

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>							
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS							26 از 1 :شماره صفحه
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	
	BK	GCS	HY	120	EL	DS	0002	
							V00	

طرح نگهداشت و افزایش تولید ۲۷ مخزن

DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS

نگهداشت و افزایش تولید میدان نفتی بینک

V00	Jul. 2023	IFR	Havayar Co	M.Fakharian	A.M.Mohseni	
Rev.	Date	Purpose of Issue/Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 2

Status:

IFA: Issued for Approval (For Docs. with Class#1)
IFR: Issued for Review (For Docs. with Class#2)
IFI: Issued for Information (For Docs. with Class#3)
AFC: Approved for Construction

 NISOC	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>							
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS							26 از 2 : شماره صفحه
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	
	BK	GCS	HY	120	EL	DS	0002	
							V00	

REVISION RECORD SHEET

PAGE	V00	V01	V02	V03	V04
1	X				
2	X				
3	X				
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	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>									
<p>شماره پیمان:</p> <p>۰۵۳ - ۰۷۳ - ۹۱۸۴</p>	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS								<p>26 از 3: شماره صفحه</p>	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه		
	BK	GCS	HY	120	EL	DS	0002	V00		

LUBRICATOR MOTOR

 NISOC	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS							26 از 4: شماره صفحه	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	HY	120	EL	DS	0002		V00

Data Sheets for LV Induction Motors			
Item	Category	Required Specification	Vendor Data
1	Driven Machine	Electrical Motor	Electrical Motor
2	Driven Machine Tag No.	-	-
3	Manufacturer	By Vendor	HYOSUNG
4	Manufacturer's Number / Type	By Vendor	N/A
5	Manufacturing Standard	IEC 60034 & IPS-M-EL-131(2)	IEC 60034 & IPS-M-EL-131(2)
6	Location	[X] Outdoor (Under Shelter) [] Indoor	Outdoor
7	Area Classification	Acc. to requisition data	
8	Ambient Temperature	5 to +55°C	5 to +50°C
9	Relative Humidity	100 %	100
10	Dust	[X] Yes [] No	Yes
11	Corrosion	[X] Yes [] No	Yes
12	Elevation	12.5m Above Sea Level	12.5m Above Sea Level
13	Quantity	Acc. To Load List (BK-GCS-PEDCO-120-EL-LI-0001)	3
14	Tag Number	Acc. To Load List (BK-GCS-PEDCO-120-EL-LI-0001)	N/A
15	Motor Type	Asynchronous, Squirrel Cage	Asynchronous, Squirrel Cage
16	Mounting	[] Horizontal [] Vertical	Vertical
17	Rotor Construction	[] Brazed Copper Bars [] Aluminum Die Cast	Aluminum Die Cast
18	Frame Material	Steel Sheet or Cast Iron	Cast Iron
19	Rotor Cage Material	By Vendor	Steel
20	Cooling Method	IC411 According to IPS-M-EL-131(2)	IC411
21	Ingress Protection Degree for Motor	IP 54	IP 55
22	Ingress Protection Degree for Terminal Box	IP 55	IP 55
23	Explosion Protection of Motor	N/A for Safe Area Zone 2, IIB, T3	Ex db IIB T4 Gb
24	Explosion Protection of Terminal Box	N/A for Safe Area Zone 2, IIB, T3	Ex db IIB T4 Gb
25	Ex. Certificate Authority/Certificate No.	By Vendor	N/A
26	Driven Machine Shaft Power Requirement (^p mp)	As Per Related Mechanical Data sheet (to be Specified by Vendor)	N/A
27	De-Rating Factor due to Ambient Temperature (K_t)	Vendor Shall Advise	N/A
28	De-Rating Factor Due to Altitude (K_a)	1	N/A
29	Design margin (K_m)	Acc. to IPS Standard (Note 1)	N/A

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS							26 از 5: شماره صفحه	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	HY	120	EL	DS	0002		V00

Data Sheets for LV Induction Motors			
Item	Category	Required Specification	Vendor Data
30	Motor Shaft Power Requirement @ Site <small>condition (=K_m X P_{mp})</small>	By Vendor	Not Motor Vendor scope
31	Standard Rated Motor Output <small>=K_m X P_{mp} (K_a K_p)</small>	By Vendor	Not Motor Vendor scope
32	Frame Size	By Vendor	80M
33	Frame Earth Boss	External	M6
34	Rated Voltage	400 V ±10%	400 V ±10%
35	Rated Frequency	50 Hz ±5%	50 Hz ±5%
36	Protection Devices	Switch-Fuse	
37	Neutral Earthing System	TNS	
38	Voltage During Motor Start	80% Un	80% Un
39	Synchronous Speed	By Vendor	1500
40	Full Load Speed [RPM]	By Vendor	1440
41	Over Speed Capability	By Vendor	150%
42	Number of Poles	By Vendor	4
43	Starting Method	Direct on Line	Direct on Line
44	Direction of Rotation (Viewed from coupling end)	Shall be Proposed by MFR Based on Driven Load Rotation of Direction	<input type="checkbox"/> CW <input type="checkbox"/> CCW <input type="checkbox"/> Unidirectional <input checked="" type="checkbox"/> Bidirectional
45	Stator Winding Connection	Delta	Delta
46	Location of Terminal Box (Viewed from DE)	<input type="checkbox"/> Right <input type="checkbox"/> Left	Left
47	Insulation Class	Class F	Class F
48	Class of Temperature Rise	Class B	Class B
49	Max. Permissible Starting Time [s]	By Vendor	17s
50	Accelerating Time DOL starting, at 100% U _n [s]	By Vendor	load torque curve be needed
51	Accelerating Time DOL starting, at 80% U _n [s]	By Vendor	load torque curve be needed
52	Starting Torque at 100% U _n [N.m]	By Vendor	4.4
53	Starting Torque at 80% U _n [N.m]	By Vendor	2.8
54	Maximum Torque [N.m]	By Vendor	5.7
55	Pull-Up Torque	By Vendor	4
56	Locked Rotor Torque	By Vendor	4.4
57	Rated Torque [N.m]	By Vendor	2.6
58	Rated Current [A]	By Vendor	1

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS							26 از 6: شماره صفحه	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		
	BK	GCS	HY	120	EL	DS	0002	V00	

Data Sheets for LV Induction Motors			
Item	Category	Required Specification	Vendor Data
59	Max Starting Current	By Vendor	6
60	No Load Current [A]	By Vendor	0.5
61	Locked Rotor Current [A]	$< I_n$	600%
62	Locked Rotor Power Factor [A]	By Vendor	62.30%
63	Torque-Speed Class	Shall be Selected Based on Driven Load Torque Requirement	[] A [v] B [] C [] D
64	Duty Cycle	S1	S1
65	Current at ½ Rated Load	By Vendor	0.6
66	Current at ¾ Rated load	By Vendor	0.8
67	Current at Rated Load	By Vendor	1
68	Starting Power Factor	By Vendor	62.30%
69	Power Factor at ½ Rated Load	By Vendor	60
70	Power Factor at ¾ Rated load	By Vendor	70
71	Power Factor at Rated Load	By Vendor	75
72	Efficiency at ½ Rated Load	By Vendor	75
73	Efficiency at ¾ Rated Load	By Vendor	77
74	Efficiency at Rated Load	By Vendor	78
75	No Load Losses	By Vendor	26W
76	Stall Time (Hot/Cold) (Sec)	By Vendor	17s / 24s
77	Transient Reactance (X'd)	By Vendor	
78	Sub - Transient Reactance (X"d)	By Vendor	
79	Acceleration Time At 80% Un (Sec)	By Vendor	
80	Bearing (DE)		
	Type (Detail Description by Vendor)	Anti Friction (Ball Bearing)	Anti Friction (Ball Bearing)
	Manufacturer	By Vendor	Later
	Minimum Life Without Load	Minimum 40000 Hours	Minimum 40000 Hours
	Minimum Life With Load	Minimum 32000 Hours	Load info. Be needed
	Lubrication	Grease	Grease
	Cooling Water/ Oil Capacity	N/A	N/A
	Permissible Trust Force [N]	By Vendor	Later
81	Bearing (NDE)		
	Type (Detail Description by Vendor)	Anti friction (ball bearing)	Anti Friction (Ball Bearing)
	Manufacturer	By Vendor	Later

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS							26 از 7: شماره صفحه	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	HY	120	EL	DS	0002		V00

Data Sheets for LV Induction Motors			
Item	Category	Required Specification	Vendor Data
	Minimum Life Without Load	Minimum 40000 Hours	Minimum 40000 Hours
	Minimum Life With Load	Minimum 32000 Hours	Load info. Be needed
	Lubrication	Grease	Grease
	Cooling Water/ Oil Capacity	N/A	N/A
	Permissible Trust Force [N]	By Vendor	Later
	Space Heater	Not Required	N/A
	Space Heater Voltage [V]	230VAC, 50Hz, 1Ph	N/A
	Space Heater Power [W]	By Vendor	N/A
82	Temp. Detector (Winding/Bearing)	By Vendor	N/A
83	Terminal Boxes	[X] Power Terminal Box [X] Space heater (if required)	Power Terminal Box
84	Main Power Cable Specification & Size & Orientation	According to (BK-GCS-PEDCO-120-EL-CN-0003)	Not Motor Vendor scope
85	Motor Weight (Net/Shipped)	By Vendor	34 kgf
86	Rotor Moment of Inertia	By Vendor	0.048 kg-m2
87	Method of Cable Entry	[X] Cable Gland [] Sealing Gasket	Cable Gland
88	Cable Gland Hub of Main Terminal Box	By Vendor	1-M25x1.5
89	Cable Gland Entry for aux. Terminal Box (if applicable)	1 X M25 (if Required)	N/A
90	Short Circuit Capability of Terminal Box	30 kA for 0.2 S	N/A
91	Sound Level at 1 distance meter From Motor	Max. 85 dB(A)	Max. 85 dB(A)
92	Finish Color	Manufacturer Standard	RAL7047 (LIGHT GREY, ENAMEL)
93	Load Torque/Slip, Current/Slip Curves	By Vendor	N/A
94	Motor Torque/Slip, Current/Slip Curves	By Vendor	N/A
95	Time - Current Heating (Thermal Limit) Curve	By Vendor	N/A
96	Motor Thermal Capacity Data	By Vendor	N/A
97	Installation, Operation & Maintenance Instruction	By Vendor	N/A
98	Spare Parts List for Two Years Operation	By Vendor	N/A
99	Commissioning Spare Part List	By Vendor	N/A
100	Dimensional Outline Drawing	By Vendor	ES1A126004 / ES1B100912
101	Certified Type Test Report & Written Statement	By Vendor	N/A
102	Certified Conformity for EX Type Motors	By Vendor	N/A
103	Deviation List (if Any)	By Vendor	N/A

