

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.	HSDE450-12-5009-IBBRSRSH	Item No.			Rev. No.	[]	
Project Name		Project No.			Quantity	sets	
GENERAL SPECIFICATION				PERFORMANCE DATA			
Frame Size	5009		Rated Output	335 kW		450 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	418.0 A	522.5 A	1,045.0 A
Insulation Class	F			Locked-rotor**	675 %	675 %	675 %
Temp. Rise at full load (by resistance method)			Efficiency				
	at 1.0 S.F	80 deg. C					
Motor Location	☐ Indoor ☐ Outdoor		50% Load 92.8 %				
Altitude	Less than 1,000 meter		75% Load 94.8 %				
Relative Humidity	Less than 80 %		100% Load 95.8 %				
Ambient Temp.	40 deg. C (Max.)		Power Factor(p.u)				
Duty Type	Continuous (S1)		50% Load 0.690				
Service Factor	1.15		75% Load 0.790				
Mounting	B3		100% Load 0.840				
Bearing	Type	Anti-Friction	Speed at Full Load 1185 r.p.m				
	DE/N-DE	NU324 / 6320C3-INS.	Torque				
	Lubricant	Grease(Polyrex-EM)	Full Load 1,991.6 lb.ft				
External Thrust	Not applicable		Locked-rotor** 135 %				
Coupling Method	☐ Direct ☐ V-belt		Breakdown** 220 %				
Shaft Extension	Single		Moment of Inertia (J)				
Terminal	Main	Cast Iron	Load(Max.) 4,666.000 lb.ft2				
Box	Aux.	Yes	Motor 264.270 lb.ft2				
	Location	Refer to Outline Drawing	Sound Pressure Level (No-load & mean value at 1m from motor)				
Application			83.5 dB(A)				
Area classification	Hazardous		Vibration 3.8 mm/sec (peak)				
Type of Ex-Protection	Class I&II, Division 2		Permissible number of Cold 2 times				
Applicable Standard	NEMA MG1, CSA C390		consecutive starts Hot 1 time				
ACCESSORIES *. B.T.D.(Pt 100 Ω at 0°C,Single) : 2EA/Motor *. W.T.D.(Pt 100 Ω at 0°C) : 2EA/Ph. *. Space Heater : 1EA/Motor			Paint Munsell No. 4.0PB5.4/5.5(VL-451)				
			SUBMITTAL DRAWING				
			Outline Dimension Drawing \ Motor Weight(Approx.)				
			B3	LM-T0509B3P7001	4030 lb.		
SPARE PARTS			REMARK				
			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 -. 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; Temp code : T3 -. Class II, Division 2 Group F & G; Temp code : T3 5. Shaft material : AISI4140				
			Date	DSND	CHKD	CHKD	APPD
			2024-07-13	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.

REV	DATE	CONTENTS	REVD BY	CHKD BY	CHKD BY	APPD BY

4.72

CROWN TRITON

Premium Efficiency AC 3 Phase Motor



450HP 6P 460V				Cat. No. HSDE450-12-5009-IBBRSRSH			
Model LATER				INS. Class F		Amps 522.5	
Type PJP		Duty CONT		Code G Amb. 40°C		Hertz 60Hz	
Frame 5009		Encl. TEFC		S.F. 1.15 RPM 1185		NEMA Nom. Eff. 95.8%	
Bearing		Drive NU324		S.F.1.00 (10:1 C.T., 20:1 V.T., NEMA-MG1 Part31)		3/4 Eff. 94.8%	
		Opp. 6320C3-INS.				NEMA Design B	
Usable at							
CSA Certified for	CLASS I, Div. 2, Gr. A, B, C & D CLASS I, Zone 2, Gr. IIA, IIB, & IIC		CLASS II, Div. 2, Gr. F & G		Temp. Code (sine wave)	Frame	L440FR - 500FR
						Amb. 40°C	T3 (200°C)
						Amb. 55°C	T3 (200°C)
No. -			Date -			Weight 4030 lb	

4M-136053

MARINE DUTY IEEE45

Made in Korea H1



APPD BY	S.Y.KIM	UNIT	INCH	SUBJECT	CSA Class 1, Division2 Severe Duty (HSDE ,L449-500)	DWG SIZE
CHKD BY	I.K.KIM	SCALE	NONE	TITLE 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-136053	Sheet No. of
				DWG NO	NP-HSDE450-12-5009-IBBRSRSH	Revision No. 0

