Larger
- Stainless Steel Nameplate
- 12 Leads
- Standard with Klixon 9700K Temperature Limiting Switch, 1 Per Phase
- 5% Minimum Slip
- Rodent Screens

EXTRAS/ OPTIONS:

- Please refer to the modifications document for common modifications that can be performed.

Notes:

1. Consult a Stock Product Application Specialist for suitability in higher ambient environments.
2. Consult a Stock Product Application Specialist for suitability at higher elevations.
3. All motors are NEMA Design D torque.
OIL WELL PUMP TEFC
AEEAFP, STANDARD EFFICIENCY, DESIGN D [QT]

APPLICATIONS:
- Oil Well Pumps
- Any Applications Requiring NEMA Design D Torques

FEATURES:
- Output Range: 5 - 125 HP
- Speed: 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP54)
- Voltage: 230/460V
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous)
- Class F Insulation
- Class B Temperature Rise
- NEMA Design D Torques
- Cast Iron Frame, End Brackets, Fan Cover and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box with additional Foot Grounding Provision
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F2 Mounted, F1 Available with Modification
- Designed for 40°C Ambient Temperature
- Designed for 3300 ft. Elevation
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint System: Phenolic Rust Proof Base with Alkyd Finish
- Paint Color: Dark Blue (Munsell 5PB 4.5/2)
- Double Shielded Bearings Pre-Packed with MULTEMP SRL for F# 280T and Smaller (Non-regreasable)
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM for F# 320T and Larger
- Labyrinth Type Metal Flinger on Both Ends for Frames F# 320T and Larger
- Cast Iron Inner and Outer Bearing Caps for F# 324T and Larger
- Stainless Steel Nameplate
- 12 Leads
- Standard with Klixon 9700K Temperature Limiting Switch, 1 Per Phase
- 5% Minimum Slip

EXTRAS/ OPTIONS:
- Please refer to the modifications document for common modifications that can be performed.

Notes:
1. Please consult factory for suitability in higher ambients.
2. Please consult factory for suitability in higher elevations.
3. All motors are NEMA Design D torque
2 SPEED, 1 WINDING, VARIABLE TORQUE

AECA, HIGH EFFICIENCY [CP]

APPLICATIONS:
- Fans & Blowers
- Pumps
- Cooling Towers

FEATURES:
- Output Range: 100 - 300 HP
- Speeds: 1800 / 900 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP55)
- Voltage: 460V Only
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous)
- Self-Certified for Class I, Div. 2, Groups B, C, D
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques as a Minimum
- Cast Iron Frame, End Brackets, Fan Cover and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box with additional Foot Grounding Provision
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40°C Ambient Temperature
- Designed for 3300 ft. Elevation
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: 2 Part Epoxy
- Paint Color: Dark Gray - Munsell 7.5B 3.5/0.5
- Epoxy Coated Internals
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM
- Automatic Grease Discharge Fittings
- Stainless Steel Nameplate and Hardware
- Stainless Steel Automatic Breather Drain
- 6 Leads Only
- Noise Level Not to Exceed 85 dB(A) at 1 Meter Unloaded
- 2 Speed, 1 Winding - Variable Torque
- High Efficiency, Severe Duty

EXTRAS/OPTIONS:
- Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Please consult factory for suitability in higher ambients.
(2) Please consult factory for suitability in higher elevations.
(3) Additional charge for Division II nameplate - see Factory Modifications Pricing.
(4) Catalog# CP3004/8 (F#5009B) will have steel fan cover.
(5) Multi-speed motors are exempt from (DOE) Department of Energy premium efficiency requirements.
ROLLED STEEL ODP FAMILY

ASGHPE, NEMA PREMIUM, F#56 (1/4 HP - 3 HP) [DSP]
ASGH, NEMA PREMIUM, F#140T - 280T (1 HP - 40 HP) [DTP]
ASGA, HIGH EFFICIENCY, F#56 (1/3 HP - 3 HP) [DS]
ASGHJP/JM, NEMA PREMIUM, CLOSE COUPLED, (1 HP - 40 HP) [DJPP/DJMP]
ASGAJP/JM, HIGH EFFICIENCY, CLOSE COUPLED, (1 HP - 40 HP)[DJP/DJM]*

APPLICATIONS:
- Fans & Blowers
- Compressors
- Pumps
- Fire Pumps*
- HVAC Equipment
- UL
- FIRE SAFETY

FEATURES:
- Output Range: 1/3 - 40 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Open Drip Proof (IP22)
- Voltage: 230/460V (Usable on 200 & 208V)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Rolled Steel Frame and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40˚C Ambient Temperature(3)
- Designed for 3300 ft. Elevation(2)
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Premium - Blue - Munsell SPB 3/8
  High Efficiency - Light Gray - Munsell N5.0
- Double Shielded Bearings Pre-Packed with MULTEMP SRL (Non-regreasable)
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31(3,4)
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque
- 9 Leads for 5 HP and Smaller;
- 12 Leads for 7.5 HP and Larger
- Motors are U.L. Recognized for United States and Canada, CSA Approved and CE Marked

EXTRAS/ OPTIONS:
- Please refer to the modifications document for common modifications that can be performed.

Notes:
* Fire Pump available. See product page for more details.
(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability at higher elevations.
(3) Motor service factor is 1.0 when operated on a VFD.
(4) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1.
**APPLICATIONS:**

- Fans & Blowers
- Pumps
- Compressors
- HVAC Equipment

The AEGIS® SGR Bearing Protection Ring aids in preventing electrical bearing "fluting" damage by safely diverting harmful shaft voltages and bearing currents to ground. Using proprietary Electron Transport Technology™, the conductive microfibers inside the AEGIS® SGR provide reliable current diversion technology for shaft grounding with a "path of least resistance" to dramatically extend motor life. **AEGIS® Shaft Grounding Rings have a warranty of 1 year.**

**FEATURES:**

- Output Range: 1 - 40 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Open Drip Proof (IP22)
- Voltage: 230/460V (Usable on 200 & 208V)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- Grounding Ring Factory Installed Externally on DE Bracket
- Class F Insulation
- NEMA Design B Torques
- Rolled Steel Frame and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40°C Ambient Temperature
- Designed for 3300 ft. Elevation
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Blue - Munsell 5PB 3/8
- Double Shielded Bearings Pre-Packed with MULTEMP SRL (Non-regreasable)
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque
- 9 Leads for 5 HP and Smaller;
- 12 Leads for 7.5 HP and Larger
- Motors are U.L. Recognized for United States and Canada, CSA Approved and CE Marked

**EXTRAS/ OPTIONS:**

Please refer to the modifications document for common modifications that can be performed.

**Notes:**

1. Consult a Stock Product Application Specialist for suitability in higher ambient environments.
2. Consult a Stock Product Application Specialist for suitability at higher elevations.
3. Motor service factor is 1.0 when operated on a VFD.
4. Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1, Part 31.
5. AEGIS® SGR Bearing Protection Ring can not be used in Hazardous Locations (i.e. Class I, Div. 2, etc.)
CAST IRON ODP

APPLICATIONS:
- Fans & Blowers
- Pumps
- Compressors
- HVAC Equipment
- Fire Pumps*

FEATURES:
- Output Range: 1 - 800 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Open Drip Proof (IP22)
- Voltage: 230/460V (Usable on 208V); 150HP and Larger is 460V Only*(1)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Cast Iron Frame and End Brackets
- Rolled Steel Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40°C Ambient Temperature (2)
- Designed for 3300 ft. Elevation (3)
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Light Gray - Munsell N5.0
- Double Shielded Bearings Pre-Packed with MULTEMP SRL for F#140T - 280T (Non-regreasable)
- High Quality Ball (or Roller) Bearings regreasable with Mobil Polyrex™ EM for F#280TS and Larger
- Labyrinth Type Metal Flinger on Both Ends for F#280TS and Larger
- Cast Iron Inner and Outer Bearing Caps for F#280TS and Larger
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31 (3,4)
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque
- 9 Leads for 5 HP and Smaller;
- 12 Leads for 7.5 HP to 125 HP;
- 6 Leads for 150 HP and Larger
- Motors are U.L. Recognized, CSA Approved and CE Marked

EXTRAS/ OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
* Fire Pump available. See product page for more details.
(1) Available in 575V. TWMC carries minimal 575V stock; please check availability to ensure required motors are in stock.
    - Ratings may be available from our Canadian warehouses and/or our factory. Pricing and leadtime may vary.
(2) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(3) Consult a Stock Product Application Specialist for suitability in higher elevations.
(4) Motor service factor is 1.0 when operated on a VFD.
(5) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1, Part 31.
CAST IRON ODP AEGIS® SGR
ASHH, NEMA PREMIUM WITH AEGIS® SGR [DHP_G]

APPLICATIONS:
- Fans & Blowers
- HVAC Equipment
- Pumps
- Compressors

The AEGIS® SGR Bearing Protection Ring aids in preventing electrical bearing “fluting” damage by safely diverting harmful shaft voltages and bearing currents to ground. Using proprietary Electron Transport Technology™, the conductive microfibers inside the AEGIS® SGR provide reliable current diversion technology for shaft grounding with a “path of least resistance” to dramatically extend motor life. AEGIS® Shaft Grounding Rings have a warranty of 1 year.

FEATURES:
- Output Range: 1 – 75 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Open Drip Proof (IP22)
- Voltage: 230/460V (Usable on 208V); 150HP and Larger is 460V Only(1)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- Grounding Ring Factory Installed Externally on DE Bracket for F# 143T - 286T; Internally on NDE for F# 284TS - 405T
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Cast Iron Frame and End Brackets
- Rolled Steel Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40°C Ambient Temperature(2)
- Designed for 3300 ft. Elevation(3)
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Light Gray - Munsell N5.0
- Double Shielded Bearings Pre-Packed with MULTEMP SRL for F# 140T - 280T (Non-regreasable)
- High Quality Ball (or Roller) Bearings regreasable with Mobil Polyrex™ EM for F# 280TS and Larger
- Labyrinth Type Metal Flinger on Both Ends for F# 280TS and Larger
- Cast Iron Inner and Outer Bearing Caps for F#280TS and Larger
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31(3,4)
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque
- 9 Leads for 5 HP and Smaller;
- 12 Leads for 7.5 HP to 125 HP;
- 6 Leads for 150 HP and Larger
- Motors are U.L. Recognized, CSA Approved and CE Marked

EXTRAS/OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Available in 575V. TWMC carries minimal 575V stock; please check availability to ensure required motors are in stock. Ratings may be available from our Canadian warehouses and/or our factory. Pricing and leadtime may vary.
(2) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(3) Consult a Stock Product Application Specialist for suitability at higher elevations.
(4) Motor service factor is 1.0 when operated on a VFD.
(5) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31.
(6) AEGIS® SGR Bearing Protection Ring can not be used in Hazardous Locations (i.e. Class I, Div. 2, etc.)

www.tecowestinghouse.com or call 1-800-USE-TECO
3-PHASE FRACTIONAL HP TEFC
AEGA, FOOTED, HIGH EFFICIENCY [G]

APPLICATIONS:
- Fans & Blowers
- Compressors
- Pumps
- HVAC Equipment

FEATURES:
- Output Range: 1/3 - 2 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP44)
- Voltage: 230/460V (Usable on 200 & 208V)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous)
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Rolled Steel Frame and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40°C Ambient Temperature (1)
- Designed for 3300 ft. Elevation (2)
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Dark Gray - Munsell 7.5B 3.5/0.5
- Double Shielded Bearings Pre-Packed with MULTEMP SRL (Non-regreasable)
- Mylar Nameplate
- Rubber Dust Flinger on Drive-End
- 9 Leads

EXTRAS/OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Please consult factory for suitability in higher ambient environments.
(2) Please consult factory for suitability in higher elevations.
(3) 1 HP and larger are CSA certified and UL recognized. Motors below 1 HP are CSA certified only.
(4) 56 frames change to GH and 140 and above frames change to GP. G type will be obseleted in June of 2018.
**ROLLED STEEL TEFC FAMILY**

AEGHPE, NEMA PREMIUM, F#56 (1/4 HP - 2 HP) [GH]
AEGH, NEMA PREMIUM, F#140T - 210T (1 HP - 10 HP) [GP]
AEGHPE-CF, NEMA PREMIUM, FOOTED C-FACE, F#56 (1/4 HP - 2 HP) [GH_C]
AETHPE, NEMA PREMIUM, ROUND BODY C-FACE, F#56 (1/4 HP - 2 HP) [GHV_C]
AEGHC, NEMA PREMIUM, FOOTED C-FACE, F#140T - 210T (1 HP - 10 HP) [GP_C]
AETHCF, NEMA PREMIUM, ROUND BODY C-FACE, F#140T - 210T (1 HP - 10 HP) [GPV_C]

**APPLICATIONS:**
- Fans & Blowers
- Pumps
- Compressors
- HVAC Equipment

**FEATURES:**
- Output Range: 1/4 - 10 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP44)
- Voltage: 230/460V (Usable on 200 & 208V)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Rolled Steel Frame, Fan Cover, and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted Only (F2 not available)
- Designed for 40°C Ambient Temperature(1)
- Designed for 3300 ft. Elevation(2)
- Bi-Directional Rotation
- Cast Iron End Brackets
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Blue - Munsell SPB 3/8
- Double Shielded Bearings Pre-Packed with MULTEMP SRL (Non-regreasable)
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31(3,4)
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque
- 9 Leads for 5 HP and Smaller;
- 12 Leads for 7.5 HP and Larger
- Motors are U.L. Recognized for United States and Canada, CSA Approved and CE Marked

**EXTRAS/ OPTIONS:**
Please refer to the modifications document for common modifications that can be performed.

**Notes:**
(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability at higher elevations.
(3) Motor service factor is 1.0 when operated on a VFD.
(4) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31.
**ROLLED STEEL TEFC AEGIS® SGR**

AEGH, FOOTED, NEMA PREMIUM WITH AEGIS® SGR [GP_G]

**APPLICATIONS:**

- Fans & Blowers
- HVAC Equipment
- Pumps
- Compressors

The AEGIS® SGR Bearing Protection Ring aids in preventing electrical bearing "fluting" damage by safely diverting harmful shaft voltages and bearing currents to ground. Using proprietary Electron Transport Technology™, the conductive microfibers inside the AEGIS® SGR provide reliable current diversion technology for shaft grounding with a "path of least resistance" to dramatically extend motor life.

*AEGIS® Shaft Grounding Rings have a warranty of 1 year.*

**FEATURES:**

- Output Range: 1 - 10 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP44)
- Voltage: 230/460V (Usable on 200 & 208V)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- Grounding Ring Factory Installed Externally on NDE Bracket
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Rolled Steel Frame, Fan Cover, and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted Only (F2 not available)
- Designed for 40°C Ambient Temperature(1)
- Designed for 3300 ft. Elevation(2)
- Bi-Directional Rotation
- Cast Iron End Brackets
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Blue - Munsell 5PB 3/8
- Double Shielded Bearings Pre-Packed with MULTEMP SRL (Non-regreasable)
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31(3,4)
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque
- 9 Leads for 5 HP and Smaller;
- 12 Leads for 7.5 HP and Larger
- Motors are U.L. Recognized for United States and Canada, CSA Approved and CE Marked

**EXTRAS/ OPTIONS:**

Please refer to the modifications document for common modifications that can be performed.

**Notes:**

(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability at higher elevations.
(3) Motor service factor is 1.0 when operated on a VFD.
(4) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31
(5) AEGIS® SGR Bearing Protection Ring can not be used in Hazardous Locations (i.e. Class I, Div. 2, etc.)

www.tecowestinghouse.com or call 1-800-USE-TECO

Effective 07-08-18
Supercedes 03-24-17
**MAX-IE3™ METRIC**

**AESV3W, IEC, IE3 EFFICIENCY [MP]**

**APPLICATIONS:**
- Fans & Blowers
- Pumps
- Compressors
- Any Application that Requires IEC Mounting Dimensions

**FEATURES:**
- Output Range: 1 - 150 HP (0.75 - 112 kW)
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP55)
- Voltage: 230/460V (Usable on 208V)(1) Ratings 150 HP and up are 460V only
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- Class F Insulation
- Class B Temperature Rise
- Cast Iron Frame, End Brackets and Main Conduit Box; Rolled Steel Fan Cover
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F3 Mounted (IM1001)
- Designed for 40°C Ambient Temperature(2)
- Designed for 3300 ft. Elevation(3)
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Blue - Munsell SPB 3/8
- Double Shielded Bearings Pre-Packed with MULTEMP SRL for F# 80 - 225 (Non-regreasable)
- High Quality Ball (or Roller) Bearings Regreasable with with MULTEMP SRL for F# 250 and Larger
- Oil Seal/V-Ring on Both Ends
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31(4)
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque
- 6 Leads
- Motors are CE Marked

**EXTRAS/OPTIONS:**
- Please refer to the modifications document for common modifications that can be performed.

**Notes:**
2. Consult a Stock Product Application Specialist for suitability in higher ambient environments.
3. Consult a Stock Product Application Specialist for suitability at higher elevations.
4. Motor service factor is 1.0 when operated on a VFD.
5. Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated by NEMA MG-1. Part 31.
CAST IRON TEFC JP/JM

AEHH8NJP/JM, NEMA PREMIUM, CLOSE-COUPLED [JPP/JMP]
AEEAJP/JM, HIGH EFFICIENCY, CLOSE-COUPLED [JPN/JMN]

APPLICATIONS:
- Pumps

FEATURES:
- Output Range: 3/4 - 50 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP54)
- Voltage: 230/460V (Usable on 208V)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- CSA Certified for Class I, Div. 2, Groups B, C & D - Temp Code T3C Minimum
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Cast Iron Frame, End Brackets & Fan Cover and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40°C Ambient Temperature
- Designed for 3300 ft. Elevation
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Premium - Light Gray - Munsell N5.0
- High Efficient - Dark Gray - Munsell 7.5B 3.5/0.5
- Double Shielded Bearings Pre-Packed with MULTEMP SRL for F# 140JP/JM - 280JP/JM (Non-regreasable)
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM for F# 280JP/JM (2P), 320JP/JM and Larger
- Automatic Grease Discharge Fittings on Regreasable Models
- Rubber Dust Flinger on DE for F# 140JP/JM - 280JP/JM
- Labyrinth Type Metal Flinger on Both Ends for F# 280JP/JM (2P), 320JP/JM and Larger
- Cast Iron Inner and Outer Bearing Caps for Frame# 280JP/JM (2P), 320JP/JM and Larger
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31
- Inverter Duty Speed Range: 10:1 Variable Torque, 5:1 Constant Torque
- 9 Leads for 5 HP and Smaller;
- 12 Leads for 7.5 HP to 125 HP;
- Motors are U.L. Recognized, CSA Approved and CE Marked

EXTRAS/OPTIONS:
- Please refer to the modifications document for common modifications that can be performed.

