WIN IE4 SUPER PREMIUM EFFICIENCY

Industrial Motors

Commercial & Appliance Motors

Automation

Digital & Systems

Energy

Transmission & Distribution

Coatings

Driving efficiency and sustainability

WIN IE4 SUPER PREMIUM EFFICIENCY

A design created high performance which is translated into a lower Total Cost of Ownership, due to its reliability, easy maintenance and energy savings!

In the last two decades, **the global energy consumption has increased by 50%**. And the forecast for the next two forthcoming decades is to keep this growing rate constant.

This increasing demand for electrical energy to sustain global development requires consistent heavy investments in power supply generation. However, in addition to complex medium and long term planning, these investments rely on natural resources, which are becoming depleted due to constant pressures upon the environment.

As a reflex of this scenario, electric energy costs are vertiginously rising, and in comparison to other economic indicators, standing out negatively. One of the main responsible for this accenting grow is **the industrial segment, which demands around 30% of the electric energy globally available.** And, in industrial applications, electric motors driven systems represents around 65% of all energy consumption.

This emphasizes the world's demand for more and more efficient products that may not only break this increasing demand, but also provide its reduction and, consequently, energy and money saving.

If we consider industrial and domestic applications, including appliances to our analysis, the electric motor energy consumption represents more than 40% of the total.

With this situation in mind WEG presents its WIN IE4 Super Premium Efficiency **motor line, meeting the** IE4 Efficiency Levels **defined in IEC 60034-30-1.**

WEG's WIN IE4 Super Premium Motors have a mechanical design, which offers:

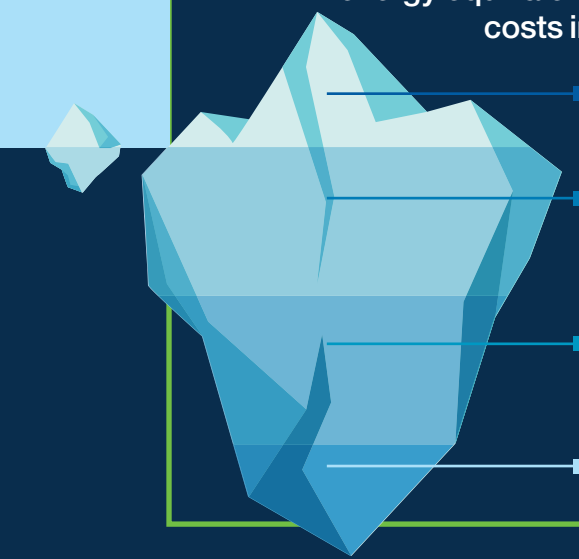
Extended grease fitting
Easy maintenance for regreasing

IP55 Degree of protection
Protects against dust and water jets for the complete range.

Automatic T-labyrinth drain plug
For easy motor drainage at maintenance procedures, and can provide high protection at harsh conditions.

Total Cost of Ownership Much more to be considered!

Most electric motors consume the energy equivalent of their acquisition costs in less than half year!



Industries Operating Costs

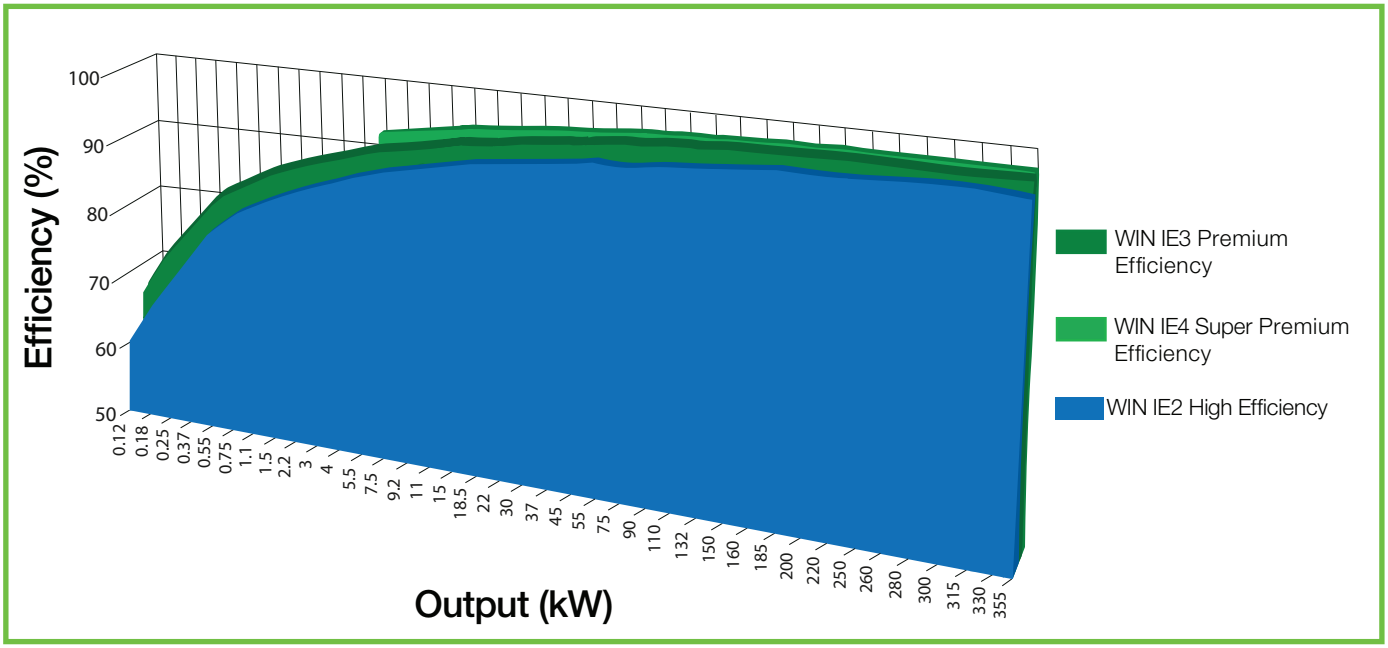
Industries require several resources to support their transformation activities such as water, compressed air, steam, electric energy, etc. And these resources play a major task at the company results, since they directly impact on the final company prices, affecting the general competitiveness.

