

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.                                    | HES25-12-324TC                                                             | Item No.                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                         | Rev. No. | [      ] |  |  |
| Project Name                                   |                                                                            | Project No.              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                         | Quantity | sets     |  |  |
| <b>GENERAL SPECIFICATION</b>                   |                                                                            |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                | <b>PERFORMANCE DATA</b> |          |          |  |  |
| Frame Size                                     | 324TC                                                                      |                          | Rated Output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 18.5 kW        |                         | 25 HP    |          |  |  |
| Type                                           | PJP                                                                        |                          | Number of Poles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 6              |                         |          |          |  |  |
| 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      | 25.0 A                  | 31.2 A   | 62.4 A   |  |  |
| Insulation Class                               | F                                                                          |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Locked-rotor** | 720 %                   | 720 %    | 720 %    |  |  |
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | 90.0 %                  |          |          |  |  |
| Altitude                                       | Less than 1,000 meter                                                      |                          | 75% Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | 92.0 %                  |          |          |  |  |
| Relative Humidity                              | Less than 80 %                                                             |                          | 100% Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 93.0 %                  |          |          |  |  |
| Ambient Temp.                                  | 40 deg. C (Max.)                                                           |                          | Power Factor(p.u)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                         |          |          |  |  |
| Duty Type                                      | Continuous ( S1 )                                                          |                          | 50% Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | 0.650                   |          |          |  |  |
| Service Factor                                 | 1.15                                                                       |                          | 75% Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | 0.750                   |          |          |  |  |
| Mounting                                       | B35                                                                        |                          | 100% Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 0.800                   |          |          |  |  |
| Bearing                                        | Type                                                                       | Anti-Friction            | Speed at Full Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                | 1175 r.p.m              |          |          |  |  |
|                                                | DE/N-DE                                                                    | 6313ZC3 / 6212ZC3        | Torque                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |                         |          |          |  |  |
|                                                | Lubricant                                                                  | Grease(Polyrex-EM)       | Full Load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 110.92 lb.ft            |          |          |  |  |
| External Thrust                                | Not applicable                                                             |                          | Locked-rotor**                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                | 170 %                   |          |          |  |  |
| Coupling Method                                | <input checked="" type="checkbox"/> Direct <input type="checkbox"/> V-belt |                          | Breakdown**                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                | 210 %                   |          |          |  |  |
| Shaft Extension                                | Single                                                                     |                          | Moment of Inertia (J)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                         |          |          |  |  |
| Terminal                                       | Main                                                                       | Cast Iron                | Load(Max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                | 389.183 lb.ft2          |          |          |  |  |
| Box                                            | Aux.                                                                       | No                       | Motor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                | 8.094 lb.ft2            |          |          |  |  |
|                                                | Location                                                                   | Refer to Outline Drawing | Sound Pressure Level (No-load & mean value at 1m from motor)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                         |          |          |  |  |
| Application                                    |                                                                            |                          | 68 dB(A)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                         |          |          |  |  |
| Area classification                            | Hazardous                                                                  |                          | Vibration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 3.8 mm/sec (peak)       |          |          |  |  |
| Type of Ex-Protection                          | Class I&II, Division 2                                                     |                          | Permissible number of consecutive starts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | Cold                    |          | 3 times  |  |  |
| Applicable Standard                            | NEMA MG1, CSA C390                                                         |                          | 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.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                         |          |          |  |  |
|                                                |                                                                            |                          | B35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                | LM-T2324C4PLV23         |          | 570 lb.  |  |  |
|                                                |                                                                            |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                         |          |          |  |  |
|                                                |                                                                            |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                         |          |          |  |  |
| <b>SPARE PARTS</b>                             |                                                                            |                          | <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 : T3C(160°C) at sine wave |                |                         |          |          |  |  |
|                                                |                                                                            |                          | 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.

