HIGH EFFICIENCY THREE PHASE AC INDUCTION MOTORS

Y2E SERIES

YAMANASHI®

IE2 *High Efficiency*

Conform to IEC/EN 60034-30

Yamanashi Electric Power Group (M) Sdn. Bhd.
A Member of *Yamanashi Power Group (UK).*

Member FPA Fire Protection Association

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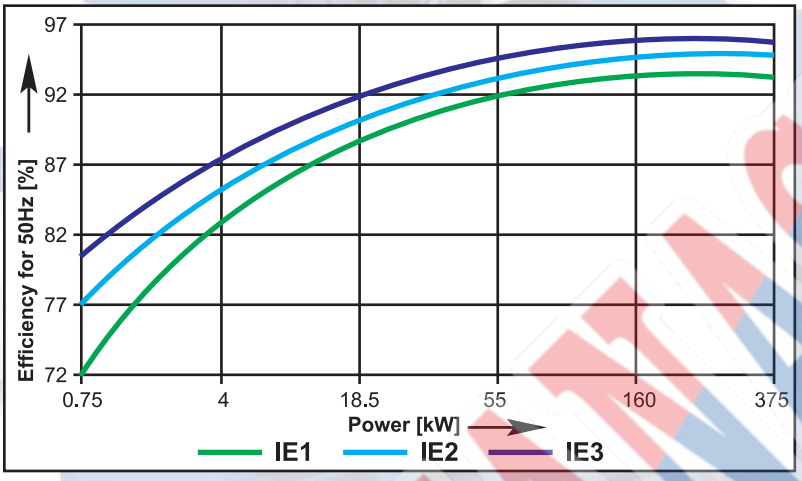
QUALITY PRODUCTS, SERVICES & SUPPORT...

Y2E series

The new standard

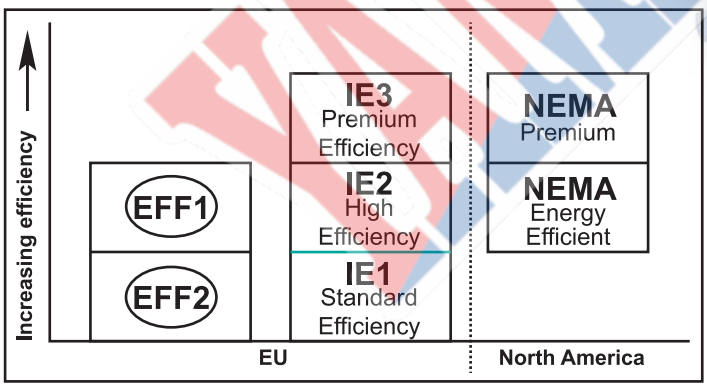
With the aim of reducing energy consumption and therefore Co2 emissions worldwide, the International Electrotechnical Commission (IEC) has developed a new standard. The IEC 60037-30-2008 rates 50 an 60 Hz asynchronous motors with a power range from 0.75 kW to 375 kW in terms of their degree or class of efficiency, thereby taking the place of the earlier regulations which varied between different countries in Europe. it also defines which motors are affected in different parts of the world, and what exceptions apply. In all member countries of the European Union, EU Regulation 640/2009 is definitive for application of the new standard.



Key Features:

- IEC Standard
- Superior finish
- Excellent ventilation
- Light weight construction
- Top mounted terminal box
- IP55 protection
- Interchangable foot mounting and flange mounting
- Motor frame size from 63-315
- 2, 4, 6 & 8 pole
- Class F insulation
- CE approval

In North America the EISA (Energy Independence Security Act) comes into force in December 2010, and specifies minimum efficiency requirements for NEMA motors (60 Hz).



