



4" 3-Phase High Thrust Motors PRODUCT CATALOG



Franklin Electric



Franklin Electric



Quality in the Well





Franklin Electric

4" Super Stainless 3 Phase High Thrust



Submersible Motors

Quality in the Well

Franklin Electric 4" encapsulated submersible motors, built in ISO 9001/14001 certified facilities for outstanding performance in 4" or larger water wells.

The three phase motor offers maximum life and highest efficiency under various load conditions. It should ideally be combined to the Franklin Electric SubStart/ SubTronic3P control boxes for maximum system performance, protection and warranty.

Product features

- Hermetically sealed stator. Anti track, self healing stator resin prevents motor burn out, mechanically supports the winding and provides fast heat dissipation.
- High efficiency electrical design (low operation cost, cool running winding)
- Removable water bloc lead connector
- No-wear, water lubricated radial and thrust bearings for 100% maintenance free operation
- Non-contaminating FES 93 filling liquid
- Various agency approvals for use in drinking water

Brackish Water version Specifications

- For use in water that has more salinity than fresh water, but not as much as seawater.
- The novel Franklin Electric Brackish Water Motor proposes a cost-effective solution wherever standard 4" motors are not giving sufficient service life.

Pollution Recovery Motor-version Specifications

- Fluorelastomere (Viton®) rubber parts
- Special Polyurethane (PUR) lead assemblies
- 304 graded stainless steel as standard, 316SS as an option

Technical Specification

- 3 phase motor range: 2,2 – 9,3kW
- 4" NEMA flange
- Thrust capacity: 6500 N
- Rotation: reversible
- Degree of protection: IP68
- Insulation: Cl.B
- Rated ambient temperature: 30°C
- Required cooling flow: min. 0,08m/s
- Max. starts/hr.: 20, equally distributed
- Mounting: vertical to horizontal, shaft upwards
- Voltage tolerance 50Hz from nominal: -10% / +6%
- Voltage tolerance 60Hz from nominal: ±10%
- Protection requirements: EN 61947-4-1

Options

- Motor cable VDE / ACS / KTW approved (1,5m; 2,5m; special lengths available)
- Motors with factory- installed lead in Single Packing
- Special voltages on request
- Motor complete in AISI 316SS with SiC seal



3- Phase High Thrust Model Numbers 50 Hz

P _N [kW]	U _N [V]	Digit 1-6		Digit 7-10					
		DOL	YΔ (only in 316SS)	304 (Motors in 40 motors packing unit)	304 (with Lead and Single Pack)	316SS (Motors in 40 motors packing unit)	316 SS (with Lead and Single Pack)	Pollution Recovery Motor (with Lead and Single Pack)	Brackish Water Motor (with Lead and Single Pack)
2,2	220, 230	234 756	234 780	3421	3421L	3521	3521L	3422L	3424L
	380 - 415	234 726	234 770	3421	3421L	3521	3521L	3422L	3424L
	500	234 796	-	3421	3421L	3521	3521L	3422L	3424L
3,0	220, 230	234 766	234 781	3421	3421L	3521	3521L	3422L	3424L
	380 - 415	234 764	234 771	3421	3421L	3521	3521L	3422L	3424L
	500	234 768	-	3421	3421L	3521	3521L	3422L	3424L
3,7	220, 230	234 757	234 782	3421	3421L	3521	3521L	3422L	3424L
	380 - 415	234 727	234 772	3421	3421L	3521	3521L	3422L	3424L
	500	234 797	-	3421	3421L	3521	3521L	3422L	3424L
4,0	220, 230	234 767	234 783	3421	3421L	3521	3521L	3422L	3424L
	380 - 415	234 765	234 773	3421	3421L	3521	3521L	3422L	3424L
	500	234 769	-	3421	3421L	3521	3521L	3422L	3424L
5,5	220, 230	234 758	234 784	3421	3421L	3521	3521L	3422L	3424L
	380 - 415	234 728	234 778	3421	3421L	3521	3521L	3422L	3424L
	500	234 798	-	3421	3421L	3521	3521L	3422L	3424L
7,5	220, 230	-	-	3421	3421L	3521	3521L	3422L	3424L
	380 - 415	234 729	234 779	3421	3421L	3521	3521L	3422L	3424L
	500	234 799	-	3421	3421L	3521	3521L	3422L	3424L
9,3	380 - 415	234 788	-		3429L		3529L		



3-Phase High Thrust 50 Hz Performance Data

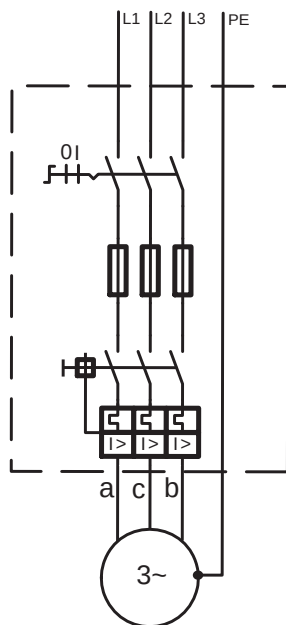
P _N [kW]	Thrust F [N]	U _N [V]	n _N [min ⁻¹]	I _N [A]	I _A [A]	η (Eff.) [%] at % load			cos φ (Pf.) at % load			T _N [Nm]	T _A [Nm]
						50	75	100	50	75	100		
2,2	6500	220	2820	9,3	49,0	71	75	75	0,6	0,74	0,82	7,42	19,87
		230	2845	9,5	51,6	69	74	75	0,52	0,66	0,77	7,37	22
		380	2820	5,4	28,3	71	75	75	0,6	0,74	0,82	7,42	19,87
		400	2845	5,5	29,8	69	74	75	0,52	0,66	0,77	7,37	22
		415	2855	5,8	30,9	65	72	74	0,47	0,61	0,72	7,33	23,67
		500	2820	4,1	21,5	71	75	75	0,6	0,74	0,82	7,42	19,87
3	6500	220	2820	12,8	69,1	73	77	77	0,61	0,74	0,82	10,16	28,80
		230	2845	13,0	72,8	70	76	76	0,53	0,67	0,77	10,06	31,93
		380	2820	7,4	39,9	73	77	77	0,61	0,74	0,82	10,16	28,80
		400	2845	7,5	42,0	70	76	76	0,53	0,67	0,77	10,06	31,93
		415	2855	7,9	43,6	67	73	75	0,47	0,61	0,72	10,04	34,33
		500	2820	5,6	30,3	73	77	77	0,61	0,74	0,82	10,16	28,80
3,7	6500	220	2815	15,3	86,1	75	79	78	0,62	0,75	0,83	12,6	37,5
		230	2840	15,5	90,6	73	77	78	0,54	0,69	0,78	12,5	41,5
		380	2815	8,8	49,7	75	79	78	0,62	0,75	0,83	12,6	37,5
		400	2840	9,0	52,3	73	77	78	0,54	0,69	0,78	12,5	41,5
		415	2850	9,3	54,3	70	76	77	0,49	0,63	0,73	12,4	44,7
		500	2815	6,7	37,8	75	79	78	0,62	0,75	0,83	12,6	37,5
4	6500	220	2820	16,7	93,7	75	78	78	0,60	0,74	0,82	13,5	39,7
		230	2840	17,2	98,7	72	77	78	0,52	0,67	0,77	13,4	44,0
		380	2820	9,7	54,1	75	78	78	0,60	0,74	0,82	13,5	39,7
		400	2840	9,9	57,0	72	77	78	0,52	0,67	0,77	13,4	44,0
		415	2855	10,4	59,1	69	75	77	0,47	0,61	0,72	13,4	47,4
		500	2820	7,3	41,1	75	78	78	0,60	0,74	0,82	13,5	39,7
5,5	6500	220	2845	21,9	127,0	77	80	79	0,66	0,79	0,85	18,5	51,0
		230	2865	21,8	133,7	75	79	79	0,59	0,73	0,81	18,3	56,5
		380	2845	12,6	73,3	77	80	79	0,66	0,79	0,85	18,5	51,0
		400	2865	12,6	77,2	75	79	79	0,59	0,73	0,81	18,3	56,5
		415	2875	12,8	80,1	73	77	79	0,54	0,68	0,77	18,2	60,9
		500	2845	9,6	55,7	77	80	79	0,66	0,79	0,85	18,5	51,0
7,5	6500	380	2830	17,2	94,3	78	80	79	0,66	0,79	0,86	25,3	65,9
		400	2855	17,1	99,3	75	79	79	0,58	0,72	0,81	25,1	73,1
		415	2865	17,6	103,0	73	78	79	0,52	0,67	0,77	25,0	78,6
		500	2830	13,1	71,7	78	80	79	0,66	0,79	0,86	25,3	65,9
9,3	6500	380	2825	21,2	108,0	77	80	79	0,65	0,78	0,86	31,4	73,8
		400	2850	21,4	113,0	75	79	79	0,56	0,71	0,81	31,1	81,8
		415	2860	22,1	118,0	72	77	78	0,47	0,58	0,76	31,0	88,0