Due to the hard competition, and the difficulty on reducing purchasing costs or even selling prices, a wise strategy may be focusing the efforts on saving the resources during the production process. WEG developed the W IE4 Super Premium Efficiency motors to allow for significant electric energy savings due its extreme performance, being a great partner for the industries in the search for costs reduction.

Total Cost of Ownership

When companies need to get new electric motors, the most part of them considers as decisive item the acquisition cost. However, a proper evaluation shall consider all costs that are inherent to the ownership on equipment, such as purchasing, running and maintenance costs.

Outstanding Performance



The comparative chart above shows the efficiency comparison between WIN 4-pole motors with IE2, IE3 and the IE4 efficiency levels.
As motors usually run for thousands of hours every year, any gain in efficiency by replacing motors with higher efficiency versions, will translate into considerable savings which would pay for the investment in a few years and in some cases even months. The Super Premium design, which presents from 20% less losses in comparison to the conventional motors, provides high efficiency levels.

Because of this, the investment for the replacement of installed motors by the WIN IE4 Super Premium efficiency motors returns in very short periods of time, resulting not only on energy savings, but also on plant reliability and availability, since new motors count on factory warranty and will renew your plant, valorizing your capital. The energy savings will be even greater if the old motor has been subject to repairs during its lifetime!

Calculate your savings

$$\text{Demand Savings (kW)} = \left(\frac{\text{Output}_{(\text{existing motor})}(\text{kW})}{\frac{\text{Efficiency}_{(\text{existing motor})}(\%)}{100}}\right) - \left(\frac{\text{Output}_{(\text{new motor})}(\text{kW})}{\frac{\text{Efficiency}_{(\text{new motor})}(\%)}{100}}\right)$$

Annual Energy Savings (kWh) = Demand Savings (kW) x Operating days x Operating hours

Annual Savings (R) = Annual Energy Savings (kWh) x Energy Cost (R/kWh)

Notes:
1) Class F (105K) temperature rise.

WIN IE4 Super Premium

The WIN IE4 Super Premium Efficiency motors are designed according to the DIN EN 50347 Standard, which means that you can replace an IE1, IE2 or IE3 motors with total reliability.

Basic features

Rated Output: 0,18 to 500 kW
Frame sizes: 71 to 355A/B
Number of poles: 2, 4 and 6
Voltage: 240/415V W/6 cables
415V C/W 6 cables.

II Poles		
Frame	Output Efficiency	Efficiency at Full Load
71	0,37	78,1
71	0,55	81,5
80	0,75	83,5
L80	1,1	85,2
L90S	1,5	86,5
L90L	2,2	88,0
100L	3,0	89,1
L100L	3,7	90,0
112M	4,0	90,0
L112M	5,5	90,9
132S	5,5	90,9
L132S	7,5	91,7
L132M	9,2	92,2
160M	9,2	92,2
160M	11	92,6
160M	15	93,3
160L	18,5	93,7
180M	22	94,0
200M/L	30	94,5
200M/L	37	94,8
225S/M	45	95,0
250S/M	55	95,3
W280S/M	75	95,6
W280S/M	90	95,8
W315S/M	110	96,0
W315S/M	125	96,2
W315S/M	132	96,2
315S/M	150	96,3
315S/M	160	96,3
315S/M	185	96,5
315L	200	96,5
355M/L	200	96,5
315L	225	96,5
355M/L	225	96,5
315L	250	96,5
355M/L	250	96,5
315L	280	96,5
355M/L	280	96,5
355M/L	300	96,5
355M/L	315	96,5
355M/L	330	96,5
355M/L	355	96,5
355A/B	375	96,5
355A/B	400	96,5
355A/B	450	96,5

IV Poles		
Frame	Output Efficiency	Efficiency at Full Load
71	0,25	77,9
80	0,37	81,1
L80	0,55	83,9
90S	0,75	85,7
L90S	1,1	87,2
100L	1,5	88,2
L100L	2,2	89,5
112M	3,0	90,4
132S	3,7	91,1
132S	4,0	91,1
L132M	5,5	91,9
L132M/L	7,5	92,6
160M	9,2	93,0
160M	11	93,3
160L	15	93,9
180M	18,5	94,2
180L	22	94,5
200M/L	30	94,9
W225S/M	37	95,2
225S/M	37	95,2
225S/M	45	95,4
250S/M	55	95,7
W280S/M	75	96,0
W280S/M	90	96,1
W315S/M	110	96,3
W315S/M	125	96,4
W315S/M	132	96,4
315S/M	150	96,6
315S/M	160	96,6
315S/M	185	96,7
315L	200	96,7
315L	225	96,7
355M/L	225	96,7
315L	250	96,7
355M/L	250	96,7
315L	280	96,7
355M/L	280	96,7
315L	300	96,7
355M/L	300	96,7
355M/L	315	96,7
355M/L	330	96,7
355M/L	355	96,7
355M/L	375	96,7
355A/B	400	96,7
355A/B	450	96,7
355A/B	500	96,7

VI Poles		
Frame	Output Efficiency	Efficiency at Full Load
80	0,18	70,1
80	0,25	74,1
L80	0,37	78,0
90S	0,55	80,9
L90L	0,75	82,7
100L	1,1	84,5
L100L	1,5	85,9
L112M	2,2	87,4
132S	3,0	88,6
132M	3,7	89,5
L132M	4,0	89,5
280S/M	45	94,8
280S/M	55	95,1
315S/M	75	95,4
315S/M	90	95,6
315S/M	110	95,8
315S/M	125	96,0
315S/M	132	96,0
315L	150	96,2
315L	160	96,2
355M/L	160	96,2
315L	185	96,3
355M/L	185	96,3
355M/L	200	96,3
355M/L	225	96,5
355M/L	250	96,5
355M/L	280	96,5
355A/B	300	96,6
355A/B	315	96,6
355A/B	330	96,6
355A/B	355	96,6
355A/B	375	96,6
355A/B	400	96,6

