

Customer :  
Project Name :  
Project No. :  
Revision No. :

# SPECIFICATION for INDUCTION MOTOR



| 0   |      | For Bidding |             |            |             |
|-----|------|-------------|-------------|------------|-------------|
| No. | DATE | DESCRIPTION | PREPARED BY | CHECKED BY | APPROVED BY |

# AC INDUCTION MOTOR DATA SHEET

|                                                |                                                                            |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                         |          |          |  |  |
|------------------------------------------------|----------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------|----------|----------|--|--|
| Catalog No.                                    | HHI100-18-405T                                                             | Item No.                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                         | Rev. No. | [      ] |  |  |
| Project Name                                   |                                                                            | Project No.              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                         | Quantity | sets     |  |  |
| <b>GENERAL SPECIFICATION</b>                   |                                                                            |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                | <b>PERFORMANCE DATA</b> |          |          |  |  |
| Frame Size                                     | 405T                                                                       |                          | Rated Output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 75 kW          |                         | 100 HP   |          |  |  |
| Type                                           | PJP                                                                        |                          | Number of Poles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 4              |                         |          |          |  |  |
| Enclosure(Protection)                          | Totally Enclosed / IP55                                                    |                          | Rotor Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Squirrel Cage  |                         |          |          |  |  |
| Method of Cooling                              | IC411(FC)                                                                  |                          | Starting Method*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | D.O.L          |                         |          |          |  |  |
| Rated Frequency                                | 60 Hz                                                                      |                          | Rated Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 575 V          | 460 V                   | 230 V    |          |  |  |
| Number of Phases                               | 3                                                                          |                          | Current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Full Load      | 91.3 A                  | 114.1 A  | 228.1 A  |  |  |
| Insulation Class                               | F                                                                          |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Locked-rotor** | 650 %                   | 650 %    | 650 %    |  |  |
| Temp. Rise at full load (by resistance method) |                                                                            |                          | Efficiency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                         |          |          |  |  |
| at 1.0 S.F                                     |                                                                            |                          | 80 deg. C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |                         |          |          |  |  |
| Motor Location                                 | <input type="checkbox"/> Indoor <input type="checkbox"/> Outdoor           |                          | 50% Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | 92.4 %                  |          |          |  |  |
| Altitude                                       | Less than 1,000 meter                                                      |                          | 75% Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | 94.4 %                  |          |          |  |  |
| Relative Humidity                              | Less than 80 %                                                             |                          | 100% Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 95.4 %                  |          |          |  |  |
| Ambient Temp.                                  | 40 deg. C (Max.)                                                           |                          | Power Factor(p.u)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                         |          |          |  |  |
| Duty Type                                      | Continuous ( S1 )                                                          |                          | 50% Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | 0.715                   |          |          |  |  |
| Service Factor                                 | 1.15                                                                       |                          | 75% Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | 0.815                   |          |          |  |  |
| Mounting                                       | B3                                                                         |                          | 100% Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 0.865                   |          |          |  |  |
| Bearing                                        | Type                                                                       | Anti-Friction            | Speed at Full Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                | 1780 r.p.m              |          |          |  |  |
|                                                | DE/N-DE                                                                    | NU316 / 6313C3           | Torque                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |                         |          |          |  |  |
|                                                | Lubricant                                                                  | Grease(Polyrex-EM)       | Full Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 296.84 lb.ft            |          |          |  |  |
