

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.                                    | HSDE250-12-L449TC-IBSH                                                     | Item No.                 |                                                              |                         | Rev. No.             | [      ] |          |
| Project Name                                   |                                                                            | Project No.              |                                                              |                         | Quantity             | sets     |          |
| <b>GENERAL SPECIFICATION</b>                   |                                                                            |                          |                                                              | <b>PERFORMANCE DATA</b> |                      |          |          |
| Frame Size                                     | L449TC                                                                     |                          | Rated Output                                                 | 190 kW      250 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               | 237.1 A              | 296.3 A  | 592.7 A  |
| Insulation Class                               | F                                                                          |                          |                                                              | Locked-rotor**          | 680 %                | 680 %    | 680 %    |
| Temp. Rise at full load (by resistance method) |                                                                            |                          | Efficiency                                                   |                         |                      |          |          |
|                                                | at 1.0 S.F                                                                 | 80 deg. C                | 50% Load      92.8 %                                         |                         |                      |          |          |
| Motor Location                                 | <input type="checkbox"/> Indoor <input type="checkbox"/> Outdoor           |                          | 75% Load      94.8 %                                         |                         |                      |          |          |
| Altitude                                       | Less than 1,000 meter                                                      |                          | 100% Load      95.8 %                                        |                         |                      |          |          |
| Relative Humidity                              | Less than 80 %                                                             |                          | Power Factor(p.u)                                            |                         |                      |          |          |
| Ambient Temp.                                  | 40 deg. C (Max.)                                                           |                          | 50% Load      0.690                                          |                         |                      |          |          |
| Duty Type                                      | Continuous ( S1 )                                                          |                          | 75% Load      0.790                                          |                         |                      |          |          |
| Service Factor                                 | 1.15                                                                       |                          | 100% Load      0.840                                         |                         |                      |          |          |
| Mounting                                       | B35                                                                        |                          | Speed at Full Load                                           | 1185 r.p.m              |                      |          |          |
| Bearing                                        | Type                                                                       | Anti-Friction            | Torque                                                       |                         |                      |          |          |
|                                                | DE/N-DE                                                                    | 6322C3 / 6318C3-INS.     | Full Load      1129.57 lb.ft                                 |                         |                      |          |          |
|                                                | Lubricant                                                                  | Grease(Polyrex-EM)       | Locked-rotor**      135 %                                    |                         |                      |          |          |
| External Thrust                                | Not applicable                                                             |                          | Breakdown**      200 %                                       |                         |                      |          |          |
| Coupling Method                                | <input checked="" type="checkbox"/> Direct <input type="checkbox"/> V-belt |                          | Moment of Inertia (J)                                        |                         |                      |          |          |
| Shaft Extension                                | Single                                                                     |                          | Load(Max.)      2,740.000 lb.ft2                             |                         |                      |          |          |
| Terminal                                       | Main                                                                       | Cast Iron                | Motor      158.295 lb.ft2                                    |                         |                      |          |          |
| Box                                            | Aux.                                                                       | Yes                      | Sound Pressure Level (No-load & mean value at 1m from motor) |                         |                      |          |          |
|                                                | Location                                                                   | Refer to Outline Drawing | 80 dB(A)                                                     |                         |                      |          |          |
| Application                                    |                                                                            |                          | Vibration      3.8 mm/sec (peak)                             |                         |                      |          |          |
| Area classification                            | Hazardous                                                                  |                          | Permissible number of                                        |                         |                      |          |          |
| Type of Ex-Protection                          | Class I&II, Division 2                                                     |                          | Cold      2 times                                            |                         |                      |          |          |
| Applicable Standard                            | NEMA MG1, CSA C390                                                         |                          | consecutive starts      Hot      1 time                      |                         |                      |          |          |
|                                                |                                                                            |                          | Paint                                                        | Munsell No.             | 4.0PB5.4/5.5(VL-451) |          |          |
| <b>ACCESSORIES</b>                             |                                                                            |                          | <b>SUBMITTAL DRAWING</b>                                     |                         |                      |          |          |
| *. Space Heater : 1EA/Motor                    |                                                                            |                          | Outline Dimension Drawing      \      Motor Weight(Approx.)  |                         |                      |          |          |
|                                                |                                                                            |                          | B35      LM-T044XC4UE001      2990 lb.                       |                         |                      |          |          |
|                                                |                                                                            |                          |                                                              |                         |                      |          |          |
|                                                |                                                                            |                          |                                                              |                         |                      |          |          |
|                                                |                                                                            |                          |                                                              |                         |                      |          |          |
|                                                |                                                                            |                          | <b>REMARK</b>                                                |                         |                      |          |          |
|                                                |                                                                            |                          | 1. Premium efficiency according to NEMA MG1                  |                         |                      |          |          |
|                                                |                                                                            |                          | 2. Inverter Duty @ 1.0 Service Factor & F Temperature rise   |                         |                      |          |          |
|                                                |                                                                            |                          | - . 10:1 VT (20:1 VT at 50% load)                            |                         |                      |          |          |
|                                                |                                                                            |                          | - . 10:1 CT (1 hour duty, 4:1 continuous)                    |                         |                      |          |          |
|                                                |                                                                            |                          | - . CHp up to 1.5 times base speed, NEMA MG1 Part31          |                         |                      |          |          |
|                                                |                                                                            |                          | 3. NDE side : Insulated bearing                              |                         |                      |          |          |
|                                                |                                                                            |                          | 4. CSA Certification                                         |                         |                      |          |          |
|                                                |                                                                            |                          | - . Class I, Division 2, Group A, B, C & D                   |                         |                      |          |          |
|                                                |                                                                            |                          | - . Class II, Division 2 Group F & G                         |                         |                      |          |          |
|                                                |                                                                            |                          | 5. Shaft material : AISI4140                                 |                         |                      |          |          |
|                                                |                                                                            |                          | 6. Temp. code : T3(200°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