The standard IEC 60034-30 defines the new efficiency classes (IE = International Efficiency)

IE1	=	Standard Efficiency
IE2	=	High Efficiency (Comparable to NEMA Energy Efficient)
IE3	=	Premium Efficiency (Comparable to NEMA Premium)

Operating conditions

Ambient temperature	: -15°C < 0 < 40°C
Above sea level	: not exceed 1000m
Rated voltage	: ± 5%

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Country	Voltage / Frequency	Power Range	No of Poles	Law / Regulation	Regulation of minimum efficiency	Outlook
Europe	400 V +/- 10%; 50Hz	0.75 kW- 375 kW	2 - 6	EC No. 640/2009	IE2 compulsory 16.6.2011	1.1.2015: IE3 from 7.5 to 375 kW or IE2 motor + frequency converter 1.1.2017: IE3 from 0.75 to 375 kW or IE2 motor + frequency converter
Russia	up to 690 V	1 kW- 400 kW	All	GOST R 51677-2000	No	
Switzerland	400 V +/- 10%; 50Hz	0.75 kW- 375 kW	2 - 6	EnV	IE2 compulsory 1.7.2011	From January 2010: IE1 From July 2010: IE2, for extention of regulations in 2015 and 2017, Swiss energy act will be revised in time
Turkey	400 V +/- 10%; 50Hz	0.75 kW- 375 kW	2 - 6	EC No. 640/2009	IE1	No decision yet. Will probably follow the EU timeline
USA	480 V +/- 10%; 60Hz	0.75 kW- 150 kW	2 - 6	Nema EPAct EISA 2007	IE3 compulsory 1.1.2011	Until 18.12.2010: NEMA EPAct - IE2 From 19.12.2010: EISA - IE3
Canada	480 V / 575 V +/- 10%; 60Hz	0.75 kW- 150 kW	2 - 6	CSA C390	IE3 compulsory 1.1.2011	Until 30.12.2010: NEMA EPAct - IE2 From 1.1.2011: EISA - IE3
Mexico	460 V +/- 10%; 60Hz	0.75 kW- 150 kW	2 - 6	Nema EPAct EISA 2007	IE3 expected	Expected to follow USA timeline
Brazil	220 V/380 V/440 V / 460 V / 480 V +/- 10%; 60Hz	0.75 kW- 250 kW	2 - 8	NBR 17094-1 Regulation 553	IE2 compulsory 8.12.2009	
Chile	380 V/400 V/420 V /440 V/460 V/690 V +/- 10%; 50Hz	0.75 kW- 7.5 kW	2 - 6	NCH 3086	IE2 compulsory 4.1.2011	
China	380 V +/- 10%; 50Hz	0.55 kW- 315 kW	2 - 6	GB 18613-2006	IE2 compulsory 1.7.2011	Scope of motor output will be changed to 0.75 kW - 375 kW in near future
Hong Kong	380 V +/- 10%; 50Hz	0.75 kW- 375 kW	2 - 6	Mandatory Buildings Energy Efficiency Bill	IE2 introduction stage since Dec 2009	Efficiency bill will follow the model of EU (see Europe)
India	415 V/690 V +/- 10%; 50Hz	0.37 kW- 315 kW	2 - 8	IS: 4889 IS: 12615-2004	IE2 ecpected 2013	IE1/IE2-based regulations assumed 2013
Israel	400 V +/- 10%; 50Hz	0.75 kW- 185 kW	2 - 8	SI 5289	IE2 compulsory 1.2.2008	Review of IS 5289 at the end of 2010 and changing in line with European law
Japan	200/220/400/400 V +/- 10%; 50 / 60Hz	0.2 kW- 160 kW	2 - 6	JIS C 4210 JIS C 4212	IE2 expected	No law, efficiency per JIS standard. IEC 60034-30 will be integrated into JIS in 2010
Korea	Bis 600 V +/- 10%; 60Hz	0.75 kW- 200 kW	2 - 6	KS C 4202	IE2 compulsory 1.7.2008	1.7.2010: IE2 from 0.75 kW to 200 kW
Singapore	415 V +/- 10%; 50Hz	1.1 kW- 90 kW	2 - 4	SS530:2006	IE2	Only goverment projects compulsory in IE2
Taiwan	< 600 V +/- 10%; 60Hz	0.37 kW- 200 kW	2 - 8	CNS 14400	IE2	No plan to adapt IEC 60034-30 right now. IE2 motors can be certified acc. CNS 14400 as high-efficiency motors
United Arab Emirates	400 V +/- 10%; 50Hz	0.75 kW- 375 kW	2 - 6	EC No. 640/2009	IE2 from 16.6.2011 as recommenda- tion	No local standards/demands on this efficiency levels, just following EU (see European)
Saudi Arabia	380 V/460 V +/- 5%; 60Hz	All	All	no regulation	No	
Replubic of South Africa	400 V/525 V +/- 10%; 50Hz	0.75 kW- 375 kW	2 - 6	IEC 60034-30	IE1	IE2 is being recommended. Implementation of the IEC standard is probably not foreseen before 2016
Australia / New Zealand	415 V/690 V + 10%/ - 6%; 50Hz	0.73 kW- 186 kW	2 - 8	AS/NS 1359.5- 2004	IE2 1.4.2006 IE3 expected	IE3 is planned in near future