Winding Resistances 50Hz

P_N [kW]	U_N [V]	Stator Ref.	U - V / Ohm
2,2	220 - 230	326 780 902	2,5 - 3,0
	380 - 400 - 415	326 715 902	7,1 - 8,6
	500	326 792 902	11,9 - 14,5
3,0	220 - 230	326 781 902	1,5 - 1,9
	380 - 400 - 415	326 716 902	4,7 - 5,8
	500	326 793 902	8,4 - 10,2
3,7	220 - 230	326 784 902	1,2 - 1,5
	380 - 400 - 415	326 717 902	3,7 - 4,5
	500	326 796 902	6,5 - 7,9
4,0	220 - 230	326 785 902	1,1 - 1,3
	380 - 400 - 415	326 718 902	3,3 - 4,0
	500	326 797 902	5,8 - 7,1
5,5	220 - 230	326 786 902	0,9 - 1,1
	380 - 400 - 415	326 719 902	2,6 - 3,2
	500	326 798 902	4,6 - 5,7
7,5	380 - 400 - 415	326 720 902	1,9 - 2,3
	500	326 799 902	3,3 - 4,1
9,3	380 - 400 - 415	326 995 920	1,5 - 1,7

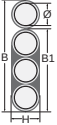
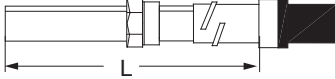
Electrical Connection DOL



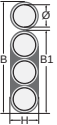
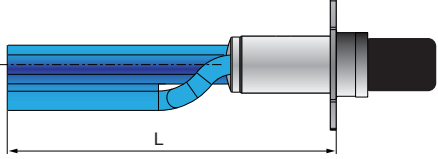
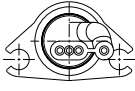
a	b	c	PE
black	brown	grey	yellow/green

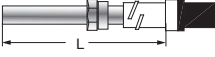
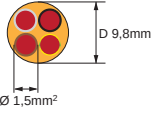


Motor cable* 2,2 - 7,5kW

$\varnothing$ [mm ²]	B [mm]	B1 [mm]	H [mm]
3X1,5+1G1,5	16,8 ± 0,3	10,7 ± 0,3	5,0 ± 0,3
 			
L [m]	Part numbers		
	Standard	304 SS	316 SS
1,5	310 113 001	310 113 401	310 113 501
2,5	310 113 002	310 113 402	310 113 502
5	310 113 005	310 113 405	310 113 505
10	310 113 010	310 113 410	310 113 510
15	310 113 015	310 113 415	310 113 515
20	310 113 020	310 113 420	310 113 520
30	310 113 030	310 113 430	310 113 530
40	310 113 040	310 113 440	310 113 540
50	310 113 050	310 113 450	310 113 550

Motor cable* 9,3kW

$\varnothing$ [mm ²]	B [mm]	B1 [mm]	H [mm]
3X1,5+1G1,5	16,8 ± 0,3	10,7 ± 0,3	5,0 ± 0,3
  			
L [m]	Part number		
2,5	310 116 502K		
5	310 116 505K		
10	310 116 510K		
20	310 116 520K		
30	310 116 530K		

L [m]	Pollution Recovery Motor cable*	
	Modelnb. (only in 316SS)	
1,5	310 313 501	 
2,5	310 313 502	
10	310 313 510	
20	310 313 520	
30	310 313 530	
40	310 313 540	
50	310 313 550	

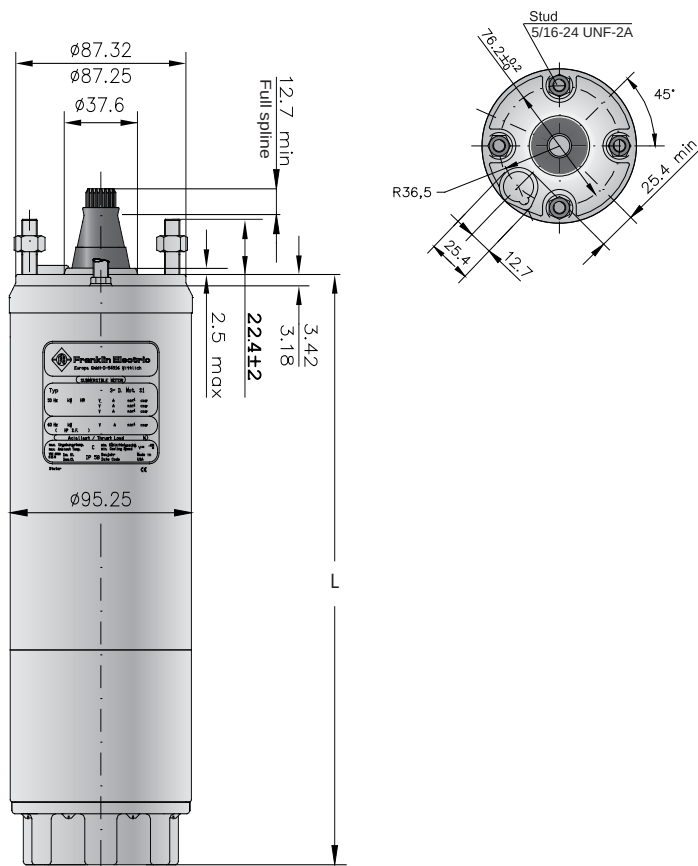
*Cables are designed for submerged operation. For air operation please consult Franklin Electric.



