

6" Encapsulated Motors

Standard:



Optional:



Submersible Motors

Quality in the Well

These 6" encapsulated motors, manufactured in ISO 9001 certified facilities, are built for dependable operation in 6" diameter or larger water wells.

Water lubricated thrust and radial bearings enable a maintenance free operation.

A special diaphragm ensures pressure compensation inside the motor. The motor is filled with a special FES91 fluid, providing frost protection down to -15°C storage temperature.

The Sand fighter® SiC seal system is standard.

Product advantages:

- Hermetically sealed stator, anti track, self healing stator resin prevents motor burn out
- 37 and 45kW up to 50°C ambient temperature
- Removable "Water Bloc" lead connector
- Cable material according to drinking water regulations (VDE / ACS / KTW approved)
- „Sand fighter®“ Motor with SiC-Mechanical Seal and Sand Slinger
- High efficiency electrical design for low operation cost
- All motors prefilled and 100% tested
- Max. storage temperature -15°C - + 60°C
- Non contaminating FES91 -filled design
- 45kN Thrust Capacity (Standard in 37kW and 45kW motors)

Technical Specifications

- 4 ... 45 kW
- 6" NEMA flange
- Protection: IP 68
- Starts per hour: 20
- Installation: vertical/horizontal
- Standard Voltage: 380-415V/50Hz, 460V/60Hz
- Voltage tolerance 50 Hz from nominal: -10%/+6%
- Voltage tolerance 60 Hz from nominal: ±10%
- Motor protection: Select thermal overloads according to DIN 61947-4-1
- Insulation: Class F
- Rated ambient temperature: 4- 30kW up to 30°C; 37 & 45 kW up to 50°C
- Cooling flow: min. 0,16 m/s
- Motor lead in 4m length (VDE / ACS / KTW approved)

Options

- Other voltages
- YΔ - start (pos. of cables 90°)
- 45kN High Thrust Version (standard in 37kw and 45kW motors)
- Motors complete in 304SS and in 316SS
- PT 100 temperature sensor (sold separately)
- Special Lead lengths up to 50m
- Built-in PTC temperature sensor
- Built-in SubMonitor Transmitter (standard for 37&45kW)

6" Standard Model Numbers 50 Hz

P _N [kW]	U _N [V]	Model Number Digit 1 – 6		Model Number Digit 7 - 10									
		DOL	YΔ	Standard			with SubMonitor Transmitter			with PTC			45 000N Motor Version
				Cast Iron	304SS	316SS	Cast Iron	304SS	316SS	Cast Iron	304SS	316SS	
4	220, 230	236 680	236 670	9061	1061	3961	6061	1161	4061	2061	1261	3661	**63
	380 - 415	236 610	236 710										
	500	236 700	236 790										
5,5	220, 230	236 681	236 671	9061	1061	3961	6061	1161	4061	2061	1261	3661	**63
	380 - 415	236 611	236 711										
	500	236 701	236 791										
7,5	220, 230	236 682	236 672	9061	1061	3961	6061	1161	4061	2061	1261	3661	**63
	380 - 415	236 612	236 712										
	500	236 702	236 792										
9,3	220, 230	236 015	236 005	9061	1061	3961	6061	1161	4061	2061	1261	3661	**63
	380 - 415	236 001	236 011										
	500	236 008	236 018										
11	220, 230	236 683	236 673	9061	1061	3961	6061	1161	4061	2061	1261	3661	**63
	380 - 415	236 613	236 713										
	500	236 703	236 793										
15	220, 230	236 684	236 674	9061	1061	3961	6061	1161	4061	2061	1261	3661	**63
	380 - 415	236 614	236 714										
	500	236 704	236 794										
18,5	220, 230	236 685	236 675	9061	1061	3961	6061	1161	4061	2061	1261	3661	**63
	380 - 415	236 615	236 715										
	500	236 705	236 795										
22	220, 230	236 686	236 676	9061	1061	3961	6061	1161	4061	2061	1261	3661	**63
	380 - 415	236 616	236 716										
	500	236 706	236 796										
30	220, 230		236 677	9061	1061	3961	6061	1161	4061	2061	1261	3661	**63
	380 - 415	236 617	236 717										
	500	236 707	236 797										
37	380 - 415	276 618	276 718				6161		6361				Standard
45	380 - 415	276 619	276 719				6161		6361				Standard

