

INTEROBIZ

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kW	4"CS 1 ~	4"CS 3 ~	6"CS 3 ~	8"CS 3 ~	10"CS 3 ~	kW
0,37	0,37	0,37				0,37
0,55	0,55	0,55				0,55
0,75	0,75	0,75				0,75
1,1	1,1	1,1				1,1
1,5	1,5	1,5				1,5
2,2	2,2	2,2				2,2
3		3				3
4		4	4			4
5,5		5,5	5,5			5,5
7,5			7,5			7,5
9,2			9,2			9,2
11			11			11
13			13			13
15			15			15
18,5			18,5			18,5
22			22			22
26			26			26
30			30	30		30
37				37		37
45				45		45
51				51		51
55				55		55
59				59		59
66				66		66
75				75	75	75
92				92	92	92
110					110	110
132					132	132
150					150	150
165					165	165

Construction

The Calpeda 4", 6", 8" and 10" submersible motors are built using advanced technology and components of superior quality that they ensure good mechanical strength and excellent electrical reliability.

The 4" motors have a special food grade dielectric fluid that gives a better lubricant effect, increasing the life of all moving parts and the copper wires.

The 6", 8" e 10" motors are in a water bath with the wire being coated with polyvinyl chloride.

All the Calpeda motors can be rewound and they are NEMA STANDARD.

Operating conditions

Motor	4"	6"	8"	10"
Max. Liquid temperature	30 °C	25 °C	25 °C	25 °C
Max. starts per hour	20	15	15	10
Cooling : minimum flow velocity	8 cm/s	16 cm/s	20 cm/s	20 cm/s

Continuous duty.

Operation data

2-pole induction motor, 50 Hz (n = 2900 1/min).

Sized for connection to the pumps according to NEMA Standards.

Standard voltages:

- single-phase 230 V - up to 2,2 kW for 4" motors.

- three-phase 230 V; 400 V for 4" motors.

- three-phase 400 V; 400/690 V for 6-8-10" motors.

Voltage tolerance : +6% / -10%.

Recommended type of starting for powers from 7.5 kW:

star/delta, soft start, impedance starting, autotransformer.

Insulation class F for 4" motors, PVC coated wire for 6-8-10" motors.

Protection IP 68.

Cable

Motor 230V - 50Hz - 1~	Section	Length
4CS 0,37 ÷ 2,2 kW	4 G 2 mm ²	2 m

Motor 400V - 50Hz - 3 ~	Section	Length
4CS 0,37 ÷ 2,2 kW	4 G 2 mm ²	2 m
4CS 3 ÷ 5,5 kW	4 G 2 mm ²	3,5 m
6CS 4 ÷ 22 kW	3 + 1 x 4 mm ²	3,5 m
6CS 26 - 30 kW	3 + 1 x 6 mm ²	3,5 m
8CS 30 kW	3 + 1 x 6 mm ²	4 m
8CS 37 - 45 kW	3 + 1 x 10 mm ²	4 m
8CS 51 ÷ 59 kW	3 + 1 x 16 mm ²	4 m
8CS 66 - 75 kW	3 + 1 x 25 mm ²	4 m
8CS 92 kW	3 + 1 x 35 mm ²	4 m
10CS 75 kW	3 + 1 x 25 mm ²	4 m
10CS 92 kW	3 + 1 x 35 mm ²	4 m
10CS 110-132 kW	3 + 1 x 50 mm ²	4 m
10CS 150-165 kW	3 + 1 x 70 mm ²	4 m

Materials

Components	4"
External frame	Cr-Ni steel AISI 304
Motor flange	Brass
Motor base	Plastic
Shaft	Cr-Ni-Mo steel AISI 316
Thrust bearing	Oil wetted
Components	6", 8", 10"
External frame	Cr-Ni steel AISI 304 (Fe P01 plate motor 10")
Supports	GJL 200 EN 1561
Shaft	Hardened and tempered Cr steel AISI 420
Thrust bearing	Oscillation pads
Bushings	Graphite (Bronze for 8" motor of 51-59-66 kW)

Special features on request

- Other voltage.

