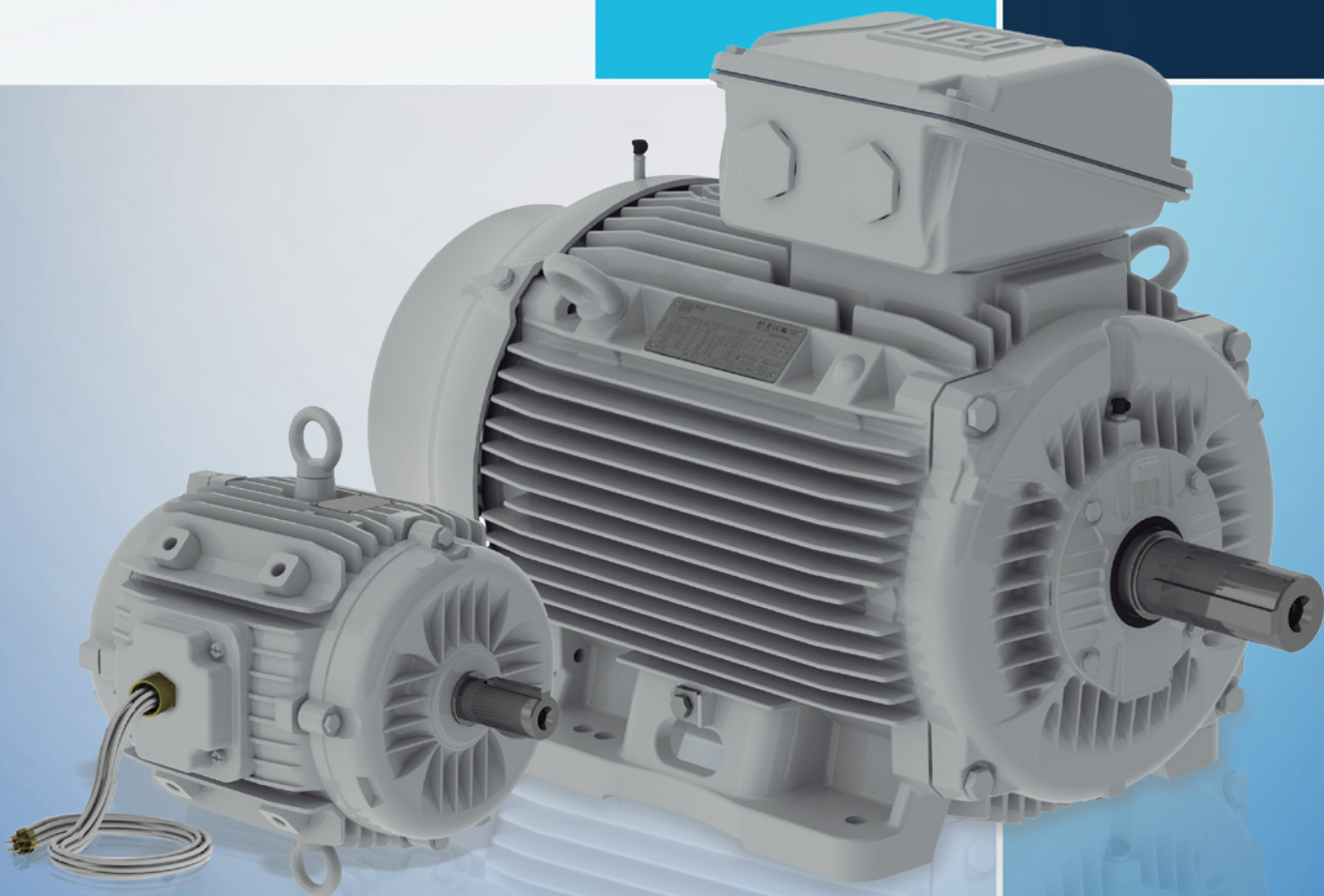


W22 Smoke Extraction

Technical Catalog EMEA Market



Driving efficiency and sustainability



W22 Smoke Extraction

Ensuring security in business and industrial installations is one of the main concerns of designers and company owners in the conception of business centers, factories, warehouses, parking garages, tunnels and other places with great concentration of people.

The Smoke Extraction motors were developed so as to ensure the air circulation in closed environments. In emergency situations, they withstand operation at high temperatures and ensure fast smoke extraction and heat, besides delaying the fire propagation, allowing free access to the emergency exits.

The project of the Smoke Extraction motor is based on the requirements of the European safety standard for smoke and heat exhaustion systems - EN12101*:

Designed to operate at the maximum temperature of 200 °C, 250°C, 300 °C or 400 °C for up to 2 hours**.

* EN12101 - Smoke and heat control systems - Part 3: Specification for powered smoke and heat exhaust ventilators - April 2005

** Only once



Smoke Type TEFC

Smoke Type TEAO

W22 Smoke Extraction Characteristics

- Efficiency*: High Efficiency (IE2),
Premium Efficiency (IE3)
Super Premium Efficiency (IE4)
- Cooling method: TEAO (Totally Enclosed Air Over)
TEFC (Totally Enclosed Fan Cooled)
- Mounting: Foot mounted, Pad mounted or Flange mounted
- Rated output: 0,18 to 500 kW
- Number of poles: 2 to 8
- Frequency: 50/60 Hz and 60 Hz
- Voltage: 50/60 Hz: 220-230-240/380-400-415/460 V
(up to 100L)
380-400-415/660-690/460 V
(112M up to 355M/L)
60 Hz: 230/400 V (up to 100L)
400/690 V (112M to 355M/L)
- Frames: 80 up to 355M/L
- Colour: RAL 9006 - Grey
- Ambient temperature: -20 °C to 40 °C, at 1000 m.a.s.l.
- Class "H" insulation
- Degree of protection: IP55
- Special impregnation system to withstand high temperatures
- Special terminal block to withstand high temperatures
- Duty: S1 / S2 (according to temperature class – only once).
- Motors designed to operate at maximum temperatures:
200 °C (2 hours), 250 °C (2 hours),
300 °C (1 and 2 hours) or 400 °C (2 hours).
- CSA / UL certification