Notes:
1. Consult a Stock Product Application Specialist for suitability in higher ambient environments.
2. Consult a Stock Product Application Specialist for suitability at higher elevations.
3. Motor service factor is 1.0 when operated on a VFD.
4. Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31.
5. CSA Certification for Hazardous Location only applies to AEHH8NJP/JM, NEMA premium [JPP/JMP] product line.
MAX-PE™ FAMILY

AEHH8P, NEMA PREMIUM [NP]

AEHH8PCF, NEMA PREMIUM, FOOTED C-FACE [NP_C]

AEUH8PDC, NEMA PREMIUM, ROUND BODY C-FACE [NPV_C]

APPLICATIONS:
- Fans & Blowers
- Pumps
- Crushers
- Compressors
- Mixers
- Conveyors

FEATURES:
- Output Range: 1 - 200 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP54)
- Voltage: 230/460V (Usable on 208V); 150HP and Larger is 460V Only(1)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- CSA Certified for Class 1, Div. 2, Groups B, C, D - Temp Code T3C Minimum
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques as a Minimum; Various Ratings also Meet Design C
- Cast Iron Frame and End Brackets; Rolled Steel Fan Cover and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40˚C Ambient Temperature(2)
- Designed for 3300 ft. Elevation(3)
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Dark Gray - Munsell 7.5B 3.5/0.5
- Double Shielded Bearings Pre-Packed with MULTEMP SRL for F# 140T - 280T (Non-regreasable)
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM for F# 280TS and Larger
- Automatic Grease Discharge Fittings on Regreasable Models
- Labyrinth Type Metal Flinger on Both Ends for F# 280TS and Larger
- Cast Iron Inner and Outer Bearing Caps for F#280TS and Larger
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31(3,4)
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque
- 9 Leads for 5 HP and Smaller;
- 12 Leads for 7.5 HP to 125 HP;
- 6 Leads for 150 HP and Larger
- Motors are U.L. Recognized, CSA Approved and CE Marked
- Dual Drilled Feet Available on Most Ratings - Longer Frames (i.e. 143T Drilled also for 143T)
- Provisions for Breather Drains for Vertical Mount Down (F# 324T and Larger)
- Rubber Dust Flinger on Drive-End for F# 140T - 280T

EXTRAS/ OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Motors 7.5 HP & up are suitable for Wye/Delta Starting.
(2) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(3) Consult a Stock Product Application Specialist for suitability at higher elevations.
(4) Motor service factor is 1.0 when operated on a VFD.
(5) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31
**MAX-PE™ AEGIS® SGR**

AEHH8P, NEMA PREMIUM [NP_G]

Effective 07-08-18
Supercedes 03-24-17

**APPLICATIONS:**
- Fans & Blowers
- Pumps
- Compressors
- HVAC Equipment

The AEGIS® SGR Bearing Protection Ring aids in preventing electrical bearing "fluting" damage by safely diverting harmful shaft voltages and bearing currents to ground. Using proprietary Electron Transport Technology™, the conductive microfibers inside the AEGIS® SGR provide reliable current diversion technology for shaft grounding with a "path of least resistance" to dramatically extend motor life. **AEGIS® Shaft Grounding Rings have a warranty of 1 year.**

**FEATURES:**
- Output Range: 1 - 75 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP54)
- Voltage: 230/460V (Usable on 208V)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- Grounding Ring Factory Installed Externally on NDE Bracket for F# 143T - 286T; Internally on NDE for F# 284TS - 405T
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques as a Minimum; Various Ratings also Meet Design C
- Cast Iron Frame and End Brackets; Rolled Steel Fan Cover and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40˚C Ambient Temperature
- Designed for 3300 ft. Elevation
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Dark Gray - Munsell 7.5B 3.5/0.5
- Double Shielded Bearings Pre-Packed with MULTEMP SRL for F# 140T - 280T (Non-regreasable)
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM for F# 280TS and Larger
- Automatic Grease Discharge Fittings on Regreasable Models
- Labyrinth Type Metal Flinger on Both Ends for F# 280TS and Larger
- Cast Iron Inner and Outer Bearing Caps for F#280TS and Larger
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque
- 9 Leads for 5 HP and Smaller;
- 12 Leads for 7.5 HP to 75 HP;
- Motors are U.L. Recognized, CSA Approved and CE Marked
- Dual Drilled Feet Available on Most Ratings - Longer Frames (i.e. 145T Drilled also for 143T)
- Provisions for Breather Drains for Vertical Mount Down (F# 324T and Larger)
- Rubber Dust Flinger on Drive-End for F# 140T - 280T

**EXTRAS/ OPTIONS:**
Please refer to the modifications document for common modifications that can be performed.

**Notes:**
1. Motors 7.5 HP & up are suitable for Wye/Delta Starting.
2. Consult a Stock Product Application Specialist for suitability in higher ambient environments.
3. Consult a Stock Product Application Specialist for suitability at higher elevations.
4. Motor service factor is 1.0 when operated on a VFD.
5. Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31.
6. AEGIS® SGR Bearing Protection Ring can not be used in Hazardous Locations (i.e. Class I, Div. 2, etc.)

www.tecowestinghouse.com or call 1-800-USE-TECO
**MAX-SE™**

**AERVANE, HIGH EFFICIENCY, ROUND BODY C-FACE [NV_C]**

**APPLICATIONS:**
- Fans & Blowers
- Crushers
- Pumps
- Mixers
- Compressors
- Conveyors

**FEATURES:**
- Output Range: 1 - 100 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP54)
- Voltage: 230/460V (Usable on 208V)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- Factory Self-Certified for Class I, Div. 2, Groups B, C, D - Temp Code T3C Minimum
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques as a Minimum; Various Ratings also Meet Design C
- Cast Iron Frame, End Brackets, Main Conduit Box; Rolled Steel Fan Cover
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40˚C Ambient Temperature\(^1\)
- Designed for 3300 ft. Elevation\(^2\)
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Dark Gray - Munsell 7.5B 3.5/0.5
- Double Shielded Bearings Pre-Packed with MULTEMP SRL for F# 140T - 280T (Non-regreasable)
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM for F# 280TS and Larger
- Automatic Grease Discharge Fittings on Regreasable Models
- Labyrinth Type Metal Flinger on Both Ends for F# 280TS and Larger
- Cast Iron Inner and Outer Bearing Caps for F#280TS and Larger
- Stainless Steel Nameplate
- Suitable for Inverter Duty per NEMA MG-1, Part 30\(^{4,5}\)
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque
- 9 Leads for 5 HP and Smaller;
- 12 Leads for 7.5 HP to 125 HP;
- Motors are U.L. Recognized, CSA Approved and CE Marked
- Rubber Dust Flinger on Drive-End for F# 140T - 280T

**EXTRAS/ OPTIONS:**
Please refer to the modifications document for common modifications that can be performed.

**Notes:**

1. Consult a Stock Product Application Specialist for suitability in higher ambient environments.
2. Consult a Stock Product Application Specialist for suitability at higher elevations.
3. Factory Self-Certification for hazardous areas for 440T/TS frames requires fan change. Please see modifications section.
4. Additional charge for Division II nameplates.
5. Motor service factor is 1.0 when operated on a VFD.
6. Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1.
7. Per DOE regulations, this High Efficiency inventory (Ratings Below 600 HP) will be available through June 2018, or until current inventory has been depleted. Whichever occurs first. Please see our new line of Premium Efficient MAX-PE™ Premium Efficient Round Body C-Face motors.

www.tecowestinghouse.com or call 1-800-USE-TECO
MAX-E1® FAMILY
AEH88N, NEMA PREMIUM (1 HP - 500 HP) [EP]
AEHE, HIGH EFFICIENCY [E]
AEH88NCF, NEMA PREMIUM, FOOTED C-FACE (1 HP - 300 HP) [EP_C]
AEUH8NDC, NEMA PREMIUM, ROUND BODY C-FACE (1 HP - 100 HP) [EPV_C]

APPLICATIONS:
- Fans & Blowers
- Compressors
- Pumps
- Mixers
- Crushers
- Conveyors
- Any Severe Duty/ Petro-Chem/ Pulp & Paper Application

FEATURES:
- Output Range: 3/4 - 800 HP
- Speed: 3600, 1800, 1200 & 900 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP54 for 280 Frames and below, IP55 for 280TS Frames and above)
- Voltage: 230/460V (Usable on 208V); 150HP and Larger is 460V Only
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- CSA Certified for Class I, Div. 2, Groups B, C, D - Temp Code T3 Minimum
- CSA Certified for Class II, Div. 2, Groups F & G - Temp Code T3 Minimum
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques as a Minimum; Various Ratings also Meet Design C
- Cast Iron Frame, End Brackets & Fan Cover and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40°C Ambient Temperature
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction for F# 140T - 449T
- Copper/Copper Alloy Rotor Construction for F# 5000 and Larger
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Light Gray - Munsell N5.0
- Double Shielded Bearings Pre-Packed with MULTEMP SRL for F# 140T - 280T (Non-regreasable)
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM for F# 280TS and Larger
- Automatic Grease Discharge Fittings on Regreasable Models
- Labyrinth Type Metal Flinger on Both Ends for F# 280TS and Larger
- Cast Iron Inner and Outer Bearing Caps for F#280TS and Larger
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque (350 HP and Larger are 3:1 Constant Torque)
- 9 Leads for 5 HP and Smaller;
- 12 Leads for 7.5 HP to 125 HP;
- 6 Leads for 150 HP and Larger
- Motors are U.L. Recognized, CSA Approved, CE Marked. ABS Design Assessment from 250 HP-800 HP
- Dual Drilled Feet Available on Most Ratings - Longer Frames (i.e. 145T Drilled also for 143T)
- 2-Pole Motors 600 HP and Larger are Form Wound and Insulated Non-Drive End Bearing
- Rubber Dust Flinger on Drive-End for F# 140T - 280T
- Catalog Numbers Ending in “R” Come Standard with Roller Bearings for Belted Applications.

EXTRAS/ OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) TWMC carries minimal MAX-E1® 575V stock; please check availability to ensure required motors are available. Ratings may be available from our Canadian warehouses at a higher price or from our factory with a longer lead time. Pricing and lead time may vary.
(2) Motors 7.5 HP & up are suitable for Wye/Delta Starting.
(3) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(4) Consult a Stock Product Application Specialist for suitability at higher elevations.
(5) Motor service factor is 1.0 when operated on a VFD.
(6) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31.
(7) Catalog# EP3502, EP3504, EP4002T & EP4004T are “Hybrid” ratings; Not CSA Certified (Self-Certify Only) for hazardous locations, and not dual drilled.
(8) Catalog# EP3006 also not CSA Certified for Hazardous Locations (Self-Certify Only).
(9) F# 5000 and with Larger with Pressed Steel Plate Main Conduit Box.
(10) F# 5007 - 5011 8 Pole Ratings are Aluminum Die Cast Squirrel Cage Rotor Construction.
(11) EP4002T & EP4004T are hybrid frames and not VFD suitable.
(12) Various temp codes apply to ratings. Consult a product specialist for accurate code.
KEYLESS SHAFT MOTOR

AEHHSY, NEMA PREMIUM (200 HP - 500 HP) [EPY]

AEHESY, HIGH EFFICIENCY [EY]

APPLICATIONS:

- Fans & Blowers
- Compressors
- Pumps
- Mixers
- Any Severe Duty/ Petro-Chem
- Pulp & Paper Application

FEATURES:

- Output Range: 200 - 800 HP
- Speed: 1800, 1200 & 900 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP55)
- Voltage: 460V Only
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- CSA Certified for Class I, Div. 2, Groups B, C, D - Temp Code T3 Minimum
- CSA Certified for Class II, Div. 2, Groups F & G - Temp Code T3 Minimum
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Cast Iron Frame, End Brackets & Fan Cover and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40°C Ambient Temperature
- Designed for 3300 ft. Elevation
- Bi-Directional Rotation
- SCM440 Q&T Keyless Oversized Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction or Copper/Copper Alloy Rotor Construction. See product page for more details.
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Light Gray - Munsell N5.0
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM
- Automatic Grease Discharge Fittings on Regreasable Models
- Labyrinth Type Metal Flinger on Both Ends
- Cast Iron Inner and Outer Bearing Caps
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque (350 HP and Larger are 3:1 Constant Torque)
- 6 Leads
- Motors are U.L. Recognized, CSA Approved and CE Marked
- Provisions for Bearing RTD’s, both End Brackets Pre-Drilled and Plugged; F#5000 and Larger Only

EXTRAS/ OPTIONS:

Please refer to the modifications document for common modifications that can be performed.

Notes:

(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability at higher elevations.
(3) CSA Certification for Hazardous Locations only applies to select ratings. See product page for select details.
(4) Motor service factor is 1.0 when operated on a VFD.
(5) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31.
(6) F# 5000 and Larger with Pressed Steel Plate Main Conduit Box.
MAX-E2/841® LITE

AEHH, NEMA PREMIUM [HH]

APPLICATIONS:
- Fans & Blowers
- Compressors
- Pumps
- Mixers
- Crushers
- Conveyors
- Severe Duty/ Petro-Chem
- Pulp & Paper Application
- Marine Duty

FEATURES:
- Output Range: 1 - 300 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP55); IP(56) 280TS Frames and Above
- Voltage: 460V Only
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- CSA Certified for Class I, Div. 2, Groups B, C, D - Temp Code T3 Minimum
- CSA Certified for Class II, Div. 2, Groups F & G - Temp Code T3 Minimum (444T and above)
- IEEE 841 Ready
- Meets IEEE 45 Marine Duty
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques as a Minimum; Various Ratings also Meet Design C
- Cast Iron Frame, End Brackets & Fan Cover and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box with additional Foot Grounding Provision
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40˚C Ambient Temperature
- Designed for 3300 ft. Elevation
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: 2 Part Epoxy
- Paint Color: Blue - Munsell 5PB 3/8
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM
- Automatic Grease Discharge Fittings
- Rubber Dust Flinger on DE for F# 140T - 280T
- Oil Seal/V-Ring on Both Ends for F# 320T - 400T
- Labyrinth Type Metal Flinger on Both Ends for F# 440T and Larger
- Cast Iron Inner and Outer Bearing Caps for F# 400T and Larger
- Stainless Steel Nameplate and Hardware
- Stainless Steel Automatic Breather Drain
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque (350 HP and Larger are 3:1 Constant Torque)
- Motors are U.L. Recognized, CSA Approved
- 3 Leads Only
- Dual Drilled Feet Available on Most Ratings - Longer Frames (i.e. 145T Drilled also for 143T)
- Vibration Not to Exceed 0.08 Inches Per Second
- Noise Level Not to Exceed 85 dB(A) at 1 Meter Unloaded

EXTRAS/ OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability at higher elevations.
(3) Motor service factor is 1.0 when operated on a VFD.
(4) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31.
(5) Various temp codes apply to ratings. Consult a stock product specialist for accurate code.
MAX-E2/841® FAMILY

AEHH8B, NEMA PREMIUM [HB]
AEHH8BCF, NEMA PREMIUM, FOOTED C-FACE (1 HP - 100 HP) [HB_C]
AEUH8BDC, NEMA PREMIUM, ROUND BODY C-FACE (1 HP - 100 HP) [HBV_C]

APPLICATIONS:
- Fans & Blowers
- Compressors
- Pumps
- Mixers
- Crushers
- Conveyors
- Severe Duty/ Petro-Chem
- Pulp & Paper Application
- Marine Duty

FEATURES:
- Output Range: 1 - 500 HP
- Speed: 3600, 1800, 1200 & 900 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP56)
- Voltage: 460V Only
- Meets GM 7E-TA Specifications
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- CSA Certified for Class I, Div. 2, Groups B, C, D - Temp Code T3 Minimum
- CSA Certified for Class II, Div. 2, Groups F & G - Temp Code T3 Minimum (Frame 444T and Above)
- Meets or Exceeds IEEE 841 Standards
- Meets IEEE 45 Marine Duty and ABS Design Assessment up to 500 HP (2, 4, 6 pole only)
- Extended Warranty - 60 Months from Date of Manufacture
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques as a Minimum; Various Ratings also Meet Design C
- Cast Iron Frame, End Brackets & Fan Cover and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box with additional Foot Grounding Provision
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 50°C Ambient Temperature
- Designed for 3300 ft. Elevation
- Bi-Directional Rotation; Except 2 Pole “Hybrid” and F# 5000 and Larger Ratings are Counter-Clockwise facing the DE
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction for F# 140T - 449T Copper/Copper Alloy Rotor Construction for F# 5000 and Larger
- Paint System: 2 Part Epoxy
- Paint Color: Blue - Munsell 5PB 3/8
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM
- Automatic Grease Discharge Fittings
- VBXX INPRO™ Seals Installed on Both Ends
- Stainless Steel Nameplate and Hardware
- Stainless Steel Automatic Breather Drain
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1, Part 31
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque (350 HP and Larger are 3:1 Constant Torque)
- Motors are U.L. Recognized, CSA Approved
- 3 Leads Only
- Dual Drilled Feet Available on Most Ratings - Longer Frames (i.e. 145T Drilled also for 143T)
- Vibration Not to Exceed 0.08 Inches Per Second
- Noise Level Not to Exceed 85 dB(A) at 1 Meter Unloaded

EXTRAS/OPTIONS:
Please refer to modifications document for common modifications that can be performed.

Notes:
(1) TWMC carries minimal MAX-E2® 575V stock; please check availability to ensure required motors are available.
(2) Ratings may be available from our Canadian Warehouses at a higher price or from our factory with a longer lead time. Pricing and lead time may vary.
(3) Consult a Stock Product Application Specialist for suitability at higher elevations.
(4) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1, Part 31.
(5) Catalog# HB3502 & HB3504 are “Hybrid” ratings; Not CSA Certified (Self-Certify Only) for hazardous locations, and not dual drilled.
(6) Catalog# HB3006 also not CSA Certified for hazardous locations (Self-Certify Only).
(7) To convert to IP65 the M17 modification will be required. To convert to IP66 the M31 modification will be required.

www.tecowestinghouse.com or call 1-800-USE-TECO
MAX-HT™ LOW VOLTAGE CRUSHER DUTY

AEHHGD, NEMA PREMIUM, DESIGN C (20 HP - 200 HP) [CDP]  
AEEAGD, HIGH EFFICIENCY, DESIGN C [CD]

APPLICATIONS:

- Crushers  
- Impactors  
- Chippers/ Shredders  
- Ball Mills/ Rolling Mills  
- Any High Torque Application

FEATURES:

- Output Range: 20 - 600 HP  
- Speed: 1800, 1200 & 900 RPM  
- Enclosure: Totally Enclosed Fan Cooled (IP55)  
- Voltage: 230/460V (Usable on 208V); 150HP and Larger is 460V Only\(^\text{(1)}\)  
- CSA Certified for Class I, Div. 2, Groups B, C, D - Temp Code T3 Minimum\(^\text{(6)}\)  
- CSA Certified for Class II, Div. 2, Groups F & G - Temp Code T3 Minimum (Frame 444T and above)\(^\text{(6)}\)  
- Class F Insulation  
- Class B Temperature Rise  
- NEMA Design A Torques; Equal or Greater Than 200% Starting Torque / 250% Breakdown Torque  
- Cast Iron Frame, End Brackets, Main Conduit Box; Rolled Steel Fan Cover\(^\text{(7)}\)  
- Grounding Terminal Inside Main Conduit Box\(^\text{(8)}\)  
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted  
- Designed for 40°C Ambient Temperature\(^\text{(2)}\)  
- Designed for 3300 ft. Elevation\(^\text{(3)}\)  
- Bi-Directional Rotation  
- High Strength 4140 AISI Steel Shaft  
- Aluminum Die Cast Squirrel Cage Rotor Construction  
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat  
- Paint Color: Dark Gray - Munsell 7.5 BG 3.5/0.5  
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM  
- Automatic Grease Discharge Fittings  
- Gamma (Axial Face) Seal on Both Ends for F# 140T - 400T  
- Labyrinth Type Metal Flinger on Both Ends for F# 440T and Larger  
- Cast Iron Inner and Outer Bearing Caps for F# 320T and Larger  
- Stainless Steel Nameplate  
- New Dual Column Design Nameplate as Standard (60/50 Hz)  
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31\(^\text{(4,5)}\)  
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque (350 HP and Larger are 3:1 Constant Torque)  
- 12 Leads for 125 HP and Smaller  
- 6 Leads for 150 HP and Larger  
- Standard With Thermistors (PTC 140°C) 1 per Phase  
- Locknut and Washer on NDE for Vertical Shaft Down Applications on F# 440 and Larger  
- Drain Holes / Plugs on Both End Brackets for Vertical Applications  
- Threaded One Way Breather Drains for Horizontal Mount Applications

EXTRAS/ OPTIONS:

Please refer to the modifications document for common modifications that can be performed.