|                    |                                                                                  |             |                             |                  |                                                  |      |           |                     |          |
|--------------------|----------------------------------------------------------------------------------|-------------|-----------------------------|------------------|--------------------------------------------------|------|-----------|---------------------|----------|
| 250HP              |                                                                                  | 6P          | 460V                        | Cat. No.         | HSDE250-12-L449TC-IBSH                           |      |           |                     |          |
| Model              | LATER                                                                            |             |                             | INS. Class       | F                                                |      | Amps      | 296.3A              |          |
| Type               | PJP                                                                              | Duty        | CONT                        | Code             | H                                                | Amb. | 40°C      | Hertz               | 60Hz     |
| Frame              | L449TC                                                                           | Encl.       | TEFC                        | S.F.             | 1.15                                             | RPM  | 1185      | NEMA Nom. Eff.      | 95.8%    |
| Bearing            | Drive                                                                            | 6322C3      |                             |                  | S.F.1.00 (10:1 C.T., 20:1 V.T., NEMA-MG1 Part31) |      |           | 3/4 Eff.            | 94.8%    |
|                    | Opp.                                                                             | 6318C3-INS. |                             |                  |                                                  |      |           | NEMA Design         | B Torque |
| Usable at          | 50Hz 200HP 380V 283.8A 985rpm S.F.: 1.0 Eff.: 95.6% Code: H                      |             |                             |                  |                                                  |      |           |                     |          |
|                    | 50Hz 200HP 400/415V 283.1/287.2A 986/987rpm S.F.: 1.0 Eff.: 95.6/95.6% Code: J/J |             |                             |                  |                                                  |      |           |                     |          |
| CSA Certified for  | CLASS I, Div. 2, Gr. A, B, C & D<br>CLASS I, Zone 2, Gr. IIA, IIB, & IIC         |             | CLASS II, Div. 2, Gr. F & G |                  | Temp. Code<br>(sine wave)                        |      | Frame     | L440FR - 500FR      |          |
|                    |                                                                                  |             |                             |                  |                                                  |      | Amb. 40°C | T3 (200°C)          |          |
|                    |                                                                                  |             |                             |                  |                                                  |      | Amb. 55°C | T3 (200°C)          |          |
| No.                | -                                                                                |             |                             | Date             | -                                                |      |           | Weight              | 2990 lb  |
| 4M-136053          |                                                                                  |             |                             | Made in Korea H1 |                                                  |      |           | HD HYUNDAI ELECTRIC |          |
| MARINE DUTY IEEE45 |                                                                                  |             |                             |                  |                                                  |      |           |                     |          |