Type : PJP

335kW 450HP 6 P 60 Hz

Full Load Torque : 1991.6 lb.ft

Speed at Full Load : 1185 RPM

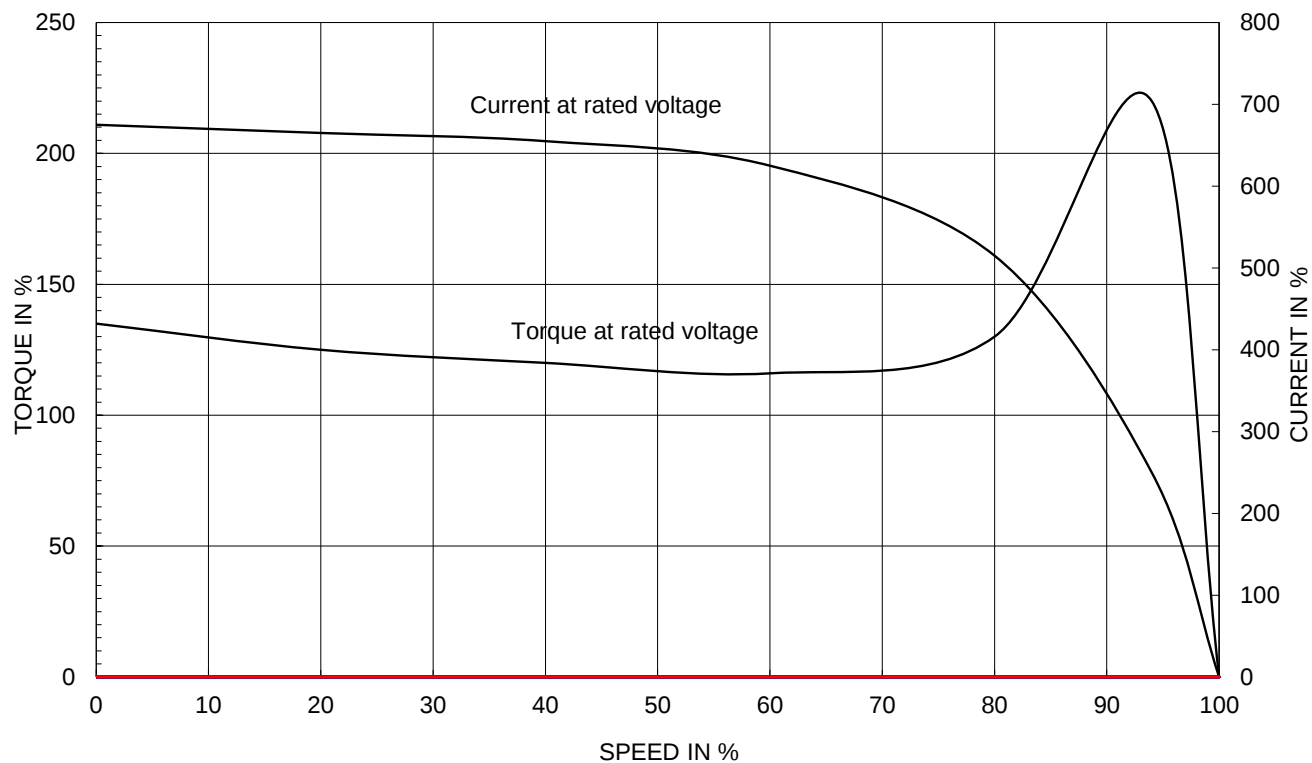
 Load moment of Inertia (J) : 4666.000 lb.ft²

