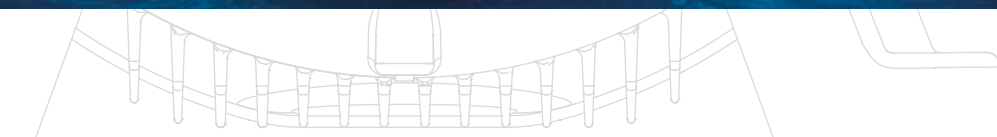
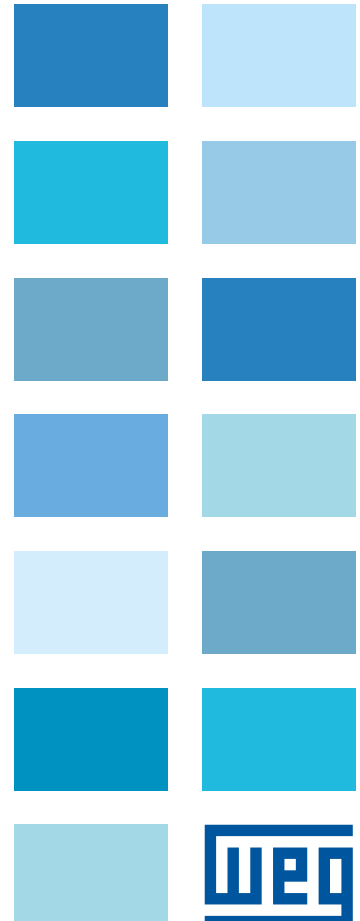
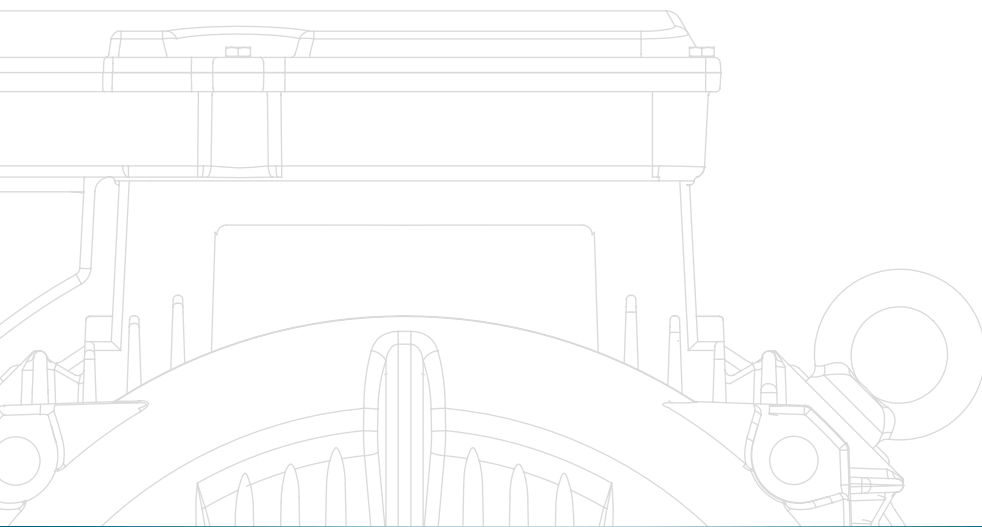




B&P Elektromotoren

W22 Marine

Low Voltage Three Phase Motors





Serving the **Marine Industry** Globally

Our global structure allows us to be closer to our customers. Over 32 subsidiaries established in key countries are prepared to provide you with technical and commercial support; our manufacturing plants strategically located in the main markets can serve you with short deliveries; and our network of over 1,250 Authorized Service Agents located in the five continents are fully equipped to give you prompt after sales and service support.



Company Overview

- Manufacturing plants in 9 countries
- 32 subsidiaries present in 28 countries
- Over 1,250 Authorized Service Agents across five continents

Marine Certifications



U.K.



