



# 4" Super Stainless 1~ PSC NextGen



## Submersible Motors

### Quality in the Well

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

The single phase PSC motor has been electrically optimized to offer reliable pump starting over a wide range of incoming voltages. It should ideally be combined to the Franklin Electric SubStart/SubTronicSC control boxes for maximum system performance, protection and warranty.

### Features:

- Hermetically sealed stator with 316SS shell. 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

### Pollution Recovery Motor Version Specifications:

- Fluorelastomere (Viton®) rubber parts
- Special Polyuretane (PUR) lead assemblies
- 304SS (316SS Stator) graded stainless steel as standard

### Technical specification:

- PSC motor range: 0,25 – 2,2kW
- 4" NEMA flange
- Rotation: CCW facing shaft end (CW upon request)
- 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 from nominal: -10% / +6%
- Protection requirements: EN 60947-4-1

### Options:

- Various cable lengths
- Motor sets including control box, lead and splice kit
- Alternative material executions



4" PSC NextGen Motor Model numbers 50 Hz

P <sub>N</sub> [kW]	U <sub>N</sub> [V]	304SS		
		Standard Motors (Single pack, with Lead)	Standard Motors (40 motors packing unit)	Pollution Recovery Motors (Single pack, with Lead)
0,25	220-230	254 803 6700L	254 803 6700	254 803 6715L
	230-240	254 813 6700L	254 813 6700	254 813 6715L
0,37	220-230	254 805 6700L	254 805 6700	254 805 6715L
	230-240	254 815 6700L	254 815 6700	254 815 6715L
0,55	220-230	254 807 6700L	254 807 6700	254 807 6715L
	230-240	254 817 6700L	254 817 6700	254 817 6715L
0,75	220-230	254 808 6700L	254 808 6700	254 808 6715L
	230-240	254 818 6700L	254 818 6700	254 818 6715L
1,10	220-230	254 809 6700L	254 809 6700	254 809 6715L
	230-240	254 819 6700L	254 819 6700	254 819 6715L
1,50	220-230	254 810 6700L	254 810 6700	254 810 6715L
	230-240	254 820 6700L	254 820 6700	254 820 6715L
2,20	220-230	254 811 6700L	254 811 6700	254 811 6715L
	230-240	254 821 6700L	254 821 6700	254 821 6715L

4" PSC Performance Data 50 Hz

220V - 230V version

P <sub>N</sub> [kW]	Thrust F [N]	U <sub>N</sub> [V]	n <sub>N</sub> [min <sup>-1</sup> ]	I <sub>N</sub> [A]	I <sub>A</sub> [A]	η (Eff.) [%] at % load			cos φ (Pf.) at % load			T <sub>N</sub> [Nm]	T <sub>A</sub> [Nm]	Capacitor μF (U <sub>C</sub> =450V)
						50	75	100	50	75	100			
0,25	4000	220	2865	2,3	9,0	33	45	51	0,91	0,93	0,96	0,82	0,73	12,5
		230	2875	2,4	9,4	28	42	50	0,80	0,88	0,92	0,83	0,80	
0,37	4000	220	2850	3,2	12,1	36	47	54	0,86	0,92	0,97	1,21	1,07	16
		230	2860	3,3	12,6	35	46	54	0,78	0,85	0,91	1,24	1,17	
0,55	4000	220	2840	4,2	16,9	46	57	63	0,94	0,97	0,98	1,85	1,50	20
		230	2850	4,3	17,7	45	57	63	0,86	0,91	0,94	1,90	1,63	
0,75	4000	220	2825	5,7	21,7	44	54	61	0,97	0,99	0,99	2,5	2,3	35
		230	2845	5,7	22,7	41	52	59	0,92	0,96	0,98	2,5	2,5	
1,1	4000	220	2830	8,1	32,5	47	59	65	0,86	0,94	0,97	3,7	2,9	40
		230	2845	8,4	33,9	43	56	63	0,77	0,86	0,92	3,7	3,1	
1,5	4000	220	2820	10,4	39,9	52	63	68	0,90	0,95	0,98	5,1	3,6	50
		230	2830	10,7	41,7	48	59	66	0,82	0,90	0,95	5,1	3,9	
2,2	4000	220	2825	14,7	59,2	55	65	70	0,93	0,98	0,99	7,4	5,0	70
		230	2840	14,7	61,8	51	62	68	0,86	0,93	0,97	7,4	5,5	

