

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.	HSDE450-18-5009C-IBSH	Item No.			Rev. No.	[]	
Project Name		Project No.			Quantity	sets	
GENERAL SPECIFICATION				PERFORMANCE DATA			
Frame Size	5009C		Rated Output	335 kW		450 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	392.9 A	491.1 A	982.2 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	50% Load 93.2 %				
Motor Location	☐ Indoor ☐ Outdoor		75% Load 95.2 %				
Altitude	Less than 1,000 meter		100% Load 96.2 %				
Relative Humidity	Less than 80 %		Power Factor(p.u)				
Ambient Temp.	40 deg. C (Max.)		50% Load 0.740				
Duty Type	Continuous (S1)		75% Load 0.840				
Service Factor	1.15		100% Load 0.890				
Mounting	B35		Speed at Full Load	1785 r.p.m			
Bearing	Type	Anti-Friction	Torque				
	DE/N-DE	6324C3 / 6320C3-INS.	Full Load 1322.16 lb.ft				
	Lubricant	Grease(Polyrex-EM)	Locked-rotor** 135 %				
External Thrust	Not applicable		Breakdown** 230 %				
Coupling Method	☒ Direct ☐ V-belt		Moment of Inertia (J)				
Shaft Extension	Single		Load(Max.) 1,710.000 lb.ft2				
Terminal	Main	Cast Iron	Motor 158.058 lb.ft2				
Box	Aux.	Yes	Sound Pressure Level (No-load & mean value at 1m from motor)				
	Location	Refer to Outline Drawing	85 dB(A)				
Application			Vibration 3.8 mm/sec (peak)				
Area classification	Hazardous		Permissible number of Cold 2 times				
Type of Ex-Protection	Class I&II, Division 2		consecutive starts Hot 1 time				
Applicable Standard	NEMA MG1, CSA C390		Paint	Munsell No.	4.0PB5.4/5.5(VL-451)		
ACCESSORIES			SUBMITTAL DRAWING				
*. Space Heater : 1EA/Motor			Outline Dimension Drawing \ Motor Weight(Approx.)				
			B35	LM-T0509C4PE001	4110 lb.		
			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 (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				
SPARE PARTS			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

450HP		4P	460V	Cat. No.	HSDE450-18-5009C-IBSH		
Model	LATER			INS. Class	F	Amps	491.1A
Type	PJP	Duty	CONT	Code	G	Amb.	40°C
Frame	5009C	Encl.	TEFC	S.F.	1.15	RPM	1785
Bearing	Drive	6324C3	S.F.1.00 (10:1 C.T., 20:1 V.T., NEMA-MG1 Part31)		3/4 Eff.		95.2%
	Opp.	6320C3-INS.			NEMA Design		B
Usable at	50Hz 335HP 380V 449.6A 1485rpm S.F.: 1.15 Eff.: 96.0% Code: H						
	50Hz 335HP 400/415V 426.7/416.0A 1486/1487rpm S.F.: 1.15 Eff.: 96.1/96.1% Code: J/K						
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	Frame	L440FR - 500FR
					(sine wave)	Amb. 40°C	T3 (200°C)
						Amb. 55°C	T3 (200°C)
No.	-			Date	-		
	4M-136053			Made in Korea H1		Weight	4110 lb
	MARINE DUTY IEEE45						

