



# VSF SERIES 50 HZ

4"/6" SUBMERSIBLE PUMPS





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NOTE: Franklin Electric S.r.l. reserves the right to amend specification without prior notice

For the most up-to-date product information, visit [franklinwater.eu](http://franklinwater.eu).

## 4"/6" SUBMERSIBLE PUMPS

### APPLICATION

- Municipal water works, fountains and waste water
- Water distribution and pressure boosting
- Irrigation and sprinkler systems, water treatment plants, filtration and reverse osmosis
- Industrial cooling and processing
- Mining industry, drainage and dewatering
- Fire-fighting equipment
- Water supply to and from tanks, reservoir and wells
- Lifting and distribution of a wide range of liquids
- Autoclave and cistern charge and discharge
- Turf and landscape
- Residential and farm wells and drainage
- General industry

### FEATURES

- Compact, reliable and suited to operate in horizontal position
- 4": Built-in check valve to protect the pump against water hammer risk (for model 4VVSF15 please contact Franklin Electric)
- 6": Built-in check valve, spring loaded for models with more than 19 stages, to protect the pump against water hammer risk
- Floating impellers to grant a better performance and longer life for the pump against abrasion (4" pumps)

### GENERAL PUMP SPECIFICATION

- Pumped liquid: chemically and mechanically non aggressive
- Rotation: counter clockwise when looking into the discharge
- Pump can work continuously in vertical or horizontal position

### PUMP SPECIFICATION

- Flow:
  - 4" pumps: up to 27 m<sup>3</sup>/h at 50 Hz
  - 6" pumps: up to 60 m<sup>3</sup>/h at 50 Hz
- Head:
  - 4" pumps: up to 641 m at 50 Hz
  - 6" pumps: up to 788 m at 50 Hz
- Pumped liquid: chemically and mechanically non aggressive
- Max water temperature: 4" pumps: 45 °C; 6" pumps: 30 °C
- Maximum allowable amount of sand:
  - 4" pumps: 250 g/m<sup>3</sup>; 6" pumps: 60 g/m<sup>3</sup>
- Maximum pump diameter (including cable guard):
  - 4" pumps: 98 mm; 6" pumps: 140 mm
- Outlet diameter:
  - 4" pumps: 1" ¼ for VSF 1-2-3-4, 2" for VSF 6-8-12-15
  - 6" pumps: 3"
- Motor support:
  - 4" pumps: supplied for connection to 4" motor
  - 6" pumps: supplied for connection to 4" motor up to 5.5 kW; from 7.5 kW to 6" motor
- Rotation: counter clockwise when looking into the discharge
- Pump can work continuously in vertical or horizontal position

### MOTOR SPECIFICATION

- Motor adapter in compliance with NEMA standard
- For more information consult the product catalog of Submersible motors

### AVAILABLE ON REQUEST

- Spring loaded check valve for 6" pumps with less than 19 stages
- 6" motor support for 6VVSF up to 5.5 kW
- Cooling shroud
- Discharge head 2" ½
- Double cable guard

# 4" HYDRAULIC PERFORMANCE AT 50 HZ - 2850rpm

## 4VSF 1-2

Pump model	No. stages	RATED POWER		Q = DELIVERY													
				m³/h 0	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3	6		
				l/min 0	5	10	15	20	25	30	35	40	45	50			
[kW]		[HP]		H = TOTAL M.HEAD OF WATER COLUMN [m]													
4VSF 1	11	0.37	0.5	63.5			59.0	55.0	50.5	43.0	35.0	26.0	15.0				
	16	0.55	0.75	90.5			85.5	80.0	72.0	62.5	51.0	37.0	20.5				
	22	0.75	1	124.5			117.5	109.5	99.0	86.0	70.0	50.5	26.0				
	32	1.1	1.5	181.0			171.0	159.5	144.0	124.5	101.5	73.5	41.0				
	42	1.5	2	237.5			224.5	209.0	189.0	163.5	133.0	96.0	54.0				
	63	2.2	3	356.0			336.5	313.5	293.0	245.5	199.5	144.5	81.0				
	Efficiency				-			27%	36%	42%	46%	45%	39%	27%			
4VSF 2	07	0.37	0.5	47.0				44.0	42.0	39.5	36.5	33.0	28.5	23.5	18.0		
	11	0.55	0.75	70.0				65.5	62.5	59.0	54.5	49.0	43.0	35.0	27.0		
	15	0.75	1	96.0				89.0	85.5	80.5	74.5	67.0	58.0	48.0	36.5		
	22	1.1	1.5	140.0				129.5	124.0	117.0	107.0	96.0	83.0	68.0	50.0		
	30	1.5	2	187.0				174.0	165.5	155.0	142.0	126.5	108.5	87.5	64.0		
	44	2.2	3	274.0				253.5	243.0	227.0	208.0	185.5	159.5	128.5	94.0		
	60	3	4	374.0				346.0	331.0	310.0	284.0	253.0	217.0	175.0	128.0		
Efficiency				-				32%	40%	47%	51%	53%	52%	49%	41%		