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS							26 از 8: شماره صفحه		
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال			نسخه
	BK	GCS	HY	120	EL	DS	0002			V00

Data Sheets for LV Induction Motors			
Item	Category	Required Specification	Vendor Data
104	Test & Inspection	Factory Routine Test Report Shall be Submitted	

DE: Drive End

NDE: Non Drive End CW: Clockwise

CCW: Counter Clockwise

Note 1: IPS design margin is defined in accordance with standard output power rating of motor:

	Standard Output Power Rating	Design margin
1	Up to 22kW	1.25
2	from 22kW to 55kW	1.15
3	Above 55kW	1.10

Note 2: The following values are default unless otherwise specified during finalization of motors:

	Standard Output Power Rating	Cable Size	Gland Size
1	5.5kW	3x6	M25
2	7.5kW	3x6	M25
3	15kW	3x16	M32
4	18.5kW	3x16	M32
5	30kW	3x50	M40
6	37kW	3x50	M40
7	45kW		M50
8	55kW	3x95	M50

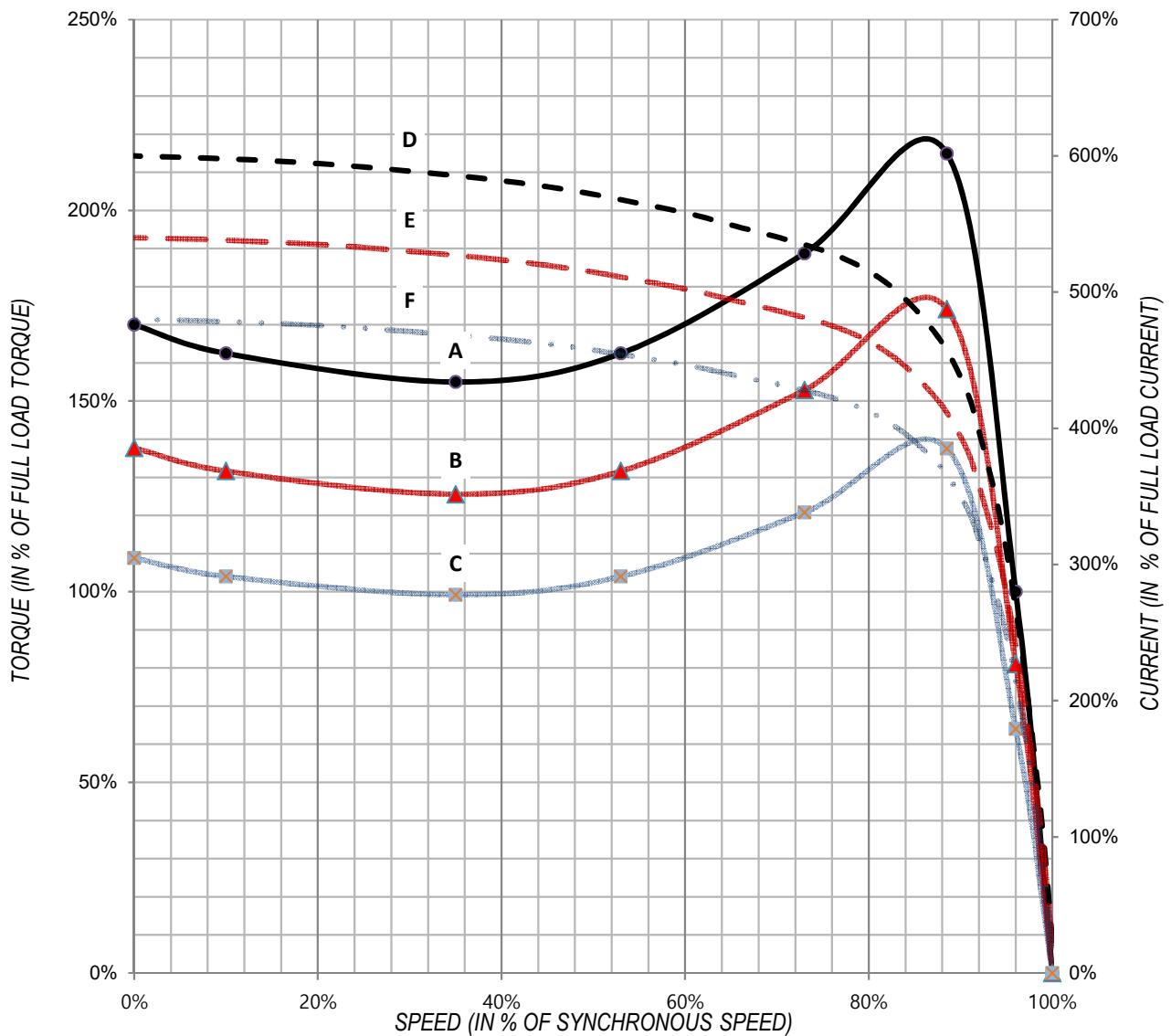
<div>HYOSUNG</div> <div>HEAVY INDUSTRIES</div>		INDUCTION MOTOR DATA SHEET		PROJECT No.		F0238444-L1-0002			
				HS No.		HLA020106014871			
				L-SPEC No.		DSML21444F020M			
SHEET 1 OF 1		CUSTOMER :							
FOR APPROVAL		JOB No. :		N/A		ITEM No. :			
SERVICE : N/A		SITE :		효성강전_광신기계공업_UAE PJT_220220		QUANTITY 3 SETS			
GENERAL DATA				PERFORMANCE DATA					
FRAME No.		80M		OUTPUT		0.4 kW			
TYPE		EF-F		POLES		4 P			
ENCLOSURE		TE		ROTOR TYPE		SQUIRREL CAGE			
COOLING METHOD		FC(IC411)		STARTING METHOD		DIRECT ON LINE			
INSULATION CLASS		F CLASS		PHASE		3 PHASE			
TEMP. RISE AT FULL LOAD				FREQUENCY		50 Hz			
RES. METHOD		65 K (at S.F:1.0)		SPEED (AT FULL LOAD)		1440 r/min			
RATING		S1		PRIMARY					
LOCATION		OUTDOOR		VOLTAGE		400 V			
ALTITUDE		LESS THAN 1030 m		NO LOAD CURRENT		0.5 A			
HUMIDITY		LESS THAN 80 %		FULL LOAD CURRENT		1.0 A			
AMBIENT TEMP.		55 °C		LOCKED-ROTOR CURRENT		600 %			
EXPLOSION PROOF TYPE		Ex db IIB T4 Gb		EFFICIENCY					
MOUNTING		V1		AT 1/2 LOAD		75.0 %			
BEARING TYPE		ANTI-FRICTION		AT 3/4 LOAD		77.0 %			
NDE/DE BRG. No.		6203ZZ / 6204ZZ		AT FULL LOAD		78.0 %			
BRG. LUBRICATION		N/A		POWER FACTOR					
PROTECTION GRADE		IP55		AT 1/2 LOAD		60.0 %			
SERVICE FACTOR		1.0		AT 3/4 LOAD		70.0 %			
DRIVE		DIRECT COUPLED		AT FULL LOAD		75.0 %			
SHAFT				TORQUE					
EXTENSION		SINGLE		FULL LOAD		0.27 kg-m			
EXTERNAL THRUST		N/A				2.6 N-m			
NOISE LEVEL(MEAN VALUE AT 1m FROM MOTOR)				LOCKED ROTOR		170 %			
NO-LOAD		STANDARD		BREAKDOWN		220 %			
VIBRATION		2.8 mm/s (r.m.s)		MOTOR GD ²		0.012 kg-m ²			
NUMBER OF CONSECUTIVE STARTS		COLD : 2 / HOT : 1 (4P)		MAX LOAD GD ² AT MOTOR SHAFT		1.7 kg-m ²			
				MOTOR APPROX. WEIGHT		34 kg			
ROTATION(VIEWED FROM DE)		C.C.W		PAINTING		RAL7047 (LIGHT GREY, ENAMEL)			
ACCESSORIES (OPTIONAL)				SUBMITTAL DRAWINGS					
TEMPERATURE DETECTOR				OUTLINE DIMENSION		ES1A126004			
WINDING		NO		CONDUIT BOX & COVER		ES1B100912			
TYPE		N/A		SPEED-TORQUE & CURRENT CURVE		1STF0238444-L1-0002			
BEARING		NO		THERMAL LIMIT		1TLF0238444-L1-0002			
TYPE		N/A		& TIME-CURRENT CURVE					
SPACE HEATER		NO		LOAD vs POWER FACTOR		1PEF0238444-L1-0002			
RATING		N/A		& EFFICIENCY					
				<REMARKS>					
				1. ABOVE ALL DATA ARE CALCULATED AT 100% VOLTAGE.					
				2. PREMIUM EFFICIENCY TYPE MOTOR					
APPLICATION STANDARDS									
IEC60034-1, ISO 3746									
< NOTE > 1. THESE DATA ARE ONLY DESIGN VALUES AND SHALL BE GUARANTEED WITH TOLERANCE OF APPLICATION STANDARD.									
2. EXCEPT FOR STATEMENTS SPECIFIED ON THIS SHEET, ANYTHING ELSE SHALL BE IN ACCORDANCE WITH MAKER'S STANDARD.									
3. THE TEMPERATURE MEASURED AT BEARING HOUSING DOES NOT EXCEED 105°C.									
0		2023-04-28		M.S.KIM		D.H.OH		B.W.KO	
REV. NO		DATE		PREPARED		CHECKED		APPROVED	

SPEED - TORQUE & CURRENT CURVE

Curve No.

