Horizontal Motors Conversions & Accessories Descriptions & Adders

DISCOUNT SYMBOL: SAME AS MOTOR BEING CONVERTED

All Cast Iron Construction

Cast Iron Conduit Box

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	153	161	193	209	234	242	346	483	636	-	-	-

Replacement of steel conduit box with cast iron version.

Available on Hostile Duty Motors (Types CTE, CTI)

Cast Iron Fan Cover

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	145	161	234	371	443	467	822	1369	1530	-	-	-

Replacement of steel (or plastic) fan cover with cast iron version.

Available on Hostile Duty Motors (Types CTE, CTI)

Assembly Mounting

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	145	145	145	145	190	190	190	215	215	215	215	-	650

Convert standard F1 Assembly to F2, W1, W2, W3 or W4 assembly. Involves repositioning output shaft to achieve proper configuration.

Availability:

56-140 Frame: Very limited availability.

180-447 Frame: available on ODP, TEFC & Explosionproof Motors.

449 Frame: available on ODP only.

5000 Frame: available on type JDE, R & RS only.

F1 to F2 UNIMOUNT® base must be repositioned for correct "BA" Dimension.

Not available on 180-250 frame flange mount (C or D Flange) UNIMOUNT®.

Limited availability on 180-320 frame ODP.

Contact your NMC Technical Representative prior to quoting.

Base, Removal of Feet

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	161	161	161	161	161	161	-	-	-	-	-	-	-

For flange mount (C or D Flange) motors, involves removal of bolt-on base.

Available on UNIMOUNT® Motors 180 frame & larger.

Contact your NMC Technical Representative for availability on 56 & 140 frame UNIMOUNT® motors (some 56 & 140 frames have welded bases).

UTE, UTI, UT4 - welded, non-removable base.

Bearings

Sealed

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	174	190	203	322	322	564	564	-	-	-	-	-

Includes replacing the standard bearings with sealed bearings, and replacing the grease fittings with plugs. Most 180-360 frame motors have shielded bearings as standard.

Available on ODP, TEFC and Explosionproof enclosures. UNIMOUNT (TEFC) 140-280 frames only (Not Close-Coupled Pump)

Roller Bearing On Drive End

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	-	-	-	-	-	-	$1100	$1550	-	$1800	-

Includes replacing the standard drive end bearing with a roller bearing.

Not offered for 2 pole ratings & not offered for Cooling Tower ratings

Not offered for 2 pole ratings & not offered for Cooling Tower ratings

Horizontal Motors Conversions & Accessories Descriptions & Adders

DISCOUNT SYMBOL: SAME AS MOTOR BEING CONVERTED

Brakes

Install Brake Kit (Must also add the price of the brake kit)

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	(QP)	(QP)	(QP)	(QP)	(QP)	-	-	-	-	-	-	-	-

Use the above adder PLUS list price of the brake kit. Refer to the Quick Pick chart, or "Kits" section for brake kits prices.

Available on UNIMOUNT® motors (Type UTE, UTI) 56-210 frame. Involves removal of fan guard and adding stub shaft with brake and adaptor.

Available on UNIMOUNT® motors (Type UTNX) 56-250 frame and (Type CTNI) 180-250.

Conduit Boxes

Accessory Conduit Box

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	548	548	548	548	548	548	548	548	548	-	-

A condulet can be added to the main motor conduit box for routing of accessory leads. Available on ODP and TEFC (not Explosionproof) ratings.

Rotate Conduit Box

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	161	161	161	161	161	161	161	161	161	161	161	100	100

Standard motors have lead opening facing down (toward motor feet). Includes rotating the conduit box so the lead opening is facing the desired direction. Specify direction of lead opening: Facing up (away from motor feet); Facing pulley end (shaft end); Facing short end (fan end)

Oversized Conduit Box

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	242	242	242	242	322	322	403	403	403	-	-

Includes mounting the conduit box on the motor (for motors that have the conduit box shipped loose).