Optional Features

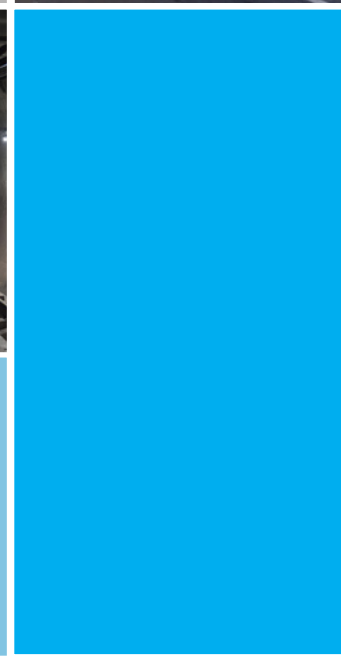
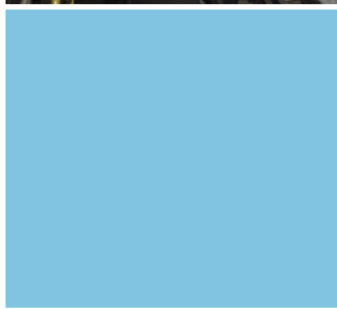
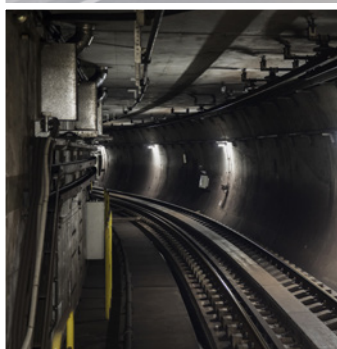
- Other outputs – available upon request
- Other number of poles (10 or 12 poles) – available upon request
- Other mounting forms: Flange FF, C-DIN, NEMA C or D
- Other voltages
- Degree of protection: IP56, IP65, IP66
- Without terminal box (with 1 meter flying leads, extra length available upon request)
- Maximum ambient temperature 50 °C
- Two-speed motor (Dahlander winding or two windings)
- CSA / UL certification

WISE® (WEG Insulation System Evolution)

Motor suitable to operate with frequency inverter**, thanks to the exclusive insulation system WISE®, developed by WEG, which enhances the winding insulation resistance.

**Insulation for voltages above 575 V, upon consultation.

*IE1 Standard Efficiency is also available.

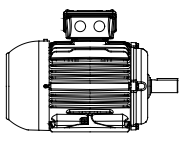
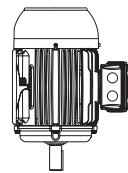
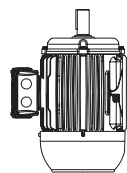
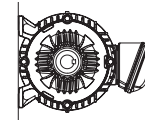
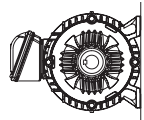
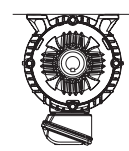
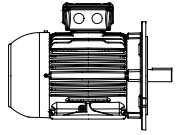
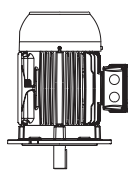
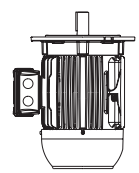
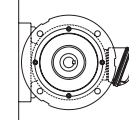
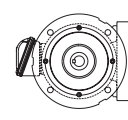
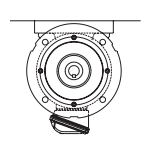
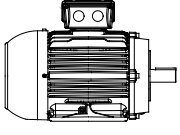
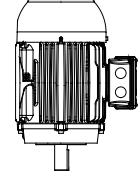
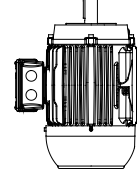
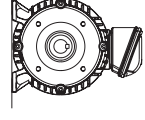
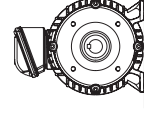
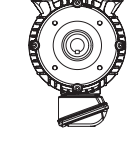
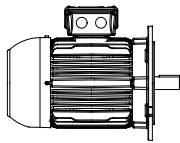
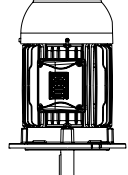
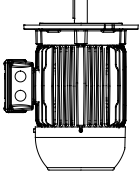
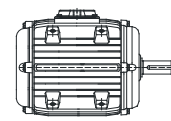
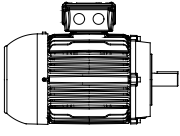
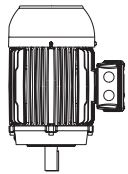
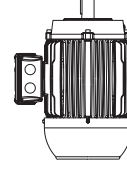


Operating with a frequency inverter, the ventilation and air circulation systems may save up to 70% of electric energy.

Mounting Forms

The mounting configuration for the W22 motor lines comply with IEC 60034-7 standard. Standard mounting forms and their variations are shown in table below. After the designation, a characteristic letter is used to define the terminal box position. So, the mounting code IM B3 can be seen in WEG documents as detailed below (without IM code).