WIRING DIAGRAM

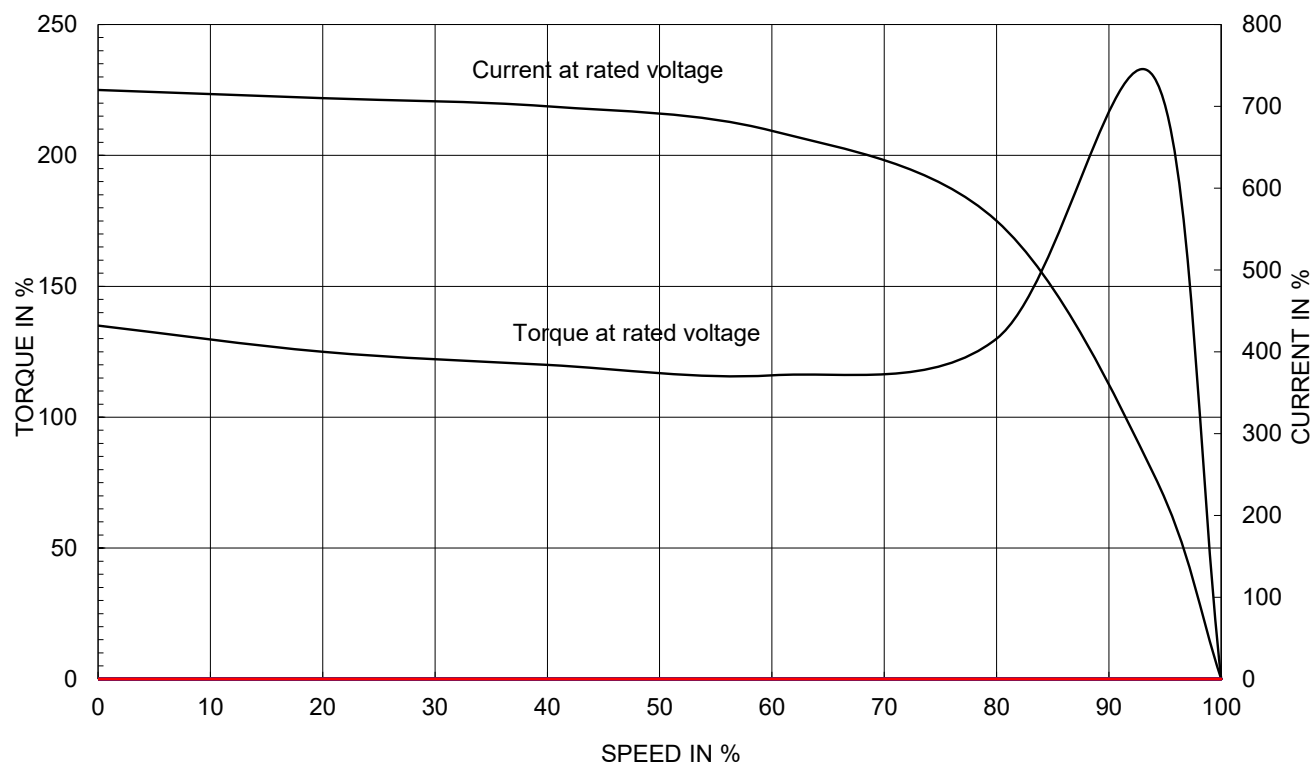
D.O.L (INVERTER & SOFT STARTER) WARNING IMPROPER INSTALLATION, CONNECTION, OPERATION, GROUNDING OF THIS MOTOR MAY CAUSE SERIOUS INJURY TO PERSONNEL OR MOTOR FAILURE. READ INSTRUCTIONS CAREFULLY. GROUNDING SHOULD BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND APPLICABLE LOCAL SOUND PRACTICES. INTERNAL CONNECTIONS D.O.L. (ΔRUN) KEEP FINGERS AND FOREIGN OBJECTS AWAY FROM OPENINGS AND ROTATING PARTS DISCONNECT ALL POWER SOURCES BEFORE TOUCHING INTERNAL PARTS TO AVOID ELECTRICAL SHOCK. 4M-129326	WYE-DELTA (Y-D) WARNING 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. START INTERNAL CONNECTIONS RUN KEEP FINGERS AND FOREIGN OBJECTS AWAY FROM OPENINGS AND ROTATING PARTS DISCONNECT ALL POWER SOURCES BEFORE TOUCHING INTERNAL PARTS TO AVOID ELECTRICAL SHOCK. 4M-128852
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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	NAMEPLATE DRAWING				A4 (1:1)
CHKD BY	R.G.KIM	PROJEC'N	3rd Angle					
DSND BY	S.H.LEE	DATE	2024.06.07					
				REF. NO	4M-136053 / 4M-129326	Sheet No.	of	
				DWG NO	NP-HSDE450-18-5009C-IBSH	Revision No.	0	

