

4" 3~ ENCAPSULATED PM MOTOR

OPTIONAL



FEATURES & BENEFITS

- NEMA mounting design
- Stainless steel splined shaft
- StatorShield™ - Franklin encapsulation system
- Factory filled with Franklin's FES93 motor fill solution
- 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
- Pressure-equalizing diaphragm
- High efficiency electrical design for low operation costs
- Drinking water approvals

SPECIFICATION

- Rating: 0,55 - 3,0 kW, 4 kN Thrust load
- Rating: 3,0 - 7,5 kW, 6,5 kN Thrust load
- Voltage: 220 / 380 V
- Nominal ambient temperature: 30 °C with 0.08 m/s cooling flow
- Voltage tolerance: ±10 %
- Protection IP68 and insulation class B
- Frequency of starts: 20 starts/ hour (with min. 3 minutes resting time)
- motors with factory installed leads 2,5 m (optional)
- Vertical and horizontal operation, shaft upwards
- Rotation counter clock wise facing shaft end (Rotation reversible)

OPTIONS

- Built in lightning arrestors
- Various cable lengths
- Motors with factory-installed lead in single packing
- Motor complete in 316SS with SiC seal
- Special voltages



ISO 9001

All motors are manufactured in ISO 9001 certified plants and 100% tested

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" ENCAPSULATED PM MOTOR - 3- PHASEN DESIGN

MODEL NUMBERS - PM MOTOR - 220V / 100HZ

P _N [kW]	U _N [V]	Thrust F [N]	Digit 1 - 6	Digit 7 - 10	
				304SS Single pack with lead*	316SS Single pack with lead*
0,55 - 1,1	220	4000	234 071	6721L	6821L
1,1 - 2,2	220	4000	234 072	6721L	6821L
2,2 - 3,0	220	4000	234 073	6721L	6821L
3,0 - 4,0	220	6500	234 074	3421L	3521L

* Lead lengths Motors "L" : with pre-mounted cable 1.5m/ 6500N- 2,5m

MODEL NUMBERS - PM MOTOR -380V / 100HZ

P _N [kW]	U _N [V]	Thrust F [N]	Digit 1 - 6	Digit 7 - 10	
				304SS Single pack with lead*	316SS Single pack with lead*
1,1 - 2,2	380	4000	234 062	6721L	6821L
2,2 - 3,0	380	4000	234 063	6721L	6821L
3,0 - 4,0	380	6500	234 064	3421L	3521L
4,0 - 7,5	380	6500	234 066	3421L	3521L

* Lead lengths Motors "L" : with pre-mounted cable 1.5m/ 6500N- 2,5m

WINDING RESISTANCE DATA 220V / 100 HZ

P _N [kW]	U _N [V]	Stator-Ref.	U - V [Ohm]
0,55 - 1,1	220	327 460 945	7,70 - 8,14
1,1 - 2,2	220	327 461 945	2,30 - 2,40
2,2 - 3,0	220	327 462 945	1,45 - 1,54
3,0 - 4,0	220	327 463 902	0,78 - 0,82

WINDING RESISTANCE DATA 380V / 100 HZ

P _N [kW]	U _N [V]	Stator-Ref.	U - V [Ohm]
1,1 - 2,2	380	327 451 945	8,0 - 8,40
2,2 - 3,0	380	327 452 945	4,40 - 4,62
3,0 - 4,0	380	327 453 902	2,70 - 2,90
4,0 - 7,5	380	327 454 902	1,88 - 2,07

3~ PERFORMANCE DATA 220V / 100 HZ

Motor MDL	P_N [kW]	Thrust F [N]	U_N [V]	n [min^{-1}]	I_N [A]	I_A/I_N	η [%]	$\cos \varphi$ [%]	T_N [Nm]	T_A/T_N
234 071	0,55	4000	220	3000	1,8	1	85,1	0,95	1,8	1
	0,75	4000	220	3000	2,4	1	85,6	0,97	2,4	1
	1,1	4000	220	3000	3,8	1	83,5	0,99	3,5	1
234 072	1,1	4000	220	3000	3,4	1	86,4	0,96	3,5	1
	1,5	4000	220	3000	4,8	1	88,0	0,97	4,8	1
	2,2	4000	220	3000	7,0	1	87,0	0,99	7,0	1
234 073	2,2	4000	220	3000	6,9	1	90,3	0,96	7,0	1
	3,0	4000	220	3000	9,4	1	90,2	0,97	9,6	1
234 074	3,0	6500	220	3000	10,2	1	90,7	0,94	9,6	1
	3,7	6500	220	3000	12,0	1	91,0	0,96	11,8	1
	4,0	6500	220	3000	13,0	1	91,0	0,97	12,7	1