France



USA



Norway



Germany



Italy



Russia



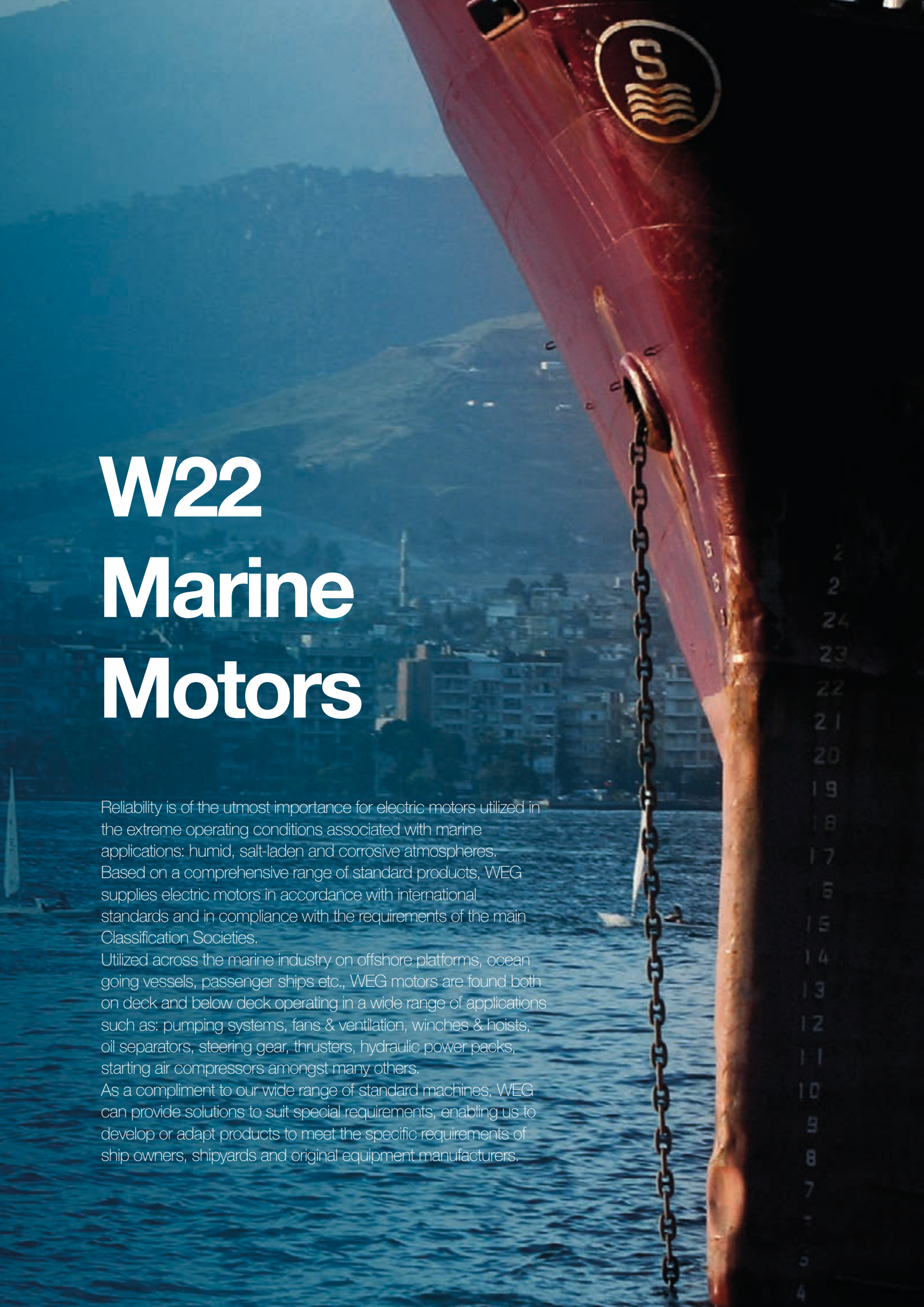
China



Japan



Korea



W22 Marine Motors

Reliability is of the utmost importance for electric motors utilized in the extreme operating conditions associated with marine applications: humid, salt-laden and corrosive atmospheres. Based on a comprehensive range of standard products, WEG supplies electric motors in accordance with international standards and in compliance with the requirements of the main Classification Societies.

Utilized across the marine industry on offshore platforms, ocean going vessels, passenger ships etc., WEG motors are found both on deck and below deck operating in a wide range of applications such as: pumping systems, fans & ventilation, winches & hoists, oil separators, steering gear, thrusters, hydraulic power packs, starting air compressors amongst many others.

As a compliment to our wide range of standard machines, WEG can provide solutions to suit special requirements, enabling us to develop or adapt products to meet the specific requirements of ship owners, shipyards and original equipment manufacturers.

Standards and Classification Societies

The W22 range of marine motors can be supplied in accordance with the requirements of the the main marine classification societies, members of IACS (International Association of Classification Societies).

Code	Name	Country
ABS	American Bureau of Shipping	USA
BV	Bureau Veritas	France
CCS	China Classification Society	China
DNV	Det Norske Veritas	Norway
GL	Germanischer Lloyd	Germany
KRS	Korean Register of Shipping	Korea
LR	Lloyd's Register	United Kingdom
NK	Nippon Kaiji Kyokai	Japan
RINA	Registro Italiano Navale	Italy
RMRS	Russian Maritime Register of Shipping	Russia

“Essential” and “Non-Essential” Services

Depending on the motor’s intended application, the classification societies normally define equipment for either “Essential Service” or “Non-Essential Service”.

Essential Service

“Essential” or “Primary Essential Services” are those services that need to be in continuous operation for maintaining the vessel’s manoeuvrability with regard to propulsion and steering.

Essential services are also those services that need not necessarily be in continuous operation for maintaining for the vessel’s manoeuvrability, but which are necessary for maintaining the vessel’s functions and the safety of people - emergency services included. Examples of equipment which can be classed as Essential Service: Propulsion motors and shaft generators, motors for steering gear, anchor winches, thruster motors (e.g. for drill ships), lubrication and cooling pumps and engine starting compressors.

Non-Essential Service

“Non-Essential Services” are all other applications that are not listed for essential services and which do not represent any potential danger to the safety or steering of the vessel. They are implemented according to the instructions of the classification society, but no separate testing is necessary (factory certificates are accepted).



Documentation Requirements for Marine Motors

Motors Covered by Type Approval Certification

Classification Society	Ambient Temp. (°C)	Max. Permitted Temp Rise (K)	Duty ⁽¹⁾	Output	WEG Routine Test Report ⁽²⁾	Type Approval Certificate ⁽⁶⁾	Additional Classification Society's Certificate based on WEG Test Reports ⁽³⁾	Specific Classification Society's Certificate based on Witnessed Tests ⁽⁴⁾	Shaft Material		Documentation not required by Classification Societies ⁽⁵⁾
									Inspection Certificate 3.2 ⁽⁹⁾ by Class. Society	Test Report 3.1 by WEG ⁽⁹⁾	
ABS	45	75/100	NE								X
			E	< 100 kW	X	X					
			E	≥ 100 kW			X		X ⁽⁷⁾	X	
BV	45	75/100	NE								X
			E	< 100 kW	X	X					
			E	≥ 100 kW			X		X ⁽⁷⁾	X	
DNV	45	75/100	NE								X
			E	< 100 kW	X	X					
			E	≥ 100 kW	X	X				X	
RINA	45	75/100	NE								X
			E	< 100 kW	X	X					
			E	≥ 100 kW			X ⁽⁸⁾		X ⁽⁷⁾	X	
GL	45	75/100	NE								X
			E	< 50 kW	X	X					
			E	≥ 50 kW			X		X ⁽⁷⁾	X	
RMRS	45	75/100	E	< 20 kW	X	X					
			E	20 ≤ kW ≤ 300			X				
			E	> 300 kW				X ⁽⁸⁾			
CCS	45	75/100	NE								X
			E	< 50 kW	X	X					
			E	≥ 50 kW				X	X ⁽⁷⁾	X	

Notes:

- (1) Some Marine Classification Societies define the motors as being for "Essential Service" - E, or "Non-Essential service" - NE. Where the class of service is not specified by the client, WEG will consider the motors to be for Non-Essential Service.
- (2) Unwitnessed Routine Test in all batch according to requirements of each classification society.
- (3) Unwitnessed Routine Test in all batch according to requirements of each classification society. It is necessary to provide for WEG the Shipyard, Hull Number and Application of motor(s) to permit issue of the Certificate.
- (4) Witnessed Type Test on the first motor and Witnessed Routine Test on the remaining motors, according to the requirements of each classification society. It is necessary to provide for WEG the Shipyard, Hull Number and Application of the motor(s) to permit issue of the Certificate.
- (5) A Work/Conformity certificate is issued by WEG, upon request WEG can supply a Line Test Report.
- (6) The motor is supplied with a copy of Type Approval Certificate (TAC).
- (7) Only for propulsion services.
- (8) The motor is supplied with the certificate number on the nameplate or marine society logo (as applicable).
- (9) According to Standard EN 10204:2004.