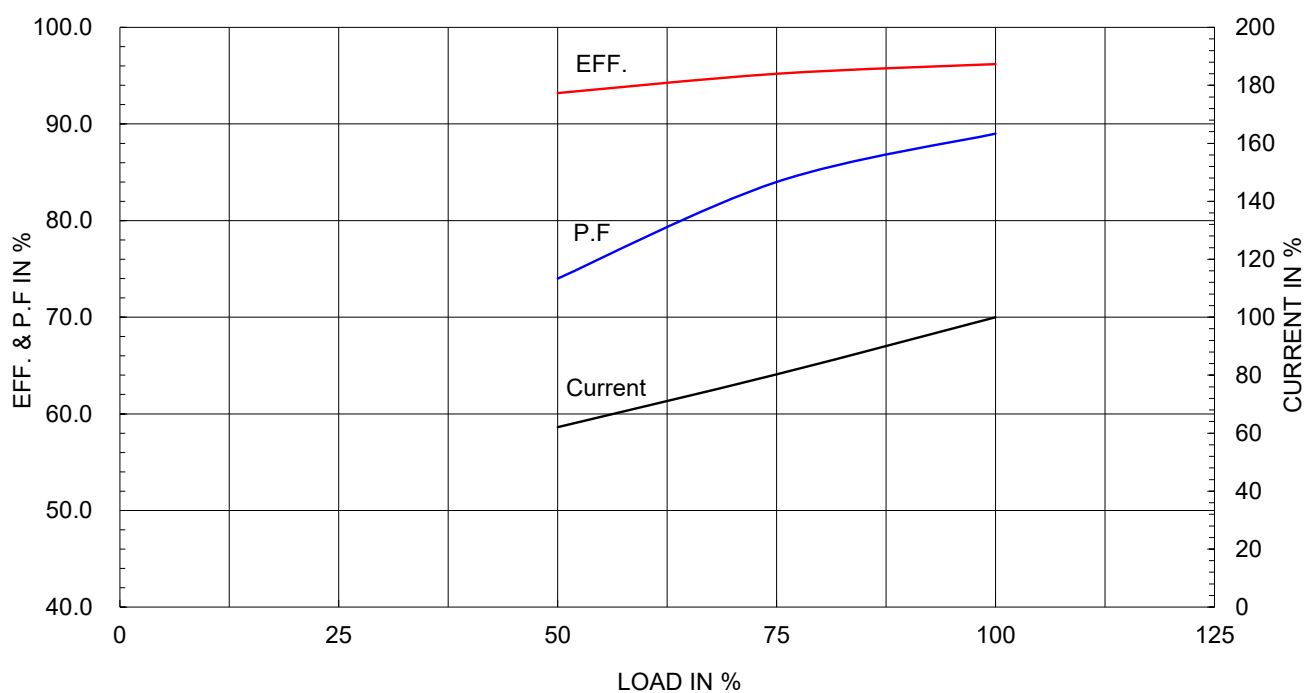
Type :	PJP	
Full Load Torque :	1322.16	lb.ft
Load moment of Inertia (J) :	1710.000	lb.ft2
Motor moment of Inertia (J) :	158.058	lb.ft2

335kW	450HP	4 P	60 Hz
Speed at Full Load :		1785 RPM	
Rated Voltage	575V	460V	230V
Full Load Current	392.9A	491.1A	982.2A