Notes:

1. 575V motors available on a made-to-order basis. Consult a Stock Product Application Specialist for details.
2. Consult a Stock Product Application Specialist for suitability in higher ambient environments.
3. Consult a Stock Product Application Specialist for suitability at higher elevations.
4. Motor service factor is 1.0 when operated on a VFD.
5. Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31
6. CSA Certification for Hazardous Locations only applies to AEHHGD, NEMA Premium Type.
7. F# 5000 and with Larger with Pressed Steel Plate Main Conduit Box.
8. Additional Foot Grounding Provision for F# 440 and Larger.

www.tecowestinghouse.com or call 1-800-USE-TECO
MAX-HT™ LOW VOLTAGE CRUSHER DUTY

AEHHGD, NEMA PREMIUM, DESIGN A [CDP]

APPLICATIONS:
- Crushers
- Impactors
- Chippers/ Shredders
- Ball Mills/ Rolling Mills
- Any High Torque Application

FEATURES:
- Output Range: 200 - 500 HP
- Speed: 1800, 1200 & 900 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP55)
- Voltage: 460V(1)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- CSA Certified for Class I, Div. 2, Groups B, C, D - Temp Code T3 Minimum(6)
- CSA Certified for Class II, Div. 2, Groups F & G - Temp Code T3 Minimum (Frame 444T and above) (6)
- Class F Insulation
- Class B Temperature Rise
- NEMA Design A Torques; Equal or Greater Than 200% Starting Torque / 250% Breakdown Torque
- Cast Iron Frame, End Brackets; Pressed Steel Plate Main Conduit Box and Fan Cover
- Cast Iron Main Conduit Box on 505UZ Frame
- Grounding Terminal Inside Main Conduit Box with additional Foot Grounding Provision
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40˚C Ambient Temperature(2)
- Designed for 3300 ft. Elevation(3)
- Bi-Directional Rotation
- High Strength 4140 AISI Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Dark Gray - Munsell 7.5 BG 3.5/0.5
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM
- Automatic Grease Discharge Fittings
- Labyrinth Type Metal Flinger on Both Ends
- Cast Iron Inner and Outer Bearing Caps
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31(4,5)
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque (350 HP and Larger are 3:1 Constant Torque)
- 6 Leads
- Standard With Thermistors (PTC 140˚C) 1 per Phase
- Locknut and Washer on NDE for Vertical Shaft Down Applications
- Drain Holes / Plugs on Both End Brackets for Vertical Applications
- Threaded One Way Breather Drains for Horizontal Mount Applications

EXTRAS/ OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
1. 575V motors available on a made-to order basis. Consult a Stock Product Application Specialist for details.
2. Consult a Stock Product Application Specialist for suitability in higher ambient environments.
3. Consult a Stock Product Application Specialist for suitability at higher elevations.
4. Motor service factor is 1.0 when operated on a VFD.
5. Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31.
6. CSA Certification for Hazardous Locations only applies to AEHHGD, NEMA Premium Type.

www.tecowestinghouse.com or call 1-800-USE-TECO
MAX-HT™ MEDIUM VOLTAGE CRUSHER DUTY

APPLICATIONS:

- Mills
- Grinders
- Compressors
- Crushers
- Impacters
- Ball Mills
- Shredders
- High Torque Applications

FEATURES:

- Output Range: 100 - 900 HP
- Speed: 1800, 1200 & 900 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP55)
- Voltage: 2300/4000V¹
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous)
- CSA Certified for Class I, Div. 2, Groups B, C, D - Temp Code T3 Minimum
- CSA Certified for Class II, Div. 2, Groups F & G - Temp Code T3 Minimum
- Class F Insulation
- Class B Temperature Rise
- NEMA Design C Torques; Equal or Greater Than 200% Starting Torque / 250% Breakdown Torque
- Cast Iron Frame, End Brackets: Pressed Steel Plate Main Conduit Box and Fan Cover⁵
- Grounding Terminal Inside Main Conduit Box with additional Foot Grounding Provision
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40°C Ambient Temperature²
- Designed for 3300 ft. Elevation³
- Bi-Directional Rotation
- High Strength 4140 AISI Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Dark Gray - Munsell 7.5 BG 3.5/0.5
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM
- Automatic Grease Discharge Fittings
- Labyrinth Type Metal Flinger on Both Ends
- Cast Iron Inner and Outer Bearing Caps
- Stainless Steel Nameplate
- Suitable for Inverter Duty (PWM - Pulse Width Modulation) per NEMA MG-16
- Inverter Duty Speed Range: 10:1 Variable Torque, 3:1 Constant Torque⁶
- 6 Leads
- CSA Approved
- Locknut and Washer on NDE for Vertical Shaft Down Applications
- Drain Holes / Plugs on Both End Brackets for Vertical Applications
- Threaded One Way Breather Drains for Horizontal Mount Applications
- 100 Ohm Platinum Stator RTD’s (2/Phase); in separate Auxiliary Box
- Space Heaters (120V); in separate Auxiliary Box⁴
- Mounting Provisions for Bearing RTD’s and Vibration Detectors on F# 5007 and Larger

EXTRAS/ OPTIONS:

Please refer to the modifications document for common modifications that can be performed.

Notes:

¹ Suitable for Full Voltage Direct On-Line Connection, Wye-Delta Start, Reduced Voltage Start or VFD.
² Consult a Stock Product Application Specialist for suitability in higher ambient environments.
³ Consult a Stock Product Application Specialist for suitability at higher elevations.
⁴ Space Heaters are Low Temperature Type; Suitable for Hazardous Location Division 2 Environments
⁵ F# 447T(Z) - 449T(Z) with Cast Iron Main Conduit Box and Cast Iron Fan Cover.
⁶ Motor service factor is 1.0 when operated on a VFD.
STAINLESS STEEL WASHDOWN

AEGP, NEMA PREMIUM, FOOTED C-FACE [WFP/WP]
AEGPCW, NEMA PREMIUM, ROUND BODY C-FACE [WFPV/WPV]

APPLICATIONS:
- Any Application Where the Motor Will be Subjected to High Pressure Spray Down
- Marine Duty
- Food Processing and Packaging

FEATURES:
- Output: 1/2 - 10 HP
- Speed: 3600 & 1800 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP66) (IEEE 45)
- Voltage: 230/460V (Usable on 208V)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Stainless Steel Frame, End Brackets and Hardware
- Grounding Terminal Inside Main Conduit Box
- Stainless Steel Oversized Main Conduit Box - F3 Mounted (IM1001)
- Designed for 40˚C Ambient Temperature(1)
- Designed for 3300 ft. Elevation(2)
- Bi-Directional Rotation
- SUS304 Stainless Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Double Shielded Bearings Pre-Packed with MULTEMP SRL
- Contact Lip Type Seal on Both Ends
- Etched Nameplate on the Stainless Steel Frame
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31(3)(4)
- Inverter Duty Speed Range: 10:1 Variable Torque, 4:1 Constant Torque
- 9 Leads
- Two Drain Holes on Bottom of Frame and one in the C-Flange
- Motors are U.L. Recognized, CSA Approved and CE Marked
- Department of Energy Efficiency Certificate # CC082A
- Encapsulated Windings as Option(5)

EXTRAS/ OPTIONS:
- Please refer to the modifications document for common modifications that can be performed.

Notes:
1. Consult a Stock Product Application Specialist for suitability in higher ambient environments.
2. Consult a Stock Product Application Specialist for suitability at higher elevations.
3. Motor service factor is 1.0 when operated on a VFD.
4. Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31
5. Consult a Stock Product Application Specialist for encapsulated winding quote.
6. TENV up to 1 HP.
7. Turn down the same TEFC 60 min. duty intermittent.
TEXP EXPLOSION PROOF FAMILY

AEHXV/AEHXU, NEMA PREMIUM [XP]
AEHXG/AEHXF, NEMA PREMIUM, FOOTED C-FACE (1 HP - 100 HP)[XP_C]
AEUHXG/AEUHXF, NEMA PREMIUM, ROUND BODY C-FACE (1 HP - 75 HP)[XPV_C]

APPLICATIONS:
- Grain Elevators
- Pumps
- Blowers
- Applications Where Explosive Gases are Present
- Applications Where Explosive Dusts/Grains are Present

FEATURES:
- Output Range: 1 - 400 HP
- Speed: 3600, 1800, 1200 & 900 RPM
- Enclosure: Totally Enclosed Fan Cooled - Explosion Proof (IP55)
- Voltage: 230/460V (Usable on 208V); 150HP and Larger is 460V Only(1)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- Class I, Div. 1, Group C & D and Class II, Groups E, F and G - Temp Code T2D/T3B Up to and Including F# 256T
- Class I, Div. 1, Group D and Class II, Groups E, F and G - Temp Code T2D/T3B for F# 284T and Larger
- UL File: E84757
- CSA File: #64671
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Standard with Klixon 9700K Temperature Limiting Switch, 1 per Phase
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Dual Drilled Back Feet on 447/9 and 5007/9 Frames
- Designed for 40°C Ambient Temperature(2)
- Designed for 3300 ft. Elevation(3)
- Bi-Directional Rotation
- Cast Iron Frame, Fan Cover, End Brackets and Main Conduit Box
- Capable of Withstanding Explosion Force as Required by UL
- Stainless Steel Breather Drains with Bronze Filters (For Horizontal Mount Only)
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction through 449 Frame; Fabricated Copper Bar on 5000 Frame
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Dark Blue - Munsell 5 PB 4.5/2
- Double Shielded Bearings Pre-Packed with MULTEMP SRL for F# 140T - 280T (Non-regreasable)
- High Quality Ball (or Roller) Bearings Regreasable with Mobil PolyrexTM EM for F# 280TS and Larger
- Bronze Flinger on Both Ends
- Cast Iron Inner and Outer Bearing Caps for F#280TS and Larger
- Stainless Steel Nameplate
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31(4,5)
- UL Listed for Inverter Duty(4,5)
- Inverter Duty Magnet Wire Capable of Withstanding Voltage Spikes of up to 2200 Volts
- Inverter Duty Speed Ranges: VT = 3 - 60 Hz
  CT for 140T - 210T Frames = 10 - 60 Hz
  CT for 250T - 320T Frames = 13 - 60 Hz
  CT for 260T - 440T Frames = 16 - 60 Hz
- 9 Leads for 5 HP and Smaller; 12 Leads for 7.5 HP to 125 HP; 6 Leads for 150 HP and Larger

EXTRAS/OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Available in 575V. TWMC carries minimal 575V stock; please check availability to ensure required motors are in stock.
(2) Ratings may be available from our Canadian warehouses and/or our factory. Pricing and leadtime may vary.
(3) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(4) Consult a Stock Product Application Specialist for suitability at higher elevations.
(5) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31.
(6) Extras/Modification options are limited on TEXP Products.

www.tecowestinghouse.com or call 1-800-USE-TECO
**APPLICATIONS:**

- Pumps
- Fans & Blowers
- Compressors

**FEATURES:**

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<tr>
<th>Feature</th>
<th>Details</th>
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<tbody>
<tr>
<td>Output Range:</td>
<td>100 - 2000 HP</td>
</tr>
<tr>
<td>Speed:</td>
<td>3600, 1800, 1200 &amp; 900 RPM(3)</td>
</tr>
<tr>
<td>Enclosure:</td>
<td>Weather Protected Type I (WPI)</td>
</tr>
<tr>
<td>Voltage:</td>
<td>2300/4000V</td>
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<tr>
<td>Three Phase, 60 Hz, 1.15 Service Factor (Continuous)</td>
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<tr>
<td>Standard Features:</td>
<td>100 Ohm Platinum Stator RTD's (2 per Phase), Space Heaters (120V)</td>
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<tr>
<td>Standard Features:</td>
<td>Pre-Drilled &amp; Plugged Bearing Bracket for 100 Ohm Platinum Bearing RTD's on 5000 Frames &amp; Above</td>
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<tr>
<td>Standard Features:</td>
<td>Pre-Drilled &amp; Spot Faced on Top of End Bracket for Vibration Detectors on 5000 Frames and Above</td>
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<tr>
<td>Class F Insulation</td>
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<td>NEMA Design B Torques</td>
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<td>Oversized Main Conduit Box Rotatable in 90 Degree Increments Fully Gasketed with NPT Threaded Entrance - F1 Mounted</td>
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<tr>
<td>Designed for 40˚C Ambient Temperature(2)</td>
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<tr>
<td>Designed for 3300 ft. Elevation(3)</td>
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<tr>
<td>Rotation:</td>
<td>F#447-449: Bi-Directional. F#5000-5813: Bi-Directional. 2 Pole Motors F# 5000 or Larger are Uni-Directional, Counter-Clockwise (CCW) facing the Drive End</td>
</tr>
<tr>
<td>1045 Carbon Steel Shaft</td>
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<tr>
<td>Aluminum Die Cast Squirrel Cage Rotor Construction for F#449T and Below</td>
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<tr>
<td>Squirrel Cage Copper or Copper Alloy Bar Rotor Construction for F#5000 and Larger</td>
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<tr>
<td>Paint System:</td>
<td>Phenolic Rust Proof Base Plus Polyurethane Top Coat</td>
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<td>Paint Color:</td>
<td>Dark Gray - Munsell 7.5B 3.5/0.5</td>
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<td>High Quality Ball (or Roller) Bearings Regreasable with Mobil PolyrexTM EM</td>
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<td>Insulated Non-Drive End Bearing on 3600 RPM Motors; 600 HP and Larger</td>
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<td>Labyrinth Type Metal Flinger on Both Ends</td>
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<td>Cast Iron Inner and Outer Bearing Caps</td>
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<td>Grounding Terminal Inside Main Box and on Motor Foot</td>
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<tr>
<td>Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31(4,5)</td>
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<tr>
<td>6 Leads</td>
<td></td>
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<tr>
<td>Motors are CSA Approved</td>
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</tbody>
</table>

**EXTRAS/OPTIONS:**

Please refer to the modifications document for common modifications that can be performed.

**Notes:**

1. Slower speeds available as Made to Order.
2. Consult a Stock Product Application Specialist for suitability in higher ambient environments, and for variable and constant torque speed ranges.
3. Consult a Stock Product Application Specialist for suitability at higher elevations.
4. Motor service factor is 1.0 when operated on a VFD.
5. Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31. An isolation transformer or other method of mitigating common mode voltages from motor terminals must be utilized. Please check out our accompanying TEAMMaster™ starters.
GLOBAL WPI
ASHA, HIGH EFFICIENCY, MEDIUM VOLTAGE [P]

APPLICATIONS:
- Pumps
- Fans & Blowers
- Compressors

FEATURES:
- Output Range: 100 - 1000 HP
- Speed: 3600, 1800, 1200 & 900 RPM
- Enclosure: Weather Protected Type I (WPI)
- Voltage: 2300/4160V
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous)
- Standard Features: 100 Ohm Platinum Stator RTD’s (2 per Phase), Space Heaters (120V)
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Oversized Main Conduit Box Rotatable in 90 Degree Increments. Fully Gasketed with NPT Threaded Entrance - F1 Mounted
- Designed for 40°C Ambient Temperature
- Designed for 3300 ft. Elevation
- Rotation: Bi-Directional Except 2 Pole which is Counter-Clockwise (CCW) facing the Drive End
- Cast Iron Frame and End Brackets
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction for F#449T and Below
- Squirrel Cage Copper or Copper Alloy Bar Rotor Construction for F#5000 and Above
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Dark Gray - Munsell 7.5B 3.5/0.5
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM
- Insulated Non-Drive End Bearing on 2 Pole Motors; 600 HP and Larger
- Labyrinth Type Metal Flinger on Both Ends
- Cast Iron Inner and Outer Bearing Caps
- Grounding Terminal Inside Main Box and on Motor Foot
- Stainless Steel Nameplate
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31
- 6 Leads
- Motors are CSA Approved

EXTRAS/ OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Slower speeds available as Made to Order.
(2) Consult a Stock Product Application Specialist for suitability in higher ambient environments, and for variable and constant torque speed ranges.
(3) Consult a Stock Product Application Specialist for suitability at higher elevations.
(4) Motor service factor is 1.0 when operated on a VFD.
(5) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1, Part 31.

An isolation transformer or other method of mitigating common mode voltages from motor terminals must be utilized. Please check out our accompanying TEAMMaster™ starters.
GLOBAL XPE

APPLICATIONS:

- Pumps
- Fans & Blowers
- Mills
- Grinders
- Compressors

FEATURES:

- Output Range: 100 - 2000 HP
- Speed: 3600, 1800, 1200 & 900 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP55)
- Voltage: 2300/4160V
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous)
- CSA Certified for Class I, Div. 2, for 5000 Frames and above
- CSA Certified for Class 1, Div. 2, Groups B, C, and D, for 444 Frames and above, Code T3
- Standard Features: 100 Ohm Platinum Stator RTD’s (2/Phase), Space Heaters (120V)
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Oversized Main Conduit Box Rotatable in 90 Degree Increments Fully Gasketed with NPT Threaded Entrance - F1 Mounted
- Cast Iron Terminal Box on 444T - 449T Frames
- Steel Plate Terminal Box on 5000 Frames and Above
- Designed for 40°F Ambient Temperature
- Designed for 3300 ft. Elevation
- Bi-Directional Rotation for all 444T - 449T Frames and for 1800 - 900RPM (4 - 8 Pole) 5007 - 6808 Frame Motors and for (4-8 Pole) 5007-6808 Frame Motors
- 5007 - 6808 Frame 3600 RPM (2 Pole) Motors have Counter-Clockwise (CCW) Rotation facing the Drive End
- Cast Iron Frame and End Brackets
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction on 444T - 449T Frames
- Squirrel Cage Copper or Copper Alloy Bar Rotor Construction for on 5007 - 6808 Frames
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Dark Gray - Munsell 7.5B 3.5/0.5
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM
- Labyrinth Type Metal Flinger on Both Ends
- Cast Iron Inner and Outer Bearing Caps
- Grounding Terminal Inside Main Box and on Motor Foot
- Stainless Steel Nameplate
- 6 Leads, with Solderless Lug Terminals
- Motors are CSA Approved
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31

EXTRAS/ OPTIONS:

Please refer to the modifications document for common modifications that can be performed.

Notes:

1. Consult a Stock Product Application Specialist for suitability in higher ambient environments, and for variable and constant torque speed ranges.
2. Consult a Stock Product Application Specialist for suitability at higher elevations.
3. Motor service factor is 1.0 when operated on a VFD.
4. Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31.
   An isolation transformer or other method of mitigating common mode voltages from motor terminals must be utilized. Please check our accompanying TEAMMaster™ starters.
5. Consult Stock Product Specialist for various temp codes on what ratings.
GLOBAL MAX

AFHGTK, NEMA PREMIUM, MEDIUM VOLTAGE (500 HP - 200 HP)[KF]
AFJHTK, IEC, NEMA PREMIUM, MEDIUM VOLTAGE (900 HP - 1750 HP)[JF]

APPLICATIONS:

- Pumps
- Mills
- Fans & Blowers
- Grinders
- Compressors

FEATURES:

- Output Range: 500 - 2000 HP
- Speed: 3600, 1800, 1200 & 900 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP55)
- Voltage: 2300/4000V
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous)
- CSA Certified for Class I, Div. 2, Group B, C, D - Temp Code T3 Minimum
- CSA Certified for Class II, Div. 2, Group F & G - T3C Minimum
- Standard Features: Provisions for Bearing RTD’s, 100 Ohm Platinum Stator RTD’s(2/Phase), Space Heaters(120V)
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Oversized Fabricated Steel Main Conduit Box Rotatable in 90 Degree Increments Fully Gasketed with NPT Threaded Entrance - F1 Mounted
- Designed for 40°C Ambient Temperature\(^{(1)}\)
- Designed for 3300 ft. Elevation\(^{(2)}\)
- Bi-Directional Rotation; except 2 Pole which is Counter-Clockwise (CCW) facing the Drive End
- Cast Iron Frame and End Brackets
- 1045 Carbon Steel Shaft
- Squirrel Cage Copper Bar Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Dark Gray - Munsell 7.5B 3.5/0.5
- High Quality Ball (or Roller) Bearings Regreasable with Mobil Polyrex™ EM
- Bronze Labyrinth Type Metal Flinger on Both Ends
- Cast Iron Inner and Outer Bearing Caps
- Grounding Terminal Inside Main Box and on Motor Foot
- Stainless Steel Nameplate
- 6 Leads, with Solderless Lug Terminals
- Motors are CSA Approved
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31\(^{(3,4)}\)

EXTRAS/ OPTIONS:

Please refer to the modifications document for common modifications that can be performed.