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WIRING DIAGRAM

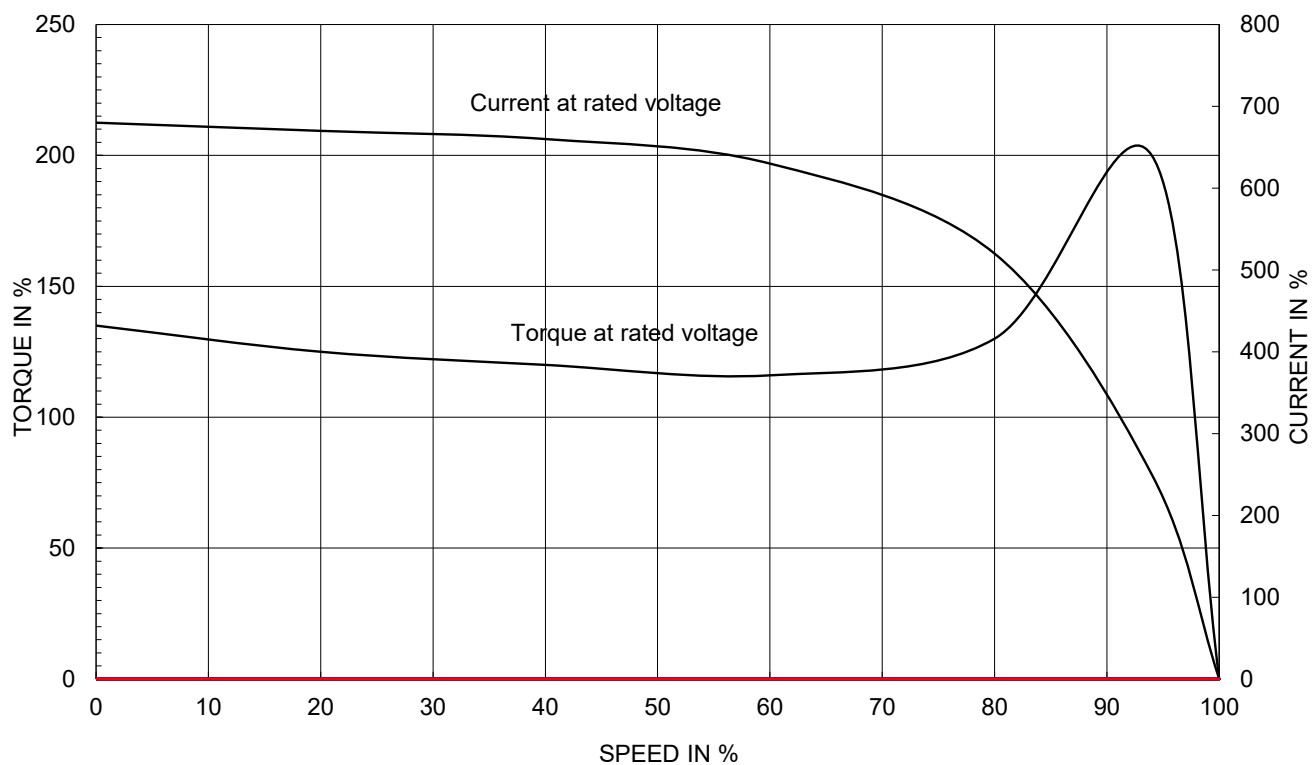
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>D.O.L<br/>(INVERTER &amp; SOFT STARTER)</b></p> <p><b>WARNING</b></p> <p>IMPROPER INSTALLATION, CONNECTION, OPERATION, GROUNDING OF THIS MOTOR MAY CAUSE SERIOUS INJURY TO PERSONNEL OR MOTOR FAILURE. READ INSTRUCTIONS CAREFULLY. GROUNDING SHOULD BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND APPLICABLE LOCAL SOUND PRACTICES.</p> <p><b>D.O.L. (ΔRUN)</b></p> <p>KEEP FINGERS AND FOREIGN OBJECTS AWAY FROM OPENINGS AND ROTATING PARTS DISCONNECT ALL POWER SOURCES BEFORE TOUCHING INTERNAL PARTS TO AVOID ELECTRICAL SHOCK.</p> <p>4M-129326</p> | <p><b>WYE-DELTA<br/>(Y-D)</b></p> <p><b>WARNING</b></p> <p>IMPROPER INSTALLATION, CONNECTION, OPERATION, GROUNDING OF THIS MOTOR MAY CAUSE SERIOUS INJURY TO PERSONNEL OR MOTOR FAILURE. READ INSTRUCTIONS CAREFULLY. GROUNDING SHOULD BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND APPLICABLE LOCAL SOUND PRACTICES.</p> <p><b>START</b></p> <p><b>RUN</b></p> <p>KEEP FINGERS AND FOREIGN OBJECTS AWAY FROM OPENINGS AND ROTATING PARTS DISCONNECT ALL POWER SOURCES BEFORE TOUCHING INTERNAL PARTS TO AVOID ELECTRICAL SHOCK.</p> <p>4M-128852</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                     |         |          |            |                            |                                                     |              |            |
|---------------------|---------|----------|------------|----------------------------|-----------------------------------------------------|--------------|------------|
| APPD BY             | S.Y.KIM | UNIT     | INCH       | SUBJECT                    | CSA Class I, Division2 Severe Duty (HSDE, L449-500) |              | DWG SIZE   |
| CHKD BY             | I.K.KIM | SCALE    | NONE       | TITLE<br>NAMEPLATE DRAWING |                                                     |              | A4 ( 1:1 ) |
| CHKD BY             | R.G.KIM | PROJEC'N | 3rd Angle  |                            |                                                     |              |            |
| DSND BY             | S.H.LEE | DATE     | 2024.06.07 |                            |                                                     |              |            |
| HD HYUNDAI ELECTRIC |         |          |            | REF. NO                    | 4M-136053 / 4M-129326                               | Sheet No.    | of         |
|                     |         |          |            | DWG NO                     | NP-HSDE250-12-L449TC-IBSH                           | Revision No. | 0          |

