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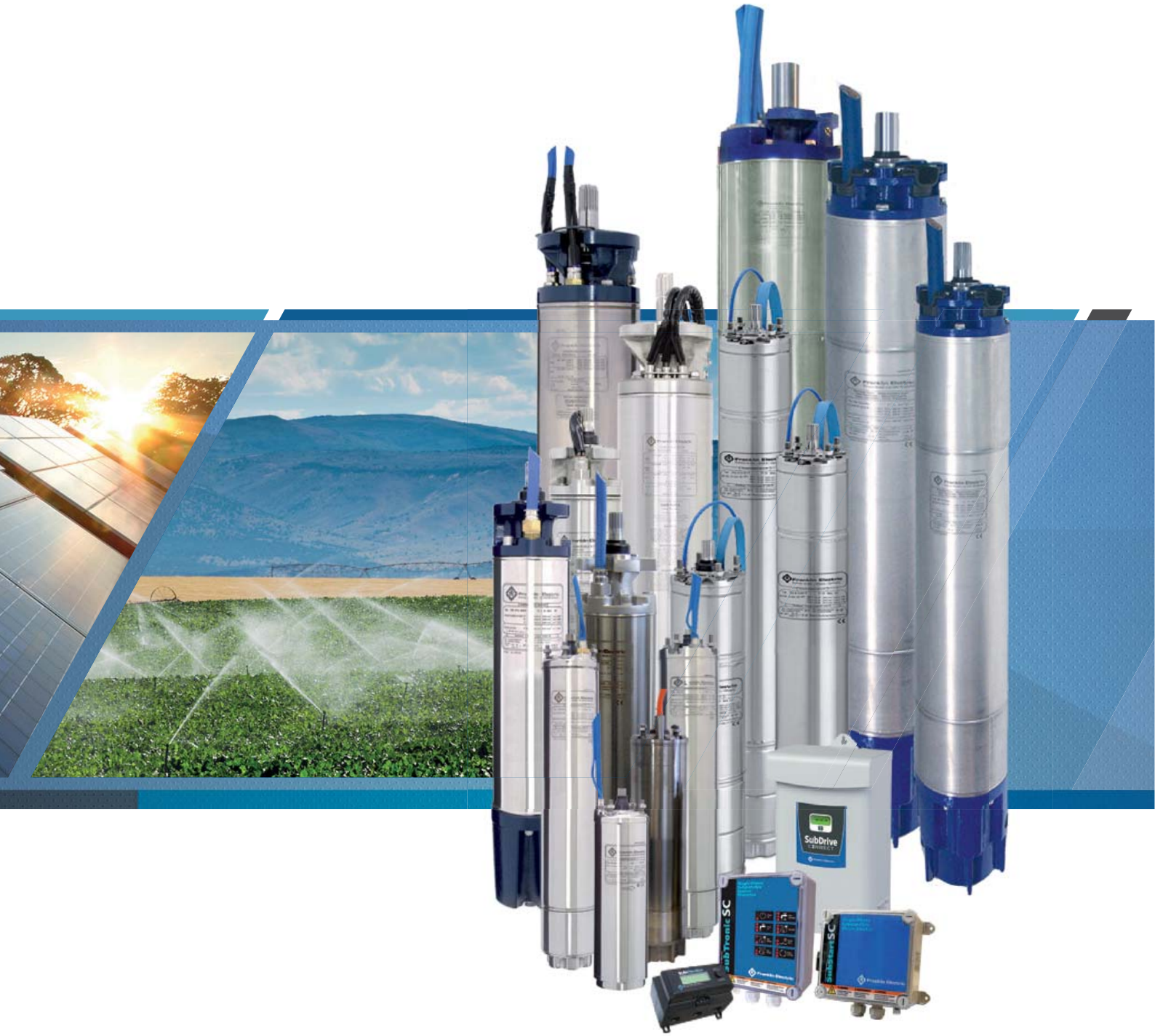

Franklin Electric

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Franklin Electric

4"
Super Stainless
1~ PSC

Submersible Motors

Quality in the Well

Franklin Electric 4" encapsulated submersible motors, built in ISO 9001/14001 certified facilities for outstanding performance in 4" or larger water wells.
The single phase PSC motor has been electrically optimized to offer reliable pump starting over a wide range of incoming voltages. It should ideally be combined to the Franklin Electric SubStart/SubTronicSC control boxes for maximum system performance, protection and warranty.