230V - 240V version

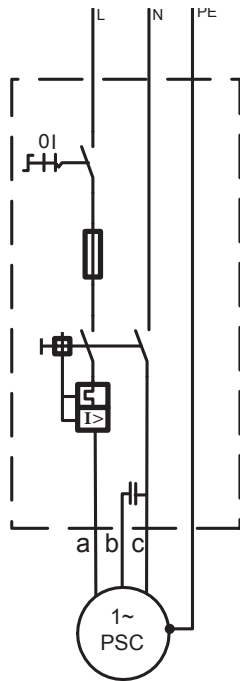
P <sub>N</sub> [kW]	Thrust F [N]	U <sub>N</sub> [V]	n <sub>N</sub> [min <sup>-1</sup> ]	I <sub>N</sub> [A]	I <sub>A</sub> [A]	η (Eff.) [%] at % load			cos φ (Pf.) at % load			T <sub>N</sub> [Nm]	T <sub>A</sub> [Nm]	Capacitor μF (U <sub>C</sub> =450V)
						50	75	100	50	75	100			
0,25	4000	230	2865	2,2	8,6	33	45	51	0,91	0,93	0,96	0,82	0,73	12,5
		240	2875	2,3	9,0	28	42	50	0,80	0,88	0,92	0,83	0,80	
0,37	4000	230	2850	3,1	11,6	36	47	54	0,86	0,92	0,97	1,21	1,07	16
		240	2860	3,2	12,1	35	46	54	0,78	0,85	0,91	1,24	1,17	
0,55	4000	230	2840	4,0	16,2	46	57	63	0,94	0,97	0,98	1,85	1,50	20
		240	2850	4,1	16,9	45	57	63	0,86	0,91	0,94	1,90	1,63	
0,75	4000	230	2825	5,5	20,8	44	54	61	0,97	0,99	0,99	2,5	2,3	35
		240	2845	5,5	21,8	41	52	59	0,92	0,96	0,98	2,5	2,5	
1,1	4000	230	2830	7,8	31,1	47	59	65	0,86	0,94	0,97	3,7	2,9	40
		240	2845	8,1	32,5	43	56	63	0,77	0,86	0,92	3,7	3,1	
1,5	4000	230	2820	10,0	38,3	52	63	68	0,90	0,95	0,98	5,1	3,6	50
		240	2830	10,2	40,0	48	59	66	0,82	0,90	0,95	5,1	3,9	
2,2	4000	230	2825	14,0	56,7	55	65	70	0,93	0,98	0,99	7,4	5,0	70
		240	2840	14,1	59,3	51	62	68	0,86	0,93	0,97	7,4	5,5	



PSC Winding resistance 50 Hz

$P_N$ [kW]	$U_N$ [V]	Stator-Ref. # 304SS	Main phase [Ohm]	Start phase [Ohm]
0,25	220 - 230	326 738 942	8,2 - 10,0	31,1 - 38,1
	230 - 240	326 800 942	8,9 - 10,9	26,7 - 32,6
0,37	220 - 230	326 739 942	6,7 - 8,1	21,7 - 26,5
	230 - 240	326 801 942	7,2 - 8,8	20,8 - 25,4
0,55	220 - 230	326 740 942	4,4 - 5,4	13,6 - 16,6
	230 - 240	326 802 942	4,8 - 5,8	13,1 - 16,0
0,75	220 - 230	326 741 942	3,3 - 4,1	8,1 - 9,9
	230 - 240	326 803 942	3,7 - 4,6	7,7 - 9,4
1,1	220 - 230	326 742 942	2,3 - 2,8	6,8 - 8,3
	230 - 240	326 804 942	2,5 - 3,0	6,5 - 7,9
1,5	220 - 230	326 743 942	1,8 - 2,2	4,7 - 5,7
	230 - 240	326 805 942	1,9 - 2,4	4,4 - 5,4
2,2	220 - 230	326 744 942	1,2 - 1,5	3,2 - 3,9
	230 - 240	326 806 942	1,3 - 1,6	3,0 - 3,6