- Frequency 60 Hz.

- Special mechanical seal for 6",8",10" motors.

- Cr-Ni-Mo steel AISI 316 shaft for 6",8",10" motors.

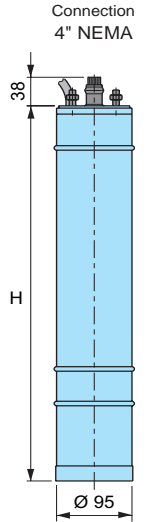
- Operation with frequency converter.

- Higher liquid temperature.

Performance, dimensions and weights

4"CS - 1 ~

Type	PN		IN 230 V A	Power factor cos φ			Efficiency η %			R.P.M.	Direct start		Capacitor 450 Vc μF	Axial thrust N	H mm	Weight kg
	kW	HP		4/4	3/4	2/4	4/4	3/4	2/4		I _A IN	C _A CN				
4CS 0,37M	0,37	0,5	3,2	0,93	0,90	0,84	54	47	37	≈ 2850	3,5	0,55	16	1500	310	7,2
4CS 0,55M	0,55	0,75	4,7	0,92	0,88	0,82	56	52	41		3,7	0,60	25		330	8,2
4CS 0,75M	0,75	1	5,8	0,94	0,90	0,84	61	54,5	44		4	0,55	30		360	9,4
4CS 1,1M	1,1	1,5	8,3	0,94	0,88	0,79	64	57	47		3,8	0,55	40		390	10,8
4CS 1,5M	1,5	2	12,5	0,90	0,80	0,70	64	54	43		3,8	0,56	50		450	13,5
4CS 2,2M	2,2	3	15,1	0,96	0,93	0,85	68	63	54		3,1	0,58	70		500	15,5

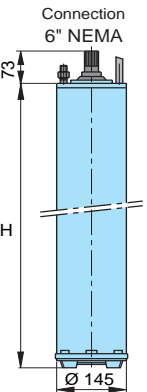


4"CS - 3 ~

Type	PN		IN 400 V A	Power factor cos φ			Efficiency η %			R.P.M.	Direct start		Axial thrust N	H mm	Weight kg
	kW	HP		4/4	3/4	2/4	4/4	3/4	2/4		I _A IN	C _A CN			
4CS 0,37T	0,37	0,5	1,45	0,65	0,56	0,47	59	53	44	≈ 2850	4,8	4,8	1500	310	7,2
4CS 0,55T	0,55	0,75	1,7	0,77	0,68	0,56	63	61	53		4,1	3,2		310	7,2
4CS 0,75T	0,75	1	2,2	0,79	0,68	0,56	64	63	57		4,1	3,1		330	8,2
4CS 1,1T	1,1	1,5	3	0,79	0,69	0,55	68	67	61		4,5	3,3		360	9,4
4CS 1,5T	1,5	2	4,2	0,78	0,68	0,54	68	67	63		4,2	3,2		390	10,8
4CS 2,2T	2,2	3	6	0,72	0,63	0,50	73	73	68		5,2	3,7		490	14,3
4CS 3T	3	4	7,5	0,75	0,68	0,57	77	76	70		5,6	3	575	19,9	
4CS 4T	4	5,5	10	0,79	0,71	0,58	78	78	75		6	2,9	665	24,3	
4CS 5,5T	5,5	7,5	13	0,80	0,73	0,60	78	78	73		5,8	2,8	745	27,7	