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Y2E series

Performance Data

Synchronous Speed : 3000 RPM
Power Range : 0.75 - 315kW (2 Pole)

TYPE / FRAME SIZE	RATED OUTPUT	CURRENT (AMPS)		SPEED	POWER FACTOR	EFFICIENCY	DIRECT ON LINE STARTING (MULTIPLES OF FULL LOAD)			MOMENT OF INERTIA	NET WEIGHT
	kW	400V	690V	RPM	cos Φ	η (%)	TORQUE LRT	CURRENT LRC	TORQUE MAX. Torque	kg.m2	kg
Y2E-801-2	0.75	1.64	0.95	2830	0.83	79.3	2.2	6.1	2.3	0.00075	16
Y2E-802-2	1	2.32	1.35	2830	0.84	81.3	2.2	7.0	2.3	0.0009	17
Y2E-90S-2	1.5	3.11	1.80	2840	0.84	83.0	2.2	7.0	2.3	0.0012	22
Y2E-90L-2	2.2	4.44	2.57	2840	0.85	84.2	2.2	7.0	2.3	0.0014	25
Y2E-100L-2	3.0	5.83	3.38	2870	0.87	85.4	2.2	7.5	2.3	0.0029	33
Y2E-112M-2	4.0	7.60	4.41	2890	0.88	86.3	2.2	7.5	2.3	0.0055	45
Y2E-132S1-2	5.5	10.3	5.98	2900	0.88	87.5	2.2	7.5	2.3	0.0109	64
Y2E-132S2-2	7.5	13.9	8.07	2900	0.88	88.4	2.2	7.5	2.3	0.0126	70
Y2E-160M1-2	11	19.8	11.5	2930	0.89	89.9	2.2	7.5	2.3	0.0377	117
Y2E-160M2-2	15	26.8	15.6	2930	0.89	90.7	2.2	7.5	2.3	0.0449	125
Y2E-160L-2	18.5	32.5	18.9	2930	0.90	91.2	2.2	7.5	2.3	0.0550	117
Y2E-180M-2	22	38.6	22.4	2940	0.90	91.5	2.0	7.5	2.3	0.075	180
Y2E-200L1-2	30	52.2	30.3	2950	0.90	92.2	2.0	7.5	2.3	0.124	240
Y2E-200L2-2	37	64.1	37.2	2950	0.90	92.6	2.0	7.5	2.3	0.139	255
Y2E-225M-2	45	77.5	44.9	2970	0.90	93.1	2.0	7.5	2.3	0.233	320
Y2E-250M-2	55	93.4	54.2	2970	0.91	93.4	2.0	7.5	2.3	0.312	420
Y2E-280S-2	75	125	72.6	2970	0.92	94.0	2.0	7.5	2.3	0.597	544
Y2E-280M-2	90	149	86.6	2970	0.92	94.5	2.0	7.5	2.3	0.675	620
Y2E-315S-2	110	184	107	2980	0.91	94.6	1.8	7.1	2.2	1.18	980
Y2E-315M-2	132	221	128	2980	0.91	94.8	1.8	7.1	2.2	0.82	1080
Y2E-315L1-2	160	264	153	2980	0.92	95.0	1.8	7.1	2.2	2.08	1160
Y2E-315L2-2	200	329	191	2980	0.92	95.4	1.8	7.1	2.2	2.41	1190
Y2E-355M-2	250	410	238	2980	0.92	95.7	1.6	7.1	2.2	3.56	1760
Y2E-355L-2	315	515	299	2980	0.92	95.9	1.6	7.1	2.2	4.16	1850