Notes:

1. Consult a Stock Product Application Specialist for suitability in higher ambient environments, and for variable and constant torque speed ranges.
2. Consult a Stock Product Application Specialist for suitability at higher elevations.
3. Motor service factor is 1.0 when operated on a VFD.
4. Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1.Part 31. An isolation transformer or other method of mitigating common mode voltages from motor terminals must be utilized. Please check out our accompanying TEAMMaster™ starters.
VERTICAL HOLLOW SHAFT WPI
HIGH THRUST with "P" BASE - LOW VOLTAGE

AMRCNH, (MAX-VHP™) NEMA PREMIUM [VHP]*
AMRCFP, (MAX-VH™) HIGH EFFICIENCY [VH_FP]*

APPLICATIONS:
- Deep Well Turbine Pumps
- Irrigation
- Fluid Handling Systems
- Water/Waste Water
- Fire Pumps*

FEATURES:
- Output Range: 7.5 - 800 HP
- Speed: 1800 RPM
- Enclosure: Weather Protected Type I (WPI)
- Voltage: 230/460V (Usable on 208V); 150HP and Larger is 460V Only
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous on Sine Wave Power)
- Inverter Duty (PWM) per NEMA® MG-1 Part 31 at 1.0 Service Factor
- New Dual Column (60/50 Hz) Design Nameplate as Standard; 50 Hz Data 190/380V at 1.0 S.F.
- Standard Features: Coupling w/ Gib Key, Ball Type NRR, Drip/Splash Cover, Space Heaters (120V)
- 5000 Frames and Above also include Mounting Provisions for bearing RTD’s and Insulated Bearing Housing
- Optional Capability for 175% High Thrust Requirement for 444 - 449TP Frames
- Motor Design Suitable to handle 2 stacked bearings; Motors will ship with 1 bearing and 1 spacer as Standard
- Class F Insulation with Phenolic Alkyd Resin Varnish
- Class B Temperature Rise
- NEMA Design B Torques
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - Fully Gasketed with NPT Threaded Entrance
- Cast Iron Conduit Box for F#449TP and Below; Steel Plate Conduit Box for F#5000
- Designed for 40°C Ambient Temperature(1)
- Designed for 3300 ft. Elevation(2)
- Counterclockwise (CCW) Rotation; Viewed from Top
- Cast Iron Frame & End Brackets
- 1045 Hollow Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction for F#449TP and Below
- Squirrel Cage Copper or Copper Alloy Bar Rotor Construction for F#5000
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color for AMRC (MAX-VH™): Dark Gray - Munsell 7.5B 3.5/0.5
- Paint Color for AMRCNH (MAX-VHP™): Blue - Munsell 5PB 3/8
- Guide Bearings: 213 - 286TP frames are Grease Pre-packed Double Shielded Bearings (MULTEMP SRL)
- 324TP - 5009P frames are Re-Greasable (Mobil Polyrex EM)
- Thrust Bearings: 213 - 286TP frames are Re-Greasable Angular Contact (Mobil Polyrex EM);
- 324 - 449TP frames are Oil Lubricated Angular Contact; F#5000 and Above with Spherical Roller
- Oil Sight Glass for 324TP Frames and Above
- Oil Requirements: 300 S.S.U. @100°F
- Grounding Terminal Inside Main Box
- Stainless Steel Nameplate and Rodent Screens
- 12 Leads (PWS on 230V) on 213 - 405TP3; Wye/Delta on 230V or 460V
- 6 Leads on 444TP to 449TP; 5000 Frames and Above with Connection Studs(4)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31.
- 10:1 Variable Torque with NRR. 10:1 C.T., 20:1 VT without NRR Using Braking in VFD
- Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by VFD

EXTRAS/OPTIONS:
Please refer to pages 147 - 154 which show common modifications that can be performed.

Notes:
* Fire Pump available. See product page for more details.
(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability at higher elevations.
(3) Suitable for Wye/Delta start at 230V or 460V.
(4) Suitable for Wye/Delta start at 460V.
VERTICAL HOLLOW SHAFT TEFC
HIGH THRUST with "P" BASE - LOW VOLTAGE

AEEHNH, (MAX-VHP™) NEMA PREMIUM [VHTP]

APPLICATIONS:
- Deep Well Turbine Pumps
- Irrigation
- Water/Wastewater

FEATURES:
- Output Range: 15 - 800 HP
- Speed: 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP55)
- Voltage: 230/460V (Usable on 208V); 150HP and Larger is 460V Only
- 230/460V Motors Suitable for Partial Winding Start (at 230V Only)\(^{(3)}\)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous on Sine Wave Power)
- CSA Certified for Class I, Div. 2, Group B, C, D - Temp Code T3 Minimum
- Inverter Duty (PWM) per NEMA® MG-1 Part 31 at 1.0 Service Factor
- New Dual Column (60/50 Hz) Design Nameplate as Standard; 50 Hz Data 190/380V at 1.0 S.F.
- Standard Features: Coupling w/ Gib Key, Non-Sparking Ball Type NRR, Drip/Splash Cover, Space Heaters (120V)
- 5000 Frames and Above also include Mounting Provisions for bearing RTD’s and Insulated Bearing Housing
- CSA Certified for Class I, Div. 2, Groups B,C, D; Temp Code T3 minimum
- Class F Insulation with Phenolic Alkyd Resin Varnish
- Class B Temperature Rise
- NEMA Design B Torques
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - Fully Gasketed with NPT Threaded Entrance
- Cast Iron Conduit Box for F#449TP and Below; Steel Plate Conduit Box for F#5000
- Designed for 40°C Ambient Temperature\(^{(1)}\)
- Designed for 3300 ft. Elevation\(^{(2)}\)
- Counterclockwise (CCW) Rotation; Viewed from Top
- Cast Iron Frame & End Brackets
- 1045 Hollow Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Blue - Munsell 5PB 3/8
- Guide Bearings: 254 - 286TP frames are Grease Pre-packed Double Shielded Bearings (MULTEMP SRL)
  324TP - 5810P frames are Re-Greasable (Mobil Polyrex EM)
- Thrust Bearings: 254 - 365TP frames are Re-Greasable Angular Contact (Mobil Polyrex EM);
  404 - 449TP frames are Oil Lubricated Angular Contact; F#5000 & Above with Spherical Roller or Angular Contact
- Oil Sight Glass for 324TP Frames and Above
- Oil Requirements: 300 S.S.U. @ 100°F
- Grounding Terminal Inside Main Box
- Stainless Steel Nameplate
- 12 Leads (PWS on 230V) on 213 - 405TP; (3) Suitable for Wye/Delta Start at 230V or 460V.
  6 Leads on 444TP to 449TP; 5000 Frames and Above with Connection Studs\(^{(4)}\)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31. - 10:1 Variable Torque with NRR; 20:1 Variable Torque without
  NRR Using Braking in VFD 10:1 Constant Torque
- Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by VFD
  as stated per NEMA MG-1 Part 31.

EXTRAS/ OPTIONS:

- Please refer to the modifications document for common modifications that can be performed.

Notes:
1. Consult a Stock Product Application Specialist for suitability in higher ambient environments.
2. Consult a Stock Product Application Specialist for suitability at higher elevations.
3. Suitable for Wye/Delta start at 230V or 460V.
4. Suitable for Wye/Delta start at 460V.
VERTICAL HOLLOW SHAFT WPI
HIGH THRUST with "P" BASE - MEDIUM VOLTAGE

AMRKNH, NEMA PREMIUM [VHKP]

Effective 07-08-18
Supercedes 03-24-17

APPLICATIONS:
- Deep Well Turbine Pumps
- Irrigation
- Water/Wastewater

FEATURES:
- Output Range: 200 - 1000 HP
- Speed: 1800 & 1200 RPM
- Enclosure: Weather Protected Type I (WPI)
- Voltage: 2300/4000V
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous on Sine Wave Power)
- Inverter Duty (PWM) per NEMA® MG-1 Part 31 at 1.0 Service Factor
- Standard Features: Coupling w/ Gib Key, Ball Type NRR, Drip/Splash Cover, Space Heaters (120V)
- 5000 Frames and Above also include Mounting Provisions for bearing RTD’s and Insulated Bearing Housing
- Class F Insulation with VPI Epoxy Resin Varnish
- Class B Temperature Rise
- NEMA Design B Torques
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - Fully Gasketed with NPT Threaded Entrance
- Cast Iron Conduit Box for F#449TP and Below; Steel Plate Conduit Box for F#5000
- Designed for 40°C Ambient Temperature(1)
- Designed for 3300 ft. Elevation(2)
- Counterclockwise (CCW) Rotation; Viewed from Top
- Cast Iron Frame & End Brackets
- 1045 Hollow Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction for F#449TP and Below
- Squirrel Cage Copper or Copper Alloy Bar Rotor Construction for F#5000 and above
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Blue - Munsell 5PB 3/8
- Guide Bearings: Re-Greaseable with Mobil Polyrex™ EM Grease
- Thrust Bearings: 449TP frames are Oversized Angular Contact Oil Lubricated
- Thrust Bearings: 5000 Frame and above are Oil Lubricated Spherical Roller with Site Glass
- Oil Requirements: 300 S.S.U. @100°F
- Grounding Terminal Inside Main Box
- Stainless Steel Nameplate
- 6 Leads
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31. - 10:1 Variable Torque with NRR;
  20:1 Variable Torque without NRR Using Braking in VFD
- Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by VFD
  as stated per NEMA MG-1. Part 31.

EXTRAS/ OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability at higher elevations.
VERTICAL HOLLOW SHAFT TEFC
HIGH THRUST with "P" BASE - MEDIUM VOLTAGE
AEHCNH, NEMA PREMIUM [VHKTP]

Effective 07-08-18
Supercedes 03-24-17

APPLICATIONS:
- Deep Well Turbine Pumps
- Irrigation
- Water/Wastewater

FEATURES:
- Output Range: 200 - 700 HP
- Speed: 1800 & 1200 RPM
- Voltage: 2300/4000V
- Motors Suitable for Reduced Starting Voltage
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous on Sine Wave Power)
- Inverter Duty (PWM) per NEMA® MG-1 Part 31 at 1.0 Service Factor
- Standard Features: Coupling w/ Gib Key, Non-Sparking Ball Type NRR, Drip/Splash Cover, Space Heaters (120V)
- 5000 Frames and Above also include Mounting Provisions for bearing RTD's and Insulated Bearing Housing
- CSA Certified for Class I, Div. 2, Groups B,C, D; Temp Code T3 minimum
- Class F Insulation with VPI Epoxy Resin Varnish
- Class B Temperature Rise
- NEMA Design B Torques
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - Fully Gasketed with NPT Threaded Entrance
- Steel Plate Conduit Box with Threaded Connection Opening(s)
- Designed for 40°C Ambient Temperature
- Designed for 3300 ft. Elevation
- Oversized Angular Contact or Spherical Thrust Bearing Installed
- Counterclockwise (CCW) Rotation; Viewed from Top
- Cast Iron Frame & End Brackets
- 1045 Hollow Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction for F#449TP
- Squirrel Cage Copper or Copper Alloy Bar Rotor Construction for F#5000 and Above
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Blue - Munsell SPB 3/8
- Vacuum De-Gassed Re-Greasable Ball Bearings Frames -5007TP & Up with Mobil Polyrex™ EM Grease
- Guide Bearings: 324TP - 5810P Frames are Re-Greasable with Mobil Polyrex™ EM Grease
- Thrust Bearings: 449 - 5810P Frames are Oil Lubricated Angular Contact or Spherical Thrust Bearing with Site Glass
- Oil Requirements for 444TP - 5810P Frames: 300 S.S.U. @ 100°F
- Grease Discharge Fittings on Frames with Re-Greasable Motors
- Bronze Labyrinth Type Metal Flinger on Lower End Bracket
- Grounding Terminal Inside Main Box
- Stainless Steel Nameplate
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31.
- Speed Ranges: 10:1 Variable Torque
- 6 Leads
- UL Recognized and CSA Approved
- Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by VFD as stated per NEMA MG-1. Part 31.

EXTRAS/ OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability at higher elevations.

www.tecowestinghouse.com or call 1-800-USE-TECO
**COUPLING KITS WPI**

**FOR VERTICAL HOLLOW SHAFT MOTORS**

**Notes:**
1. Tolerance on BX dimensions up to and including 1.500 inches in diameter:
   - +0.001 inches, -0.000 inches; Larger than 1.500 inches diameter: +0.0015 in., -0.0000 in.
2. Dimension EW tolerance: +0.002 inches, -0.000 inches.
3. Dimension R tolerance: +0.010 inches, -0.000 inches.
4. "**" in the table denotes the standard coupling size for each frame.
5. One coupling is included with motor price. If purchased separately use list pricing.
6. Please consult Application Specialist for listings not shown.
7. Notice coupling part numbers have changed from 2015/2016 Pricebook; New design.

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**Diagram:**

![Diagram](image-url)

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**Effective 07-08-18**

**Supercodes 03-24-17**

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**www.tecowestinghouse.com or call 1-800-USE-TECO**
**Notes:**

1. Tolerance on BX dimensions up to and including 1.500 inches diameter: +0.001 inches, -0.000 inches; Larger than 1.500 inches diameter: +0.0015 in., -0.0000 in.
2. Dimension EW tolerance: +0.002 inches, -0.000 inches.
3. Dimension R tolerance: +0.010 inches, -0.000 inches.
4. *EWC* in the table denotes the standard coupling size for each frame.
5. One coupling is included with motor price. If purchased separately use list pricing.
6. Please consult Application Specialist for listings not shown.
7. Notice coupling part numbers have changed from 2015/2016 Pricebook; New design.

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**FRAME** | BX | BY | BZ | EW | R | XB | XD | XE | XF | PART NO. | LIST PRICE ($) |
---|---|---|---|---|---|---|---|---|---|---|---|
210TP | 0.751 | NO. 10-32 UNF | 1.375 | 0.188 | 0.845 | 1.750 | 0.343 | 2.000 | 1.125 | 31010D6870206 | 460 |
250TP | 0.751 | NO. 10-32 UNF | 1.375 | 0.188 | 0.970 | 1.750 | 0.343 | 2.000 | 1.125 | 31010D6870303 | 613 |
280TP | 0.751 | NO. 10-32 UNF | 1.375 | 0.188 | 0.970 | 2.560 | 0.343 | 2.250 | 1.625 | 31010D6870508 | 613 |
320TP | 1.001 | NO. 10-32 UNF | 1.375 | 0.250 | 1.126 | 2.560 | 0.406 | 2.250 | 1.625 | 31010D6870605 | 613 |
360TP | 1.001 | NO. 10-32 UNF | 1.375 | 0.250 | 1.126 | 3.331 | 0.406 | 2.875 | 2.331 | 31010D6871008 | 920 |
400TP | 1.001 | NO. 10-32 UNF | 1.375 | 0.250 | 1.126 | 3.543 | 0.531 | 3.150 | 2.441 | Contact Factory | – |
444TP/ | 1.188 | NO. 10-32 UNF | 1.375 | 0.250 | 1.126 | 3.331 | 0.406 | 2.875 | 2.331 | 31010D6871105 | 920 |
44TP/ | 1.188 | NO. 10-32 UNF | 1.375 | 0.250 | 1.126 | 3.543 | 0.531 | 3.150 | 2.441 | Contact Factory | – |
44TP/ | 1.188 | NO. 10-32 UNF | 1.375 | 0.250 | 1.126 | 3.543 | 0.531 | 3.150 | 2.441 | Contact Factory | – |
5000/ | 1.438 | NO. 10-32 UNF | 1.375 | 0.375 | 1.605 | 3.543 | 0.531 | 4.725 | 3.071 | 3A711C1590100X001 | 2,150 |
5800-6P | 1.438 | NO. 10-32 UNF | 1.375 | 0.375 | 1.605 | 3.543 | 0.531 | 4.725 | 3.071 | 3A711C1590100X001 | 2,150 |
& ABOVE | 1.438 | NO. 10-32 UNF | 1.375 | 0.375 | 1.605 | 3.543 | 0.531 | 4.725 | 3.071 | 3A711C1590100X001 | 2,150 |

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**COUPLING KITS TEFC**

FOR VERTICAL HOLLOW SHAFT MOTORS

Effective 07-08-18

Supercedes 03-24-17
**STEADY BUSHING KITS WPI**

FOR VERTICAL HOLLOW SHAFT MOTORS

**Notes:**
1. See corresponding diagram for part detail.
2. Please consult Application Specialist for listings not shown.
3. Steady Bushing material is Bronze.
4. Kit includes hardware.
5. Notice steady bushing part numbers have changed from 2015/2016 Pricebook; New design.
6. Steady bushing kits are the same for WPI and TEFC for frames 449TP and smaller.
7. "*" in the table denotes the standard size for each frame.

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www.tecowestinghouse.com or call 1-800-USE-TECO
# STEADY BUSHING KITS TEFC

## FOR VERTICAL HOLLOW SHAFT MOTORS

### Notes:
1. See corresponding diagram for part detail.
2. Please consult Application Specialist for listings not shown.
3. Steady Bushing material is Bronze.
4. Kit includes hardware.
5. Steady bushing kits are the same for WPI and TEFC for frames 449TP and smaller.
6. "*" in the table denotes the standard size for each frame.

### TABLES:

#### FRAME DIMENSION

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www.tecowestinghouse.com or call 1-800-USE-TECO
MAX-PE® VERTICAL ROUND BODY SOLID SHAFT  
NORMAL THRUST with "P" BASE - LOW VOLTAGE

AEUH8PDP, NEMA PREMIUM, ROUND BODY [NPV_P]

APPLICATIONS:
- Centrifugal Pumps
- Petro-Chemical
- Water/Wastewater
- Pulp and Paper

FEATURES:
- Output Range: 15 - 200 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP54)
- Voltage: 230/460V (Usable on 208V)(1)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- CSA Certified for Class I, Div. 2, Groups B, C, D - Temp Code T3 Minimum
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques
- Cast Iron Frame, End Brackets, Fan Cover, Drip Cover and Main Conduit Box
- Rolled Steel, Fan Cover, Drip Cover and Main Conduit Box
- Grounding Terminal Inside Main Conduit Box
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 40˚C Ambient Temperature(2)
- Designed for 3300 ft. Elevation(3)
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Dark Gray - Munsell 7.5B 3.5/0.5
- Guide Bearings: 250HP - 449HP Frames are Single Shielded
- Thrust Bearings: 250HP - 449HP Frames are Re-Greasable Angular Contact with Mobil Polyrex™ EM
- Automatic Grease Discharge Fittings on Regreasable Motors
- Labyrinth Type Metal Flinger on Both Ends for Frames 320 HP & Larger
- Cast Iron Inner and Outer Bearing Caps for Frames 280 & Larger
- Stainless Steel Nameplate
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Duty (PWM - Pulse Width Modulation) per NEMA MG-1, Part 31(4,5)
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque
- 12 Leads
- Dust Flinger on Drive-End for F# 140 HP - 280 HP
- NEMA Type P Base

EXTRAS/ OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Motors 7.5 HP & up are Suitable for Wye/Delta Starting.
(2) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(3) Consult a Stock Product Application Specialist for suitability at higher elevations.
(4) Motor service factor is 1.0 when operated on a VFD.
(5) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1. Part 31.
(6) HP Shaft is same as VP shaft dimensions per NEMA MG-1.
MAX-E2/841® VERTICAL ROUND BODY SOLID SHAFT
NORMAL/MEDIUM THRUST with "P" BASE - LOW VOLTAGE

AEUH8BDP, NEMA PREMIUM, ROUND BODY [HBV_P]

APPLICATIONS:

- Centrifugal Pumps
- Petro-Chemical
- Water/Wastewater
- Pulp and Paper

FEATURES:

- Output Range: 15 - 100 HP
- Speed: 3600, 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP56)
- Voltage: 460V Only(1,4)
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous); 50 Hz, 1.0 Service Factor (Continuous)
- CSA Certified for Class I, Div. 2, Groups B, C, D - Temp Code T3 Minimum
- Meets or Exceeds IEEE 841 Standards
- Extended Warranty - 60 Months from Date of Manufacture
- Class F Insulation
- Class B Temperature Rise
- NEMA Design B Torques as a Minimum; Various Ratings also Meet Design C
- Cast Iron Frame, End Brackets, Fan Cover, Drip Cover and Main Conduit Box
- Grounding Terminal inside Main Conduit Box with additional Foot Grounding Provision
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - F1 Mounted
- Designed for 50˚C Ambient Temperature(2)
- Designed for 3300 ft. Elevation(3)
- Bi-Directional Rotation
- 1045 Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: 2 Part Epoxy
- Paint Color: Blue - Munsell 5PB 3/8
- Guide Bearings: 250HP - 400HP Frames are Single Shielded
- Thrust Bearings: 250HP - 405HP Frames are Re-Greasable Angular Contact with Mobil PolyrexTM EM
- Automatic Grease Discharge Fittings
- Cast Iron Inner and Outer Bearing Caps for all frames
- VBXX INPRO™ Seals Installed on Both Ends
- Stainless Steel Nameplate and Hardware
- Stainless Steel Automatic Breather Drain (located at both End Brackets for Vertical Mounts)
- New Dual Column Design Nameplate as Standard (60/50 Hz)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31, (5,6)
- Inverter Duty Speed Range: 20:1 Variable Torque, 10:1 Constant Torque
- Motors are U.L. Recognized, CSA Approved
- 3 Leads Only
- Vibration Not to Exceed 0.08 Inches Per Second
- Noise Level Not to Exceed 85 dB(A) at 1 Meter Unloaded
- NEMA Type P Base

EXTRAS/ OPTIONS:

Please refer to the modifications document for common modifications that can be performed.