Electrical connection PSC Motors

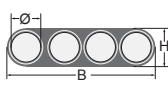
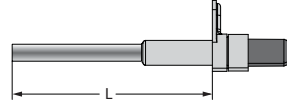


a	b	c	PE
black	brown	grey	yellow/green

Motor Leads\*

PSC Motor- VDE / ACS/ KTW Approved Flat Leads

$\varnothing$ [mm <sup>2</sup> ]	B [mm]	H [mm]
4X1,5	14,6 ± 0,3	5,1 ± 0,3

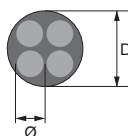
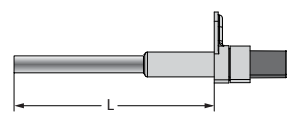



L [m]	304 SS	316 SS
1,5	310 178 401	310 178 501
2,5	310 178 402	310 178 502
5	310 178 405	310 178 505
10	310 178 410	310 178 510
15	310 178 415	310 178 515
20	310 178 420	310 178 520
30	310 178 430	310 178 530
40	310 178 440	310 178 540
50	310 178 450	310 178 550

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

PSC Motor- Pollution Recovery Round Leads

$\varnothing$ [mm <sup>2</sup> ]	$\varnothing D$ [mm]
4X1,5	9,8 ± 0,3

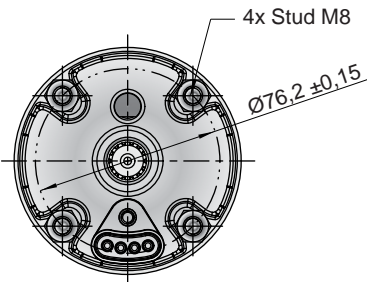
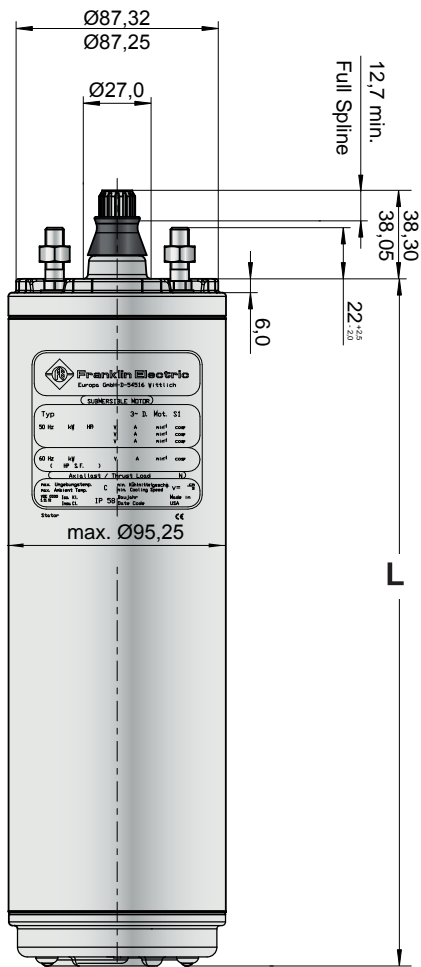



L [m]	304 SS	316 SS
1,5	310 318 401	310 318 501
2,5	310 318 402	310 318 502
5	310 318 405	310 318 505
10	310 318 410	310 318 510
15	310 318 415	310 318 515
20	310 318 420	310 318 520
30	310 318 430	310 318 530
40	310 318 440	310 318 540
50	310 318 450	310 318 550