WIN IE4 Super Premium Performance Data

Three-phase Electric Induction Motor - Super Premium Efficiency - IE4 - 50 Hz [1]

Output		Frame	Full Load Torque (Nm)	Locked Rotor Current Il/In	Locked Rotor Torque Tl/Tn	Break-down Torque Tb/Tn	Inertia J (kgm²)	Allowable locked rotor time (s)		Weight (kg)	Sound dB(A)	415 V							
												Rated speed (rpm)	% of full load						Full load current In (A)
													Efficiency			Power Factor			
kW	HP							Hot	Cold				50	75	100	50	75	100	
II Poles																			
0,37	0,5	71	0,1	7,8	2,6	2,9	0,0005	15	33	11	56	2855	73,00	76,40	78,10	0,66	0,78	0,85	0,78
0,55	0,75	71	0,2	7,8	3,2	3,2	0,0005	14	31	12	56	2830	78,60	80,50	81,50	0,63	0,76	0,83	1,13
0,75	1	80	0,3	7,8	3,5	3,6	0,0009	18	40	15	59	2870	79,20	81,80	83,50	0,57	0,70	0,78	1,60
1,1	1,5	L80	0,4	7,8	4,2	3,9	0,0011	19	42	17	59	2865	82,00	83,90	85,20	0,58	0,71	0,79	2,27
1,5	2	L90S	0,5	7,8	3,3	3,5	0,0023	14	31	22	62	2890	84,00	85,60	86,50	0,64	0,75	0,82	2,94
2,2	3	L90L	0,7	8,9	4,0	4,1	0,0032	11	24	26	62	2900	85,40	87,00	88,00	0,62	0,74	0,81	4,29
3	4	100L	1,0	8,9	3,5	4,4	0,0064	12	26	33	67	2920	86,30	88,40	89,10	0,61	0,74	0,80	5,86
3,7	5	L100L	1,2	8,9	3,4	4,1	0,0080	11	24	36	67	2920	88,50	89,80	90,00	0,70	0,82	0,87	6,57
4	5,5	112M	1,3	8,9	3,1	4,0	0,0096	15	33	44	62	2920	87,90	89,50	90,00	0,69	0,80	0,85	7,27
5,5	7,5	132S	1,8	8,9	2,2	3,3	0,0196	22	48	65	63	2935	88,50	90,10	90,90	0,71	0,81	0,85	9,90
7,5	10	L132S	2,5	8,9	3,0	4,1	0,0285	14	31	77	63	2950	88,80	90,60	91,70	0,67	0,78	0,83	14
9,2	12,5	L132M	3,0	8,9	3,0	4,0	0,0356	8	18	85	63	2945	89,80	91,20	92,20	0,71	0,81	0,86	16
11	15	160M	3,6	8,9	3,3	4,5	0,0512	16	35	121	67	2960	90,40	91,90	92,60	0,61	0,73	0,80	21
15	20	160M	4,9	8,9	3,7	4,5	0,0548	18	40	132	67	2955	91,60	92,80	93,30	0,62	0,74	0,80	28
18,5	25	160L	6,1	8,9	3,0	3,7	0,0731	20	44	161	67	2945	93,00	93,50	93,70	0,75	0,84	0,86	32
22	30	180M	7,2	8,9	2,6	4,0	0,0988	19	42	182	67	2960	92,30	93,40	94,00	0,64	0,76	0,80	41
30	40	200M/L	9,9	8,0	3,0	3,3	0,1692	32	70	251	72	2960	92,90	93,90	94,50	0,72	0,81	0,83	53
37	50	200M/L	12,2	8,9	3,5	3,7	0,2138	26	57	281	72	2965	93,20	94,30	94,80	0,73	0,82	0,84	65
45	60	225S/M	14,8	8,9	2,7	3,7	0,2861	30	66	374	74	2970	92,90	94,10	95,00	0,70	0,80	0,83	79
55	75	250S/M	18,0	8,6	3,1	3,4	0,3722	39	86	458	74	2970	93,40	94,40	95,30	0,73	0,82	0,85	95
75	100	W280S/M	24,6	8,9	2,9	3,2	0,5414	28	62	563	74	2965	94,20	94,90	95,60	0,79	0,86	0,87	125
90	125	W280S/M	29,6	8,9	3,1	3,3	0,5752	24	53	583	74	2965	94,40	95,10	95,80	0,78	0,86	0,87	150
110	150	W315S/M	36,0	8,5	2,0	2,8	1,2263	34	75	821	77	2975	94,40	95,30	96,00	0,78	0,85	0,86	185
125	170	W315S/M	40,9	8,9	2,4	3,1	1,6442	29	64	926	77	2980	94,70	95,60	96,20	0,81	0,87	0,89	203
132	175	W315S/M	43,2	8,9	2,4	2,8	1,7331	30	66	950	77	2977	94,90	95,60	96,20	0,83	0,86	0,89	214
150	200	315S/M	49,0	8,7	2,5	3,1	2,2792	34	75	1007	77	2982	94,80	95,70	96,30	0,80	0,86	0,88	246
160	220	315S/M	52,3	8,7	2,2	2,9	2,3552	36	79	1025	77	2980	95,10	95,80	96,30	0,82	0,88	0,88	263
185	250	315S/M	60,4	8,8	2,6	3,1	2,7545	29	64	1111	77	2981	95,50	96,20	96,50	0,79	0,86	0,88	303
200	270	315L	65,3	8,9	3,0	3,2	3,4245	28	62	1295	78	2984	95,10	96,00	96,50	0,79	0,86	0,88	328
225	305	315L	73,5	8,0	2,5	2,6	3,6292	34	75	1324	78	2980	95,60	96,30	96,50	0,82	0,88	0,89	364
250	340	315L	81,8	8,9	2,3	2,4	3,5552	24	53	1324	78	2977	95,60	96,20	96,50	0,84	0,89	0,90	400
280	380	315L	91,4	8,9	3,3	2,5	4,0736	14	31	1419	78	2983	95,60	96,30	96,50	0,79	0,80	0,88	459
300	400	355M/L	97,8	8,9	3,0	3,3	5,3619	8	18	1692	80	2987	95,50	95,90	96,50	0,82	0,88	0,90	481
315	430	355M/L	103,0	8,9	2,6	2,3	5,2547	24	53	1689	80	2986	95,60	96,20	96,50	0,83	0,83	0,89	510
330	450	355M/L	108,0	8,9	3,2	2,3	5,8981	19	42	1792	80	2985	95,80	96,20	96,50	0,85	0,89	0,90	529
355	480	355M/L	116,0	8,9	3,0	2,1	6,0053	21	46	1821	80	2983	95,90	96,30	96,50	0,86	0,90	0,90	569
375	510	355A/B	122,0	8,9	3,4	2,1	7,6139	23	51	2221	83	2986	96,50	96,50	96,50	0,78	0,89	0,90	601
400	550	355A/B	130,0	8,9	3,3	2,2	7,7211	36	79	2237	83	2986	96,50	96,50	96,50	0,85	0,88	0,90	641
450	610	355A/B	147,0	8,9	3,0	2,0	7,6853	32	70	2248	83	2983	96,50	96,50	96,50	0,86	0,90	0,90	721