Note: The terminal box position is defined viewing the motor from the shaft end. Mounting forms and their variations are indicated table a below.

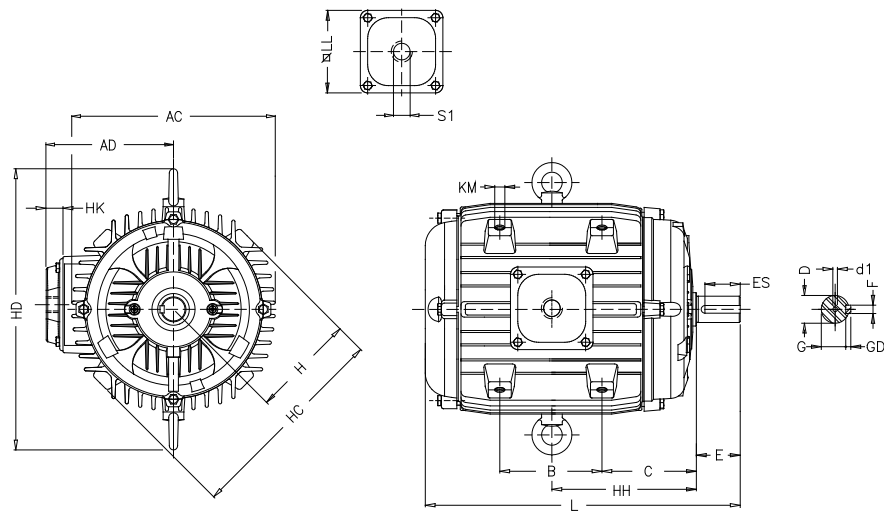
Basic mountings			Other type of mounting		
IM B3	IM V5	IM V6	IM B6	IM B7	IM B8
IM 1001	IM 1011	IM 1031	IM 1051	IM 1061	IM 1071
					
IM B35	IM V15	IM V36	- *)	- *)	- *)
IM 2001	IM 2011	IM 2031	IM 2051	IM 2061	IM 2071
					
IM B34	IM V17	IM V37	- *)	- *)	- *)
IM 2101	IM 2111	IM 2131	IM 2151	IM 2161	IM 2171
					
IM B5	IM V1	IM V3	IM B30		
IM 3001	IM 3011	IM 3031			
					
IM B14	IM V18	IM V19			
IM 3601	IM 3611	IM 3631			
					

* Non-defined mountings by IEC 60034-7.