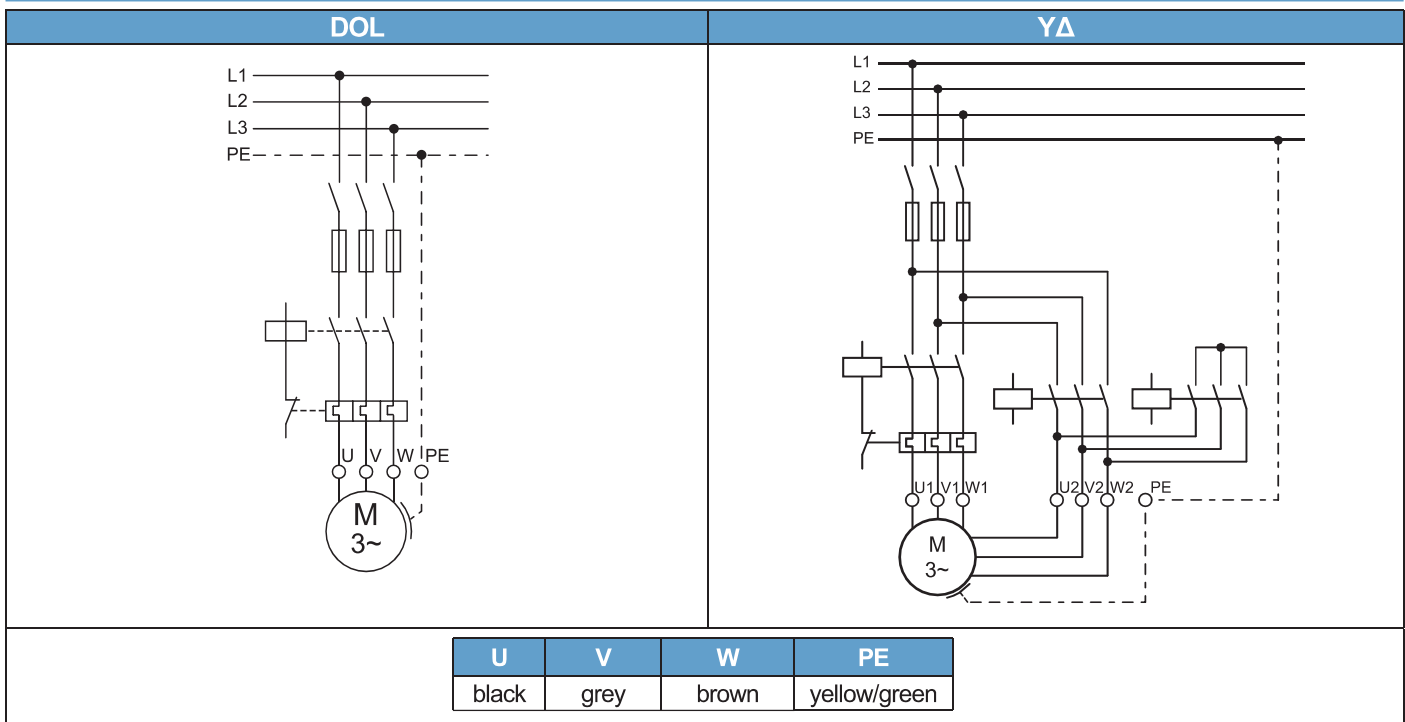
6" Performance Data 50 Hz

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		
4,0	15.500	220	2840	16,4	73	76,0	78,5	77,0	0,70	0,80	0,85	12,5	17,9
		230	2860	16,1	75	74,0	77,5	78,0	0,62	0,74	0,82	12,3	20,2
		380	2840	9,5	42	76,0	78,5	77,0	0,70	0,80	0,85	12,5	17,9
		400	2860	9,3	43	74,0	77,5	78,0	0,62	0,74	0,82	12,3	20,2
		415	2880	9,3	46	74,5	78,0	78,5	0,57	0,70	0,78	12,3	20,8
5,5	15.500	500	2840	7,2	32	76,0	78,5	77,0	0,70	0,80	0,85	12,5	17,9
		220	2850	22,1	104	77,0	79,0	78,0	0,70	0,80	0,85	18,7	30,3
		230	2870	21,7	106	74,0	78,0	79,0	0,63	0,75	0,82	18,6	35,0
		380	2850	12,8	60	77,0	79,0	78,0	0,70	0,80	0,85	18,7	30,3
		400	2870	12,5	64	74,0	78,0	79,0	0,63	0,75	0,82	18,6	35,0
7,5	15.500	415	2880	12,8	66	74,0	77,5	78,0	0,58	0,70	0,78	18,6	35,9
		500	2850	9,7	46	77,0	79,0	78,0	0,70	0,80	0,85	18,7	30,3
		220	2850	28,2	143	77,5	79,5	79,0	0,74	0,83	0,87	25,0	43,0
		230	2860	27,7	144	75,0	78,5	79,0	0,70	0,81	0,86	25,0	47,7
		380	2850	16,3	83	77,5	79,5	79,0	0,74	0,83	0,87	25,0	43,0
9,3	15.500	400	2860	16,0	83	75,0	78,5	79,0	0,70	0,81	0,86	25,0	47,7
		415	2880	16,2	91	75,0	78,5	79,0	0,61	0,74	0,81	24,7	51,3
		500	2850	12,4	63	77,5	79,5	79,0	0,74	0,83	0,87	25,0	43,0
		220	2870	36,4	183	79,0	81,0	81,0	0,71	0,81	0,86	31,1	61,6