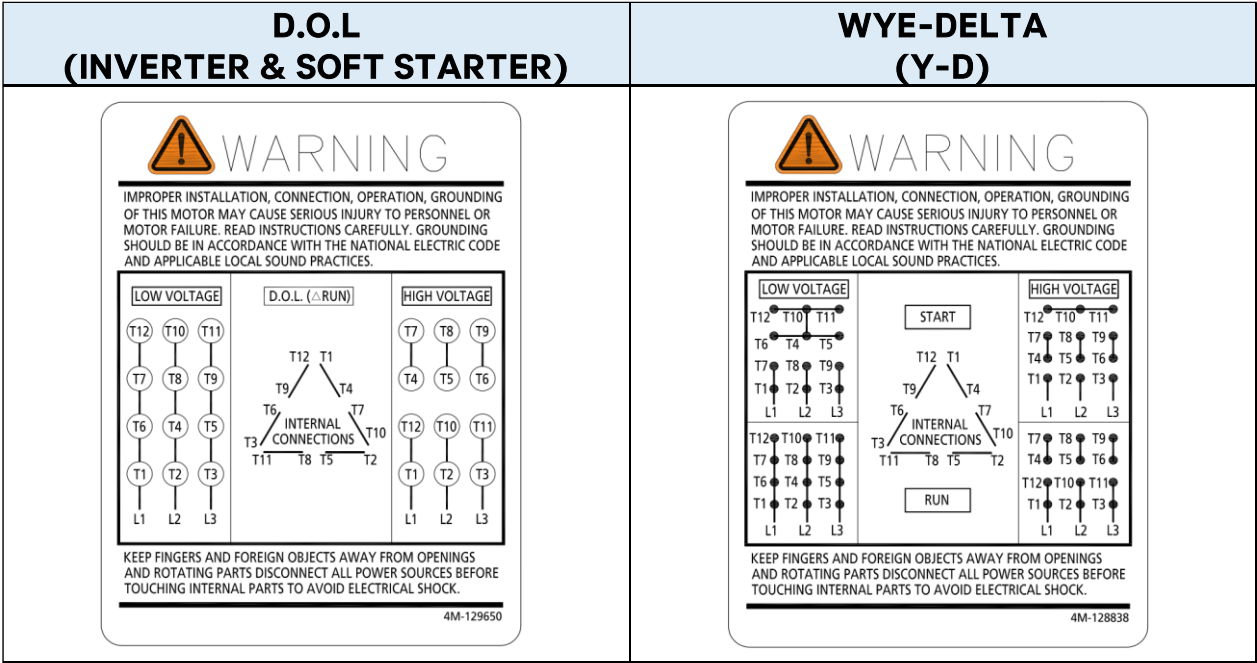
\*\* Data is based on rated voltage & frequency and is expressed as a percentage of full-load value.

MAIN NAMEPLATE

4.72

|                                 |                                                                                |         |                                                     |                                                  |                                                            |             |                     |                |            |
|---------------------------------|--------------------------------------------------------------------------------|---------|-----------------------------------------------------|--------------------------------------------------|------------------------------------------------------------|-------------|---------------------|----------------|------------|
| 25HP                            |                                                                                | 6P      | 230/460V                                            | Cat. No.                                         | HES25-12-324TC                                             |             |                     |                |            |
| Model                           | HLS324PR335V                                                                   |         |                                                     | INS. Class                                       | F                                                          | HD-F1       | Amps                | 62.4/31.2A     |            |
| Type                            | HLS                                                                            | Duty    | CONT                                                | Code                                             | J                                                          | Amb.        | 40°C                | Hertz          | 60Hz       |
| Frame                           | 324TC                                                                          | Encl.   | TEFC                                                | S.F.                                             | 1.15                                                       | RPM         | 1175                | NEMA Nom. Eff. | 93.0%      |
| Bearing                         | Drive                                                                          | 6313ZC3 |                                                     |                                                  | S.F.1.25 (When 100HP or less, Temp Rise F & Non-Hazardous) |             |                     | 3/4 Eff.       | 92.0%      |
|                                 | Opp.                                                                           | 6212ZC3 |                                                     |                                                  | S.F.1.00 (10:1 C.T., 20:1 V.T., NEMA-MG1 Part31)           |             |                     | NEMA Design    | B Torque   |
| Usable at                       | 50Hz 25HP 380V 41.4A 980rpm S.F.: 1.15 Eff.: 91.7% Code: H                     |         |                                                     |                                                  |                                                            |             |                     |                |            |
|                                 | 50Hz 25HP 400/415V 39.9/39.0A 980/985rpm S.F.: 1.15 Eff.: 91.7/91.7% Code: J/K |         |                                                     |                                                  |                                                            |             |                     |                |            |
| 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)    | T3 (200°C) |
| No.                             | -                                                                              |         |                                                     | Date                                             | -                                                          |             |                     | Weight         | 570 lb     |
| 4M-136024<br>MARINE DUTY IEEE45 |                                                                                |         |                                                     | Made in Vietnam H4<br>Designed By HYUNDAI, Korea |                                                            |             | HD HYUNDAI ELECTRIC |                |            |