Corro-duty: 180-447 frames

841 PLUS®: 180-400 frames (excluding 210 frame)

Hostile Duty: 210-447 frames

ODP: 180-447 frames

Automotive Duty: 180-447 frames (excluding 210 frame)

Steel Edge: 180-250 frames

Horizontal Motors Conversions & Accessories
Descriptions & Adders

DISCOUNT SYMBOL: SAME AS MOTOR BEING CONVERTED

Drains

Stainless Steel T-Type Breather/Drain

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	586	586	586	586	586	586	586	586	-	-	-

Install stainless steel T-type breather/drains in place of standard drains.

Available on 180-440 frame cast iron enclosed motors.

Dripcover / Canopy Cap

TEFC UNIMOUNT® (Type UTE, UTI, UTF)

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	145	145	161	177	209	242	-	-	-	-	-	-	-

Install dripcover kit for vertical shaft-down mounting.

Open Drip Proof (Type DE, DI)

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	145	161	177	209	242	274	-	-	-	-	-	-

Install dripcover kit for vertical shaft-down mounting.

TEFC Cast Iron (Type CTE, CTI, CE, TCE)

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	169	282	282	282	372	372	372	677	677	-	-	-

Install dripcover kit for vertical shaft-down mounting.

On Hostile Duty 180 or 210 frame, fan cover is also changed to Cast Iron

On Explosionproof 210 frame, fan cover is also changed to Cast Iron

Not available on most 320-360 frame TEFC motors.

Division 2 Self Certified & Division 2 CSA®† Certified

(+) Refer To The Charts Below For Pricing

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)

The following restrictions apply:

Not available (not applicable) on UL®† Listed Hazardous Location motors.

Must use energy or premium efficient motors.

Class II not available on ODP motors or CSA®† Division 2.

Contact an NMC Technical Representative to confirm availability.

Temp codes T-4 to T-6 not available.

Group E not available.

Inverter duty limited to T1-T3.

Zone 2 markings are available on separate Division 2 nameplate options.

Class I, Grps. A/B/C/D T1-T3 T-Codes On Main N/P @ 1.0 SF (On CTE, TCE, CE and JCE Models – Standard Rating ONLY)

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	-	NC	NC

Contact an NMC Technical Representative to confirm availability.

Horizontal Motors Conversions & Accessories Descriptions & Adders

DISCOUNT SYMBOL: SAME AS MOTOR BEING CONVERTED

Division 2 Self Certified & Division 2 CSA®† Certified *(continued)*

Class I, T-Code T1-T3C On Sep. Div. 2 Plate (Self Certified)

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	100	100	100	100	100	100	100	100	100	100	100	100	100

Contact an NMC Technical Representative to confirm availability.

Class I & II, T-Code T3C On Sep. Div. 2 Plate (Self Certified)

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	100	100	100	100	100	100	100	100	100	100	-	100	100

Contact an NMC Technical Representative to confirm availability.
Group E is not available
Class II is not available on Open Drip Proof (ODP) motors

Class I, T-Code T1-T3C On Sep. Div. 2 Plate (CSA)

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	100	100	100	100	100	100	100	100	100	-	100	100

Contact an NMC Technical Representative to confirm availability.
CSA is not available on Open Drip Proof (ODP) motors

Export Boxing

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)

Product is boxed, packaged or crated as required for under deck exporting.
(#) Refer to Optional Export Packing Charges Section.

Fans, Install Uni-Directional

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	-	-	451	451	580	580	677	677	-	830	-

Replace one-directional (CCW) with one-directional (CW) fan if the fan is available.
Specify desired rotation, when viewed from opposite drive end of motor.
Available on Totally Enclosed Fan Cooled (TEFC) motors.

Flanges

C-Face

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	242	242	290	330	725	1007	1087	1176	1450	1692	-	2169	-

Removal of standard end shield and replaced with C-Face.
Available on UNIMOUNT®, Hostile Duty, CORRO-DUTY®, Automotive Duty & 841 PLUS® motors.
140-250 frame will have non-NEMA®† "BA" dimension.

D-Flange

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	403	403	419	353	1087	1208	1369	1595	2014	2900	-	2272	-

Removal of standard end shield and replaced with D-Flange.
Available on UNIMOUNT®, Hostile Duty, CORRO-DUTY®, Automotive Duty & 841 PLUS® motors.