		230	2870	36,0	189	78,0	81,0	81,0	0,58	0,72	0,80	31,1	68,6
11,0	15.500	380	2870	21,0	106	79,0	81,0	81,0	0,71	0,81	0,86	31,1	61,6
		400	2870	20,7	112	78,0	81,0	81,0	0,58	0,72	0,80	31,1	68,2
		415	2890	21,0	116	74,0	79,0	80,0	0,55	0,70	0,78	30,8	74,1
		500	2870	16,0	80	79,0	81,0	81,0	0,71	0,81	0,86	31,1	61,6
		220	2860	41,5	218	80,0	82,0	81,0	0,73	0,82	0,87	37,4	72,8
15,0	15.500	230	2860	40,4	224	78,5	81,0	81,0	0,68	0,79	0,85	37,3	78,3
		380	2860	24,0	126	80,0	82,0	81,0	0,73	0,82	0,87	37,4	72,8
		400	2860	23,3	129	78,5	81,0	81,0	0,68	0,79	0,85	37,3	78,3
		415	2870	24,1	136	74,5	78,5	79,5	0,61	0,74	0,81	37,2	84,8
		500	2860	18,2	96	80,0	82,0	81,0	0,73	0,82	0,87	37,4	72,8
18,5	15.500	220	2850	55,0	283	81,0	83,0	82,0	0,76	0,84	0,86	50,0	104,0
		230	2860	54,2	289	79,0	81,5	81,0	0,70	0,80	0,85	49,9	107,3
		380	2850	32,0	164	81,0	83,0	82,0	0,76	0,84	0,86	50,0	104,0
		400	2860	31,3	169	79,0	81,5	81,0	0,70	0,80	0,85	49,9	107,3
		415	2870	31,0	179	77,0	81,0	81,0	0,65	0,77	0,83	49,6	116,6
22	15.500	500	2850	24,3	124	81,0	83,0	82,0	0,76	0,84	0,86	50,0	104,0
		220	2850	69,2	380	82,0	83,0	82,0	0,76	0,84	0,87	62,4	139,7
		230	2860	66,7	392	80,0	82,5	82,0	0,68	0,79	0,85	62,4	159,6
		380	2850	40,0	220	82,0	83,0	82,0	0,76	0,84	0,87	62,4	139,7
		400	2850	38,5	231	80,0	82,5	82,0	0,68	0,79	0,85	62,4	154,6