WIRING DIAGRAM



|                     |         |          |            |              |                                                   |          |                       |           |    |
|---------------------|---------|----------|------------|--------------|---------------------------------------------------|----------|-----------------------|-----------|----|
| APPD BY             | S.Y.KIM | UNIT     | INCH       | SUBJECT      | CSA Class I, Division2 Severe Duty (HES, 254-326) | DWG SIZE | A4 ( 1:1 )            |           |    |
| CHKD BY             | I.K.KIM | SCALE    | NONE       | TITLE        | NAMEPLATE DRAWING                                 | REF. NO  | 4M-136024 / 4M-129650 |           |    |
| CHKD BY             | R.G.KIM | PROJEC'N | 3rd Angle  |              |                                                   |          |                       | Sheet No. | of |
| DSND BY             | S.H.LEE | DATE     | 2024.06.07 |              |                                                   |          |                       |           |    |
| HD HYUNDAI ELECTRIC |         |          |            | Revision No. |                                                   | 0        |                       |           |    |

Type : PJP

18.5kW 25HP

6 P

60 Hz

Full Load Torque : 110.92 lb.ft

Speed at Full Load : 1175 RPM

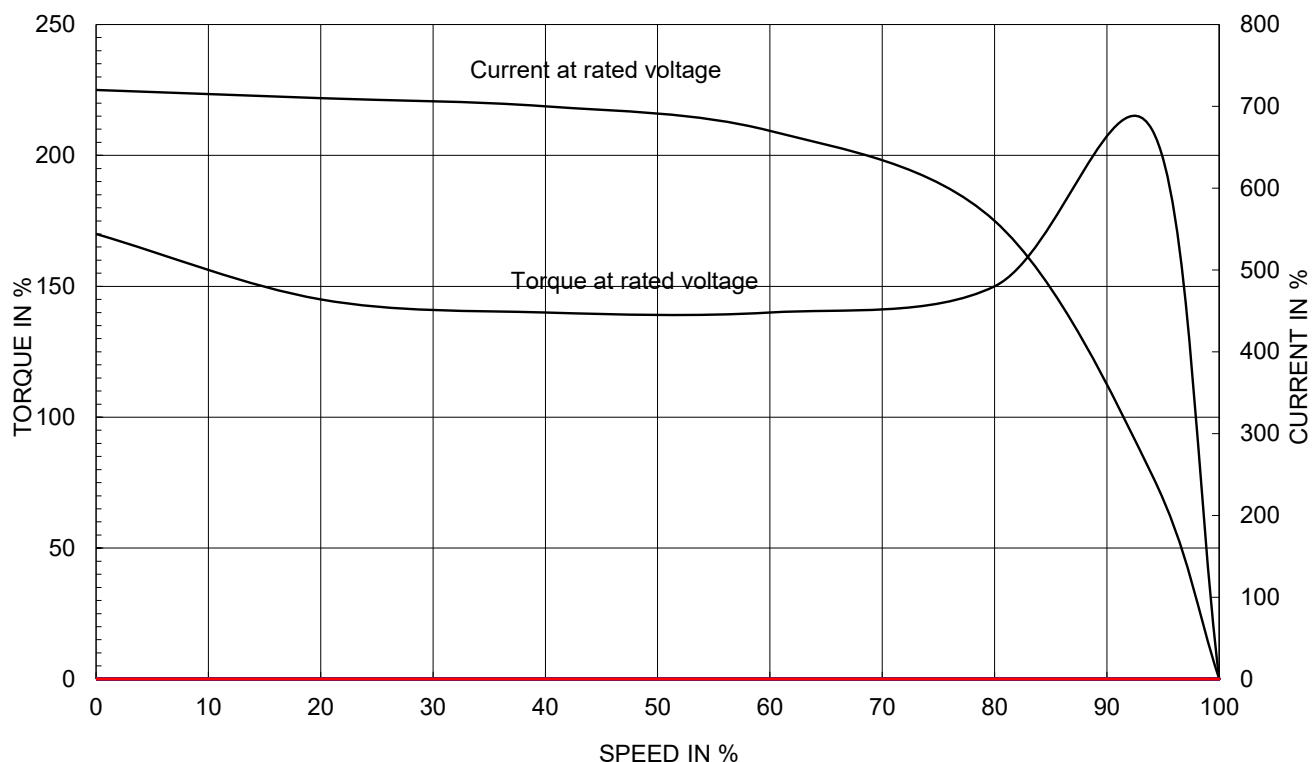
Load moment of Inertia (J) : 389.183 lb.ft2