Product features:

- Hermetically sealed stator with 316SS shell. Anti track, self healing stator resin prevents motor burn out, mechanically supports the winding and provides fast heat dissipation.
- High efficiency electrical design (low operation cost, cool running winding)
- Removable water bloc lead connector
- No-wear, water lubricated radial and thrust bearings for 100% maintenance free operation
- Non-contaminating FES 93 filling liquid
- Various agency approvals for use in drinking water

Technical Specification

- Motor range: 0,25 – 2,2kW
- 4" NEMA flange
- Rotation: CCW facing shaft end (CW upon request)
- Degree of protection: IP68
- Insulation: Cl.B
- Rated ambient temperature: 30°C
- Required cooling flow: min. 0,08m/s
- Max. starts/hr.: 20, equally distributed
- Mounting: vertical to horizontal, shaft upwards
- Voltage tolerance from nominal: -10% / +6%
- Protection requirements: EN 61947-4-1

Pollution Recovery Motor Version Specifications:

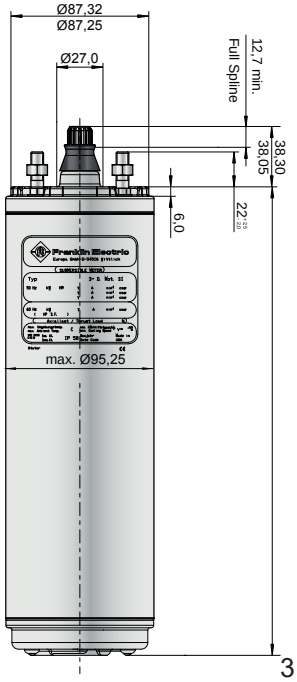
- Fluorelastomere (Viton®) rubber parts
- Special Polyuretane (PUR) lead assemblies
- 304SS (316SS Stator) graded stainless steel as standard

Options

- Built in lightning arrestors
- Various cable lengths
- Motor sets including control box, lead and splice kit
- Alternative material executions

1~ 4" Encapsulated Motors
PSC / 220- 230V / 50Hz

P_N [kW]	Thrust F [N]	U_N [V]	n_N [min^{-1}]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	C [µF] 450V	L [mm]	m [kg]
0,25	**4000**	220	2865	2,3	9,0	51	0,96	0,82	0,73	12,5	237,2	7,0
		230	2875	2,4	9,4	50	0,92	0,83	0,80			
0,37	**4000**	220	2850	3,2	12,1	54	0,97	1,21	1,07	16	251,1	7,5
		230	2860	3,3	12,6	54	0,91	1,24	1,17			
0,55	**4000**	220	2840	4,2	16,9	63	0,98	1,85	1,50	20	276,2	8,6
		230	2850	4,3	17,7	63	0,94	1,90	1,63			
0,75	**4000**	220	2825	5,7	21,7	61	0,99	2,5	2,3	35	297,2	9,5
		230	2845	5,7	22,7	59	0,98	2,5	2,5			
1,1	**4000**	220	2830	8,1	32,5	65	0,97	3,7	2,9	40	321,2	11,0
		230	2845	8,4	33,9	63	0,92	3,7	3,1			
1,5	**4000**	220	2820	10,4	39,9	68	0,98	5,1	3,6	50	353,2	11,7
		230	2830	10,7	41,7	66	0,95	5,1	3,9			
2,2	**4000**	220	2825	14,7	59,2	70	0,99	7,4	5,0	70	451,2	15,5
		230	2840	14,7	61,8	68	0,97	7,4	5,5			



4"
Super Stainless
1~ PSC Motor Set

Submersible Motors

Quality in the Well

In an effort to ease our customers ordering, stock holding and inventory management, Franklin Electric Europa GmbH is introducing the PSC Motor Kit.
Consisting of the submersible motor, control box, motor short lead and splicing kit all packaged into one compact yet sturdy box, this kit is the ideal stock item to drive your pump.

