4" SUPER STAINLESS HEAT PUMP MOTORS – 3-PHASE DESIGN

OPTIONAL

STAINLESS STEEL 304 | STAINLESS STEEL 316

FEATURES & BENEFITS

- Suitable for operation in heating systems that extract heat from groundwater and river water (heat deep wells - or open systems).
- Three motor models cover the range from 160 to 1100Watts, each motor being capable of driving several pumps within a certain power level range
- 4" NEMA mounting design with metric studs
- Stainless steel splined shaft
- Stator shell in 316SS
- Factory filled with Franklin's non-toxic water soluble fill solution
- Max. storage temperature -15°C - + 50°C
- Liquid lubricated radial bearings and High capacity Kingsbury type thrust bearing for 100 % maintenance free operation
- Field replaceable lead using Franklin's exclusive Water Bloc technology with extended jam nut in Stainless steel
- High efficiency electrical design for low operation costs
- Drinking water approvals
- Suitable for use in water with increased salinity

SPECIFICATION

- Ratings: 0,16 kW up to 1,1 kW
- Voltage: 3~, 400 V - 50 Hz
- Thrust load: 4 kN
- Nominal ambient temperature: 30 °C with 0.08 m/s cooling flow
- Voltage tolerance: -10 % / +6 %
- Protection IP68, insulation class B
- Frequency of starts: 20 starts/ hour (with min. 3 minutes resting time)
- All motors with factory installed leads (1.50 m / 2.50 m) Special lead length up to 50 m,
- Installation orientation: Vertical / horizontal (shaft end heightened)
- Rotation counter clock wise facing shaft end (3 phase motors rotation reversible)

OPTIONS

- Built in lightning arrestors
- 316SS material design
- Special voltages

Hydrodynamic liquid lubricated radial bearings

100 % maintenance free operation

StatorSHIELD™ - Franklin encapsulation system

Franklin Electric encapsulated motors are equipped with hermetically-sealed windings. The Anti track stator resin mechanically supports the winding and provides fast heat dissipation.

Kingsbury type thrust bearing

High capacity 4 kN Kingsbury type thrust bearing for 100 % maintenance free operation

Pressure-equalizing diaphragm

4" SUPER STAINLESS HEAT PUMP MOTORS - 3- PHASE DESIGN

MODEL NUMBERS - SOLAR MOTORS 60 HZ

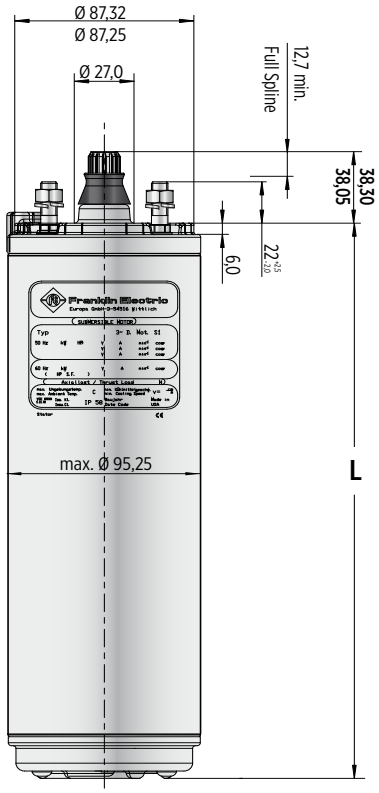
P_N [kW]	U_N [V]	Digit 1 - 6	Digit 7 - 10			
			Standard 304SS		Standard 316SS	
			Single pack with lead*	40 motors packing unit	Single pack with lead*	40 motors packing unit
0,16 - 0,32	400	234 870	6721L	6721	6821L	6821
0,30 - 0,60	400	234 871	6721L	6721	6821L	6821
0,55 - 1,1	400	234 872	6721L	6721	6821L	6821