Note:
(1) Efficiency values are given according to IEC 60034-2-1. They are calculated according to indirect method, with stray load losses determined by measurement.

Three-phase Electric Induction Motor - Super Premium Efficiency - IE4 - 50 Hz [1]

Output		Frame	Full Load Torque (Nm)	Locked Rotor Current Il/In	Locked Rotor Torque Tl/Tn	Break-down Torque Tb/Tn	Inertia J (kgm²)	Allowable locked rotor time (s)		Weight (kg)	Sound dB(A)	415 V							
												Rated speed (rpm)	% of full load						Full load current In (A)
													Efficiency			Power Factor			
kW	HP							Hot	Cold				50	75	100	50	75	100	
IV Poles																			
0,25	0,33	71	0,2	6,5	3,3	3,3	0,0008	50	110	12	43	1420	70,80	75,00	77,90	0,44	0,56	0,65	0,69
0,37	0,5	80	0,2	7,0	3,5	3,7	0,0026	26	57	15	44	1450	75,20	78,80	81,10	0,51	0,65	0,74	0,86
0,55	0,75	L80	0,4	7,0	4,1	4,3	0,0039	26	57	18	44	1445	78,90	81,80	83,90	0,50	0,64	0,73	1,25
0,75	1	90S	0,5	7,0	2,5	3,4	0,0055	20	44	22	49	1460	81,50	84,20	85,70	0,51	0,65	0,72	1,69
1,1	1,5	L90S	0,7	7,0	2,5	3,0	0,0066	22	48	24	49	1450	85,30	86,40	87,20	0,60	0,72	0,79	2,22
1,5	2	100L	1,0	7,0	3,1	2,9	0,0090	31	68	32	53	1440	87,10	87,80	88,20	0,61	0,73	0,78	3,03
2,2	3	L100L	1,5	8,3	4,8	4,5	0,0119	21	46	37	53	1455	86,30	88,20	89,50	0,47	0,61	0,69	4,96
3	4	112M	2,0	8,3	2,7	3,5	0,0208	23	51	48	56	1465	88,80	89,80	90,40	0,57	0,70	0,76	6,07
3,7	5	132S	2,5	8,3	2,4	3,2	0,0453	20	44	65	56	1470	89,00	90,30	91,10	0,66	0,78	0,83	6,81
4	5,5	132S	2,7	8,3	2,5	3,4	0,0528	20	44	69	56	1470	89,00	90,30	91,10	0,66	0,77	0,84	7,27
5,5	7,5	L132M	3,6	8,3	2,6	3,4	0,0679	20	44	79	56	1470	89,50	91,10	91,90	0,70	0,80	0,85	9,80
7,5	10	L132M/L	5,0	8,3	2,6	3,7	0,0864	16	35	91	56	1470	91,00	91,80	92,60	0,66	0,78	0,82	13,70
9,2	12,5	160M	6,1	8,3	3,1	4,0	0,1193	16	35	130	57	1482	91,40	92,60	93,00	0,63	0,75	0,81	17,00
11	15	160M	7,3	8,3	2,5	3,3	0,1110	24	53	132	57	1475	92,30	93,00	93,30	0,63	0,75	0,81	20,20
15	20	160L	9,9	8,3	3,0	3,8	0,1527	22	48	166	57	1476	92,50	93,50	93,90	0,60	0,73	0,78	28,50
18,5	25	180M	12,2	8,3	3,1	3,7	0,1902	25	55	195	62	1475	93,00	93,90	94,20	0,60	0,72	0,78	35,00
22	30	180L	14,5	8,3	3,6	3,9	0,2248	26	57	224	62	1475	93,30	94,10	94,50	0,59	0,72	0,79	41,00
30	40	200M/L	19,8	8,3	2,6	3,3	0,3581	28	62	283	63	1477	94,50	94,90	94,90	0,67	0,78	0,82	53,60
37	50	225S/M	24,3	8,3	2,5	3,2	0,4914	48	106	356	64	1482	94,10	94,80	95,20	0,67	0,78	0,82	65,90
45	60	225S/M	29,6	8,3	2,9	3,5	0,5897	43	95	386	64	1483	94,10	94,90	95,40	0,65	0,76	0,80	82,00
55	75	250S/M	36,1	8,3	3,0	3,1	0,8430	38	84	478	64	1484	94,90	95,50	95,70	0,69	0,79	0,83	96,30
75	100	W280S/M	49,2	8,9	3,1	3,2	1,2140	32	70	593	64	1484	95,40	95,80	96,00	0,71	0,81	0,83	131
90	125	W280S/M	59,0	8,9	3,9	3,8	1,2814	26	57	612	64	1486	95,10	95,70	96,10	0,65	0,77	0,81	161
110	150	W315S/M	72,0	8,9	3,1	3,5	2,6094	20	44	881	69	1489	95,00	95,80	96,30	0,61	0,73	0,78	204
125	170	W315S/M	81,7	8,9	3,3	3,6	3,0699	18	40	951	69	1490	95,20	95,90	96,40	0,62	0,73	0,78	231
132	175	W315S/M	86,3	8,9	3,5	3,8	3,1466	17	37	964	69	1490	95,10	95,90	96,40	0,60	0,72	0,77	247
150	200	315S/M	98,0	8,2	2,9	3,0	3,6387	30	66	1038	71	1491	95,40	96,10	96,60	0,66	0,77	0,81	267
160	220	315S/M	105,0	8,2	2,7	2,8	3,7489	29	64	1053	71	1490	95,60	96,20	96,60	0,70	0,80	0,83	278
185	250	315S/M	121,0	8,4	3,2	3,1	4,5208	25	55	1151	71	1491	95,70	96,30	96,70	0,68	0,78	0,82	325
200	270	315L	131,0	8,6	2,7	2,6	4,9389	32	70	1266	73	1490	96,20	96,60	96,70	0,72	0,81	0,84	343
225	305	315L	147,0	8,6	3,3	2,9	5,7735	25	55	1362	73	1491	95,90	96,50	96,70	0,73	0,82	0,85	381
250	340	315L	163,0	8,9	3,0	2,4	6,3952	25	55	1450	73	1490	96,50	96,70	96,70	0,72	0,81	0,85	423
280	380	315L	183,0	8,9	3,0	3,0	6,3805	19	42	1450	73	1490	96,40	96,70	96,70	0,71	0,80	0,85	474
300	400	315L	196,0	8,9	3,5	3,2	6,8838	16	35	1504	73	1492	95,70	96,50	96,70	0,70	0,80	0,82	526
315	430	355M/L	206,0	8,2	2,5	2,3	9,5447	21	46	1724	74	1492	95,50	96,20	96,70	0,73	0,81	0,81	559
330	450	355M/L	216,0	8,2	2,6	2,3	10,3600	20	44	1813	74	1491	95,80	96,40	96,70	0,73	0,81	0,81	586
355	480	355M/L	232,0	8,2	2,4	2,1	10,3600	18	40	1813	74	1490	95,80	96,30	96,70	0,75	0,82	0,82	623
375	510	355M/L	245,0	8,2	3,0	2,3	11,1655	15	33	1886	74	1492	95,60	96,30	96,70	0,73	0,81	0,81	666
400	550	355A/B	261,0	8,2	3,0	2,5	11,9676	14	31	2136	76	1492	95,90	96,60	96,70	0,66	0,77	0,81	710
450	610	355A/B	294,0	8,9	3,5	2,7	13,9325	12	26	2338	76	1493	95,60	96,50	96,70	0,61	0,73	0,79	820
500	680	355A/B	326,0	8,9	3,0	2,4	14,6170	12	26	2416	76	1492	96,10	96,70	96,70	0,67	0,78	0,82	877