3~ PERFORMANCE DATA 380V / 100 HZ

Motor MDL	P_N [kW]	Thrust F [N]	U_N [V]	n [min^{-1}]	I_N [A]	I_A/I_N	η [%]	$\cos \varphi$ [%]	T_N [Nm]	T_A/T_N
234 062	1,1	4000	380	3000	2,2	1	86,4	0,95	3,5	1
	1,5	4000	380	3000	2,8	1	88,0	0,96	4,8	1
	2,2	4000	380	3000	4,0	1	87,0	0,97	7,0	1
234 063	2,2	4000	380	3000	4,0	1	89,6	0,95	7,0	1
	3,0	4000	380	3000	5,4	1	90,0	0,97	9,6	1
234 064	3,0	6500	380	3000	5,7	1	89,7	0,96	9,6	1
	3,7	6500	380	3000	6,7	1	90,2	0,97	11,8	1
	4,0	6500	380	3000	7,3	1	90,2	0,98	12,7	1
234 066	4,0	6500	380	3000	7,3	1	90,2	0,98	12,7	1
	5,5	6500	380	3000	9,7	1	91,0	0,95	17,5	1
	7,5	6500	380	3000	13,1	1	90,5	0,96	23,9	1

The performance data is based on measurements with Franklin Electric measuring equipment.

*Since this is an integrated system (motor plus electronics), these values refer to the FI input (mains side).

WINDING RESISTANCE 220V/100HZ

P_N [kW]	U_N [V]	Stator Ref.	U - V (Ohm)	Rotor Ref.
0,55 - 1,1	220	327 460 945	7,70 - 8,14	178 172 901
1,1 - 2,2	220	327 461 945	2,30 - 2,40	178 172 903
2,2 - 3,0	220	327 462 945	1,45 - 1,54	178 172 904
3,0 - 4,0	220	327 463 902	0,78 - 0,82	178 173 921

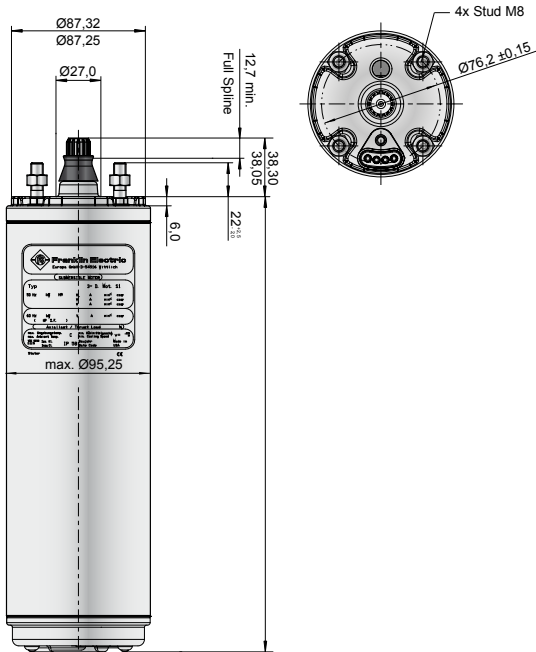
WINDING RESISTANCE 380V/100HZ

P_N [kW]	U_N [V]	Stator Ref.	U - V (Ohm)	Rotor Ref.
1,1 - 2,2	380	327 451 945	8,0 - 8,40	178 172 903
2,2 - 3,0	380	327 452 945	4,40 - 4,62	178 172 904
3,0 - 4,0	380	327 453 902	2,70 - 2,90	178 173 921
4,0 - 7,5	380	327 454 902	1,88 - 2,07	178 141 901