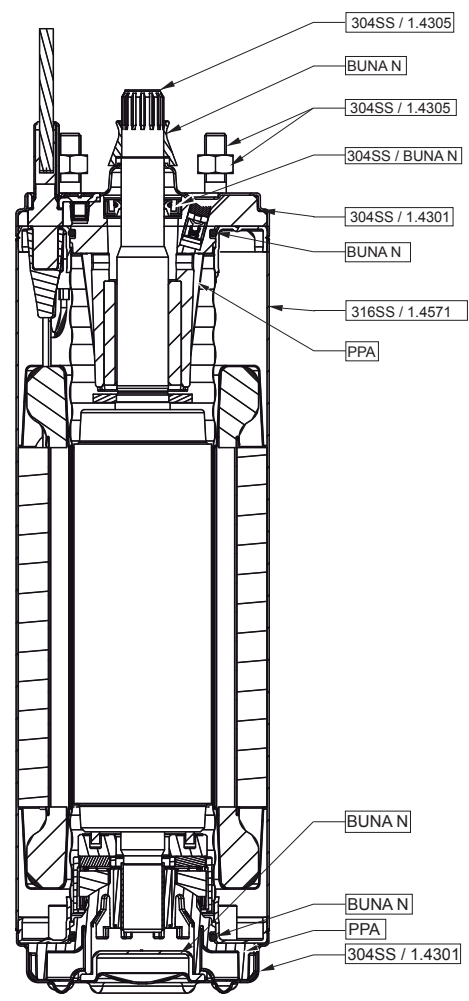


Outline Drawing PSC Motors

Material Description



- 304SS
  - EPR
  - AISI 316
  - AISI 304
  - Neoprene
- 316SS
  - EPR
  - AISI 316
  - AISI 316
  - Neoprene



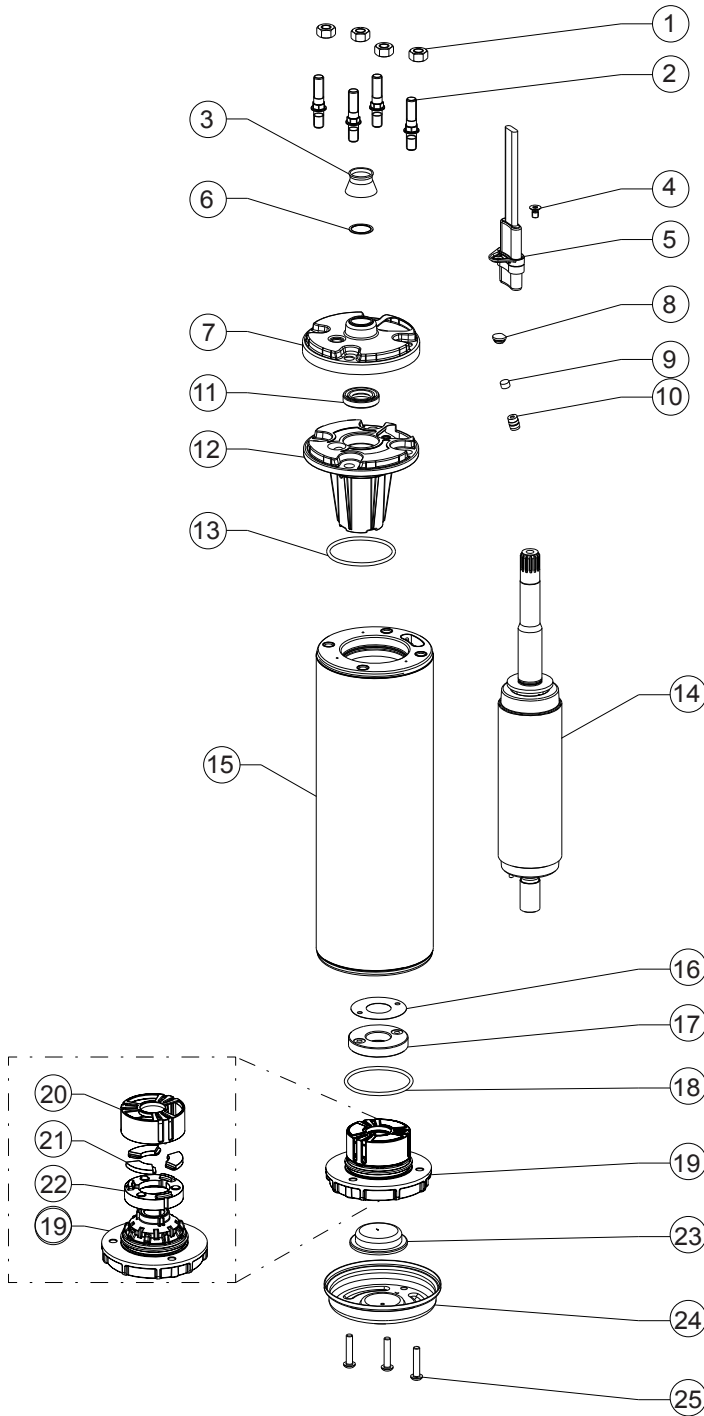
Tolerances according to NEMA MG 1-18.388