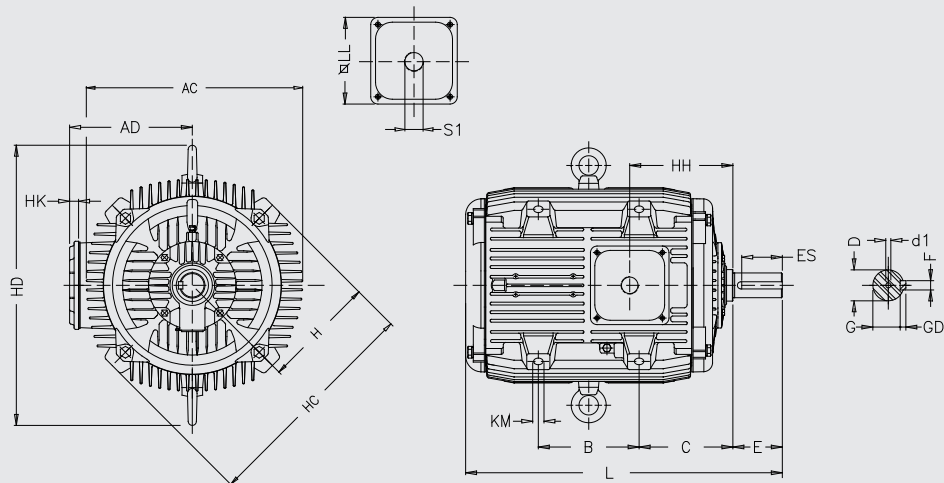
Mechanical Data

Motors B30 - TEAO

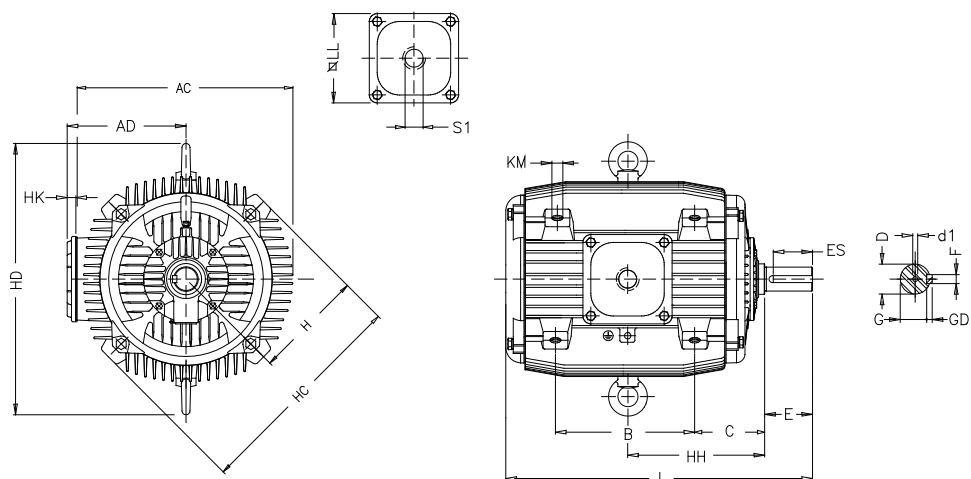
Frames 80-200L



Frames 225S/M



Frame 250S/M



Frame	Front view						Left side view						
	AC	AD	H	HC	HD	HK	B	C	HH	KM	L		
80	159	103	85	170	-	20	80	60	100	M12x1,75x18	238		
L80											263		
90S	179	113	95	190			65	73,5	106		258		
L90S											289		
90L						90	118,5	283					
L90L								314					
100L	206	133	105	210		30	100	83	133		322		
L100L											362		
112M	215	160	117	234	316	45		90	140	M16x2x24	373		
132S	260	188	145	290	374		125	96,5	159		393		
132M							140	108	178		403		
160M	319	193	180	360	428	25	156	135	235	M20x2,5x30	574		
160L							200				160,5	260,5	622
180L	360	208	184,5	369	465								
200L	380	221	215,5	431	528	18	224	173,5	285,5	M24x3x41	676		
225S/M'	455	279	255	510	625	20			192,5		212	727	
225S/M												761	
250S/M'	486								230,5		343		824
250S/M													

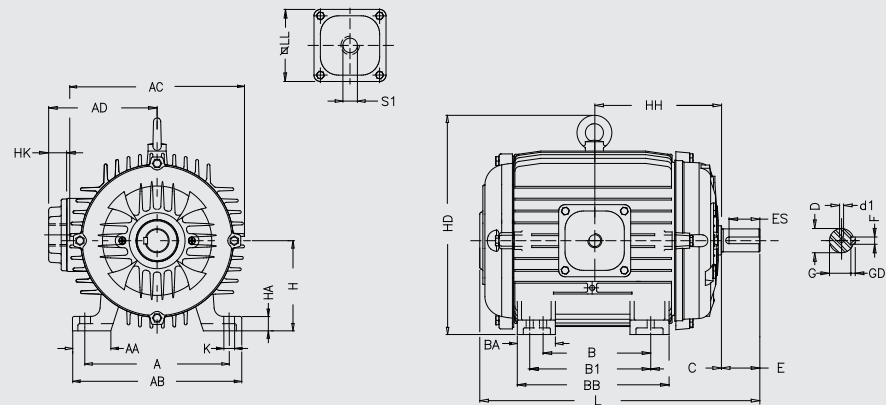
Frame	Entry plate detail		Shaft end detail							Bearing size				
	LL	S1	D	D1	E	ES	F	GD	G	DE	NDE			
80	80	M20x1,5	19j6	DM6	40	30	6	6	15,5	6204 ZZ	6203 ZZ			
L80			24j6	DM8	50	40	8	7	20	6205 ZZ	6204 ZZ			
90S														
L90S														
90L														
L90L		M25x1,5	28j6	DM10	60	45	24	6206 ZZ	6205 ZZ					
100L								6307 ZZ	6206 ZZ					
L100L														
112M	104							M25x1,5	38k6	DM12	80	63	10	8
132S		37	6309 C3 ²	6209 Z-C3 ²										
132M														
160M	140	M32x1,5	42k6	DM16	110	80	12	9	37	6309 C3 ²	6209 Z-C3 ²			
160L			48k6				14		10	42,5	6311 C3 ²	6211 Z-C3 ²		
180L										16	49	6312 C3 ²	6212 Z-C3 ²	
200L	155	M40x1,5	55m6	DM20			140	125	18	11	53	6314 C3 ²	6314 C3 ²	
225S/M'	196	M50x1,5	55m6		16	10								49
225S/M			60m6											
250S/M'		M63x1,5	60m6											
250S/M			65m6								58			

Notes:

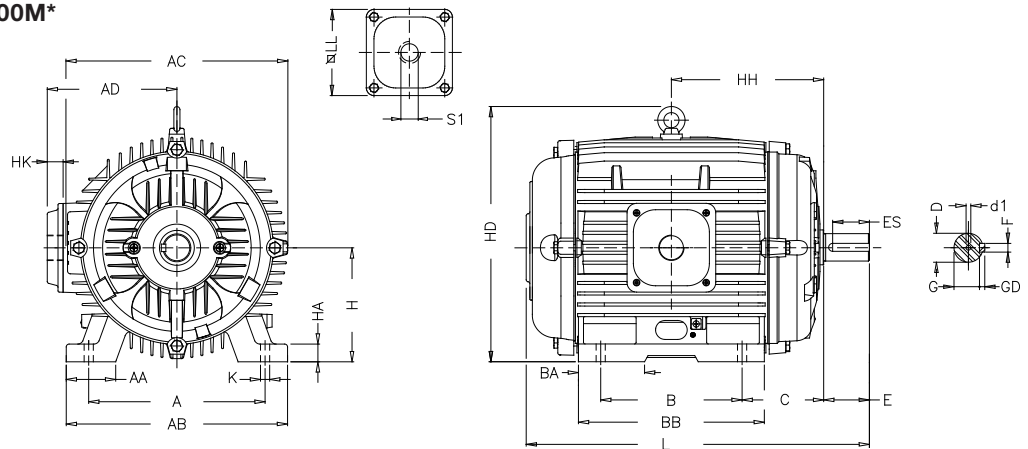
- 1) Dimensions for 2 pole motors.
- 2) Bearing clearance C4 for 400 °C (2 hours).
- 3) Dimensions are in mm.