Rated Voltage	575V	460V	230V
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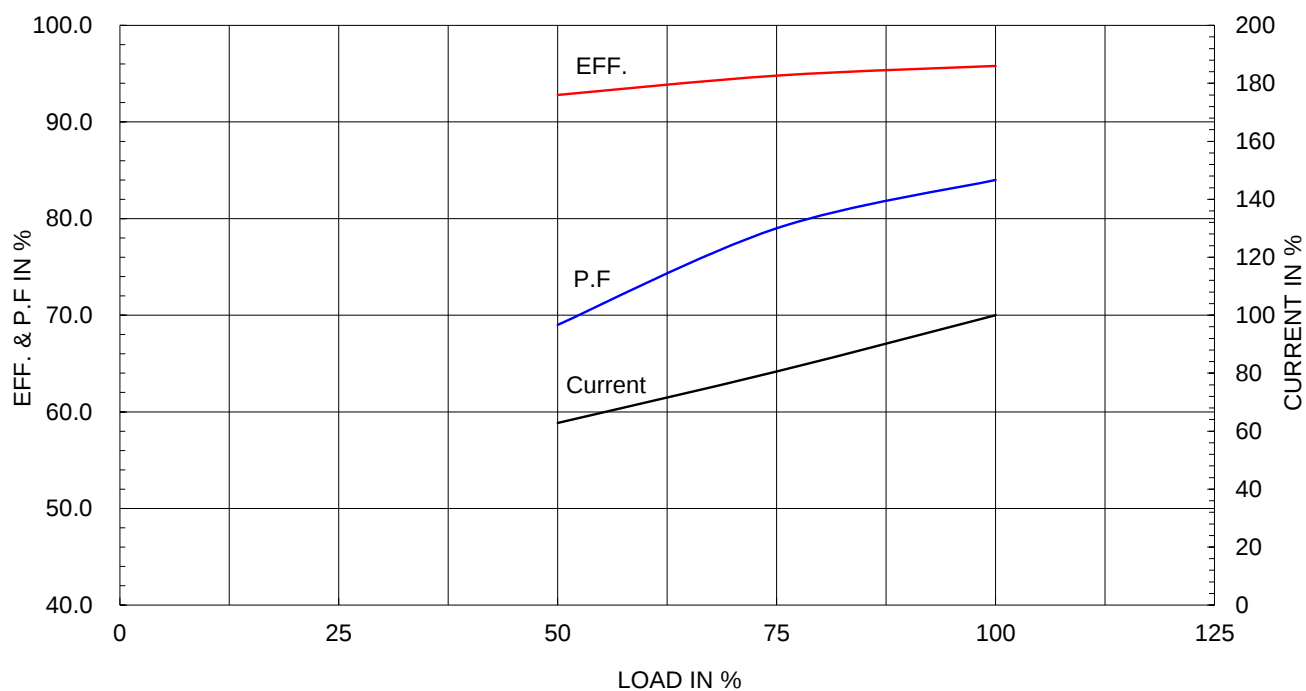
 Motor moment of Inertia (J) : 264.270 lb.ft²

Full Load Current	418.0A	522.5A	####
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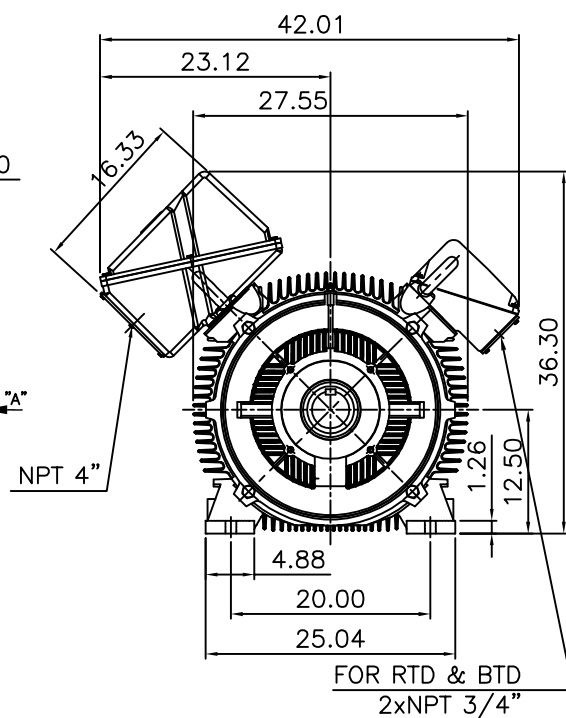
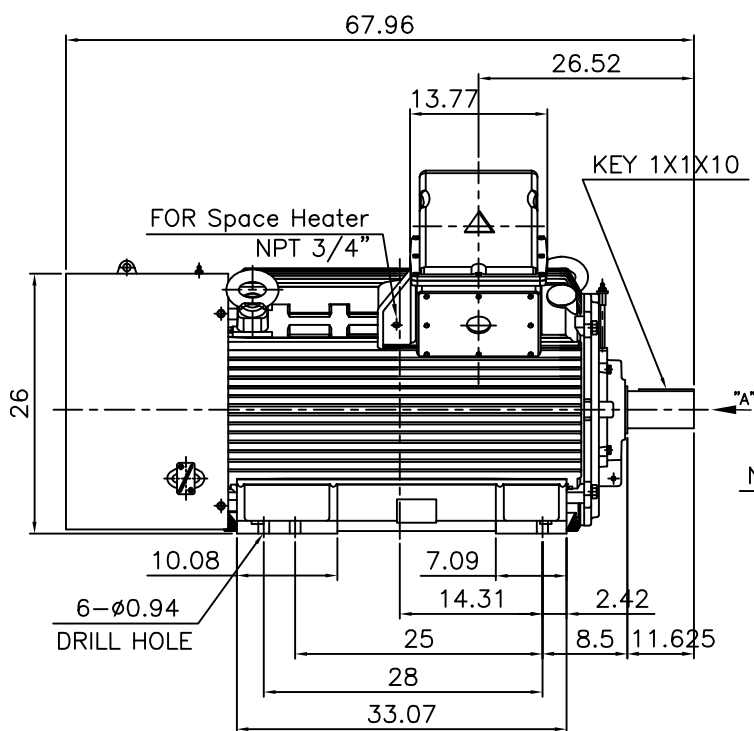
SPEED VS TORQUE & CURRENT CURVE