Horizontal Motors Conversions & Accessories Descriptions & Adders

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Grease, Low Temp Grease

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	137	137	145	187	208	292	313	499	688	688	-	-

Purge and repack lubricant in end shields with Mobil®† 28 grease, or equivalent, with temperature range of -65°F to 350°F.
Available on motors with shielded or open bearings.

Grease Fittings

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	209	209	209	209	209	322	322	322	322	-	-

Replace grease plugs on motors so equipped with hydraulic grease fittings on inlets and pressure reliefs on grease drains.
Not available on Explosionproof motors.

Ground Lug

In Conduit Box

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	129	129	129	129	129	129	129	129	129	129	129	300	300

Addition of ground lug in main motor conduit box.

On Frame

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	371	371	371	371	371	371	371	371	371	300	300

Addition of drilled and tapped hole on conduit box side of frame and installation of a bronze grounding screw.
Available on non-Explosionproof cast iron ratings only.

Grounding, Shaft

Installed AEGIS®† SGR™

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	260	260	310	310	310	385	385	575	810	1080	-	-

UNIMOUNT® and ODP - drive end only. ODP Flanged or Close Coupled Pump: 280 frame and smaller.
Not offered on Hazardous Location motors
Not offered on Cooling Tower motors and models with "TS" shaft extension

C-Face with MGS Grounding Seal

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	-	-	-	1317	1472	1561	1946	2540	-	2941	-

Only available on Cast Iron Accu-Torq CTI, TCI, TCBI (CT)

Installed MGS SGR™

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	433	466	492	517	584	609	650	775	-	830	-

Available on 841 Plus

Hardware, Stainless Steel

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	548	548	918	918	918	1257	1257	1643	1643	-	-

Replacement of all external hardware with grade 5 stainless steel (standard hardware is zinc plated).
Available on non-Explosionproof cast iron enclosed motors.

Horizontal Motors Conversions & Accessories Descriptions & Adders

DISCOUNT SYMBOL: SAME AS MOTOR BEING CONVERTED

Leads

Ring Type Lead Lugs

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	140	140	140	140	161	161	-	-	-	-	-	-	-

Addition of ring type lead lugs on 56-250 frame motors.

Crimp type lead lugs are standard on all 280 frame & larger.

Tie Back Leads

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	274	274	274	403	403	612	612	612	612	612	612	-	-

Reconnect dual voltage 9-lead or 12-lead motors to 3-lead single voltage. Tie back and connect leads inside frame for single voltage 3-lead conduit box connections.

Specify desired voltage when ordering.

Available on non-Explosionproof motors.

Lifting Lugs

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	274	-	-	-	-	-	-	-	-	-	-

Addition of lifting lugs to motors normally not supplied with them.

Currently only available on 180 frame premium efficient ODP motors (Type DE).

Marine Duty

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	338	338	338	338	419	419	419	419	612	612	612	5%	5%

Conversion of standard product to IEEE-45 below deck standards. Includes addition of screens (on ODP motors), lead terminals, high moisture winding treatment and rerate to 50°C ambient, 1.0 service factor. Motors will NOT include USCG documentation.

Not available on TITAN® sleeve bearing motors.

Nameplates

Additional Duplicate Nameplate

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	70	70	70	70	70	70	70	70	70	70	70	70	70

An additional duplicate nameplate for mounting on customer equipment. These additional nameplates cannot be supplied with CSA®† or UL®† logos.

Additional Stamping On Main Nameplate

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	70	70	70	70	70	70	70	70	70	70	70	-	-

The main motor nameplate can be stamped with limited customer tagging information (20 characters max).

Rotation Arrow

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	70	70	70	70	70	70	70	70	70	70	70	-	-

Metal plate mounted on motor with arrow showing direction of rotation. Customer must specify required direction of rotation:

Counter clockwise facing opposite drive end

Clockwise facing opposite drive end

Supplied as standard on motors with uni-directional fans.

Shipping Tag (#6 Paper Tag)

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

A #6 paper shipping tag, with customer tagging information, can be supplied at no charge when specified at time of motor order.