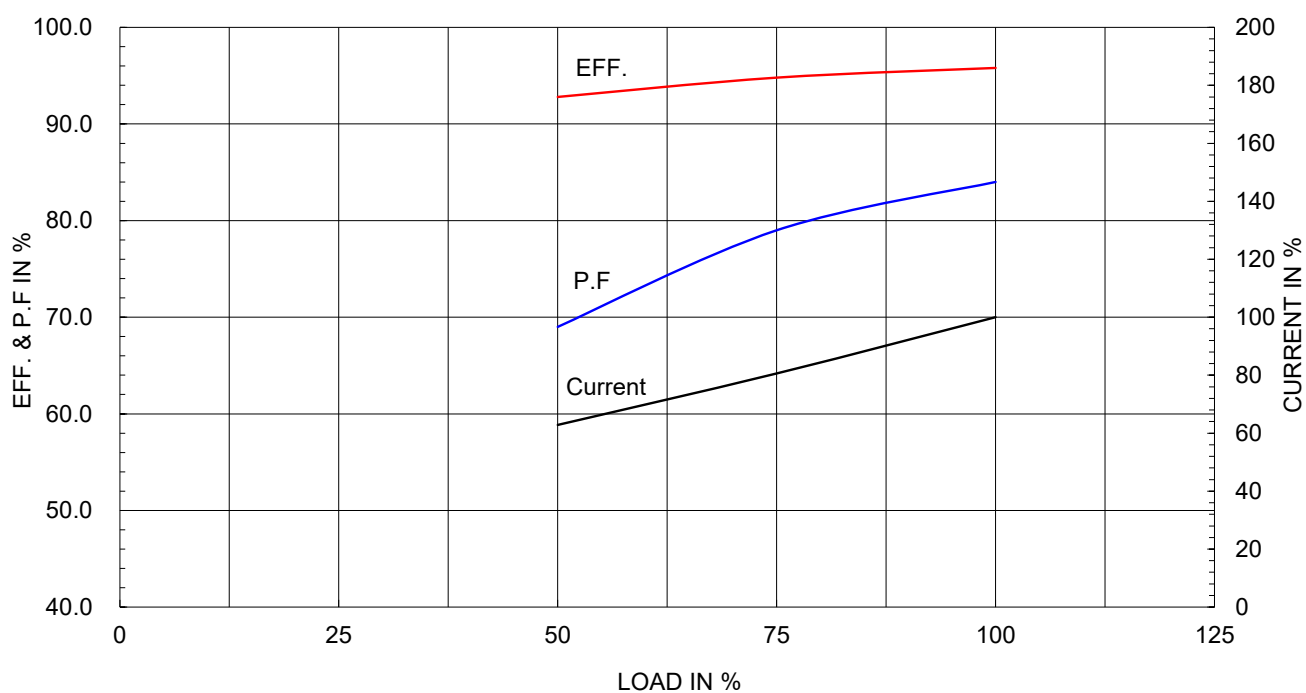
|                               |          |        |
|-------------------------------|----------|--------|
| Type :                        | PJP      |        |
| Full Load Torque :            | 1129.57  | lb.ft  |
| Load moment of Inertia (J) :  | 2740.000 | lb.ft2 |
| Motor moment of Inertia (J) : | 158.295  | lb.ft2 |

