



東元全密型 **IE4** 超優級效率馬達 (For IEC)

MODEL : AEMB4E

3-PHASE SQUIRREL CAGE
IE4 EFFICIENCY INDUCTION MOTOR
FRAME SIZE : 160M ~ 315MC



31057D62161

REV. 01

		SPECIFICATION TABLE	MODEL AEMB4E
		3-PHASE SQUIRREL CAGE IE4 EFFICIENCY INDUCTION MOTOR	
ITEM		STANDARD SPECIFICATION	
R A T I N G	Kind of Motor	Squirrel-Cage Induction Motor (SCIM).	
	Design Standards	IEC 60034 , BS 4999 , BS 5000 , AS 1359 , AS 1360.	
	Voltages	380V, 400V, 415V, 440V.	
	Frequency	50Hz.	
	Output Range	7.5kW~185kW (10HP ~ 250HP).	
	R.P.M. (Syn.)	3000~1000 R.P.M.(2 ~ 6 Poles).	
	Time Duty	Continuous. S1 (S.F. : 1.0).	
	Frame Size	160M ~ 315M.	
	Protection Enclosure	Totally Enclosed (IP55).	
	Cooling Method	Self External Fan, Surface Cooling (IC 411).	
Mounting	Horizontal Foot Mounting B3 (IM 1001).		
A P P L I C A T I O N	Power Source Conditions	Voltage : $\pm 10\%$, Frequency : $\pm 5\%$, and 10% Max. of Combined Voltage and Frequency . But Frequency Variation Does Not Exceed $\pm 5\%$.	
	Environment Conditions	Place : Shadow , Non-Hazardous. Ambient Temperature : $-15^{\circ}\text{C} \sim 40^{\circ}\text{C}$, Relative Humidity : Less Than 90 %RH (Non-Condensation) , Altitude : Less Than 1,000 m.	
	Drive Method	Belt Service , However , 2-Pole 22kW and Up Coupling Service is the Way.	
	Direction of Rotation	Bi-Directional.	
	Method of Starting	Full Voltage Direct On Line or $\lambda - \Delta$ Starting.	
P E R F O R M A N C E	Test Procedure	IEC 60034-2-1 and Full Voltage Measuring Starting Performance.	
	Temperature Rise	Not to Exceed 80°C Rise by Resistance Method at S.F.1.0 Operation.	
	Over Speed	120% Syn. R.P.M. for 2 Minutes.	
	Over Torque	160% Rated Torque for 15 Sec.	

PERFORMANCE DATA

MODEL
AEMB4E

3-PHASE SQUIRREL CAGE
IE4 EFFICIENCY INDUCTION MOTOR

**TEFC, CLASS F, 40°C AMBIENT TEMP.
IEC DESIGN N CONTINUOUS DUTY
S.F. 1.0, 400V 50Hz**

IE4

TYPICAL PERFORMANCE

(400 V)