Notes:

(1) 575V motors available.
(2) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(3) Consult a Stock Product Application Specialist for suitability at higher elevations.
(4) Motors 7.5 HP & up are suitable for wye/delta starting.
(5) Motor service factor is 1.0 when operated on a VFD.
(6) Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG-1.
(7) HP Shaft is same as VP shaft dimensions per NEMA MG-1.
VERTICAL SOLID SHAFT WPI

HIGH THRUST with "P" BASE - LOW VOLTAGE

AMRCED (MAX-VSP™) NEMA PREMIUM [VSP]*

APPLICATIONS:
- Deep Well Turbine Pumps
- Fluid Handling Systems
- Irrigation
- Water/Wastewater
- Fire Pumps*

FEATURES:
- Output Range: 15 - 800 HP
- Speed: 1800 & 1200 RPM
- Enclosure: Weather Protected Type I (WPI)
- Voltage: 230/460V (Usable on 208V); 150HP and Larger is 460V Only
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous on Sine Wave Power)
- Inverter Duty (PWM) per NEMA® MG-1 Part 31 at 1.0 Service Factor
- New Dual Column (60/50Hz) Design Nameplate as Standard; 50 Hz Data 190/380V at 1.0 S.F.
- Standard Features: Ball Type NRR, Drip/Splash Cover, Space Heaters (120V)
- 5000 Frames and Above also include Mounting Provisions for bearing RTD’s and Insulated Bearing Housing
- Class F Insulation with Phenolic Alkyd Resin Varnish
- Class B Temperature Rise
- NEMA Design B Torques
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - Fully Gasketed with NPT Threaded Entrance
- Cast Iron Conduit Box for F#449VP and Below; Steel Plate Conduit Box for F#5000
- Designed for 40°C Ambient Temperature(1)
- Designed for 3300 ft. Elevation(2)
- Counterclockwise (CCW) Rotation; Viewed from Top
- Cast Iron Frame & End Brackets
- 1045 Solid Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction for F#449VP and Below
- Squirrel Cage Copper or Copper Alloy Bar Rotor Construction for F#5000
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color for AMRCED (MAX-VSP™): Blue - Munsell 5PB 3/8
- Guide Bearings: 213VP - 286VP frames are Double Shielded
- Guide Bearings: 324VP - 5810 frames are Re-Greasable with Mobil Polyrex™ EM
- Thrust Bearings: 213VP - 286VP frames are Re-Greasable Angular Contact with Mobil Polyrex™ EM
- Thrust Bearings: 324VP - 405VP frames are Oil Lubricated Angular Contact with Site Glass
- Oil Requirements for 324VP-405VP - 145 to 175 S.S.U. @100°F
- Oil Requirements for 444VP-5810VP - 300 S.S.U. @100°F
- Grounding Terminal Inside Main Box
- Stainless Steel Nameplate and Rodent Screens
- 12 Leads (PWS on 230V) on 213 - 405VP(3)
- 6 Leads on 444VP to 449VP; 5000 Frames and Above with Connection Studs(4)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31.
- - 10:1 Variable Torque with NRR. 10:1 C.T., 20:1 VT without NRR Using Braking in VFD
- Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by VFD as stated per NEMA MG-1 Part 31.

EXTRAS/ OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
* Fire Pump available. See product page for more details.
(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability at higher elevations.
(3) Suitable for Wye/Delta start at 230V or 460V.
(4) Suitable for Wye/Delta start at 460V.
VERTICAL SOLID SHAFT TEFC
HIGH THRUST with "P" BASE - LOW VOLTAGE

AEEHED (MAX-VSP™) NEMA PREMIUM [VSTP]

APPLICATIONS:
- Deep Well Turbine Pumps
- Irrigation
- Water/Wastewater

FEATURES:
- Output Range: 15 - 800 HP
- Speed: 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP55)
- Voltage: 230/460V (Usable on 208V); 150HP and Larger is 460V Only
- Three Phase, 60 Hz. 1.15 Service Factor (Continuous on Sine Wave Power)
- CSA Certified for Class I, Div. 2, Group B, C, D - Temp Code T3 Minimum
- Inverter Duty (PWM) per NEMA® MG-1 Part 31 at 1.0 Service Factor
- New Dual Column (60/50 Hz) Design Nameplate as Standard; 50 Hz Data 190/380V at 1.0 S.F.
- Standard Features: Non-Sparking Ball Type NRR, Drip/Splash Cover, Space Heaters (120V)
- 5000 Frames and Above also include Mounting Provisions for bearing RTD's and Insulated Bearing Housing
- CSA Certified for Class I, Div. 2, Groups B, C, D; Temp Code T3 minimum
- Class F Insulation with Phenolic Alkyd Resin Varnish
- Class B Temperature Rise
- NEMA Design B Torques
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - Fully Gasketed with NPT Threaded Entrance
- Cast Iron Conduit Box for F#449TP and Below; Steel Plate Conduit Box for F#5000
- Designed for 40°C Ambient Temperature(1)
- Designed for 3300 ft. Elevation(2)
- Counterclockwise (CCW) Rotation; Viewed from Top
- Cast Iron Frame & End Brackets
- 1045 Solid Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Blue - Munsell 5PB 3/8
- Guide Bearings: 213TP - 286TP frames are Double Shielded
- Guide Bearings: 324TP - 5810P frames are Re-Greasable with Mobil Polyrex™ EM Grease
- Thrust Bearings: 213TP - 286TP frames are Re-Greasable Angular Contact with Mobil Polyrex™ EM Grease
- Thrust Bearings: 324TP - 5810P frames are Oil Lubricated Angular Contact with Site Glass
- Oil Requirements for 324TP-405TP - 145 to 175 S.S.U. @100°F
- Oil Requirements for 444TP-5810P - 300 S.S.U. @100°F
- Grounding Terminal Inside Main Box
- Stainless Steel Nameplate and Rodent Screens
- 12 Leads (PWS on 230V) on 213 - 405TP;(3)
  - 6 Leads on 444TP to 449TP; 5000 Frames and Above with Connection Studs(4)
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31.
  - 10:1 Variable Torque with NRR. 10:1 C.T., 20:1 VT without NRR Using Braking in VFD
- Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by VFD as stated per NEMA MG-1 Part 31.

EXTRAS/ OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability at higher elevations.
(3) Suitable for Wye/Delta start at 230V or 460V.
(4) Suitable for Wye/Delta start at 460V.
VERTICAL SOLID SHAFT WPI
HIGH THRUST with "P" BASE - MEDIUM VOLTAGE

AMRKED, NEMA PREMIUM [VSKP]

Effective 07-08-18
Supercedes 03-24-17

APPLICATIONS:
- Deep Well Turbine Pumps
- Irrigation
- Water/Wastewater

FEATURES:
- Output Range: 200 - 1000 HP
- Speed: 1800, 1200 & 900 RPM
- Enclosure: Weather Protected Type I (WPI)
- Voltage: 2300/4000V
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous on Sine Wave Power)
- Inverter Duty (PWM) per NEMA® MG-1 Part 31 at 1.0 Service Factor
- Standard Features: Coupling w/ Gib Key, Ball Type NRR, Drip/Splash Cover, Space Heaters (120V)
- 5000 Frames and Above also include Mounting Provisions for bearing RTD's and Insulated Bearing Housing
- Class F Insulation with VPI Epoxy Resin Varnish
- Class B Temperature Rise
- NEMA Design B Torques
- Oversized Main Conduit Box Rotatable in 90 Degree Increments - Fully Gasketed with NPT Threaded Entrance
- Steel Plate Conduit Box for F#449-5800
- Designed for 40°C Ambient Temperature^{(1)}
- Designed for 3300 ft. Elevation^{(2)}
- Counterclockwise (CCW) Rotation; Viewed from Top
- Cast Iron Frame & End Brackets
- 1045 Solid Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction for F#449TP and Below
- Squirrel Cage Copper or Copper Alloy Bar Rotor Construction for F#5000
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Blue - Munsell 5PB 3/8
- Guide Bearings: 449VP - 5810VP Frames are Re-Greasable with Mobil Polyrex™ EM Grease
- Thrust Bearings: 449VP - 5810VP Frames are Oil Lubricated Angular Contact or Spherical Thrust Bearing with Site Glass
- Oil Requirements for 444VP - 5810VP Frames: 300 S.S.U. @ 100°F
- Grease Discharge Fittings on Frames with Re-Greasable Motors
- Labyrinth Type Metal Flinger on Lower End Bracket
- Grounding Terminal Inside Main Box
- Stainless Steel Nameplate
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31.
- Speed Ranges: 10:1 VT, 4:1 CT
- 6 Leads
- UL Recognized and CSA Approved
- Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by VFD as stated per NEMA MG-1 Part 31.
- Ball Type NRR Provided

EXTRAS/ OPTIONS:
Please refer to the modifications document for common modifications that can be performed.

Notes:
^{(1)} Consult a Stock Product Application Specialist for suitability in higher ambient environments.
^{(2)} Consult a Stock Product Application Specialist for suitability at higher elevations.
VERTICAL SOLID SHAFT TEFC
HIGH THRUST with "P" BASE - MEDIUM VOLTAGE

AEHCED, NEMA PREMIUM [VSKTP]

APPLICATIONS:
- Deep Well Turbine Pumps
- Irrigation
- Water/Wastewater

FEATURES:
- Output Range: 200 - 700 HP
- Speed: 1800 & 1200 RPM
- Enclosure: Totally Enclosed Fan Cooled (IP55)
- Voltage: 2300/4000V
- Three Phase, 60 Hz, 1.15 Service Factor (Continuous on Sine Wave Power)
- Inverter Duty (PWM) per NEMA® MG-1 Part 31 at 1.0 Service Factor
- Standard Features: Non-Sparking Ball Type NRR, Drip/Splash Cover, Space Heaters (120V)
- 3000 Frames and Above also include Mounting Provisions for bearing RTD’s and Insulated Bearing Housing
- CSA Certified for Class I, Div. 2, Groups B, C, D; Temp Code T3 minimum
- Class F Insulation with VPI Epoxy Resin Varnish
- Class B Temperature Rise
- NEMA Design B Torques
- Fab Steel Plate Oversized Main Conduit Box Rotatable in 90 Degree Increments - Fully Gasketed with NPT Threaded Entrance.
- Steel Plate Conduit Box with Threaded Connection Opening(s)
- Designed for 40°C Ambient Temperature(1)
- Designed for 3300 ft. Elevation(2)
- Oversized Angular Contact or Spherical Thrust Bearing Installed
- Counterclockwise (CCW) Rotation; Viewed from Top
- Cast Iron Frame & End Brackets; Steel Plate Fan Cover
- 1045 Solid Carbon Steel Shaft
- Aluminum Die Cast Squirrel Cage Rotor Construction for F#449VP and Below
- Squirrel Cage Copper or Copper Alloy Bar Rotor Construction for F#5000 and Above.
- Paint System: Phenolic Rust Proof Base Plus Polyurethane Top Coat
- Paint Color: Blue - Munsell 5PB 3/8
- Guide Bearings: Re-Greasable with Mobil Polyrex™ EM Grease
- Thrust Bearings: Oil Lubricated Angular Contact or Spherical Thrust bearing with Site Glass
- Oil Requirements: 300 S.S.U. @ 100F
- Automatic Grease Discharge Fittings on Frames with Re-Greasable Motors
- Labyrinth Type Metal Flinger on Both Ends for Frames 320VP & Up
- Grounding Terminal Inside Main Box
- Stainless Steel Nameplate
- Suitable for Inverter Use per NEMA MG-1.4.4.2, Part 31.
- Speed Ranges: 10:1 VT, 4:1 CT
- 6 Leads
- UL Recognized and CSA Approved
- Precautions should be taken to eliminate or reduce shaft currents that may be imposed on the motor by VFD as stated per NEMA-MG-1 Part 31.

EXTRAS/ OPTIONS:
- Please refer to the modifications document for common modifications that can be performed.

Notes:
(1) Consult a Stock Product Application Specialist for suitability in higher ambient environments.
(2) Consult a Stock Product Application Specialist for suitability at higher elevations.
## C-FLANGE KITS FOR FIELD CONVERSION

**Notes:**

1. For MAX-E2/841*, type AEHH8B (catt # "HB") motors, INPRO™ Bearing Isolator Seal is already included in the list price. INPRO™ Bearing Isolator Seal ships separately and will be added to order as an additional no cost line item.
2. "TS" Flanges are for 2 pole motors only. "TS" C-flanges for 280TS - 405TS are interchangeable between MAX-E1® and MAX®-SE/PE. 444TS - 449TS C-flanges are NOT interchangeable.
3. 56 Frame Only - Fits bearing sizes 6204ZZ
4. 56 and 140T Frames - Fits bearing sizes 6205ZZ
5. For frame sizes larger than 449T, please refer to an Application Specialist for availability.
7. Flanges for # 505UZ and 586/7UZ Crusher Duty "CD", type AEHGD motors must be quoted by an Application Specialist.

### NEMA C-FLANGE KITS FOR ROLLED STEEL MOTORS

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<td>CF5140T</td>
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### C-FACE KITS FOR LARGE TEFC FRAMES

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<th>MAX-E2/841* AEHH8B</th>
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### IEC B14 "C-FLANGE" KITS

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<td>454</td>
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**D-FLANGE KITS FOR FIELD CONVERSION**

**NEMA D-FLANGE KITS FOR CAST IRON MOTORS**

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<th>LIST PRICE ($)</th>
<th>ODP ASHH CATALOG NO. &quot;DHP&quot;</th>
<th>MAX-PE™ AEHH8P CATALOG NO. &quot;NP&quot;</th>
<th>MAX-E1® AEHE, AEHH8N CATALOG NO. &quot;E&quot; or &quot;EP&quot;</th>
<th>MAX-E2® AEHH CATALOG NO. &quot;HH&quot;</th>
<th>MAX-E2/841® AEHH8B LIST PRICE ($)</th>
<th>MAX-E2/841® AEHH8B CATALOG NO. &quot;HB&quot;</th>
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<tbody>
<tr>
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<td>299</td>
<td>N/A</td>
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<td>DFE140T</td>
<td>DFFH140T</td>
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<td>180T</td>
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<td>DFFH180T</td>
<td>446</td>
<td>DFHH180T</td>
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<td>210T</td>
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<td>DFE210T</td>
<td>DFFH210T</td>
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<td>320T or TS</td>
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<td>DFE360TS</td>
<td>DFFH360TS</td>
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<td>DFFH360T</td>
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<td>400TS</td>
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<td>DFN400T</td>
<td>DFE400T</td>
<td>DFFH400T</td>
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<tr>
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**D-FLANGE KITS FOR LARGE TEFCE FRAMES**

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<th>LIST PRICE ($)</th>
<th>MAX-E1® AEHE, AEHH8N, AEHHGTK CATALOG NO. &quot;E&quot;, &quot;EP&quot;, &quot;KG&quot;</th>
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<tr>
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<td>5009B/C</td>
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<td>5011B/C</td>
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**D-FLANGE KITS FOR LARGE ODP FRAMES**

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**IEC B5 "D-FLANGE" KITS**

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<td>225CC/225MC</td>
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<td>DFM225-6P</td>
<td>4 &amp; 6 Pole Only</td>
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<td>250SA</td>
<td>955</td>
<td>DFM250-2P</td>
<td>2 Pole Only</td>
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<tr>
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<td>955</td>
<td>DFM250-6P</td>
<td>4 &amp; 6 Pole Only</td>
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**Notes:**

* Part # for 2 Pole Only.

1. For MAX-E2/841®, type AEHH8B (cat# "HB") motors, INPRO™ Bearing Isolator Seal is already included in the list price. INPRO™ Bearing Isolator Seal ships separately and will be added to order as an additional no cost line item.

2. "TS" Flanges are for 2 pole motors only. "TS" c-flanges for 280TS-449TS are interchangeable between MAX-E1® and MAX®-SE/PE.

3. 56 Frame Only - Fits bearing sizes 6204ZZ

4. 56 and 140T Frames - Fits bearing sizes 6205ZZ

5. For frame sizes larger than 449T, please refer to the factory.

6. MAX-E1® type AEHH8N "hybrid" ratings are cat# EP3502 & EP3504. No D-flange is available at this time for Hybrid frames.

7. Flanges for F# 505UZ and 586/7UZ Crusher Duty "CD", type AEHHGD motors must be quoted by an Application Specialist.

8. Flanges for Large ODP motors above 5000 2P must be quoted by an Application Specialist.

9. TECO Westinghouse is working towards a solution for hybrid frame D-Flanges in the future.

www.tecowestinghouse.com or call 1-800-USE-TECO
## DRIP COVERS, PAINT, & STOCK REPLACEMENT PARTS

### DRIP COVER/FAN COVER ASSEMBLIES

<table>
<thead>
<tr>
<th>FRAME</th>
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<th>ROLLED STEEL LIST PRICE ($)</th>
<th>CAST IRON CATALOG NO.</th>
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<td>CIDC210T</td>
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<td>250T/TS</td>
<td>RSDC250T</td>
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<td>CIDC250T</td>
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<td>RSDC320T</td>
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<td>CIDC320T</td>
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<td>RSDC360T</td>
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<td>CIDC400T</td>
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**Notes:**
(1) 56 frame drip covers available as stock items. Contact the parts department for part number and quote.
(2) Drip covers available for 440T and above as made to order. Contact part department for quote.

### AEROSOL TOUCH-UP SPRAY PAINT

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<td>LIGHT GRAY</td>
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<td>SINGLE PHASE FARM DUTY</td>
<td>SD98549H07</td>
<td>GREEN</td>
<td>MUNSELL 5G 4/4</td>
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<tr>
<td>TEXP</td>
<td>SD98549H08</td>
<td>DARK BLUE</td>
<td>MUNSELL 5PB 4.5/2</td>
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<tr>
<td>TEFC OIL WELL PUMP</td>
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<td>MAX-SE™</td>
<td>SD98549H03</td>
<td>DARK GRAY</td>
<td>MUNSELL 7.5B 3.5/0.5</td>
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<td>MAX-PE™</td>
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<td>MAX-HT™</td>
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<td>HIGH EFFICIENCY VERTICALS</td>
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<tr>
<td>MEDIUM VOLTAGE</td>
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</table>

**Stock Replacement parts:**
Contact TECO-Westinghouse for replacement part inquiries for stock product motors. Email our stock product parts group at Tframeparts@tecowestinghouse.com or call 1-800-USE-TECO and select or ask to be connected with the stock product parts group.

Most commonly replaced motor parts are stocked in limited quantities. Replacement parts are also available on a made to order basis.

