

W23 Sync+

Industrial Motors

Commercial & Appliance
Motors

Automation

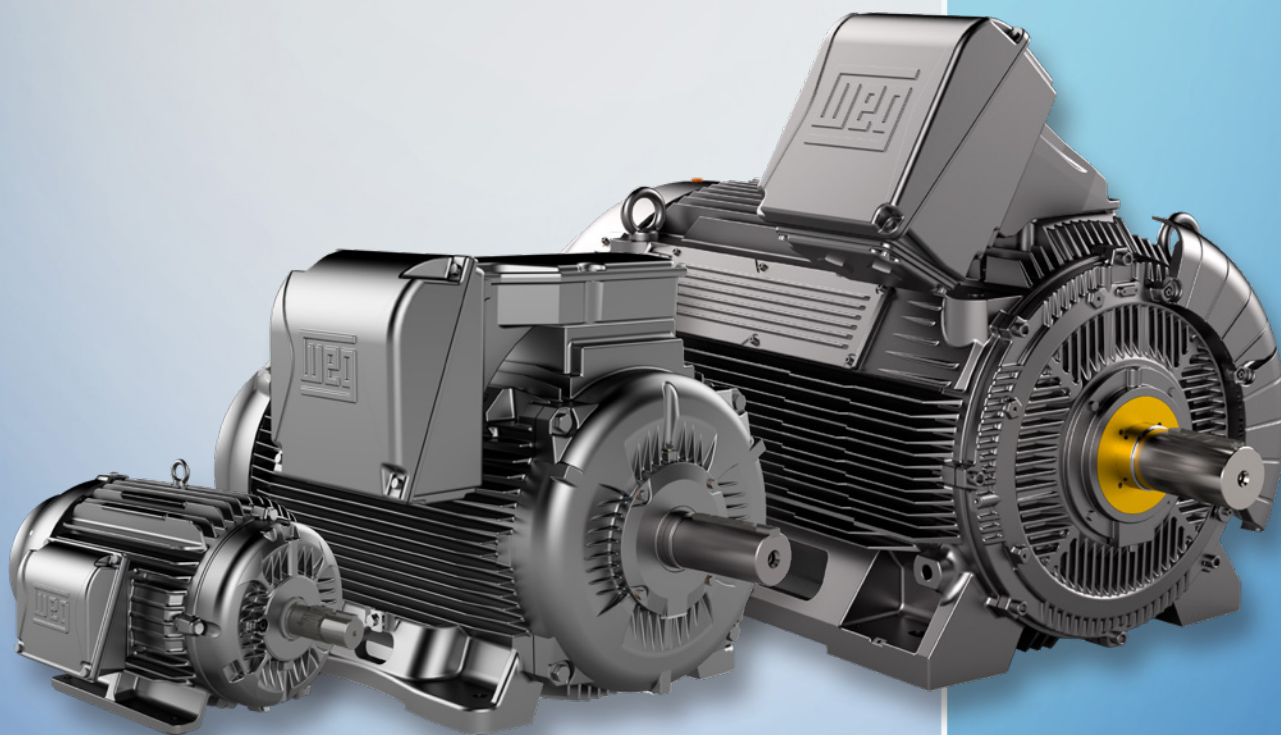
Digital &
Systems

Energy

Transmission &
Distribution

Coatings

**Combining
technologies for
greater performance.**
NEMA market



Driving efficiency and sustainability



W23 Sync+

The W23 Sync+ line is at the forefront of efficiency in the industry, meeting the Ultra Premium(IE5) efficiency. Reducing losses by 40% compared to the NEMA Premium efficiency (IE3).

The W23 Sync+ line is a result of WEG's dedication to research and development. W23 Sync+ provides measurable energy efficiency improvement and a reduction in Total Cost of Ownership



