

Total Smart Solution Partner

SN High Voltage Induction Motor



주식회사 에스엔



SN Product Line

Midium & High Voltage Motors

TE Series

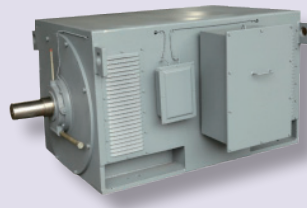
전폐 Fin Type



Rotor Type: Squirrel Cage
Number of Poles: 2-12P
Voltage: 2 - 11 kV
Output: 75 - 700 kW
Type of Enclosure: TEFC
Frame Size: 280 - 400
Type of Construction: B3, V1
Degree of Protection: IP55
Method of Cooling: IC411

DP Series

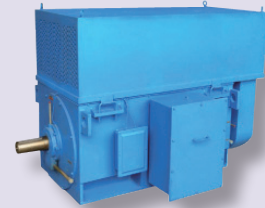
반폐 Type



Rotor Type: Squirrel Cage
Number of Poles: 4P ~
Voltage: 2 - 13.8 kV
Output r: 250 - 10,000 kW
Type of Enclosure: DP
Frame Size: 355 - 630
Type of Construction: B3, V10
Degree of Protection: IP22
Method of Cooling: IC01

TA Series

전폐 Pipe냉각 Type

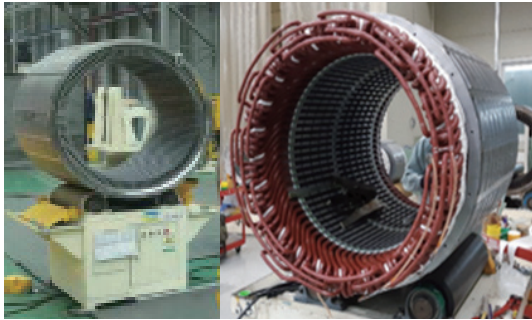


Rotor Type: Squirrel Cage
Number of Poles: 4P~
Voltage: 2 - 13.8 kV
Voltage: 150 - 800 kW
Type of Enclosure: TEAAC
Frame Size: 355 - 630
Type of Construction: B3, V10
Degree of Protection: IP55
Method of Cooling: IC611



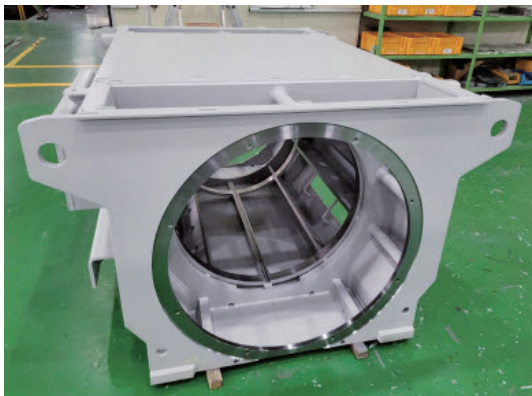
Product Features

SN 제품 특징점



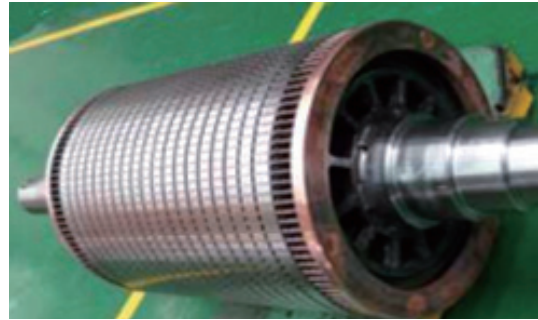
고정자

- 최고급 재료의 전기 강판 사용과 두께 편차를 없애는 코어 적층 방법 적용으로 고효율화 실현 및 자기소음 최소화
- 최신의 VPI(Vacuum Pressure Impregnation) 절연 시스템 적용으로 전동기 신뢰성 확보



FRAME

- 기계적 전기적 진동에 우수한 내력을 가진 강판구조이며 내부식성 또한 우수함



회전자

- 엄격한 축재질 선정과 최적의 코어 적층공법 적용으로 회전자 안정감 확보
- 2 Plane 정밀 동적 Balancing으로 저진동 실현



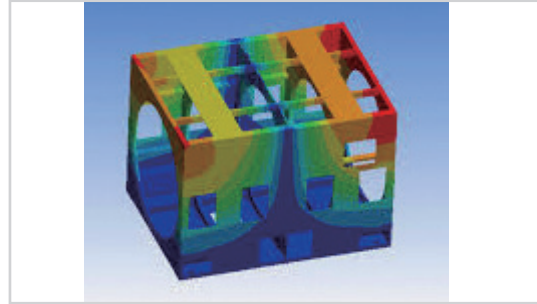
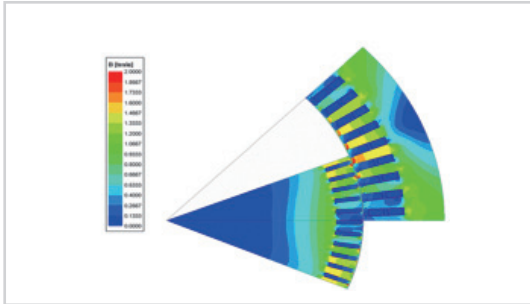
품질, 시험

- 품질 실명제 적용으로 신뢰성 제고
- 3 MW 까지 부하시험 실시로 제품 품질확보



SN 전동기 연구개발

R&D Design Analysis



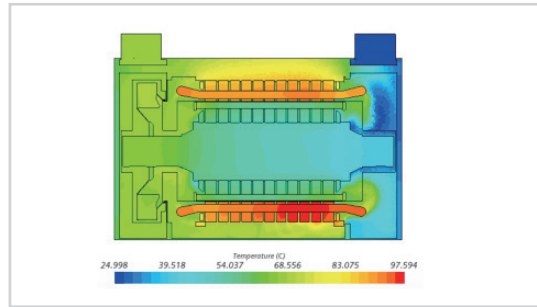
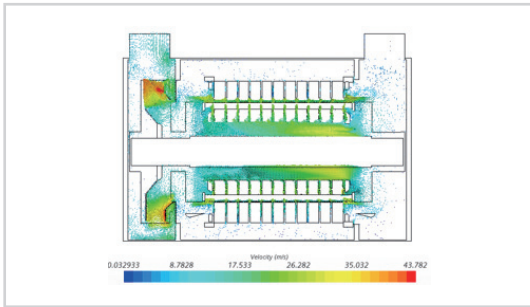
전자장 해석 (Electromagnetic Analysis)