Nameplates *(continued)*

Special I.D. Plate

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	70	70	70	70	70	70	70	70	70	70	70	70	70

Special identification plates can be mounted on the motor with limited customer specified tagging information (100 characters max).

Re-Nameplate (Re-Rate)

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	70	70	70	70	70	70	70	70	70	70	70	70	70

Motors can be re-nameplated (after approval) for alternate ratings. Changes in horsepower, altitude, ambient, voltage, frequency, etc.
Contact an NMC Technical Representative for approval prior to quoting.

Firepump Label

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	140	-

UL®† Listed (File E187977) firepump motors are designed per UL-1004A®† and meet the NFPA-20®† "Standard for the Installation of Centrifugal Fire Pump Spec".
This conversion is to add the firepump label.
Contact your NMC Technical Representative with exact rating to confirm that it meets the firepump requirements.

Paint, Special

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	322	322	322	322	596	596	596	596	596	596	1176	5%	5%

Fire Pump Red color only

Prints & Data (Submittals)

(Net Adders)

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)

Submittals adders are NET ADDERS. (QP) refer to Vertical motors quick pick chart.
The following submittals are considered standard submittals, and are available at no charge if requested at time of motor order:

- Certified Dimension Print
- Performance Data
- Nameplate Data
- Instruction Manual
- Wiring Diagram
- Parts List
- Recommended Spare Parts
- Conduit Box Details
- Paint Specification
- Rotor Air Gap (Calculated)
- Rotor Inertia
- Cut Sheets For Accessories

Screens

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	226	226	226	226	226	403	403	403	403	-	STD

Addition of rodent screens to ventilation openings on Open Drip Proof motors.

Sealant, RTV

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	145	145	145	193	258	258	322	322	354	354	354	-	-

Silicon sealant applied to registers between the end bracket and frame and/or under bolt heads to prevent contaminants from entering the motor.
841 PLUS® and Cooling Tower ratings only

Horizontal Motors Conversions & Accessories Descriptions & Adders

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Shaft Seals, Inpro®† Type

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	-	-	-	-	-	-	-	-	-	-	-

Inpro®† seal is standard on both ends of 841 PLUS® non-flanged motors.

- Inpro®† seal is standard on both ends of 841 PLUS® non-flanged motors.
- Can be added to Cooling Tower ratings if shaft up assembly position

Space Heaters

ODP or TEFC Motors

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	210	210	250	250	320	380	420	420	480	480	480	480	480

XP Motors

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	-	-	-	500	640	760	840	840	960	960	-	-	-

Space heaters are installed to prevent moisture condensation in the motor during times the motor is not running. NMC uses silicon rubber strip-type heaters manufactured by sandwiching a resistance wire network between two pieces of high-temperature silicon rubber and bonding the pieces together. Heaters are sized to provide approximately 10°C temperature rise above the ambient temperature.

Heaters are placed on the end turns of the motor winding. Heaters are of the low density type, which yields low surface temperature and long life. Heaters are single phase, rated 60 or 50 Hertz.

Space Heaters are available in the following voltages:

115, 230 & 460 Volt

230 Volt operated at 115 Volt (not offered for XP motors)

Testing

Short Commercial Test, Un-Witnessed

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	282	282	282	282	612	612	612	612	612	612	612	380	380

A Short Commercial Test, per NEMA®† MG-1 Part 12, consists of no load current, locked rotor current (performed at reduced voltage, typically 25-50%), winding resistance, high potential, and bearing inspection. A test report is provided to the customer.

Complete Initial Test, Un-Witnessed

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	2457	2457	2457	2457	3649	3649	3649	3649	3649	3649	3649	5230	8400

A Complete Initial Test consists of full load heat run, percent slip, no load current, full load current, locked rotor current, locked rotor torque, breakdown torque (calculated), efficiency & power factor at 100%, 75% & 50% full load, winding resistance, high potential, and bearing inspection. This test is performed in accordance with IEEE 112 Method B. A test report is provided to the customer. Motor will be shipped to an NMC facility with a calibrated lab for testing and will require additional leadtime.

Contact an NMC Technical Representative for availability and leadtime.