Motors B3 - TEAO

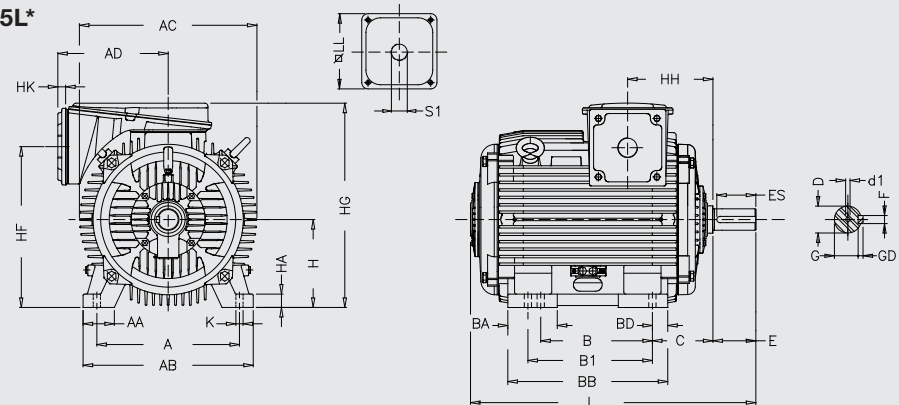
Frames 80 to 132M/L



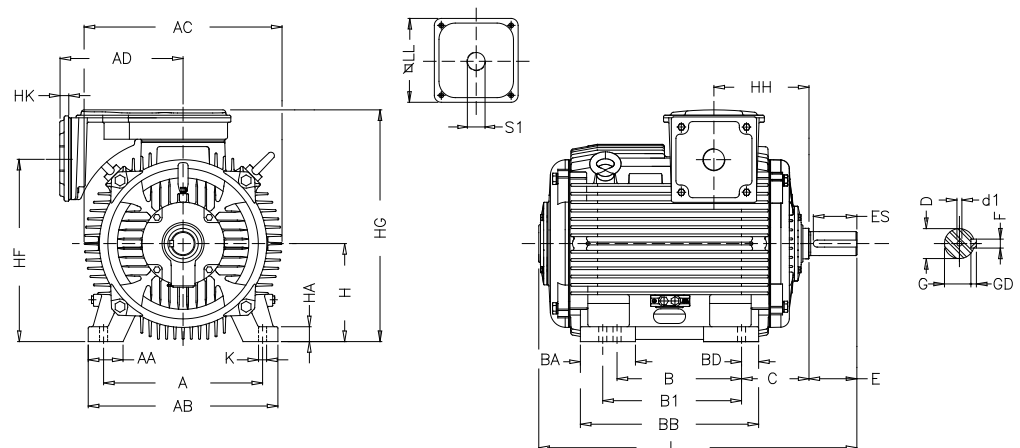
Frame 180M end 200M*



Frames 280S/M up to 315L*



Frames 355M/L



Frame	Front view											Terminal box detail		Bearing size		
	A	AA	AB	AC	AD	H	HA	HF	HG	HK	K	LL	S1	DE	NDE	
80	125	30,5	149	158	103	80	8	87	-	23	10	80	M20x1,5	6204 ZZ	6203 ZZ	
90S	140	36,5	164	178	113	90	9	90	-	23	10	80	M20x1,5	6205 ZZ	6204 ZZ	
90L	140	36,5	164	178	113	90	9	90	-	23	10	80	M20x1,5	6205 ZZ	6204 ZZ	
100L	160	40	188	198	123	100	10	106	-	23	12	80	M25x1,5	6206 ZZ	6205 ZZ	
112M	190	40,5	220	221	140	112	10	112	-	28	12	104	M25x1,5	6307 ZZ	6206 ZZ	
132M/L	216	45,5	248	260	188	132	17	132	-	45	12	104	M25x1,5	6308 ZZ	6207 ZZ	
180M	279	57	329	360	208	140	19	180		25	14,5	140	M32x1,5	6311 C3 ³	6211 Z-C3 ³	
280S/M ¹	457	100	557	599	316	280	42	572	686	20	24	196	M63x1,5	6314 C3 ³	6314 C3 ³	
280S/M														6316 C3 ³	6316 C3 ³	
315S/M ¹²	508	120	630	657	372	315	48	592	751		28	260		M80x2	6314 C3 ³	6314 C3 ³
315S/M ²															NU-319 C3 ³	6316 C3 ³
315S/M ¹															6314 C3 ³	6314 C3 ³
315S/M															6319 C3 ³	6316 C3 ³
315L ¹															6314 C3 ³	6314 C3 ³
315L				6319 C3 ³	6316 C3 ³											
355M/L ¹	610	140	750	736	411	355	50	665	847	25	315	M80x2	6316 C3 ³	6314 C3 ³		
355M/L													6316 C3 ³	6314 C3 ³		
355A/B					6322 C3 ³			6319 C3 ³								
					432			700	885					345		