Documentation Requirements for Marine Motors

Motors Not Covered by Type Approval Certification

Classification Society	Ambient Temp. (°C)	Max. Permitted Temp Rise (K)	Duty ⁽¹⁾	Output	WEG Routine Test Report ⁽²⁾	Specific Classification Society's Certificate based on Witnessed Tests ⁽³⁾	Specific Certificate ⁽⁶⁾	Shaft Material		Documentation not required by Classification Societies ⁽⁵⁾
								Inspection Certificate 3.2 ⁽⁴⁾ by Class. Society	Test Report 3.1 by WEG ⁽⁴⁾	
ABS	45	75/100	NE							X
			E	< 100 kW	X					
			E	≥ 100 kW		X	X	X ⁽⁷⁾	X	
BV	45	75/100	NE							X
			E	< 100 kW	X					
			E	≥ 100 kW		X	X	X ⁽⁷⁾	X	
DNV	45	75/100	NE							X
			E	< 100 kW	X					
			E	≥ 100 kW		X	X		X	
GL	45	75/100	NE							X
			E	< 50 kW	X					
			E	≥ 50 kW		X	X	X ⁽⁷⁾	X	
LRS	45	75/100	NE							X
			E	< 100 kW	X					
			E	100 ≤ kW < 250		X	X	X ⁽⁷⁾	X ⁽⁹⁾	
			E	≥ 250 kW		X	X	X		
RMRS	45	75/100	E	Motors not covered by TAC's		X	X ⁽⁸⁾			
RINA	45	75/100	NE							X
			E	< 100 kW	X					
			E	≥ 100 kW		X	X ⁽⁸⁾	X ⁽⁷⁾	X	
CCS	45	75/100	NE							X
			E	< 50 kW	X					
			E	≥ 50 kW		X	X	X ⁽⁷⁾	X	
NK	45	75/100	NE							X
			E	< 100 kW	X				X	
			E	≥ 100 kW		X	X	X		
KRS	50	75/90	NE							X
			E	< 100 kW	X				X	
			E	≥ 100 kW		X	X	X		

Notes:

- (1) Some Marine Classification Societies define the motors as being for "Essential Service" - E, or "Non-Essential service" - NE. Where the class of service is not specified by the client, WEG will consider the motors to be for Non-Essential Service.
- (2) Unwitnessed Routine Test in all batch according to requirements of each classification society.
- (3) Witnessed Type Test on the first motor and Witnessed Routine Test on the remaining motors, according to requirements of each classification society. It is necessary to provide for WEG the Shipyard, Hull Number and Application of the motor(s) to permit issue of the Certificate.
- (4) According to Standard EN 10204:2004.
- (5) A Work/Conformity certificate is issued by WEG, upon request WEG can supply a Line Test Report.
- (6) A Specific Certificate is issued by the classification society for each batch and a copy should be sent to the client.
- (7) Only for propulsion services and additionally in the case of LRS, for the dynamic positioning services.
- (8) The motor is supplied with the specific certificate number on the nameplate or marine society logo (as applicable).
- (9) According to standard EN 10204:2004. For LRS, the shaft has to be either:
 - made at works which have been approved by LRS (consult a list of approved manufacturers on: <https://www.cdlive.lir.org/> e.g. Hoselmann), or
 - the certificate should contain a declaration that the products comply with the requirements of LRS Rules or the applicable National or International standard.

Product Specification

Standard Features

- Three phase, low voltage induction motors
- Squirrel cage rotor (aluminium die cast)
- Efficiency levels: IE1, IE2 or IE3
- Cooling method: IC411 (Totally Enclosed Fan Cooled)
- Construction: Cast iron FC-200 (EN GJL 200)
- Rated outputs: 0.12kW up to 500kW
- Frame sizes: 63-355A/B
- Number of poles: 2, 4, 6 and 8
- Degree of protection: IP55
- Insulation class: "F" (temperature rise class B)
- Frequency: 50 or 60Hz
- Rated voltages: 220-240/380-415//440-460V (frames 63-100L), 380-415/660//440-460V (frames 112M and above)
- Ambient temperature: 45°C / 50°C (per classification society)
- Altitude: up to 1000m a.s.l.
- Design N
- Service factor: S1 continuous duty
- Thermal protection: 3 x PTC thermistors standard on frame sizes 160 and above
- Regreasing nipples: standard for frame sizes 225 and above
- Stainless steel rating plate
- Anti-condensation drain holes
- External earth terminal
- Metric cable entries in terminal box
- Balancing with 1/2 key, vibration severity grade A according to IEC 60034-14
- Suitable for inverter duty applications
- Paint colour: RAL 5009 blue

Optional Features

- Efficiency level: IE4 Super Premium (from frame size 132)
- Cooling method: IC410 (Totally Enclosed Non Ventilated)
- Degree of protection: IP56, IP65 or IP66
- Number of poles: 10, 12, 2-speeds etc.
- Non-standard voltages
- Anti-condensation heaters
- Insulation class: "H"
- Design H
- Service factor 1.15
- Thermal protection: RTD's (Pt100), thermostats, thermocouples
- Roller bearings for frame size 160 and above
- Non-standard shaft extensions / flanges
- Cable glands
- Drip proof canopy for vertical mounting
- Brakes (up to frame 250)
- Forced ventilation / encoders / insulated bearings for VFD applications
- Reduced balancing meeting vibration severity grade B according IEC 60034-14
- Special marine paint finishes according ISO 12944

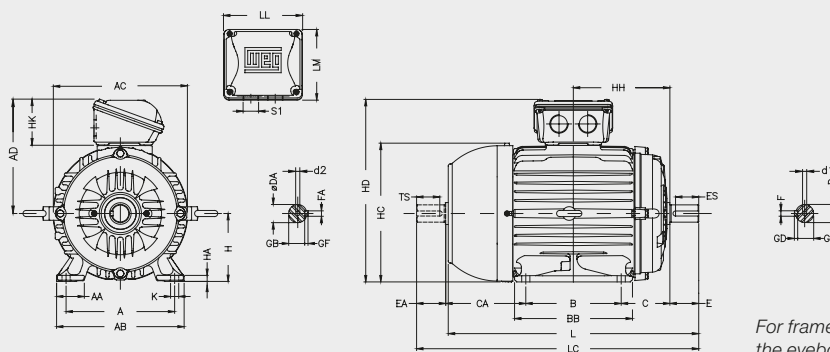
Other options available on request.