*lead lengths motors „L" : up to 1.5 kW with 1.5 m preassembled cable

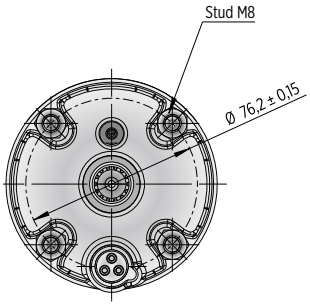
MOTOR PERFORMANCE AND MECHANICAL DATA 50 HZ - 3-PHASE

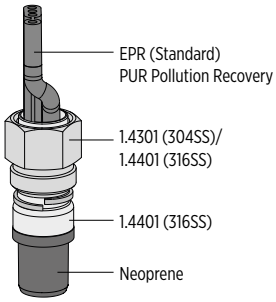
P_N [kW]	Thrust F [N]	U_N [V]	n_N [min^{-1}]	I_N [A]	I_A [A]	η (Eff.) [%]	cos φ (Pf.)	T_N [Nm]	T_A [Nm]	L [mm]	Weight [kg]
0,16 - 0,32	4000	400	2910	0,56	3,7	64	0,68	0,52	2,4	237,2	5,6
			2860	0,7		70	0,78	0,84			
			2820	0,8		70	0,83	1,08			
0,30 - 0,60	4000	400	2920	0,95	7,1	71	0,65	0,98	4,8	271,2	7,3
			2870	1,2		74	0,78	1,56			
			2830	1,4		75	0,84	2,02			
0,55 - 1,1	4000	400	2910	1,7	12,2	75	0,67	1,80	8,5	297,2	8,6
			2870	1,9		76	0,76	2,48			
			2800	2,5		76	0,85	2,74			

MOTOR DESIGN



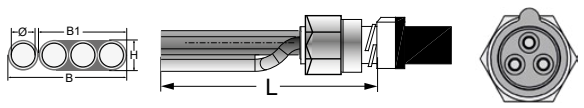
Tolerances according to NEMA MG 1-18.388





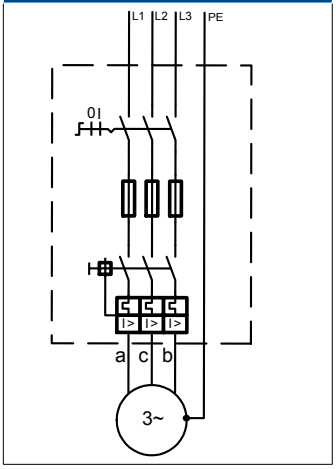
MOTOR LEAD - 3-PHASEN DESIGN

3-Phasen Motor lead			
0,16 - 1,1 kW			
Ø [mm^2]	B [mm]	B1 [mm]	H [mm]
3X1,5 + 1G1,5	16,8	10,7	5,0



L [m]	Model numbers 304SS	Model numbers 316SS
1,5	310 113 401	310 113 501
2,5	310 113 402	310 113 502
5	310 113 405	310 113 505
10	310 113 410	310 113 510
15	310 113 415	310 113 515
20	310 113 420	310 113 520
30	310 113 430	310 113 530
40	310 113 440	310 113 540
50	310 113 450	310 113 550