30	27.500	415	2850	38,5	240	78,5	81,5	82,0	0,64	0,76	0,83	62,1	166,8
		500	2850	30,5	168	82,0	83,0	82,0	0,76	0,84	0,87	62,4	139,7
		220	2840	81,2	441	82,0	83,0	82,0	0,78	0,86	0,88	75,3	160,0
		230	2860	78,5	455	81,0	83,0	83,0	0,71	0,81	0,86	74,7	177,6
		380	2840	47,0	255	82,0	83,0	82,0	0,78	0,86	0,88	75,3	160,0
37	45.000	400	2860	45,3	268	81,0	83,0	83,0	0,71	0,81	0,86	74,7	177,6
		415	2870	45,0	278	79,5	82,5	82,5	0,66	0,78	0,84	74,5	189,9
		500	2840	35,8	194	82,0	83,0	82,0	0,78	0,86	0,88	75,3	160,0
		220	2860	111	645	83,0	83,5	82,5	0,74	0,82	0,85	99,6	237,4
		230	2860	107	670	80,5	83,0	83,0	0,67	0,79	0,84	99,4	263,1
45	45.000	380	2860	64,1	373	83,0	83,5	82,5	0,74	0,82	0,85	99,6	237,4
		400	2860	63,5	393	80,5	83,0	83,0	0,67	0,79	0,84	99,4	263,1
		415	2880	64,5	407	79,0	82,0	82,5	0,62	0,74	0,81	99,0	283,5
		500	2860	49,0	283	83,0	83,5	82,5	0,74	0,82	0,85	99,6	237,4
		380	2850	80,1	387	77	80,0	81,0	0,75	0,82	0,87	124,8	269,8
45	45.000	400	2870	77,9	411	76	80,0	81,0	0,68	0,78	0,85	124,5	269,8
		415	2880	77,9	423	75	79,0	81,0	0,64	0,75	0,82	123,8	269,8
		380	2850	95,5	480	79	81,0	82,0	0,76	0,83	0,87	150,5	287,4
45	45.000	400	2870	93,9	509	78	80,0	82,0	0,72	0,79	0,84	149,1	325,4
		415	2880	93,2	531	77	80,0	82,0	0,68	0,77	0,82	149,1	355,2