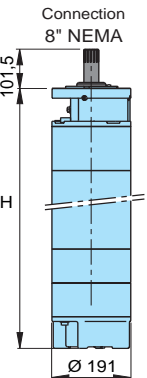
6"CS

Type	PN		IN 400 V A	Power factor cos φ			Efficiency η %			R.P.M.	Direct start		Axial thrust N	H mm	Weight kg
	kW	HP		4/4	3/4	2/4	4/4	3/4	2/4		I _A IN	C _A CN			
6CS 4	4	5,5	11	0,78	0,71	0,61	70	67	60	≈ 2850	4,9	2	20000	530	40
6CS 5,5	5,5	7,5	13,5	0,83	0,79	0,69	72	70	66		4	1,45		530	40
6CS 7,5	7,5	10	18	0,83	0,79	0,69	72	70	66		4,1	1,5		580	45
6CS 9,2	9,2	12,5	21	0,83	0,78	0,68	75	74	70		5	1,7		630	50
6CS 11	11	15	25,5	0,82	0,76	0,65	76	76	74		5,4	2		680	55
6CS 13	13	17,5	29,5	0,79	0,72	0,59	81	81	79		6,2	2,5		780	65
6CS 15	15	20	33	0,81	0,74	0,62	81	82	80		5,6	2,2		780	65
6CS 18,5	18,5	25	40	0,82	0,76	0,63	82	82	81		5,6	2,2		830	70
6CS 22	22	30	48,5	0,80	0,72	0,60	83	82	79		6	2,7		930	80
6CS 26	26	35	58	0,80	0,75	0,64	82	83	80		5,8	2,3		1030	90
6CS 30	30	40	63	0,83	0,76	0,64	83	84	82		5,6	2,1		1130	100



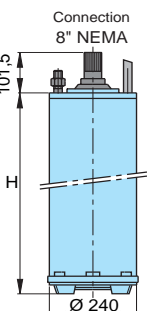
8"CS

Type	PN		IN 400 V A	Power factor cos φ			Efficiency η %			R.P.M.	Direct start		Axial thrust N	H mm	Weight kg
	kW	HP		4/4	3/4	2/4	4/4	3/4	2/4		I _A IN	C _A CN			
8CS 30	30	40	61	0,82	0,74	0,62	85	85	84	≈ 2900	5,3	1,4	30000	1056	141
8CS 37	37	50	74	0,85	0,82	0,72	84	85	83		5,1	1,25		1156	161
8CS 45	45	60	91	0,82	0,77	0,67	87	87	85		5,8	1,7		1236	177
8CS 51	51	70	108	0,78	0,70	0,58	88	89	86		8	2		1376	205
8CS 55	55	75	114	0,80	0,72	0,60	88	89	87		7,6	1,91		1376	205
8CS 59	59	80	121	0,82	0,74	0,62	87	89	87		7,2	1,8		1376	205
8CS 66	66	90	136	0,80	0,73	0,63	88	86	84		7,8	2		1576	245
8CS 75	75	100	147	0,83	0,75	0,65	87	88	86		7,3	1,8		1576	245
8CS 92	92	125	186	0,83	0,78	0,66	88	89	87		7,5	1,89		1735	277



10"CS

Type	PN		IN 400 V A	Power factor cos φ			Efficiency η %			R.P.M.	Direct start		Axial thrust N	H mm	Weight kg
	kW	HP		4/4	3/4	2/4	4/4	3/4	2/4		I _A IN	C _A CN			
10CS 75	75	100	148	0,87	0,81	0,71	83	83	80	≈ 2900	6,1	1,4	30000	1180	219
10CS 92	92	125	183	0,87	0,81	0,70	83	83	81		6,5	1,45		1280	262
10CS 110	110	150	225	0,84	0,78	0,67	84	84	82		6,9	1,5		1480	350
10CS 132	132	180	265	0,85	0,79	0,68	85	85	83		7,35	1,6		1580	393
10CS 150	150	200	290	0,87	0,81	0,69	86	86	83		7,7	1,67		1680	436
10CS 165	165	225	330	0,83	0,76	0,66	87	86	84		8,0	1,75		1780	486



PN Rated power output IN Rated current I_A/IN Starting current / Nominal current C_A/CN Starting torque/Nominal torque

Motor Cooling

To ensure a suitable cooling, water must be in touch with the motor casing with a minimum velocity according to the following table