1STF0238444-L1-0002

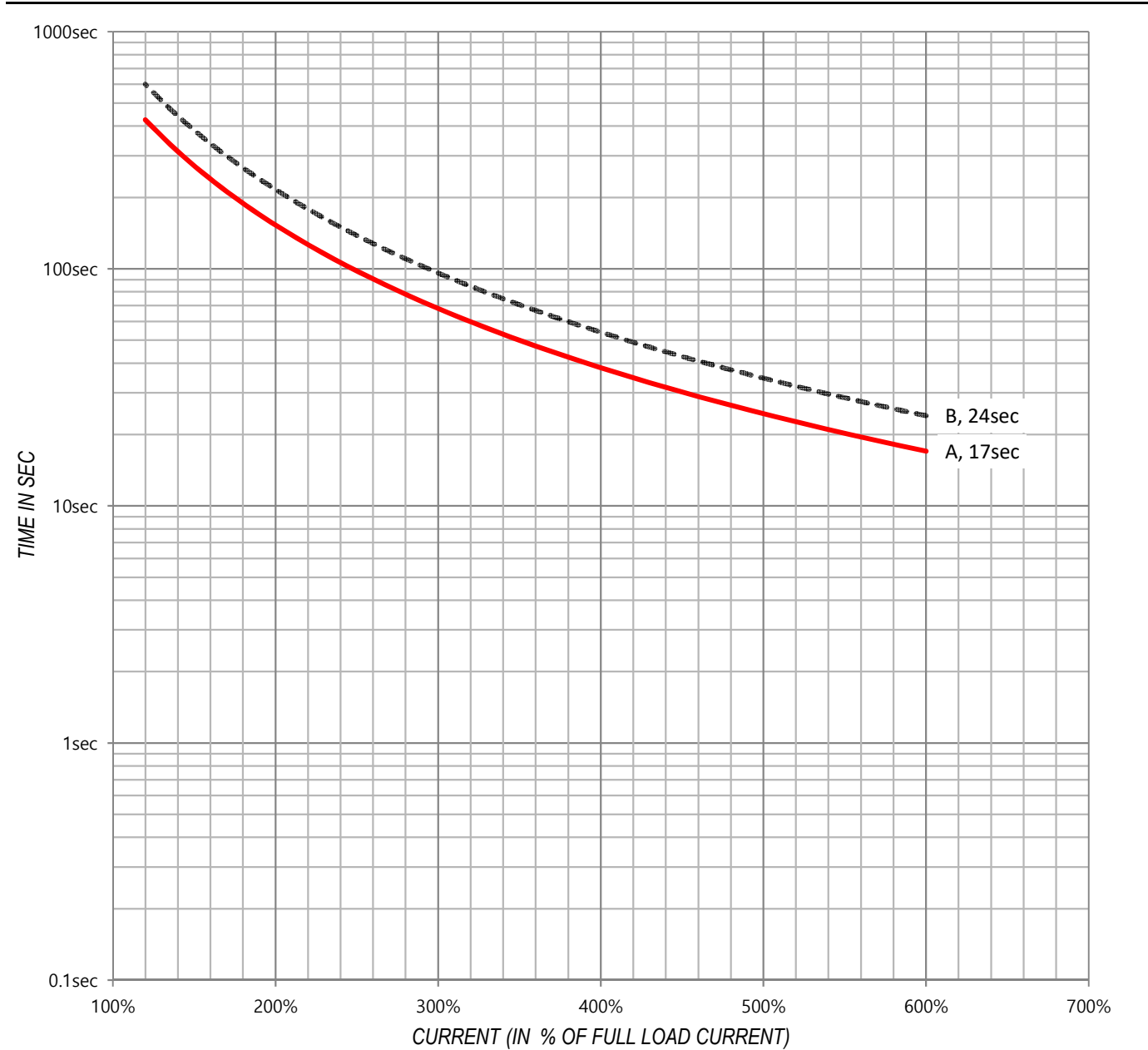
OUTPUT	0.4	kW	POLES	4	P
VOLTAGE	400	V	FREQUENCY	50	Hz
FULL LOAD TORQUE	0.27	kg·m	FULL LOAD CURRENT	1.0	A
LOCKED ROTOR TORQUE	170	%	LOCKED-ROTOR CURRENT	600	%
BREAKDOWN TORQUE	220	%	SPEED (at FULL LOAD)	1440	r/min
GD ² of LOAD :	-	kg·m ²	GD ² of MOTOR	0.012	kg·m ²



NOTE

	A	: SPEED-TORQUE CURVE AT	100%	RATED VOLTAGE
	B	: SPEED-TORQUE CURVE AT	90%	RATED VOLTAGE
	C	: SPEED-TORQUE CURVE AT	80%	RATED VOLTAGE
	D	: SPEED-CURRENT CURVE AT	100%	RATED VOLTAGE
	E	: SPEED-CURRENT CURVE AT	90%	RATED VOLTAGE
	F	: SPEED-CURRENT CURVE AT	80%	RATED VOLTAGE

<div> <div>HYOSUNG</div> <div>HEAVY INDUSTRIES</div> </div>	THERMAL LIMIT & TIME - CURRENT CURVE		Curve No.	
			1TLF0238444-L1-0002	
OUTPUT	0.4	kW	POLES	4 P
VOLTAGE	400	V	FREQUENCY	50 Hz
FULL LOAD TORQUE	0.27	kg·m	FULL LOAD CURRENT	1.0 A
LOCKED ROTOR TORQUE	170	%	LOCKED-ROTOR CURRENT	600 %
BREAKDOWN TORQUE	220	%	SPEED (at FULL LOAD)	1440 r/min
GD ² of LOAD :	-	kg·m ²	GD ² of MOTOR	0.012 kg·m ²



- NOTE
- A

: THERMAL LIMIT CURVE AT HOT CONDITION
- B

: THERMAL LIMIT CURVE AT COLD CONDITION
- C

※TIME-CURRENT CURVES(C,D,E) NEED BELOW DATA TO BE DRAWN.
- D

* LOAD GD2 AT MOTOR SHAFT
- E

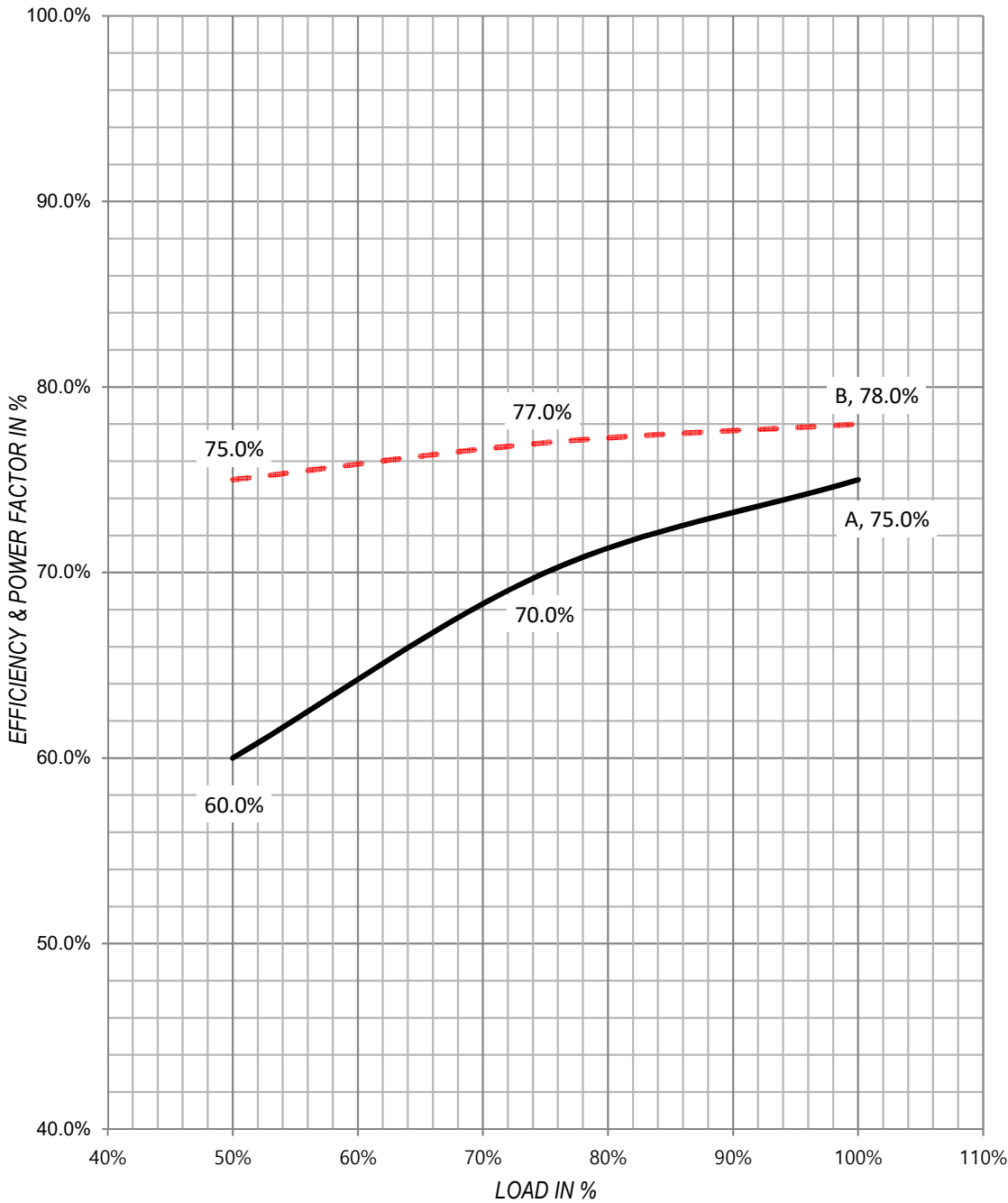
* SPEED-TORQUE CURVE OF LOAD

LOAD - POWER FACTOR & EFFICIENCY CURVE

Curve No.