Frame	Left side detail									Shaft detail						
	B	B1	BA	BB	BD	C	HD	HH	L	D	D1	E	ES	F	G	GD
80	100	-	-	125,5	-	50	-	100	238	19J6	DM6	40	32	6	15,5	6
90S	100	-	-	131	-	56	-	106	259,5	24j6	DM8	50	40	8	20	7
90L	125	-	-	156	-	56	-	118,5	284,5	24j6	DM8	50	40	8	20	7
100L	140	-	-	173	-	63	244	133	324	28j6	DM10	60	50	8	24	7
112M	140	-	-	177	-	70	280	140	337	28j6	DM10	60	50	8	24	7
132M/L	178	203	-	250	-	89	320	190,5	456	38k6	DM12	80	63	10	33	8
180M	241	-		294		121	413	241,5	580	48k6	DM16	110	80	14	42,5	9
280S/M ¹	368	418	151	517	49	190	686	266	937	65m6	DM20	140	125	18	58	11
280S/M										75m6				20	67,5	12
315S/M ^{1,2}	406	457	184	626	70	216	751	264	1037	70m6		170	160	25	81	14
315S/M ²									1067	90m6				22	76	
315S/M ¹									1037	65m6				18	58	
315S/M									1067	80m6				22	76	
315L ¹									1147	65m6				18	58	
315L	508	-	219	752	81	216	760	285	1177	80m6		170	160	22	76	
355M/L ¹	560	630	230	760	65	254	847	339	1248	75m6		140	125	20	67,5	12
355M/L									1318			140	125	20	67,5	12
355A/B	710	800	325	965	70	254	885	340	1537	100m6	DM24	210	200	28	90	16

Notes:

1) Dimension applicable to 2 pole motors.

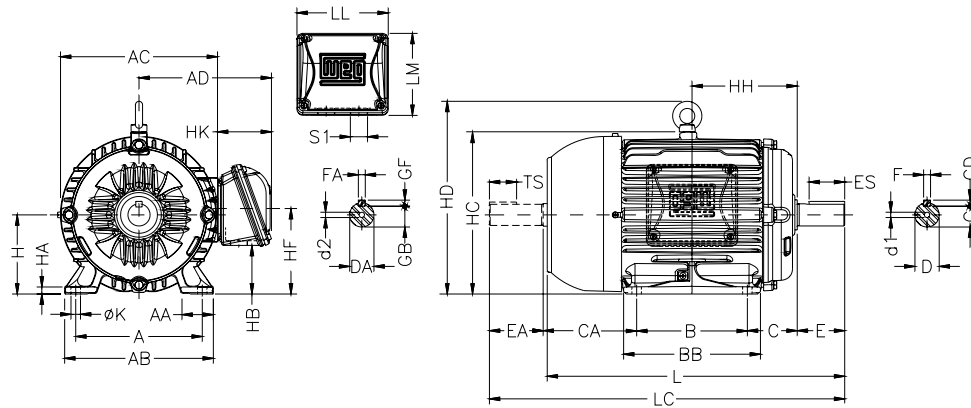
2) Output Motor >= 185 kW.

3) Bearing clearance C4 for 400 °C (2 hours).

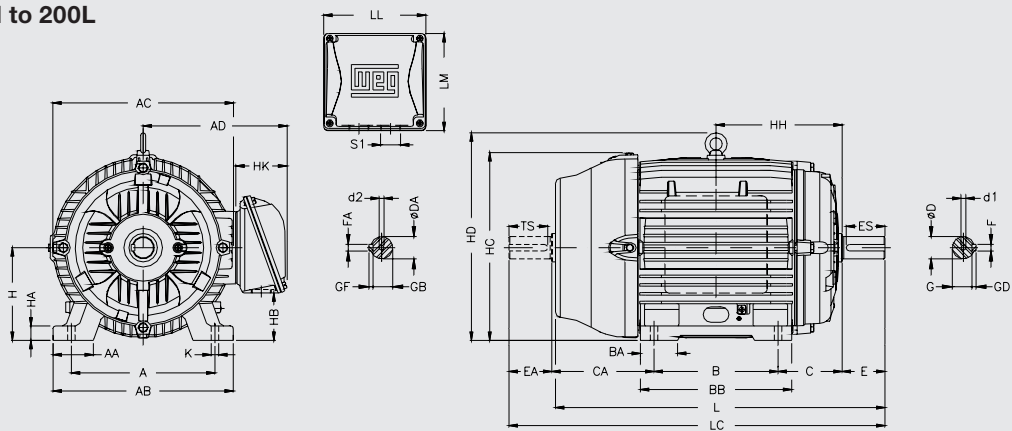
4) Dimensions are in mm.