- 우수한 전기적 특성과 고효율 달성
- 최적의 전자기 소음 및 온도 예측

구조해석 (Structural Analysis)

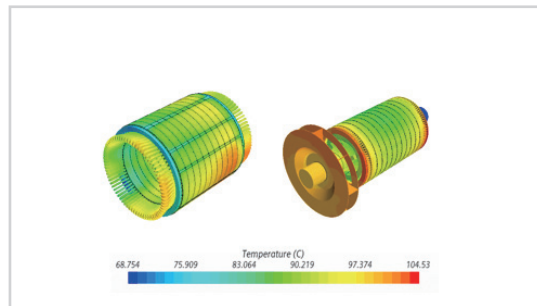
- 최적의 Frame 구조 및 공진회피 설계

04



통풍 냉각 해석

- 최적의 통풍회로 및 풍량해석
- CFD(Computational Fluid Dynamics)를 활용한 정확한 온도해석



Standard Specification

표준 적용 사양

적용 규격(Applicable Standard Rule)	KS, IEC, NEMA, IEEE
정격 전압(Voltage)	2,000 V ~ 11,000 V
정격 주파수(Frequency)	60Hz, 50Hz
시간 정격(Time Duty)	S1(연속 정격)
주위 온도(Ambient Temperature)	-20°C ~ 40°C
설치 장소(Area Classification)	비방폭 지역
표고(Altitude)	1000 M 이하
절연 계급(Insulation Class)	F
온도 상승(Temperature Rise)	B Class(저항법으로 80K)
보호 등급(Protection Degree)	IP22, IP44, IP54, IP55
기동 방식(Starting Method)	직입 기동
연속기동횟수(Starting Duty)	냉상태-2번, 열상태-1번
운전 전원조건(Power Condition)	정격전압의 ±10%, 정격 주파수의 ±5%

환경에의한 출력 감소

1. 주위 온도

주위 온도	출력 감소 Factor
40°C	1.0
45°C	0.95
50°C	0.9
55°C	0.84
60°C	0.78

2. 표고

표고(Altitude)	출력 감소 Factor
0 m < A ≤ 1000 m	1.0
1000 m < A ≤ 1500 m	0.95
1500 m < A ≤ 2000 m	0.92
2000 m < A ≤ 2500 m	0.88
2500 m < A ≤ 3000 m	0.84
3000 m < A ≤ 3500 m	0.80
3500 m < A ≤ 4000 m	0.76

외형 치수의 적용공차

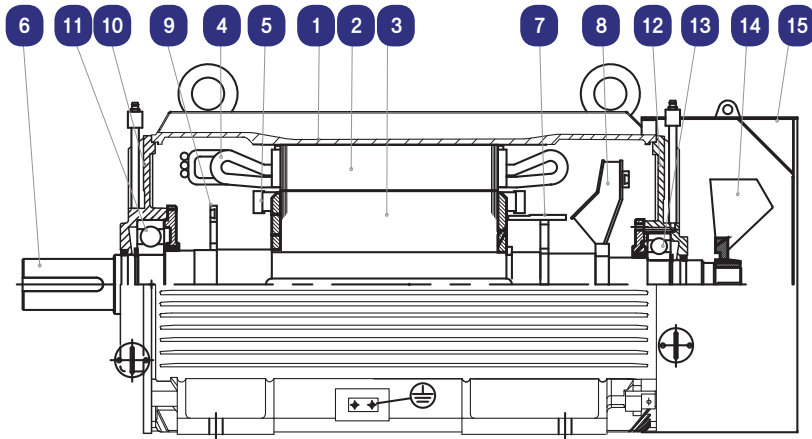
치수(외형도상 기호)	적용 공차(mm)	
축 중심까지 높이(H)	500 Fr 이하	0 ~ -1.0
	630 Fr 이상	0 ~ -1.5
축경(ΦD)	m6	
Mounting Hole간 거리 (A, B)	500 mm	±1.0
	500 ~ 750 mm	±1.5
	750 ~ 1000 mm	±2.0
	1000 mm 이상	±2.5



TE Series

농형전동기 Rib냉각 모델

Totally Enclosed fan Cooled



전동기 단면도 및 부품명칭

1 프레임	5 엔드링	9 바란스	13 반부하 베어링
2 고정자 철심	6 축	10 부하 엔드실드	14 외부 팬
3 회전자 철심	7 에어 가이드	11 부하 베어링	15 팬 커버
4 고정자 코일	8 내부 팬	12 반부하 엔드실드	



Rated Power

Specifications

회전자 구조	농형	프레임 사이즈	280 ~ 400
극 수	2~12P	설치 방법	수평(B3), 수직(V1)
전 압	2 ~ 11 KV	보호 등급	IP44, IP54, IP55
출력범위	75 ~ 700 KW	절연등급/온도상승	F/B
외피형식	TEFC	냉각 방식	IC411(IEC 60034-6)

3,300 V, 60 Hz

Unit: kW

Type \ Poles		2P(B3)	4P	6P	8P	10P	12P
280	A	130	160	130	75	-	-
	B	180	200	170	100	-	-
315	A	260	320	240	170	-	-
	B	340	400	320	230	-	-
355	A	410	470	400	290	230	160
	B	480	540	450	340	260	180
400	A	600	630	530	440	350	280
	B	680	700	600	480	390	310