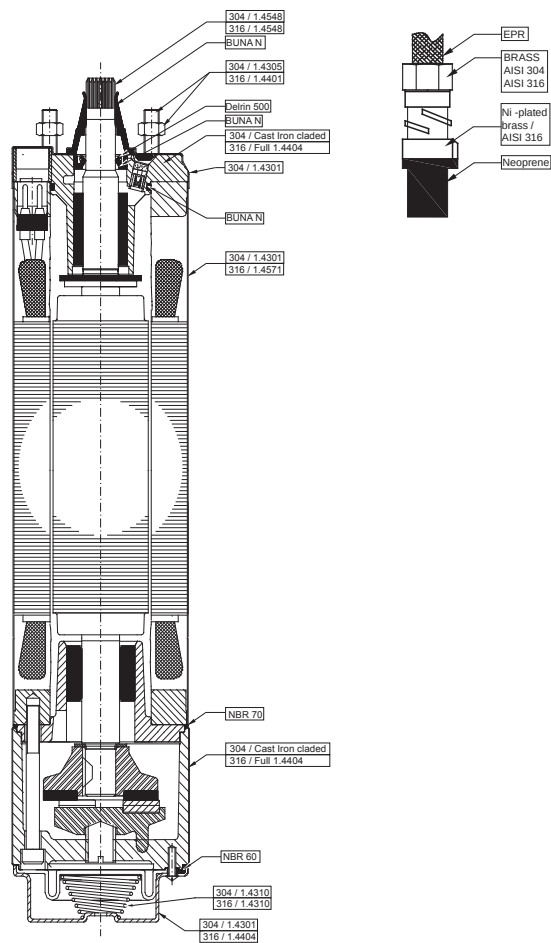
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4" 3~ Motor Outlines 2,2 up to 7,5kW

High Thrust 2,2kW - 7,5kW



Material Description



Tolerances according to NEMA MG 1-18.388

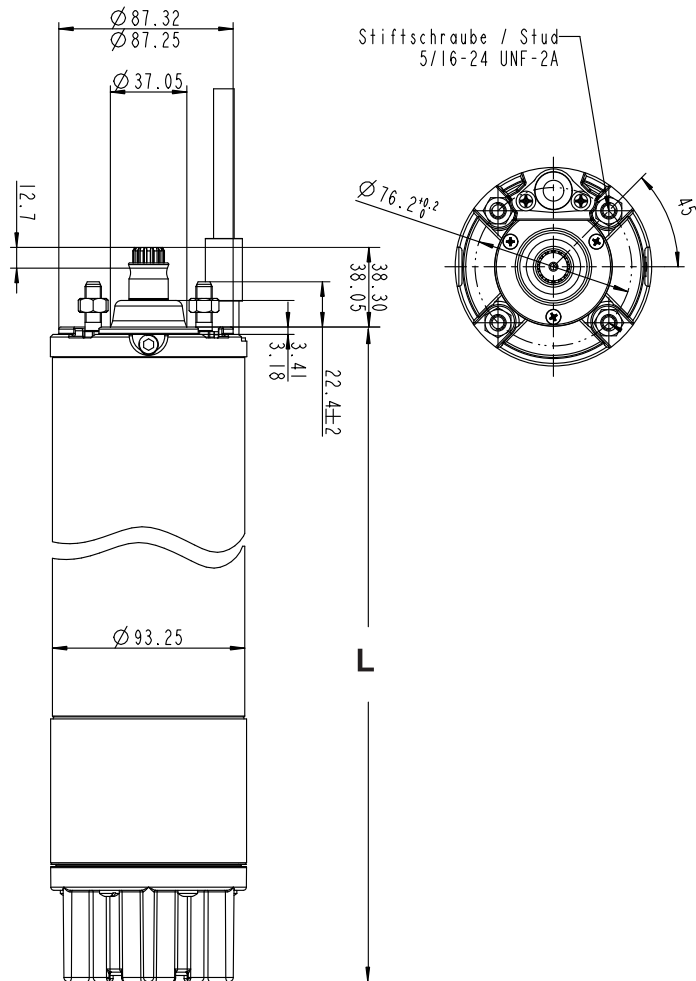
4" 3- Phase High Thrust Motors Lengths & Weights

P _N [kW]	304 L [mm]	316SS L [mm]	304 [kg]	316SS [kg]	Motor with Lead ,in single pack	
					[mm]	[kg]
2,2	422,2	431,4	15,0	15,5	796 x 100 x 110	16,8
3,0	477,2	486,4	17,0	17,5	796 x 100 x 110	18,9
3,7	520,2	529,4	19,1	19,6	796 x 100 x 110	20,9
4,0	543,2	552,4	20,0	20,5	796 x 100 x 110	21,8
5,5	652,5	661,7	26,6	27,1	904 x 100 x 110	28,7
7,5	730,5	739,7	30,6	31,1	904 x 100 x 110	32,7



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4" 3~ Motor Outlines 9,3kW



Tolerances according to NEMA MG 1-18.388

Motors Lengths & Weights

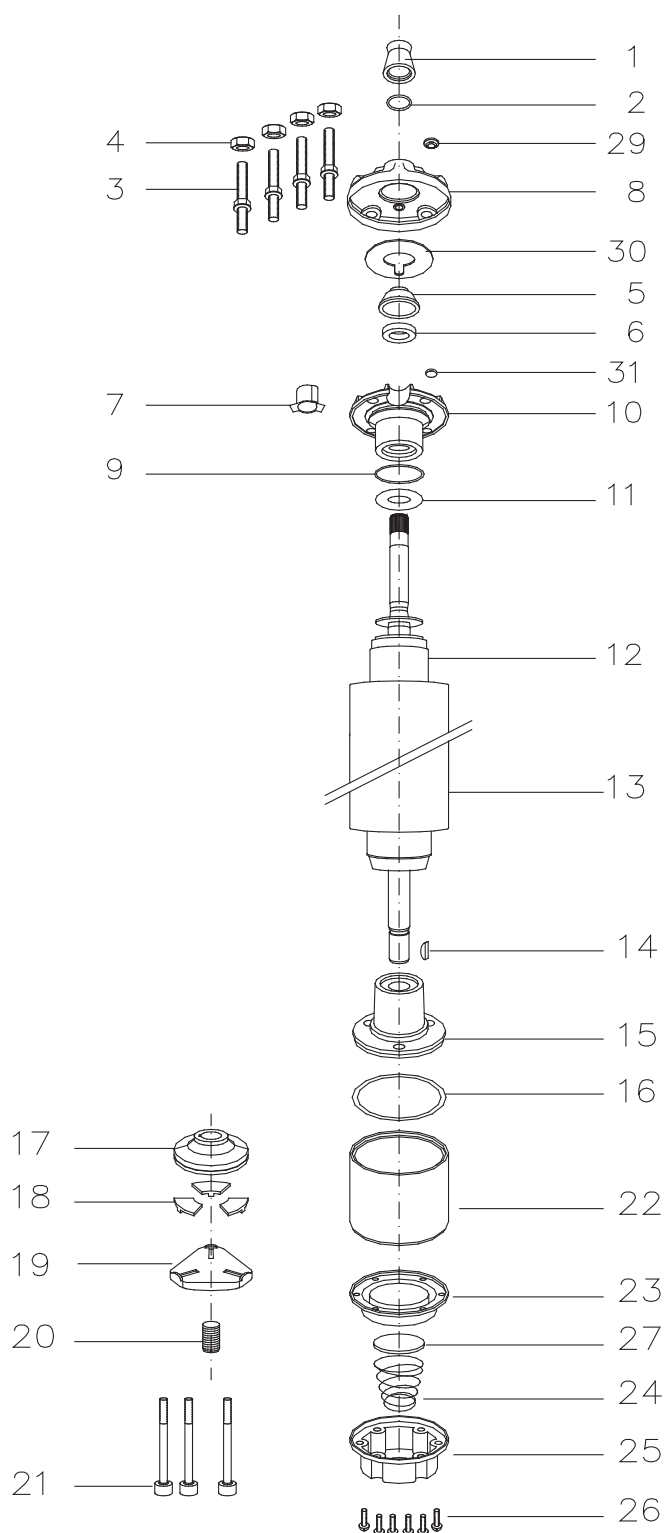
P _N [kW]	L [mm]	M [kg]	Motor with Lead in single pack	
			[mm]	[kg]
9,3	855,1	37,9	904 x 100 x 110	41,3