| External Thrust                                | Not applicable                                                             |                          | Locked-rotor**                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                | 140 %                   |          |          |  |  |
| Coupling Method                                | <input checked="" type="checkbox"/> Direct <input type="checkbox"/> V-belt |                          | Breakdown**                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                | 220 %                   |          |          |  |  |
| Shaft Extension                                | Single                                                                     |                          | Moment of Inertia (J)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                         |          |          |  |  |
| Terminal                                       | Main                                                                       | Cast Iron                | Load(Max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                | 1,337.213 lb.ft2        |          |          |  |  |
| Box                                            | Aux.                                                                       | No                       | Motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                | 35.910 lb.ft2           |          |          |  |  |
|                                                | Location                                                                   | Refer to Outline Drawing | Sound Pressure Level (No-load & mean value at 1m from motor)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                         |          |          |  |  |
| Application                                    |                                                                            |                          | 82 dB(A)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                         |          |          |  |  |
| Area classification                            | Hazardous                                                                  |                          | Vibration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 3.8 mm/sec (peak)       |          |          |  |  |
| Type of Ex-Protection                          | Class I&II, Division 2                                                     |                          | Permissible number of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                | Cold                    |          | 3 times  |  |  |
| Applicable Standard                            | NEMA MG1, CSA C390                                                         |                          | consecutive starts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                | Hot                     |          | 2 times  |  |  |
|                                                |                                                                            |                          | Paint                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Munsell No.    | 4.0PB5.4/5.5(VL-451)    |          |          |  |  |
| <b>ACCESSORIES</b>                             |                                                                            |                          | <b>SUBMITTAL DRAWING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                         |          |          |  |  |
|                                                |                                                                            |                          | Outline Dimension Drawing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | \ Motor Weight(Approx.) |          |          |  |  |
|                                                |                                                                            |                          | B3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                | LM-T1405B3PL001         |          | 1120 lb. |  |  |
|                                                |                                                                            |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                         |          |          |  |  |
|                                                |                                                                            |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                         |          |          |  |  |
|                                                |                                                                            |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                         |          |          |  |  |
|                                                |                                                                            |                          | <b>REMARK</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |                         |          |          |  |  |
|                                                |                                                                            |                          | 1. Premium efficiency according to NEMA MG1<br>2. Inverter Duty @ 1.0 Service Factor & F Temperature rise<br>-. 10:1 VT (20:1 VT at 50% load)<br>-. 10:1 CT (1 hour duty, 4:1 continuous)<br>-. CHP up to 1.5 times base speed, NEMA MG1 Part31<br>3. CSA Certification<br>-. Class I, Division 2, Group A, B, C & D<br>-. Class II, Division 2 Group E, F & G (Group E : up to 320Fr.)<br>4. Service Factor 1.15 and Temperature rise B are applicable under the condition of sine wave power.<br>5. Service Factor 1.25 is applicable to motors of 100HP or less with temperature rise F & Non-Hazardous.<br>6. Temp. code : T3B(165°C) at sine wave |                |                         |          |          |  |  |
| <b>SPARE PARTS</b>                             |                                                                            |                          | Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | DSND           | CHKD                    | CHKD     | APPD     |  |  |
|                                                |                                                                            |                          | 2025-07-22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | S.H. LEE       | I.K. KIM                | R.G. KIM | S.W. KIM |  |  |