6,600 V, 60 Hz

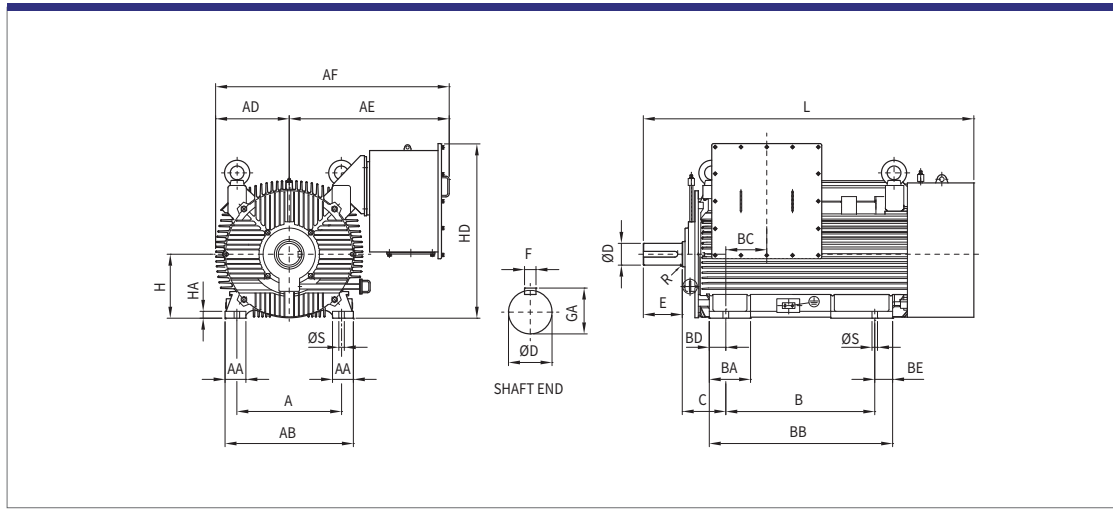
Unit: kW

Type \ Poles		2P(B3)	4P	6P	8P	10P	12P
280	A	120	120	100	-	-	-
	B	180	190	150	85	-	-
315	A	250	310	230	150	-	-
	B	330	390	300	210	-	-
355	A	400	450	370	275	210	150
	B	460	510	420	320	230	170
400	A	580	600	510	410	300	240
	B	670	670	570	460	350	280



Outline Dimension

Mounting B3/Anti-Friction Bearing



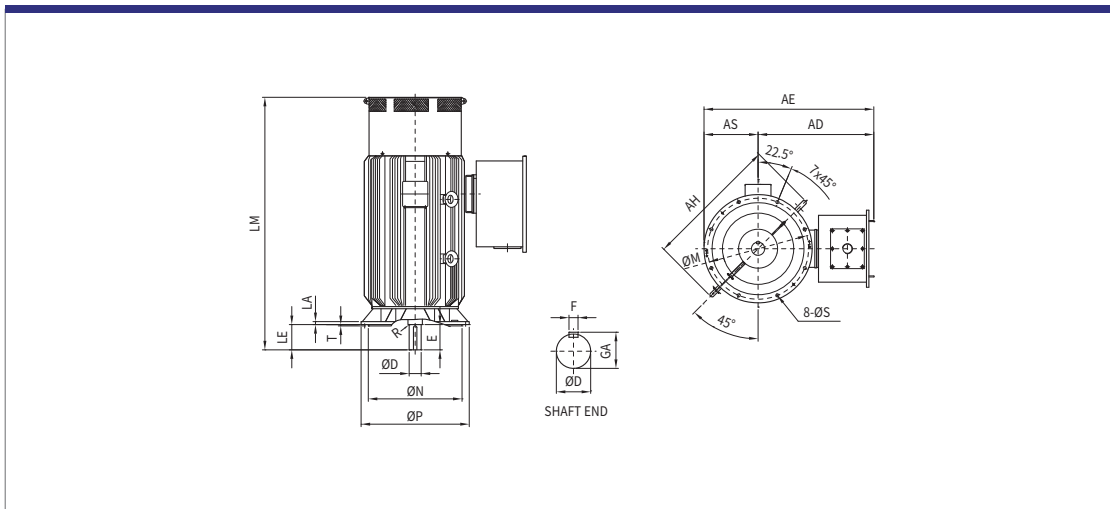
Unit: mm

Type	Poles	A	AA	AB	AD	AE	AF	B	BA	BB	BC	BD	BE	
280	A	2~	457	91	560	330	800	1130	650	180	800	100	72	78
	B													
315	A	2~	610	120	730	360	810	1170	900	180	1200	200	61.5	238.5
	B													
355	A	2~	686	150	840	410	840	1250	1000	200	1270	200	61.5	208.5
	B													
400	A	2~	750	150	900	470	900	1370	1120	220	1365	166	50	155
	B													

Type	Poles	C	H	HA	HD	S	L	D	E	F	GA	Weight(kg)						
280	A	190	280	30	870	24	1530	70	140	20	74.5	1370						
								85	170	22	90	1400						
	B						4	1560	85	170	22	90	1470					
														6~	1560	85	170	22
	315						A	216	315	28	920	30	1970	65	140	18	69	2150
														90	170	25	95	2200
B		4~	1970	65	140	18	69						2400					
														4~	2000	90	170	25
355		A	224	355	35	1000	30						2020	75	140	20	79.5	2850
														100	210	28	106	3200
	B	2						2020	75	140	20	79.5	2950					
														4~	2100	100	210	28
	400	A						254	400	35	1050	35	2150	80	170	22	85	3600
														110	210	28	116	4000
B		2	2150	80	170	22	85						3800					
														4~	2250	110	210	28

Outline Dimension

Mounting V1/Anti-Friction Bearing



Unit: mm

Type	Poles	AD	AE	AH	AS	LA	LE	LM	M	N	
280	A	4~	950	1350	900	400	25	170	1650	740	680
	B										
315	A	4~	960	1360	950	400	25	170	2050	740	680
	B										
355	A	4~	1000	1450	1150	450	25	210	2350	840	780
	B										
400	A	4~	1050	1550	1300	500	25	210	2450	940	880
	B										

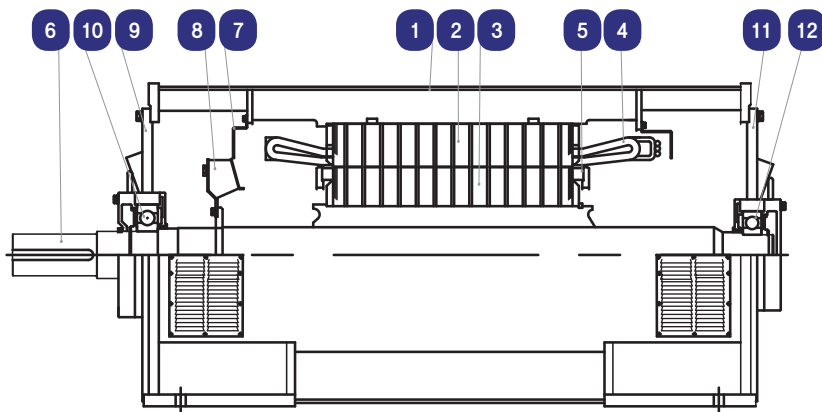
Type	Poles	P	S	T	D	E	F	GA	Weight(kg)	
280	A	4~	800	23	6	85	170	22	90	1500
	B									1700
315	A	4~	800	23	6	90	170	25	95	2000
	B									2300
355	A	4~	900	23	6	100	210	28	106	3500
	B									3700
400	A	4~	1000	23	6	110	210	28	116	4200
	B									4500