Material DIN / AISI

Part	Material description
Shell	1.4301
End bell, upper	1.4401
End bell, lower	Cast iron
Thrust housing	1.4401
Shaft Seal	SiC / SiC
Seal Cover	1.4401
Slinger	NBR
Shaft Extensions	17-4 SS
Diaphragm	NBR
Diaphragm housing	Cast iron / 1.4301
Motor Lead	EPR
Seals	NBR 70



4" 3- phase Standard Motor* High Thrust 2,2 - 7,5kW Motor Parts 304SS



Pos.	Part Description	Qty.	Part No.
1	Protector, Spline	1	Kit B
2	Washer	1	Kit B
3	Stud	4	Kit C
4	Nut	4	Kit C
5	Seal cover	1	Kit D
6	Shaft Seal	1	Kit B+D
7	Connector boss	1	Kit D
8	Top Endbell, Cover	1	Kit D
9	O-Ring	1	Kit B+D
10	Top Endbell	1	Kit D
11	Upthrust washer	1	Kit
12	Rotor	1	page 55
13	Stator	1	page 55
14	Woodruff key	1	275 250 104
15	Bottom Endbell	1	Kit
16	O-Ring	1	Kit B
17	Thrust disc	1	Kit A
18	Segment	1	Kit A
19	Leveling disc	1	155 660 101
20	Screw, adj.	1	151 048 102
21	Screw	3	Kit C
22	Thrust housing	1	177 378 901
23	Diaphragm	1	Kit B
24	Spring	1	151 449 101
25	Cover, Diaphragm	1	155 647 101
26	Screw	6	Kit C
27	Cup spring, Diaphragm	1	151 448 101
29	Sealing stopper	1	Kit B+D
30	Seal	1	Kit D
31	Filter	1	Kit B+D

* Spare Parts for Heat Pump, Pollution Recovery and Brackish Water Motors on Request



4" 3- phase Spare Part Kits 304SS High Thrust

P _N [kW]	Thrust Bearings	End bell upper (Pos. 10)	End bell, lower (Pos. 15)	Upthrust washer (Pos. 11)
2,2	6500 N / KIT A	Kit D1	177 379 921	308 268 104
3,0				
3,7				
4,0				
5,5		Kit D2	177 379 901	308 317 901
7,5				
Kit A 6500N	Thrust Bearing Kit		incl. Pos.: 17, 18	308 700 301
Kit B	Seal Kit		incl. Pos.: 1, 2, 6, 9, 16, 23, 29, 31	308 900 351
Kit B1	Seal Kit Pollution Recovery		incl. Pos.: 1, 2, 6, 9, 16, 23, 29, 31	308 900 401
Kit C	Screw Kit		incl. Pos.: 3, 4, 21, 26	308 658 351
Kit D1	End bell PE 2,2- 4,0kW		incl. Pos.: 5, 6, 7, 8, 9, 10, 29, 30, 31	308 233 509
Kit D2	End bell PE 5,5- 7,5kW		incl. Pos.: 5, 6, 7, 8, 9, 10, 29, 30, 31	308 434 501

Replacement Standard Motor* Stator and Rotor 50 Hz

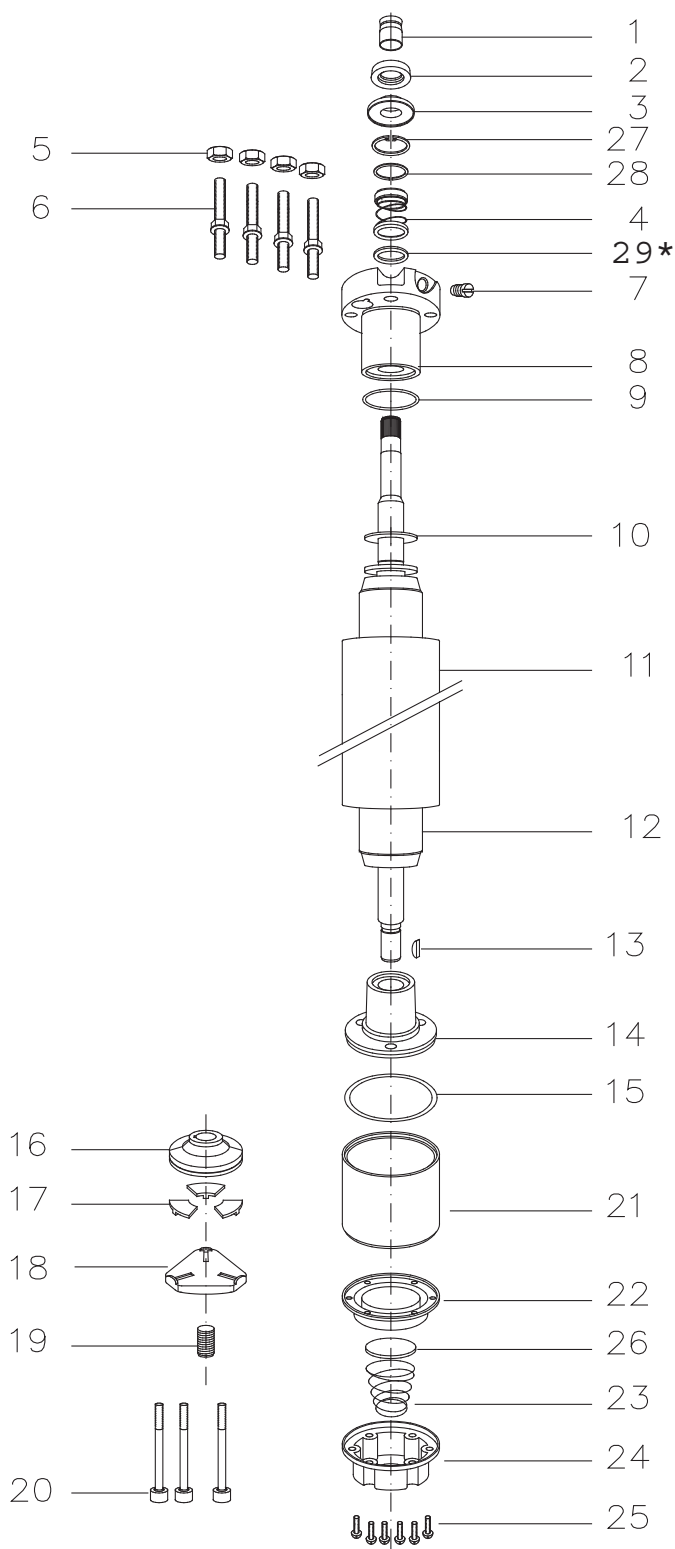
P _N [kW]	U _N [V]	Motor Model No.	Stator Model No.	Rotor
2,2	220, 230	234 756 3421 / L	305 491 361	178 163 903K
	380, 400, 415	234 726 3421 / L	305 491 381	
	500	234 796 3421 / L	305 491 401	
3,0	220, 230	234 766 3421 / L	305 491 362	178 125 903K
	380, 400, 415	234 764 3421 / L	305 491 382	
	500	234 768 3421 / L	305 491 402	
3,7	220, 230	234 757 3421 / L	305 491 363	178 126 903K
	380, 400, 415	234 727 3421 / L	305 491 383	
	500	234 797 3421 / L	305 491 403	
4,0	220, 230	234 767 3421 / L	305 491 364	178 127 903K
	380, 400, 415	234 765 3421 / L	305 491 384	
	500	234 769 3421 / L	305 491 404	
5,5	220, 230	234 758 3421 / L	305 491 365	178 133 903K
	380, 400, 415	234 728 3421 / L	305 491 385	
	500	234 798 3421 / L	305 491 405	
7,5	380, 400, 415	234 729 3421 / L	305 491 386	178 134 903K
	500	234 799 3421 / L	305 491 406	