[Note] Others not mentioned in this data sheet shall be in accordance with maker standard.

Above technical data are only design values and shall be guaranteed with tolerance of applicable standard.

Inspection and performance test shall be done according to maker standard, if not mentioned.

\* In case of Inverter-Fed Motor, performance data is based on sine wave tests. It may be different from test data of Inverter combined motor.

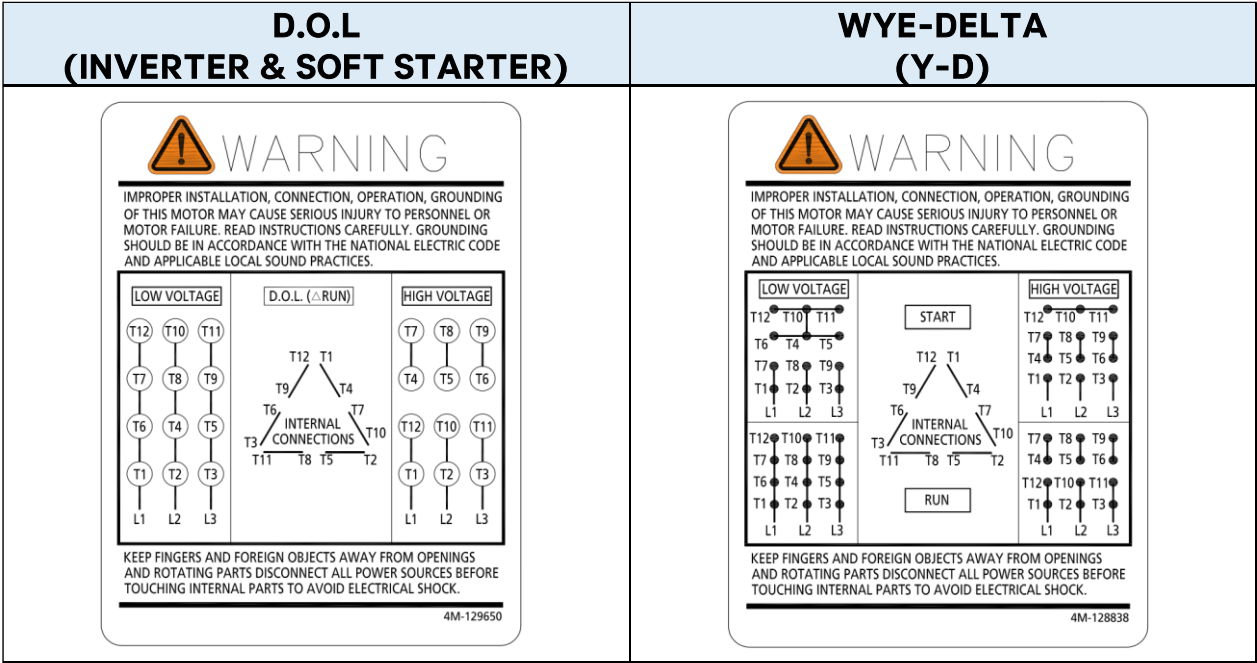
\*\* Data is based on rated voltage & frequency and is expressed as a percentage of full-load value.

MAIN NAMEPLATE

4.72

|                    |                                                                                    |                                                    |          |                                                  |                |             |             |                     |       |
|--------------------|------------------------------------------------------------------------------------|----------------------------------------------------|----------|--------------------------------------------------|----------------|-------------|-------------|---------------------|-------|
| 100HP              |                                                                                    | 4P                                                 | 230/460V | Cat. No.                                         | HHI100-18-405T |             |             |                     |       |
| Model              | HLS405SR04U3                                                                       |                                                    |          | INS. Class                                       | F              | HD-F1       | Amps        | 228.1/114.1A        |       |
| Type               | HLS                                                                                | Duty                                               | CONT     | Code                                             | G              | Amb.        | 40°C        | Hertz               | 60Hz  |
| Frame              | 405T                                                                               | Encl.                                              | TEFC     | S.F.                                             | 1.15           | RPM         | 1780        | NEMA Nom. Eff.      | 95.4% |
| Bearing            | Drive                                                                              | NU316                                              |          | S.F.1.00 (10:1 C.T., 20:1 V.T., NEMA-MG1 Part31) |                |             |             | 3/4 Eff.            | 94.4% |
|                    | Opp.                                                                               | 6313C3                                             |          |                                                  |                |             |             | NEMA Design         | B     |
| Usable at          | 50Hz 100HP 380V 137.5A 1475rpm S.F.: 1.0 Eff.: 94.5% Code: E                       |                                                    |          |                                                  |                |             |             |                     |       |
|                    | 50Hz 100HP 400/415V 132.6/130.6A 1478/1479rpm S.F.: 1.0 Eff.: 94.8/94.9% Code: F/G |                                                    |          |                                                  |                |             |             |                     |       |
| CSA Certified for  | Model                                                                              | LATER                                              | Type     | PJP                                              | Temp. Code     | Frame       | 140~320FR   | 360~400FR           | 440FR |
|                    | CLASS I, Div. 2, Gr. A, B, C & D                                                   | CLASS II, Div. 2 Gr. E, F & G (Gr. E: Up to 320FR) |          |                                                  | Amb. 40°C      | T3C (160°C) | T3B (165°C) | T3A (180°C)         |       |
|                    | CLASS I, Zone 2, Gr. IIA, IIB, & IIC                                               |                                                    |          |                                                  | Amb. 55°C      | T3A (180°C) | T3A (180°C) | T3 (200°C)          |       |
| No.                | -                                                                                  | Date                                               | -        | Weight                                           | 1120 lb        |             |             |                     |       |
| 4M-135702          |                                                                                    |                                                    |          | Made in Korea H1                                 |                |             |             | HD HYUNDAI ELECTRIC |       |
| MARINE DUTY IEEE45 |                                                                                    |                                                    |          |                                                  |                |             |             |                     |       |