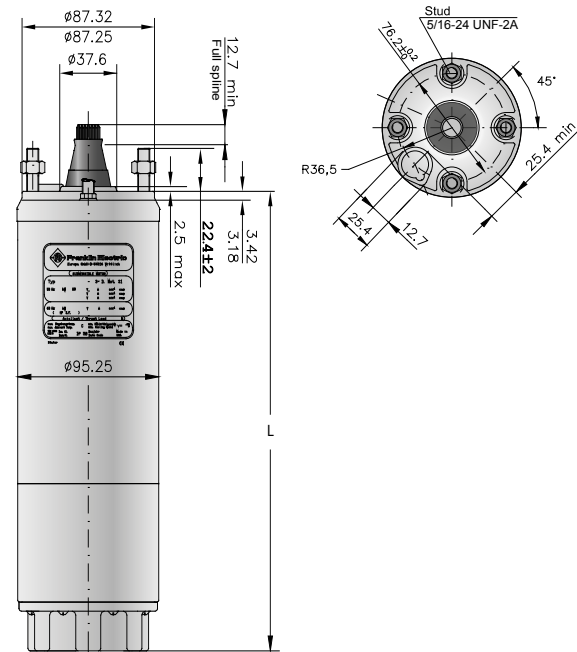


MOTOR DIMENSION

0,55kW - 3,0kW [4000N]



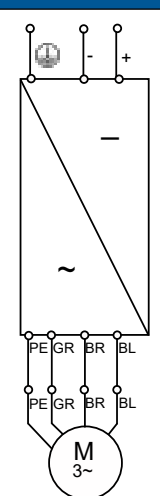
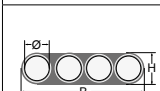
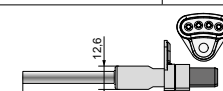

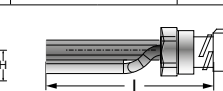
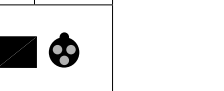
3,0 - 7,5kW [6500N]



P _N [kW]	U _N [V]	Thrust F [N]	L [mm]	M [kg]	Motor with lead in single pack	
					[mm]	[kg]
0,55 - 1,1	220	4000	208,00	5,20	530 x 100 x 110	6
1,1 - 2,2	220	4000	253,00	7,20	530 x 100 x 110	8
2,2 - 3,0	220	4000	343,00	9,20	560 x 100 x 110	10
3,0 - 4,0	220	6500	455,00	15,20	560 x 100 x 110	16
1,1 - 2,2	380	4000	253,00	7,20	560 x 100 x 110	8
2,2 - 3,0	380	4000	343,00	9,20	560 x 100 x 110	10
3,0 - 4,0	380	6500	455,00	15,20	796 x 100 x 110	16
4,0 - 7,5	380	6500	530,5	19,8	796 x 100 x 110	20,2

tolerances according to NEMA MG 1-18.388

ELECTRICAL CONNECTION 3~ MOTORS DOL

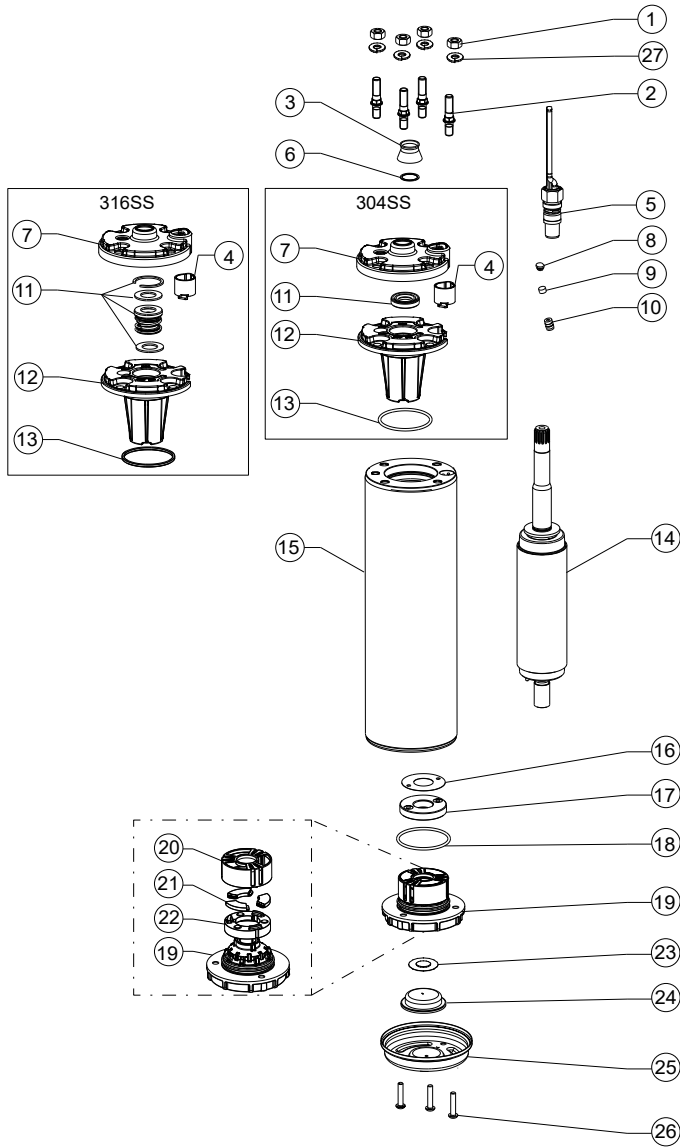
3~ PM motors DOL	Motor lead**						
	0,55kW - 3,0kW [4000N]			3,0 - 7,5kW [6500N]			
	Ø [mm²]	B [mm]	H [mm]	Ø [mm²]	B [mm]	B1 [mm]	H [mm]
		4 x 1,5	14,6 ± 0,3	5,1 ± 0,3	3X1,5+1G1,5	16,8	10,7
							