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4" 3- phase Standard Motor* High Thrust 2,2 - 7,5kW Parts 316SS



Pos.	Part Description	Qty.	Part No.
1	Protector, Spline	1	Kit C
2	Slinger	1	Kit C
3	Seal cover	1	Kit B + C
4	Shaft Seal	1	Kit B
5	Nut	4	Kit D
6	Stud	4	Kit D
7	Sealing Screw	1	308 279 903
8	Top Endbell	1	Kit
9	O-Ring	1	Kit B
10	Upthrust washer	1	Kit
11	Stator	1	page 57
12	Rotor	1	page 57
13	Woodruff key	1	275 250 104
14	Bottom Endbell	1	Kit
15	O-Ring	1	Kit B
16	Thrust disc	1	Kit A
17	Segments	1	Kit A
18	Leveling disc	1	155 660 101
19	Screw, adj.	1	151 048 102
20	Screw	3	Kit D
21	Thrust housing	1	177 378 951
22	Diaphragm	1	Kit B
23	Spring	1	151 449 101
24	Cover, Diaphragm	1	155 647 201
25	Screw	6	Kit D
26	Cup spring, Diaphragm	1	151 448 101
27	Ring	1	Kit B
28	Retain Ring	1	Kit B
29*	Washer	1	308 747 201

* only for 2,2 - 3kW

*** Spare Parts for Heat Pump, Pollution Recovery and Brackish Water Motors on Request**



4" 3- phase Spare Part Kits 316SS High Thrust

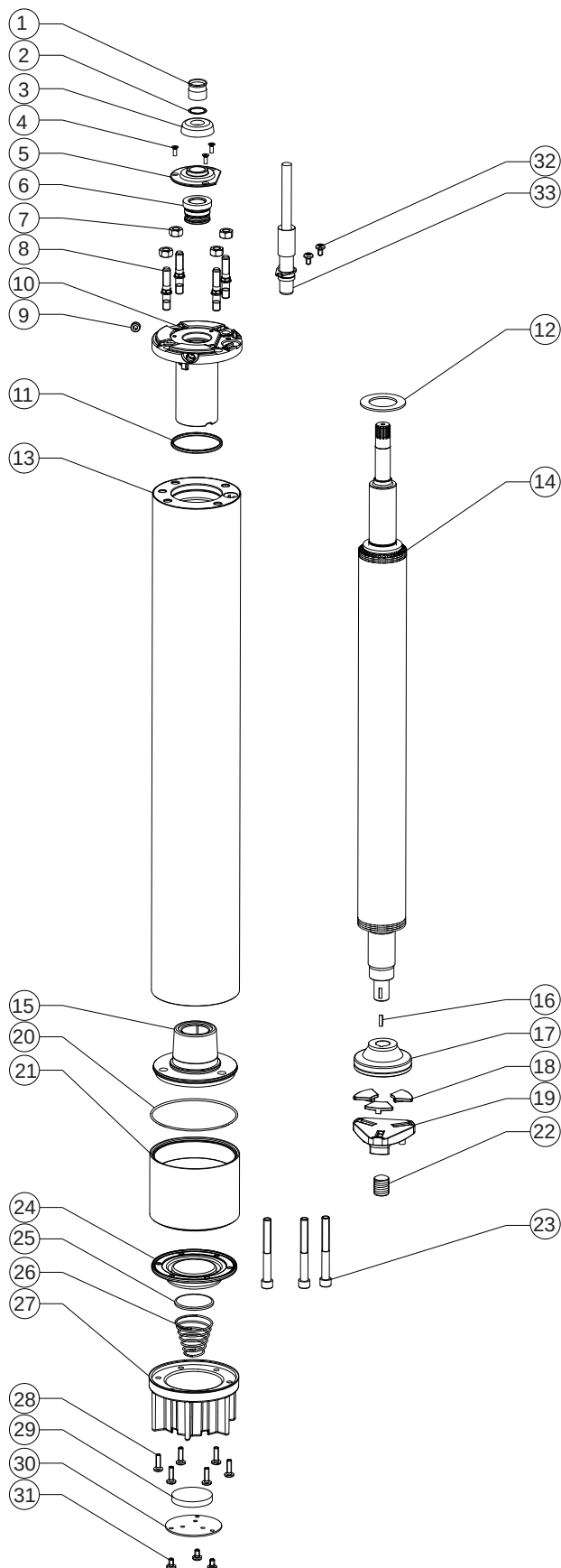
P _N [kW]	End bell, upper (Pos 8)		End bell, lower (Pos. 14)	Upthrust washer (Pos. 10)
	3 ~ DOL	3 ~ YΔ		
2,2 - 4,0	177 390 955	177 390 956	177 379 921	308 317 901
5,5 - 7,5	177 390 951	177 390 953	177 379 901	
Kit A 6500N	Thrust bearing Kit		inkl. Pos.: 16, 17	308 700 301
Kit B	Seal Kit		inkl. Pos.: 3, 4, 9, 15, 22, 27, 28	308 900 302
Kit B1	Seal Kit Pollution Recovery		inkl. Pos.: 1, 2, 3, 4, 9, 15, 22, 27, 28	308 900 402
Kit C	Slinger Kit		inkl. Pos.: 1, 2, 3	308 825 201
Kit D	Screw Kit		inkl. Pos.: 5, 6, 20, 25	308 658 301