Lower
energy
consumption



Easily
interchangeable



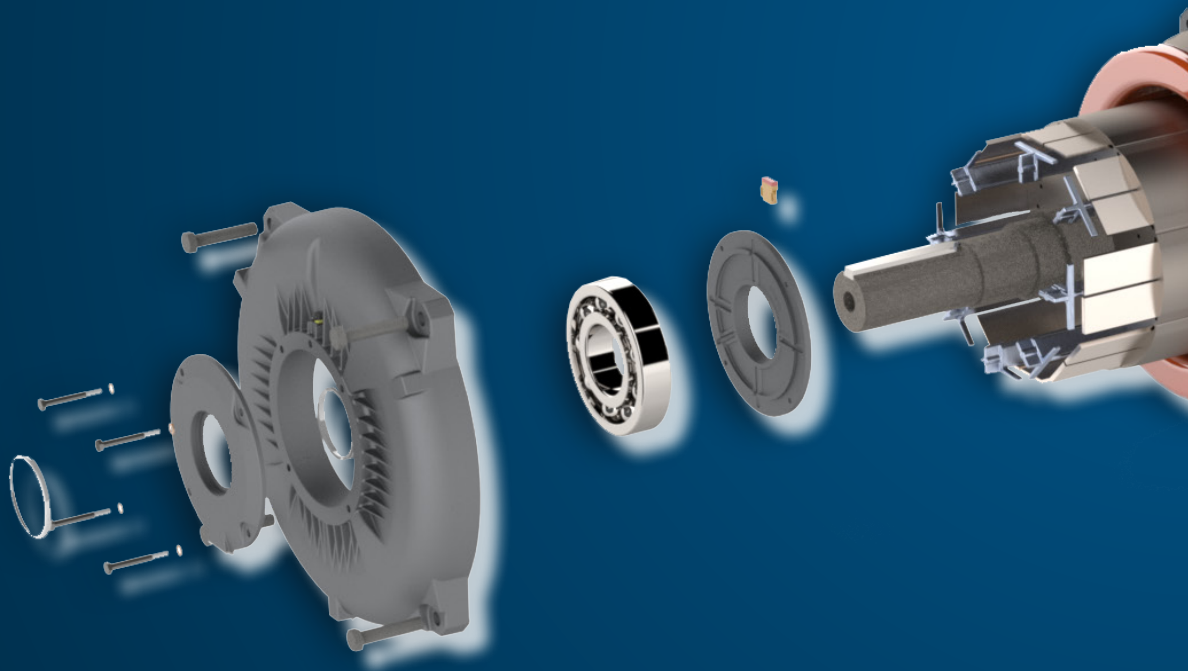
Low
noise



Long life of
components



High
durability

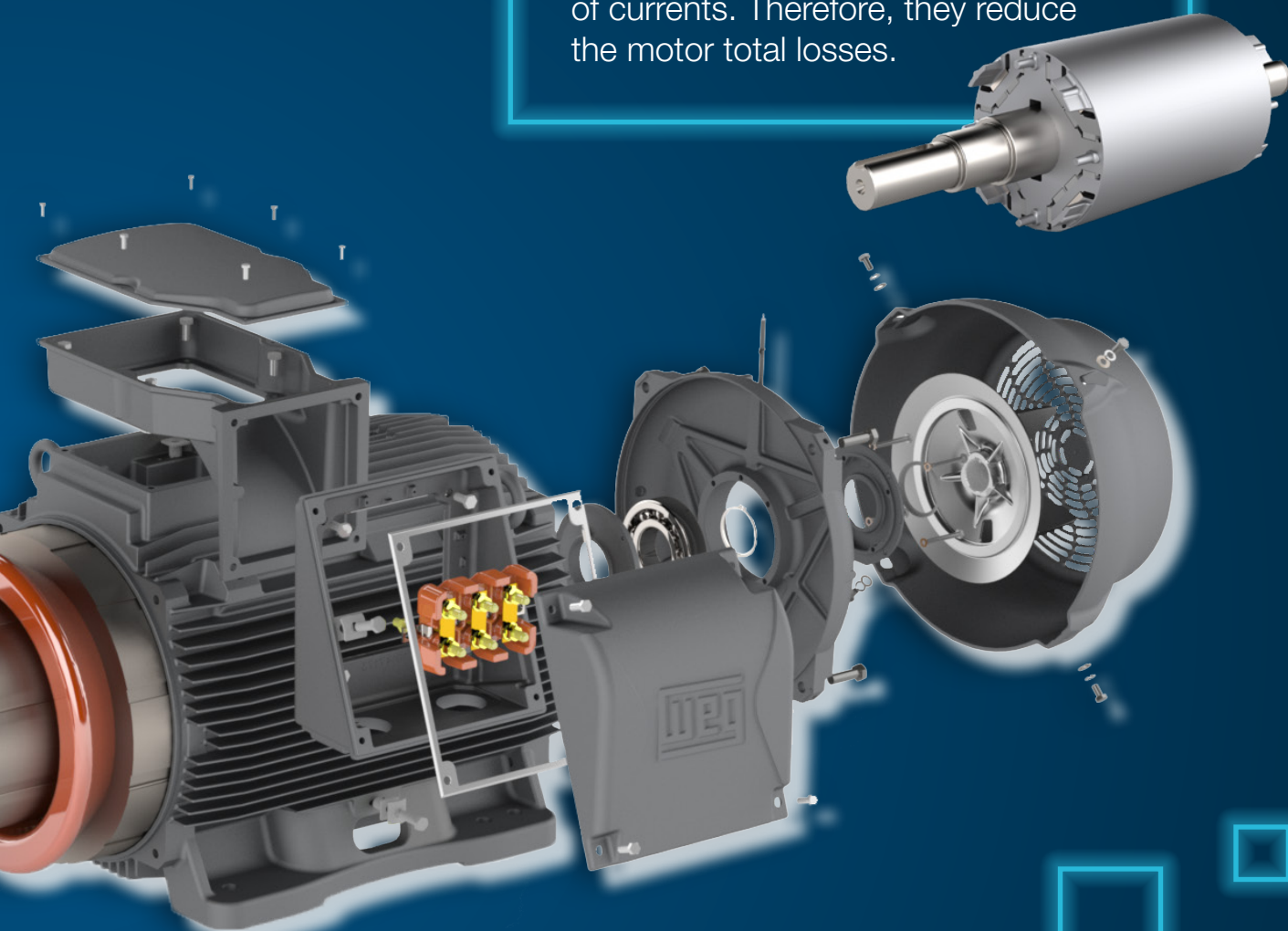


The New W23 Sync+ motors maintain their efficiency irrespective of speed variations or load, leading to energy savings of up to 30% compared to induction motors with variable frequency inverters.