	L [m]*	304SS / 316SS		L [m]*	304SS / 316SS		
	1,5	310 178 501		2,5	310 113 502		
	2,5	310 178 502		5	310 113 505		
	5	310 178 505		10	310 113 510		
	10	310 178 510		15	310 113 515		
	15	310 178 515		20	310 113 520		
	20	310 178 520					

*For special lead lengths, please consult Franklin Electric.

**Cable size designed for submerged operation. For air operation, please consult Franklin Electric.

MOTOR PART DESCRIPTION

MOTORDSIGN 0,55 - 3,0 KW / 4000 N



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 67
6	Washer	1	Kit B
7	Top Endbell, Cover	1	Kit A1
8	Plug	1	Kit B / A1
9	Filter	1	Kit B / A1
10	Valve	1	Kit A1
11	Shaft Seal	1	Kit B / A1
12	Top Endbell	1	Kit A1
13	O- Ring	1	Kit B / A1
14	Rotor	1	see page 69
15	Stator	1	see page 69
16	Level washer	1	Kit A2
17	Thrust disk assy	1	Kit A2
18	O- Ring	1	Kit B / A2
19	Bottom Endbell	1	Kit A2
20	Bearing cage	1	Kit A2
21	Segments	3	Kit A2
22	Rocking Disk	1	Kit A2
23	Diaphragm washer	1	Kit B
24	Diaphragm	1	Kit B
25	Bottom Endbell Cover 304SS	1	156 414 201
	Bottom Endbell Cover 316SS	1	156 414 301
26	Screw, Cover	3	Kit C
27	Lock washer	4	Kit C

MOTOR SPARE PARTS

OVERVIEW SPARE PARTS KITS 4000N

P_N [kW]	0,55 - 3,0kW		
Kit A1	Upper end bell 304SS (Pos. 7 -13)	incl. Pos. 7 - 13	308 462 901
	Upper end bell 316SS (Pos. 7 -13)		308 462 951
Kit A2	Lower end bell incl. Thrust Bearing Kit 4000N	incl. Pos. 16 - 22	308 464 911
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
Kit C	Fastener Kit 304SS	incl. Pos. 1, 2, 4, 26	308 656 201
	Fastener Kit 316SS		308 656 251