Motor	Water temperature	Water passage velocity	
		Minimum	Recommended
4"	30 °C	0,08 m/s	1 m/s
6"	25 °C	0,16 m/s	1 m/s
8"	25 °C	0,20 m/s	1 m/s
10"	25 °C	0,20 m/s	1 m/s

For operation with higher temperatures, contact our Technical Sales Department

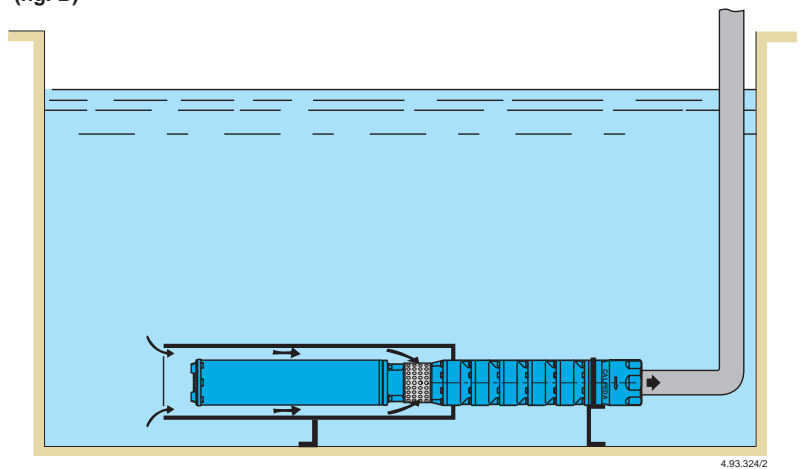
Cooling jacket

When the submersible motor is installed :

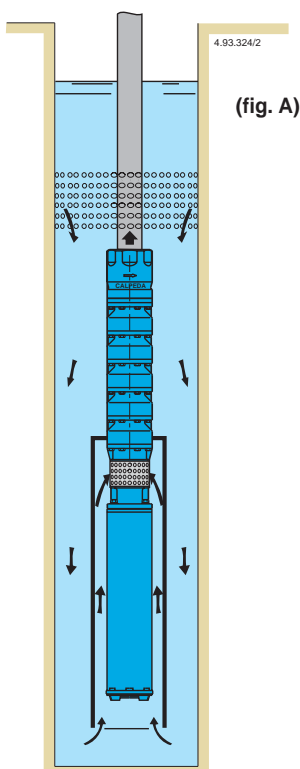
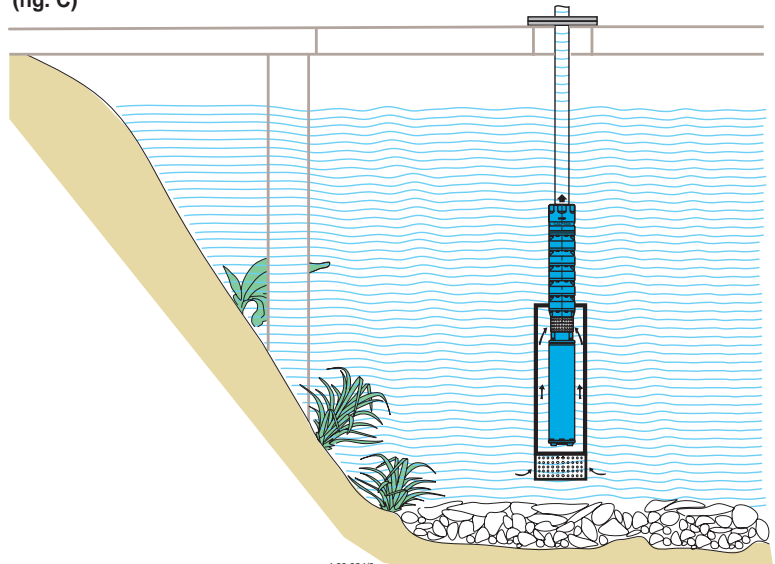
- below the well inlet points (**picture A**);
- in tanks, lakes, basins, etc... (**pictures B and C**)

an external jacket must be installed to create a cooling flow around the motor. Only in this way a safe operation can be assured avoiding any overheating which can damage the motor.