Additionally, these motors can operate over a wide Constant Torque speed range without the need for external ventilation. Their cool operation over a wide speed range eliminates the need for blowers. Hence, they are perfect for tasks requiring adjustable speed and constant torque.

The highest efficiency in rotor technology

The magnets generate their own magnetic field without requiring induction of currents. Therefore, they reduce the motor total losses.



General Characteristics

Power : 0.75 to 1750 HP
Frame : 143T to 7009/10
Speed : up to 3600 rpm
Voltage : up to 600V

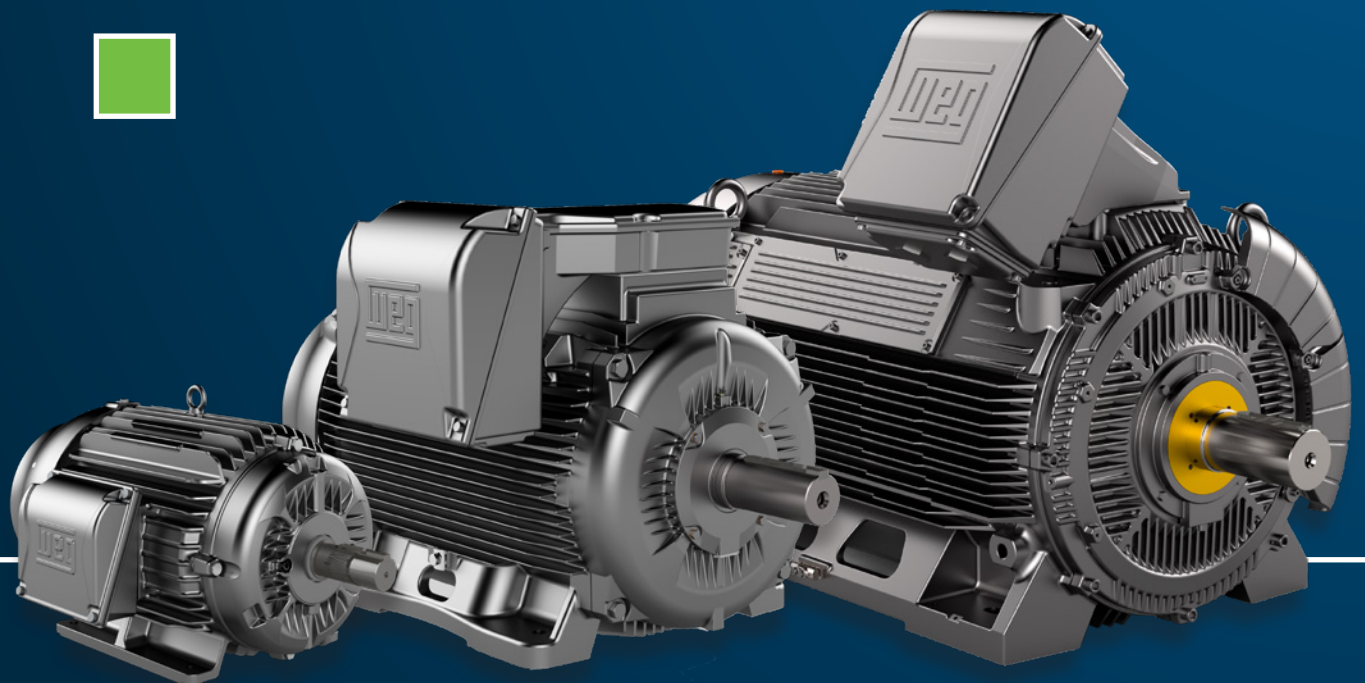
Protection Rating : IP55
Insulation : F with B rise (80K)
Service Factor : 1.0
Bearing type : Ball

Driving efficiency and sustainability



IE6

and beyond





With industry-leading performance we anticipated the next level of efficiency, IE6 and beyond. Meeting 20% lower losses than IE5.



- **Energy Saving:** The anticipated efficiency of IE6 motors reduces energy consumption, benefiting the environment and reducing operational costs for companies.
- **Compliance with Standards:** Exceed international efficiency standards, ensuring compliance with local and global regulations.
- **Lower Heat Generation:** IE6 motors generate less heat, contributing to efficient operations and reducing the need for additional cooling.
- **Extended Service Life:** With advanced materials and technologies, IE6 motors have a longer lifespan, resulting in fewer replacements and maintenance jobs.
- **Performance at Variable Loads:** IE6 is efficient even at partial load, making it ideal for applications with load variations.
- **Sustainability:** The energy efficiency of IE6 motors contributes to sustainable practices, reducing the demand for natural resources and minimizing environmental impacts.