Motors B3L - TEFC

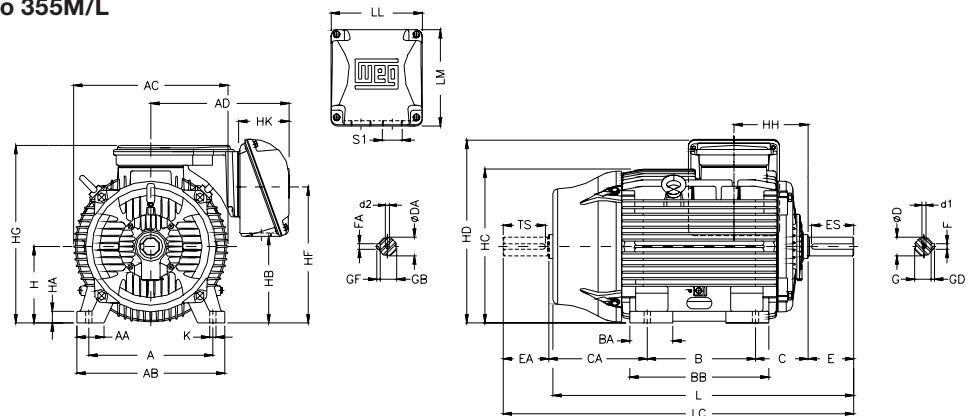
Frames 80 to 132M/L



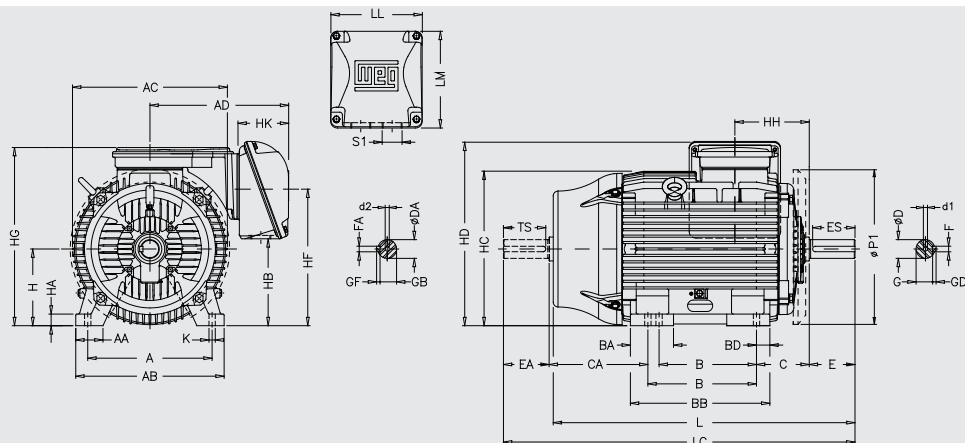
Frames 160M to 200L



Frames 225S/M to 355M/L



Frames 355A/B



* Some outputs in frame sizes 315 and 355 are equipped with an air deflector at the DE. In this case the dimension P1 will be 780 mm and 880 mm for frames 315 and 355 respectively.

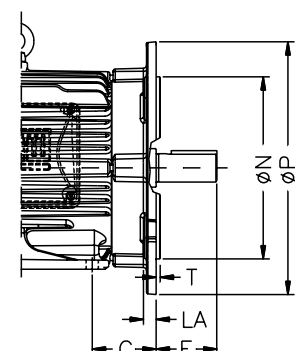
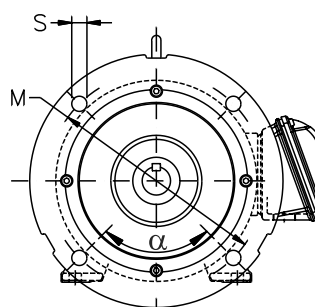
Flanges

Flange Mounted Motors

“FF” Flange

Flange "FF"									
Frame	Flange	LA	M	N	P	S	T	α	N° of holes
80	FF-165	10	165	130	200	12	3,5	45°	4
90									
100	FF-215	11	215	180	250	15	4		
112									
132	FF-265	12	265	230	300	19	5		
160	FF-300	18	300	250	350				
180									
200	FF-350		350	300	400				
225	FF-400		400	350	450				
250	FF-500		500	450	550				
280									
315S/M	FF-600	22	600	550	660	24	6	22°30'	8
315L									
355	FF-740		740	680	800				

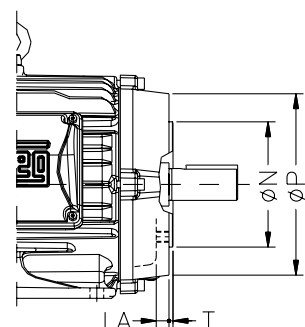
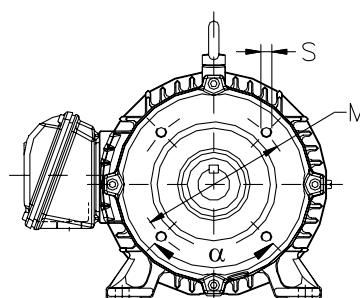
1) Dimensions are in mm.



“C-DIN” Flange

Flange “C-DIN”									
Frame	Flange	LA	M	N	P	S	T	α	N° of holes
80	C-120	10,5	100	80	120	M6	3	45°	4
90	C-140		115	95	140	M8			
100	C-160	12	130	110	160		3,5		
112		13,5							
132	C-200	15.5	165	130	200		M10		

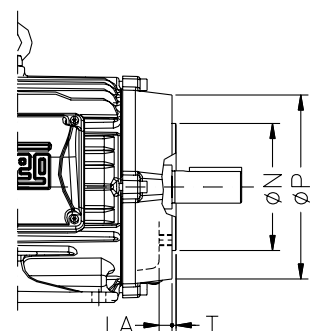
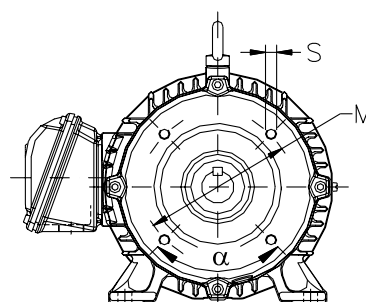
1) Dimensions are in mm.