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Performance Data

Synchronous Speed : 1500 RPM
Power Range : 0.55 - 315kW (4 Pole)

TYPE / FRAME SIZE	RATED OUTPUT	CURRENT (AMPS)		SPEED	POWER FACTOR	EFFICIENCY	DIRECT ON LINE STARTING (MULTIPLES OF FULL LOAD)			MOMENT OF INERTIA	NET WEIGHT
	kW	400V	690V	RPM	cos Φ	η (%)	TORQUE LRT	CURRENT LRC	TORQUE MAX. Torque	kg.m2	kg
Y2E-801-4	0.55	1.37	0.79	1390	0.75	77.5	2.4	5.8	2.3	0.0018	17
Y2E-802-4	0.75	1.75	1.01	1390	0.77	80.3	2.3	6.5	2.3	0.0021	18
Y2E-90S-4	1.1	2.49	1.44	1400	0.77	82.8	2.3	7.0	2.3	0.0021	22
Y2E-90L-4	1.5	3.28	1.90	1400	0.79	83.6	2.3	7.0	2.3	0.0027	27
Y2E-100L1-4	2.2	4.60	2.66	1430	0.81	85.3	2.3	7.0	2.3	0.0054	34
Y2E-100L2-4	3.0	6.13	3.55	1430	0.82	86.2	2.3	7.0	2.3	0.0067	38
Y2E-112M-4	4.0	8.09	4.69	1440	0.82	87.0	2.3	7.0	2.3	0.0095	43
Y2E-132S-4	5.5	10.9	6.32	1440	0.83	87.8	2.3	7.0	2.3	0.0214	68
Y2E-132M-4	7.5	14.5	8.39	1440	0.84	89.0	2.3	7.0	2.3	0.0296	81
Y2E-160M-4	11	20.9	12.1	1460	0.84	90.3	2.2	7.0	2.3	0.0747	120
Y2E-160L-4	15	28.0	16.2	1460	0.85	91.0	2.2	7.5	2.3	0.0918	142
Y2E-180M-4	18.5	34.0	19.7	1470	0.86	91.3	2.2	7.5	2.3	0.139	180
Y2E-180L-4	22	40.0	23.3	1470	0.86	91.8	2.2	7.2	2.3	0.158	200
Y2E-200L-4	30	54.4	31.6	1470	0.860.88	92.5	2.2	7.2	2.3	0.262	265
Y2E-225S-4	37	64.6	37.5	1480	0.89	93.9	2.2	7.2	2.3	0.406	284
Y2E-225M-4	45	78.2	45.4	1480	0.89	93.3	2.2	7.2	2.3	0.469	320
Y2E-250M-4	55	95.0	55.1	1480	0.89	93.9	2.2	7.2	2.3	0.66	428
Y2E-280S-4	75	129	74.9	1480	0.89	94.1	2.2	7.2	2.3	1.12	578
Y2E-280M-4	90	155	89.7	1484	0.89	94.3	2.2	7.2	2.3	1.46	668
Y2E-315S-4	110	188	109	1484	0.89	94.8	2.1	6.9	2.2	3.11	1000
Y2E-315M-4	132	226	131	1484	0.89	94.9	2.1	6.9	2.2	3.62	1100
Y2E-315L1-4	160	273	158	1484	0.89	95.2	2.1	6.9	2.2	4.13	1160
Y2E-315L2-4	200	341	198	1484	0.89	95.2	2.1	6.9	2.2	4.94	1270
Y2E-355M-4	250	430	249	1487	0.89	95.3	2.1	6.9	2.2	5.67	1730
Y2E-355L-4	315	534	309	1487	0.89	95.7	2.1	6.9	2.2	6.66	1880