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

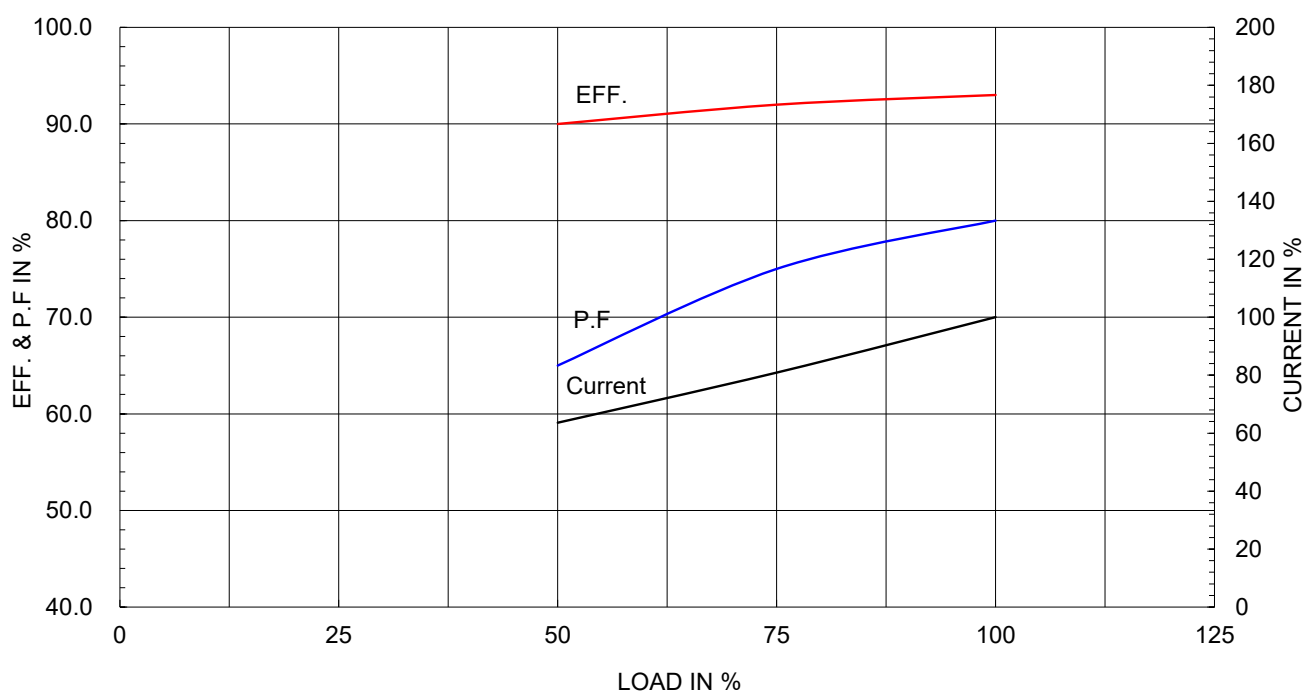
Motor moment of Inertia (J) : 8.094 lb.ft2

|                   |       |       |       |
|-------------------|-------|-------|-------|
| Full Load Current | 25.0A | 31.2A | 62.4A |
|-------------------|-------|-------|-------|