OUTPUT		FULL LOAD RPM	FRAME SIZE	EFFICIENCY			POWER FACTOR			CURRENT		TORQUE				ROTOR GD ² kg-m ²
				FULL LOAD (%)	3/4 LOAD (%)	1/2 LOAD (%)	FULL LOAD (%)	3/4 LOAD (%)	1/2 LOAD (%)	FULL LOAD (A)	LOCKED ROTOR (A)	FULL LOAD kg-m	LOCKED ROTOR %FLT	PULL UP %FLT	BREAK DOWN %FLT	
HP	kW															
10	7.5	975	160M	91.3	91.5	91.0	77.0	71.0	58.5	15.4	120	7.485	285	250	285	0.503
		2950	160M	92.6	93.0	92.0	89.0	86.0	79.5	19.3	185	3.628	240	195	330	0.192
		1470 970	160M 160L	93.3 92.3	93.0 92.0	93.0 92.0	82.5 80.0	78.0 74.5	67.5 63.5	20.6 21.5	180 175	7.281 11.03	265 300	215 260	295 290	0.407 0.700
20	15	2950	160M	93.3	93.0	93.0	87.5	84.0	76.0	26.5	260	4.947	265	215	355	0.218
		1470	160L	93.9	94.0	93.5	85.0	82.0	73.5	27.1	210	9.929	235	190	260	0.506
		980	180L	92.9	93.0	93.5	82.0	79.0	71.0	28.4	220	14.89	275	230	290	1.782
25	18.5	2950	160L	93.7	93.5	93.0	87.5	84.0	76.0	32.6	305	6.102	270	215	350	0.250
		1480	180M	94.2	94.0	93.5	84.0	80.5	72.0	33.7	285	12.16	240	205	290	0.928
		980	200L	93.4	94.0	93.0	86.5	84.0	77.0	33.1	215	18.37	200	165	230	2.791
30	22	2950	180M	94.0	93.5	93.0	90.0	87.5	80.0	37.5	360	7.256	290	230	350	0.330
		1480	180L	94.5	94.0	93.0	82.0	78.0	68.0	41.0	365	14.46	265	220	305	1.005
		980	200L	93.7	94.0	93.0	85.5	82.0	74.0	39.6	280	21.84	220	180	245	3.023
40	30	2960	200L	94.5	94.5	94.0	93.5	93.0	91.5	49.0	380	9.861	155	135	265	1.074
		1480	200L	94.9	94.5	94.0	81.5	77.0	67.0	56.0	435	19.72	220	185	275	1.649
		980	225M	94.2	94.5	94.5	85.0	82.5	75.0	54.1	390	29.79	225	190	245	4.559
50	37	2965	200L	94.8	95.0	94.5	93.5	92.5	90.0	60.3	535	12.14	180	155	295	1.187
		1480	225S	95.2	95.0	94.5	88.0	85.0	77.5	63.7	510	24.33	210	185	265	3.186
		985	250S	94.5	95.0	95.0	83.0	80.0	71.0	68.1	495	36.55	200	185	275	6.011
60	45	2965	225M	95.0	95.0	94.5	91.5	91.0	88.0	74.7	555	14.77	140	125	270	1.345
		1480	225M	95.4	95.0	94.5	88.0	85.0	78.0	77.4	600	29.58	210	185	260	3.476
		985	250M	94.8	95.0	95.0	84.0	80.0	71.0	81.6	600	44.45	200	180	275	6.492
75	55	2970	250S	95.3	95.0	94.0	90.0	88.5	84.0	92.6	840	18.02	155	140	330	2.111
		1480	250S	95.7	96.0	95.5	86.0	83.0	75.0	96.5	865	36.16	185	170	320	5.033
		990	280S	95.1	94.0	93.0	83.0	78.0	66.0	101	870	54.06	260	230	275	12.416
100	75	2970	250M	95.6	95.5	95.0	90.5	89.0	85.5	125	110	24.57	145	130	300	2.375
		1480	250M	96.0	96.0	96.0	86.0	83.0	75.0	131	1040	49.31	185	175	315	5.752
		990	280M	95.4	95.0	94.0	83.0	77.5	65.0	137	1080	73.71	265	235	270	14.633
125	90	2980	280S	95.8	95.0	94.0	84.0	80.0	69.0	161	1250	29.39	130	115	275	3.677
		1490	280S	96.1	96.0	95.0	83.0	77.0	64.5	163	1250	58.77	130	120	290	9.486
		990	315S	95.6	95.0	94.5	83.0	78.0	67.0	164	1295	88.45	270	240	270	17.737
150	110	2980	280M	96.0	95.0	94.5	87.0	84.5	77.5	190	1555	35.92	125	110	250	4.202
		1485	280M	96.3	96.0	95.0	85.0	81.0	69.5	194	1530	72.07	125	110	285	10.404
		990	315M	95.8	95.0	95.0	82.5	77.0	65.0	201	1585	108.1	270	245	270	19.511
175	132	2980	315S	96.2	95.5	95.0	87.0	84.0	76.5	228	1835	43.10	155	140	275	5.077
		1485	315S	96.4	96.0	96.0	87.0	83.5	73.5	227	1730	86.49	125	110	275	12.240
		990	315M	96.0	95.5	95.0	83.0	77.5	65.0	239	1905	129.7	265	240	260	21.285
200	150	2980	315M	96.3	96.0	95.0	89.0	87.0	82.0	253	2085	48.98	140	130	255	5.602
		1485	315M	96.6	96.0	96.0	87.0	83.0	74.5	258	1955	98.28	125	110	275	13.464
250	185	2975	315M	96.5	96.0	95.5	90.0	89.0	85.0	307	2510	60.51	140	125	235	6.478
		1485	315M	96.7	96.5	96.0	87.0	84.0	74.5	317	2345	121.2	120	105	260	15.300

NOTE : 1. Efficiency values are given according to IEC 60034-2-1.

2. Breakdown & locked rotor torques are shown as average expected values.

3. Efficiency, power factor, speed and torque are the same for other voltages.

Current values vary inversely with voltage.

4. Tolerance According to IEC 60034-1.

5. Data subject to change without notice.

OUTLINE DIMENSION SHEET

3-PHASE SQUIRREL CAGE
IE4 EFFICIENCY INDUCTION MOTOR
FRAME SIZE 160M ~ 225MC

MODEL

AEMB4E

Totally Enclosed Fan - Cooled Type, Squirrel - Cage Rotor.