|                      |        |        |          |
|----------------------|--------|--------|----------|
| 190kW                | 250HP  | 6 P    | 60 Hz    |
| Speed at Full Load : |        |        | 1185 RPM |
| Rated Voltage        | 575V   | 460V   | 230V     |
| Full Load Current    | 237.1A | 296.3A | 592.7A   |

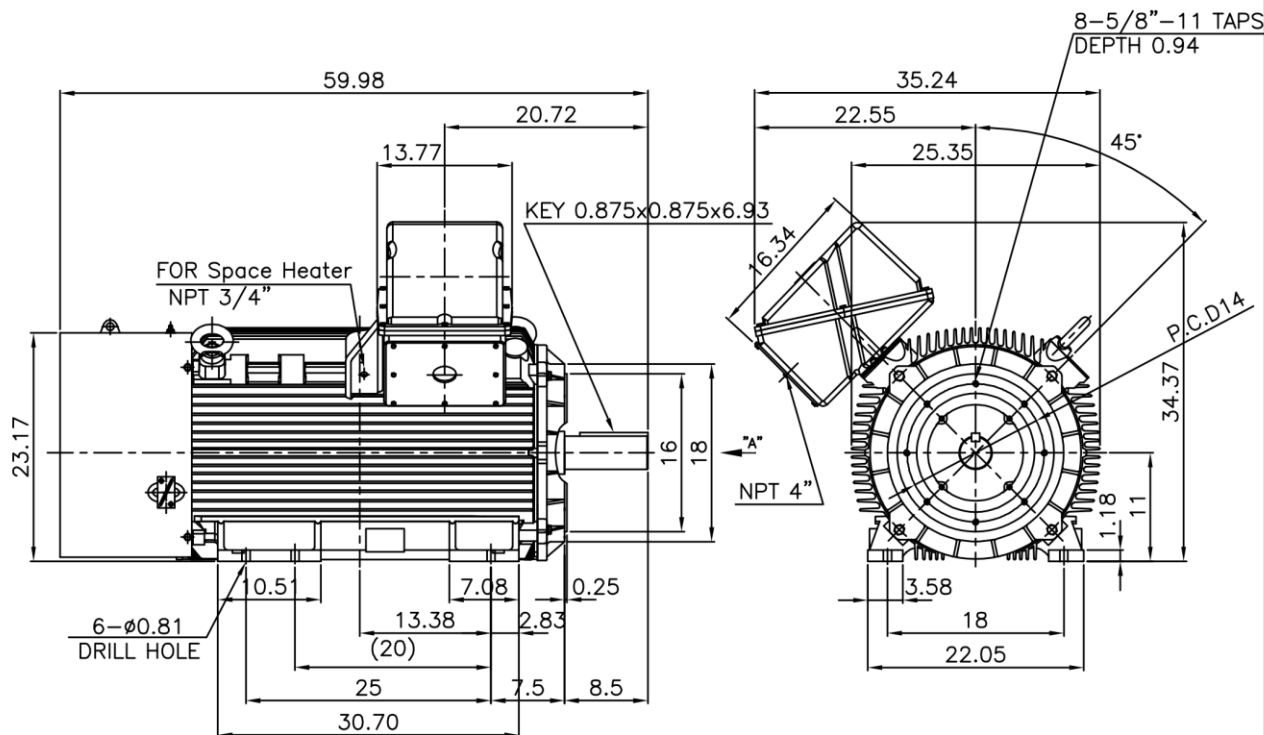
SPEED VS TORQUE &amp; CURRENT CURVE



OUTPUT VS EFF., P.F &amp; CURRENT CURVE



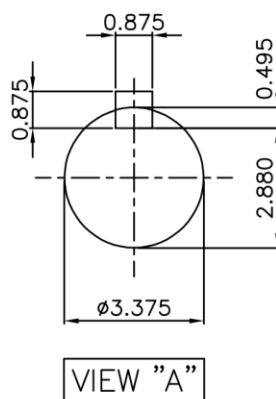
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|------|-------|-----|------|
| ▽    | 50S   | REV | DATE |
| ▽▽   | 12.5S |     |      |
| ▽▽▽  | 3.2S  |     |      |
| ▽▽▽▽ | 0.4S  |     |      |