OUTPUT VS EFF., P.F & CURRENT CURVE



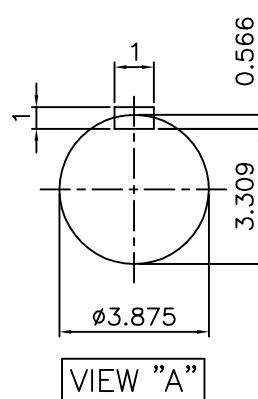
1	2	3	4
▽	50S	REV	DATE
▽▽	12.5S		
▽▽▽	3.2S		
▽▽▽▽	0.4S		



NOTE

1.TOLERANCE :

CENTER HEIGHT	12.5	+0.000 -0.060
SHAFT DIAMETER	Ø3.875	+0.000 -0.001
KEYWAY WIDTH	1	+0.003 -0.000



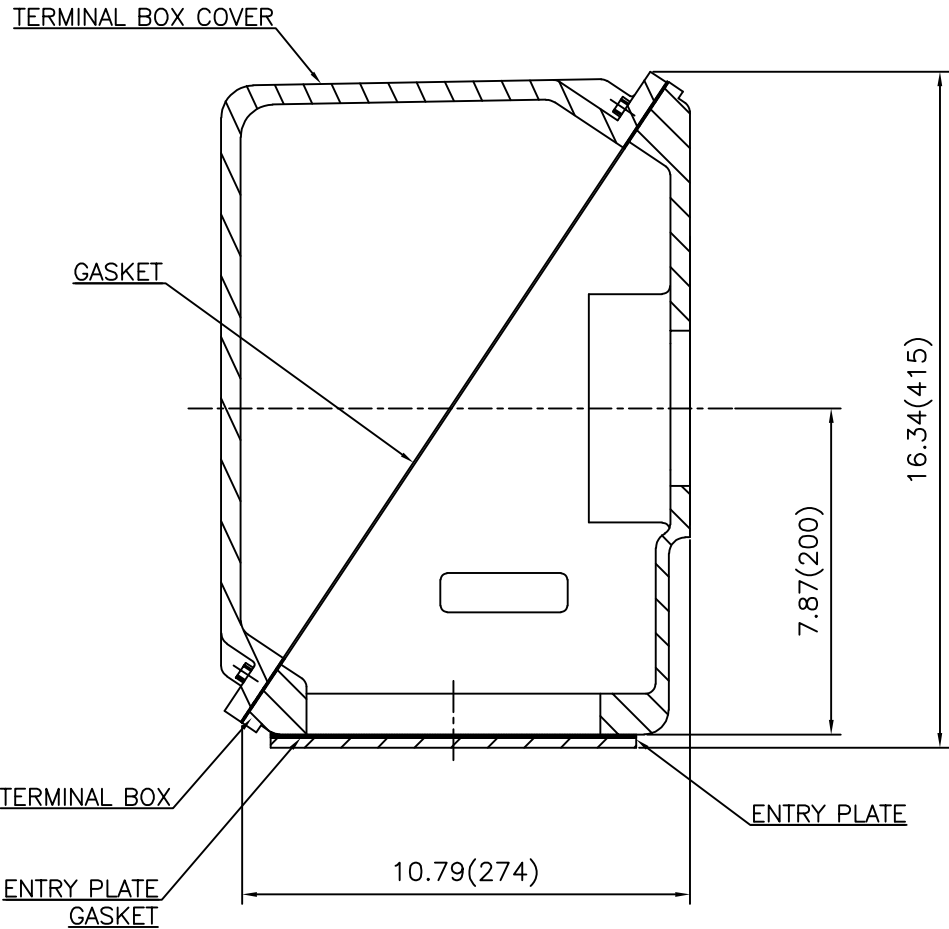