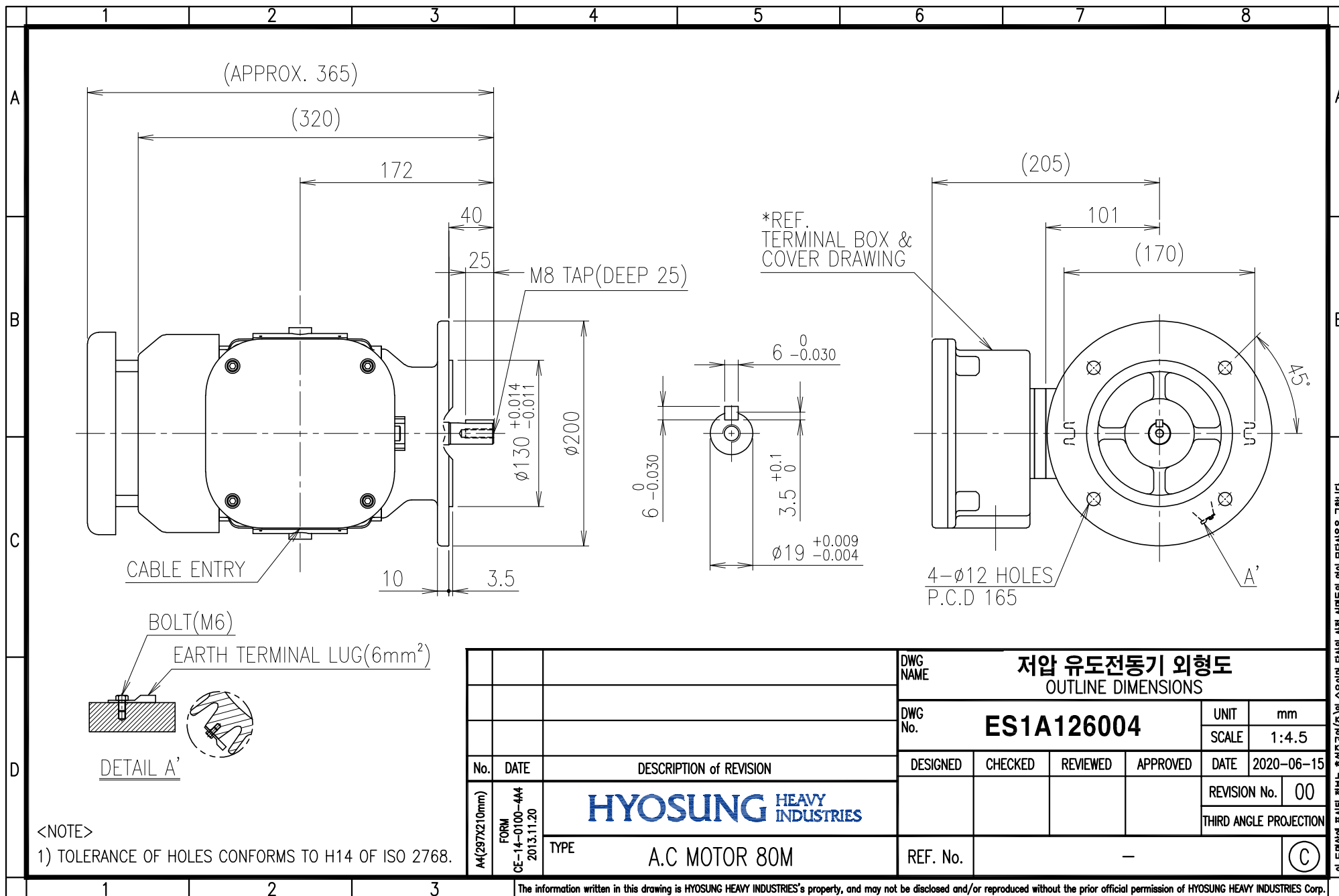
1PEF0238444-L1-0002

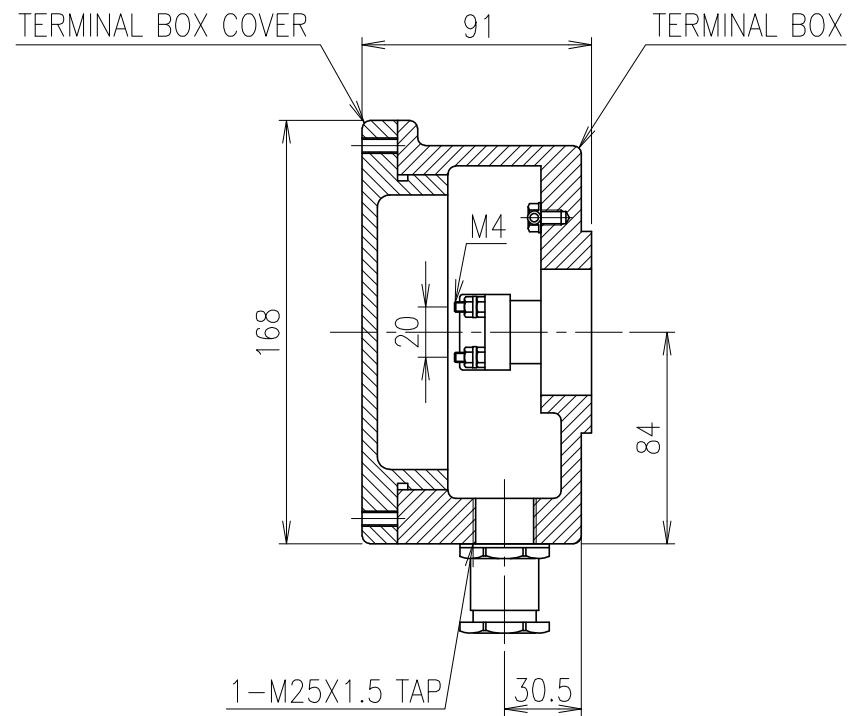
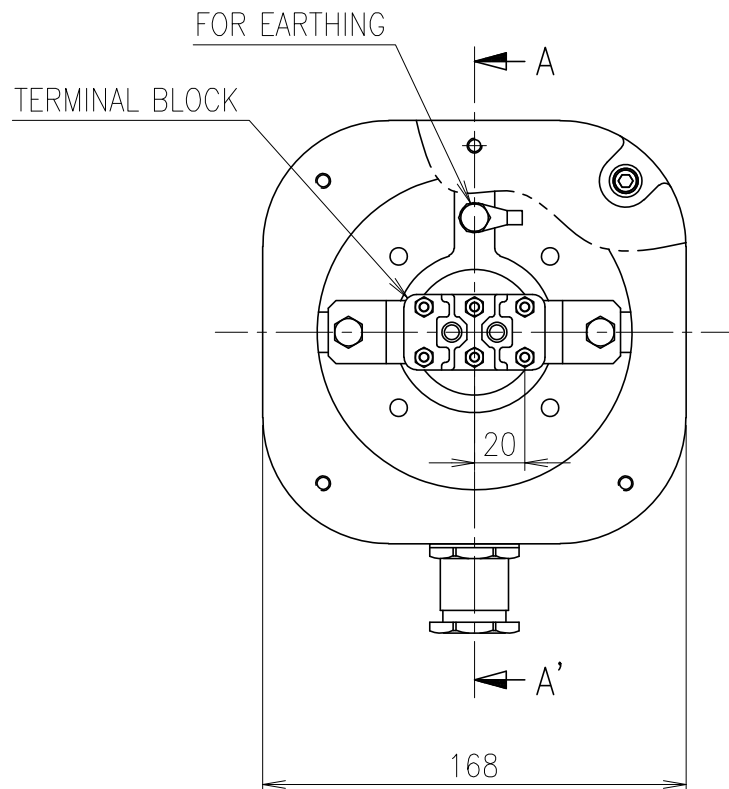
OUTPUT	0.4	kW	POLES	4	P
VOLTAGE	400	V	FREQUENCY	50	Hz
FULL LOAD TORQUE	0.27	kg·m	FULL LOAD CURRENT	1.0	A
LOCKED ROTOR TORQUE	170	%	LOCKED-ROTOR CURRENT	600	%
BREAKDOWN TORQUE	220	%	SPEED (at FULL LOAD)	1440	r/min
GD ² of LOAD :	-	kg·m ²	GD ² of MOTOR	0.012	kg·m ²



NOTE


- A : LOAD - POWER FACTOR CURVE
- - - B : LOAD - EFFICIENCY CURVE





SEC. A-A'

			DWG NAME				저압 유도전동기 단자박스외형도	
							TERMINAL BOX DRAWING	
			DWG No.				UNIT	mm
			ES1B100912				SCALE	1:3
			DESIGNED	CHECKED	REVIEWED	APPROVED	DATE	2020-10-29
			2020.10.20 MIN KYEONG MOON	2020.10.29 JU HWAN SHIN		2020.10.29 TAE HYUN KIM	REVISION No.	01
							THIRD ANGLE PROJECTION	
			REF. No.				—	
							C	

1	20.10.29	Terminal box cover shape changed	
No.	DATE	DESCRIPTION of REVISION	
A4(297X210mm)	FORM CE-14-0100-444 2013.11.20	 HYOSUNG	
		TYPE	
		A.C MOTOR 132	

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이 도면상의 표시된 정보는 (주) 효성의 소유이며, 당사의 사전 서면동의 없이 무단사용을 금합니다.