Electrical data

W23 Sync+ (1200 RPM - IE5)

HP	kW	Frame	Poles	Weight (lb)	Power Factor 100 %	Efficiency 100 %	Rated current (A)	Inverter Parameter			Inverter	Inverter Current (A)
								Ld (mH)	Lq (mH)	ke (V/krpm)		
1	0.75	143/5T	4	49	0.87	85.7	1.23	471	2482	115	CFW500B02P6T4...	2.6
1.5	1.1	182/4T	4	77	0.77	87.2	2.09	394	1430	72.6	CFW500B02P6T4...	2.6
2	1.5	182/4T	4	86	0.77	88.4	2.81	295	1085	71.1	CFW500B04P3T4...	4.3
3	2.2	213/5T	4	121	0.83	89.7	3.65	192	844	110	CFW500B04P3T4...	4.3
5	3.7	213/5T	4	143	0.82	91.2	6.16	110	496	106	CFW500B06P5T4...	6.5
7.5	5.5	254/6T	4	225	0.77	92.2	10.1	59.3	318	25.3	CFW500C14P0T4...	14
10	7.5	254/6T	4	276	0.78	92.9	13.4	43.7	242	26.1	CFW500C14P0T4...	14
15	11	284/6T	4	353	0.79	93.7	18.4	32.2	176	65	CFW500D24P0T4...	24
20	15	284/6T	4	375	0.8	94.3	25.8	23.8	126	58.3	CFW500D31P0T4...	31
25	18.5	324/6T	4	470	0.8	94.6	31.8	19.8	101	72	CFW500E39P0T4...	45
30	22	324/6T	4	470	0.78	94.9	38.8	16.6	82.1	67.5	CFW500E39P0T4...	45
40	30	364/5T	4	730	0.8	95.3	50.9	11.8	63.1	79	CFW500E49P0T4...	58.5
50	37	364/5T	4	798	0.79	95.6	61.7	9.84	53.6	80	CFW500F77P0T4...	77
60	45	W444/5T	4	974	0.76	95.8	81.4	7.98	40	63.1	CFW500F88P0T4...	88
75	55	W444/5T	4	1052	0.76	96.0	101	6.31	31.8	62.1	CFW500F0105T4...	105
100	75	444/5T	8	1246	0.96	96.3	102	2.37	4.59	389	CFW500F0105T4...	105
125	90	444/5T	8	1246	0.96	96.5	123	2.76	5.06	404	CFW500G0142T4...	142

W23 Sync+ (1800 RPM - IE5)

HP	kW	Frame	Poles	Weight (lb)	Power Factor 100 %	Efficiency 100 %	Rated current (A)	Inverter Parameter			Inverter	Inverter Current (A)
								Ld (mH)	Lq (mH)	ke (V/krpm)		
1	0.75	143/5T	4	40	0.86	88.2	1.24	322	1656	75.4	CFW500B02P6T4...	2.6
1.5	1.1	143/5T	4	46	0.87	89.5	1.76	226	1185	79.2	CFW500B02P6T4...	2.6
2	1.5	L143/5T	4	53	0.86	90.4	2.4	161	863	77.2	CFW500B02P6T4...	2.6
3	2.2	182/4T	4	86	0.77	91.4	4.05	142	519	49.2	CFW500B04P3T4...	4.3
5	3.7	182/4T	4	95	0.76	92.6	6.85	84.4	313	44.1	CFW500B10P0T4...	10
7.5	5.5	213/5T	4	132	0.82	93.4	9.29	51.6	226	67.2	CFW500B10P0T4...	10
10	7.5	213/5T	4	152	0.82	94.0	12.3	38.7	173	69.3	CFW500C14P0T4...	14
15	11	254/6T	4	273	0.77	94.6	19.7	19.4	109	18.4	CFW500D24P0T4...	24
20	15	254/6T	4	291	0.77	95.1	26.8	14.2	80.1	17.2	CFW500D31P0T4...	31
25	18.5	284/6T	4	392	0.79	95.3	31.1	12.3	68.3	44.8	CFW500E39P0T4...	45
30	22	284/6T	4	432	0.80	95.5	37.5	10	55.9	43.2	CFW500E39P0T4...	45
40	30	324/6T	4	518	0.79	95.9	50.2	8.4	44.0	51.7	CFW500E49P0T4...	58.5
50	37	324/6T	4	567	0.80	96.1	62.5	6.55	34.6	50.6	CFW500F77P0T4...	77
60	45	364/5T	4	765	0.79	96.3	77.8	4.91	27.1	52.7	CFW500F88P0T4...	88
75	55	364/5T	4	862	0.81	96.5	91.6	4.18	23.7	55.4	CFW500F0105T4...	105
100	75	404/5T	4	1012	0.76	96.7	134	3.15	16.3	43.3	CFW500G0142T4...	142
125	90	444/5T	8	1252	0.94	96.9	126	1.07	2.29	270	CFW500G0142T4...	142
150	110	444/5T	8	1252	0.96	97.0	150	1.15	2.27	270	CFW500G0180T4...	180
200	150	444/5T	8	1512	0.95	97.2	207	0.705	1.47	272	CFW500G0211T4...	211