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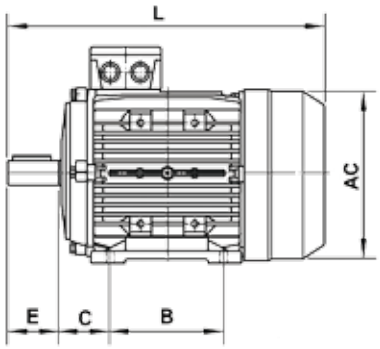
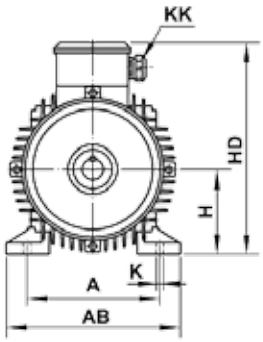
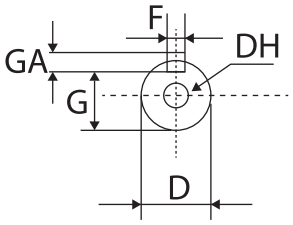
QUALITY PRODUCTS, SERVICES & SUPPORT...

Y2E series

MOUNTING AND OVERALL DIMENSION







FOOT MOUNTING - 1M/B3

DIMENSIONS IN MM															
Y2E Type	Poles	A	AB	AC	B	C	D	E	F x GA	G	H	HD	K	L	DH
63M	2, 4	100	135	130	80	40	11	23	4 x 4	8.5	63	180	7	230	M4 x 10
71M	2, 4, 6	112	150	145	90	45	14	30	5 x 5	11	71	195		255	M5 x 12
80M		125	165	175	100	50	19	40	6 x 6	15.5	80	220		295	M6 x 16
90S		140	180	195		56	24	50	8 x 7	20	90	250	10	320	M8 x 19
90L					125									345	
100L		160	205	215		63	28	60		24	100	270		385	M10 x 22
112M		190	230	240	140	70					112	300	12	400	
132S		216	270	275		89	38	80	10 x 8	33	132	345		470	M12 x 28
132M	2, 4, 6				178									510	
160M		254	320	330	210	108	42	110	12 x 8	37	160	420	15	615	M16 x 36
160L					254									670	
180M		279	355	380	241	121	48		14 x 9	42.5	180	455		700	
180L					279									740	
200L		318	395	420	305	133	55		16 x 10	49	200	505	19	770	M20 x 42
225S	4	356	435	470	286	149	60	140	18 x 11	53	225	560		815	
225M	2				311		55	110	16 x 10	49				820	
	4, 6						60	140	18 x 11	53				845	
250M	2	406	490	510	349	168					250	615	24	910	
	4, 6						65			58					
280S	2	457	550	580	368	190					280	680		985	
	4, 6						75		20 x 12	67.5					
280M	2				419		65		18 x 11	58				1035	
	4, 6						75		20 x 12	67.5					
315S	2	508	635	645	406	216	65		18 x 11	58	315	845	28	1178	
	4, 6						80	170	22 x 14	71				1208	
315M	2				457		65	140	18 x 11	58				1290	
	4, 6						80	170	22 x 14	71				1320	
315L	2				508		65	140	18 x 11	58				1290	
	4, 6						80	170	22 x 14	71				1320	
355M	2	610	730	710	560	254	75	140	20 x 12	67.5	355	1010		1500	M20 x 42
	4, 6						95	170	25 x 14	86				1530	M24 x 50
355L	2				630		75	140	20 x 12	67.5				1500	M20 x 42
	4, 6						95	170	25 x 14	86				1530	M24 x 50