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>									
<p>شماره پیمان:</p> <p>۰۵۳ - ۰۷۳ - ۹۱۸۴</p>	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS								<p>26 از 15: شماره صفحه</p>	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه		
	BK	GCS	HY	120	EL	DS	0002	V00		

BARRING DEVICE MOTOR

 NISOC	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS							26 از 16: شماره صفحه	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	HY	120	EL	DS	0002		V00

Data Sheets for LV Induction Motors			
Item	Category	Required Specification	Vendor Data
1	Driven Machine	Electrical Motor	Electrical Motor
2	Driven Machine Tag No.	-	-
3	Manufacturer	By Vendor	HYOSUNG
4	Manufacturer's Number / Type	By Vendor	N/A
5	Manufacturing Standard	IEC 60034 & IPS-M-EL-131(2)	IEC 60034 & IPS-M-EL-131(2)
6	Location	[X] Outdoor (Under Shelter) [] Indoor	Outdoor
7	Area Classification	Acc. to requisition data	
8	Ambient Temperature	5 to +55°C	5 to +50°C
9	Relative Humidity	100 %	100%
10	Dust	[X] Yes [] No	Yes
11	Corrosion	[X] Yes [] No	Yes
12	Elevation	12.5m Above Sea Level	12.5m Above Sea Level
13	Quantity	Acc. To Load List (BK-GCS-PEDCO-120-EL-LI-0001)	3
14	Tag Number	Acc. To Load List (BK-GCS-PEDCO-120-EL-LI-0001)	N/A
15	Motor Type	Asynchronous, Squirrel Cage	Asynchronous, Squirrel Cage
16	Mounting	[] Horizontal [] Vertical	Horizontal
17	Rotor Construction	[] Brazed Copper Bars [] Aluminum Die Cast	Aluminum Die Cast
18	Frame Material	Steel Sheet or Cast Iron	Cast Iron
19	Rotor Cage Material	By Vendor	Steel
20	Cooling Method	IC411 According to IPS-M-EL-131(2)	IC411
21	Ingress Protection Degree for Motor	IP 54	IP 55
22	Ingress Protection Degree for Terminal Box	IP 55	IP 55
23	Explosion Protection of Motor	N/A for Safe Area Zone 2, IIB, T3	Ex db IIB T4 Gb
24	Explosion Protection of Terminal Box	N/A for Safe Area Zone 2, IIB, T3	Ex db IIB T4 Gb
25	Ex. Certificate Authority/Certificate No.	By Vendor	N/A
26	Driven Machine Shaft Power Requirement (P_{mp})	As Per Related Mechanical Data sheet (to be Specified by Vendor)	N/A
27	De-Rating Factor due to Ambient Temperature (K_p)	Vendor Shall Advise	N/A
28	De-Rating Factor Due to Altitude (K_a)	1	N/A
29	Design margin (K_m)	Acc. to IPS Standard (Note 1)	N/A

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS							26 از 17 شماره صفحه	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	HY	120	EL	DS	0002		V00

Data Sheets for LV Induction Motors			
Item	Category	Required Specification	Vendor Data
30	Motor Shaft Power Requirement @ Site <small>condition (=Km X P_{mp})</small>	By Vendor	Not Motor Vendor scope
31	Standard Rated Motor Output <small>=Km X P_{mp} / (K_a - K_t)</small>	By Vendor	Not Motor Vendor scope
32	Frame Size	By Vendor	112M
33	Frame Earth Boss	External	M6
34	Rated Voltage	400 V ±10%	400 V ±10%
35	Rated Frequency	50 Hz ±5%	50 Hz ±5%
36	Protection Devices	Switch-Fuse	
37	Neutral Earthing System	TNS	
38	Voltage During Motor Start	80% Un	80% Un
39	Synchronous Speed	By Vendor	1500
40	Full Load Speed [RPM]	By Vendor	1455
41	Over Speed Capability	By Vendor	150%
42	Number of Poles	By Vendor	4
43	Starting Method	Direct on Line	Direct on Line
44	Direction of Rotation (Viewed from coupling end)	Shall be Proposed by MFR Based on Driven Load Rotation of Direction	[] CW [] CCW [] Unidirectional [X] Bidirectional
45	Stator Winding Connection	Delta	Delta
46	Location of Terminal Box (Viewed from DE)	[] Right [] Left	Left
47	Insulation Class	Class F	Class F
48	Class of Temperature Rise	Class B	Class B
49	Max. Permissible Starting Time [s]	By Vendor	15s
50	Accelerating Time <small>DOL starting, at 100% U_n [s]</small>	By Vendor	load torque curve be needed
51	Accelerating Time <small>DOL starting, at 80% U_n [s]</small>	By Vendor	load torque curve be needed
52	Starting Torque at 100% U _n [N.m]	By Vendor	25.9
53	Starting Torque at 80% U _n [N.m]	By Vendor	16.6
54	Maximum Torque [N.m]	By Vendor	33.1
55	Pull-Up Torque	By Vendor	23.7
56	Locked Rotor Torque	By Vendor	25.9
57	Rated Torque [N.m]	By Vendor	14.4
58	Rated Current [A]	By Vendor	4.8

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS							26 از 18 :شماره صفحه	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	HY	120	EL	DS	0002		V00

Data Sheets for LV Induction Motors			
Item	Category	Required Specification	Vendor Data
59	Max Starting Current	By Vendor	33.6
60	No Load Current [A]	By Vendor	2.3
61	Locked Rotor Current [A]	$< I_n$	700%
62	Locked Rotor Power Factor [A]	By Vendor	46.30%
63	Torque-Speed Class	Shall be Selected Based on Driven Load Torque Requirement	[] A [v] B [] C [] D
64	Duty Cycle	S1	S1
65	Current at ½ Rated Load	By Vendor	3.2
66	Current at ¾ Rated load	By Vendor	4.0
67	Current at Rated Load	By Vendor	4.8
68	Starting Power Factor	By Vendor	46.30%
69	Power Factor at ½ Rated Load	By Vendor	59
70	Power Factor at ¾ Rated load	By Vendor	69
71	Power Factor at Rated Load	By Vendor	76
72	Efficiency at ½ Rated Load	By Vendor	83.7
73	Efficiency at ¾ Rated Load	By Vendor	85.7
74	Efficiency at Rated Load	By Vendor	86.7
75	No Load Losses	By Vendor	81W
76	Stall Time (Hot/Cold) (Sec)	By Vendor	15s / 35s
77	Transient Reactance (X'd)	By Vendor	
78	Sub - Transient Reactance (X''d)	By Vendor	
79	Acceleration Time At 80% Un (Sec)	By Vendor	
80	Bearing (DE)		
	Type (Detail Description by Vendor)	Anti Friction (Ball Bearing)	Anti Friction (Ball Bearing)
	Manufacturer	By Vendor	Later
	Minimum Life Without Load	Minimum 40000 Hours	Minimum 40000 Hours
	Minimum Life With Load	Minimum 32000 Hours	Load info. Be needed
	Lubrication	Grease	Grease
	Cooling Water/ Oil Capacity	N/A	N/A
	Permissible Trust Force [N]	By Vendor	Later
81	Bearing (NDE)		
	Type (Detail Description by Vendor)	Anti friction (ball bearing)	Anti Friction (Ball Bearing)
	Manufacturer	By Vendor	Later

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>									
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS							26 از 19 شماره صفحه		
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال			نسخه
	BK	GCS	HY	120	EL	DS	0002			V00

Data Sheets for LV Induction Motors			
Item	Category	Required Specification	Vendor Data
	Minimum Life Without Load	Minimum 40000 Hours	Minimum 40000 Hours
	Minimum Life With Load	Minimum 32000 Hours	Load info. Be needed
	Lubrication	Grease	Grease
	Cooling Water/ Oil Capacity	N/A	N/A
	Permissible Trust Force [N]	By Vendor	Later
	Space Heater	Not Required	N/A
	Space Heater Voltage [V]	230VAC, 50Hz, 1Ph	N/A
	Space Heater Power [W]	By Vendor	N/A
82	Temp. Detector (Winding/Bearing)	By Vendor	N/A
83	Terminal Boxes	[X] Power Terminal Box [X] Space heater (if required)	Power Terminal Box
84	Main Power Cable Specification & Size & Orientation	According to (BK-GCS-PEDCO-120-EL-CN-0003)	Not Motor Vendor scope
85	Motor Weight (Net/Shipped)	By Vendor	66 kgf
86	Rotor Moment of Inertia	By Vendor	0.312 kg-m2
87	Method of Cable Entry	[X] Cable Gland [] Sealing Gasket	Cable Gland
88	Cable Gland Hub of Main Terminal Box	By Vendor	1-M25x1.5
89	Cable Gland Entry for aux. Terminal Box (if applicable)	1 X M25 (if Required)	N/A
90	Short Circuit Capability of Terminal Box	30 kA for 0.2 S	N/A
91	Sound Level at 1 distance meter From Motor	Max. 85 dB(A)	Max. 85 dB(A)
92	Finish Color	Manufacturer Standard	RAL7047 (LIGHT GREY, ENAMEL)
93	Load Torque/Slip, Current/Slip Curves	By Vendor	N/A
94	Motor Torque/Slip, Current/Slip Curves	By Vendor	N/A
95	Time - Current Heating (Thermal Limit) Curve	By Vendor	N/A
96	Motor Thermal Capacity Data	By Vendor	N/A
97	Installation, Operation & Maintenance Instruction	By Vendor	N/A
98	Spare Parts List for Two Years Operation	By Vendor	N/A
99	Commissioning Spare Part List	By Vendor	N/A
100	Dimensional Outline Drawing	By Vendor	ES1AS64855 / ES1B100912
101	Certified Type Test Report & Written Statement	By Vendor	N/A
102	Certified Conformity for EX Type Motors	By Vendor	N/A
103	Deviation List (if Any)	By Vendor	N/A