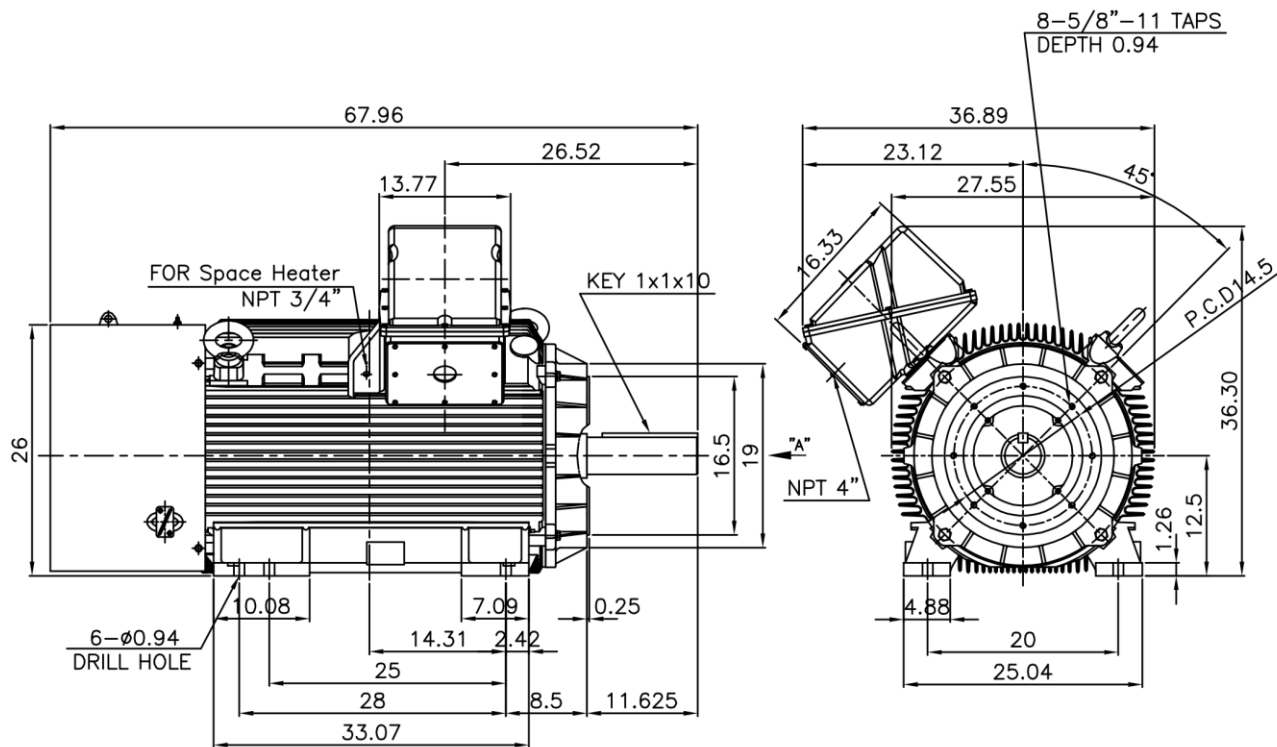
SPEED VS TORQUE & CURRENT CURVE



OUTPUT VS EFF., P.F & CURRENT CURVE



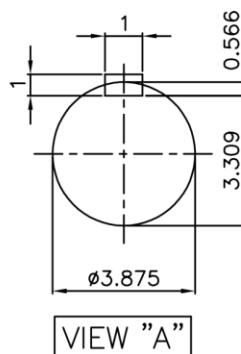
1			2		3		4		
▽	50S	REV	DATE	CONTENTS		REVD BY	CHKD BY	CHKD BY	APPD BY
▽▽	12.5S								
▽▽▽	3.2S								
▽▽▽▽	0.4S								



NOTE

1.TOLERANCE :