WIRING DIAGRAM



|                     |         |          |            |                   |                                                   |              |            |
|---------------------|---------|----------|------------|-------------------|---------------------------------------------------|--------------|------------|
| APPD BY             | S.Y.KIM | UNIT     | INCH       | SUBJECT           | CSA Class I, Division2 Severe Duty (HHI, 364-449) | DWG SIZE     | A4 ( 1:1 ) |
| CHKD BY             | I.K.KIM | SCALE    | NONE       | NAMEPLATE DRAWING |                                                   |              |            |
| CHKD BY             | R.G.KIM | PROJEC'N | 3rd Angle  |                   |                                                   |              |            |
| DSND BY             | S.H.LEE | DATE     | 2024.06.07 |                   |                                                   |              |            |
| HD HYUNDAI ELECTRIC |         |          |            | REF. NO           | 4M-135702 / 4M-129650                             | Sheet No.    | of         |
|                     |         |          |            | DWG NO            | NP-HHI100-18-405T                                 | Revision No. | 0          |

Type : PJP

75kW 100HP 4 P 60 Hz

Full Load Torque : 296.84 lb.ft

Speed at Full Load : 1780 RPM

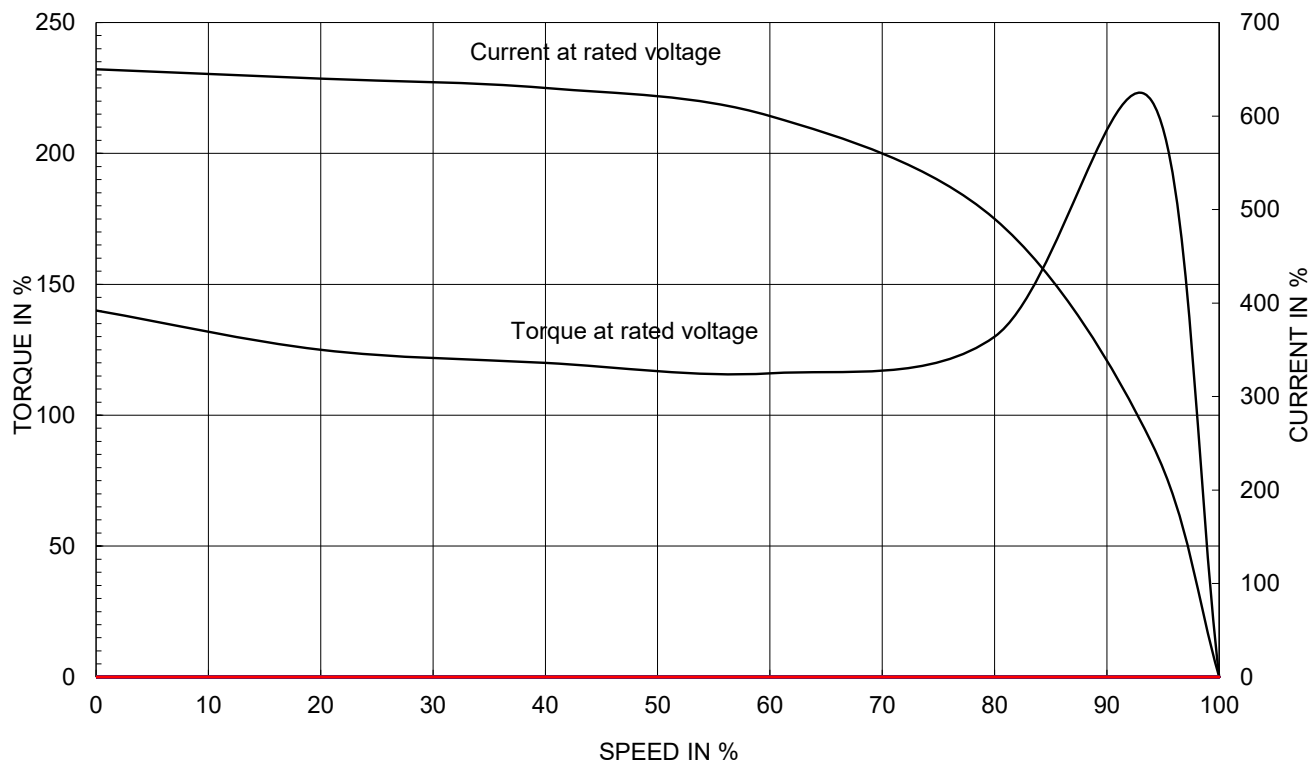
Load moment of Inertia (J) : 1337.213 lb.ft2

|               |      |      |      |
|---------------|------|------|------|
| Rated Voltage | 575V | 460V | 230V |
|---------------|------|------|------|