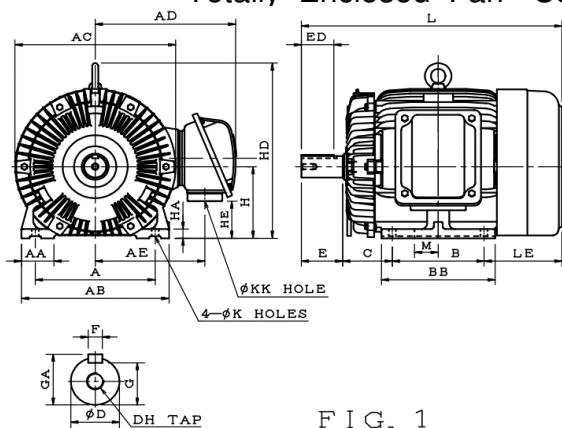


FIG. 1

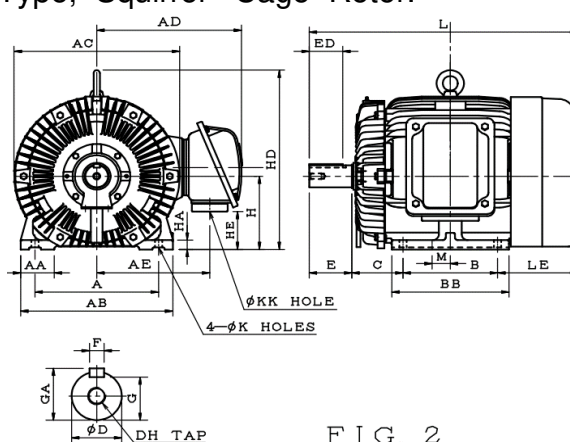


FIG. 2

Dimension in mm

Output (kW)			FRAME SIZE	FIG NO.	A	AA	AB	AC	AD	AE	B	BB	C	H	HA	HD	HE
2P	4P	6P			1	2	1	2	1	2	1	2	1	2	1	2	1
11	11	7.5	160M	1	254	50	300	334	263	218	210	250	108	160	18	377	83
15	15	11	160L		254	50	300	334	263	218	254	300	108	160	18	377	83
22	—	—	180MA	2	279	75	355	382	305	250	241	297	121	180	22	434	103
—	18.5	—	180MC	1	279	75	355	382	305	250	241	297	121	180	22	434	103
—	22	15	180LC		279	75	355	382	305	250	279	389	121	180	22	434	103
30	—	—	200LA	2	318	80	400	458	394	307	305	400	133	200	25	499	88
—	30	18.5	200LC		318	80	400	458	394	307	305	400	133	200	25	499	88
—	37	—	225SC		356	100	450	520	452	355	286	415	149	225	30	550	57
45	—	—	225MA		356	100	450	520	452	355	311	415	149	225	30	550	57
—	45	30	225MC		356	100	450	520	452	355	311	415	149	225	30	550	57
—	—	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—
FRAME	K	KK	L	LE	M	SHAFT EXTENSION						BEARING		APPROX. WEIGHT KGS			
						D	E	ED	F	G	GA	DH	DRIVE END		OPPOSITE DRIVE END		
160M	φ 14.5	M32×P1.5	608.0	180.0	0	42	110	80	12	37.0	45.0	M16×32	6309ZZ	6307ZZ	128		
160L	φ 14.5	M32×P1.5	652.0	180.0	0	42	110	80	12	37.0	45.0	M16×32	6309ZZ	6307ZZ	163		
180MA	φ 14.5	M32×P1.5	710.0	238.0	19	48	110	80	14	42.5	51.5	M16×32	6211C3	6211C3	210		
180MC	φ 14.5	M32×P1.5	710.0	238.0	19	48	110	80	14	42.5	51.5	M16×32	6311ZZ	6310ZZ	220		
180LC	φ 14.5	M32×P1.5	764.0	254.0	27	48	110	80	14	42.5	51.5	M20×40	6311ZZ	6310ZZ	251		
200LA	φ 18.5	M50×P1.5	809.5	261.5	17.5	55	110	80	16	49.0	59.0	M20×40	6312C3	6212C3	308		
200LC	φ 18.5	M50×P1.5	809.5	261.5	17.5	55	110	80	16	49.0	59.0	M20×40	6312	6212	334		
225SC	φ 18.5	M50×P1.5	880.0	305.0	32	60	140	110	18	53.0	64.0	M20×40	6313	6213	443		
225MA	φ 18.5	M50×P1.5	850.0	280.0	19.5	55	110	80	16	49.0	59.0	M20×40	6312C3	6212C3	449		
225MC	φ 18.5	M50×P1.5	880.0	280.0	19.5	60	140	110	18	53.0	64.0	M20×40	6313	6213	470		

Note : 1. Tolerance of Shaft End Diameter D : φ 42 ~ φ 48 : k6 , φ 55 ~ φ 60 : m6 .