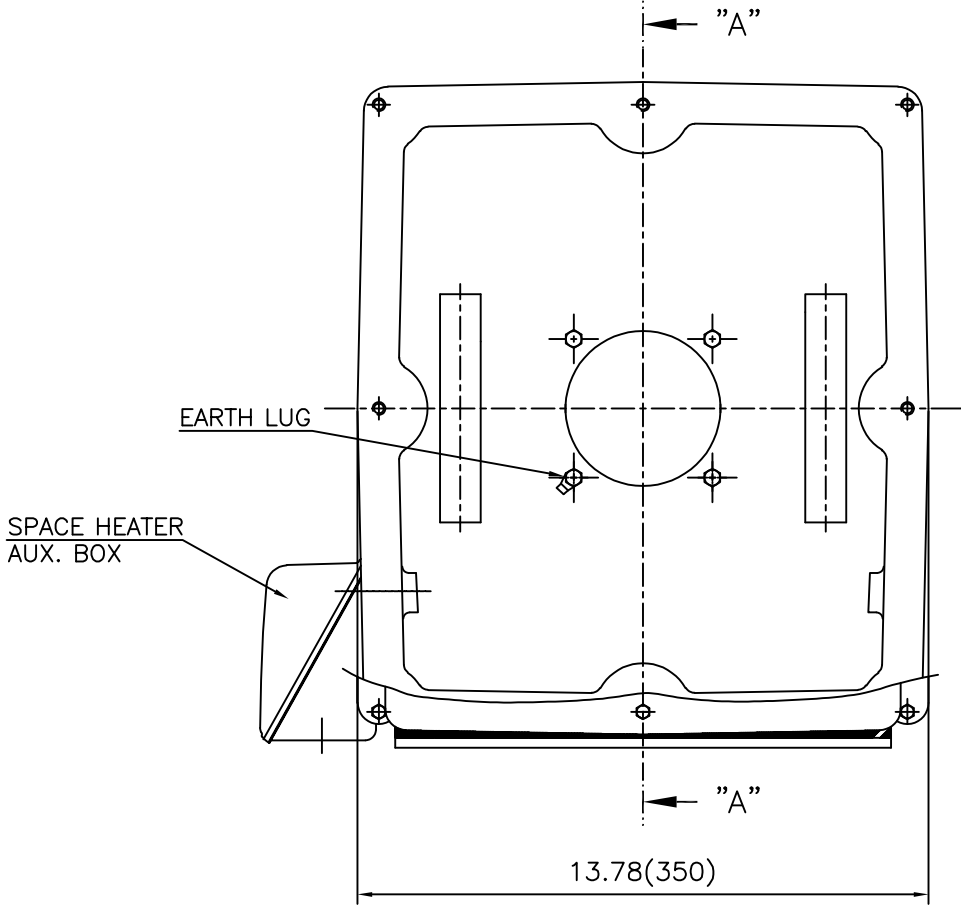
VIEW "A"

APPD BY	S.Y.KIM	UNIT	INCH	SUBJECT	Fr.5008/5009T	DWG SIZE
CHKD BY	O.J.KIM	SCALE	1/19	TITLE	CAST IRON T-BOX	A4 (1:19)
CHKD BY	R.G.KIM	PROJEC'N	3각법 (3rd Angle)	OUTLINE		
DSND BY	H.K.LEE	DATE	2021-04-27	REF. NO		Sheet No. of
				DWG NO	LM-T0509B3P7001	Revision No. 0