## NOTE

1.TOLERANCE :

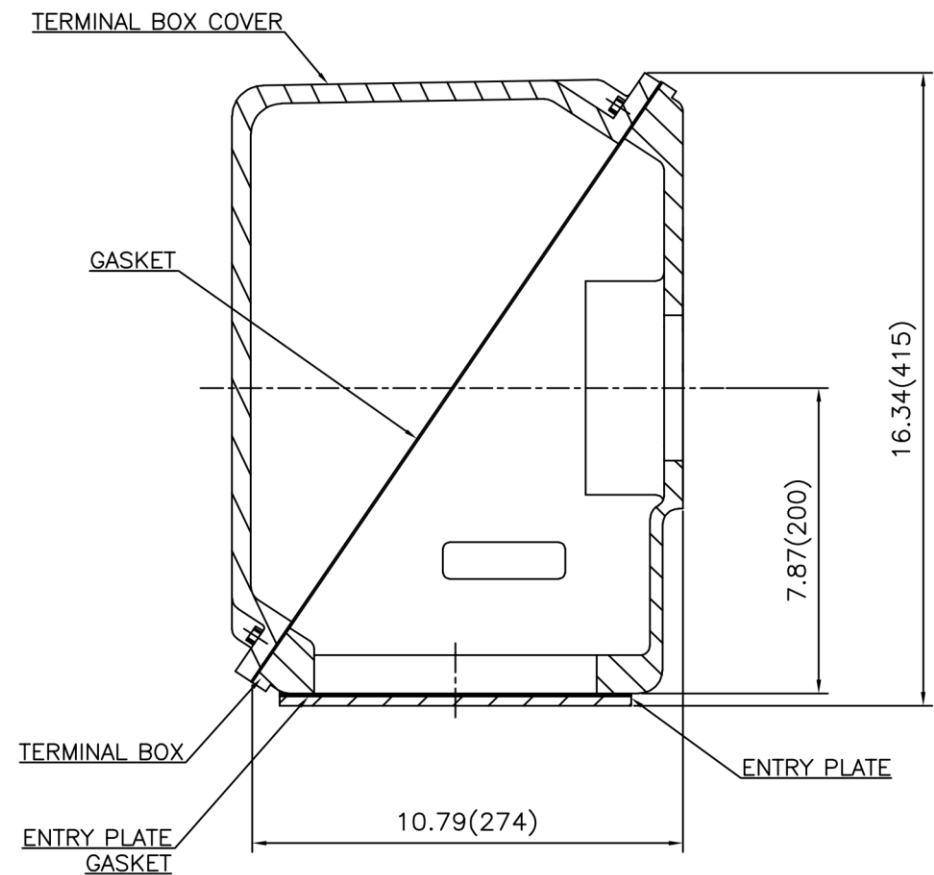
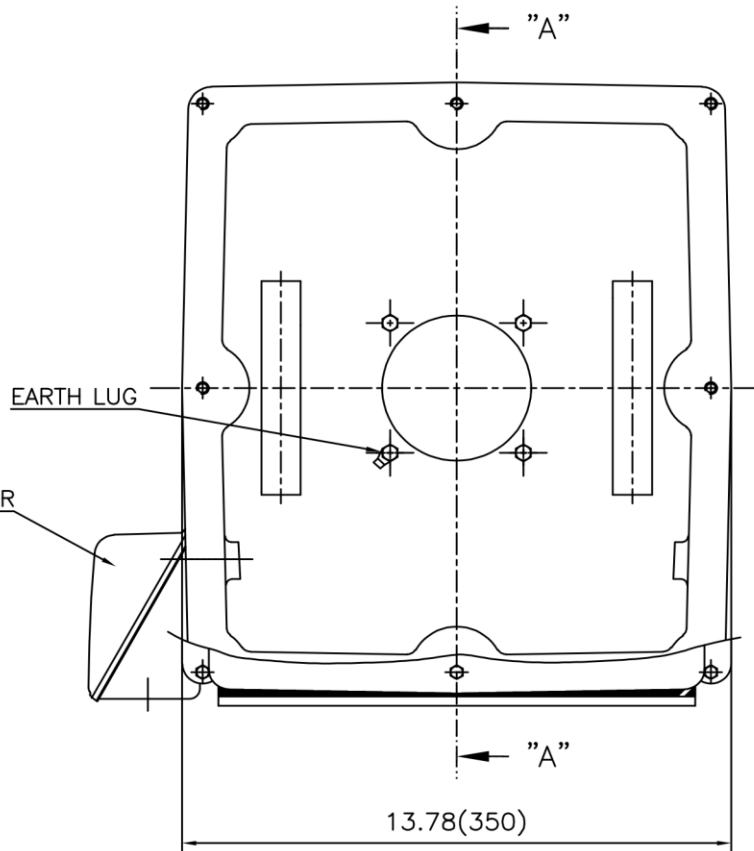
|                 |        |                  |
|-----------------|--------|------------------|
| CENTER HEIGHT   | 11     | +0.000<br>-0.060 |
| RABBET DIAMETER | Ø16    | 0<br>-0.005      |
| SHAFT DIAMETER  | Ø3.375 | +0.000<br>-0.001 |
| KEYWAY WIDTH    | 0.875  | +0.003<br>-0.000 |