Replacement Standard Motor* Stator and Rotor High Thrust 50 Hz DOL

P _N [kW]	U _N [V]	Motor Model No.	Stator Model No.	Rotor
2,2	220, 230	234 756 3521 / L	305 491 641	178 163 913K
	380, 400, 415	234 726 3521 / L	305 491 661	
	500	234 796 3521 / L	305 491 681	
3,0	220, 230	234 766 3521 / L	305 491 642	178 125 913K
	380, 400, 415	234 764 3521 / L	305 491 662	
	500	234 768 3521 / L	305 491 682	
3,7	220, 230	234 757 3521 / L	305 491 643	178 126 913K
	380, 400, 415	234 727 3521 / L	305 491 663	
	500	234 797 3521 / L	305 491 683	
4,0	220, 230	234 767 3521 / L	305 491 644	178 127 913K
	380, 400, 415	234 765 3521 / L	305 491 664	
	500	234 769 3521 / L	305 491 684	
5,5	220, 230	234 758 3521 / L	305 491 645	178 133 913K
	380, 400, 415	234 728 3521 / L	305 491 665	
	500	234 798 3521 / L	305 491 685	
7,5	380, 400, 415	234 729 3521 / L	305 491 666	178 134 913K
	500	234 799 3521 / L	305 491 686	



4" 3- phase Standard Motor* High Thrust 9,3kW Parts



Pos.	Description	Qty.	Part Nb.
1	Protector, Spline	1	Kit B
2	Washer	1	275 542 102
3	Slinger	1	Kit B
4	Screw, Seal cover	3	Kit C
5	Seal cover	1	156 275 102
6	Shaft Seal	1	Kit B
7	Nut	4	Kit C
8	Stud	4	Kit C
9	Plug screw	1	282 230 101
10	Top Endbell	1	177 553 901
11	O-Ring	1	Kit B
12	Upthrust washer	1	308 317 901
13	Stator	1	see page 59
14	Rotor	1	see page 59
15	Bottom Endbell	1	177 379 901
16	Woodruff key	1	275 250 104
17	Thrust disc	1	Kit A
18	Segments	3	Kit A
19	Leveling disc	1	155 660 101
20	O- Ring	1	Kit B
21	Thrust housing	1	177 378 901
22	Screw, adj.	1	151 048 102
23	Screw	3	Kit C
24	Diaphragm	1	Kit B
25	Cup spring, Diaphragm	1	151 448 201
26	Spring	1	151 449 101
27	Diaphragm housing	1	177 965 101
28	Screw	6	Kit C
29	Filter	1	156 276 101
30	Cover, Diaphragm	1	156 278 101
31	Screw	3	Kit C
32	Screw	2	Kit C
33	Motor cable, 2,5m	1	see page 46



4" 3- phase Spare Part Kits High Thrust 9,3kW

P_N [kW]	Thrust Bearing	End bell, upper (Pos. 10)	End bell, bottom (Pos. 15)	Upthrust-Disc (Pos. 12)
9,3	6500 N / KIT A	177 553 901	177 379 901	308 317 901
Kit A 6500N	Thrust Bearing Kit		incl. Pos.: 17, 18	308 700 301
Kit B	Seal Kit		incl. Pos.: 1; 3; 6; 11; 20; 24	308 900 501
Kit C	Screw Kit		incl. Pos.: 4; 7; 8; 23; 28; 31; 32	308 658 501

Replacement 9,3kW High Thrust Stator and Rotor 50 Hz

P_N [kW]	U_N [V]	Motor nb.	Stator nb.	Rotor
9,3	380 - 415	234 788	326 995 920	178 139 915



SubStart3P® Three phase Submersible Motor Starter

The SubStart3P® range covers all 3 phase motors from 0.37kW to 7,5kW. Ergonomic design, attention to detail and unique features make the SubStart3P® motor starter range your first choice when considering submersible motor protection. In conjunction with Franklin Electric submersible motors you now have an tangible water system advantage resulting in ease of installation and reliable protection

Product features:

- Attention to detail – every aspect engineered for the application
- The complete package – The device is 100% compatible with the motor characteristics
- All in one name – Reliability backed by the leader in submersible motors

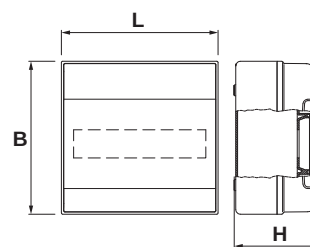


Ergonomically designed	
Mounting	Easy wall mounting without destroying the protection rating of the enclosure.
Wiring	Sufficient space is provided for ease of wiring.
Enclosure	
Protection	IP54
Material	PVC / Polycarbonate
Components	
ON/OFF Switch	Manual motor starter switch
Circuit breaker	Integrated thermal and magnetic overload protection
Auxiliary relay	Powered auxiliary contactor for use with external switches
Cable glands	Ensure IP54 rating

SubStart3P® Model Parameters				
Motor Rating (kW)	Type 3~ 400V 50Hz	Model Number	Nom. Current (A)	Starting Current (A)
0,37	SS037P3	288 500 3510	1,1	5,4
0,55	SS055P3	288 501 3510	1,6	7,4
0,75	SS075P3	288 502 3510	2	10,6
1,10	SS110P3	288 503 3510	2,8	16
1,50	SS150P3	288 504 3510	3,9	20,7
2,20	SS220P3	288 505 3510	5,5	29,8
3,0	SS300P3	288 506 3510	7,5	42
3,7	SS370P3	288 507 3510	9	52,3
4,0	SS400P3	288 508 3510	9,9	57
5,5	SS550P3	288 509 3510	12,6	77,2
7,5	SS750P3	288 510 3510	17,1	99,3

Specifications	
Mechanical Specification	
Protection level	IP 54
Environment	This equipment is suitable for environment B according to IEC/EN 61439 - 1 : 2010
Altitude	max 2000m above sea level
External dimensions	190x184x106mm <= 4kW 250x256x140mm >= 5,5kW
Weight	1,2 kg <= 4kW 2,3 kg >= 7,5kW
Mounting	Wall mounting (mounting hardware provided)
Storage temperature	-25°C to +55°C
Operation temperature	-5°C to +40°C
Humidity	50% at 40°C (without condensation)
Electrical Specifications	
Working Voltage	3~ / 50Hz 380 - 415V / -10% +6%
Voltage tolerance	380V -10% / 415V+6%
Rated insulation voltage	400 Vac
Rated short-time withstand current	50 kA
Rated conditional short-circuit current	50 kA
Current	5A, 9A, 16 A
Power	0,37kW - 7,5kW
Standards	
IEC/EN 61439 - 1 : 2010	