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS							26 از 20 :شماره صفحه	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	HY	120	EL	DS	0002		V00

Data Sheets for LV Induction Motors			
Item	Category	Required Specification	Vendor Data
104	Test & Inspection	Factory Routine Test Report Shall be Submitted	

DE: Drive End

NDE: Non Drive End CW: Clockwise

CCW: Counter Clockwise

Note 1: IPS design margin is defined in accordance with standard output power rating of motor:

	Standard Output Power Rating	Design margin
1	Up to 22kW	1.25
2	from 22kW to 55kW	1.15
3	Above 55kW	1.10

Note 2: The following values are default unless otherwise specified during finalization of motors:

	Standard Output Power Rating	Cable Size	Gland Size
1	5.5kW	3x6	M25
2	7.5kW	3x6	M25
3	15kW	3x16	M32
4	18.5kW	3x16	M32
5	30kW	3x50	M40
6	37kW	3x50	M40
7	45kW		M50
8	55kW	3x95	M50

INDUCTION MOTOR
DATA SHEET

PROJECT No.	F0238444-L1-0001
HS No.	HLA020106014870
L-SPEC No.	DSML21159F020H

SHEET 1 OF 1	CUSTOMER :	
FOR APPROVAL	JOB No. :	N/A
SERVICE : N/A	SITE :	효성강전_광신기계공업_UAE PJT_220220
	QUANTITY	3 SETS

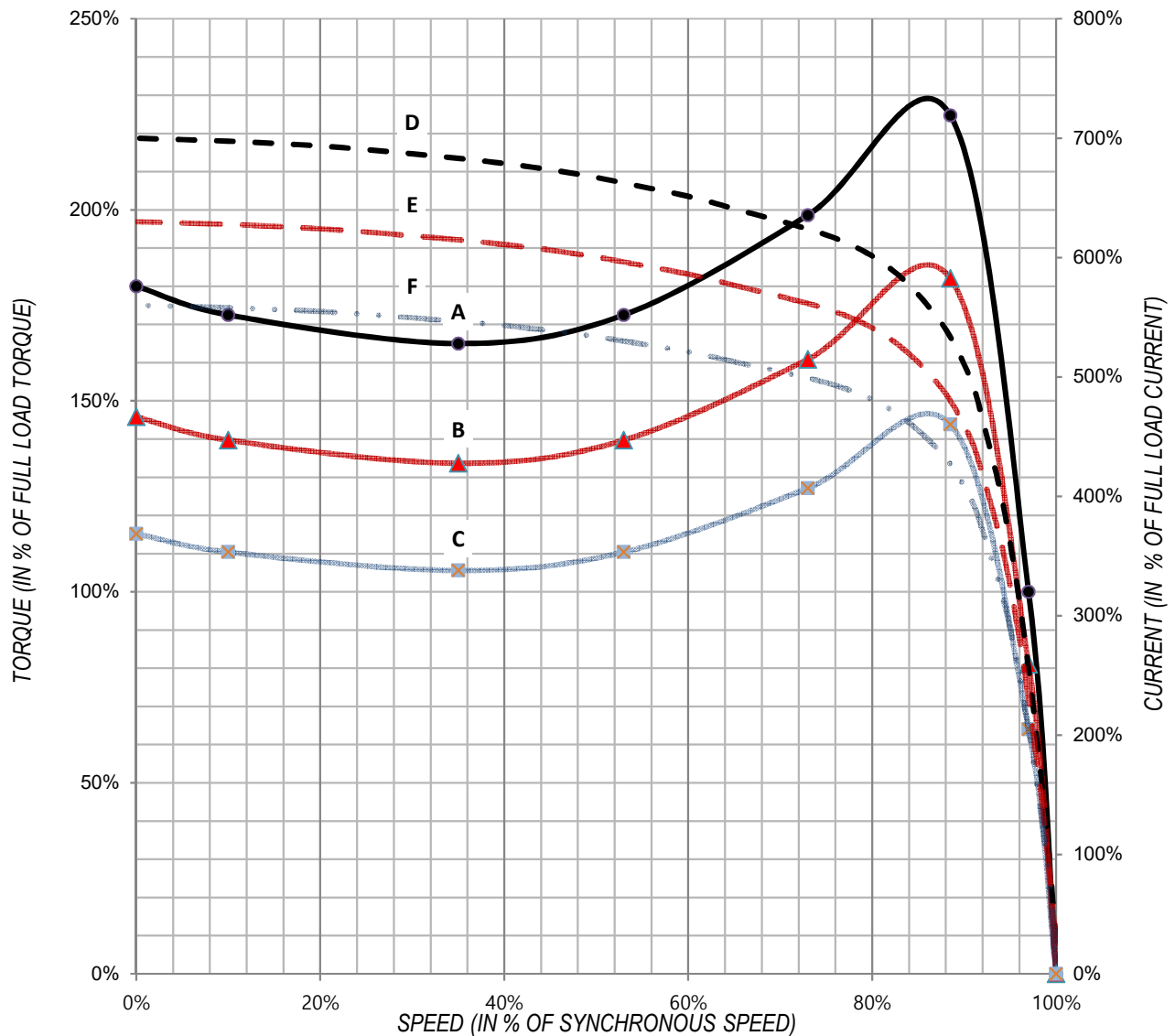
GENERAL DATA				PERFORMANCE DATA					
FRAME No.		112M		OUTPUT			2.2 kW		
TYPE		EF-F		POLES			4 P		
ENCLOSURE		TE		ROTOR TYPE			SQUIRREL CAGE		
COOLING METHOD		FC(IC411)		STARTING METHOD			DIRECT ON LINE		
INSULATION CLASS		F CLASS		PHASE			3 PHASE		
TEMP. RISE AT FULL LOAD				FREQUENCY			50 Hz		
	RES. METHOD	65 K (at S.F:1.0)		SPEED (AT FULL LOAD)			1455 r/min		
RATING		S1		PRIMARY					
LOCATION		OUTDOOR			VOLTAGE		400 V		
ALTITUDE		LESS THAN 1030 m			NO LOAD CURRENT		2.3 A		
HUMIDITY		LESS THAN 80 %			FULL LOAD CURRENT		4.8 A		
AMBIENT TEMP.		55 °C			LOCKED-ROTOR CURRENT		700 %		
EXPLOSION PROOF TYPE		Ex db IIB T4 Gb		EFFICIENCY					
MOUNTING		B35			AT 1/2 LOAD		83.7 %		
BEARING TYPE		ANTI-FRICTION			AT 3/4 LOAD		85.7 %		
NDE/DE BRG. No.		6205ZZ / 6207ZZ			AT FULL LOAD		86.7 %		
BRG. LUBRICATION		N/A		POWER FACTOR					
PROTECTION GRADE		IP55			AT 1/2 LOAD		59.0 %		
SERVICE FACTOR		1.0			AT 3/4 LOAD		69.0 %		
DRIVE		DIRECT COUPLED			AT FULL LOAD		76.0 %		
SHAFT				TORQUE					
	EXTENSION	SINGLE			FULL LOAD		1.47 kg-m		
	EXTERNAL THRUST	N/A					14.4 N-m		
NOISE LEVEL(MEAN VALUE AT 1m FROM MOTOR)					LOCKED ROTOR		180 %		
	NO-LOAD	STANDARD			BREAKDOWN		230 %		
VIBRATION		2.8 mm/s (r.m.s)		MOTOR GD ²			0.078 kg-m ²		
NUMBER OF CONSECUTIVE STARTS		COLD : 2 / HOT : 1 (4P)		MAX LOAD GD ² AT MOTOR SHAFT			6.2 kg-m ²		
				MOTOR APPROX. WEIGHT			66 kg		
ROTATION(VIEWED FROM DE)		C.C.W		PAINTING			RAL7047 (LIGHT GREY, ENAMEL)		
ACCESSORIES (OPTIONAL)				SUBMITTAL DRAWINGS					
TEMPERATURE DETECTOR				OUTLINE DIMENSION			ES1AS64855		
	WINDING		NO	CONDUIT BOX & COVER			ES1B100912		
		TYPE	N/A	SPEED-TORQUE & CURRENT CURVE			1STF0238444-L1-0001		
	BEARING		NO	THERMAL LIMIT			1TLF0238444-L1-0001		
		TYPE	N/A	& TIME-CURRENT CURVE					
SPACE HEATER		NO		LOAD vs POWER FACTOR			1PEF0238444-L1-0001		
	RATING		N/A	& EFFICIENCY					
				<REMARKS>					
				1. ABOVE ALL DATA ARE CALCULATED AT 100% VOLTAGE.					
				2. PREMIUM EFFICIENCY TYPE MOTOR					
APPLICATION STANDARDS									
IEC60034-1, ISO 3746									
< NOTE > 1. THESE DATA ARE ONLY DESIGN VALUES AND SHALL BE GUARANTEED WITH TOLERANCE OF APPLICATION STANDARD.									
2. EXCEPT FOR STATEMENTS SPECIFIED ON THIS SHEET, ANYTHING ELSE SHALL BE IN ACCORDANCE WITH MAKER'S STANDARD.									
3. THE TEMPERATURE MEASURED AT BEARING HOUSING DOES NOT EXCEED 105 °C.									
0		2023-04-28		M.S.KIM		D.H.OH		B.W.KO	
REV. NO		DATE		PREPARED		CHECKED		APPROVED	

SPEED - TORQUE & CURRENT CURVE

Curve No.