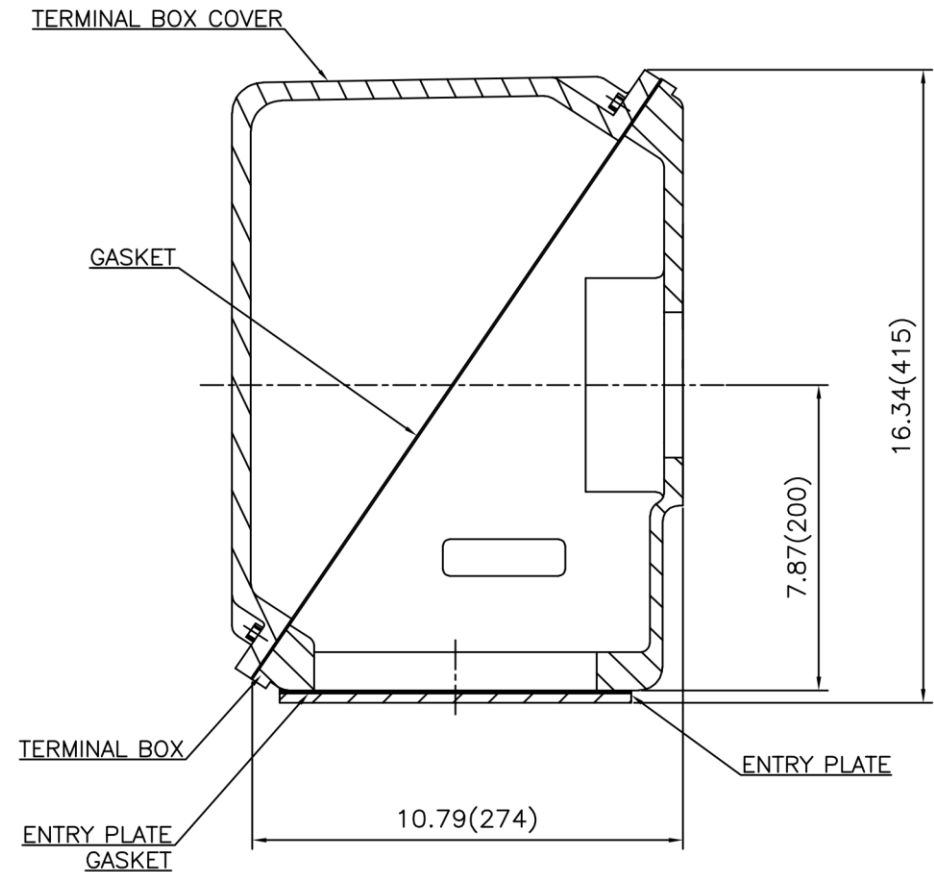
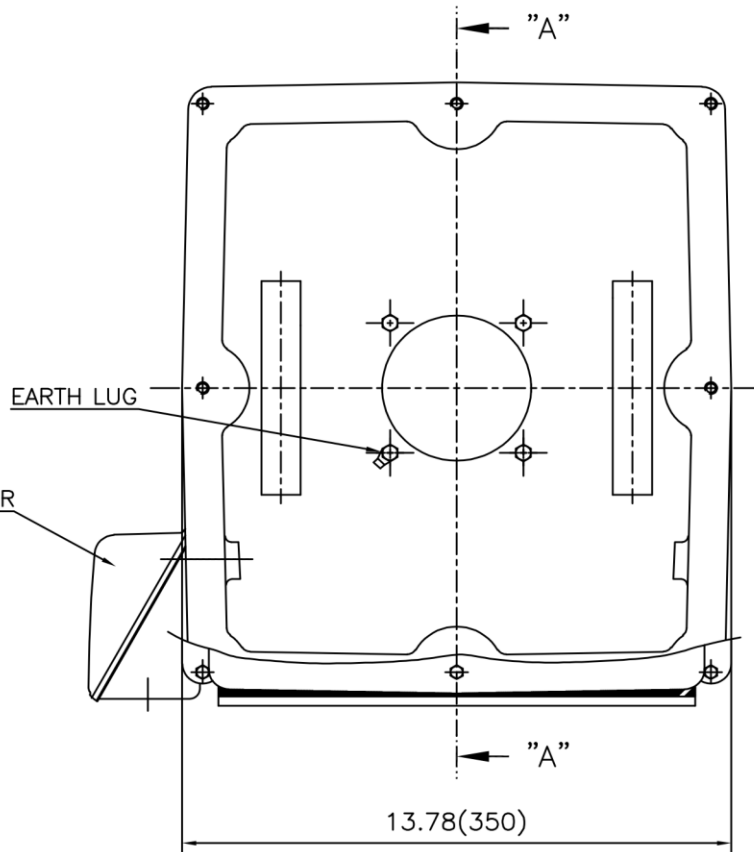
CENTER HEIGHT	12.5	+0.000 -0.060
RABBIT DIAMETER	ø16.5	+0.000 -0.005
SHAFT DIAMETER	ø3.875	+0.000 -0.001
KEYWAY WIDTH	1	+0.003 -0.000



APPD BY	S.Y.KIM	UNIT	INCH	SUBJECT	Fr.5008/5009C	DWG SIZE
CHKD BY	O.J.KIM	SCALE	1/19			A4 (1:19)
CHKD BY	R.G.KIM	PROJEC'N	3각법 (3rd Angle)	TITLE	OUTLINE	
DSND BY	H.K.LEE	DATE	2021-04-27			
				REF. NO		Sheet No. of
				DWG NO	LM-T0509C4PE001	Revision No. 0