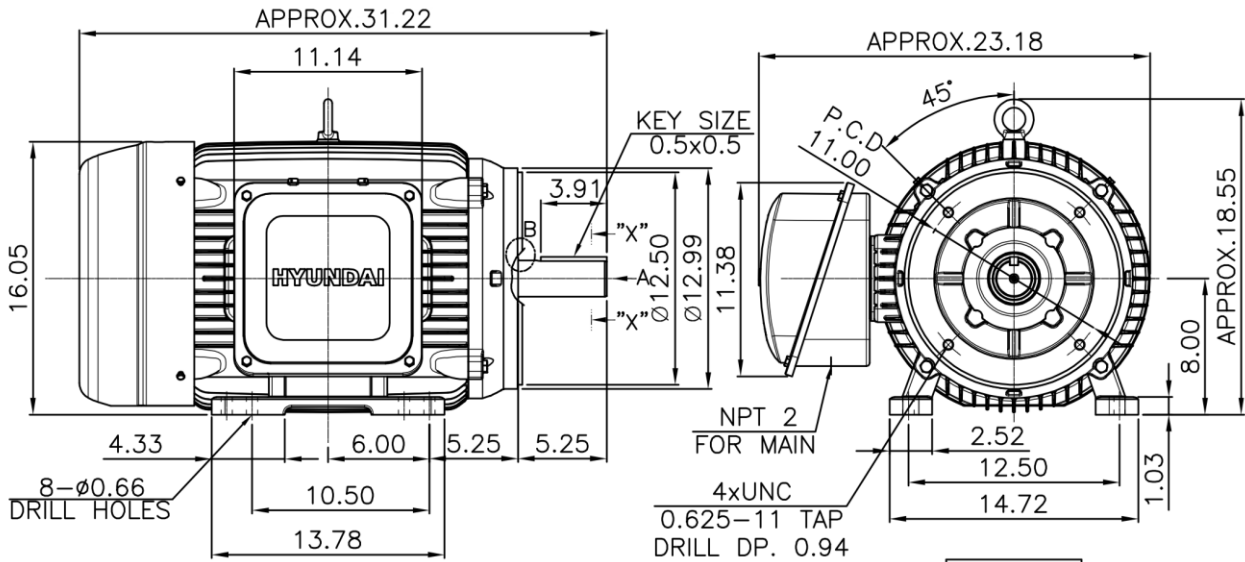
## SPEED VS TORQUE & CURRENT CURVE



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



| 1    |       |     | 2    |          | 3 |         | 4       |         |         |
|------|-------|-----|------|----------|---|---------|---------|---------|---------|
| ▽    | 50S   | REV | DATE | CONTENTS |   | REVD BY | CHKD BY | CHKD BY | APPD BY |
| ▽▽   | 12.5S |     |      |          |   |         |         |         |         |
| ▽▽▽  | 3.2S  |     |      |          |   |         |         |         |         |
| ▽▽▽▽ | 0.4S  |     |      |          |   |         |         |         |         |