(fig. B)



(fig. C)





Maximum length of electric cables

230 Volt - 50 Hz - 1 ~					
MOTOR kW	1 four-wires cable 4 xmm ²				
	1,5	2,5	4	6	10
cables max m					
0,37	114	191	305		
0,55	77	128	205	308	
0,75	56	94	151	226	376
1,1	38	64	103	154	257
1,5		47	75	113	188
2,2		32	51	77	128

Voltage drop 3%.
Maximum room temperature + 30 °C.

Direct-starting

230 Volt - 50 Hz - 3 ~															
MOTOR kW	1 four-wires cable 4 xmm ²						4 cables 1 xmm ²								
	1,5	2,5	4	6	10	16	25	35	50	70	95	120	150	185	240
cables max m															
0,37	261														
0,55	175	292													
0,75	129	214	343												
1,1	88	146	234	351											
1,5	64	107	172	257											
2,2	44	73	117	176	293										
3	32	54	86	129	215	344									
3,7-4		40	64	97	161	258									
5,5			47	70	117	188	294								
7,5			34	52	86	138	216	302							
9,2				42	70	113	176	247	353						
11					59	94	148	207	295						
15						69	109	152	217	304					
18,5						57	88	124	177	248	336				
22							75	104	149	209	284	358			
30								77	110	155	210	265	331		
37									90	126	171	216	271	334	
45									75	105	142	179	224	276	359
55										86	116	146	183	226	294
75											88	111	138	171	222

400 Volt - 50 Hz - 3 ~																
MOTOR kW	1 four-wires cable 4 xmm ²						4 cables 1 xmm ²									
	1,5	2,5	4	6	10	16	25	35	50	70	95	120	150	185	240	
cables max m																
0,37	777															
0,55	523															
0,75	384															
1,1	262															
1,5	192	320														
2,2	131	218	349													
3	96	160	256	385												
3,7 - 4	72	120	192	289												
5,5	52	88	140	210	351											
7,5		64	103	154	258											
9,2		52	84	126	210	337										
11			70	106	176	282										
15				78	130	208	324									
18,5				63	106	169	264	370								
22					89	143	223	312								
30						105	165	231	330							
37							134	188	269	377						
45								111	156	223	312					
55									182	255	357					
75									138	193	262	331				
92									114	160	217	274	342			
110										136	184	233	291	359		
132											157	198	248	306	396	
150												143	180	226	279	361
165													159	199	245	318

Star-delta starting

230 Volt - 50 Hz - 3 ~ Y/Δ															
MOTOR kW	2 four-wires cables 4 xmm ²					7 cables 1 xmm ²									
	4	6	10	16	25	35	50	70	95	120	150	185	240		
cables max m															
7,5	52	78	129	207	324										
9,2		63	106	169	264	370									
11			53	89	142	221	310	443							
15				65	104	163	228	326							
18,5				53	85	133	186	265	372						
22					72	112	157	224	314	426					
30						53	83	116	166	232	315	398			
37							68	95	135	189	257	325	406		
45								56	78	112	157	213	269	336	415
55									92	128	174	220	275	340	
75									69	97	132	166	208	256	332

400 Volt - 50 Hz - 3 ~ Y/Δ																			
MOTOR kW	2 four-wires cables 4 xmm ²						7 cables 1 xmm ²												
	1,5	2,5	4	6	10	16	25	35	50	70	95	120	150	185	240				
cables max m																			
7,5	58	96	154	232	386														
9,2	47	79	126	189	316														
11		66	106	159	264	423													
15		49	78	117	195	311	487												
18,5			63	95	158	253	396												
22				53	80	134	214	334	468										
30					59	99	158	247	346										
37						81	129	202	282	404									
45							67	107	167	234	334	468							
55								87	136	191	273	383	536						
75									103	145	207	289	393	496					
92										120	171	240	325	411	514				
110											146	204	277	350	437	539			
132												124	173	235	297	372	458	595	
150													113	158	214	271	339	418	543
165														138	188	238	298	367	477

Electric control boards
M COMP

For single-phase motor.