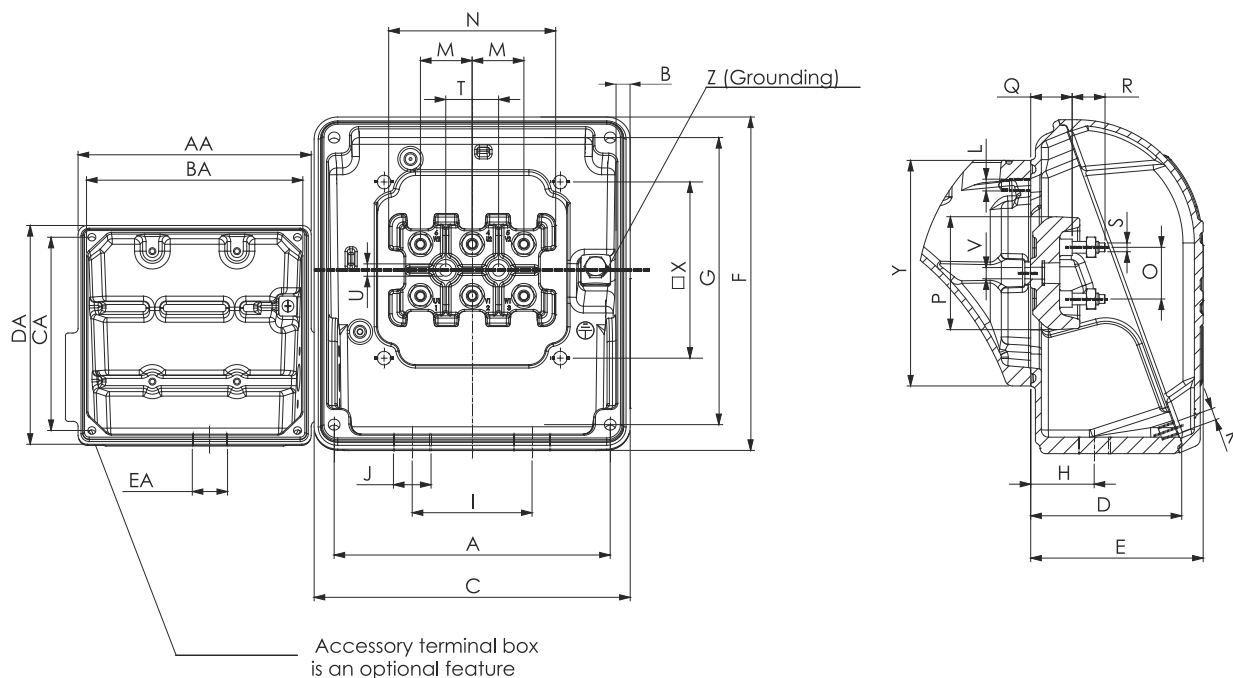
“NEMA C” Flange

Flange “C”									
Frame	Flange	LA	M	N	P	S	T	α	N° of holes
80	FC-95	10	95,2	76,2	143	UNC 1/4"x20	4	45°	4
90	FC-149	15	149,2	114,3	165	UNC 3/8"x16			
100		12							
112	FC-184	13,5	184,2	215,9	225	UNC 1/2"x13	6,3		
132		15,5							
160		26							
180	FC-228	20	228,6	266,7	280				
200									
225	FC-279	25	279,4	317,5	395	UNC 5/8"x11	6,3	22°30'	8
250	FC-355		355,6	406,4	455				
280									
315									
315L	FC-368		22	368,3	419,1				
355M/L		40							

1) Dimensions are in mm.



Terminal Box Drawings



Frame	A	B	C	D	E	F	G	H	I	J	J(*)	K	L	M	N	O	P	Q	R	S	T	U
80	98	7	115	58	67	104	91	31	42	M20x1.5	M20x1.5	M5x0.8	M5x0.8	16	53	16	35	15,5	12	M4x0.7	20	5,8
90			140	69	80	133	117	36	54	M25x1.5		M6x1.0	M6x1.0	23	75	23	52	17	16	M5x0.8	23	6,5
100			198,5	86	101	190	175	46	84	2xM25x1.5		M8x1.25	M8x1.25	28	90	28	60	21,5	20,5	M6x1.0	28	6,6
112			230	101,5	119,5	220	204	56	94	2xM32x1.5		M8x1.25	M8x1.25	35	112	35	74	24	24	M8x1.25	35	9,5
132	117	8,5	269	127	153	285	260	68	110	2xM40x1.5	M40x1.5	M10x1.5	M10x1.5	44	140	44	94	32,5	28	M10x1.5	45	10,5
160	175		312	130	147	314	275	126	160	2xM50x1.5		M12x1.75	M12x1.75	45	153	45	108	35,5	40	M12x1.75		
180	204		379	156	176	382	345	82	200	2xM63x1.5		M14x2.0	M14x2.0	65	210	65	146	51	45	M16x2.0	65	
200	235		404	195,5	220	436	390	97	200	2xM80x2		M10x1.5	M10x1.5	80	-	105	-	-	-	M20x2.5	-	-
225S/M	275	13,5	544	250	290	460	480	127	160													
250S/M	340	14,5																				
280S/M	365																					
315S/M	415																					
315L																						
355M/L																						
355A/B																						

Frame	V	X	Y	Z	AA	BA	CA	DA	EA	FA	GA	HA	Maximum Connector Number		
													Main	Accessories	Space Heater
80	M5x0.8	56	81	0,5-6mm ²	108,5	90	85	96					4	16	
90			77												
100			81										6		
112			107												
132	M6x1.0	110	144	5,2-25mm ²											
160			140												
180			155												
200			192												
225S/M	M8x1.25	120	207	25-50mm ²	139	117	117	133		67,5				26	4
250S/M			260												
280S/M			305												
315L			305												
315S/M	M10x1.5	150	260	35-70mm ²											
355M/L			290												
355A/B			290												
			290												

1) Dimensions are in mm.

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The values shown are subject to change without prior notice.
The information contained is reference values.