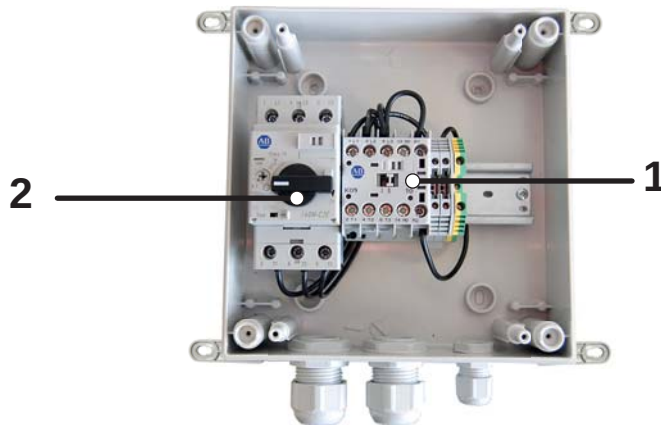
Dimensions			
Motor Rating (kW)	W [mm]	L [mm]	H [mm]
0,37kW - 4,0kW	190	184	106
5,5kW - 7,5kW	250	256	140





Franklin Electric

SubStart3P® Spare parts



1 Part: Contactor

Rating [kw]	Mod. Nb.
0,37	308 027 201
0,55	308 027 201
0,75	308 027 201
1,1	308 027 201
1,5	308 027 201
2,2	308 027 202
3,0	308 027 202
3,7	308 027 203
4,0	308 027 203
5,5	308 027 204
7,5	308 027 205

2 Part: Motor Starter

Rating [kw]	Mod. Nb.
0,37	308 027 101
0,55	308 027 102
0,75	308 027 102
1,1	308 027 103
1,5	308 027 104
2,2	308 027 104
3,0	308 027 105
3,7	308 027 105
4,0	308 027 106
5,5	308 027 106
7,5	308 027 107



SubTronic3P® Three Phase Motor Protection

The SubTronic3P® range covers all 4 inch 3 phase motors from 0.37kW to 7,5kW. Ergonomic design, attention to detail and unique features make the SubTronic3P® range your first choice when considering submersible motor protection and management. Together with Franklin Electric submersible motors you have an undisputable advantage, resulting in ease of installation, sophisticated system management and peace of mind.

Product features:

- Attention to detail – every aspect engineered for the application
- The complete package – The device is 100% compatible with the motor characteristics
- All in one name – Reliability backed by the leader in submersible motors



Ergonomically designed

Mounting	Easy wall mounting offering various options without destroying the protection rating of the enclosure.
Wiring	Reliable connectors are provided for ease of wiring.

Motor compatible design

Matching range	The SubTronic3P® Protector range was designed to match the Franklin Electric range of 3 phase motors.
Wide range of operation	Compatibility with motor design allows for a wide range of operation resulting in minimized nuisance tripping.

Intelligent Protection and Management features

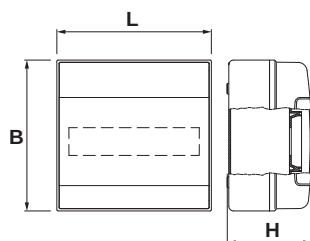
Dry-run detection (without probes)	Prevents motor and pump damage due to running the pump without water based on a proprietary reliable detection method.
Dry-run auto- reset	Automatic dry-run reset time is based on a proprietary search algorithm to find the best operating point for weak wells. Reset time in max. 60 minutes.
Over & Under voltage	Prevents motor damage that may be caused by abnormal voltage conditions without limiting the range of operation, made possible by matching the design of the SubTronic3P® Protector with the motor. Reset time approximately 3 minutes.
Over current protection	Prevents operation under conditions where motor current may exceed safe levels due to bound pump or other fault condition. Detection is based on current heating capacity measurement to prevent unnecessary nuisance tripping. Auto-reset in 15 minutes. Manual reset possible in approximately 5 minutes by reapplying power.
Rapid Cycle Protection	Prevents system damage due to factors such as continuous rapid cycling and excessive motor thermal cycling caused by waterlogged tank, faulty contacts or faulty pressure switch. Auto-reset in 5 minutes if condition clears. Manual reset possible in approximately 5 minutes by reapplying power.

Indicators

Status	Indication shows normal operation or other condition.
Voltage	Faulty voltage condition is indicated.
Fault conditions	Dry-run, Over Current, Rapid Cycling, Over Voltage and Under Voltage are indicated.

Dimensions

Motor Rating [kW]	W [mm]	L [mm]	H [mm]
0,37kW - 3kW	190	184	106
3,7kW - 7,5kW	250	256	140



Specifications

Mechanical Specification

Protection level	IP 54
Environment	This equipment is suitable for environment B according to IEC/ EN 61439 - 1 : 2010
Altitude	max 2000m above sea level
External dimensions	190 x 184 x 106 mm <= 3kW 250 x 256 x 140 mm >= 3,7kW
Weight	1,2 kg <= 3kW 2,5 kg >= 3,7kW
Mounting	Wall mounting (mounting hardware provided)
Storage temperature	-25°C to +55°C
Operation temperature	-5°C to +40°C
Humidity	50% at 40°C (without condensation)

Electrical Specifications

Rated Voltage	3~ / 50Hz 380 - 415V
Voltage tolerance	380V -10% / 415V+6%
Rated insulation voltage	400 Vac
Rated short-time withstand current	50 kA
Rated conditional short-circuit current	50 kA
Current	5 A ; 9 A ; 25 A
Power	0,37 - 7,5kW

Standards

IEC/EN 61439 - 1 : 2010

SubTronic3P Motor Protection Specifications

Motor Rating [kW]	Type 3phase / 400V 50Hz	Model Number	Nom. Current [A]	Max. Current [A]
0,37	ST037P3	288 500 3511	1,1	5,4
0,55	ST055P3	288 501 3511	1,6	7,4
0,75	ST075P3	288 502 3511	2	10,6
1,10	ST110P3	288 503 3511	2,8	16
1,50	ST150P3	288 504 3511	3,9	20,7
2,20	ST220P3	288 505 3511	5,5	29,8
3	ST300P3	288 506 3511	7,5	42
3,7	ST370P3	288 507 3511	9	52,3
4	ST400P3	288 508 3511	9,9	57
5,5	ST550P3	288 509 3511	12,6	77,2
7,5	ST750P3	288 510 3511	17,1	99,3

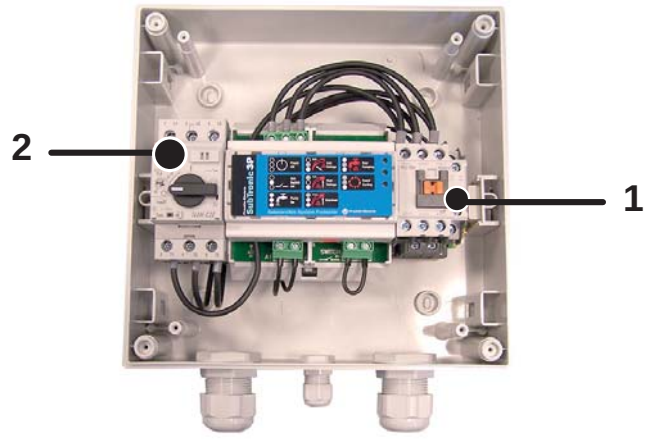
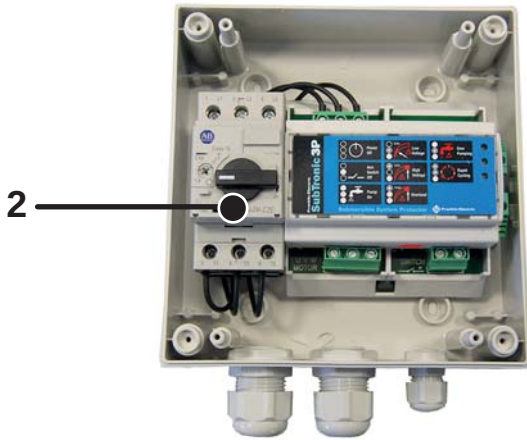