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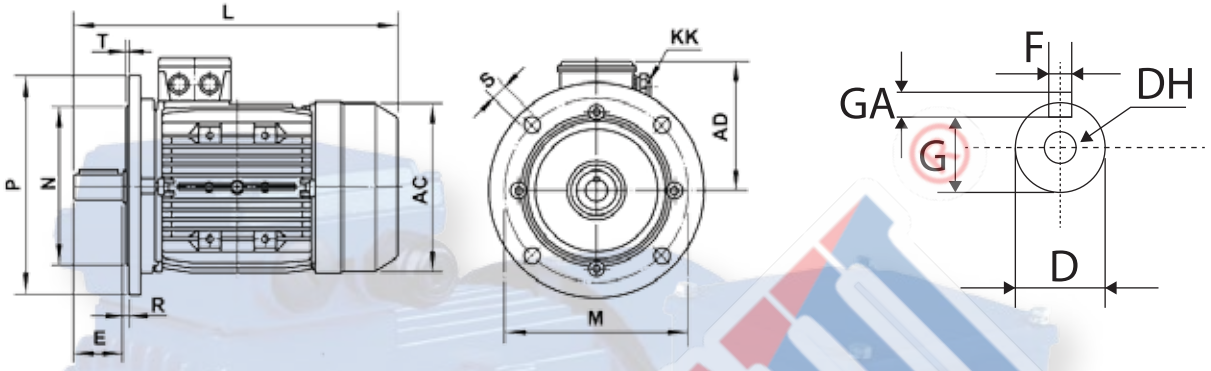
Y2E series

MOUNTING AND OVERALL DIMENSION



FLANGE MOUNTING - IM/B5

DIMENSIONS IN MM														
Y2E Type	Poles	AC	D	E	F x GA	G	M	N	P	S	T	HD	L	DH
63M	2, 4	130	11	23	4 x 4	8.5	115	95	140	10	3	130	230	M4 x 10
71M	2, 4, 6	145	14	30	5 x 5	11	130	110	160		3.5	145	255	M5 x 12
80M	2, 4, 6	175	19	40	6 x 6	5.5	165	130	200	12		185	295	M6 x 16
90S		195	24	50	8 x 7	20						195	320	M8 x 19
90L													345	
100L		215	28	60		24	215	180	250	15	4	245	385	M10 x 22
112M		240										265	400	
132S		275	38	80	10 x 8	33	265	230	300			315	470	M12 x 28
132M													510	
160M		330	42	110	12 x 8	37	300	250	350	19	5	385	615	M16 x 36
160L													670	
180M		380	48		14 x 9	42.5						430	700	
180L													740	
200L		420	55		16 x 10	49	350	300	400			480	770	M20 x 42
225S	4	470	60	140	18 x 11	53	400	350	450			535	815	
225M	2		55	110	16 x 10	49							820	
	4, 6		60	140	18 x 11	53							845	
250M	2	510					500	450	550			595	910	
	4, 6		65			58								
280S	2	580										650	985	
	4, 6		75		20 x 12	67.5								
280M	2		65		18 x 11	58							1035	
	4, 6		75		20 x 12	67.5								

Sole Agent:
Yamanashi Corporation Sdn. Bhd.
PT. 145365, Jalan Chepor 11/5,
Kawasan Perindustrian Pusat Seramik,
31200 Chepor, Ipoh,
Perak Darul Ridzuan, Malaysia.
Telephone: +605-2018768, 69
Fax: +605-2018770
E-mail: info@yamanashi.com.my
Website: **http://www.yamanashi.com.my**