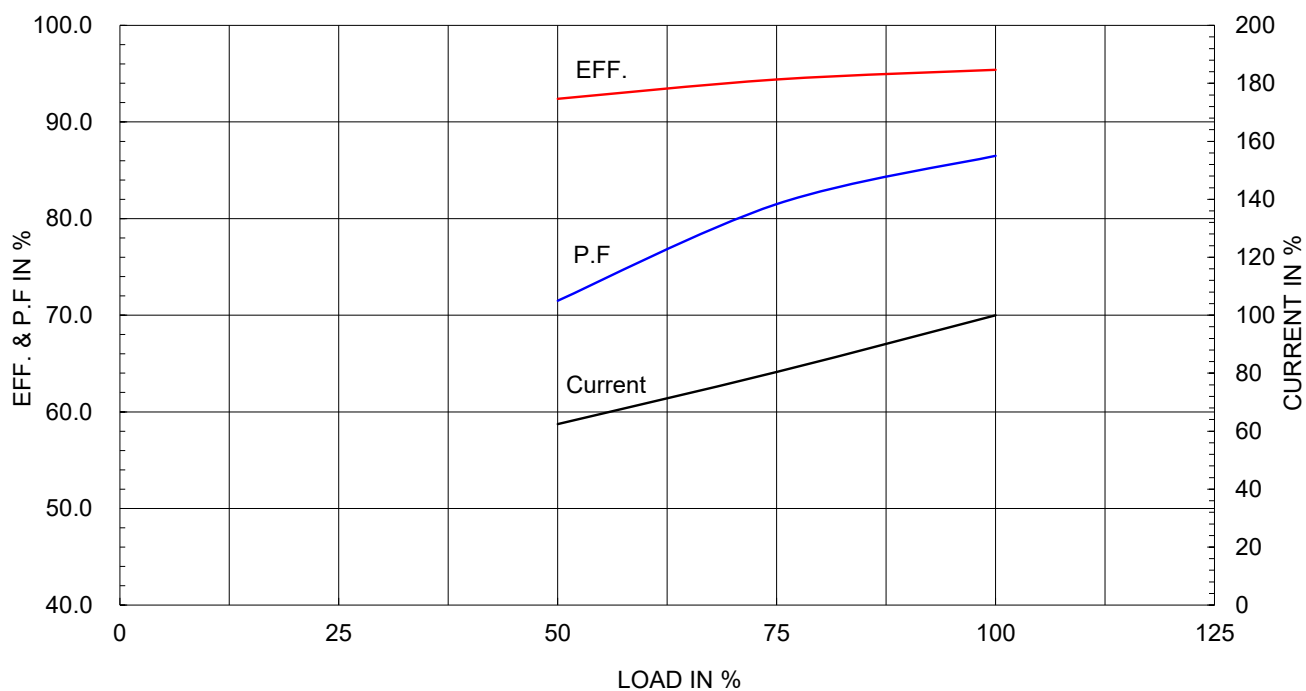
Motor moment of Inertia (J) : 35.910 lb.ft2

|                   |       |        |        |
|-------------------|-------|--------|--------|
| Full Load Current | 91.3A | 114.1A | 228.1A |
|-------------------|-------|--------|--------|