TYPE	Capacitor Vc 450	Protection A	Motor 230V - 1~ kW
M COMP 4-16	16 µf	4,5	0,37
M COMP 5-25	25 µf	5	0,55
M COMP 7-30	30 µf	7	0,75
M COMP 10-40	40 µf	10	1,1
M COMP 12-50	50 µf	12	1,5
M COMP 18-70	70 µf	18	2,2

T COMP

 For three-phase motor with **direct** starting up.

TYPE	Protection A	Motor 3~	
		230V kW	400V kW
T COMP 8	1÷8	0,37÷1,5	0,5÷2,2
T COMP 10	7÷10	---	3-3,7
T COMP 12	9÷12	2,2	4
T COMP 16	11÷16	3	5,5
T COMP 20	14÷20	3,7-4	7,5

QT1 DF

 For three-phase motor with **direct** starting up. Fuse protection.

TYPE	Motor 3~ 400V kW
QT1DF 9,2	9,2
QT1DF 11	11
QT1DF 15	15
QT1DF 22	18,5-22

QT1 ST

 For three-phase motor. **Star/delta** starting.

TYPE	Motor 3~ 400V kW
QT1ST 5,5	5,5
QT1ST 7,5	7,5
QT1ST 11	9,2-11
QT1ST 15	15
QT1ST 22	18,5-22
QT1ST 30	30
QT1ST 37	37
QT1ST 45	45
QT1ST 55	55
QT1ST 75	75
QT1ST 92	92
QT1ST 110	110
QT1ST 132	132
QT1ST 150	150
QT1ST 165	165

QT1 AT

 For three-phase motor. **Autotransformer** starting.

TYPE	Motor 3~ 400V kW
QT1AT 5,5	5,5
QT1AT 7,5	7,5
QT1AT 9,2	9,2
QT1AT 11	11
QT1AT 15	15
QT1AT 18	18,5
QT1AT 22	22
QT1AT 30	30
QT1AT 37	37
QT1AT 45	45
QT1AT 55	55
QT1AT 75	75
QT1AT 92	92
QT1AT 110	110
QT1AT 132	132
QT1AT 150	150
QT1AT 165	165

QT1 IS

 For three-phase motor. **Impedance** starting.

TYPE	Motor 3~ 400V kW
QT1IS 5,5	5,5
QT1IS 7,5	7,5
QT1IS 9,2	9,2
QT1IS 11	11
QT1IS 15	15
QT1IS 18	18,5
QT1IS 22	22
QT1IS 30	30
QT1IS 37	37
QT1IS 45	45
QT1IS 55	55
QT1IS 75	75
QT1IS 92	92
QT1IS 110	110
QT1IS 132	132
QT1IS 150	150
QT1IS 165	165

QT1 SS

 For three-phase motor. Start-stop with **Soft Start**.

TYPE	Motor 3~ 400V kW
QT1SS 7,5	7,5
QT1SS 15	9,2-11-15
QT1SS 22	18,5-22
QT1SS 30	30
QT1SS 37	37
QT1SS 45	45
QT1SS 55	55
QT1SS 75	75
QT1SS 92	92
QT1SS 110	110
QT1SS 132	132
QT1SS 150	150
QT1SS 165	165

QT1 VF

 For three-phase motor. With **inverter** control.

TYPE	Max A	Motore 3~ 400V kW
QT1VF 5,5	13	4
QT1VF 7,5	16	5,5
QT1VF 11	22	7,5-9,2
QT1VF 15	29	11
QT1VF 22	43	13-15-18,5
QT1VF 30	57	22-26
QT1VF 37	70	30
QT1VF 45	85	37
QT1VF 55	105	45
QT1VF 75	135	51-55-59
QT1VF 92	160	66-75
QT1VF 110	196	92
QT1VF 132	230	110

Higher powers and other starting types on request.