Cls. I&II, Div. 2

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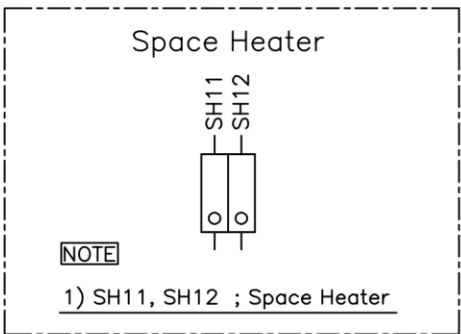
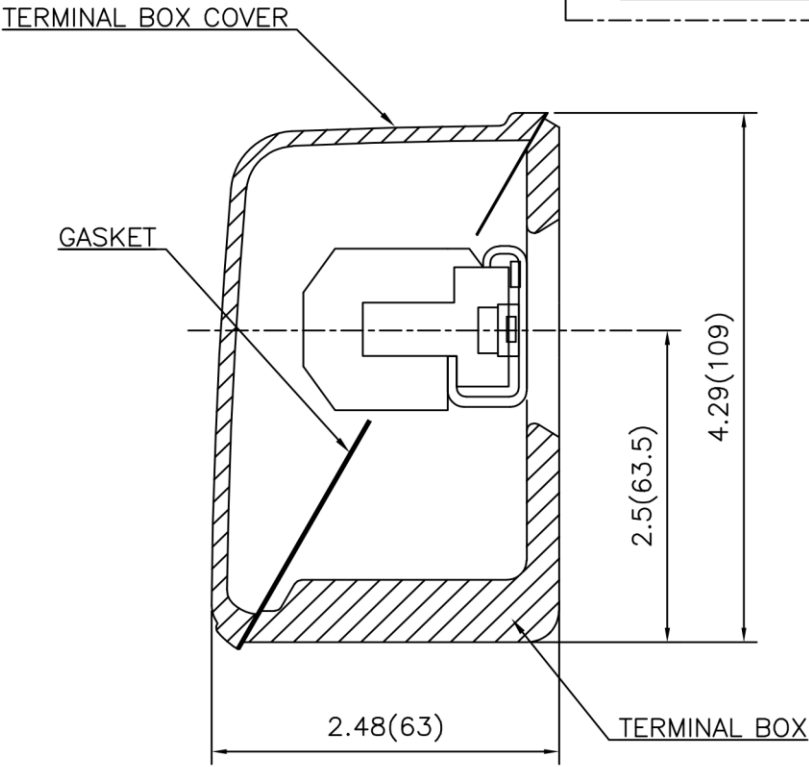
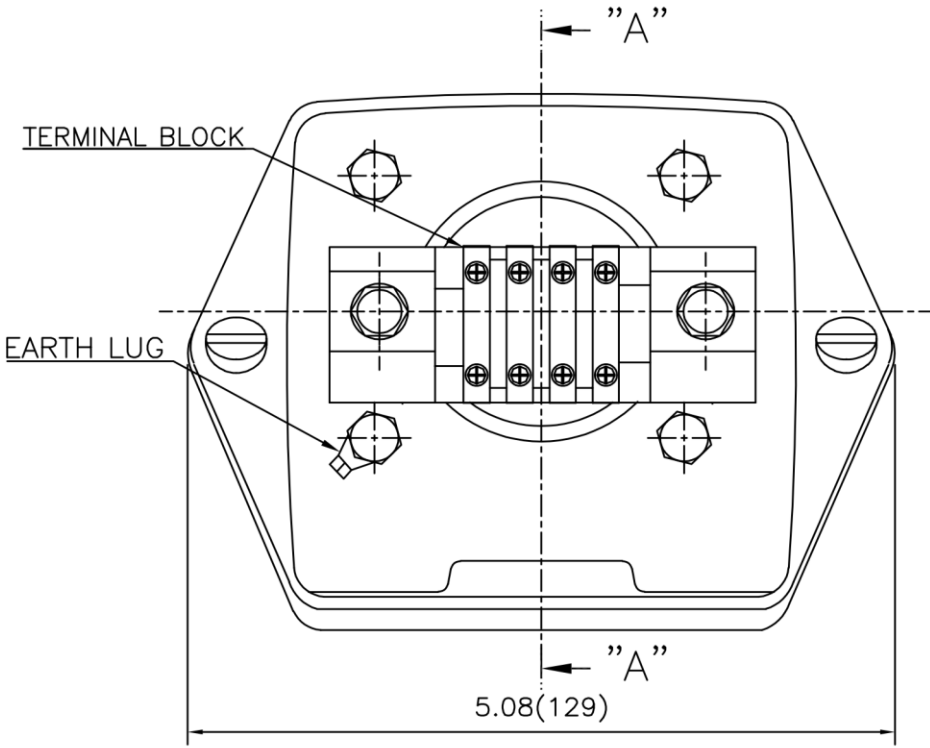


SEC. "A" - "A"

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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APPD BY	S.Y.KIM	UNIT	inch(mm)	SUBJECT	FR.180 (CAST IRON)	DWG SIZE
CHKD BY		SCALE	1/1	TITLE		A3 (1:1.1)
CHKD BY	R.G.KIM	PROJEC'N	3rd Angle			
DSND BY	배승희	DATE	2024-01-18	SUB. TERMINAL BOX ASS'Y		
				REF. NO	Sheet No. of	
				DWG NO	3M-165278	Revision No. 0

REV	DATE	CONTENTS	REVD BY	CHKD BY	CHKD BY	APPD BY