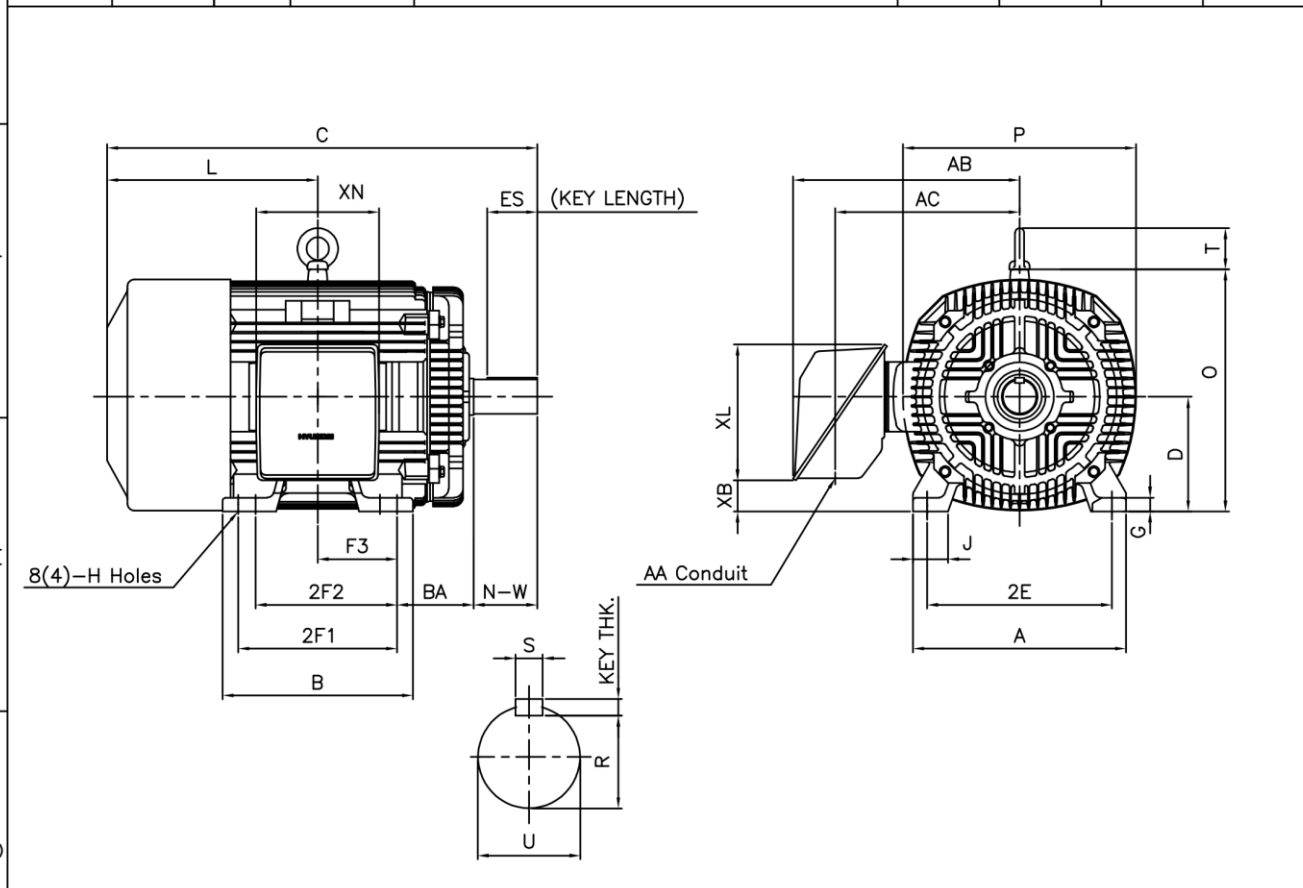
## SPEED VS TORQUE & CURRENT CURVE



## OUTPUT VS EFF., P.F & CURRENT CURVE



| 1    | 2     | 3   | 4    |
|------|-------|-----|------|
| ▽    | 50S   | REV | DATE |
| ▽▽   | 12.5S |     |      |
| ▽▽▽  | 3.2S  |     |      |
| ▽▽▽▽ | 0.4S  |     |      |