2. Tolerance of Shaft Center Height H : +0 , -0.5 .

OUTLINE DIMENSION SHEET

MODEL

AEMB4E

3-PHASE SQUIRREL CAGE
IE4 EFFICIENCY INDUCTION MOTOR
FRAME SIZE 250SA~250MC

Totally Enclosed Fan - Cooled Type, Squirrel - Cage Rotor.

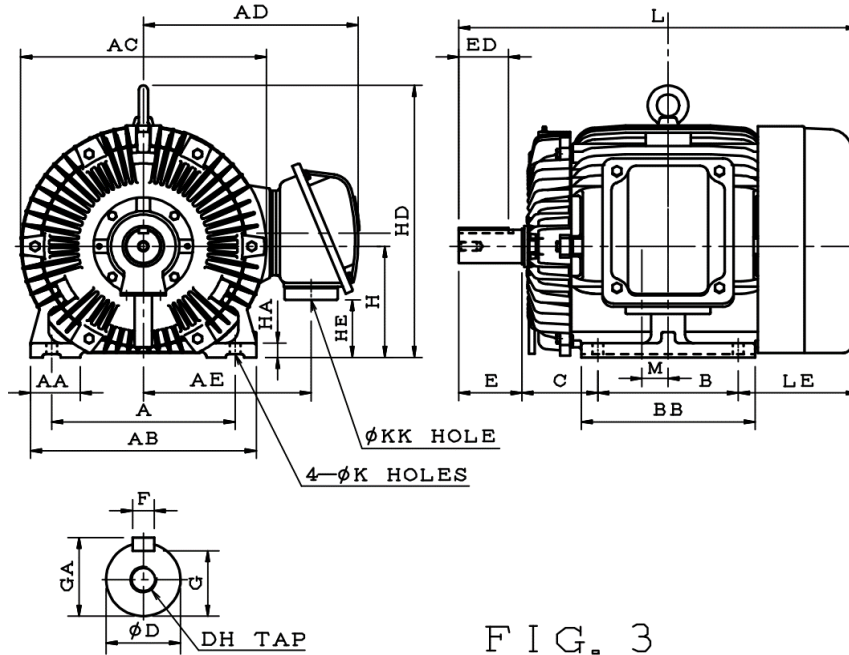


FIG. 3

Dimension in mm

Output (kW)			FRAME SIZE	FIG. NO.	A	AA	AB	AC	AD	AE	B	BB	C	H	HA	HD	HE	K
2P	4P	6P			D	E	ED	F	G	GA	DH	DRIVE END	OPPOSITE	WEIGHT				
55	—	—	250SA	3	406	110	500	545	512	395	311	425	168	250	32	612	42	24
—	55	37	250SC		406	110	500	545	512	395	311	425	168	250	32	612	42	24
75	—	—	250MA		406	110	500	545	512	395	349	480	168	250	32	612	42	24
—	75	45	250MC		406	110	500	545	512	395	349	480	168	250	32	612	42	24

FRAME SIZE	KK	L	LE	M	SHAFT EXTENSION							BEARING		APPROX. WEIGHT KGS
					D	E	ED	F	G	GA	DH	DRIVE END	OPPOSITE DRIVE END	
250SA	M63×P1.5	920.5	301.5	19	60.0	140	110	18	53.0	64.0	M20×40	6313C3	6313C3	512
250SC	M63×P1.5	920.5	301.5	19	70.0	140	110	20	62.5	74.5	M20×40	*6316 NU316	6313	579
250MA	M63×P1.5	977.5	320.5	28.5	60.0	140	110	18	53.0	64.0	M20×40	6313C3	6313C3	614
250MC	M63×P1.5	977.5	320.5	28.5	70.0	140	110	20	62.5	74.5	M20×40	*6316 NU316	6313	661

Note : 1. Tolerance of Shaft End Diameter D : $\phi 55 \sim \phi 70 : m6$.