To confirm the proper part is identified and quoted, the motor’s catalog number AND serial number must be provided at time of inquiry. Not all currently stocked parts may be interchangeable for earlier models. Replacement parts for older models may no longer be available.
### P-BASES HIGH THRUST TEFC VERTICAL MOTORS (HOLLOW SHAFT AND SOLID SHAFT)

<table>
<thead>
<tr>
<th>FRAME</th>
<th>TYPE</th>
<th>BD (in)</th>
<th>AK (in)</th>
<th>BB (in)</th>
<th>AJ (in)</th>
<th>BF (in)</th>
<th>PART NUMBER</th>
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<tr>
<td>180</td>
<td>Standard</td>
<td>9.85</td>
<td>8.25</td>
<td>0.20</td>
<td>9.125</td>
<td>0.44</td>
<td>31103F351X6C5</td>
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<tr>
<td>210</td>
<td>Standard</td>
<td>10</td>
<td>8.25</td>
<td>0.20</td>
<td>9.125</td>
<td>0.44</td>
<td>31103F331X8C1</td>
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<tr>
<td>250</td>
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<td>8.25</td>
<td>0.20</td>
<td>9.125</td>
<td>0.44</td>
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<tr>
<td>280</td>
<td>Standard</td>
<td>10</td>
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<td>0.20</td>
<td>9.125</td>
<td>0.44</td>
<td>31103F354X8C6</td>
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<tr>
<td></td>
<td>Alternate</td>
<td>12</td>
<td>8.25</td>
<td>0.25</td>
<td>9.125</td>
<td>0.44</td>
<td>31103F354X8C6</td>
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<tr>
<td>320</td>
<td>Standard</td>
<td>16.5</td>
<td>13.5</td>
<td>0.25</td>
<td>14.750</td>
<td>0.69</td>
<td>31103B67604C0</td>
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<td>360</td>
<td>Standard</td>
<td>16.5</td>
<td>13.5</td>
<td>0.25</td>
<td>14.750</td>
<td>0.69</td>
<td>31103B67704C5</td>
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<tr>
<td>400</td>
<td>Standard</td>
<td>16.5</td>
<td>13.5</td>
<td>0.25</td>
<td>14.750</td>
<td>0.69</td>
<td>31103B95105C1</td>
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<td></td>
<td>Alternate</td>
<td>20.5</td>
<td>13.5</td>
<td>0.25</td>
<td>14.750</td>
<td>0.69</td>
<td>31103B95105C1</td>
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</tbody>
</table>

### Notes:
1. P-Bases require factory machine work prior to shipment/installation.
2. Consult a Stock Product Application Specialist or T-Frame parts for P-base price and availability.
3. P-Bases also available for MAX-PE, MAX-E1 and MAX-E2 for select ratings. Consult a Stock Product Application Specialist or T-frame parts for details.

www.tecowestinghouse.com or call 1-800-USE-TECO
### P-BASES

#### P-BASES HIGH THRUST WPI VERTICAL MOTORS (HOLLOW SHAFT AND SOLID SHAFT)

<table>
<thead>
<tr>
<th>FRAME</th>
<th>TYPE</th>
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<th>BE</th>
<th>BB</th>
<th>AJ</th>
<th>BF</th>
<th>PART NUMBER</th>
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<tr>
<td>444/445</td>
<td>Standard</td>
<td>16.5&quot;</td>
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<td>14.75&quot;</td>
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<tr>
<td>444/445T</td>
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<td>20&quot;</td>
<td>13.5&quot;</td>
<td>1.00&quot;</td>
<td>0.25&quot;</td>
<td>14.75&quot;</td>
<td>0.69&quot;</td>
<td>3A103B270X5A9</td>
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<tr>
<td>447/449</td>
<td>Standard</td>
<td>20&quot;</td>
<td>13.5&quot;</td>
<td>1.00&quot;</td>
<td>0.25&quot;</td>
<td>14.75&quot;</td>
<td>0.69&quot;</td>
<td>3A103F047X4A1</td>
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<tr>
<td>445TP20/447/449</td>
<td>Alternate</td>
<td>16.5&quot;</td>
<td>13.5&quot;</td>
<td>1.00&quot;</td>
<td>0.25&quot;</td>
<td>14.75&quot;</td>
<td>0.69&quot;</td>
<td>Contact Factory</td>
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<tr>
<td>5000</td>
<td>Alternate</td>
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<td>13.5&quot;</td>
<td>1.18&quot;</td>
<td>0.25&quot;</td>
<td>14.75&quot;</td>
<td>0.69&quot;</td>
<td>3A103C077X5A8</td>
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<td>5800</td>
<td>Alternate</td>
<td>24.5&quot;</td>
<td>13.5&quot;</td>
<td>1.18&quot;</td>
<td>0.25&quot;</td>
<td>14.75&quot;</td>
<td>0.94&quot;</td>
<td>3A103C077X6A5</td>
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<tr>
<td></td>
<td>Alternate</td>
<td>30.5&quot;</td>
<td>22&quot;</td>
<td>1.18&quot;</td>
<td>0.25&quot;</td>
<td>26&quot;</td>
<td>0.81&quot;</td>
<td>3A103C077X1A9</td>
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**Notes:**

1. P-Bases require factory machine work prior to shipment/installation.
2. Consult a Stock Product Application Specialist or T-Frame parts for P-Base price and availability.
3. P-Bases also available for MAX-PE, MAX-E1 and MAX-E2 for select ratings. Consult a Stock Product Application Specialist or T-frame parts for details.

#### P-BASE KITS FOR NO-THRUST TEFCE FRAMES

<table>
<thead>
<tr>
<th>FRAME</th>
<th>LIST PRICE AEHH8B, AEHH8PCF, AEUH8PDC ($)</th>
<th>MAX-PE AEHH8P CATALOG NO. &quot;NP&quot; or &quot;NPV&quot;</th>
<th>LIST PRICE AEHH8B, AEHH8BCF, AEUH8BDC ($)</th>
<th>MAX-E2/841® AEHH8B CATALOG NO. &quot;HB&quot; or &quot;HBV&quot;</th>
<th>BD</th>
</tr>
</thead>
<tbody>
<tr>
<td>250T</td>
<td>425</td>
<td>PBN250T</td>
<td>850</td>
<td>PBHB250T</td>
<td>10&quot;</td>
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<tr>
<td>280T</td>
<td>625</td>
<td>PBN280T</td>
<td>1150</td>
<td>PBHB280T/TS</td>
<td>16.5&quot;</td>
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<tr>
<td>320T</td>
<td>750</td>
<td>PBN320T</td>
<td>1275</td>
<td>PBHB320T/TS</td>
<td>16.5&quot;</td>
</tr>
<tr>
<td>360T</td>
<td>825</td>
<td>PBN360T</td>
<td>1375</td>
<td>PBHB360T</td>
<td>16.5&quot;</td>
</tr>
<tr>
<td>400T</td>
<td>1050</td>
<td>PBN400T</td>
<td>1700</td>
<td>PBHB400T</td>
<td>16.5&quot;</td>
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<tr>
<td>444/445T</td>
<td>2975</td>
<td>PBN444/45T</td>
<td>3745</td>
<td>PBHB444/445T</td>
<td>16.5&quot;</td>
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<td>447/449T</td>
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<td>PBN447/9T</td>
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</table>

**Notes:**

1. For MAX-E2/841®, type AEHH8B (cat# "HB") motors, INPRO™ Bearing Isolator Seal is already included in the list price. INPRO™ Bearing Isolator Seal ships separately and will be added to order as an additional no cost line item.
### FACTORY MODIFICATION PRICING

**MODIFICATION LEAD TIME**

1. TWMC standard lead time for all modifications is 10-12 working days. If shorter lead time is required, please contact TWMC. Expediting fees will apply. Additional 15% of purchase order total is standard.
2. Modification lead time does not include transit time.
3. Lead time is based upon availability of parts.
4. M2X, M8A, M8B, M10, M11, M14A, M16, M18, M21A, M28 are the only modifications that can be done to our explosion-proof motors.
5. Explosion Proof motors modified in Round Rock, TX Only.

<table>
<thead>
<tr>
<th>MOD. NUMBER</th>
<th>DESCRIPTION</th>
<th>NEMA FRAME:</th>
<th>LIST PRICE ($)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>56-180T</td>
<td>210T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>905, 90L, 112S, 112M</td>
<td>132S, 132M</td>
</tr>
<tr>
<td>M1</td>
<td>Nameplate Change</td>
<td>105</td>
<td>105</td>
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<tr>
<td>M1A</td>
<td>Additional Nameplate</td>
<td>140</td>
<td>140</td>
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<tr>
<td>M1B</td>
<td>304 Stainless Steel Hardware</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>M2</td>
<td>Space Heater</td>
<td>464</td>
<td>466</td>
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<tr>
<td>M2A</td>
<td>Space Heater w/ Auxiliary Box</td>
<td>881</td>
<td>881</td>
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<tr>
<td>M2X</td>
<td>Space Heater &quot;Explosion Proof Motors Only&quot;</td>
<td>721</td>
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<tr>
<td>M3</td>
<td>Installation of C-Face</td>
<td>330</td>
<td>500</td>
</tr>
<tr>
<td>M3C</td>
<td>Installation of C-Face w/ INPRO™ Seal (MAX-E2/841® only)</td>
<td>674</td>
<td>960</td>
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<tr>
<td>M3D</td>
<td>Installation of D-Flange</td>
<td>406</td>
<td>N/A</td>
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<tr>
<td>M3D841</td>
<td>Installation of D-Flange w/ INPRO™ Seal (MAX-E2/841® only)</td>
<td>674</td>
<td>N/A</td>
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<tr>
<td>M3P</td>
<td>Installation of P-Base</td>
<td>N/A</td>
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<tr>
<td>M4</td>
<td>Stator Winding RTD's, 100 Ohm Platinum (1/ Phase)</td>
<td>890</td>
<td>1,016</td>
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<td>M4A</td>
<td>Stator Winding RTD's w/ Auxiliary Box (1/ Phase)</td>
<td>N/A</td>
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<tr>
<td>M4B</td>
<td>Stator Winding RTD's, 100 Ohm Platinum w/ Auxiliary Box (2/ Phase)</td>
<td>N/A</td>
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<tr>
<td>M5</td>
<td>Thermistors (1/ Phase)</td>
<td>614</td>
<td>922</td>
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<tr>
<td>M5A</td>
<td>Thermistors (1/ Phase) w/ Auxiliary Box</td>
<td>1,398</td>
<td>1,525</td>
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<tr>
<td>M6</td>
<td>Thermostats (1/ Phase)</td>
<td>559</td>
<td>724</td>
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<td>M6A</td>
<td>Thermostats (1/ Phase) w/ Auxiliary Box</td>
<td>1,035</td>
<td>1,145</td>
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<tr>
<td>M7</td>
<td>Bearing RTD's, 100 Ohm Platinum Cable Type w/ Aux Box (2/ Motor)</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>M8</td>
<td>Bearing Conversion - Roller to Ball or Ball to Roller (2/ Motor)</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>M8A</td>
<td>Convert to Ceramic or Hybrid Bearings</td>
<td>1,098</td>
<td>2,044</td>
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<tr>
<td>M8B</td>
<td>Convert to Outer Race Insulated Bearings</td>
<td>924</td>
<td>1,039</td>
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**Notes:**

1. Double the List Price for 240V Space Heaters operated at 120V.
2. Price includes the flange.
3. Only one per phase is available for 360T frame and smaller.
4. Price is per bearing.
5. Not required for MAX-E2* or MAX-E2/841*.
6. N/A
7. M8A or M8B Mod required as well from frames 440TS/T and Larger.
8. Must Start with IEEE441 motor. Must perform M17 Mod, and add extra sealant to end brackets.
10. Must start with "VPH" NEMA Premium Series.
12. Excludes ASHA "P" and AMHGK "PG" 2-Pole motors. Contact Application Specialist for quote.
13. If adding Stainless Steel Breather Drains for shaft up application see M28A.
14. Terminal Block Not Available for 56 Frame Motors.
# FACTORY MODIFICATION PRICING

## MODIFICATION LEAD TIME

1. TWMC standard lead time for all modifications is 10-12 working days. If shorter lead time is required, please contact TWMC. Expediting fees will apply. Additional 15% of purchase order total is standard.
2. Modification lead time does not include transit time.
3. Lead time is based upon availability of parts.
4. M2X, M8A, M8B, M10, M11, M14A, M16, M18, M21A, M28 are the only modifications that can be done to our explosion-proof motors.
5. Explosion Proof motors modified in Round Rock, TX Only.

## FACTORY MODIFICATION LIST

<table>
<thead>
<tr>
<th>MOD. NUMBER</th>
<th>DESCRIPTION</th>
<th>56-180T</th>
<th>210T</th>
<th>250T</th>
<th>280T</th>
<th>320T</th>
<th>360T</th>
<th>400T</th>
<th>440T</th>
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<td>Change Rotation</td>
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<tr>
<td>M10</td>
<td>Shorten Shaft to NEMA TS Dimensions ONLY; Does Not Require TWMC Drawing</td>
<td>2,270</td>
<td>2,403</td>
<td>2,740</td>
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<td>4,433</td>
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<tr>
<td>M10A</td>
<td>Special Keyless 4140 Shaft Ext. for 440T Frames and Above; Any Special Shaft</td>
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<td>N/A</td>
<td>N/A</td>
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<tr>
<td>M10B</td>
<td>Any Non NEMA Special Shaft Required; Non NEMA Dim requires TWMC Drawing</td>
<td>N/A</td>
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<td>M10C</td>
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<td>M11</td>
<td>F1 to F2 Mounting Conversion</td>
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<td>503</td>
<td>589</td>
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<tr>
<td>M14</td>
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<td>435</td>
<td>545</td>
<td>545</td>
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<td>765</td>
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<td>M14A</td>
<td>Tropicalization/ Fungus Protection for Explosion Proof Motors ONLY</td>
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<td>M15</td>
<td>Provisions for Vertical Jack Screws</td>
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<td>M16</td>
<td>Alternate Grease</td>
<td>330</td>
<td>364</td>
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<td>589</td>
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<td>M17</td>
<td>Chico Motor Leads</td>
<td>210</td>
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<td>377</td>
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<td>503</td>
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<td>Epoxy Paint Finish</td>
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<td>1,152</td>
<td>1,152</td>
<td>1,152</td>
<td>1,535</td>
<td>2,805</td>
</tr>
<tr>
<td>M19</td>
<td>Shaft INPRO™ Seals</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>3,003</td>
<td>3,003</td>
<td>3,003</td>
</tr>
<tr>
<td>M20</td>
<td>Grounding Provisions on Frame</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td>M21</td>
<td>Drip Cover (TEFC) Rolled Steel</td>
<td>347</td>
<td>404</td>
<td>578</td>
<td>962</td>
<td>1,213</td>
<td>1,386</td>
<td>2,195</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>M21A</td>
<td>Drip Cover (TEFC) Cast Iron</td>
<td>572</td>
<td>771</td>
<td>922</td>
<td>1,116</td>
<td>1,451</td>
<td>1,861</td>
<td>2,617</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>M22</td>
<td>Extend Leads - Connection Behind Conduit Box; Price Based on 4’ Leads</td>
<td>733</td>
<td>770</td>
<td>788</td>
<td>953</td>
<td>990</td>
<td>1,078</td>
<td>1,503</td>
<td>1,595</td>
<td>2,145</td>
<td>2,237</td>
</tr>
</tbody>
</table>

### Notes:
1. Double the List Price for 240V Space Heaters operated at 120V.
2. Price includes the flange.
3. Only one per phase is available for 360T frame and smaller.
4. Price is per bearing.
5. Not required for MAX-E2® or MAX-E2/841*.
6. N/A
7. M8A or M8B Mod required as well from frames 440T/S and Larger.
8. Must Start with IEEE841 motor. Must perform M17 Mod, and add extra sealant to end brackets.
10. Must start with “VPH” NEMA Premium Series.
12. Excludes ASHA “P” and AMHGTK “PG” motors. Contact Application Specialist for quote.
13. If adding Stainless Steel Breather Drains for shaft up application see M28A.
14. Terminal Block Not Available for 56 Frame Motors.

[www.tecowestinghouse.com](http://www.tecowestinghouse.com) or call 1-800-USE-TECO
## FACTORY MODIFICATION PRICING

### MODIFICATION LEAD TIME

1. TWMC standard lead time for all modifications is 10-12 working days. If a shorter lead time is required, please contact TWMC. Expediting fees will apply. Additional 15% of purchase order total is standard.
2. Modification lead time does not include transit time.
3. Lead time is based upon availability of parts.
4. M2X, M8A, M8B, M10, M11, M14A, M16, M18, M21A, M28 are the only modifications that can be done to our explosion-proof motors.
5. Explosion Proof motors modified in Round Rock, TX Only.

<table>
<thead>
<tr>
<th>MOD. NUMBER</th>
<th>DESCRIPTION</th>
<th>NEMA FRAME: 56-180T</th>
<th>LIST PRICE ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M23(9)</td>
<td>Supply Shaft Grounding Ring</td>
<td>90S, 90L, 112S, 112M</td>
<td>803</td>
</tr>
<tr>
<td>M23A(9)</td>
<td>Supply Internal Shaft Grounding Ring</td>
<td>125S, 132M</td>
<td>1,300</td>
</tr>
<tr>
<td>M23B(9)</td>
<td>VHS or VSS Shaft Grounding Ring &amp; Insulated Bearing for VFD Duty</td>
<td>160M, 160L</td>
<td>N/A</td>
</tr>
<tr>
<td>M23H(9)</td>
<td>Supply Shaft Grounding Device</td>
<td>180M, 180L</td>
<td>803</td>
</tr>
<tr>
<td>M24(4)</td>
<td>Provisions for Vibration Sensor Spot Face, Drill &amp; Tap (1/4-20)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>M24A(4)</td>
<td>Provide and Installation Vibration Switch/Transmitter Spec. (Does Not Include Cabling or Terminations)</td>
<td>N/A</td>
<td>QUOTE</td>
</tr>
<tr>
<td>M24B(9)</td>
<td>Provide our Standard METRIX # ST5484E-121-714-00 Transmitter</td>
<td>N/A</td>
<td>QUOTE</td>
</tr>
<tr>
<td>M25</td>
<td>Mill Off Motor Feet</td>
<td>N/A</td>
<td>1,632</td>
</tr>
<tr>
<td>M26(9)</td>
<td>Inline Blower for 1000:1 Speed Range</td>
<td>N/A</td>
<td>508</td>
</tr>
<tr>
<td>M26A</td>
<td>Provide Centrifugal (Scorpion Tail) Blower, motor, filter, and fab fan cover for 440 and above frames</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>M27A(7)</td>
<td>Installation of Dynopar Encoder</td>
<td>N/A</td>
<td>2,573</td>
</tr>
<tr>
<td>M27B(7)</td>
<td>Installation of Other Encoder</td>
<td>N/A</td>
<td>QUOTE</td>
</tr>
<tr>
<td>M28</td>
<td>Vertical Shaft Down - Snap Ring (Lock Nut and Washer)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>M28A</td>
<td>Vertical Shaft Up - DE Lip Seal and Breather Drains in NDE Endframe</td>
<td>N/A</td>
<td>225</td>
</tr>
<tr>
<td>M29(9)</td>
<td>Oil Mist Ready</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>M30</td>
<td>Installation of Brake</td>
<td>N/A</td>
<td>QUOTE</td>
</tr>
<tr>
<td>M31(9)</td>
<td>Convert to IP65 or IP66</td>
<td>N/A</td>
<td>489</td>
</tr>
<tr>
<td>M32</td>
<td>Precision Balance</td>
<td>N/A</td>
<td>QUOTE</td>
</tr>
<tr>
<td>M33</td>
<td>175% Thrust or more on VHS on 440 Frame 200-400 HP</td>
<td>N/A</td>
<td>QUOTE</td>
</tr>
<tr>
<td>M34</td>
<td>Convert TEFC to TEAO</td>
<td>N/A</td>
<td>650</td>
</tr>
<tr>
<td>M35(14)</td>
<td>Terminal Block in Main Lead Box</td>
<td>N/A</td>
<td>458</td>
</tr>
</tbody>
</table>

### Notes:

1. Double the List Price for 240V Space Heaters operated at 120V.
2. Price includes the flange.
3. Only one per phase is available for 360T frame and smaller.
4. Price is per bearing.
5. Not required for MAX-E2® or MAX-E2/841*.
6. N/A
7. M8A or M88 Mod required as well from frames 440T/T and Larger.
8. Must start with IEEE 841 motor. Must perform M17 Mod for IP65. Must perform M17 Mod, plus add extra sealant to end brackets, for IP66.
10. Must start with “VPH” NEMA Premium Series.
12. Excludes ASHA “P” and AMHGTK “PG” motors. Contact Application Specialist for quote.
13. If adding Stainless Steel Breather Drains for shaft up application see M28A.
14. Terminal Block Not Available for 56 Frame Motors.
## FACTORY MODIFICATION DESCRIPTIONS

<Effective 07-08-18  
Supercedes 03-24-17

### M1. Nameplate Change:
Add new nameplate displaying approved data changes such as new voltage and frequency, revised HP and service factor, higher or lower ambient temperature, etc. Information should be clearly stamped on P.O.

### M1A. Additional Nameplate:
Add second data plate with customer part number, order number, or other data.

### M1B. 304 Stainless Steel Hardware:
Add for 304 Stainless Steel Hardware - Bolts, Nameplate.

### M2. Space Heater:
Add wrap around space heaters with leads brought out to main terminal box. Standard voltage is 120V, however other voltages are available. Please specify voltage when ordering. All heaters are single phase.