Best efficiency point

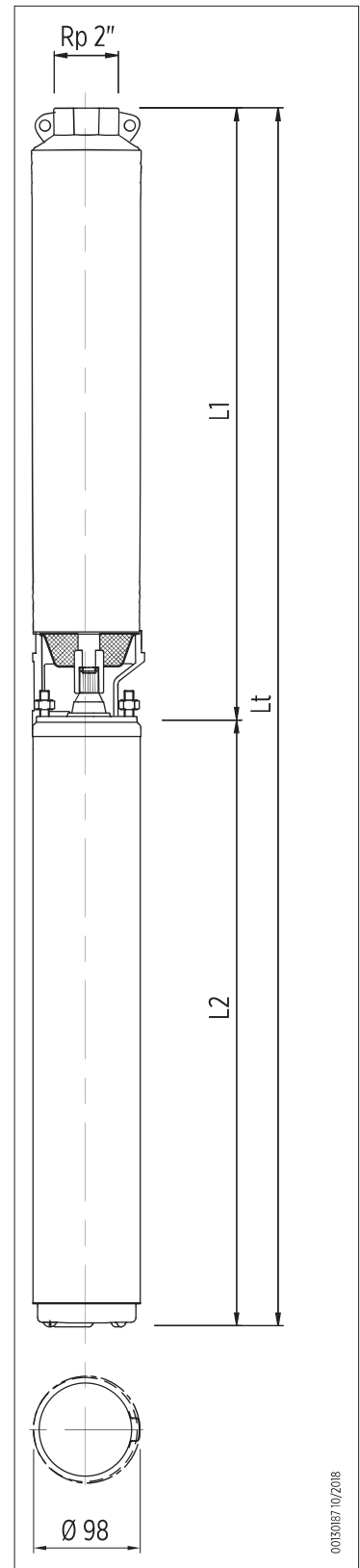
## 4VSF 3-4

Pump model	No. stages	RATED POWER		Q = DELIVERY																	
				m³/h 0	1.2	1.5	1.8	2.1	2.4	2.7	3	3.6	4.2	4.8	5.4	6	6.6	7.2	8.4		
				l/min 0	20	25	30	35	40	45	50	60	70	80	90	100	110	120	140		
[kW]		[HP]		H = TOTAL M.HEAD OF WATER COLUMN [m]																	
4VSF 3	05	0.37	0.5	32.5				31.0	30.5	30.0	29.0	27.5	26.0	22.5	18.0	12.5					
	07	0.55	0.75	45.5				43.5	43.0	41.5	40.0	38.5	36.5	31.5	25.5	17.5					
	10	0.75	1	65.0				62.5	61.0	59.5	57.5	55.0	52.0	45.0	36.0	25.0					
	15	1.1	1.5	96.5				91.0	89.0	87.0	83.5	80.0	76.0	65.5	52.5	36.0					
	20	1.5	2	129.0				121.5	119.0	115.5	111.0	106.5	101.0	87.0	69.0	47.5					
	30	2.2	3	193.0				182.5	178.5	173.5	167.0	160.0	151.5	130.5	103.0	71.5					
	40	3	4	257.0				241.0	235.5	228.0	219.5	209.5	198.0	170.0	134.0	90.0					
	54	4	5.5	346.5				325.5	317.5	307.5	296.5	282.5	267.0	229.0	181.0	121.5					
Efficiency				-				45%	49%	54%	57%	60%	62%	61%	56%	42%					
4VSF 4	04	0.37	0.5	27.5						26.0	25.0	24.5	24.0	22.5	20.0	17.0	13.0	9.5	5.5	1.5	
	06	0.55	0.75	41.0						38.5	38.0	37.0	36.0	33.5	30.0	25.0	20.0	14.0	8.0	2.0	
	08	0.75	1	55.0						51.5	50.5	49.5	48.0	44.5	40.0	33.5	26.5	19.0	11.0	2.5	
	12	1.1	1.5	82.0						77.0	75.5	74.0	72.0	67.0	59.5	50.0	39.5	28.5	16.5	4.0	
	16	1.5	2	109.0						102.5	101.0	98.5	96.0	89.0	79.5	67.0	53.0	38.0	22.0	5.0	
	24	2.2	3	163.5						154.0	151.0	148.0	143.5	134.5	119.0	100.5	79.0	56.5	32.5	7.5	
	32	3	4	218.0						205.0	201.5	197.0	191.5	118.0	159.0	134.0	105.5	75.5	43.5	10.0	
	44	4	5.5	299.5						282.0	277.0	271.0	263.0	245.0	218.5	184.0	145.0	103.5	59.5	13.5	
	60	5.5	7.5	408						384.0	377.0	369.0	359.0	334.0	298.0	251.0	197.0	141.0	81.0	18.0	
	80	7.5	10	544						512.0	503.0	492.0	478.0	445.0	397.0	334.0	263.0	188.0	108.0	24.0	
	100	9.2	12.5	680						641.0	629.0	615.0	598.0	556.0	496.0	418.0	329.0	235.0	135.0	30.0	
Efficiency										52%	56%	58%	61%	62%	62%	57%	48%	32%	-	-	