W23 Sync+ (3600 RPM - IE5)

HP	kW	Frame	Poles	Weight (lb)	Power Factor 100 %	Efficiency 100 %	Rated current (A)	Inverter Parameter			Inverter	Inverter Current (A)
								Ld (mH)	Lq (mH)	ke (V/krpm)		
1	0.75	143/5T	4	37	0.88	86.3	1.22	176	857	47.4	CFW500B02P6T4...	2.6
1.5	1.1	143/5T	4	37	0.86	87.8	1.82	114	575	38.9	CFW500B02P6T4...	2.6
2	1.5	143/5T	4	40	0.86	88.9	2.44	83.9	433	38.6	CFW500B02P6T4...	2.6
3	2.2	182/4T	4	73	0.77	90.2	4.08	72.9	258	27.7	CFW500B04P3T4...	4.3
5	3.7	182/4T	4	79	0.76	91.6	6.81	44.7	160	24.5	CFW500B10P0T4...	10
7.5	5.5	213/5T	4	121	0.83	92.6	9.08	25.5	112	39.6	CFW500B10P0T4...	10
10	7.5	213/5T	4	143	0.85	93.3	12	19.6	86.9	42.4	CFW500C14P0T4...	14
15	11	254/6T	4	243	0.77	94.0	19.7	10.3	54.4	10.9	CFW500D24P0T4...	24
20	15	254/6T	4	276	0.76	94.5	27.1	7.06	38.6	10	CFW500D31P0T4...	31
25	18.5	284/6TS	4	353	0.82	94.9	30.2	6.68	36	28	CFW500D31P0T4...	31
30	22	284/6TS	4	392	0.81	95.1	36.2	5.3	29	28	CFW500E39P0T4...	45
40	30	324/6TS	4	470	0.79	95.5	50.1	4.11	21	30.8	CFW500E49P0T4...	58.5
50	37	324/6TS	4	470	0.8	95.8	63.5	3.17	16.3	27.7	CFW500F77P0T4...	77
60	45	364/5TS	4	500	0.79	96.0	75.2	2.8	14.6	27.6	CFW500F77P0T4...	77
75	55	364/5TS	4	551	0.79	96.2	92.3	2.21	11.6	27.3	CFW500F0105T4...	105
100	75	404/5TS	4	858	0.78	96.5	132	1.56	8.29	23.4	CFW500G0142T4...	142
125	90	W444/5TS	4	977	0.78	96.6	165	1.14	6.23	22.5	CFW500G0180T4...	180
150	110	W444/5TS	4	1014	0.78	96.8	179	1.22	6.59	24.8	CFW500G0180T4...	180

Note:

* The main part of the drive code is indicated above. However, additional options and variations may be selected based on specific customer needs (e.g., RFI filter, safety functions, protection level, braking IGBT, Bluetooth, etc.). If you require further customization, please consult WEG, who can assist in completing the drive selection according to your requirements.

** Higher output is available upon request.

W23 Sync+ Ultra (1200 RPM - IE6)

HP	kW	Frame	Poles	Weight (lb)	Power Factor 100 %	Efficiency 100 %	Rated current (A)	Inverter Parameter			Inverter	Inverter Current (A)
								Ld (mH)	Lq (mH)	ke (V/krpm)		
1	0.75	143/5T	4	51	0.88	88.6	1.21	483	2521	124	CFW500B02P6T4...	2.6
1.5	1.1	182/4T	4	86	0.79	89.8	2.02	411	1500	83.1	CFW500B02P6T4...	2.6
2	1.5	182/4T	4	95	0.79	90.7	2.72	305	1128	82.4	CFW500B04P3T4...	4.3
3	2.2	213/5T	4	152	0.88	91.8	3.37	217	939	149	CFW500B04P3T4...	4.3
5	3.7	213/5T	4	163	0.86	93	5.81	124	556	124	CFW500B06P5T4...	6.5
7.5	5.5	254/6T	4	273	0.79	93.8	9.69	61.5	334	31.4	CFW500B10P0T4...	10
10	7.5	254/6T	4	309	0.77	94.3	13.4	41.8	235	28.4	CFW500C14P0T4...	14
15	11	284/6T	4	412	0.81	95.0	18.0	31.9	178	74	CFW500D24P0T4...	24
20	15	284/6T	4	452	0.79	95.4	25.0	22.9	128	67.3	CFW500D31P0T4...	31
25	18.5	324/6T	4	518	0.79	95.7	31.0	19.6	103	78.5	CFW500D31P0T4...	31
30	22	324/6T	4	567	0.79	95.9	37.1	16	85.1	78.2	CFW500E39P0T4...	45
40	30	364/5T	4	796	0.81	96.2	50.3	11.3	63.7	82.9	CFW500E49P0T4...	58.5
50	37	364/5T	4	862	0.81	96.5	62.4	9.03	51.2	81.5	CFW500F77P0T4...	77
60	45	W444/5T	4	1052	0.78	96.6	78.1	7.91	42.3	67.5	CFW500F88P0T4...	88
75	55	W444/5T	4	1131	0.77	96.8	96.8	6.35	33.9	66.1	CFW500F105T4...	105
100	75	444/5T	8	1246	0.96	97.0	102	2.37	4.59	389	CFW500F105T4...	105
125	90	444/5T	8	1305	0.96	97.2	123	2.34	4.59	405	CFW500G0142T4...	142