### M2A. Space Heater w/ Auxiliary Box:
Same as M2, except an auxiliary terminal box is added to the side of the main terminal box and the space heater leads are brought out to the auxiliary terminal box.

### M2X. Space Heater “Explosion Proof”:
Add wrap around space heaters with leads brought out to main terminal box. Standard voltage is 120V, however other voltages are available. Please specify voltages when ordering. All heaters are single phase. This applies to TWMC’s explosion proof line of motors.

### M3C. Installation of C-Face:
Remove drive-end bracket and replace with C-Face: Modification Price includes the C-Face.

#### M3C841. Installation of C-Face w/ INPRO™ Seal (MAX-E2/841® only):
Remove drive-end bracket and replace with C-Face and INPRO™ Seal: Only Available on MAX-E2/841® Line.

### M3D. Installation of D-Flange:
Remove drive-end bracket and replace with D-Flange: Modification Price includes the D-Flange.

#### M3D841. Installation of D-Flange w/ INPRO™ Seal (MAX-E2/841® only):
Remove drive-end bracket and replace with D-Flange and INPRO™ Seal: Only Available on MAX-E2/841® Line.

### M3P. Installation of P Base on any Horizontal Motor for Vertical Mount.
Remove drive-end bracket and install P-base.

### M4. Stator Winding RTD’s, 100 Ohm Platinum (1/ phase):
Provide 100 Ohm platinum resistant temperature detectors (RTD’s), one per phase, on the winding end turns with leads brought out to main terminal box. Note TWMC’s medium voltage line of products come standard with 100 Ohm platinum RTD’s, two per phase.

#### M4A. Stator Winding RTD’s w/ Auxiliary Box (1/ Phase):
Provide 100 Ohm platinum resistant temperature detectors (RTD’s) two per phase, on the winding end turns with leads terminated in an auxiliary terminal box.

**Note:** On motors 449T frame and smaller, the auxiliary box will be located on the same side as the main lead box. On 5000 frames and larger, the auxiliary box will be located on the F2 side, or on the opposite side of the main lead box.

### M4B. Stator Winding RTD’s, 100 Ohm Platinum w/ Auxiliary Box (2/ Phase):
Provide 100 Ohm platinum resistant temperature detectors (RTD’s) one per phase on the winding end turns with leads terminated in an auxiliary terminal box.

**Note:** On motors 360T - 449T, the auxiliary box will be located on the same side as the main lead box. On 5000 frames and larger, the auxiliary box will be located on the F2 side, or on the opposite side of the main lead box.

### M5. Thermistors (1/ Phase):
Provide (3) PTC thermistors (140°C) on the winding end turns with leads brought out to main terminal box. Note: these are standard on Metric motors with frames 160L and larger.
**FACTORY MODIFICATION DESCRIPTIONS**

<table>
<thead>
<tr>
<th>M5A. Thermistors (1/ Phase) w/ Auxiliary Box:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide (3) PTC thermistors (140˚C) on the winding end turns with leads brought out to an auxiliary terminal box. The auxiliary box will be located on the side of the main terminal box.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M6. Thermostats (1/ Phase):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addition of (3) normally closed thermostats (140˚C) to the winding end turns, connected in series with the leads brought out to the main terminal box. This is standard on Explosion Proof Motors.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M6A. Thermostats (1/ Phase) w/ Auxiliary Box:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addition of (3) normally closed thermostats (140˚C) to the winding end turns, connected in series with the leads brought out to an auxiliary terminal box. The auxiliary box will be located off the side of the main terminal box.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M7. Bearing RTD's, 100 Ohm Platinum Cable Type with Aux. Box (2/ Motor):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add 100 Ohm platinum bearing resistance temperature detectors, on both the drive and non-drive end bearing. Specify if alternate type is required.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M8. Convert Bearings - Ball to Roller or Roller to Ball (2/ Motor):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convert from Roller Bearings to Ball Bearings or Ball Bearings to Roller Bearings. The Roller to Ball conversion requires some machining on bearing caps to allow for thermal growth.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M8A. Convert to Ceramic Hybrid Bearings:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convert to Ceramic Hybrid Bearings: Replace existing bearing(s) with Hybrid Ceramic bearings, where the balls are ceramic. This would reduce/ eliminate shaft currents. TWMC’s standard is on the Non-Drive End Bearing only.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M8B. Convert to Outer Race Insulated Bearings:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace existing bearing(s) with bearings that have outer race coated with insulated material like SKF &quot;Insacote.&quot; This would be to reduce / eliminate shaft currents. TWMC’s standard is on the Non-Drive End bearing only.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M9. Change Rotation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>This modification only applies to 2-Pole (3600/ 3000 RPM) motors in 5000 frames and larger. Standard direction of rotation is counter-clockwise, facing the drive-end of the motor. This modification will change either the internal or external fans for operation in the clockwise direction, facing the drive-end.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M10. Shorten Shaft to NEMA TS Dimensions ONLY; Non-NEMA Dim Requires TWMC Drawing:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine shafts to TS Dimensions per NEMA MG1 ONLY. This does not include new bearings. This does NOT require a TWMC drawing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M10A. Special Keyless 4140 Shaft Extension for 5000 Frames and above; Any Special Shaft:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension is for 5000 frames and above, where torsional stress in the application is high, such as reciprocating gas compressors. Requires TWMC approval, quote, and drawing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M10B. Any NON NEMA Special Shaft Required:</th>
</tr>
</thead>
<tbody>
<tr>
<td>This requires a TWMC quote and Drawing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M10C. Drill and Tap Shaft</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>M11. F1 to F2 Mounting Conversion:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convert terminal box location from standard F1 to F2, or F2 to F1, depending on the product line. On medium voltage motors, the auxiliary terminal boxes will be on the opposite side of the main terminal box as standard. If the requirement is to have all terminal boxes on either the F1 side or the F2 side, please specify.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M12. Supply Oversized Main Conduit Box:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace existing conduit box with an oversized main conduit box. This would be done if the TWMC standard box does not meet customer’s requirement. Mount and extend leads if necessary.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M12A. Supply Fully Loaded Main Lead Box:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace existing conduit box with a fully loaded box. The box will be TWMC standard size and will contain TWMC standard lightning arrestors, surge capacitors and current transformers (50:5). Box is not self supporting and will require the customer to support.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M13. Stainless Steel Breather Drains:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drill and tap the existing drain holes to accommodate a Crouse-Hinds stainless steel breather drain. Note, this is standard on MAX-E2®, MAX-E2/841® and Explosion Proof motors.</td>
</tr>
</tbody>
</table>

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## FACTORY MODIFICATION DESCRIPTIONS

**M14. Tropicalization/ Fungus Protection:**
Involves disassembling the motor and spraying the internal windings.

**M14A. Tropicalization/ Fungus Protection for Explosion Proof Motors ONLY:**
Involves disassembling the motor and spraying the internal windings.

**M15. Provisions for Vertical Jack Screws:**
Drill and tap (2) holes per motor.

**M16. Alternate Grease:**
Purge and repack lubricant in end brackets with TWMC standard high temp. or low temp. grease. Please contact TWMC for alternates.

**M17. Chico Motor Leads:**
Apply a compound between terminal box and frame of motor. This feature is standard for explosion proof motors.

**M18A. Epoxy Paint Finish:**
Standard paint finish will be changed to Epoxy paint (e.g. MAX-E2® Epoxy Paint (Blue)).

**M18B. Fire Pump Red Finish:**
Standard paint finish will be changed to Fire Pump Red (e.g. PPG Pitt-Tech 90-306 Safety Red). Also requires addition of UL nameplate and Renameplate to show “FP” in catalog number.

**M19. Shaft INPRO™ Seals:**
Add INPRO™ seals to drive-end only of MAX-E2® motors 140T~449T/TS frames. This modification is only available for frames 440T and larger on all other product lines. The price reflects drive-end only.

**M20. Grounding Provisions on Frame:**
Drill and tap the motor frame. This is standard on MAX-E2®, MAX-E2/841®, Oil Well Pump motors, and motors on 5000 frames and larger. All motors have a grounding lug inside the main lead box as a standard.

**M21. Drip Cover (TEFC) Rolled Steel:**
Replace the existing fan cover with a rolled steel drip cover. This is only for motors mounted vertically.

**M21A. Drip Cover (TEFC) Cast Iron:**
Replace the existing fan cover with a cast iron drip cover. This is only for motors mounted vertically.

**M22. Extend Leads - Connection Behind Conduit Box; Price Based on 4’ leads:**
Extend existing leads to the length specified by customer. The splice will be made behind the conduit box so it is not seen.

**M23. Supply Shaft Grounding Ring:**
Install AEGIS shaft grounding ring as made by ELECTRO STATIC TECHNOLOGY. Any CSA Hazardous Location nameplates must be removed. This would be to reduce or eliminate shaft currents. For other methods of shaft grounding, please contact TWMC.

**M23A. Vertical Hollow Shaft Grounding Ring:**
Install a Shaft Grounding Ring internally on inboard side of Guide Bearing Cap.

**M23B. VHS or VSS Shaft Grounding Ring & Insulated Bearing for VFD Duty:**
Must start with a VHS/VSS NEMA Premium motor. Install a SGR internally on guide bearing inboard cap, and insulated bearing.

**M23H. Supply Shaft Grounding Device:**
Install shaft grounding device to reduce or eliminate shaft currents. CSA Hazardous Location Nameplates must be removed.

**M24. Provisions for Vibration Sensor:**
Drill, tap and machine end bracket(s) to accommodate vibration sensor. Customer is required to submit specifications of vibration sensor. Price is per bracket.

**M24A. Provide and Install Vibration Sensor (Does Not Include Cabling or Terminations):**
Drill, tap and machine end bracket(s) to accommodate vibration sensor. TWMC standard switch will be provided as made by METRIX, ROBERTSHAW, PREDICTECH, or STI. For details or pricing to provide another brand, please contact TWMC. Price is per bracket.

**M24B. Provide our Standard METRIX # ST5484E-121-714-00 Vibration Switch**

**M25. Mill Off Motor Feet:**
TWMC will cut off the feet of a footed motor to create a round body type motor. Second lifting lug available for an additional price adder.
## FACTORY MODIFICATION DESCRIPTIONS

<table>
<thead>
<tr>
<th>Modification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M26. Inline Blower for 1000:1 Speed Range:</strong></td>
<td>Remove existing fan and fan cover and replace with TWMC standard inline blower/fan cover configuration. Blower motor will require a separate power source. This modification will also require an “M8A” modification for 440TS/T frames and larger.</td>
</tr>
<tr>
<td><strong>M26A. Installation of Centrifugal Blower:</strong></td>
<td>Provide Centrifugal Blower, motor, filter, and fan cover for 440 and above frames.</td>
</tr>
<tr>
<td><strong>M27A. Installation of Dynopar Encoder:</strong></td>
<td>Install TWMC standard Encoder as made by Dynapar.</td>
</tr>
<tr>
<td><strong>M27B. Installation of Other Encoder:</strong></td>
<td>Please contact factory for quote.</td>
</tr>
<tr>
<td><strong>M28. Snap Ring - Lock Nut and Washer for Mounting the Motor Vertical Shaft Down</strong></td>
<td>Available on 320 frames and up.</td>
</tr>
<tr>
<td><strong>M28A. Install Drive End Lip Seal and Stainless Steel Breather Drains for Motor Vertical Shaft Up</strong></td>
<td>To prevent moisture from entering the motor in shaft up applications in an outdoor environment.</td>
</tr>
<tr>
<td><strong>M29. Oil Mist Ready:</strong></td>
<td>TWMC to prepare motors for immediate Oil Mist Lubrication. Must use MAX-E2/841® if applicable.</td>
</tr>
<tr>
<td><strong>M30. Installation of Brake:</strong></td>
<td>Modify TEFC motors such that a Brake can be attached. This must be quoted with specs and a TWMC Drawing required.</td>
</tr>
<tr>
<td><strong>M31. Convert to IP65 or IP66:</strong></td>
<td>TWMC to take IEEE 841 motor and perform M17 Mod for IP65. Must perform M17 Mod, plus add extra sealant to end brackets, for conversion to IP66.</td>
</tr>
<tr>
<td><strong>M32. Precision Balancing for Vibration limits below what standard NEMA specification on IEEE/841 motors.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>M33. 175% Thrust VHS on 440 Frame 200-400 HP:</strong></td>
<td>Modify the motor adding correct bearings, parts, and oil for higher thrust</td>
</tr>
<tr>
<td><strong>M34. Convert TEFC to TEAO</strong></td>
<td></td>
</tr>
<tr>
<td><strong>M35. Terminal Block in Main Lead Box:</strong></td>
<td>Add a 6 lug terminal block into the Cast Iron or Rolled Steel Main Lead Box for motor frame sizes 143T through 449T and attach the motor leads to the terminal block.</td>
</tr>
</tbody>
</table>
# MODIFICATION DRAWING REQUIREMENTS

<table>
<thead>
<tr>
<th>DRAWING REQ.</th>
<th>MOD CODE</th>
<th>MODIFICATION DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>M1</td>
<td>Nameplate Change</td>
</tr>
<tr>
<td>X</td>
<td>M1A</td>
<td>Additional Nameplate</td>
</tr>
<tr>
<td>X</td>
<td>M1B</td>
<td>304 Stainless Steel Hardware</td>
</tr>
<tr>
<td>●</td>
<td>M2</td>
<td>Space Heater</td>
</tr>
<tr>
<td>■</td>
<td>M2A</td>
<td>Space Heater with Aux Box</td>
</tr>
<tr>
<td>●</td>
<td>M2X</td>
<td>Space Heater &quot;Explosion Proof Motors Only&quot;</td>
</tr>
<tr>
<td>■</td>
<td>M3C</td>
<td>Installation of C-Face</td>
</tr>
<tr>
<td>■</td>
<td>M3C841</td>
<td>C-Face with Inpro (MAX-E2/841® only)</td>
</tr>
<tr>
<td>■</td>
<td>M3D</td>
<td>Installation of D-Flange</td>
</tr>
<tr>
<td>■</td>
<td>M3D841</td>
<td>D-Flange with Inpro (MAX-E2/841® only)</td>
</tr>
<tr>
<td>●</td>
<td>M4</td>
<td>Winding RTD’s 100 Ohm Platinum (1/Phase)</td>
</tr>
<tr>
<td>■</td>
<td>M4A</td>
<td>Winding RTD (2/Phase) with Auxiliary Terminal Box</td>
</tr>
<tr>
<td>●</td>
<td>M4B</td>
<td>Stator Winding RTDs, 100 Ohm Platinum (2/phase)</td>
</tr>
<tr>
<td>X</td>
<td>M5</td>
<td>Thermistors (1/Phase)</td>
</tr>
<tr>
<td>■</td>
<td>M5A</td>
<td>Thermistors (1/Phase) with Auxiliary Box</td>
</tr>
<tr>
<td>X</td>
<td>M6</td>
<td>Thermostats (1/Phase)</td>
</tr>
<tr>
<td>■</td>
<td>M6A</td>
<td>Thermostats (1/Phase) with Auxiliary Box</td>
</tr>
<tr>
<td>■</td>
<td>M7</td>
<td>Bearing RTD (2/ Motor)</td>
</tr>
<tr>
<td>●</td>
<td>M8</td>
<td>Bearings Conversion: Ball to Roller/ Roller to Ball (2/ Motor)</td>
</tr>
<tr>
<td>●</td>
<td>M8A</td>
<td>Convert to Ceramic or Hybrid Bearings</td>
</tr>
<tr>
<td>●</td>
<td>M8B</td>
<td>Convert to Outer Race Insulated Bearings</td>
</tr>
<tr>
<td>X</td>
<td>M9</td>
<td>Change Rotation</td>
</tr>
<tr>
<td>●</td>
<td>M10</td>
<td>Shorten Shaft (TS Frames) Per NEMA MG-1 Dimensions</td>
</tr>
<tr>
<td>■</td>
<td>M10A</td>
<td>Special Keyless 4140 Shaft Extension for 440 frames and Larger</td>
</tr>
<tr>
<td>■</td>
<td>M10B</td>
<td>Any Non NEMA Special Shaft Required; Non NEMA Dim Requires TWMC Drawing</td>
</tr>
<tr>
<td>■</td>
<td>M10C</td>
<td>Drill and Tap Motor Feet</td>
</tr>
<tr>
<td>●</td>
<td>M11</td>
<td>F1 to F2 Mounting Conversion</td>
</tr>
<tr>
<td>■</td>
<td>M12</td>
<td>Oversized Main Conduit Box - Mount and Extend Leads</td>
</tr>
<tr>
<td>■</td>
<td>M12A</td>
<td>Fully Loaded Main Conduit Box - Mount and Extend Leads</td>
</tr>
<tr>
<td>X</td>
<td>M13</td>
<td>Stainless Steel Breather Drains</td>
</tr>
<tr>
<td>X</td>
<td>M14</td>
<td>Tropicalization / Fungus Protection</td>
</tr>
<tr>
<td>●</td>
<td>M15</td>
<td>Provisions for Vertical Jack Screws</td>
</tr>
<tr>
<td>X</td>
<td>M16</td>
<td>Alternate Grease</td>
</tr>
<tr>
<td>X</td>
<td>M17</td>
<td>Chico Motor Leads</td>
</tr>
<tr>
<td>X</td>
<td>M18A</td>
<td>Epoxy Paint Finish</td>
</tr>
<tr>
<td>X</td>
<td>M18B</td>
<td>Fire Pump Red Finish</td>
</tr>
<tr>
<td>●</td>
<td>M19</td>
<td>Install INPRO Seals</td>
</tr>
<tr>
<td>■</td>
<td>M20</td>
<td>Grounding Provisions on Frame</td>
</tr>
<tr>
<td>●</td>
<td>M21</td>
<td>Drip cover (TEFC)- Rolled Steel</td>
</tr>
<tr>
<td>●</td>
<td>M21A</td>
<td>Drip cover (TEFC)- Cast Iron</td>
</tr>
<tr>
<td>X</td>
<td>M22</td>
<td>Extend Leads -Connect Behind Box; Price Based on 4' Leads</td>
</tr>
<tr>
<td>X</td>
<td>M23</td>
<td>Supply Shaft Grounding Ring</td>
</tr>
<tr>
<td>X</td>
<td>M23A</td>
<td>VHS Shaft Grounding Ring</td>
</tr>
<tr>
<td>X</td>
<td>M23B</td>
<td>VHS or VSS Shaft Grounding Ring &amp; Insulated Brg for INV Duty</td>
</tr>
<tr>
<td>■</td>
<td>M23H</td>
<td>Supply Shaft Grounding Device</td>
</tr>
<tr>
<td>■</td>
<td>M24</td>
<td>Provision for Vibration Sensor</td>
</tr>
<tr>
<td>■</td>
<td>M24A</td>
<td>Provide and Install Vibration Switch/ Transmitter Spec. (Does not Include Cabling or Terminations)</td>
</tr>
<tr>
<td>■</td>
<td>M24B</td>
<td>Provide our Standard METRIX # ST5484E-121-714-00 Vibration Switch</td>
</tr>
<tr>
<td>■</td>
<td>M25</td>
<td>Mill Off Motor Feet</td>
</tr>
<tr>
<td>■</td>
<td>M26</td>
<td>Inline Blower for 1000:1 speed range</td>
</tr>
<tr>
<td>■</td>
<td>M26A</td>
<td>Install Centrifugal Blower</td>
</tr>
<tr>
<td>■</td>
<td>M27A</td>
<td>Installation Of Dynopar Encoder</td>
</tr>
<tr>
<td>■</td>
<td>M27B</td>
<td>Installation Of Other Encoder</td>
</tr>
<tr>
<td>X</td>
<td>M28</td>
<td>Lock Nut and Washer For Vertical Shaft Down</td>
</tr>
<tr>
<td>■</td>
<td>M28A</td>
<td>Vertical Shaft up DE lip seal and breather drains in NDE endframe</td>
</tr>
<tr>
<td>■</td>
<td>M29</td>
<td>Oil Mist Ready</td>
</tr>
<tr>
<td>■</td>
<td>M30</td>
<td>Installation of Brake</td>
</tr>
<tr>
<td>X</td>
<td>M31</td>
<td>Convert to IP65 or IP66</td>
</tr>
<tr>
<td>X</td>
<td>M32</td>
<td>Precision Balance</td>
</tr>
<tr>
<td>■</td>
<td>M33</td>
<td>175% Thrust or more on VHS on 440 Frame 200-400 HP</td>
</tr>
<tr>
<td>■</td>
<td>M34</td>
<td>Convert TEFC to TEAO</td>
</tr>
<tr>
<td>X</td>
<td>M35</td>
<td>Terminal Block in Main Lead Box</td>
</tr>
</tbody>
</table>
L510 MICRO DRIVE

MEDIUM DUTY

A compact, low cost, and versatile AC Drive that is easy to program and ideal for OEM's.