2. Tolerance of Shaft Center Height H : +0 , -0.5 .

3. * For Direct flexible coupling

OUTLINE DIMENSION SHEET

MODEL
AEMB4E

3-PHASE SQUIRREL CAGE
IE4 EFFICIENCY INDUCTION MOTOR
FRAME SIZE 280SA~315MC

Totally Enclosed Fan - Cooled Type, Squirrel - Cage Rotor.

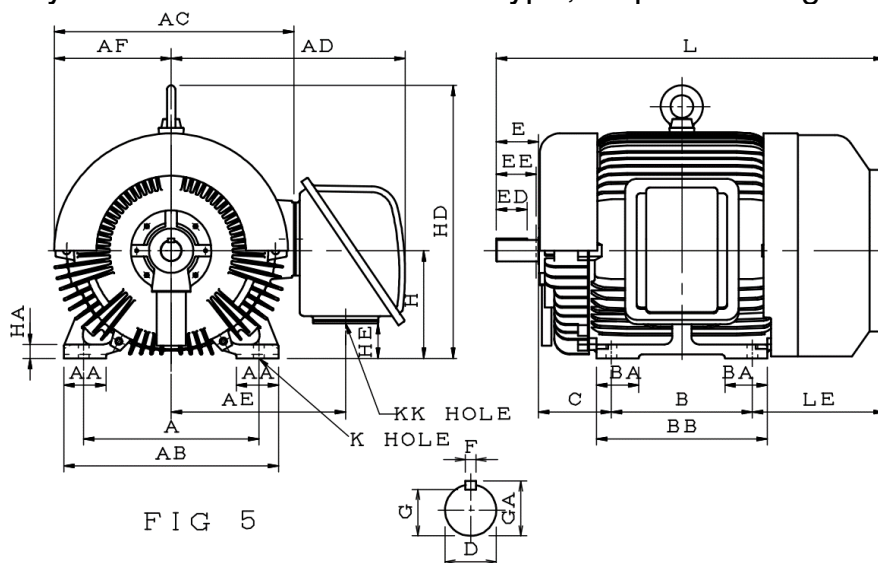


FIG 5

Dimension in mm

Output (kW)			FRAME SIZE	FIG. NO.	A	AA	AB	AC	AD	AE	AF	B	BA	BB	C	D	E
2P	4P	6P															
90	-	-	*280SA	5	457	110	560	625	610	455	305	368	110	445	190	65	140
-	90	55	280SC		457	110	560	625	610	455	305	368	110	445	190	80	170
110	-	-	*280MA		457	110	560	625	610	455	305	419	130	495	190	65	140
-	110	75	280MC		457	110	560	625	610	455	305	419	130	495	190	80	170
132	-	-	*315SA		508	115	615	625	610	455	305	406	115	490	216	65	140
-	132	90	*315SB 315SC		508	115	615	625	610	455	305	406	115	490	216	85	170
150 185	-	-	*315MA		508	115	615	625	610	455	305	457	115	540	216	65	140
-	150 185	⊙110 132	*315MB 315MC		508	115	615	625	610	455	305	457	115	540	216	85	170

FRAME SIZE	ED	EE	F	G	GA	H	HA	HD	HE	KK	K	L	LE	BEARING		APPROX weight KGS.
														DRIVE END	OPPOSITE DRIVE END	
*280SA	110	134	18	58	69	280	36	710	62	M63×P1.5		1042	344	*6314C3	6314C3	718
280SC	140	157	22	71	85	280	36	710	62	M63×P1.5	24	1072	344	⁶³¹⁸ NU318	6316	792
*280MA	110	134	18	58	69	280	36	710	62	M63×P1.5	24	1092	343	*6314C3	6314C3	774
280MC	140	157	22	71	85	280	36	710	62	M63×P1.5	24	1122	343	⁶³¹⁸ NU318	6316	870
*315SA	110	134	18	58	69	315	40	743	97	M63×P1.5	28	1131	369	*6314C3	6314C3	840
*315SB 315SC	140	157	22	76	90	315	40	743	97	M63×P1.5	28	1161	369	⁶³²⁰ NU320	6316	990
*315MA	110	134	18	58	69	315	40	743	97	M63×P1.5	28	1309	369	*6314C3	6314C3	997/1083
*315MB 315MC	140	157	22	76	90	315	40	743	97	M63×P1.5	28	1212	369	⁶³²⁰ NU320	6316	013/113 ⁴

Note : 1. Tolerance of Shaft End Diameter D : m6 .

2. Tolerance of Shaft Center Height H : +0 , -1 .

3. Usable Shaft Length : EE.

4. *For Direct Flexible Coupling.

5. ⊙ There is no "AIR DEFLECTOR" on Frame Nos.280~315 6-Pole and up.