본 도면은 HD현대일렉트릭(주) 재산이며
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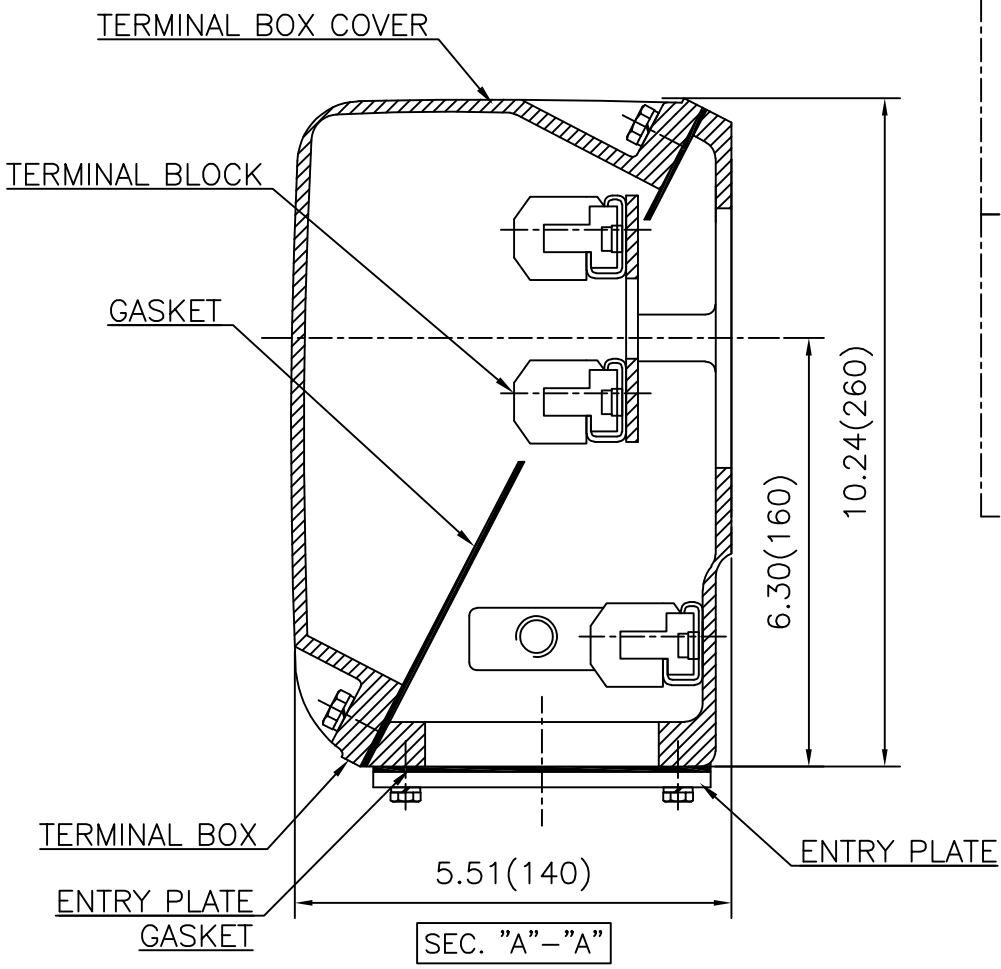
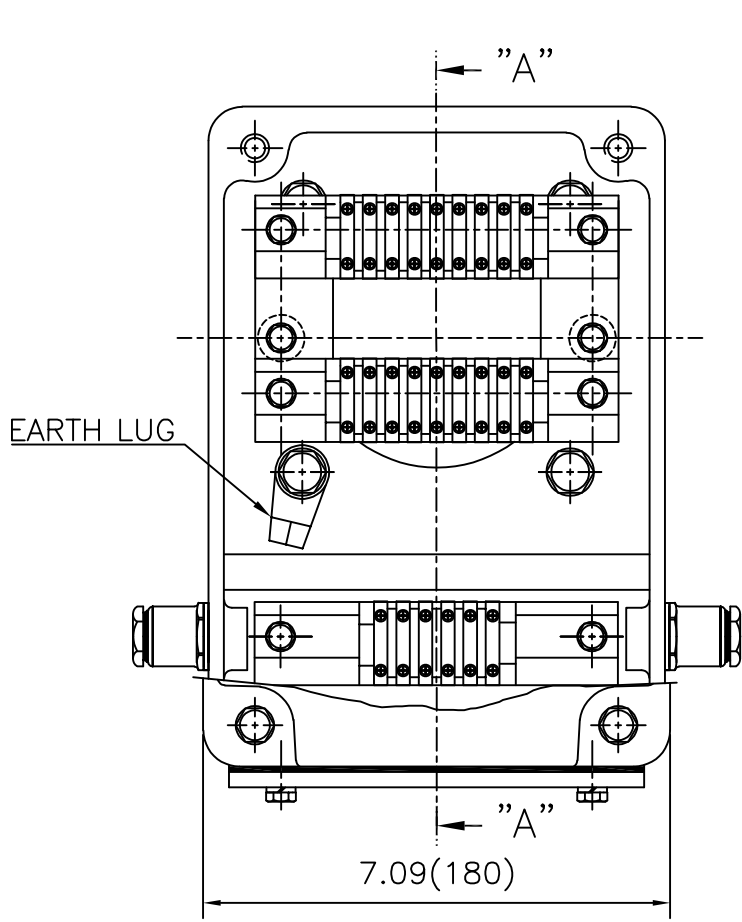
SEC. "A"-"A"