APPLICATIONS:
- Mixing
- Fans
- Small Conveyors
- Treadmills
- AC Contactor Replacement
- Lathes
- Pumps
- Milling

FEATURES:
- Chassis Style Enclosure (IP20)
- Sensorless Vector or V/Hz with Auto Torque Boost Feature
- 0.25 to 1 HP, 115V, 50/60Hz, 1-Phase
- 0.25 to 3 HP, 230V, 50/60Hz, 1-Phase
- 0.5 to 3 HP, 230V, 50/60Hz, 3-Phase
- 1 to 3 HP, 460V, 50/60Hz, 3-Phase
- Extensive Diagnostic and Monitoring Capabilities
- Din Rail Option
- PID Control
- 8 Preset speeds
- Two Multi-Function Analog Input/Qty 1 Analog Output
- Built-in Modbus or BACnet Protocol Via RJ 45 Interface
- UL, cUL, and CE Approved

www.tecowestinghouse.com or call 1-800-279-4007
**E510 COMPACT DRIVE**

**MEDIUM DUTY**

---

The E510 Compact AC Drive is an easily configured drive that controls many applications. From simple fixed speed set ups to applications requiring PM motors, the E510 meets the application challenge. This product replaces our legacy product the N3.

### APPLICATIONS:

- Conveyors
- Mixing Equipment
- Fans and Blowers
- Lathes
- AC Contactor Replacement
- Compact size is convenient for retrofitting/ replacing an older generation VFD

### FEATURES:

- 0.5 to 3 HP (CT), 230V, 50/60Hz, 1-Phase
- 0.5 to 40 HP (CT), 460V, 50/60Hz, 3-Phase
- 1 to 75 HP (CT), 460V, 50/60Hz, 3-Phase
- Parameters Grouped by function
- Built-in PLC Functionality
- PID Process Control Loop
- Built-in Modbus & BACnet Protocols
- 5 Digit Operator’s Keypad with Speed Pot
- Digital and Analog Inputs and Outputs have Extremely Fast (~4 msec) Update Time
- Auto Run Mode (Cyclic Operation)
- Power Loss Ride Through
- Automatic Voltage Regulation (AVR)
- Complies with IEC 60018-2-78, UL, cUL, CE, & RoHS
**E510 NEMA 4, 4X/12**

**INDOOR USE ONLY/ MEDIUM DUTY**

A versatile AC Drive that can control today’s demanding motor driven applications, this highly flexible drive has multiple control modes and built-in PLC functionality.

**APPLICATIONS:**
- Mixers
- Conveyors
- Machine Tools
- Pumps (Centrifugal, Positive Displacement, Metering, etc.)
- Packaging Machines
- Fans

**FEATURES:**
- Control Modes for V/F, and Sensorless Vector
- Simple PLC Function Built-in
- .5 to 20 HP (CT), 230V, 50/60Hz, 3-Phase
- 1 to 25 HP (CT), 460V, 50/60Hz, 3-Phase
- Conformal Coating on PC Boards
- LED Keypad with 5 Digits
- Flexible Input/ Output Configurations that Accept Normally Open or Normally Closed Signals
- 0 to 599 Hz Speed Range
- PID Control
- Diagnostics Registers for Troubleshooting
- Built-in Modbus Protocol via (RJ45 Interface)
- Dedicated Pulse Follower Signal
- UL, cUL, and CE Approved

www.tecowestinghouse.com or call 1-800-279-4007
HEAVY DUTY

A versatile AC Drive that can control today's demanding motor driven applications, this highly flexible drive has multiple control modes.

APPLICATIONS:
- Mixing
- Conveyors
- Packaging Machines
- Machine Tools
- Fans
- Compressors
- Pumps (Centrifugal, Positive Displacement, Metering, etc.)
- Extrusion and Injection Molding
- Winders/Unwinders
- Crushers/Grinders
- Crane/Hoist

FEATURES:
- Control Modes for V/F, V/F with PG feedback, Sensorless Vector, and Closed Loop Vector
- Simple PLC Function Built-in
- Advanced Regenerative Load Handling Capability
- 1 to 100 HP (CT), 230V, 50/60Hz, 3-Phase
- 1 to 125 HP (VT), 230V, 50/60Hz, 3-Phase
- 1 to 400 HP (CT), 460V, 50/60Hz, 3-Phase
- 1 to 400 HP (VT), 460V, 50/60Hz, 3-Phase
- 1 to 10 HP (CT/VT), 575V, 50/60Hz, 3-Phase
- 15 to 250 HP (CT), 690V, 50/60Hz, 3-Phase
- 15 to 270 HP (VT), 690V, 50/60Hz, 3-Phase
- Conformal Coating on PC Boards
- LCD Keypad that is Remotely Mountable
- Flexible Input/Output Configurations that Accept Normally Open or Normally Closed Signals
- 0 to 599 Hz Speed Range
- PID Control
- Diagnostics Registers for Troubleshooting
- Built-in RS485 Modbus Protocol
- Enhanced Design for Quiet Motor Operation
- Pulse Output and Pulse Follower
- Select Between Closed-Loop Speed and Torque Control in Vector Mode
- UL, cUL, and CE approved
## APPLICATIONS:
- Fans
- Blowers
- Water and Wastewater Industries
- Centrifugal Pumps
- HVAC Industries
- Irrigation

## FEATURES:
- Control Modes for V/F, Sensorless Vector, Sensorless Vector with Permanent Magnet Motor
- Built-in PLC as Standard
- Operation and Engineering Units Standard
- LCD Keypad with Remote Mounting Capabilities
- PID Control with Advanced Diagnostics and Sleep Mode
- 1 to 150 HP (Variable Torque), 230V, 50/ 60Hz, 3-Phase
- 1 to 800 HP (Variable Torque), 460V, 50/ 60Hz, 3-Phase
- Plenum Rated
- Diagnostics Registers for Troubleshooting
- Flexible Input/ Output Configurations that Incorporate Normally Open or Normally Closed Signals
- 0 to 400 Hz Speed Range
- Built-in Modbus, BACnet, and Metasys (N2) Protocols via (RS485 or RJ45 Interface)
- Enhanced Design for Smoother and Quieter Motor Operation
- Real Time Clock (Standard on Models with LCD Keypad)
- PTC Input Available for Direct Thermal Protection of the Motor
- Thermal Management on the Heat Sink for Overtemperature Fault Avoidance
- Master-Follower Control Mode Built-in
- EMI Protection that Complies with EM61800-3 with Optional Filter
- EMS Protection that Follows EN61800-3
- UL, cUL, and CE Approved

A versatile AC Drive that is easily configured and handles almost any fan, blower, or centrifugal pump application.
A rugged and versatile drive with a wide range of ratings ideal for both simpler and more demanding applications.

APPLICATIONS:
- Crushers, Grinders
- Compressors
- Reciprocating Machinery
- Dynamometers
- Water and Wastewater Industries
- Injection Molding
- Centrifugal Pumps
- Positive Displacement Pumps
- High Torque Mixing
- Material Handling
- Extruders
- Chillers and Refrigeration
- Fans

FEATURES:
- Designed for Constant / Variable Torque Applications
- V/F, Dynamic Torque, Sensorless and Sensor (Encoder Feedback) Vector mode
- Backlit LCD / English Language with LED Monitor Display / Selections for 6 Languages
- Keypad May be Used as Copy Unit / Remote Mounting Options
- Extensive Diagnostic Information on LCD Display
- PID Control with Sleep Mode Function
- Provided with low-noise control power supply
- 1 to 125 HP @ 230V (Constant Torque)
- 1 to 150 HP @ 230V (Variable Torque)
- 1 to 900 HP @ 460V (Constant Torque)
- 1 to 1000 HP @ 460V (Variable Torque)
- Extensive I/O Capabilities
- Encoder Feedback Option for Applications Requiring Precise Speed Control
- Conformal Coating on PC Boards, Tin Plating on DC Bus
- External Mounting of Heatsink When Installed in Control Panels (>40 HP); Option Kit Available (<= 40 HP)
- All Units are IP20 at 40hp and below and IP00 at ratings >40HP (NEMA 1 Option Kits Available)
- Built-in RS485 Protocol (Modbus)/ Options Probus-DP, DeviceNet, EtherNet
- DC Link Chokes Included in 75 HP and Above Units are Shipped Loose as Chassis Item Inside Crate
- uL and CE Approved
TECO-Westinghouse can supply low voltage solid state starters for a variety of applications such as pumping, compression, saws (woodworking), crushing and grinding operations.

COMBINATION PANELS INCLUDE:

- NEMA 3R enclosure
- Circuit breaker with flanged disconnect (service entrance rated)
- EMX3 heavy duty solid state starter
- Panel mounted switch: Soft Start/OFF/Line Start
- 110V control power transformer
- Space heater with thermostat
- Door Mounted: Keypad
  - Start / Stop Pushbutton
  - Local / Remote Switch
  - Reset Pushbutton
  - Power On Light
  - Run Light
  - Fault Light

STANDARD STARTER FEATURES (CHASSIS):

- Voltage Ratings: 208, 230, 460, 575 or 690VAC
- 15-1200HP (Standard duty)
- Constant Current, Current Ramp, XLR-8 Adaptive Acceleration, Kickstart
- LCD Keypad with real time monitoring and event log:
  - Graphical Display
  - User Friendly
  - Copy program setting between starters
  - Removable for remote mounted
- Emergency Run Mode
- RS 485 Communications via optional Modules
  - Modbus, Profibus, ProfiNET, DeviceNET, Modbus TCP, Ethernet IP
- PC Configuration Software Available

ENGINEERED PACKAGES:

- Fused disconnect or circuit breaker disconnect
- Internal shunt bypass or continuous duty
- Light, standard and heavy duty ratings
- Operator devices and pilot lights
- Fans, filters and enclosure modifiers
- Door-Mounted LCD Keypad

www.tecowestinghouse.com or call 1-800-279-4007
TEAMMASTER™ MEDIUM VOLTAGE

MCB PACKAGES with DISCONNECT

Effective 07-08-18
Supercedes 03-24-17

www.tecowestinghouse.com or call 1-800-279-4007

Engineered to provide solutions for a variety of heavy duty applications, TEAMMASTER™ Medium Voltage Soft Starters are feature loaded. They are an excellent solution to Crushers, Grinders, Ball & Hammer Mills, Compressors, Centrifuges, plus many other options.

COMBINATION PANELS INCLUDE:

- NEMA 12, NEMA 3R, NEMA 3ROD (door in door design), and Custom
- 60kV BIL
- Short Circuit Fault Rated 200MVA (2300V), 350MVA (4160V)
- 6500 PIV, UL347 – 6th Edition Certified and Listed at 2.4kV
- 13,000 PIV, UL347 – 6th Edition Certified and Listed at 4.16kV
- Fiber-Optic Firing
- 500% - 30 Second Rated (adjustable and customizable per applications)
- Load Break 5kV Switch, w/Viewing Window, Grounding Assembly, and Mechanically Interlocked Lockable Handle.
- Load matched Class R Fusing
- Fixed mounted Vacuum Contactors (Line Isolation & Bypass) Full Horsepower Rated
- Smart keypad/HMI with multiline display
- Simulation Mode Feature for “quick commissioning”
- Sim Card data logging for remote factory assistance
- Emergency Full Voltage Switch (located in LV compartment for Across Line Starting backup)
- Adjustable Electronic Overload for Emergency mode
- 120V Control Power Transformer
- Door Mounted: Start/Stop Pushbutton, Emergency Stop Pushbutton, and Run/Stop/Fault Lights
- Additional Options Adders:
  - Door Mounted Keypad
  - Communications: Modbus, Modbus TCP, USB, DeviceNet, Profibus, Profinet, Ethernet IP
  - Top Hat and/or Horizontal Bussing
  - Space Heater with Thermostat
VERSABRIDGE® FEATURES

With over 100 years of experience in motor design and application, TECO-Westinghouse Motor Company is a premier supplier of AC and DC motors and generators. Ranging from fractional HP ratings to 100,000 HP, these high-quality machines are used in a variety of rugged applications across several industries throughout the world.

TECO-Westinghouse comprises the experience of Westinghouse, a leader in the motor industry since 1888, and TECO Electric & Machinery Co., Ltd., a multinational conglomerate with over 50 years of manufacturing experience. Together, TECO-Westinghouse embodies the capabilities and proud traditions of excellence from both companies and carries them forward.

In keeping with this idea, TECO-Westinghouse is pleased to now offer a complete package of Variable Speed Drive (VSD) systems that includes an Input/Output Switchgear, Medium Voltage Drive (MVD), and motors.

VersaBridge® MVDs provide reliable motor control for a variety of industry specific and general purpose applications including Oil & Gas, Utility/Power Generation, Metals and Mines. These patented MVDs are designed utilizing a multilevel H-Bridge topology that reduces the harmonic levels to extremely low levels. The modular design facilitates ease of installation, commissioning and maintenance. The VersaBridge® is an innovative product that combines reliable, simple, and compact solutions with the latest power electronics and cooling technologies.

FEATURES

Modularity: Modular design with common building blocks (Mains, Slices, Cubes) make VersaBridge® MVD scalable for different power and voltage ratings with fewer spare parts required. Power switching modules (Cubes) can be easily removed in the event of a failure.

Quick and Easy Installation: VersaBridge® MVD provides both top and bottom cable entry as standard on all models. All shipping sections are delivered to the customer pre-terminated, making field assembly fast and efficient.

Serviceability: VersaBridge® power cubes are interchangeable and can be easily replaced within 30 minutes. Additionally, the modular design of VersaBridge® MVD requires few spare parts since the parts are universal and can be used in any configuration regardless of the voltage or power class.

Multi-level, Cascaded H-Bridge Topology produces near sinusoidal voltage output which reduces motor harmonics and torque pulsations, even at low speeds with virtually no cable length restriction. VersaBridge® MVD produces an output voltage which has at least 7 levels measured line-to-neutral and 13 levels measured line-to-line, allowing VersaBridge MVDs to be applied to new or existing motors having standard insulation systems without the need for harmonic mitigation.

Ultra Low Utility-Side Harmonics exceed the IEEE-519 Standard requirements without any additional components.

Power Cube Bypass: VersaBridge® MVD keeps your system running reliably by automatically bypassing failed power cubes and continuing operation within ¼ of a second of the initiating fault event. VersaBridge® cube bypass is software configurable to be Automatic or Manual. Both modes of bypass are designed to eliminate unnecessary voltage stress on the motor by keeping the neutral voltage balanced.

N+1...N+N Redundancy: Due to the modularity of VersaBridge® MVD, redundant Slices can be added to any system (new installation or retrofit) to achieve N+1 or more redundancy. This ensures that the process continues to operate at full rated power after a power cube bypass event.

Flying Start into a Spinning Load: VersaBridge® MVD offers the ability to smoothly catch and accelerate a spinning load without producing any severe torque, voltage, or current transients on the driven equipment.

Power Dip Ride-Through: VersaBridge® MVD provides greater than five cycle power loss ride-through to keep the process running without the need for auxiliary UPS systems.

One Drive for Multiple Motors: Using the VersaBridge® MVDs’ Synchronous Transfer feature, multiple motors can be started and synchronously transferred from the drive bus to the utility bus (Up Transfer) or from the utility bus to the drive bus (Down Transfer).

Industry Standard Modbus TCP Communication: Standard protocols allow the VersaBridge® MVDs to easily integrate with various SCADA or DCS systems using Ethernet.

www.tecowestinghouse.com or call 1-800-247-6589
**VERSABRIDGE® SPECIFICATIONS**

### Electrical

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output voltage</td>
<td>0 – 13.8 kV</td>
</tr>
<tr>
<td>Output frequency Min - Max</td>
<td>0 – 120 Hz</td>
</tr>
<tr>
<td>Auxiliary Supply</td>
<td>200 – 240 V, 1φ std; optional configurations available</td>
</tr>
<tr>
<td>Rated Supply Voltage</td>
<td>2.3 – 13.8 kV ±10%</td>
</tr>
<tr>
<td>Rated System Frequency</td>
<td>60 Hz ±5%</td>
</tr>
<tr>
<td>Voltage Variation</td>
<td>-30% to +10% for 30 line cycles</td>
</tr>
<tr>
<td>Input Current Harmonics THD</td>
<td>≤ 2% exceeds IEEE-519 requirements (36-pulse)</td>
</tr>
<tr>
<td>Inverter Topology</td>
<td>IGBT H-Bridge</td>
</tr>
<tr>
<td>Cooling</td>
<td>Advanced 2-phase cooling, forced-air cooling</td>
</tr>
<tr>
<td>Capacitors</td>
<td>Film</td>
</tr>
<tr>
<td>Regulatory Compliance</td>
<td>IEEE, ANSI, NEMA, CSA, cUL (listed), UL (listed)</td>
</tr>
<tr>
<td>Controls</td>
<td>V/Hz, Vector</td>
</tr>
<tr>
<td>Speed Regulation</td>
<td>0.1% with feedback, 0.5% without feedback</td>
</tr>
<tr>
<td>Connection</td>
<td>Top, bottom or both cable entry/exit</td>
</tr>
<tr>
<td>Power Ride Through</td>
<td>Minimum 5 cycles</td>
</tr>
<tr>
<td>Peak Efficiency</td>
<td>97%</td>
</tr>
<tr>
<td>Power Factor</td>
<td>≥97%</td>
</tr>
<tr>
<td>Output Current Harmonics THD</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Power Transformer Topology</td>
<td>Modular, multi-pulse, phase-shifted, isolated</td>
</tr>
<tr>
<td>Power Transformer Rating</td>
<td>750 kVA / Slice</td>
</tr>
<tr>
<td>Spinning Load</td>
<td>Catch a spinning load</td>
</tr>
<tr>
<td>Power Cube Bypass</td>
<td>Auto Bypass and restart, Manual Bypass modes</td>
</tr>
<tr>
<td>Synchronous Transfer</td>
<td>Automatically transfer the motor to/from the utility bus</td>
</tr>
<tr>
<td>Control Isolation</td>
<td>Fiber optic cable</td>
</tr>
<tr>
<td>Service Duty</td>
<td>CT: 150% , VT: 110% for 1 min every 10 min</td>
</tr>
<tr>
<td>HMI</td>
<td>7” TFT color LCD screen, LED backlighting</td>
</tr>
<tr>
<td>Communication Interface</td>
<td>Modbus TCP/IP (Ethernet), RS-232 , and RS-485, PLC I/O, Others Available Upon Request</td>
</tr>
</tbody>
</table>

### Mechanical

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Rating</td>
<td>NEMA 1, NEMA 3R</td>
</tr>
<tr>
<td>Cabinet Dimension (Mains or Slice)</td>
<td>H: 105” x W: 25” x D: 68.4”</td>
</tr>
<tr>
<td>Material</td>
<td>ASTM A366 steel</td>
</tr>
<tr>
<td>Color</td>
<td>Light Grey</td>
</tr>
<tr>
<td>Total Weight</td>
<td>Mains: 1,289 lbs, Slice: 4,852 lbs</td>
</tr>
</tbody>
</table>

### Environmental Condition

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient Temperature</td>
<td>-20 to +40 °C (lower/higher temperatures*)</td>
</tr>
<tr>
<td>Altitude</td>
<td>0 – 1000m (higher elevations*)</td>
</tr>
<tr>
<td>Humidity</td>
<td>95%, non-condensing</td>
</tr>
<tr>
<td>Noise Level</td>
<td>≤ 78 dB</td>
</tr>
</tbody>
</table>

* Consult factory for extended temperature or altitude ranges

### Cooling System

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformer</td>
<td>Choice of forced-air cooling or advanced 2-phase cooling options</td>
</tr>
<tr>
<td>Electronics</td>
<td>Advanced 2-phase cooling</td>
</tr>
<tr>
<td>Cooling Unit</td>
<td>Choice of integral or remote unit options</td>
</tr>
</tbody>
</table>

www.tecowestinghouse.com or call 1-800-247-6589