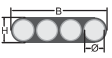
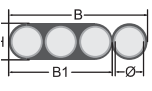
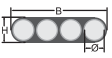
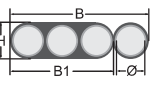
Winding Resistances 50 Hz

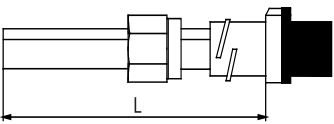
P _N kW	U _N [V]	3 ~ DOL		3 ~ YΔ	
		Stator Ref.	U - V / Ohm V - W / Ohm U - W / Ohm	Stator Ref.	U ₁ - U ₂ / Ohm V ₁ - V ₂ / Ohm W ₁ - W ₂ / Ohm
4.0	220, 230	336 694 ...	1.20 - 1.40	336 740 ...	1.75 - 2.15
	380 - 415	336 327 ...	3.40 - 4.20	336 747 ...	5.40 - 6.60
	500	336 787 ...	5.80 - 7.10	337 224 ...	9.00 - 11.0
5.5	220, 230	336 695 ...	0.72 - 0.90	336 741 ...	1.10 - 1.30
	380 - 415	336 328 ...	2.20 - 2.70	336 748 ...	3.70 - 4.50
	500	336 788 ...	4.00 - 4.90	337 225 ...	6.28 - 7.70
7.5	220, 230	336 696 ...	0.59 - 0.72	336 742 ...	0.87 - 1.08
	380 - 415	336 329 ...	1.70 - 2.20	336 749 ...	2.40 - 2.90
	500	336 789 ...	3.20 - 3.90	337 226 ...	4.53 - 5.54
9.3	220, 230	338 100 ...	0.42 - 0.50	338 103 ...	0.63 - 0.77
	380 - 415	337 915 ...	1.25 - 1.55	338 061 ...	1.94 - 2.38
	500	338 220 ...	2.60 - 3.10	338 223 ...	3.27 - 4.00
11.0	220, 230	336 697 ...	0.35 - 0.44	336 743 ...	0.53 - 0.65
	380 - 415	336 330 ...	1.05 - 1.30	336 750 ...	1.64 - 2.00
	500	336 790 ...	1.80 - 2.20	337 227 ...	2.73 - 3.35
15.0	220, 230	336 698 ...	0.25 - 0.30	336 744 ...	0.38 - 0.47
	380 - 415	336 331 ...	0.75 - 0.94	336 751 ...	1.22 - 1.50
	500	336 791 ...	1.30 - 1.60	337 228 ...	2.04 - 2.50
18.5	220, 230	336 699 ...	0.20 - 0.24	336 745 ...	0.29 - 0.36
	380 - 415	336 332 ...	0.59 - 0.73	336 752 ...	0.93 - 1.15
	500	336 792 ...	1.10 - 1.34	337 229 ...	1.70 - 2.10
22.0	220, 230	336 700 ...	0.16 - 0.20	336 746 ...	0.24 - 0.30
	380 - 415	336 333 ...	0.48 - 0.60	336 753 ...	0.74 - 0.92
	500	336 793 ...	0.83 - 1.00	337 230 ...	1.26 - 1.55
30.0	220, 230			337 353 ...	0.16 - 0.20
	380 - 415	336 334 ...	0.32 - 0.40	336 754 ...	0.50 - 0.61
	500	336 794 ...	0.60 - 0.73	337 231 ...	0.91 - 1.11
37.0	380 - 415	336 710 ...	0.25 - 0.32	336 755 ...	0.36 - 0.45
45.0	380 - 415	336 336 ...	0.22 - 0.27	336 756 ...	0.33 - 0.41

Electrical Connection



VDE / ACS / KTW Approved Leads* 304 / 316SS

DOL	Ø mm ²	Lenght [m]	St.#	Motor			B [mm] (± 0,3)	B1 [mm] (±0,3)	H [mm] (± 0,3)
				220V	380 - 415V	500V			
	4G4	4	1	4-11kW	4-22 kW	4-30 kW	19,0	-	7,0
	3X8,4+1G8,4	4	1	15-22 kW	30-45 kW		29,5	19,5	8,9
YΔ	Ø mm ²	Lenght [m]	St.#	Motor			B [mm] (± 0,3)	B1 [mm] (±0,3)	H [mm] (± 0,3)
				220V	380 - 415V	500V			
	4G4 (L=4m)	4	2	4-22kW	4-30 kW		19,0	-	7,0
	3X8,4+1G8,4	4	1	30-37kW	37-45 kW		29,5	19,5	8,9
	3X8,4		1				19,6	-	8,9

	Lead Part Numbers 304		
	4G4mm ²	3X8,4+1G8,4mm ²	3X8,4mm ²
4 m	310 125 004	310 145 004	310 155 004
8 m	310 125 008	310 145 008	310 155 008
10 m	310 125 010	310 145 010	310 155 010
15 m	310 125 015	310 145 015	310 155 015
20 m	310 125 020	310 145 020	310 155 020
25 m	310 125 025	310 145 025	310 155 025
30 m	310 125 030	310 145 030	310 155 030
35 m	310 125 035	310 145 035	310 155 035
40 m	310 125 040	310 145 040	310 155 040
45 m	310 125 045	310 145 045	310 155 045
50 m	310 125 050	310 145 050	310 155 050
	Lead Part Numbers 316SS		
	4G4mm ²	3X8,4+1G8,4mm ²	3X8,4mm ²
4 m	310 125 504	310 145 504	310 155 504
8 m	310 125 508	310 145 508	310 155 508
10 m	310 125 510	310 145 510	310 155 510
15 m	310 125 515	310 145 515	310 155 515
20 m	310 125 520	310 145 520	310 155 520
25 m	310 125 525	310 145 525	310 155 525
30 m	310 125 530	310 145 530	310 155 530
35 m	310 125 535	310 145 535	310 155 535
40 m	310 125 540	310 145 540	310 155 540
45 m	310 125 545	310 145 545	310 155 545
50 m	310 125 550	310 145 550	310 155 550