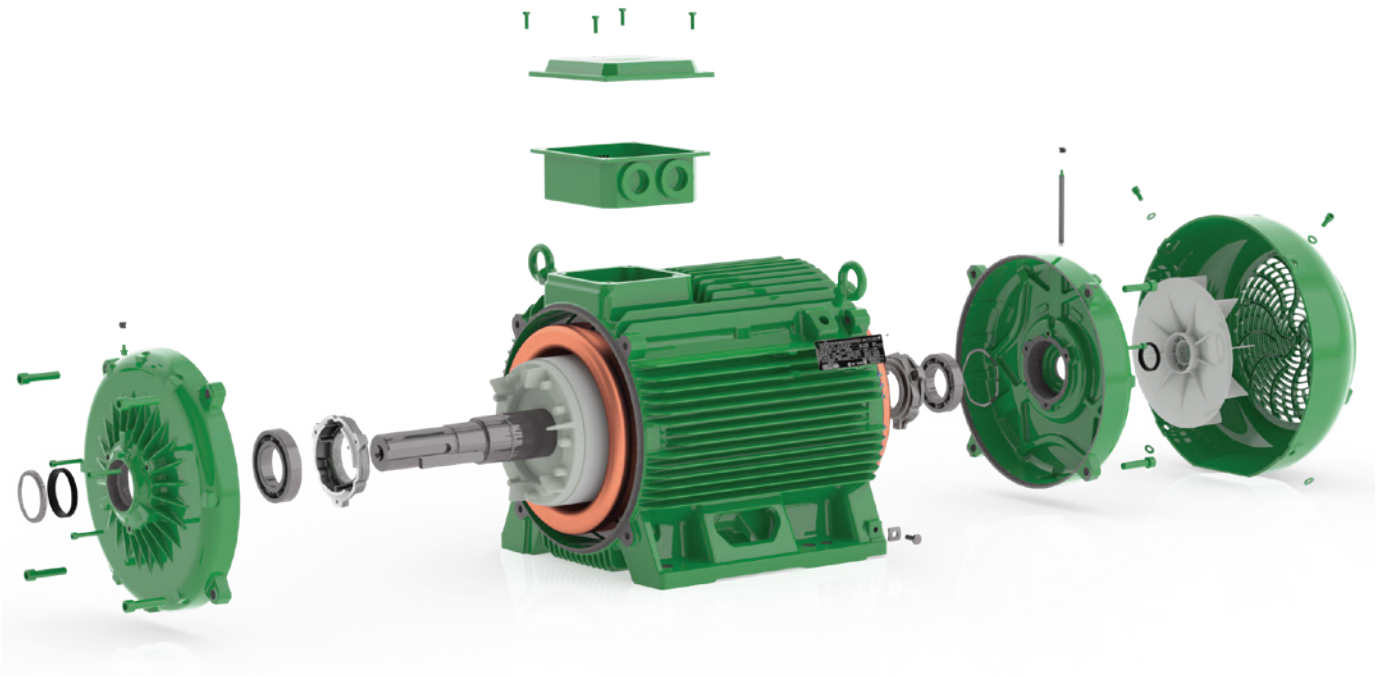
Note:
(1) Efficiency values are given according to IEC 60034-2-1. They are calculated according to indirect method, with stray load losses determined by measurement.