W23 Sync+ Ultra (1800 RPM - IE6)

HP	kW	Frame	Poles	Weight (lb)	Power Factor 100 %	Efficiency 100 %	Rated current (A)	Inverter Parameter			Inverter	Inverter Current (A)
								Ld (mH)	Lq (mH)	ke (V/krpm)		
1	0.75	143/5T	4	46	0.89	90.6	1.17	345	1753	96.2	CFW500B02P6T4...	2.6
1.5	1.1	L143/5T	4	57	0.89	91.6	1.69	235	1212	96.4	CFW500B02P6T4...	2.6
2	1.5	L143/5T	4	57	0.87	92.3	2.37	165	876	82.3	CFW500B02P6T4...	2.6
3	2.2	182/4T	4	95	0.79	93.1	3.93	145	535	56.9	CFW500B04P3T4...	4.3
5	3.7	182/4T	4	106	0.77	94.1	6.68	86.3	320	50.1	CFW500B10P0T4...	10
7.5	5.5	213/5T	4	152	0.81	94.7	9.23	46.8	211	74.4	CFW500B10P0T4...	10
10	7.5	213/5T	4	152	0.82	95.2	12.5	38.5	171	70.4	CFW500C14P0T4...	14
15	11	254/6T	4	291	0.76	95.7	19.8	18.6	104	19.7	CFW500D24P0T4...	24
20	15	254/6T	4	357	0.78	96.1	26.2	14.6	82.6	20.2	CFW500D31P0T4...	31
25	18.5	284/6T	4	412	0.81	96.2	30.4	13	71.6	48.6	CFW500D31P0T4...	31
30	22	284/6T	4	432	0.79	96.4	36.6	10.9	59.5	45.5	CFW500E39P0T4...	45
40	30	324/6T	4	567	0.79	96.7	49.8	8.17	43.1	55.7	CFW500E49P0T4...	58.5
50	37	324/6T	4	617	0.79	96.9	62.0	6.43	34.1	54.1	CFW500F77P0T4...	77
60	45	364/5T	4	829	0.81	97.0	75.6	5.04	28.1	57.9	CFW500F77P0T4...	77
75	55	364/5T	4	895	0.81	97.2	93	4.09	22.8	57	CFW500F105T4...	105
100	75	404/5T	4	1089	0.78	97.4	136	2.94	15.4	44.4	CFW500G0142T4...	142
125	90	444/5T	8	1252	0.96	97.5	122	0.955	2.05	259	CFW500G0142T4...	142
150	110	444/5T	8	1382	0.96	97.6	151	0.544	1.49	251	CFW500G0180T4...	180

W23 Sync+ Ultra (3600 RPM - IE6)

HP	kW	Frame	Poles	Weight (lbm)	Power Factor 100 %	Efficiency 100 %	Rated current (A)	Inverter Parameter			Inverter	Inverter Current (A)
								Ld (mH)	Lq (mH)	ke (V/krpm)		
1	0.75	143/5T	4	40	0.9	89.0	1.18	175	865	54.4	CFW500B02P6T4...	2.6
1.5	1.1	143/5T	4	44	0.9	90.2	1.71	123	612	50.9	CFW500B02P6T4...	2.6
2	1.5	143/5T	4	49	0.88	91.1	2.35	86.1	438	48.1	CFW500B02P6T4...	2.6
3	2.2	182/4T	4	73	0.77	92.2	4.08	73.6	259	27.8	CFW500B04P3T4...	4.3
5	3.7	182/4T	4	79	0.76	93.3	6.81	44.9	160	24.6	CFW500B10P0T4...	10
7.5	5.5	213/5T	4	121	0.82	94.1	9.07	25.3	111	40.2	CFW500B10P0T4...	10
10	7.5	213/5T	4	143	0.85	94.6	11.9	19.5	86.6	43.1	CFW500C14P0T4...	14
15	11	254/6T	4	243	0.77	95.2	19.6	10.3	54.7	11.3	CFW500D24P0T4...	24
20	15	254/6T	4	276	0.78	95.6	26.4	7.67	41.5	10.8	CFW500D31P0T4...	31
25	18.5	284/6TS	4	353	0.82	95.9	30.1	6.79	36.2	28.5	CFW500D31P0T4...	31
30	22	284/6TS	4	392	0.81	96.1	36	5.34	29.1	28.5	CFW500E39P0T4...	45
40	30	324/6TS	4	470	0.79	96.4	49.9	4.13	21.2	30.9	CFW500E49P0T4...	58.5
50	37	324/6TS	4	470	0.8	96.6	63.2	3.17	16.4	27.8	CFW500F77P0T4...	77
60	45	364/5TS	4	500	0.79	96.8	75.3	2.78	14.4	27.8	CFW500F77P0T4...	77
75	55	364/5TS	4	551	0.79	97.0	92.5	2.19	11.5	27.6	CFW500F105T4...	105
100	75	404/5TS	4	858	0.78	97.2	133	1.56	8.11	23.7	CFW500G0142T4...	142
125	90	W444/5TS	4	977	0.78	97.3	167	1.15	6.13	22.8	CFW500G0180T4...	180
150	110	W444/5TS	4	1014	0.78	97.4	182	1.22	6.41	25.1	CFW500G0211T4...	211