REV	DATE	CONTENTS	REVD BY	CHKD BY	CHKD BY	APPD BY

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



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Winding temp. sensor
(Pt 100 ohm/Working & Dual type)

U	V	W	U	V	W
WT11	WT12	WT13	WT21	WT22	WT23
WT31	WT32	WT33	WT41	WT42	WT43
WT51	WT52	WT53	WT61	WT62	WT63

NOTE

- 1) WT11~13 ; Winding temp. sensor(U)
- 2) WT21~23 ; Winding temp. sensor(V)
- 3) WT31~33 ; Winding temp. sensor(W)
- 4) WT41~43 ; Winding temp. sensor(U)
- 5) WT51~53 ; Winding temp. sensor(V)
- 6) WT61~63 ; Winding temp. sensor(W)

Bearing temp. sensor
(Pt 100 ohm/Single type)

D.E	N-D.E
BT11	BT12
BT21	BT22
BT31	BT32

NOTE

- 1) BT11~13 ; Bearing temp. sensor(D.E SIDE)
- 2) BT21~23 ; Bearing temp. sensor(N-D.E SIDE)

REV	DATE	CONTENTS	REVD BY	CHKD BY	CHKD BY	APPD BY

APPD BY	S.Y.KIM	UNIT	inch(mm)	SUBJECT	FR.360 (CAST IRON)	DWG SIZE
CHKD BY		SCALE	1/1	TITLE	AUX. TERMINAL BOX ASS'Y	A3 (1:2.2)
CHKD BY	R.G.KIM	PROJEC'N	3rd Angle	REF. NO		Sheet No. of
DSND BY	네슬렉	DATE	2024-01-18	DWG NO	3M-165277	Revision No. 0