Three-phase Electric Induction Motor - Super Premium Efficiency - IE4 - 50 Hz [1]

Output		Frame	Full Load Torque (Nm)	Locked Rotor Current Il/In	Locked Rotor Torque Tl/Tn	Break-down Torque Tb/Tn	Inertia J (kgm²)	Allowable locked rotor time (s)		Weight (kg)	Sound dB(A)	415 V							
												Rated speed (rpm)	% of full load						Full load current In (A)
													Efficiency			Power Factor			
kW	HP							Hot	Cold				50	75	100	50	75	100	
VI Poles																			
0,18	0,25	80	0,2	7,0	2,3	2,7	0,0029	17	37	15	43	965	59,60	65,30	70,10	0,43	0,54	0,64	0,56
0,25	0,33	80	0,3	7,0	2,0	2,5	0,0027	19	42	15	43	945	68,20	71,50	74,10	0,51	0,63	0,72	0,65
0,37	0,5	L80	0,4	7,2	2,7	3,1	0,0037	20	44	17	43	950	72,00	75,10	78,00	0,45	0,58	0,67	0,99
0,55	0,75	90S	0,6	7,3	2,1	2,3	0,0060	18	40	22	45	940	77,80	79,70	80,90	0,50	0,63	0,71	1,33
0,75	1	L90L	0,8	7,1	2,4	2,6	0,0077	18	40	25	45	950	80,20	81,70	82,70	0,47	0,61	0,68	1,86
1,1	1,5	100L	1,1	7,0	2,9	2,9	0,0126	28	62	31	44	960	80,60	83,10	84,50	0,44	0,57	0,66	2,74
1,5	2	L100L	1,5	7,0	2,8	3,0	0,0176	35	77	36	44	965	82,30	84,50	85,90	0,45	0,58	0,66	3,68
2,2	3	L112M	2,2	7,4	3,2	3,4	0,0275	26	57	47	49	965	84,80	86,50	87,40	0,46	0,59	0,66	5,31
3	4	132S	3,0	7,3	2,7	2,9	0,0568	40	88	72	53	976	86,00	87,60	88,60	0,48	0,61	0,68	6,93
3,7	5	132M	3,7	7,8	3,0	3,2	0,0681	42	92	79	53	977	86,40	88,10	89,50	0,46	0,59	0,66	8,71
4	5,5	L132M	4,0	7,1	2,2	2,5	0,0717	50	110	81	53	970	87,60	88,60	89,50	0,52	0,64	0,71	8,76
45	60	280S/M	44,3	7,4	2,4	3,1	2,4652	33	73	623	65	990	93,60	94,50	94,80	0,61	0,72	0,77	86
55	75	280S/M	54,1	7,8	2,5	3,2	2,8014	30	66	660	65	990	93,90	94,80	95,10	0,60	0,72	0,77	104
75	100	315S/M	73,6	7,8	2,2	2,9	4,3398	36	79	891	67	992	94,20	94,90	95,40	0,59	0,71	0,76	144
90	125	315S/M	88,4	7,8	2,2	2,8	5,2439	32	70	962	67	992	94,70	95,30	95,60	0,62	0,73	0,78	168
110	150	315S/M	108,0	8,0	2,9	3,1	6,1481	28	62	1037	67	993	94,50	95,30	95,80	0,57	0,70	0,76	210
125	170	315S/M	123,0	8,1	2,9	3,1	7,0522	27	59	1110	67	993	94,80	95,50	96,00	0,59	0,71	0,76	238
132	175	315S/M	130,0	8,2	2,4	2,8	7,2330	26	57	1123	67	992	95,10	95,60	96,00	0,63	0,74	0,78	245
150	200	315L	147,0	8,2	2,7	2,9	9,0228	28	62	1309	68	993	94,80	95,70	96,20	0,62	0,73	0,79	275
160	220	315L	157,0	8,2	2,6	2,7	8,8424	26	57	1309	68	992	94,90	95,70	96,20	0,63	0,74	0,78	297
185	250	315L	182,0	8,2	2,6	2,7	10,8274	26	57	1462	68	992	95,20	95,90	96,30	0,64	0,75	0,80	334
200	270	355M/L	196,0	8,3	1,7	2,1	11,3029	50	110	1656	73	993	95,00	95,80	96,30	0,66	0,76	0,78	370
225	305	355M/L	221,0	8,3	1,9	2,2	12,2256	50	110	1735	73	993	95,00	95,90	96,50	0,64	0,75	0,78	416
250	340	355M/L	245,0	8,3	1,8	2,1	13,1482	50	110	1807	73	993	95,10	95,90	96,50	0,66	0,76	0,77	468
280	380	355M/L	275,0	8,3	2,0	2,2	14,5602	43	95	1915	73	993	95,00	95,90	96,50	0,64	0,75	0,76	531
300	400	355A/B	294,0	8,3	2,0	2,2	15,7158	42	92	2159	73	993	95,00	95,90	96,60	0,64	0,74	0,78	554
315	430	355A/B	309,0	8,3	2,1	2,3	17,5647	41	90	2301	73	993	95,00	96,00	96,60	0,64	0,74	0,78	582
330	450	355A/B	324,0	8,3	2,0	2,2	17,1024	38	84	2269	73	993	95,10	95,90	96,60	0,64	0,74	0,78	609
355	480	355A/B	349,0	8,3	1,9	2,1	16,8390	34	75	2253	73	992	95,10	95,90	96,60	0,64	0,74	0,78	655
375	510	355A/B	368,0	8,3	1,9	2,1	19,6070	35	77	2474	73	992	95,30	96,00	96,60	0,65	0,76	0,78	692
400	550	355A/B	392,0	8,3	2,5	2,4	19,6070	29	64	2474	73	994	94,80	95,80	96,60	0,58	0,70	0,76	758

Note:
(1) Efficiency values are given according to IEC 60034-2-1. They are calculated according to indirect method, with stray load losses determined by measurement.