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



6" Motor Design 4- 30 kW

Cast Iron Version

304SS

316SS



Material DIN / AISI

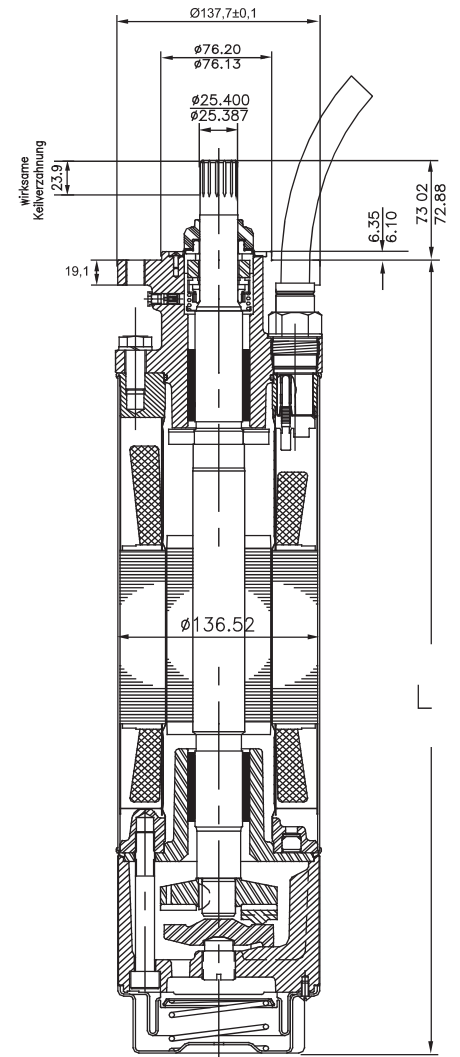
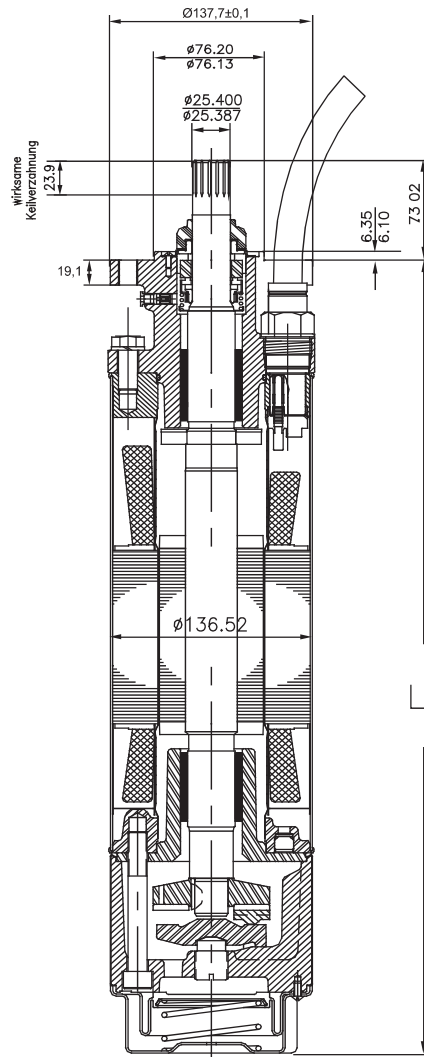
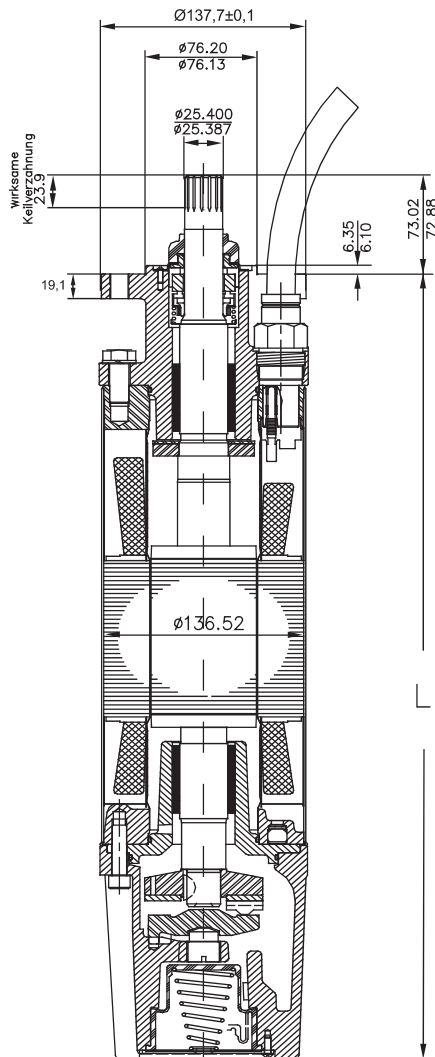
Part	Cast Iron Version	304	316 SS
Shell	1.4301	1.4301	1.4571
Upper end bell	Cast iron powder coated	1.4301	1.4408
Thrust housing	Cast iron powder coated	1.4301	1.4408
Mechanical seal	SiC / SiC	SiC / SiC	SiC / SiC
Seal cover	1.4301	1.4301	1.4401
Slinger	NBR	NBR	NBR
Shaft end	1.4305	1.4305	1.4462
Diaphragm	NBR	NBR	NBR
Lead	EPR	EPR	EPR