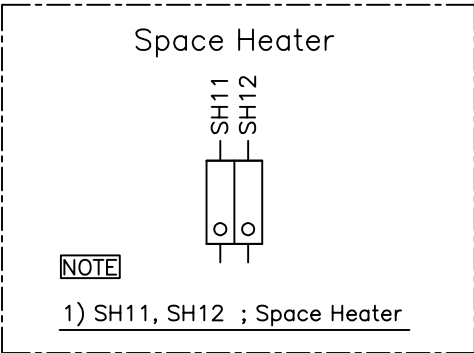
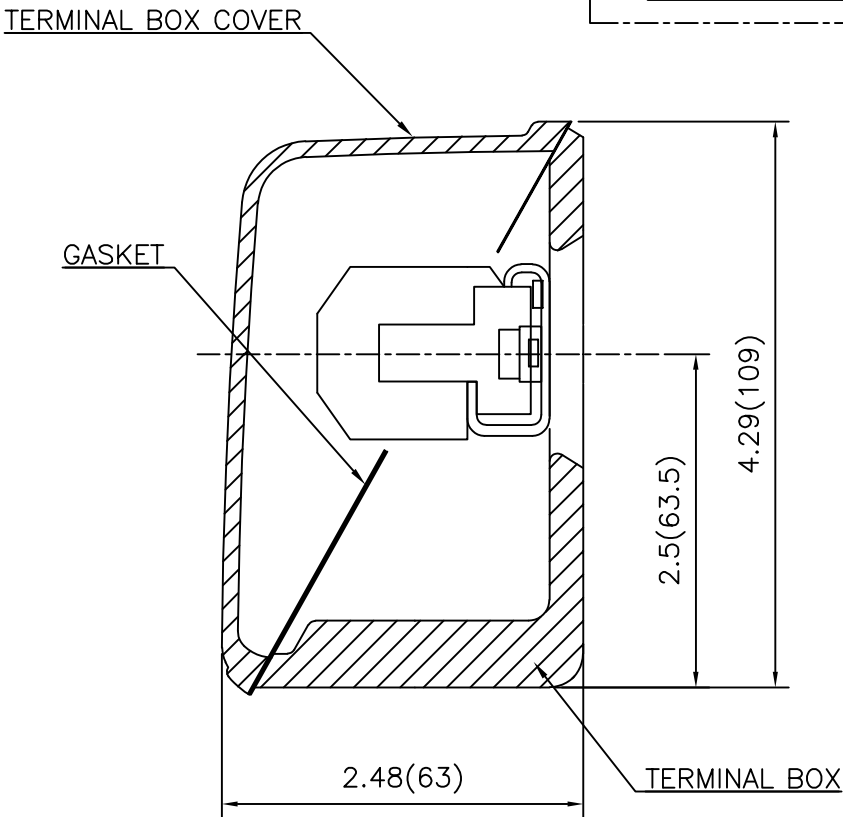
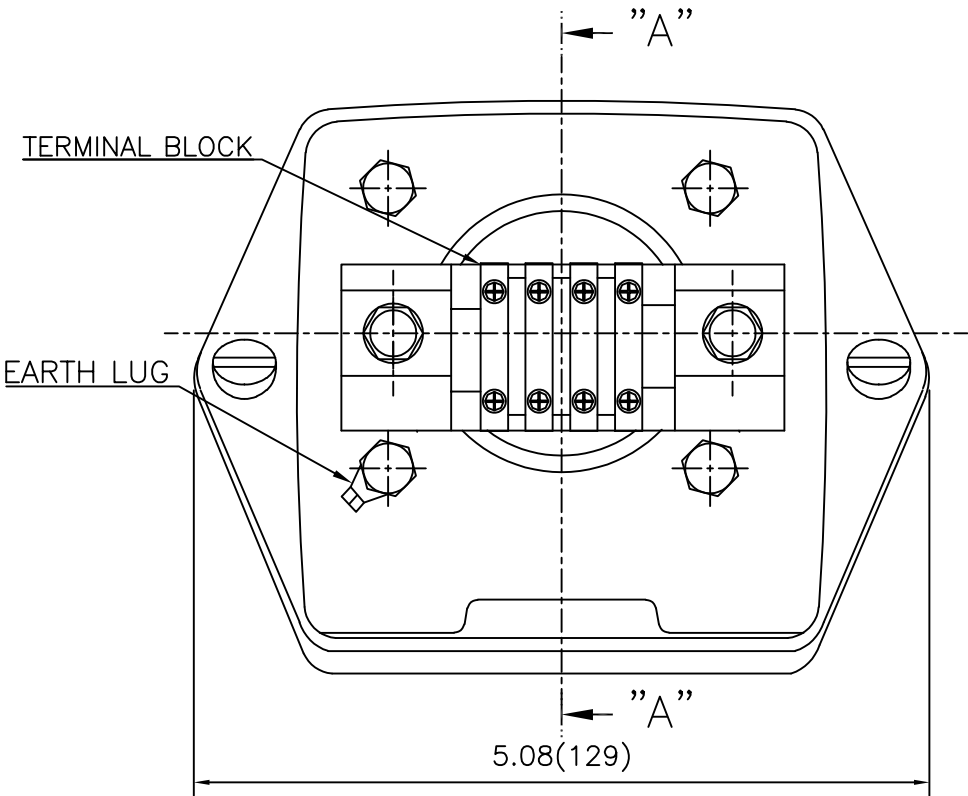


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REV	DATE	CONTENTS	REVD BY	CHKD BY	CHKD BY	APPD BY

APPD BY	S.Y.KIM	UNIT	inch(mm)	SUBJECT	FR.180 (CAST IRON)	DWG SIZE
CHKD BY		SCALE	1/1	TITLE	SUB. TERMINAL BOX ASS'Y	A3 (1:1.1)
CHKD BY	R.G.KIM	PROJEC'N	3rd Angle			
DSND BY	배승희	DATE	2024-01-18			
HD HYUNDAI ELECTRIC				REF. NO		Sheet No. of
				DWG NO	3M-165277	Revision No. 0