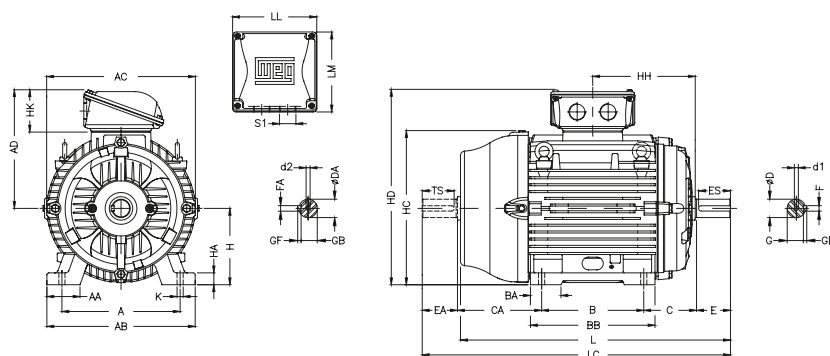
Mechanical Data

Foot Mounted Motors, Terminal Box on Top

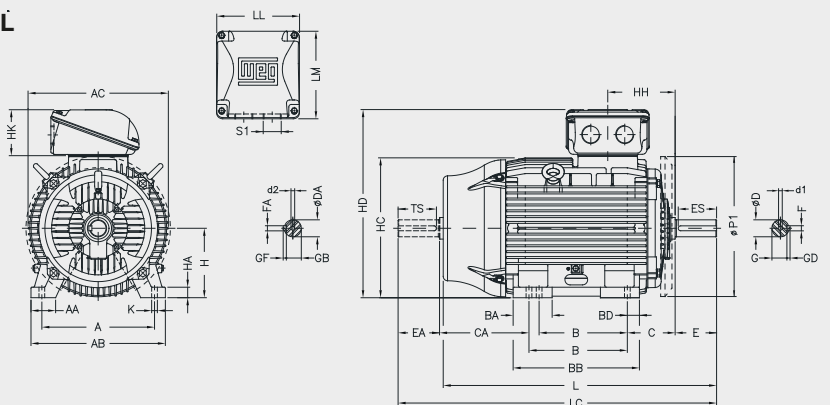
Frames 63 to 132M/L



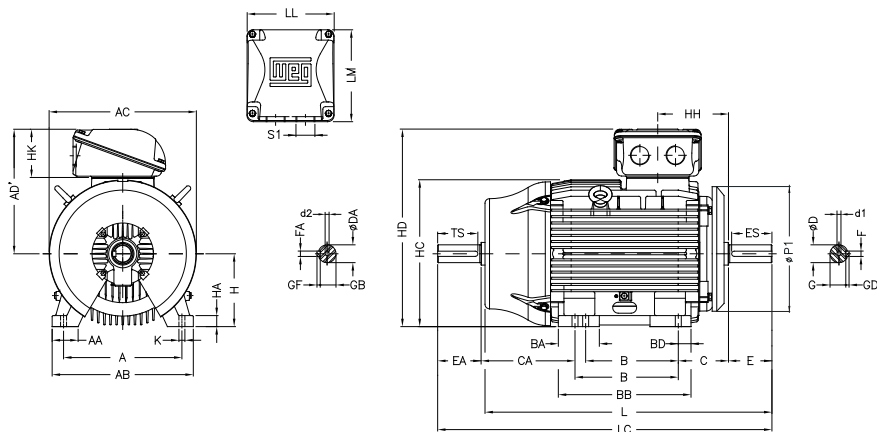
Frames 160M to 200L



Frames 225 to 355M/L



Frame 355A/B



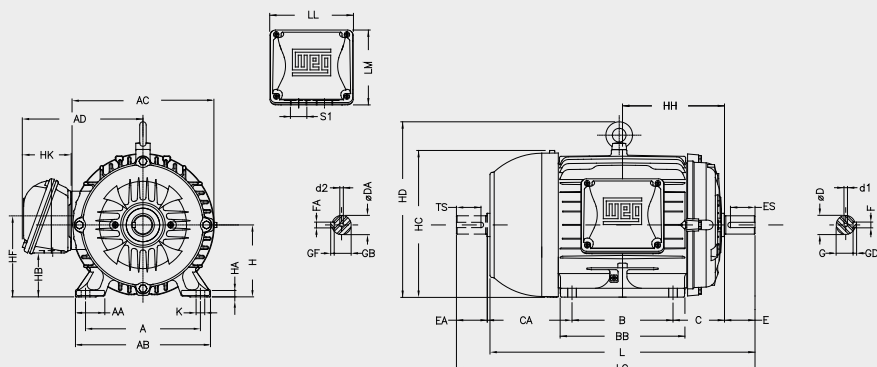
* Some outputs in frame sizes 355 are equipped with an air deflector at the D.E. In this case the dimension P1 is 880mm.

Frame	A	AA	AB	AC	AD	B	BA	BB	BD	C	CA	Shaft																															
												D	DA	E	EA	ES	F	FA	G	GB	GD	GF	TS																				
63	100	25.5	116	125	122	80		95		40	78	11j6	9j6	23	20	14	4	3	8.5	7.2	4	3	12																				
71	112	28.5	132	141	130	90		113.5		45	88	14j6	11j6	30	23	18	5	4	11	8.5	5	4	14																				
80	125	30.5	149	159	139	100		125.5		50	93	19j6	14j6	40	30	28	6	5	15.5	11	6	5	18																				
L80										142																																	
90S	140	36.5	164	179	157			125		156	56	104	24j6	16j6	50	40	36	8	5	20	13	7	5	28																			
L90S												135																															
90L								104																																			
L90L								135																																			
100L	160	40	188	199	167	140		173		63	118	28j6	22j6	60	50	45	6	6	24	18.5	6	36																					
L100L											162																																
112M								190			40.5							220					222	192	177	70	128	24j6	7	158	89	150	38k6	28j6	80	60	63	10	8	33	24	8	45
L112M																											187																
132S	216	51	248	271	218			178		225	108	174	42k6	42k6	110	110	80	12	12	37	37	9	8																				
132M/L																								254	64	308	329	264	210	254	121	200	48k6	48k6	14	14	42.5	42.5	10	10	11	125	
160M	279	78	350	360	279	241		294		121	200	48k6	140	140	125	18	18	53	53	11	11	125																					
160L																							318	82	385	402	317	267	332	133	222	55m6	140	140	125	18	18	58	58	11	11	125	
180M	279	78	350	360	279	241	294	121	200	48k6	140	140	125	18	18	53	53	11	11	125																							
180L																					318	82	385	402	317	267	332	133	222	55m6	140	140	125	18	18	58	58	11	11	125			
200M	318	82	385	402	317	267	332	133	222	55m6	140	140	125	18	18	58	58	11	11	125																							
200L																					318	82	385	402	317	267	332	133	222	55m6	140	140	125	18	18	58	58	11	11	125			
225S/M	318	82	385	402	317	267	332	133	222	55m6	140	140	125	18	18	58	58	11	11	125																							
250S/M																					318	82	385	402	317	267	332	133	222	55m6	140	140	125	18	18	58	58	11	11	125			
280S/M	318	82	385	402	317	267	332	133	222	55m6	140	140	125	18	18	58	58	11	11	125																							
315S/M																					318	82	385	402	317	267	332	133	222	55m6	140	140	125	18	18	58	58	11	11	125			
315L	318	82	385	402	317	267	332	133	222	55m6	140	140	125	18	18	58	58	11	11	125																							
355M/L																					318	82	385	402	317	267	332	133	222	55m6	140	140	125	18	18	58	58	11	11	125			
355A/B	318	82	385	402	317	267	332	133	222	55m6	140	140	125	18	18	58	58	11	11	125																							