SPARE PARTS STATOR AND ROTOR 0,55 - 3,0kW / 220V

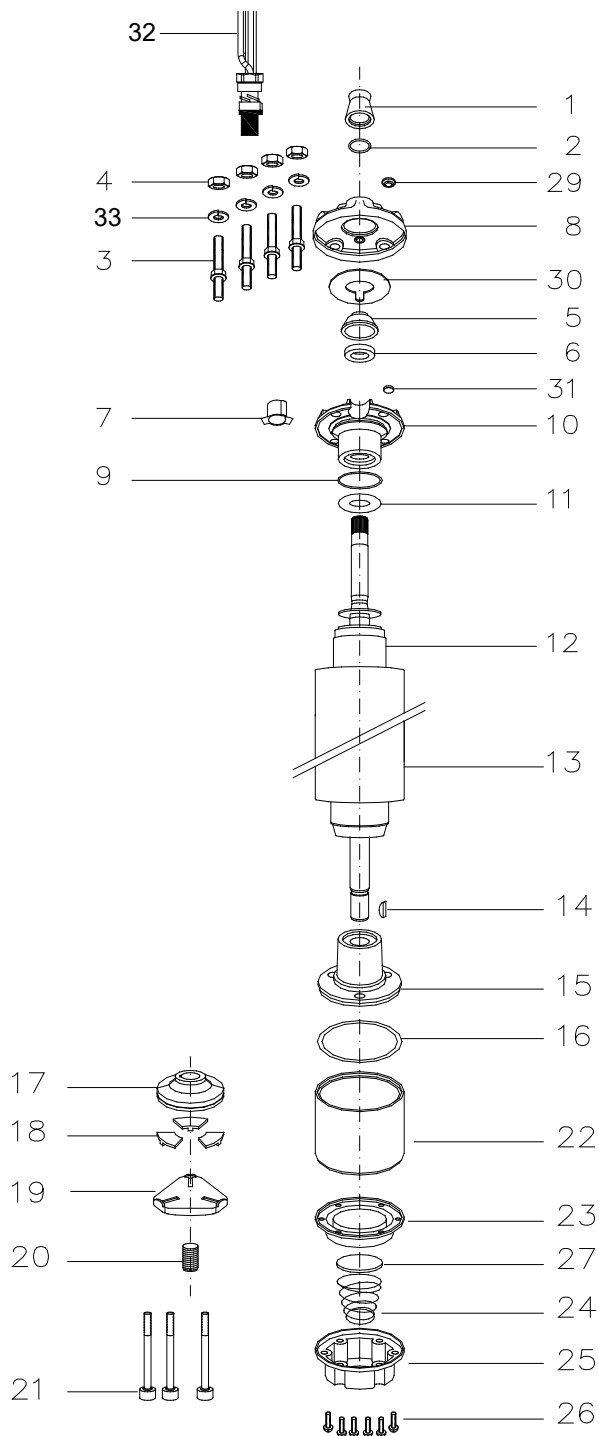
P_N [kW]	U_N [V]	Thrust F [N]	Motor Model No.		Stator Model No.	Rotor
			304SS	316SS		
0,55 - 1,1	220	4000	6700L	6800L	327 460 945	178 172 901
1,1 - 2,2	220	4000	6700L	6800L	327 461 945	178 172 903
2,2 - 3,0	220	4000	6700L	6800L	327 462 945	178 172 904

SPARE PARTS STATOR AND ROTOR 1,1 - 3,0kW / 380V

P_N [kW]	U_N [V]	Thrust F [N]	Motor Model No.		Stator Model No.	Rotor
			304SS	316SS		
1,1 - 2,2	400	4000	6700L	6800L	327 451 945	178 172 903
2,2 - 3,0	400	4000	6700L	6800L	327 452 945	178 172 904

MOTOR PART DESCRIPTION

MOTORDSIGN 3,0 - 7,5 KW / 6500 N



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	see page 71
13	Stator	1	see page 71
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
32	Motor lead	1	see page 67
33	Lock washer	4	Kit C

MOTOR SPARE PARTS

OVERVIEW SPARE PARTS KITS 6500 N

P_N [kW]	End bell upper (Pos. 10)	End bell, lower (Pos. 15)	Upthrust washer (Pos. 11)
3,0 - 7,5	308 233 509	177 379 921	308 268 104
Kit A	Thrust Bearing Kit 6500N	incl. Pos.: 17, 18	308 700 301
Kit B	Seal Kit	incl. Pos.: 1, 2, 6, 9, 16, 23, 29, 31	308 900 352
Kit D	Screw Kit	incl. Pos.: 3, 4, 21, 26	308 658 351

SPARE PARTS STATOR AND ROTOR 3,0 - 4,0kW / 220V

P_N [kW]	U_N [V]	Thrust F [N]	Motor Model No.		Stator Model No.	Rotor
			304SS	316SS		
3,0 - 4,0	220	6500	3421L	3521L	327 463 902	178 173 921

SPARE PARTS STATOR AND ROTOR 3,0 - 7,5kW / 380V

P_N [kW]	U_N [V]	Thrust F [N]	Motor Model No.		Stator Model No.	Rotor
			304SS	316SS		
3,0 - 4,0	400	6500	3421L	3521L	327 453 902	178 173 921
4,0 - 7,5	380	6500	3421L	3521L	327 454 902	178 141 921