1STF0238444-L1-0001

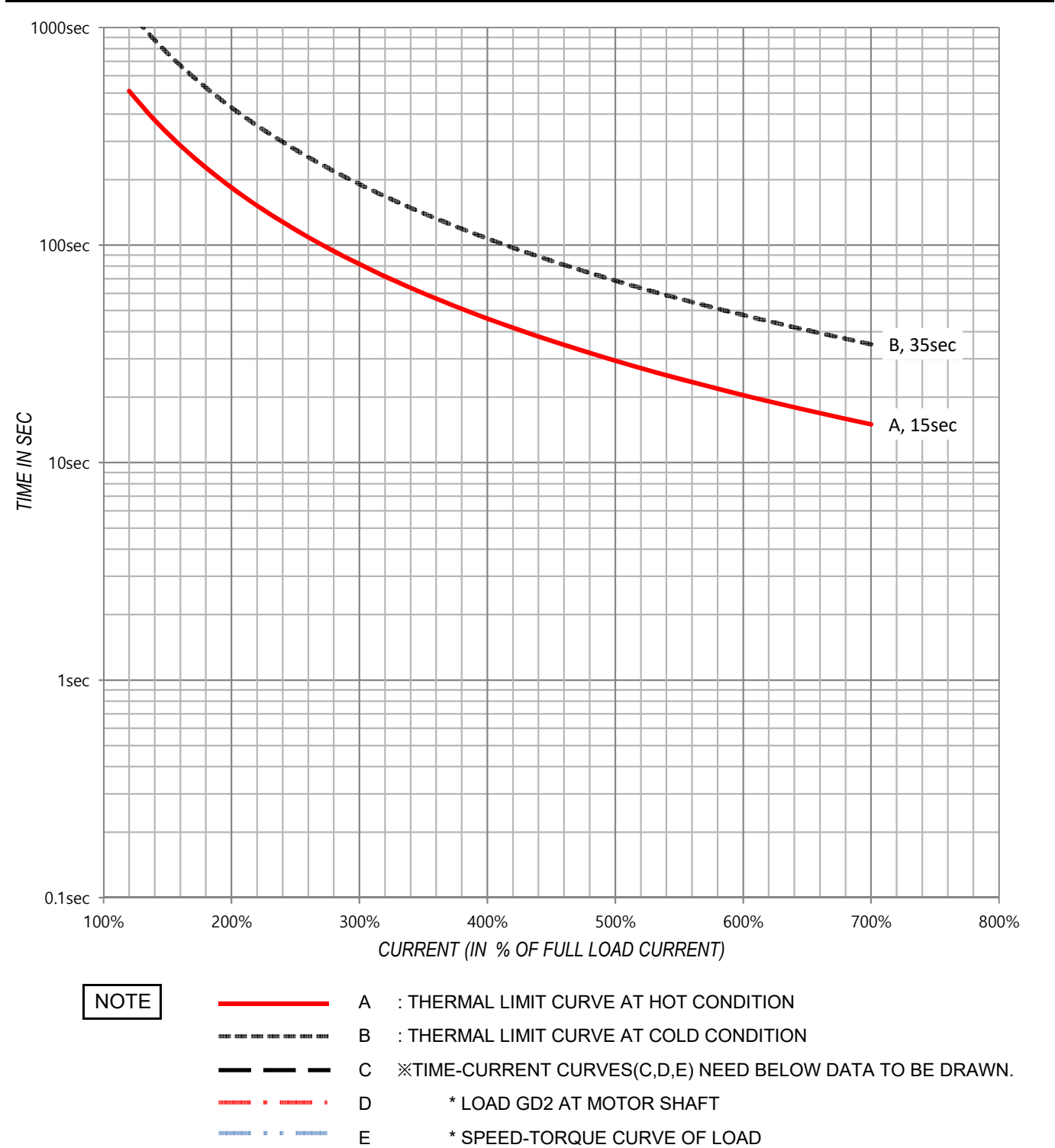
OUTPUT	2.2	kW	POLES	4	P
VOLTAGE	400	V	FREQUENCY	50	Hz
FULL LOAD TORQUE	1.47	kg·m	FULL LOAD CURRENT	4.8	A
LOCKED ROTOR TORQUE	180	%	LOCKED-ROTOR CURRENT	700	%
BREAKDOWN TORQUE	230	%	SPEED (at FULL LOAD)	1455	r/min
GD ² of LOAD :	-	kg·m ²	GD ² of MOTOR	0.078	kg·m ²



NOTE

	A	: SPEED-TORQUE CURVE AT	100%	RATED VOLTAGE
	B	: SPEED-TORQUE CURVE AT	90%	RATED VOLTAGE
	C	: SPEED-TORQUE CURVE AT	80%	RATED VOLTAGE
	D	: SPEED-CURRENT CURVE AT	100%	RATED VOLTAGE
	E	: SPEED-CURRENT CURVE AT	90%	RATED VOLTAGE
	F	: SPEED-CURRENT CURVE AT	80%	RATED VOLTAGE

<div> <div>HYOSUNG</div> <div>HEAVY INDUSTRIES</div> </div>	THERMAL LIMIT & TIME - CURRENT CURVE		Curve No.	
			1TLF0238444-L1-0001	
OUTPUT	2.2	kW	POLES	4 P
VOLTAGE	400	V	FREQUENCY	50 Hz
FULL LOAD TORQUE	1.47	kg·m	FULL LOAD CURRENT	4.8 A
LOCKED ROTOR TORQUE	180	%	LOCKED-ROTOR CURRENT	700 %
BREAKDOWN TORQUE	230	%	SPEED (at FULL LOAD)	1455 r/min
GD ² of LOAD :	-	kg·m ²	GD ² of MOTOR	0.078 kg·m ²

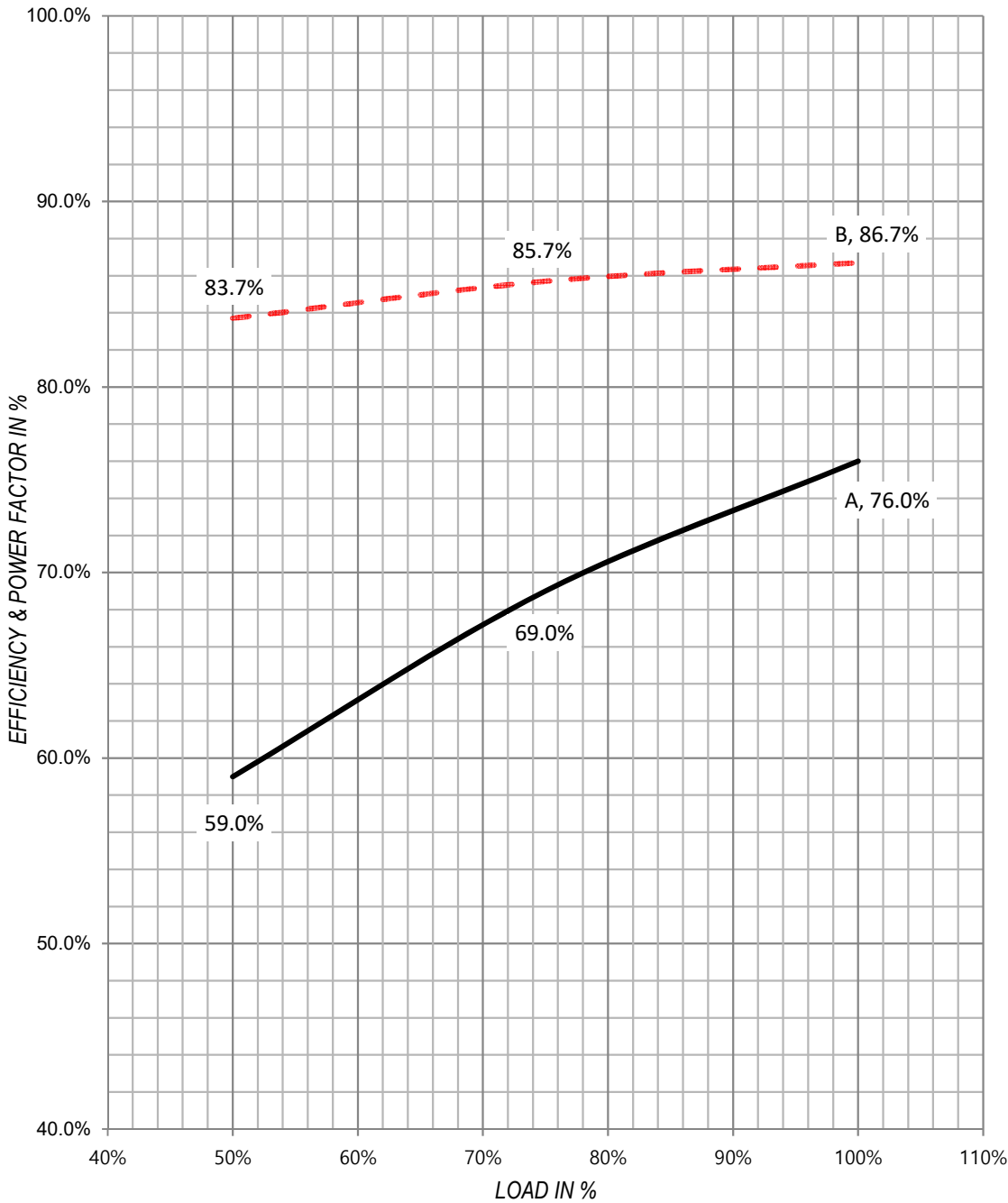


LOAD - POWER FACTOR & EFFICIENCY CURVE

Curve No.