6" Motor Design 4 - 30 kW

Cast Iron Version

304SS

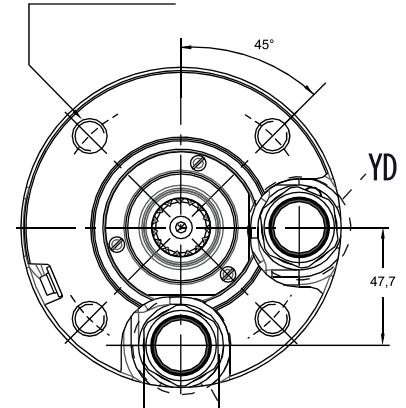
316SS



Motor Sizes

P _N [kW]	Cast Iron L [mm]	304SS L [mm]	316SS L [mm]	Motor Package Size [mm]	Shipping Weight [kg]	
					DOL	YΔ
4	581,2	570,7	570,7	155 x 212 x 800	41,3	40,3
5,5	614,4	604,0	604,0	155 x 212 x 800	44,9	43,9
7,5	646,2	635,8	635,8	155 x 212 x 800	49,0	48,0
9,3	678,7	668,3	668,3	155 x 212 x 1070	50,3	51,3
11	711,2	700,8	700,8	155 x 212 x 1070	54,7	53,7
15	776,2	765,8	765,8	155 x 212 x 1070	60,5	59,5
18,5	841,5	831,1	831,1	155 x 212 x 1070	67,1	66,1
22	906,5	896,1	896,1	155 x 212 x 1070	73,1	72,1
30	1036,6	1026,2	1026,2	155 x 212 x 1200	87,7	87,7