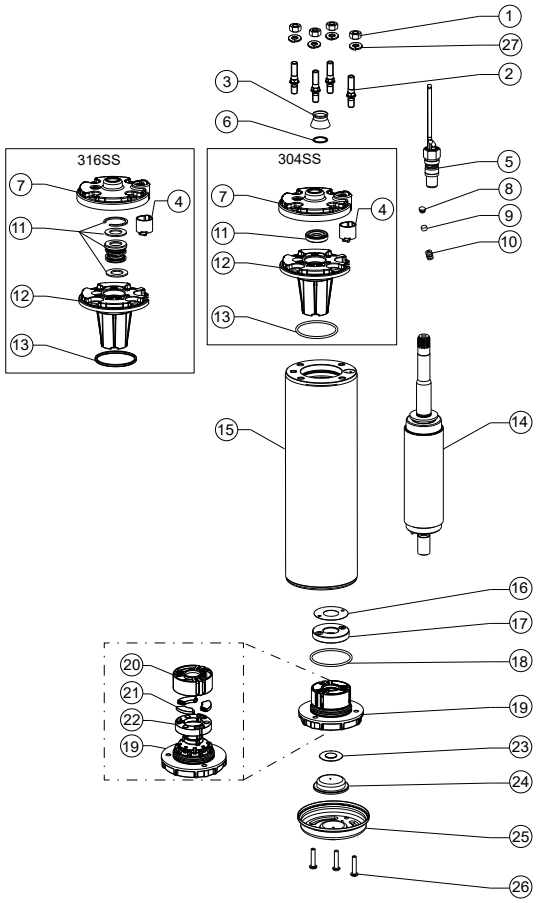
3- Motor DOL



a = black | b = brown | c = grey | PE = yellow/green

MOTOR PART DESCRIPTION

MOTOR DESIGN 0,16 UP TO 1,1 KW



Pos.	Part Description	Qty.	Part No.
1	Nut	4	Kit C
2	Stud	4	Kit C
3	Protector, Spline	1	Kit B
4	Connector boss	1	151 820 103
5	Motor Lead	1	see page 58
6	Washer	1	Kit B
7	Top Endbell, Cover 304SS	1	150 262 151
	Top Endbell, Cover 316SS*	1	150 262 251
8	Filter plug	1	Kit
9	Filter	1	Kit
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 59
15	Stator	1	see page 59
16	Level washer	1	Kit A2
17	Thrust disk assy	1	Kit A2
18	O-Ring	1	Kit B / Kit A2
19	Bottom Endbell	1	Kit A2
20	Bearing cage	1	Kit A2
21	Segments	3	Kit A2
22	Gasket	1	Kit A2
23	Diaphragm washer	1	151 314 101 / Kit A2
24	Diaphragm	1	Kit B / KitA2
25	Bottom Endbell Cover 304SS	1	156 414 201 / Kit A2
	Bottom Endbell Cover 316SS*	1	156 414 301 / Kit A2
26	Screw, Cover	3	Kit C
27	Lock washer	4	Kit C

SPARE PARTS KITS

P_N [kW]	0,16 - 1,1 kW		
Kit A1	Top Endbell 304SS	incl. pos. 4, 7, 8, 9, 10, 11 , 12, 13	308 462 902
	Top Endbell 316SS*		308 462 952
Kit A2	Bottom Endbell 304SS incl. Thrust Bearing Kit 4000N	incl. pos. 16 - 22	308 464 911
	Bottom Endbell 316SS incl. Thrust Bearing Kit 4000N*		308 464 912
Kit B	Seal Kit Standard 304SS	incl. pos. 3, 6, 8, 9, 11, 13, 18, 23, 24	308 650 201
	Seal Kit Standard 316SS*		308 650 251
	Seal Kit Pollution Recovery 304SS		308 650 202
	Seal Kit Pollution Recovery 316SS*		308 650 252
Kit C	Fastener Kit 304SS	incl. pos. 1, 2, 26, 27	308 656 202
	Fastener Kit 316SS*		308 656 252

SPARE PARTS - STATOR AND ROTOR

P_N [kW]	U_N [V]	**Motor Nb.** 304SS	**Motor Nb.** 316SS	Stator Nb.. 304SS / 316SS	Rotor Nb. 304SS	Rotor Nb. 316SS
0,16 - 0,32	400	234 870 6721L	234 870 6821L	305 *** ***	178 164 901K	178 164 951K
0,30 - 0,60	400	234 871 6721L	234 871 6821L	305 *** ***	178 164 903K	178 164 953K
0,55 - 1,1	400	234 872 6721L	234 872 6821L	305 *** ***	178 164 905K	178 164 955K