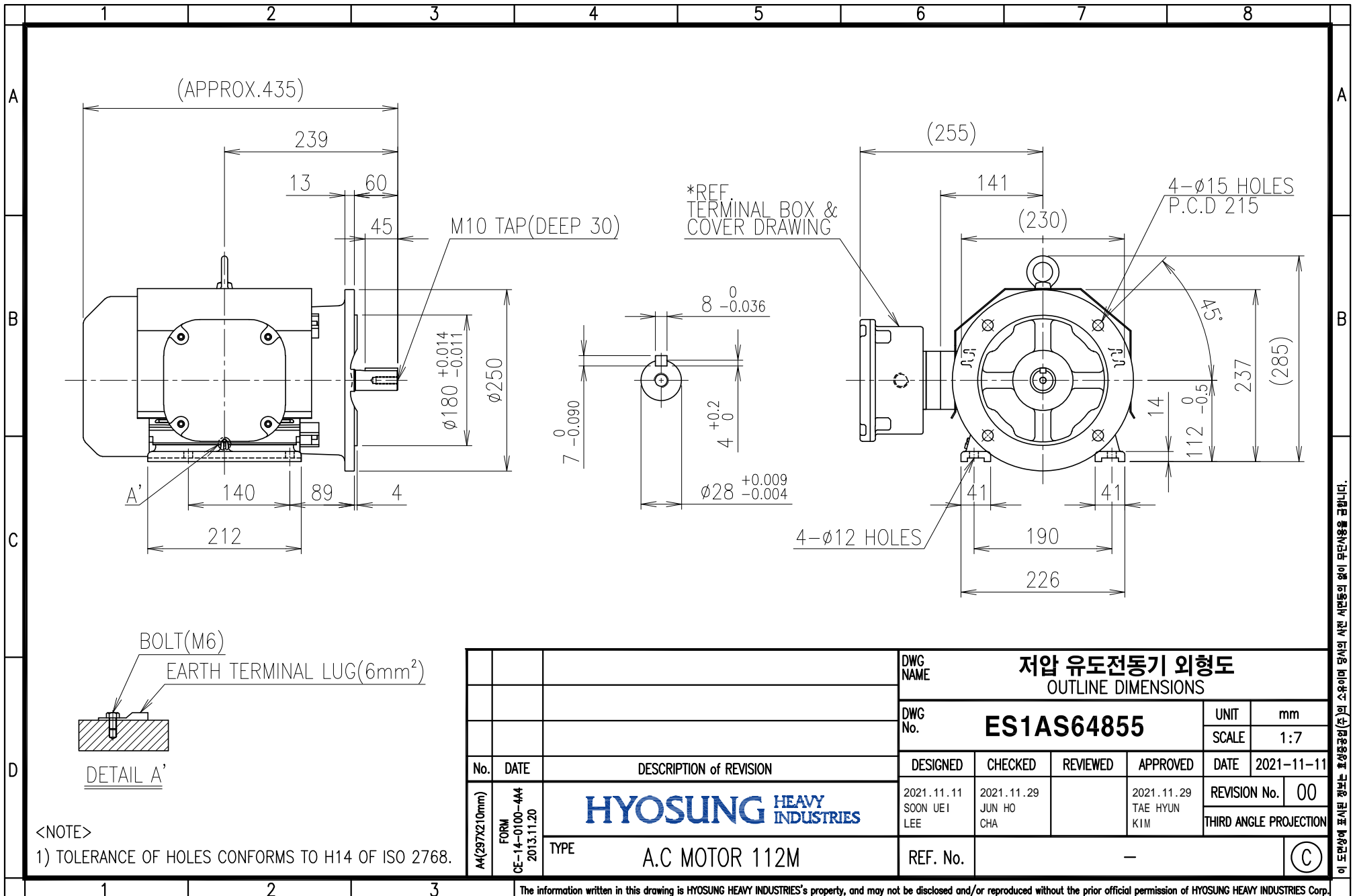
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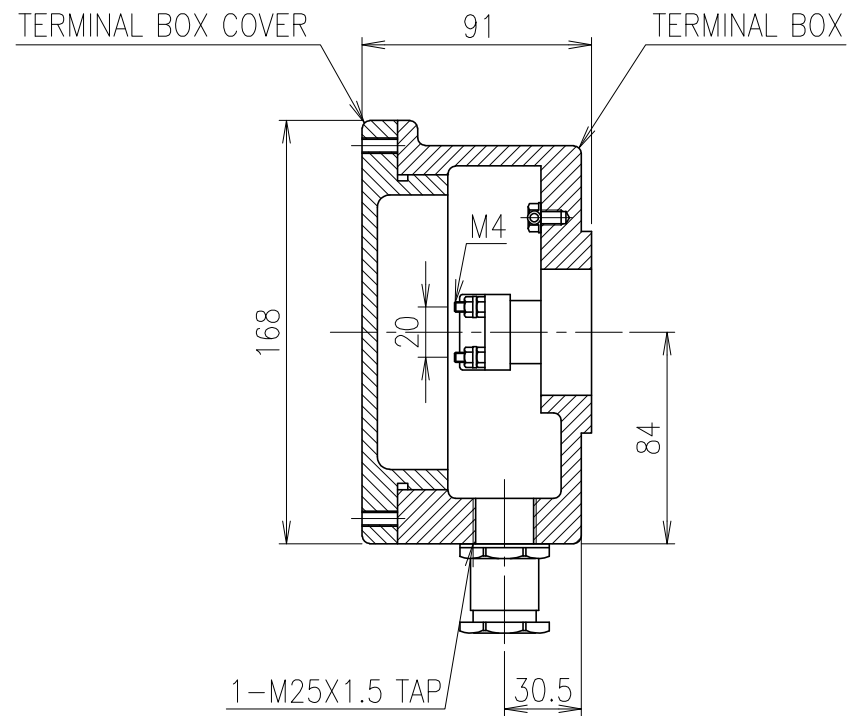
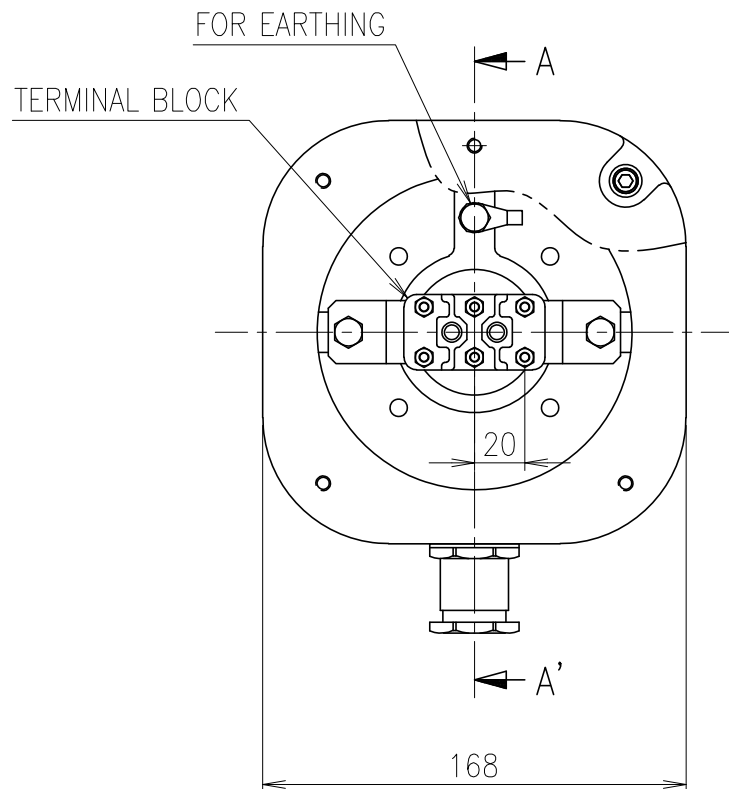
OUTPUT	2.2	kW	POLES	4	P
VOLTAGE	400	V	FREQUENCY	50	Hz
FULL LOAD TORQUE	1.47	kg·m	FULL LOAD CURRENT	4.8	A
LOCKED ROTOR TORQUE	180	%	LOCKED-ROTOR CURRENT	700	%
BREAKDOWN TORQUE	230	%	SPEED (at FULL LOAD)	1455	r/min
GD ² of LOAD :	-	kg·m ²	GD ² of MOTOR	0.078	kg·m ²



NOTE


— A : LOAD - POWER FACTOR CURVE
- - - B : LOAD - EFFICIENCY CURVE





SEC. A-A'

			DWG NAME				저압 유도전동기 단자박스외형도	
							TERMINAL BOX DRAWING	
			DWG No.				UNIT	mm
			ES1B100912				SCALE	1:3
			DESIGNED	CHECKED	REVIEWED	APPROVED	DATE	2020-10-29
			2020.10.20 MIN KYEONG MOON	2020.10.29 JU HWAN SHIN		2020.10.29 TAE HYUN KIM	REVISION No.	01
							THIRD ANGLE PROJECTION	
			REF. No.				—	
							C	

1	20.10.29	Terminal box cover shape changed	
No.	DATE	DESCRIPTION of REVISION	
A4(297X210mm)	FORM CE-14-0100-444 2013.11.20	 HYOSUNG	
		TYPE	
		A.C MOTOR 132	

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