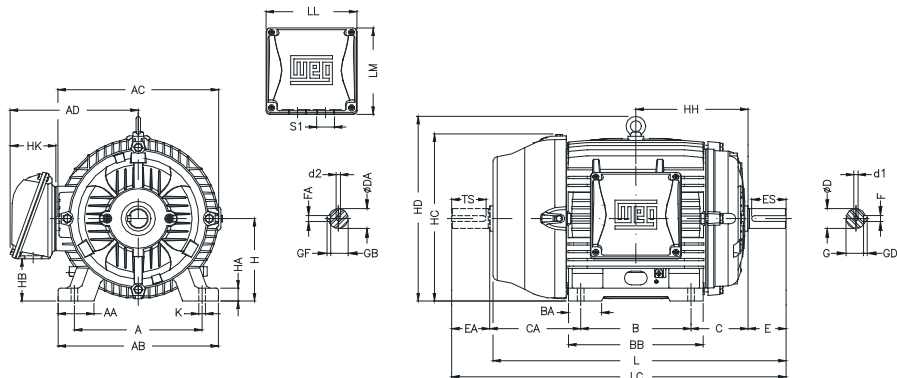
Frame	H	HA	HC	HD	HH	HK	K	L	LC	LL	LM	S1	d1	d2	Bearings														
															D.E.	N.D.E.													
63	63	7	129	189	80	59	7	216	241	108.5	99	2xM20x1.5	M4	M3	6201 - ZZ														
71	71		145	204	90			M5	M4				6202 - ZZ																
80	80	8	163	222	100		276	313					M6	6204 - ZZ	6203 - ZZ														
L80							325	362																					
90S						90	9	182		249	106	304				350	M8	M6	6205 - ZZ	6204 - ZZ									
L90S									335			381																	
90L	329	375																											
L90L	360	406																											
100L	100	10	205	272	133	67	10	376	431	115	104	2xM25x1.5	M10	M8	6206 - ZZ	6205 - ZZ													
L100L								420	475																				
112M								112	235								315	140	80	12	393	448	140	133	2xM32x1.5	M12	M10	6207 - ZZ	6206 - ZZ
L112M																					423	478							
132S	452	519	140	133	2xM32x1.5	M12	M10			6308 - ZZ	6207 - ZZ																		
132M	490	557																											
132M/L	515	582																											
160M	160	22						327	432			213	101	14.5	598	712	198.5	190	2xM40x1.5	M16	M16	6309 - C3	6209 - Z-C3						
160L			642	756																									
180M			664	782																									
180L			702	820																									
200M	200	30	405	526.5	266.5	119,5	18.5	729	842	230	220	2xM50x1.5	M20	M20	6312 C3	6212 Z-C3													
200L					767			880																					
225S/M	225	34	453	606	212	153		24	856(*)	974(*)	269						285	2xM63x1.5	M20	M20	6314 - C3								
250S/M	250	43	493	646	214				886	1034											6314 C3*								
280S/M	280	42	580	727	266	147	965		1113	314	312	6316 C3																	
315S/M	315	48	664	864	264	176	28		1071			1223	6314 C3*																
315L								1244(*)	1392(*)	379	382	6316 C3																	
355M/L								355	50			723	943	340	220	28	1274	1426	6319 C3										
																	1333(*)	1505(*)	6314 C3*	6314 C3*									
	1383	1535	6319 C3	6316 C3																									
	1412(*)	1577(*)	6316 C3*	6314 C3*																									
355A/B	355	50	723	1013	340	290	28	1482	1677	404	436	2xM80x2	M24	M20	6322 C3	6319 C3													
1607(*)								1772(*)	6316 C3*				6314 C3*																
1677								1872	6322 C3				6319 C3																