#### NOTE

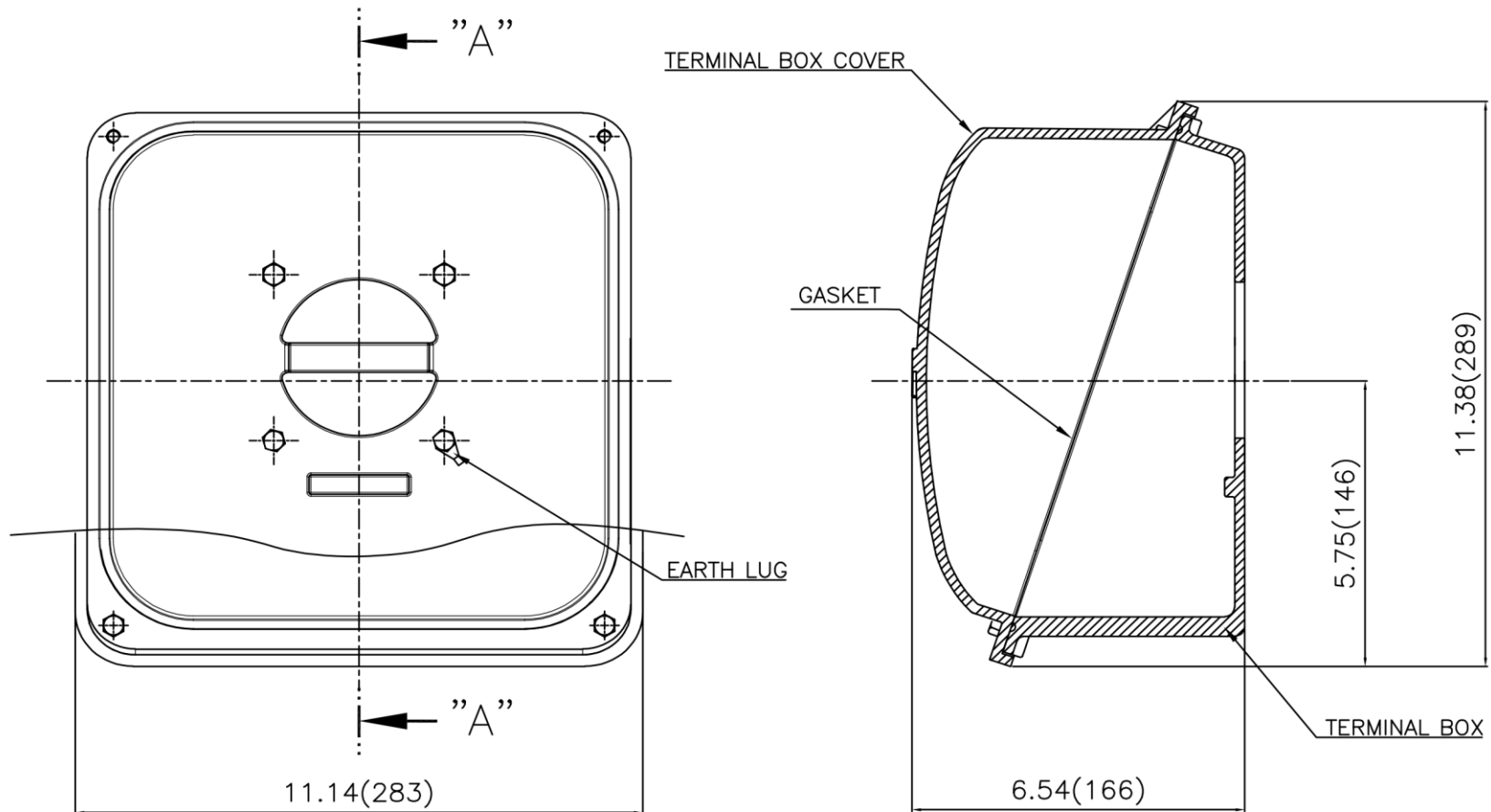
[TOLERANCE]

1. CENTER HEIGHT : +0.00inch - 0.03inch
2. SHAFT DIAMETER : +0.000inch - 0.001inch
3. KEYWAY DEPTH : +0.000inch - 0.015inch

|         |         |          |            |         |                 |                |
|---------|---------|----------|------------|---------|-----------------|----------------|
| APPD BY | S.Y.KIM | UNIT     | inch       | SUBJECT | NEMA 324TC      | DWG SIZE       |
| CHKD BY | R.G.KIM | SCALE    | 1/11       | TITLE   |                 | A4 ( 1:11 )    |
| CHKD BY |         | PROJEC'N | 3rd Angle  |         |                 |                |
| DSND BY | 주유림     | DATE     | 2021-04-29 |         |                 |                |
|         |         |          |            | REF. NO | .               | Sheet No. of   |
|         |         |          |            | DWG NO  | LM-T2324C4PLV23 | Revision No. 0 |

# Cls. I&II, Div. 2

## IEEE 841



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

| REV | DATE | CONTENTS | REVD BY | CHKD BY | CHKD BY | APPD BY |
|-----|------|----------|---------|---------|---------|---------|
| 1   |      |          |         |         |         |         |
| 2   |      |          |         |         |         |         |
| 3   |      |          |         |         |         |         |
| 4   |      |          |         |         |         |         |
| 5   |      |          |         |         |         |         |

| Q'TY    | DESCRIPTION | MATERIAL | DIMENSION  | WEIGHT  | PART NO.            | REMARK       | NO. |
|---------|-------------|----------|------------|---------|---------------------|--------------|-----|
| APPD BY | S.Y.KIM     | UNIT     | inch(mm)   | SUBJECT | FR. 320 (CAST IRON) | DWG SIZE     |     |
| CHKD BY |             | SCALE    | 1/2.5      | TITLE   | TERMINAL BOX ASS'Y  | A3 (1:2.5)   |     |
| CHKD BY | R.G.KIM     | PROJEC'N | 3rd Angle  | REF. NO |                     | Sheet No.    | of  |
| DSND BY | 네슬의         | DATE     | 2023-10-19 | DWG NO  | 3M-248459           | Revision No. | 0   |