Best efficiency point

### 4VSF 6-8-12-15

Pump model	No. stages	Motor			Dimensions [mm]					Weight [Kg]				
		Type	[Kw]	[HP]	L1	L2		Lt		Pump	Motor		Total	
						1~	3~	1~	3~		1~	3~		
4VSF 6	04	E4	0.55	0.75	278	277	252	555	530	2.7	8.4	9.4	11.1	12.1
	06	E4	0.75	1	352	298	272	650	624	3.3	9.3	7.3	12.6	10.6
	09	E4	1.1	1.5	463	322	298	785	761	4.3	10.5	8.6	14.8	12.9
	12	E4	1.5	2	573	354	322	927	895	5.3	11.9	9.6	17.2	14.9
	18	E4	2.2	3	794	452	354	1246	1148	7.3	16.7	11.1	24.0	18.4
	24	E4	3	4	1048	-	409	-	1457	9.7	-	13.6	-	23.4
	34	E4	4	5.5	1416	-	544	-	1960	13.1	-	20.0	-	33.1
	45	E4	5.5	7.5	1853	-	653	-	2506	17.2	-	26.6	-	43.8
60	E4	7.5	10	2411	-	731	-	3142	22.2	-	30.6	-	52.8	
4VSF 8	04	E4	0.75	1	290	298	272	588	562	2.7	9.3	7.3	12.0	10.0
	06	E4	1.1	1.5	370	322	298	692	668	3.4	10.5	8.6	13.8	12.0
	08	E4	1.5	2	450	354	322	804	772	4.0	11.9	9.6	16.0	13.7
	12	E4	2.2	3	609	452	354	1061	963	5.5	16.7	11.1	22.1	16.6
	16	E4	3	4	769	-	409	-	1178	6.9	-	13.6	-	20.5
	22	E4	4	5.5	1040	-	544	-	1584	9.4	-	20.0	-	29.4
	30	E4	5.5	7.5	1360	-	653	-	2013	12.1	-	26.6	-	38.7
	39	E4	7.5	10	1758	-	731	-	2489	15.4	-	30.6	-	46.2
4VSF 12	05	E4	1.5	2	435	354	322	789	757	3.5	11.9	9.6	15.4	13.1
	07	E4	2.2	3	557	452	354	1009	911	4.4	16.7	11.1	21.1	15.5
	10	E4	3	4	740	-	409	-	1149	5.7	-	13.6	-	19.3
	14	E4	4	5.5	983	-	544	-	1527	7.5	-	20.0	-	27.5
	19	E4	5.5	7.5	1287	-	653	-	1940	9.7	-	26.6	-	36.3
	25	E4	7.5	10	1652	-	731	-	2383	12.4	-	30.6	-	43.0
4VSF 15	04	E4	1.1	1.5	447	322	298	724	700	2.6	10.5	8.6	13.1	11.2
	06	E4	1.5	2	580	354	322	824	792	3.5	11.9	9.6	15.4	13.1
	09	E4	2.2	3	781	452	354	1126	1028	4.9	16.7	11.1	21.6	16.0
	12	E4	3	4	982	-	409	-	1286	6.4	-	13.6	-	20.0
	16	E4	4	5.5	1249	-	544	-	1726	8.2	-	20.0	-	28.2
	22	E4	5.5	7.5	1651	-	653	-	2173	11.0	-	26.6	-	37.6
	30	E4	7.5	10	2188	-	731	-	2659	14.8	-	30.6	-	45.4



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