Foot Mounted Motors, Terminal Box on the Left or Right Side

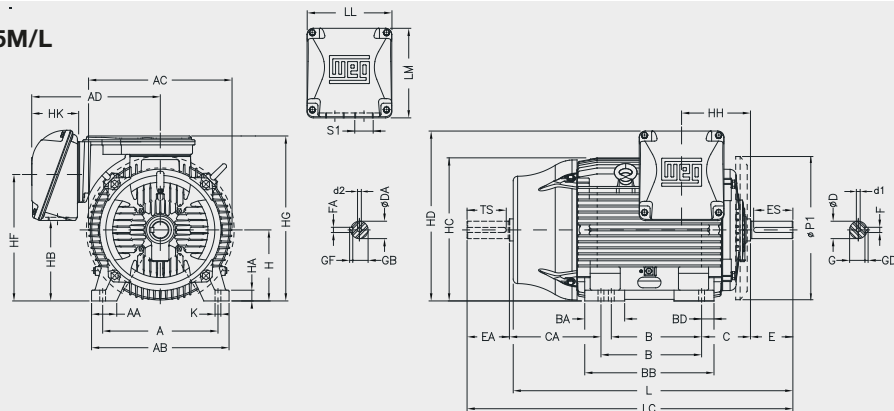
Frames 63 to 132M/L



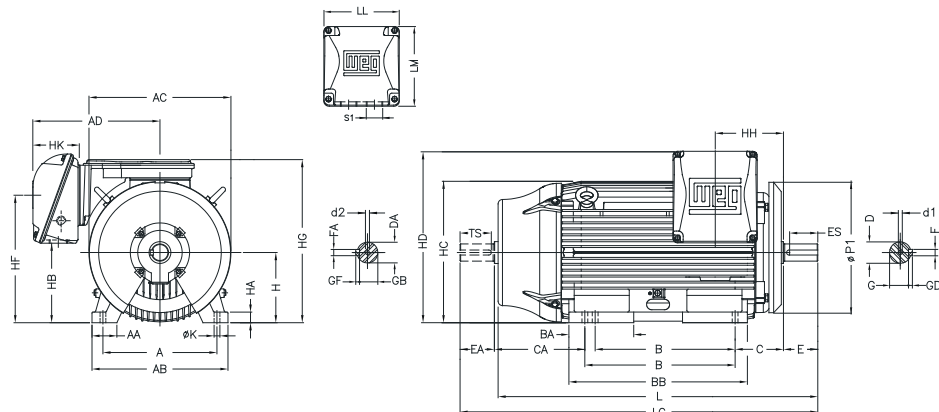
Frames 160M to 200L



Frames 225 to 355M/L



Frame 355A/B



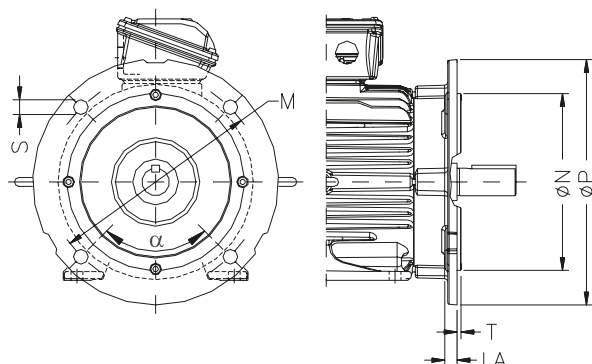
* Some outputs in frame sizes 355 are equipped with an air deflector at the D.E. In this case the dimension P1 is 880mm

Frame	A	AA	AB	AC	AD	B	BA	BB	C	CA	Shaft																														
											D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF																			
63	100	25,5	116	125	123	80	-	95	40	78	11j6	23	14	4	8,5	4	9j6	20	12	3	7,2	3																			
71	112	28,5	132	141	131	90		113,5	45	88	14j6	30	18	5	11	5	11j6	23	14	4	8,5	4																			
80	125	30,5	149	159	140	100		125,5	50	93	19j6	40	28	6	15,5	6	14j6	30	18	5	11	5																			
L80								142																																	
90S	140	36,5	164	179	159			125	131	56	104	24j6	50	36	8	20	7	16j6	40				28	13																	
L90S											135																														
90L											104																														
L90L											135																														
100L	160	40	188	199	169	140		173	63	118	28j6	60	45	8	24	7	22j6	50	36	6	18,5	6																			
L100L										162																															
112M										190													40,5	220	222	192	177	70	128	24j6	50	36	8	24	7	22j6	50	36	6	18,5	6
L112M																													158												
132S	216	45	248	272	220	178		225	89	150	38k6	80	63	10	33	8	28j6	60	45	8	24	7																			
132M																							250																		
132M/L	254	64	308	329	266	210	63	254	108	174	42k6	110	80	12	37	8	42k6	110	80	12	37	8																			
160M																							254																		
180M																							241																		
180L																							279																		
200M	318	82	385	402	319	267	82	332	133	222	55m6	16	49	10	48k6	110	80	14	42,5	9	14	42,5	9																		
200L																								305																	
225S/M	356	80	436	455	410	286/311	124	412	149	319/294	55m6*	110*	100*	16*	49*	10*	55m6*	110*	100*	16*	49*	10*																			
250S/M	406	100	506	486		311/349	146	467	168	354/316	60m6*	140	125	18	53	11	60m6	140	125	18	53	11																			
280S/M	457		557	599	445	368/419	151	517	190	385/334	65m6*			18*	58*	11*	60m6*			140	125	18	53*	58																	
315S/M	508	120	630	657	525	406/457	184	621	216	494*/443	65m6*	140*	125*	18*	58*	11*	60m6*	140*	125*						18*	53*	11*														
315L					589	508	219	752	216	502	80m6	170	160	22	71	14	65m6			53*																					
355M/L	610	140	750	736	609	560/630	230	760	254	483/413	75m6*	140*	125*	18*	67,5*	12*	60m6*	140*	125*	18*	53*	11*																			
355A/B					701	710/800	325	955		528/438	75m6*	140*	125*	18*	67,5*	12*	60m6*	140*	125*	18*	53*	11*																			

Frame	H	HA	HB	HC	HD	HF	HG	HH	HK	LL	LM	K	L	LC	S1	d1	d2	Bearing							
																		D.E.	N.D.E.						
63	63	7	25,5	130		68,5	-	80	59	108,5	99	7	216	241	2xM20x1.5	-		6201 ZZ							
71	71		33	-		76		90					6202 ZZ												
80	80		8	43,5		-		87					100	276				313	6204 ZZ	6203 ZZ					
L80	90	9	45	-	90			106	67	115	104	10	325	362	2xM25x1.5			6205 ZZ	6204 ZZ						
90S								304					350												
L90S								335					381												
90L								329					375												
L90L								360					406												
100L	100	10	61,5	-	244	106,4		133				12	376	431	2xM32x1.5			6206 ZZ	6205 ZZ						
L100L													420	475											
112M													393	448						6207 ZZ	6206 ZZ				
L112M	112		54,5	-	280	112			140	80	140	133	423	478	2xM40x1.5			6308 ZZ	6207 ZZ						
132S	132	16	75	274	319	132			159				452	519						490	557	6309 C3	6209 Z-C3		
132M									178				490	557						6308 ZZ	6207 ZZ				
132M/L								190,5	515	582	6308 ZZ	6207 ZZ													
160M	160	22	79	331	374	168			213	101	198,5	190	14,5	598	712	2xM50x1.5			6312 C3	6212 Z-C3					
160L									235					642	756						767	880	DM20	DM20	6314 C3
180M									241,5					664	782						886	1034			
180L	260,5	702	820	886	1034	965		1113	6316 C3																
200M	200	30	119	407	464	218		266,5	119,5	230	220	18,5	729	842	2xM63x1.5			6319 C3	6314 C3						
200L								285,5					767	880						886	1034	965	1113	6316 C3*	
225S/M								225					34	254						453	541	421	534	212	153
250S/M	250	43	297	493	583	463	577	214	220	404	436	28	1244*	1392*	2xM80x2	DM24	DM20*	6319 C3	6316 C3						
280S/M	280	42	386	580	700	572	686	266					147	314				312	1274	1426	1353*	1501*	6319 C3	6316 C3	
315S/M	315	48	386	644	768	615	744	264					176	379				382	1383	1536	1412*	1577*	DM20*	6316 C3*	6314 C3*
315L			336		774	575	760	284	220	404	436	1482	1677	1607*	1772*	DM24	6322 C3	6319 C3							
355M/L	355	50	461	723	898	700	885	340	290	460	544	1677	1872	2xM80x2	DM24	6322 C3	6319 C3								
355A/B			411		955							1677	1872	6322 C3	6319 C3										