## DIMENSIONS

unit : inch

| M O U N T I N G |       |       |       |         |       |      |      |      | C O N D U I T   B O X |       |       |      |       |       | APPROX.<br>WGT.(LB) |
|-----------------|-------|-------|-------|---------|-------|------|------|------|-----------------------|-------|-------|------|-------|-------|---------------------|
| A               | B     | 2E    | 2F1   | 2F2     | F3    | G    | J    | H    | AA                    | AB    | AC    | XB   | XL    | XN    |                     |
| 18.43           | 16.46 | 16.00 | 13.75 | (12.25) | 6.870 | 1.18 | 3.03 | 0.81 | 3.00                  | 20.28 | 14.85 | 2.83 | 11.65 | 10.63 | 1120                |

| O V E R A L L |       |       |       |       |       |      |       |      | S H A F T |      |       | KEY   | B E A R I N G         |                      |
|---------------|-------|-------|-------|-------|-------|------|-------|------|-----------|------|-------|-------|-----------------------|----------------------|
| BA            | C     | D     | L     | O     | P     | T    | U     | N-W  | KEYWAY    |      |       | THK.  | DRIVE<br>END          | OPP.<br>DRIVE<br>END |
|               |       |       |       |       |       |      |       |      | R         | ES   | S     |       |                       |                      |
| 6.62          | 39.42 | 10.00 | 18.68 | 20.79 | 20.16 | 3.55 | 2.875 | 7.25 | 2.450     | 5.65 | 0.750 | 0.750 | 6316C3<br>or<br>NU316 | 6313C3               |

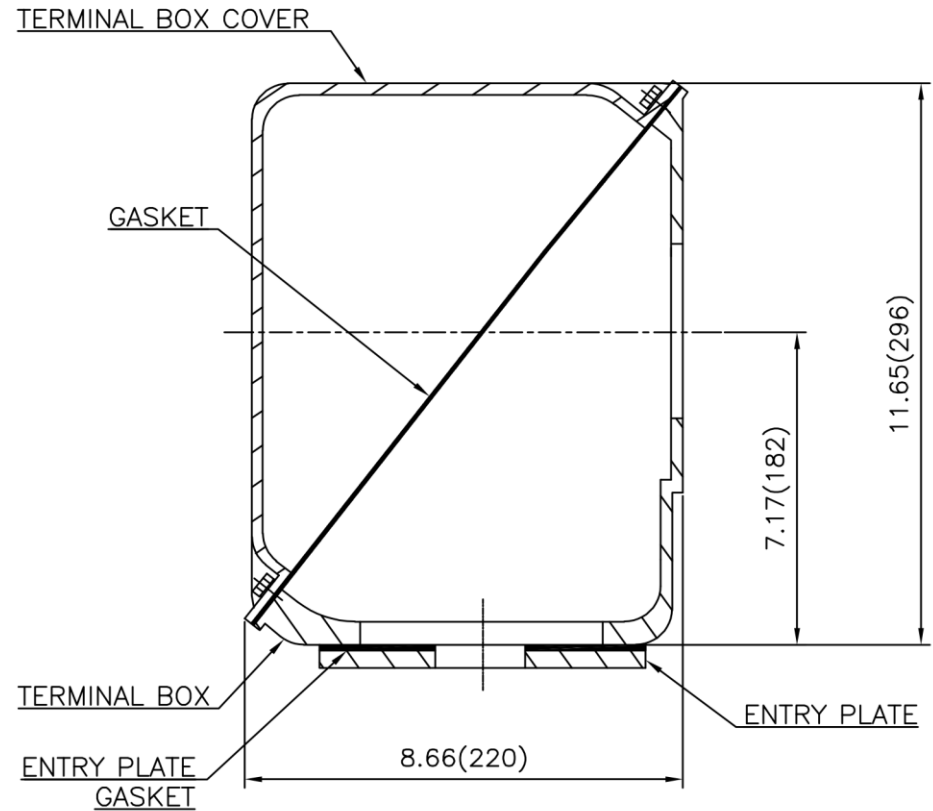
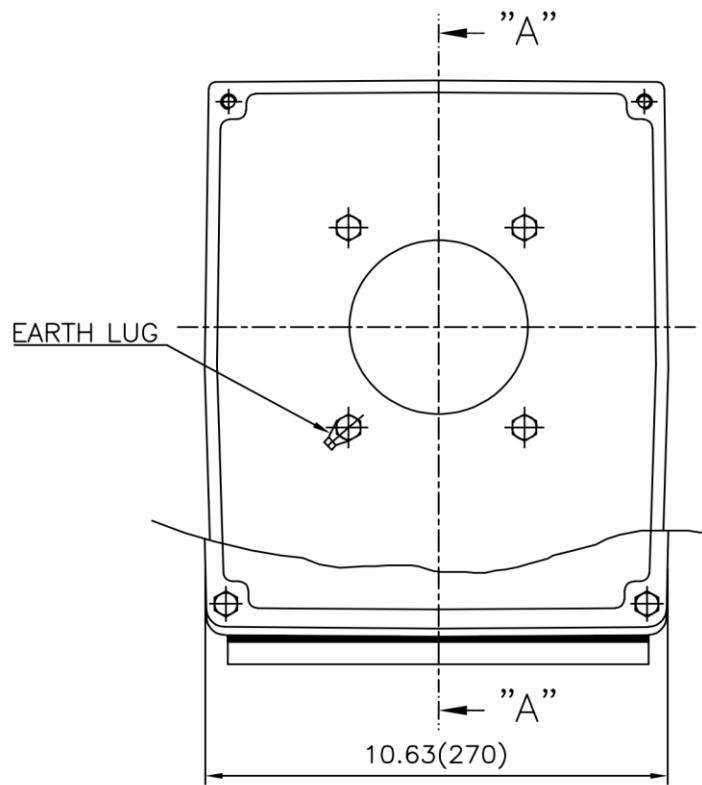
## NOTE