DP Series

농형전동기 반폐 모델

Open Drip-proof



전동기 단면도 및 부품명칭

1 프레임	5 엔드링	9 부하 엔드실드
2 고정자 철심	6 축	10 부하 베어링
3 회전자 철심	7 에어 가이드	11 반부하 엔드실드
4 고정자 코일	8 내부 팬	12 반부하 베어링

Rated Power

Specifications

회전자 구조	농형
극 수	4P
전 압	2 ~ 11 KV
출력범위	250 ~ 10,000 KW
외피형식	DP(Drip Proof)

프레임 사이즈	355 ~ 630
설치 방법	수평(B3), 수직(V10)
보호 등급	IP22
절연등급/온도상승	F/B
냉각 방식	IC01 (IEC 60034-6)

3,300 V, 60 Hz

Unit: kW

Type \ Poles		4P	6P	8P	10P	12P
355	A	570	460	340	220	160
	B	730	590	460	310	210
400	A	1020	770	580	380	280
	B	1440	1100	810	520	380
450	A	1600	1230	960	640	470
	B	2250	1700	1390	930	680
500	A	2500	2030	1710	1220	860
	B	3530	2780	2350	1700	1190
560	A	4170	3200	2560	1830	1420
	B	5770	4490	3630	2600	2020
630	A	7100	5970	5130	3980	2890
	B	9100	7270	6100	4720	3420

6,600 V, 60 Hz

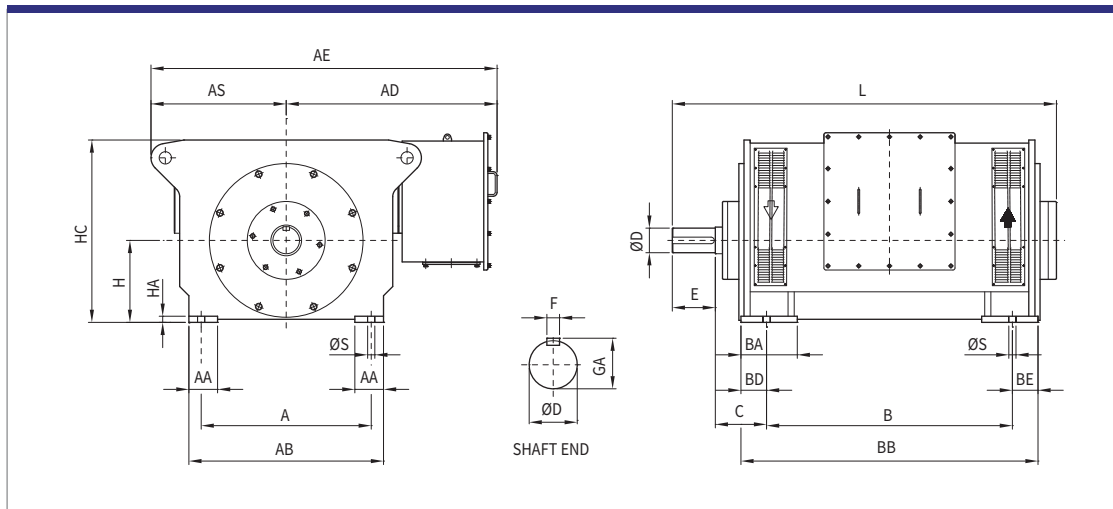
Unit: kW

Type \ Poles		4P	6P	8P	10P	12P
355	A	540	430	320	210	150
	B	680	550	430	290	200
400	A	960	730	545	360	260
	B	1350	1035	765	490	360
450	A	1500	1150	900	610	440
	B	2100	1600	1300	870	640
500	A	2350	1900	1600	1150	810
	B	3300	2600	2200	1590	1120
560	A	3900	3000	2400	1720	1330
	B	5400	4200	3400	2440	1890
630	A	6650	5300	4800	3720	2700
	B	8800	6800	5700	4420	3200



Outline Dimension

Mounting B3/Anti-Friction Bearing



Unit: mm

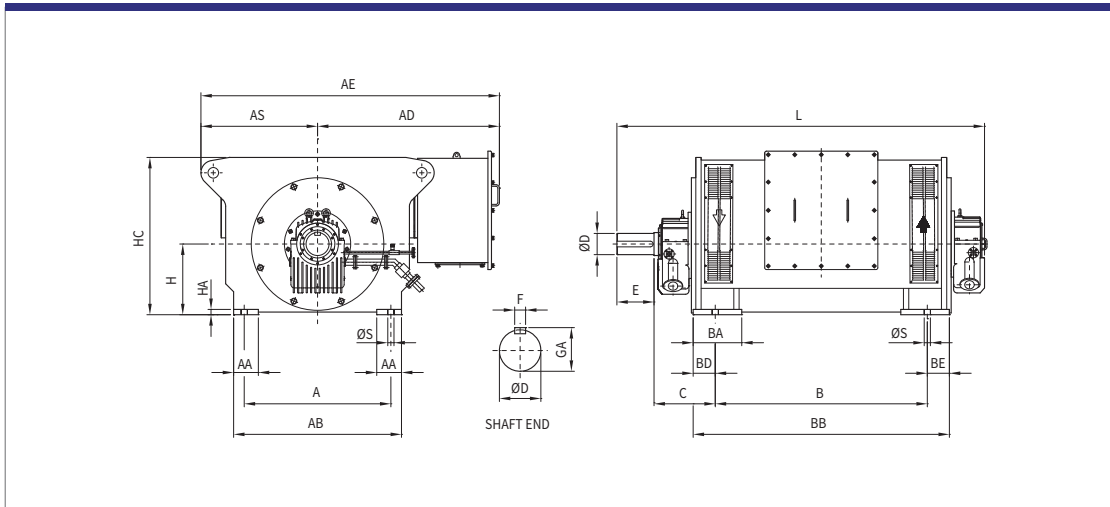
Type	Poles	A	AA	AB	AD	AS	AE	B	BA	BB	BD	BE	
355	A	4~	670	140	800	1050	580	1630	1120	275	1400	140	140
	B								1250		1550		
400	A	4~	830	140	950	1150	680	1830	1200	275	1450	125	125
	B								1350		1600		
450	A	4~	850	150	1000	1180	710	1890	1350	450	1600	110	140
	B								1500		1750		
500	A	4~	950	160	1120	1250	820	2070	1550	490	1800	110	140
	B								1650		1900		

Unit: mm

Type	Poles	C	H	HA	HC	S	L	D	E	F	GA	Weight(kg)	
355	A	4~	254	355	30	960	35	1900	110	210	28	116	2300
	B							2050					2500
400	A	4~	250	400	30	1000	35	1940	120	210	32	127	3200
	B							2130	130	250		137	3500
450	A	4~	250	450	45	1150	35	2120	140	250	36	148	4000
	B							2270	150			158	4450
500	A	4~	250	500	45	1260	48	2470	150	250	40	158	5500
	B							2570	160	300		169	6200