Flange Mounted Motors

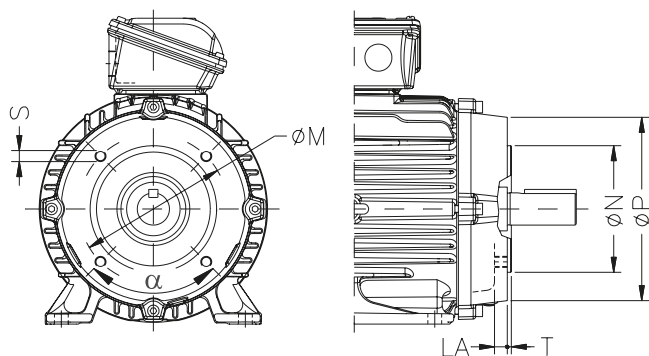
“FF” Flange



Flange “FF”										
Frame	Flange	LA	M	N	P	S	T	α	N° of holes	
63	FF-115	9	115	95	140	10	3	45°	4	
71	FF-130		130	110	160		10			
80	FF-165	10	165	130	200	12	3.5			
90										
100	FF-215	11	215	180	250	15	4			
112										
132	FF-265	12	265	230	300	19	5	22°30'	8	
160	FF-300	18	300	250	350					
180										
200	FF-350	18	350	300	400					
225	FF-400	18	400	350	450	19	5			
250	FF-500		500	450	550					
280										
315	FF-600	22	600	550	660	24	6			
355	FF-740		740	680	800/880(*)					

*Only for motors fitted with air deflector in drive end side.

“C-DIN” Flange



Frame	Flange	LA	M	N	P	S	T	α	N° of holes
63	C-90	9.5	75	60	90	M5	2.5	45°	4
71	C-105	8	85	70	105	M6			
80	C-120	10.5	100	80	120		M8		
90	C-140	12	115	95	140				
100	C-160	13.5	130	110	160	3.5			
112									
132	C-200	15.5	165	130	200		M10		
160	C-250	19	215	180	249	M12	6.3		

Drip Cover Data

Utilization of a rain drip cover increases the total length of the motor. The additional land length can be seen on the table below.

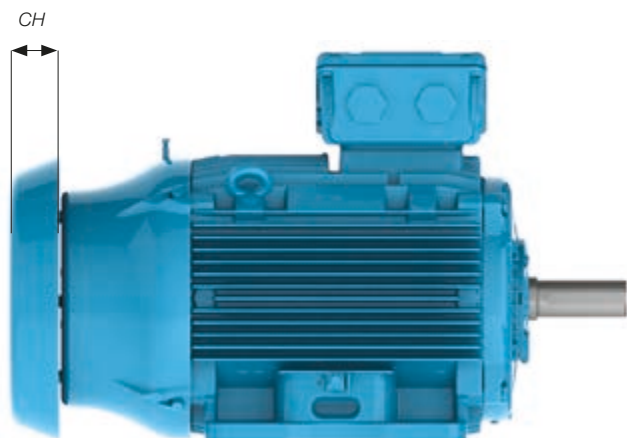
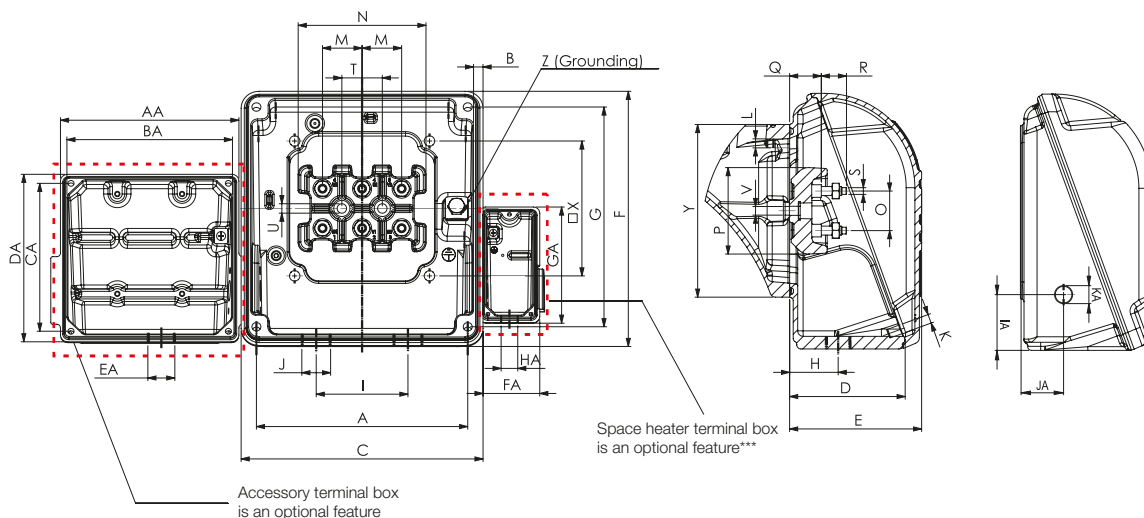


Figure 34 - Motor with drip cover

Frame	Dimension CH (increase motor length (mm))
63	18
71	
80	
90	
100	28
112	31
132	47
160	57
200	67
225S/M	81
250S/M	
280S/M	
315S/M	
315L	
355M/L	
355A/B	91