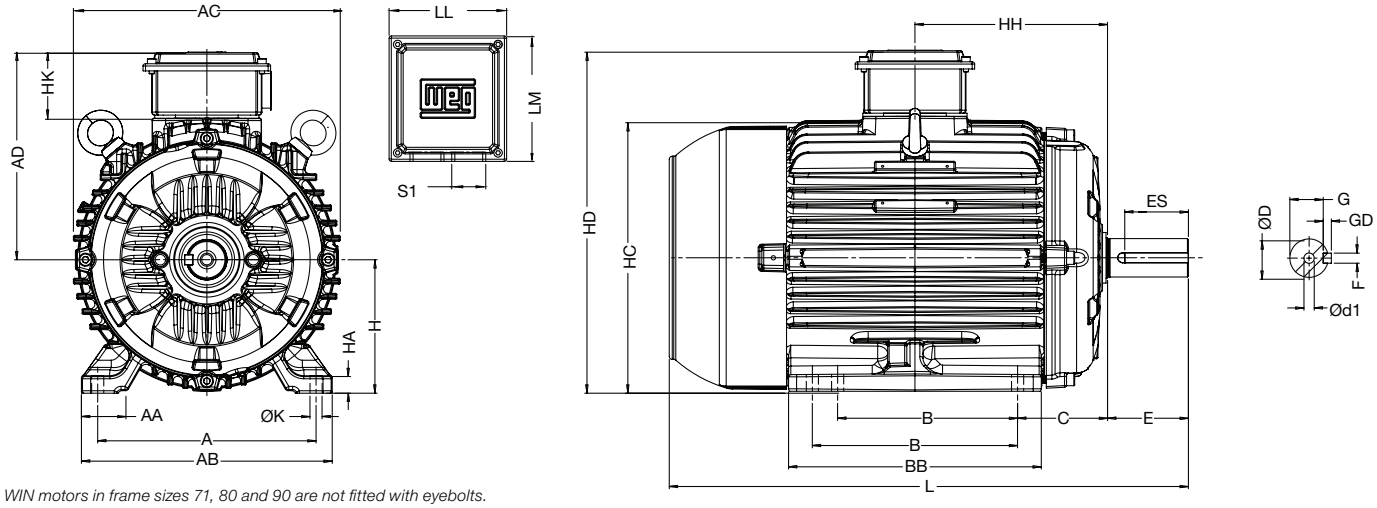
Exploded View



WIN Mechanical Data

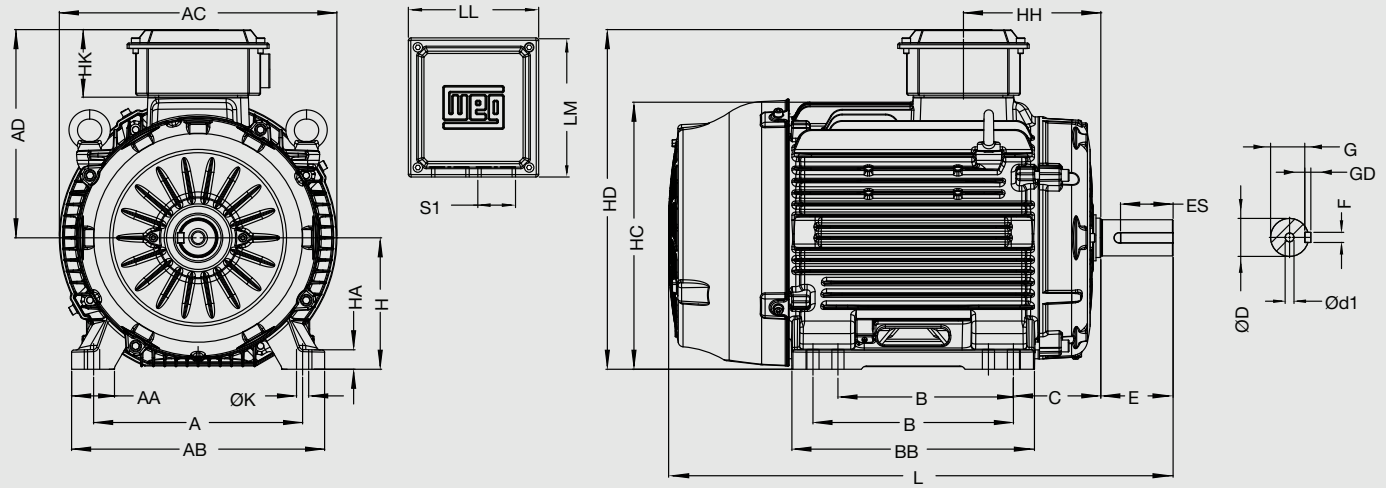
Foot Mounted Motors, Terminal Box Top

Frames 71 to 132M/L

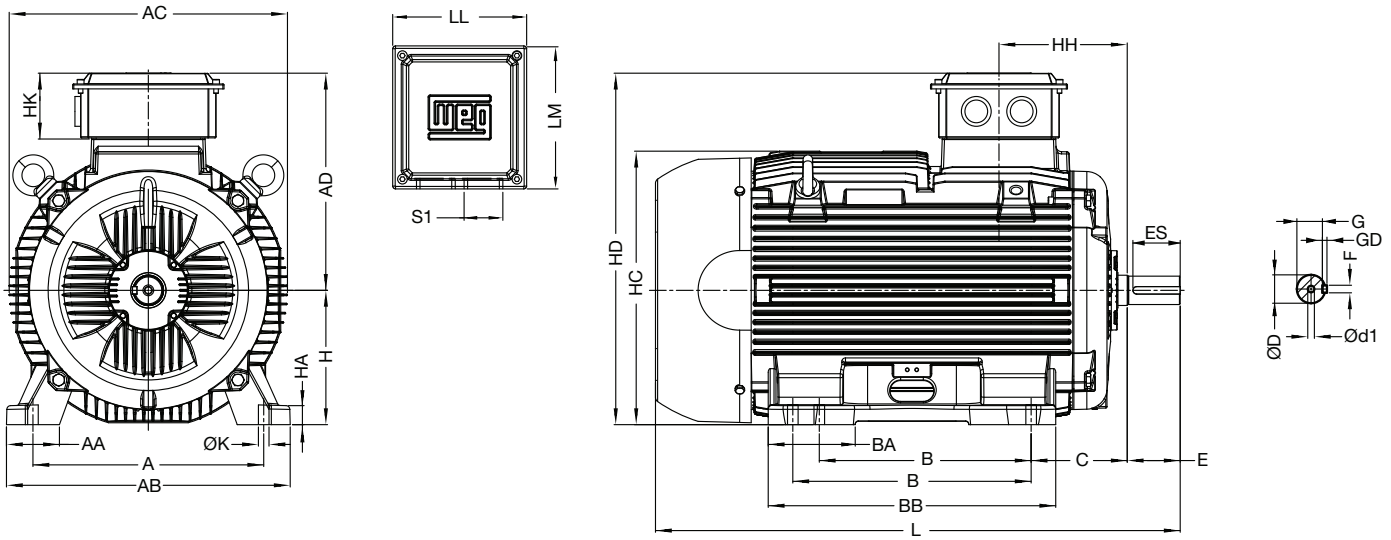


WIN motors in frame sizes 71, 80 and 90 are not fitted with eyebolts.
WIN motors in frame size 100 have the eyebolts positioned sidewards.

Frames 160M to W280S/M



Frames 280S/M to 355A/B



Frame	Feet										Frame				
	A	AA	AB	B	BA	BB	C	H	HA	K	AC	AD	HC	HD	L
71	112	29	132	90		114	45	71	7	7	141	130.5	144.5	201	250
80	125	31	149	100		126	50	80	8	10	159	139.5	163	219.5	277
L80															302
90S	140	37	164			131	56	90	9		179	149.5	182	239.5	305
L90S															334.5
90L				125		156									330
L90L															359.5
100L	160	40	188	140	-	173	63	100	10	12	210	159.5	205	259.5	376
L100L															414
112M	190		220			177	70	112			226	177.5	225.5	289.5	394
L112M															429
132S	216	46	248			187	89	132	16		272	205.5	272	337.5	450.5
L132S															475.5
132M				178		225									489
L132M															514
132M/L				178 / 203		250									513.5
160M	254	36	292	210		246	108	160	17	15	358	259	335	419	621
160L				254		290									665
180M	279	51	329	241		288	121	180	19		389	275	371	455	684.5
180L				279		325									722.5
200M/L	318	65	385	267 / 305	106	369	133	200	30	19	414	317	414	517	767.5
225S/M*	356	80	436	286 / 311	100	395	149	225	28		488	357.8	469	583	856.5
225S/M															886.5
250S/M*	406	100	506	311 / 349	135	447	168	250	30	24	528	377.8	514	628	965.5
250S/M															
W280S/M*	457		557	368 / 419	143	509	190	280	30				544	658	994
W280S/M															
280S/M*					151	517			42		599	433.8	600	714	1059.5
280S/M															
W315S/M*	508	120	630	406 / 457	168	561	216	315	35	28			635	749	1110
W315S/M															1140
315S/M*					184	626			48		657	514	665	829	1183.5
315S/M															1213.5
315L*				508	221	759						524		839	1293.5
315L															1323.5