|         |         |          |                 |         |                 |                |
|---------|---------|----------|-----------------|---------|-----------------|----------------|
| APPD BY | S.Y.KIM | UNIT     | INCH            | SUBJECT | Fr.L449TC       | DWG SIZE       |
| CHKD BY | O.J.KIM | SCALE    | 1/18            | TITLE   | OUTLINE         | A4 (1:18)      |
| CHKD BY | R.G.KIM | PROJEC'N | 3각법 (3rd Angle) |         |                 |                |
| DSND BY | H.K.LEE | DATE     | 2021-04-27      |         |                 |                |
|         |         |          |                 | REF. NO |                 | Sheet No. of   |
|         |         |          |                 | DWG NO  | LM-T044XC4UE001 | Revision No. 0 |

# Cls. I&II, Div. 2

## IEEE 841

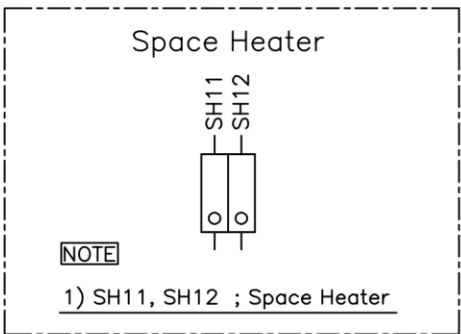
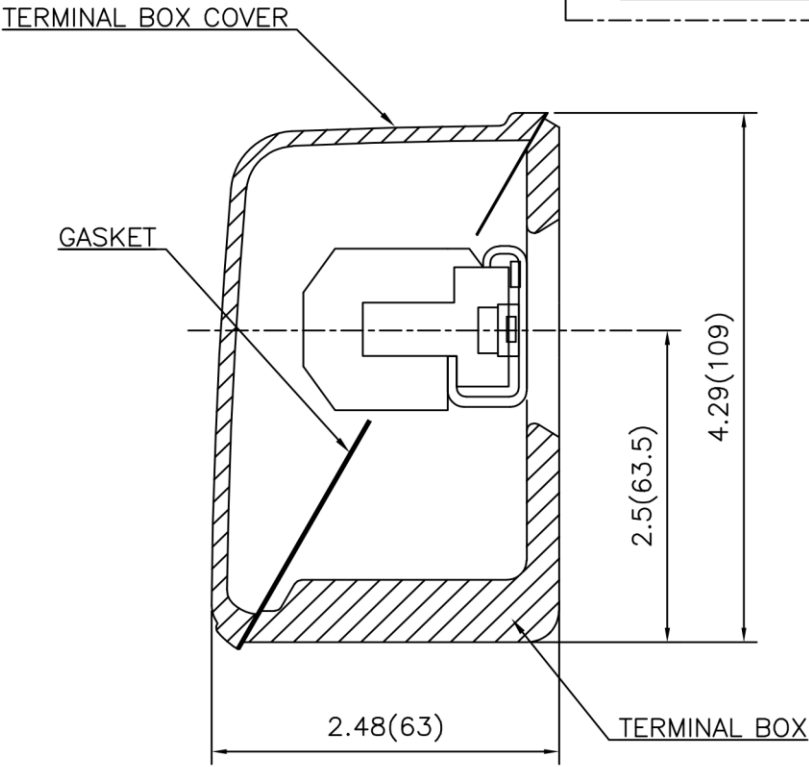
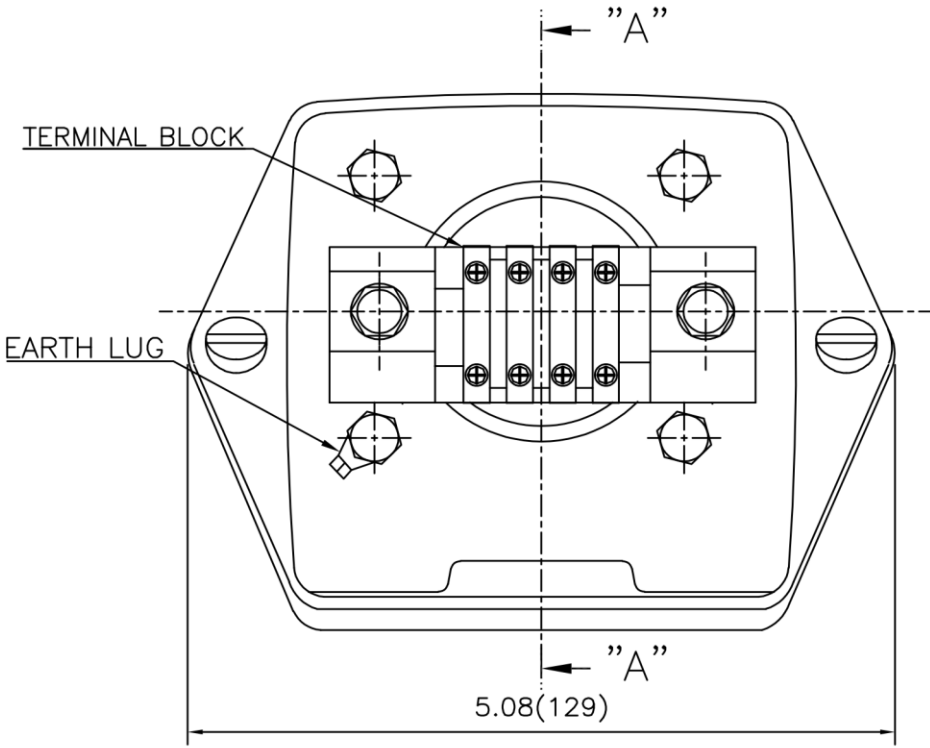


SEC. "A" - "A"

|         |         |          |            |         |                         |              |            |
|---------|---------|----------|------------|---------|-------------------------|--------------|------------|
| APPD BY | S.Y.KIM | UNIT     | inch(mm)   | SUBJECT | FR. L440 (CAST IRON)    | DWG SIZE     | A3 (1:3.5) |
| CHKD BY |         | SCALE    | 1/3.5      | TITLE   | MAIN TERMINAL BOX ASS'Y |              |            |
| CHKD BY | R.G.KIM | PROJEC'N | 3rd Angle  |         |                         |              |            |