4" PSC Motors Lengths and Weights / Packing sizes

P <sub>N</sub>		L [mm]	M [kg]	Motor with Lead in single pack		Motor Package size (40 motors per packing unit)	
[kW]	[HP]			[mm]	[kg]	[mm]	[kg]
0,25	0,33	237,2	6,55	400 x 100 x 110	7,25	800 x 500 x 870	262,0
0,37	0,50	251,1	7,20	400 x 100 x 110	7,9	800 x 500 x 870	306,8
0,55	0,75	276,2	8,35	530 x 100 x 110	9,05	800 x 500 x 870	352,8
0,75	1,00	297,2	9,30	530 x 100 x 110	10,0	800 x 500 x 870	390,8
1,10	1,50	321,2	10,45	530 x 100 x 110	11,15	800 x 500 x 870	436,8
1,50	2,0	353,2	11,90	796 x 100 x 110	12,6	800 x 500 x 870	494,8
2,20	3,0	451,2	16,65	796 x 100 x 110	17,35	800 x 500 x 870	684,8



4" PSC NextGen Motor Part Description



Pos.	Part Description	Qty.	Part No.
1	Nut M8	4	Kit C
2	Stud M8	4	Kit C
3	Protector, Spline	1	Kit B
4	Screw (Motor lead)	1	Kit C
5	Motor lead	1	see page 12
6	Washer	1	Kit B
7	Top Endbell, Cover	1	Kit
8	Plug	1	Kit B
9	Filter	1	Kit B
10	Valve	1	Kit
11	Shaft Seal	1	Kit B
12	Top Endbell	1	Kit
13	O- Ring	1	Kit B
14	Rotor	1	see page 15
15	Stator	1	see page 15
16	Washer	1	Kit A
17	Thrust disk assy	1	Kit A
18	O- Ring	1	Kit B
19	Bottom Endbell	1	A1
20	Bearing cage	1	Kit A
21	Segments	3	Kit A
22	Rocking Disk	1	Kit A
23	Diaphragm	1	Kit B
24	Bottom Endbell Cover	1	156 414 201
25	Screw, Cover	3	Kit C



**4" PSC NextGen Motor Spare Part Kits**

$P_N$ [kW]	0,25 - 2,2kW		
<b>Kit A1</b>	<b>End bell, upper 304SS (Pos. 7 - 13)</b>	incl. Pos.: 7 - 13	<b>308 462 901</b>
<b>Kit A2</b>	<b>Endbell lower incl. Thrust Bearing Kit 4000N</b>	incl. Pos.: 16 - 22	<b>308 464 911</b>
<b>Kit B</b>	<b>Seal Kit 304SS</b>	incl. Pos.: 3, 6, 8, 9, 11, 13, 18, 23	<b>308 650 201</b>
<b>Kit C</b>	<b>Fastener Kit 304SS</b>	incl. Pos.: 1, 2, 4, 25	<b>308 656 201</b>

**PSC Replacement Stator (316SS) and Rotor 50 Hz**

$P_N$ [kW]	Volt	Motor Model No.	Stator	Rotor
<b>0,25</b>	220-230	254 803 6700 / L	305 491 701	178 165 951K
	230-240	254 813 6700 / L	305 491 721	
<b>0,37</b>	220-230	254 805 6700 / L	305 491 702	178 165 952K
	230-240	254 815 6700 / L	305 491 722	
<b>0,55</b>	220-230	254 807 6700 / L	305 491 703	178 165 953K
	230-240	254 817 6700 / L	305 491 723	
<b>0,75</b>	220-230	254 808 6700 / L	305 491 704	178 165 954K
	230-240	254 818 6700 / L	305 491 724	
<b>1,10</b>	220-230	254 809 6700 / L	305 491 705	178 165 955K
	230-240	254 819 6700 / L	305 491 725	
<b>1,50</b>	220-230	254 810 6700 / L	305 491 706	178 165 956K
	230-240	254 820 6700 / L	305 491 726	
<b>2,20</b>	220-230	254 811 6700 / L	305 491 707	178 165 957K
	230-240	254 821 6700 / L	305 491 727	