Outline Dimension

Mounting B3/Sleeve Bearing



Unit: mm

Type	Poles	A	AA	AB	AD	AS	AE	B	BA	BB	BD	BE
560	A	1180	180	1320	1460	910	2370	1650	520	1900	115	135
	B							1950		2200		
630	A	1400	250	1540	1550	980	2530	1950	540	2200	115	135
	B							2150		2400		

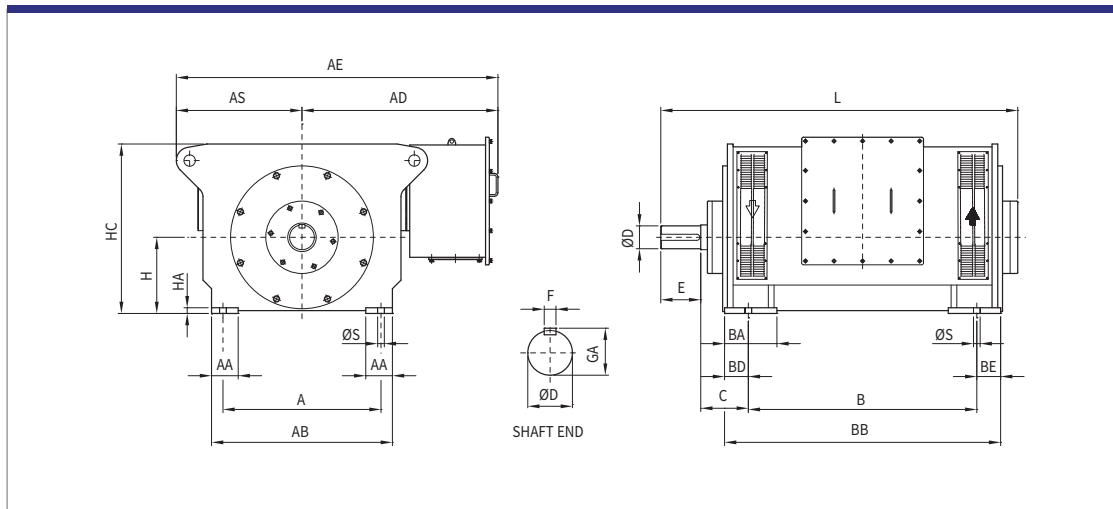
Unit: mm

Type	Poles	C	H	HA	HC	S	L	D	E	F	GA	Weight(kg)
560	A	475	560	50	1390	48	2920	190	350	45	200	7500
	B						3220	200			210	8800
630	A	475	630	55	1530	48	3200	220	350	50	231	11000
	B						3400					12500



Outline Dimension

Mounting B3/Anti-Friction Bearing



Unit: mm

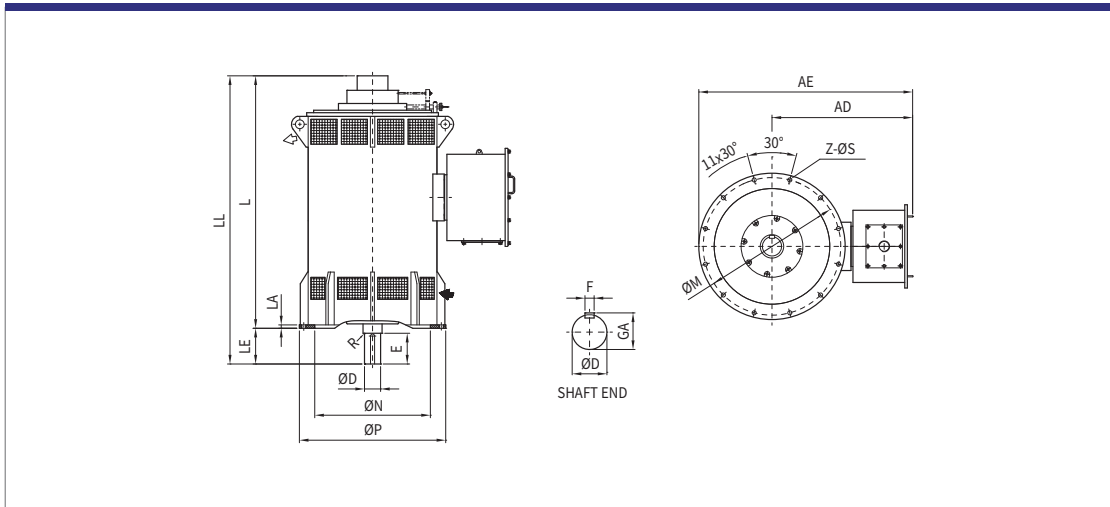
Type	Poles	A	AA	AB	AD	AS	AE	B	BA	BB	BD	BE	
560	A	6~	1180	180	1320	1460	910	2370	1650	520	1900	115	135
	B								1950		2200		
630	A	6~	1400	250	1540	1550	980	2530	1950	540	2200	115	135
	B								2150		2400		

Unit: mm

Type	Poles	C	H	HA	HC	S	L	D	E	F	GA	Weight(kg)
560	6~	335	560	50	1390	48	2600	190	350	45	200	8000
							2900	200			210	8800
630	6~	335	630	55	1530	48	2870	220	350	50	231	10900
							3070					12400

Outline Dimension

Mounting V10/Anti-Friction Bearing



Unit: mm

Type	Poles	AD	AE	LA	LE	L	LL	M	N	P	
355	A	4~	940	1440	25	170	$\frac{1900}{2050}$	$\frac{2070}{2220}$	930	760	1000
	B										
400	A	4~	1000	1575	35	200	$\frac{1900}{2100}$	$\frac{2100}{2300}$	1070	860	1150
	B										
450	A	4~	1200	1830	35	200	$\frac{2200}{2350}$	$\frac{2400}{2550}$	1180	940	1260
	B										