1. Dimension "D" tolerance : +0.00inch - 0.03inch (143T-365T) ; +0.000inch - 0.06inch (404T-449T)
2. Dimension "U" tolerance : +0.000inch - 0.005inch (143T-215T), +0.000inch - 0.001inch (254T-449T)
3. Dimension "R" tolerance : +0.000inch - 0.015inch

|         |         |          |            |         |                 |                |
|---------|---------|----------|------------|---------|-----------------|----------------|
| APPD BY | S.K.HAN | UNIT     | INCH       | SUBJECT | 405T            | DWG SIZE       |
| Q.P CHK | I.K.KIM | SCALE    | NONE       | TITLE   |                 | A4 ( 1:1 )     |
| CHKD BY | R.G.KIM | PROJEC'N | 3rd Angle  |         |                 |                |
| DSND BY | B.Y.KIM | DATE     | 2019.06.05 |         |                 |                |
|         |         |          |            | REF. NO | 350A1116AA      | Sheet No. of   |
|         |         |          |            | DWG NO  | LM-T1405B3PL001 | Revision No. 0 |

# Cls. I&II, Div. 2

## IEEE 841



SEC. "A" - "A"

|      |       |
|------|-------|
| ▽    | 50S   |
| ▽▽   | 12.5S |
| ▽▽▽  | 3.2S  |
| ▽▽▽▽ | 0.4S  |

| REV | DATE | CONTENTS | REV'D BY | CHK'D BY | CHK'D BY | APP'D BY |
|-----|------|----------|----------|----------|----------|----------|
| 1   |      |          |          |          |          |          |
| 2   |      |          |          |          |          |          |
| 3   |      |          |          |          |          |          |
| 4   |      |          |          |          |          |          |

| 일반가공공차 |      | 일반계관공차   |      |
|--------|------|----------|------|
| 1-4    | ±0.1 | 6-30     | ±0.5 |
| 4-18   | ±0.2 | 30-120   | ±0.8 |
| 18-63  | ±0.3 | 120-315  | ±1.2 |
| 63-250 | ±0.5 | 315-1000 | ±2.0 |
| 250-   | ±0.8 | 1000-    | ±3.0 |

| Q'TY     | DESCRIPTION | MATERIAL | DIMENSION  | WEIGHT  | PART NO.                | REMARK       | NO. |
|----------|-------------|----------|------------|---------|-------------------------|--------------|-----|
| APP'D BY | S.Y.KIM     | UNIT     | inch(mm)   | SUBJECT | FR. 400-440 (CAST IRON) | DWG SIZE     |     |
| CHK'D BY |             | SCALE    | 1/1.2      | TITLE   | MAIN TERMINAL BOX ASS'Y |              |     |
| CHK'D BY | R.G.KIM     | PROJEC'N | 3rd Angle  | REF. NO |                         | Sheet No.    | of  |
| DSND BY  | 네슬피         | DATE     | 2023-10-19 | DWG NO  | 3M-248451               | Revision No. | 0   |