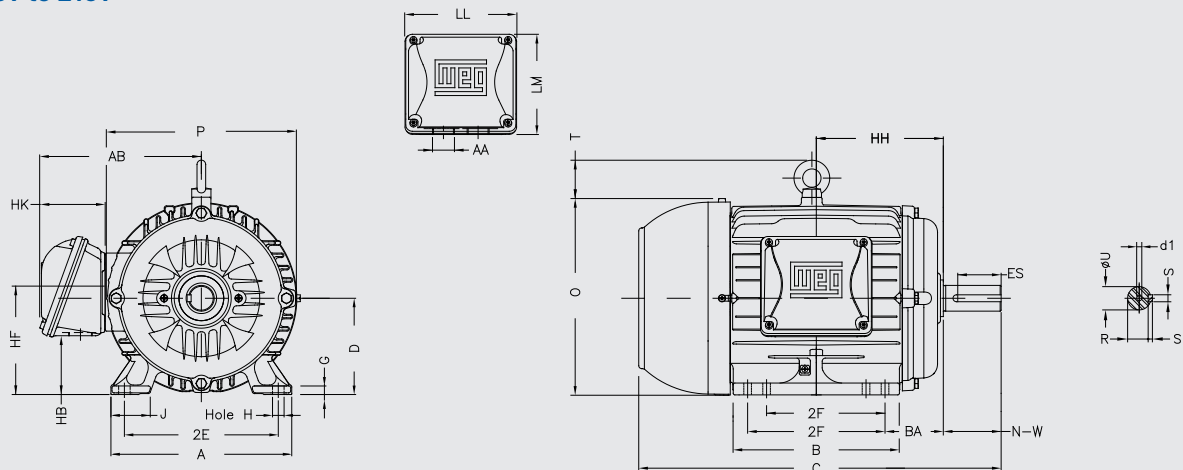
Note:

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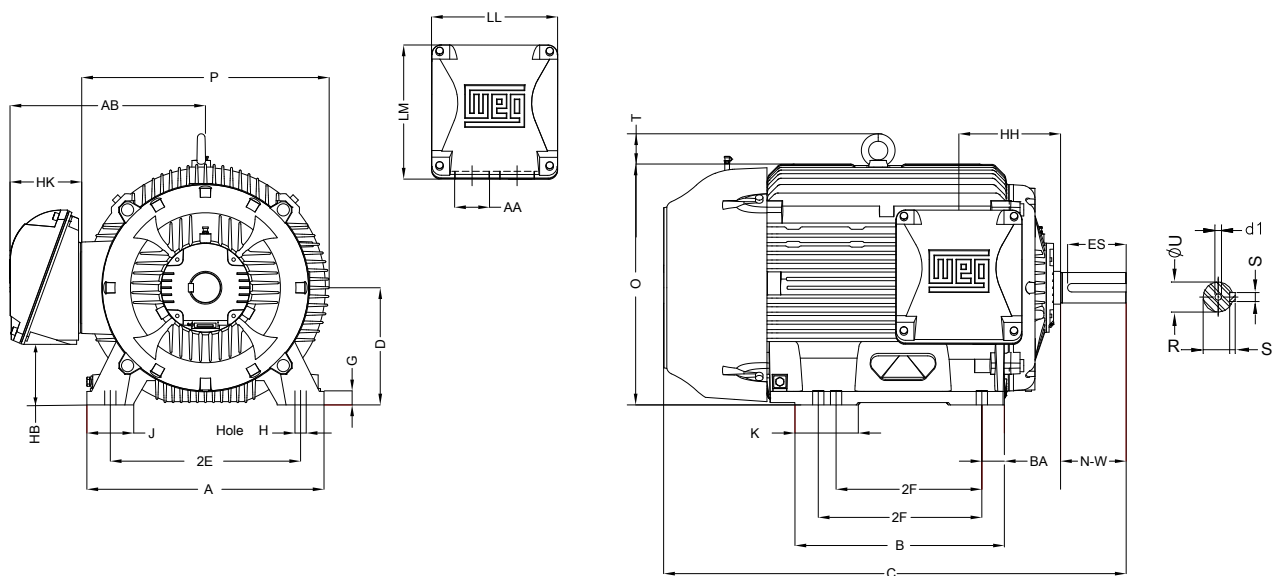
** Higher output is available upon request.