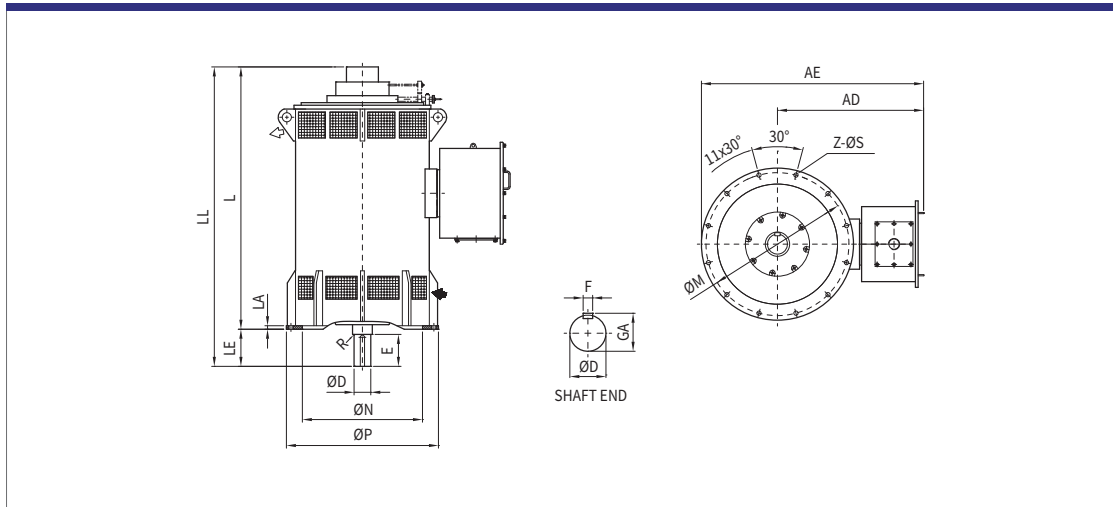
Unit: mm

Type	Poles	R	S	Z	D	E	F	GA	Weight(kg)	
355	A	4~	2	24	8	110	170	28	116	$\frac{2500}{2700}$
	B									
400	A	4~	2	28	12	130	200	32	137	$\frac{3300}{3600}$
	B									
450	A	4~	2	28	12	150	200	36	158	$\frac{4600}{5200}$
	B									



Outline Dimension

Mounting V10/Anti-Friction Bearing



Unit: mm

Type	Poles	AD	AE	LA	LE	L	LL	M	N	P	
500	A	4~	1250	1950	35	240	<u>2300</u>	<u>2540</u>	1320	1050	1400
	B						<u>2530</u>	<u>2770</u>			
560	A	4~	1300	2075	40	280	<u>2300</u>	<u>2580</u>	1450	1160	1550
	B						<u>2600</u>	<u>2880</u>			
630	A	4~	1360	2210	40	280	<u>2700</u>	<u>2980</u>	1600	1300	1700
	B						<u>2900</u>	<u>3180</u>			

Unit: mm

Type	Poles	R	S	Z	D	E	F	GA	Weight(kg)	
500	A	4~	2	28	12	170	240	40	170	<u>6000</u>
	B									<u>6700</u>
560	A	4~	2	35	12	190	280	45	200	<u>8200</u>
	B									<u>9200</u>
630	A	4~	2	35	12	<u>200</u>	280	<u>45</u>	<u>210</u>	<u>11000</u>
	B					<u>220</u>		<u>50</u>	<u>231</u>	<u>12000</u>

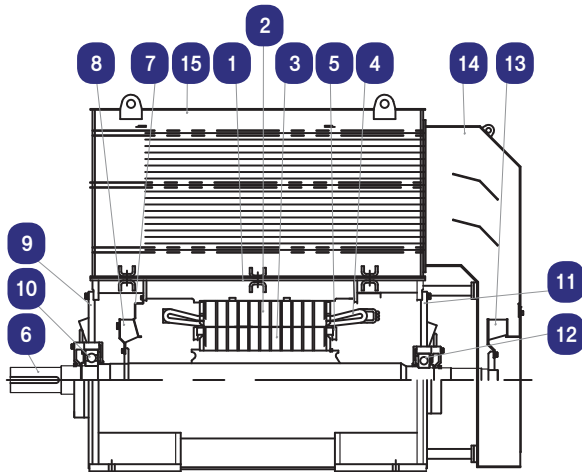


TA Series

농형전동기 전폐 파이프 냉각 모델



Totally Enclosed Air to Air Cooled



전동기 단면도 및 부품명칭

1 프레임	5 엔드링	9 부하 엔드실드	13 외부 팬
2 고정자 철심	6 축	10 부하 베어링	14 팬 커버
3 회전자 철심	7 에어 가이드	11 반부하 엔드실드	15 냉각기
4 고정자 코일	8 내부 팬	12 반부하 베어링	



Rated Power

Specifications

회전자 구조	농형
극 수	4P~
전 압	2 ~ 11 KV
출력범위	150~8,000 KW
외피형식	TEAAC

프레임 사이즈	355 ~ 630
설치 방법	수평(B3), 수직(V10)
보호 등급	IP44, IP54, IP55
절연등급/온도상승	F/B
냉각 방식	IC611(IEC 60034-6)

3,300 V, 60 Hz

Unit: kW

Type \ Poles		4P	6P	8P	10P	12P
355	A	450	355	280	180	140
	B	560	450	390	240	180
400	A	800	600	490	305	245
	B	1120	860	690	425	335
450	A	1260	990	810	525	415
	B	1760	1380	1180	770	595
500	A	2090	1630	1440	1000	790
	B	2940	2240	2030	1390	1100
560	A	3200	2670	2190	1550	1200
	B	4500	3740	3100	2200	1700
630	A	5500	4700	4270	3300	2400
	B	7100	6050	5050	3900	2850