| DSND BY | 내수위     | DATE     | 2023-10-19 | REF. NO |                         | Sheet No.    | of         |
|         |         |          |            | DWG NO  | 3M-248452               | Revision No. | 0          |
|         |         |          |            |         |                         |              |            |

| REV | DATE | CONTENTS | REVD BY | CHKD BY | CHKD BY | APPD BY |
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Cls. I&II, Div. 2  
IEEE 841



|         |         |          |            |                                  |                    |                |
|---------|---------|----------|------------|----------------------------------|--------------------|----------------|
| APPD BY | S.Y.KIM | UNIT     | inch(mm)   | SUBJECT                          | FR.180 (CAST IRON) | DWG SIZE       |
| CHKD BY |         | SCALE    | 1/1        | TITLE<br>SUB. TERMINAL BOX ASS'Y |                    |                |
| CHKD BY | R.G.KIM | PROJEC'N | 3rd Angle  |                                  |                    |                |
| DSND BY | 배승희     | DATE     | 2024-01-18 | REF. NO                          |                    | Sheet No. of   |
|         |         |          |            | DWG NO                           | 3M-165278          | Revision No. 0 |
|         |         |          |            |                                  |                    |                |

| REV | DATE | CONTENTS | REVD BY | CHKD BY | CHKD BY | APPD BY |
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