Mechanical Data

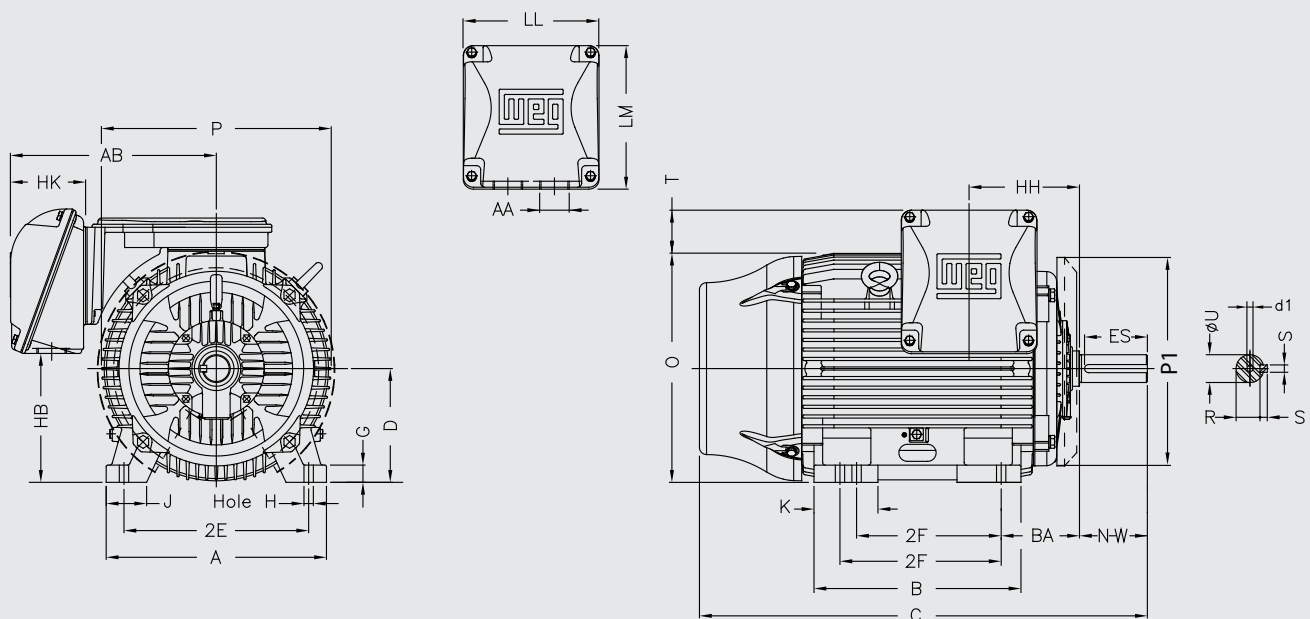
Frame 143T to 215T



Frames 254T to W444/5T



Frames 444/5T



Frame	EXTERNAL							BEARINGS	
	C	P	AB	O	T	AB	HB	D.E.	N.D.E.
143T	12.362	7.244	5.886	7.122	-	5.886	1.850	6205 ZZ	6204 ZZ
L143T	13.583								
143/5T	13.346								
L143/5T	14.566								
145T	13.358								
L145T	14.566								
182T	14.860	8.897	7.559	8.897	2.000	7.559	2.244	6207 ZZ	6206 ZZ
L182T	16.041								
182/4T	15.860								
L182/4T	17.041								
184T	15.860								
L184T	17.041								
213T	18.021	10.787	8.602	10.508	4.055	8.602	2.992	6308 ZZ	6207 ZZ
L213T	19.083								
213/5T	19.517								
L213/5T	20.461								
215T	19.517								
L215T	20.461								
254T	23.959	14.213	10.945	13.140	4.055	10.945	2.766	6309 C3	6209 C3
256T	25.691								
284T	26.852								
284TS	25.440								
286T	28.348								
286TS	26.936								
324T	29.634	16.299	13.130	16.425	4.705	13.130	4.102	6312 C3	6212 C3
324TS	28.134								
324/6T	31.130								
324/6TS	29.630								
W364/5T	32.497								
W364/5TS	30.371								
364/5T	36.316	19.213	15.551	18.606	5.945	15.551	4.256	6314 C3	6314 C3
364/5TS	34.190								
404/5T	40.607								
404/5TS	37.607								
W444/5T	42.969								
W444/5TS	39.219								
444/5T	45.157	23.583	18.563	22.795	-	18.563	5.689	6319 C3	6316 C3

W23 Sync+ | 9

W23 Sync+Ultra

The environment matters





W23 Sync+Ultra, the most efficient industrial motor ever created.

The search for sustainable innovation, as well as quality and trust in everything WEG thinks and does, resulted in the W23 Sync+. It is the largest line of synchronous electric motors with IE6 efficiency on the market.

With the same induction motor power-to-frame ratio, the new solution is innovative in all its features and superior on all levels.

Easily interchangeable, the W23 Sync+ was developed to provide maximum performance at all speeds. It is a perfect combination of technology and sustainability that consumes less energy and reduces CO2 emissions, generating a positive balance for the environment, with excellent cost-benefit.

Driving efficiency and sustainability



The WEG Group's scope of solutions is not limited to the products and solutions presented in this catalog.

To learn more about our portfolio, contact us.

**Learn about WEG's
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