Terminal Box Drawings



Frame	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
63	90	3.5	108.5	51.5	59	99	85	27	42	2xM20x1.5	M5x0.8	M5x0.8	16	75	16	35	13.5	12	M4x0.7	20	5.8
71																					
80																					
90	98	3	115	59.5	67	104	91	31	54	2xM25x1.5	M6x1.0	M6x1.0	23	55	23	52	17	16	M5x0.8	23	6.5
100																					
112	117	2.5	140	71	80	133	117	36.5	84	2xM32x1.5	M6x1.0	M6x1.0	23	55	23	52	17	16	M5x0.8	23	6.5
132																					
160	175	4	198.5	90	101	190	175	49	84	2xM40x1.5	M8x1.25	M8x1.25	28	90	28	60	21.5	20.5	M6x1	28	6.6
180																					
200	204	4.5	230	107	119.5	220	204	59	94	2xM50x1.5	M8x1.25	M8x1.25	35	112	35	74	24	24	M8x1.25	35	9.5
225S/M																					
250S/M	235	12.5	269	133	153	285	260	71	110	2xM63x1.5	M10x1.5	M10x1.5	44	140	44	94	28	28	M10x1.5	45	10.5
280S/M																					
315S/M	340	14.5	379	162	176	382	345	78	160	2xM63x1.5	M12x1.75	M12x1.75	45	153	45	108	34	40	M12x1.75	65	10.5
315L																					
355M/L	365	14.5	404	202	220	436	390	97	200	2xM80x2	M14x2.0	M14x2.0	65	210	65	146	48	48	M16x2.0	65	10.5
355A/B(**)																					
355A/B(**)	415	-	460	267 232*	290	544	678	187 152(*)	140	2xM80x2	M10x1.5	M12x1.75	80	-	105	-	-	-	M20x2.5	-	-

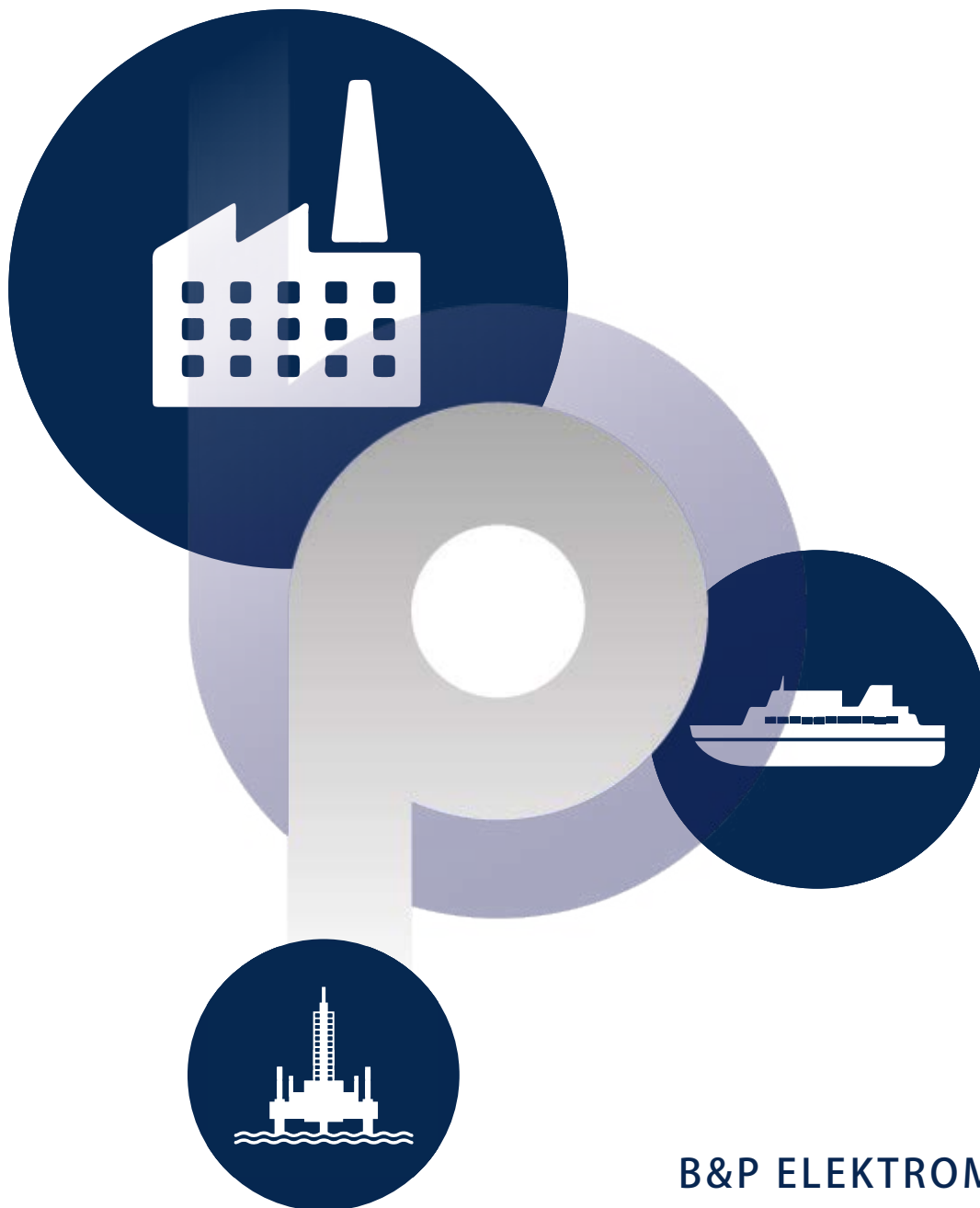
Frame	V	X	Y	Z	AA	BA	CA	DA	EA	FA	GA	HA	IA	JA	KA	Max number of connectors			
																Main	Accessories	Space heater	
63	M5x0.8	56	77	0.5-6 mm²	109	90	85	98	M20x1.5	68	101.4	M20x1.5	23	17.5	M20x1.5	4	16	4	
71			78										25	22.5					
80			81																
90			77																
100			81																
112		70	107	2-10 mm²									35	20					
132			103																
160	M6x1.0	110	140	5.2-25 mm²	139	117	117	133			47	40	12	26					
180	M8x1.25	120	155	5.2-35 mm²	198	175	175	189			47	45							
200											62	48							
225S/M											M10x1.5	150	192	25-50 mm²		77	56		
250S/M													197			35-70 mm²	82		69
280S/M													204				85-120 mm²		97
315S/M													200	260					57
315L									260	300									
355M/L	355A/B(**)	290																	

Notes:

(*) Dimension is applicable to right or left terminal box mounting

(**) Oversized terminal box

(***) Space heater terminal box is a special feature for frame sizes 63 to 112.



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