Franklin Electric

SubTronic3P® Spare Parts

0,37kW - 3,0kW

3,7kW - 7,5kW



1 Part: Contactor - > 3,7kW

Rating [kW]	Mod. Nb.
0,37	-
0,55	-
0,75	-
1,1	-
1,5	-
2,2	-
3,0	-
3,7	308 027 206
4,0	308 027 206
5,5	308 027 204
7,5	308 027 205

2 Part: Motor Starter

Rating [kW]	Mod. Nb.
0,37	308 027 101
0,55	308 027 102
0,75	308 027 102
1,1	308 027 103
1,5	308 027 104
2,2	308 027 104
3,0	308 027 105
3,7	308 027 105
4,0	308 027 106
5,5	308 027 106
7,5	308 027 107



Franklin Electric

Termination Kit 4"

This proven, sturdy solution is your choice of cable joining in temporary pump applications or when re-usage if the drop cable is desired. Furthermore, the flexibility and safety it provides for under field service conditions makes it the preferred choice over conventional, not breakable splicing kits.

Kit- Type	Mod. Number	Description
Standard	308 090 901	without . Strain relief Attention: Limited shelf life of Resin and Hardener
Strain Relief	308 090 902	incl. Strain relief Attention: Limited shelf life of Resin and Hardener



Double Plug Lead for Termination Kit

Required for use of lead termination kit. Connected between termination kit and 4" motor.

- PSC / 2-wire / 3-wire Motors and 3 ~ Motors up to 2,2kW
- Material: Connector- Ni plated brass; Lead: rubber
- 2 / 3 wire lead with ground
- Optional strain relief
- Max. current 16 amps.
- Approvals: KTW

4" High Thrust and Motor Design up to 06.2016

Mod. No.	2 - wire	Mod. No.	PSC / 3 - wire / 3-Phase (up to 2,2kW)
310 131 001	3X1,5mm ² 1,5 m - without . Strain relief	310 111 001	3X1,5+1G1,5mm ² 1,5 m - without . Strain relief
310 131 002	3X1,5mm ² 2,5 m - without . Strain relief	310 111 002	3X1,5+1G1,5mm ² 2,5 m - without . Strain relief
310 132 001	3X1,5mm ² 1,5 m - incl. Strain relief	310 112 001	3X1,5+1G1,5mm ² 1,5 m - incl. Strain relief
310 132 002	3X1,5mm ² 2,5 m - incl. Strain relief	310 112 002	3X1,5+1G1,5mm ² 2,5 m - incl. Strain relief



4" Standard Motor start 07.2016

Mod. No.	PSC / 3 - wire / 3-Phase (up to 2,2kW)
309 111 401	3X1,5+1G1,5mm ² 1,5 m - without . Strain relief



Lead Termination Kit 1,5 - 10mm²

- 3M Quality
 - 4 wire
 - 1,5 - 10mm²
 - up to 1,1kV
- Part number: 308 090 921**



PTC Lead (only as spare parts)

Ø = 2x0,75 mm ²	D = 7,0 mm	L (m)	Mod.-No.
		4	310 364 004
		10	310 364 010
		20	310 364 020
		30	310 364 030

Brackish Water Motor Lead (only as spare parts)

Ø = 4x1,5 mm ²	L (m)	Mod.-No.
	2,5	310 113 402G



Franklin Electric

4" Corrosion protection in aggressive water for Standard Motors

Wells with extremely high levels of chlorides and other elements in combination with high temperatures will aggressively attack and corrode nearly any type of metal, including stainless steel. Typical severe applications are geothermal wells and mine wells, and applications with low service times.

Material Specification: GG25

LT	HT
	
308 250 912	308 250 913

4" Corrosion protection in aggressive water for NextGen Motors

Wells with extremely high levels of chlorides and other elements in combination with high temperatures will aggressively attack and corrode nearly any type of metal, including stainless steel. Typical severe applications are geothermal wells and mine wells, and applications with low service times.

These sacrificial anodes, affixed to the motor body, will increase the service life of the motor when used in such environments.

Material Specification: GG25

LT

308 250 914

Motor Filling Liquid

Filling liquid 5 L FES92					
4" Encapsulated	→	FES93	8" Encapsulated Standard	→	FES91
6" Encapsulated Standard	→	FES91	8" Encapsulated HighTemp75	→	FES92
6" Encapsulated HighTemp90	→	FES92	6" / 8" / 10" / 12" Rew Motors 6" / 8" Rew PM Motors		FES93



Part number:
308 353 941

FES91	FES92	FES93
		

Motor Filling Kit

This kit contains all necessary tools to check and replenish Franklin Electric submersible motors with FES 91, 92 or 93 filling liquid (fill solution/concentrate must be ordered separately).

Part number: 308 726 103





Couplings

Franklin Electric offers this line of motor-pump couplings for maximum customer convenience in matching the Franklin motor to a variety of pump shafts. Couplings are designed to transmit the pump thrust to the motor in order to provide maximum benefits from the Franklin internal thrust bearing construction.

Hardened stainless steel spacer discs in the 4" and 6" couplings assure positive bearing between motor and pump shafts, and assure full support for downward thrust created by the pump.

8" couplings DO NOT contain hardened spacer discs, since the motor shaft itself is hardened.



4" Motor - Pump couplings

Application: Allow connection of pump to motors shaft.

Specification:

- Material: 304 / 316 SS
- NEMA standard measuring on motor shaft
- separation washer between motor & pump shafts

Coupling 1	304			Coupling Insert only (316SS)
	151 551 911			151 970 102
	Dimension D Max. / Min.	Dimension N Max. / Min.	Dimension H Max. / Min.	
	19,075 / 19,063	4,838 / 4,788	20,70 / 20,53	

Coupling 2	316SS
	308 712 904
	Dimension D Max. / Min.
	17,50 / 17,48
	Technical drawing of a coupling flange. The drawing shows a cross-section of the flange with the following dimensions: Outer diameter: $\varnothing 222.62 \pm 0.05$; Inner diameter: $\varnothing 137.79 \pm 0.03$; Thickness: 28.6 ± 0.4; Overall width: 41.3 ± 0.4. A 30-degree chamfer is indicated on the outer edge. The dimension D is shown as the thickness of the flange.

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin, light gray lines. There are no margins, text, or other markings on the page.



Franklin Electric

Franklin Electric Europa GmbH
Rudolf Diesel Strasse 20
54516 Wittlich / Germany

franklin-electric.eu