4 threaded holes
1/2-20 UNF-2B
hole circle - Ø 111,2 ±0,3





6" Motor Design 37- 45 kW

Cast Iron Version

316SS

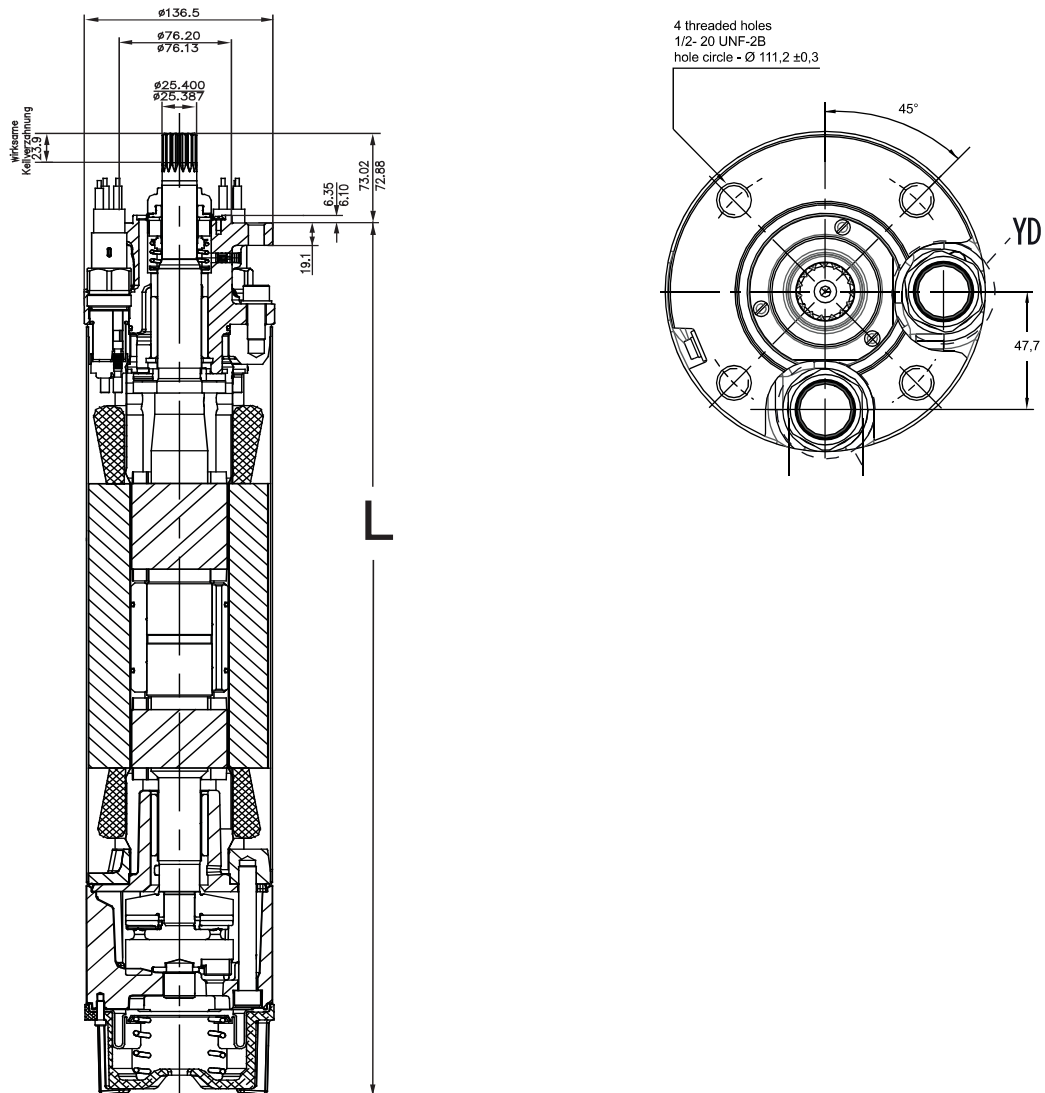


Material DIN / AISI

Part	Cast Iron Version	316 SS
Shell	1.4301	1.4571
Upper end bell	Cast iron powder coated	1.4408
Thrust housing	Cast iron powder coated	1.4408
Mechanical seal	SiC / SiC	SiC / SiC
Seal cover	1.4301	1.4401
Slinger	Viton	Viton
Shaft end	1.4305	1.4542
Diaphragm	Viton	Viton
Lead	EPR	EPR
Jam Nut (Lead)	Brass	1.4401
Lead bushing	Rubber	Rubber

6" Motor Design 37- 45 kW

Cast Iron / 316SS



Motor Sizes

P_N [kW]	304 L [mm]	316 L [mm]	Motor Package Size [mm]	Shipping Weight [kg]
37	1476,7	1476,7	223 x 267 x 1823	140
45	1629,2	1629,2	223 x 267 x 1823	156