355M/L*	610	140	750	560 / 630	237.5	775	254	355	50		736	574	755	929	1404
355M/L															1474
355A/B*				710 / 800	332	965				28					1599
355A/B															1669

Frame	Terminal box					Shaft							Bearings	
	HH	HK	LL	LM	S1	E	ES	D	D1	F	G	GD	DE	NDE
71	90	59.5	103.5	104	M24x1.5	30	18	14j6	DM5	5	11	5	6202 ZZ	6202 ZZ
80	100					40	28	19j6	DM6	6	15.5	6	6204 ZZ	6203 ZZ
L80														
90S	106					50	36	24j6	DM8	8	20	7	6205 ZZ	6204 ZZ
L90S														
90L	118.5													
L90L														
100L	133					60	45	28j6	DM10		24		6206 ZZ	6205 ZZ
L100L														
112M	140	65.5	118	126	2xM30x2								6207 ZZ	6206 ZZ
L112M														
132S	159					80	63	38k6	DM12	10	33	8	6208 ZZ	6207 ZZ
L132S														
132M	178													
L132M														
132M/L	190.5													
160M	213	84	160	168	2xM36x2	110	80	42k6	DM16	12	37		6209 ZZ C3	6209 ZZ C3
160L	187													
180M	241.5							48k6		14	42.5	9	6211 ZZ C3	
180L	212.5													
200M/L	209	103	200	216	2xM48x2			55m6	DM20	16	49	10	6212 ZZ C3	
225S/M*	203.5	114	224	248	2xM64x2		100						6214 C3	6212 C3
225S/M						140	125	60m6		18	53	11		
250S/M*	217													
250S/M								65m6			58			
W280S/M*	245.5												6314 C3	
W280S/M								75m6		20	67.5	12	6316 C3	
280S/M*	265.5							65m6		18	58	11	6314 C3	6314 C3
280S/M								75m6		20	67.5	12	6316 C3	
W315S/M*	265							65m6		18	58	11	6314 C3	
W315S/M						170	160	80m6		22	71	14	6319 C3	
315S/M*	263.5	164	310	342		140	125	65m6		18	58	11	6314 C3	
315S/M						170	160	80m6		22	71	14	6319 C3	6316 C3
315L*	285.5	174	362	400		140	125	65m6		18	58	11	6314 C3	6314 C3
315L						170	160	80m6		22	71	14	6319 C3	6316 C3
355M/L*	339				2xM72x2	140	125	75m6		20	67.5	12	6316 C3	6314 C3
355M/L						210	200	100m6	DM24	28	90	16	6322 C3	6319 C3
355A/B*						140	125	75m6	DM20	20	67.5	12	6316 C3	6314 C3
355A/B						210	200	100m6	DM24	28	90	16	6322 C3	6319 C3

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