Complete Initial Test, Witnessed

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	8506	8506	8506	8506	13782	13782	13782	13782	13782	13782	13782	7860	12150

A Complete Initial Test, as described above, performed in the presence of a Witness. Motor will be shipped to an NMC facility with a calibrated lab for testing and will require additional leadtime. Scheduling must be coordinated with the test facility.

Contact an NMC Technical Representative for availability and leadtime.

Testing *(continued)*

Megger Test

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	756	756	756	756	1474	1474	1474	1474	1474	1474	1474	-	-

Thermal Protection, Windings

Thermostats

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	200	200	200	200	300	300	300	400	400	400	400	460	460

Thermostats: Snap action, bi-metallic, temperature actuated switches installed on the end-turns of the motor winding. Their purpose is to activate a warning device or shut down the motor upon excessive winding temperatures. Standard arrangement is addition of 2 or 3 thermostats to the winding end-turns, connected in series with the leads brought out to the main motor conduit box.

The following options are available:

TW01 Thermostats, normally closed

TW02 Thermostats, normally open

TW06 Thermostats, normally closed, hermetically sealed

Not offered on XP motors

Thermistors

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	725	725	725	725	725	725	725	725	725	725	725	-	-

Thermistors: Non-linear resistance temperature detector made from semi-conductor material. Standard arrangement is Q-3 positive temperature coefficient (PTC) type on winding end-turns with leads brought out to the main motor conduit box.

Available on non-Explosionproof motors.

The following options are available:

TW10 Thermistors (PTC Type), Siemens®, 6 leads out

THERMA SENTRY®

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	1740	1740	1740	1740	1820	1820	1820	1820	1820	1820	1820	1130	1130

THERMA SENTRY®: Complete protection system consisting of three thermistors and a solid state control module (shipped loose for customer mounting). It will protect the motor for locked rotor, starting overload, running overload, abnormally high ambient temperatures, voltage unbalance, high or low voltages, ventilation failure, and single phasing.

Available on non-Explosionproof motors.

The following options are available:

TW20 THERMA SENTRY®, 115/230V, SMSE, normally closed contact

(SMSE = separately mounted, separately excited control module)

Thermocouples

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	209	209	209	209	419	419	419	419	419	419	2417	-	-

Thermocouples: A pair of dissimilar conductors so joined at one point that an electromotive force is developed by the thermoelectric effects. Standard arrangement is addition of thermocouples to the winding end-turns with leads brought out to the main motor conduit box.

Available on non-Explosionproof motors.

The following options are available:

TW32 Thermocouples, Iron Constantan (Type J)

Tropicalization / High Moisture Protection

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	242	242	242	242	354	354	354	354	612	612	612	-	-

Winding coated with Dolph®† polyurethane for superior protection in high moisture environments.

Not available on Titan non-Marine Duty or Cooling Tower ratings

Vector Encoder Conversion

Encoder

Frame:	56	140	180	210	250	280	320	360	400	444-447	449(DP)	449(TE)	5000
Adder:	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)	(QP)	-	(QP)	-

To convert an inverter duty motor (Type UTNX, UTNI, UTI, CTI, TCBX, or JEBX) to include an encoder. See page 122 for Encoder Availability.

Integral Horsepower Motor Type Code Identification Chart Horizontal Motors

Type Code	Motor Description	Phase	Efficiency
CE	841 PLUS®	Three Phase	Premium Efficient
CTE	Hostile Duty TEFC	Three Phase	Premium Efficient
CTI	Hostile Duty TEFC	Three Phase	Inverter Duty
FCT	Hostile Duty TEFC	Three Phase	Energy Efficient
DE, RE	Open Drip Proof	Three Phase	Premium Efficient
FUT	UNIMOUNT® TEFC	Three Phase	Energy Efficient
JDE	Automotive Duty	Three Phase	Energy Efficient
TCE	CORRO-DUTY® TEFC	Three Phase	Premium Efficient
TCI	CORRO-DUTY® TEFC	Three Phase	Inverter Duty
UT	UNIMOUNT® TEFC	Three Phase	Standard Efficient
UTE	UNIMOUNT® TEFC	Three Phase	Premium Efficient
UTF	UNIMOUNT® TEFC, Footless	Three Phase	Standard Efficient