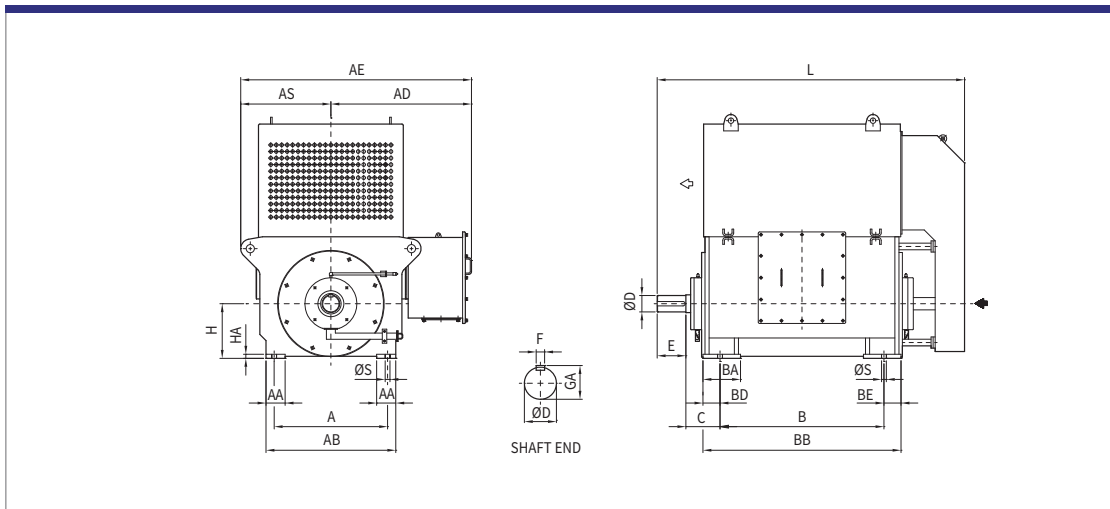
6,600 V, 60 Hz

Unit: kW

Type \ Poles		4P	6P	8P	10P	12P
355	A	420	340	265	170	130
	B	530	430	360	230	170
400	A	750	570	460	290	230
	B	1050	810	650	400	320
450	A	1190	930	760	500	390
	B	1650	1300	1100	720	560
500	A	1960	1530	1350	940	750
	B	2750	2100	1900	1300	1030
560	A	3020	2500	2050	1460	1120
	B	4200	3500	2950	2080	1590
630	A	5170	4420	400	3100	2250
	B	6850	5660	4750	3680	2670

Outline Dimension

Mounting B3/Anti-Friction Bearing



Unit: mm

Type	Poles	A	AA	AB	AD	AS	AE	B	BA	BB	BD	BE	
355	A	6~	670	140	800	1050	580	1630	1120	275	1400	140	140
	B								1250		1550		
400	A	6~	830	140	950	1150	680	1830	1200	275	1450	125	125
	B								1350		1600		
450	A	6~	850	150	1000	1180	710	1890	1350	450	1600	110	140
	B								1500		1750		
500	A	6~	950	160	1120	1250	820	2070	1550	490	1800	110	140
	B								1650		1900		

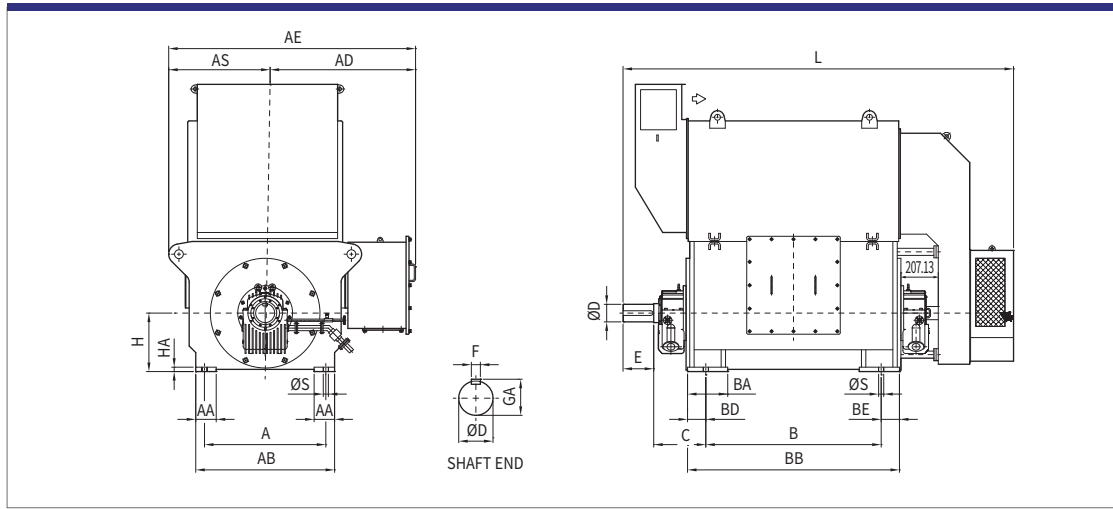
Unit: mm

Type	Poles	C	H	HA	HC	S	L	D	E	F	GA	Weight(kg)	
355	A	6~	254	355	30	1620	35	2250	110	210	28	116	4200
	B							2400					4500
400	A	6~	250	400	30	1750	35	2300	120	210	32	127	5300
	B							2410					5700
450	A	6~	250	450	45	1920	35	2610	140	250	36	148	6400
	B							2750					7000
500	A	6~	250	500	45	2100	48	2930	150	250	36	158	8600
	B							3050					9600



Outline Dimension

Mounting B3/Sleeve Bearing



20

Unit: mm

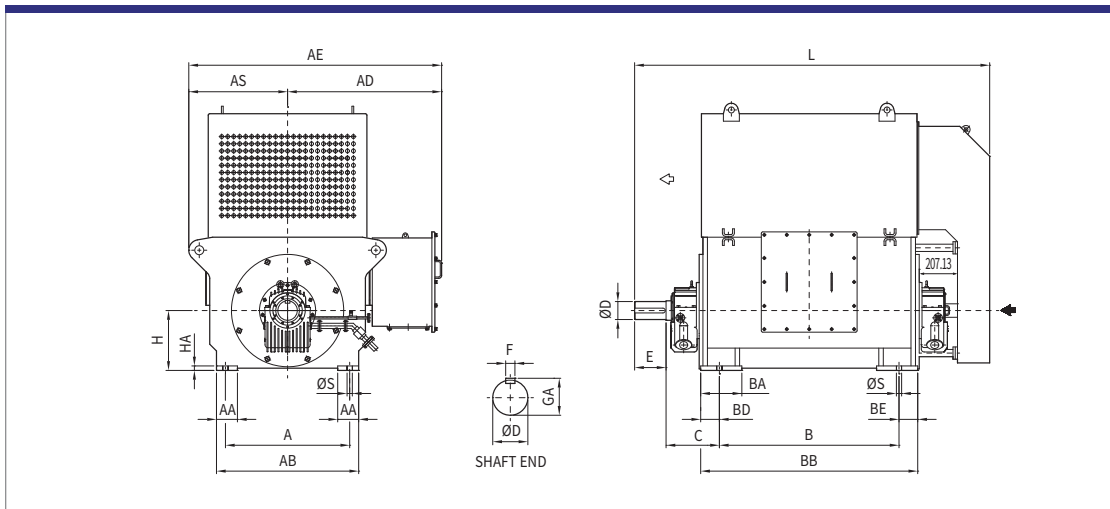
Type	Poles	A	AA	AB	AD	AS	AE	B	BA	BB	BD	BE	
560	A	4	1180	180	1320	1460	910	2370	1650	520	1900	115	135
	B								1950		2200		
630	A	4	1400	250	1540	1550	980	2530	1950	540	2200	115	135
	B								2150		2400		

Unit: mm

Type	Poles	C	H	HA	HC	S	L	D	E	F	GA	Weight(kg)	
560	A	4	475	560	50	2700	48	3800	170	300	40	179	13000
	B							4120	190	350	45	200	14500
630	A	4	475	630	55	2950	48	4220	200	350	45	210	18500
	B							4450					20500

Outline Dimension

Mounting B3/Anti-Friction Bearing



Unit: mm

Type	Poles	A	AA	AB	AD	AS	AE	B	BA	BB	BD	BE	
560	A	6~	1180	180	1320	1460	910	2370	1650	520	1900	115	135
	B								1950		2200		
630	A	6~	1400	250	1540	1550	980	2530	1950	540	2200	115	135
	B								2150		2400		

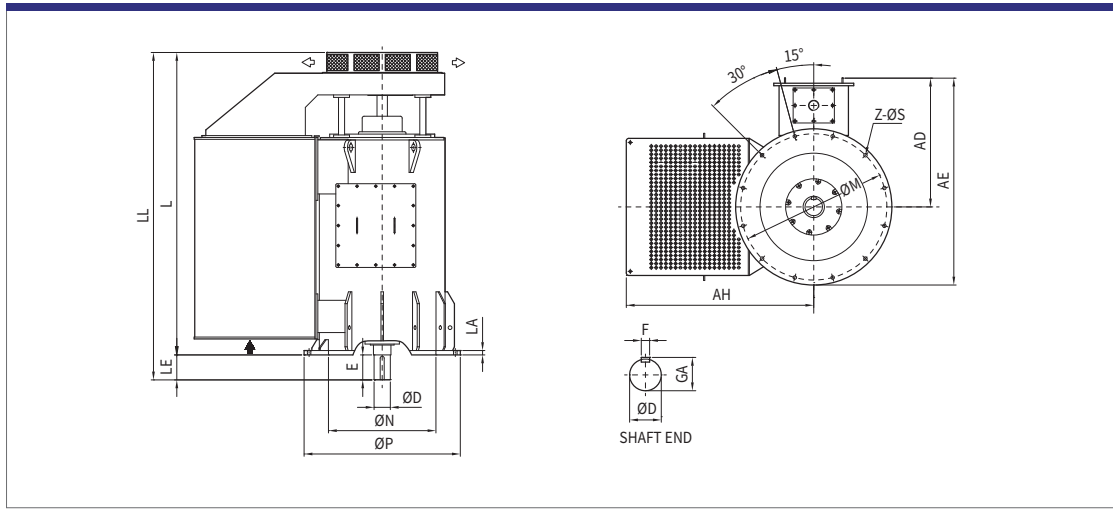
Unit: mm

Type	Poles	C	H	HA	HC	S	L	D	E	F	GA	Weight(kg)
560	6~	335	560	50	2300	48	3800	170	300	40	179	13000
							3640	190	350	45	200	14500
630	6~	335	630	55	2600	48	4000	200	350	45	210	18500
							4200					20000



Outline Dimension

Mounting V10/Anti-Friction



Unit: mm

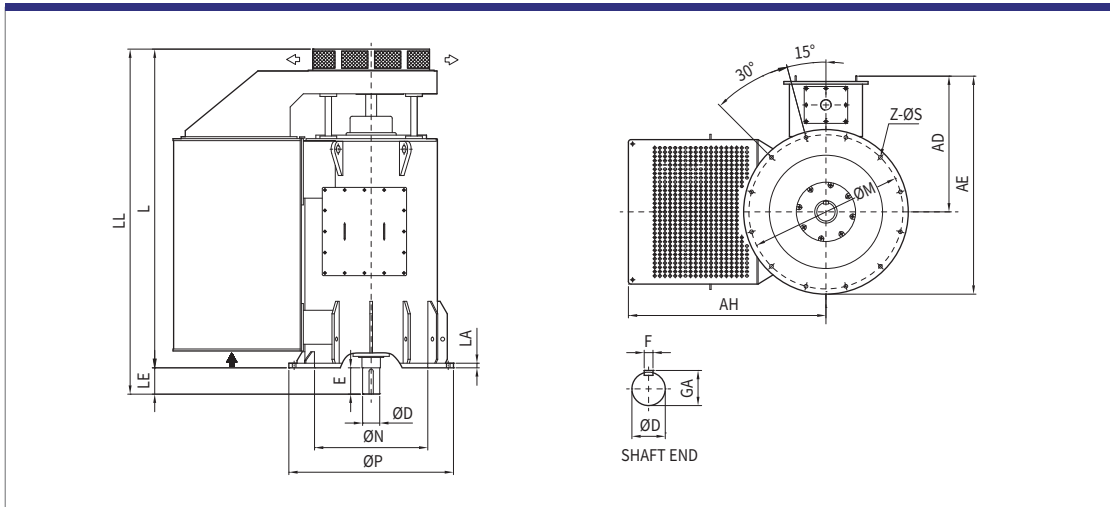
Type	Poles	AD	AE	AH	LA	LE	L	LL	M	N	
355	A	4~	940	1440	2030	25	170	2350	2520	930	760
	B							2500	2670		
400	A	4~	1000	1575	2160	35	200	2370	2570	1070	860
	B							2590	2790		
450	A	4~	1200	1830	2700	35	200	2750	2950	1180	940
	B							2900	3100		

Unit: mm

Type	Poles	R	S	Z	D	E	F	GA	Weight(kg)	
355	A	4~	1000	24	8	110	170	28	116	4400
	B									4700
400	A	4~	1150	28	12	130	200	32	137	5500
	B									6000
450	A	4~	1260	28	12	150	200	36	158	7200
	B									8000

Outline Dimension

Mounting V10/Anti-Friction Bearing



Unit: mm

Type	Poles	AD	AE	AH	LA	LE	L	LL	M	N	
500	A	4~	1250	1950	2900	35	240	2830	3070	1320	1050
	B							3100	3350		
560	A	4~	1300	2075	3050	40	280	3000	3300	1450	1160
	B							3250	3550		
630	A	4~	1360	2210	3300	40	280	3300	3590	1600	1300
	B							3500	3800		

Unit: mm

Type	Poles	R	S	Z	D	E	F	GA	Weight(kg)	
500	A	4~	1400	28	12	170	240	40	179	9300
	B									10500
560	A	4~	1550	35	12	190	280	45	200	12500
	B									13900
630	A	4~	1700	35	12	200	280	45	210	16600
	B					220		50	231	18500



SN 주식회사 에스엔

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