Product features

- One stop shop – no hassle selecting different components to work together
- Everything available at the same time
- All components matched and warranted by Franklin Electric
- Maximum flexibility – one motor kit can drive as many as 5 different pump models
- Any practical drop cable length (up to 10mm2) can be spliced using included kit

Technical Specification

- Motor range 0,25 - 2,2kW
- 4" PSC Motor with NEMA flange
- Motor protection level: IP 68
- Box protection level: IP 54
- Voltage: 220 - 240V; - 6 / +10 %; 50Hz single phase

Options

- Motor cable VDE, KTW approved (1,5m; special lengths available)

PSC Motor Set Model numbers

P_N [kW]	U_N [V]	Model nb.
0,25	220-230	254 803 6700C
	230-240	254 813 6700C
0,37	220-230	254 805 6700C
	230-240	254 815 6700C
0,55	220-230	254 807 6700C
	230-240	254 817 6700C
0,75	220-230	254 808 6700C
	230-240	254 818 6700C
1,10	220-230	254 809 6700C
	230-240	254 819 6700C
1,50	220-230	254 810 6700C
	230-240	254 820 6700C
2,20	220-230	254 811 6700C
	230-240	254 821 6700C

PSC Motor Set Description

The PSC Motor

Franklin Electric 4" encapsulated submersible motors, built in ISO 9001/14001 certified facilities for outstanding performance in 4" or larger water wells.

The single phase PSC motor has been electrically optimized to offer reliable pump starting over a wide range of incoming voltages. It should ideally be combined to the Franklin Electric SubStart/SubTronicSC control boxes for maximum system performance, protection and warranty.

Product features

- Hermetically sealed stator. Anti track, self healing stator resin prevents motor burn out, mechanically supports the winding and provides fast heat dissipation.
- High efficiency electrical design (low operation cost, cool running winding)
- Removable water bloc lead connector
- No-wear, water lubricated radial and thrust bearings for 100% maintenance free operation
- Non-contaminating FES 93 filling liquid
- Various agency approvals for use in drinking water.

Technical Specification

- PSC motor range: 0,25 – 2,2kW
- 4" NEMA flange
- Rotation: CCW facing shaft end (CW upon requ
- Degree of protection: IP68
- Insulation: Cl.B
- Rated ambient temperature: 30°C
- Required cooling flow: min. 0,08m/s
- Max. starts/hr.: 20, equally distributed
- Mounting: vertical to horizontal, shaft upwards
- Voltage tolerance 50Hz from nominal: -10% / +6%
- Protection requirements: EN 61947-4-1

The SubStartSC® Single phase Submersible Motor Starter

The SubStartSC® range covers all PSC motors from 0.25kW to 2.2kW for all voltages. Ergonomic design, attention to detail and unique features make the SubStartSC® motor starter range your first choice when considering submersible motor protection. In conjunction with Franklin Electric submersible motors you now have an tangible water system advantage resulting in ease of installation and reliable protection.

Product features

- Attention to detail – every aspect engineered for the application
- The complete package – The device is 100% compatible with the motor characteristics
- All in one name – Reliability backed by the leader in submersible motors

Splicing Kit 1,5 - 10mm²

- 4 wire
- 1,5 - 10mm²
- up to 1,2kV

4"
Super Stainless
1~ 2- wire

Submersible Motors

Quality in the Well

Franklin Electric 4" encapsulated submersible motors, built in ISO 9001/14001 certified facilities for outstanding performance in 4" or larger water wells.

The genuine Franklin Electric 2-wire motor is a split phase, control-box less submersible motor for direct connection to a fused power supply. It incorporates a long-life electronic switch that allows it to run without the aid of external controls or capacitors. Furthermore, it offers a reverse impact torque that can help loosening sand-locked pumps and comes factory-equipped with automatic reset overload and surge protectors.

Product features

- Hermetically sealed stator. Anti track, self healing stator resin prevents motor burn out, mechanically supports the winding and provides fast heat dissipation.
- High efficiency electrical design (low operation cost, cool running winding)
- Removable water bloc lead connector
- No-wear, water lubricated radial and thrust bearings for 100% maintenance free operation
- Non contaminating FES 93 filling liquid
- Various agency approvals for use in drinking water
- Two wire plus ground connection
- Automatic reset overload internal to the motor
- Built-in surge arrestors

Brackish Water version Specifications

- For use in water that has more salinity than fresh water, but not as much as seawater.
- The novel Franklin Electric Brackish Water Motor proposes a cost-effective solution wherever standard 4" motors are not giving sufficient service life.

Technical Specification

Standard Motor:

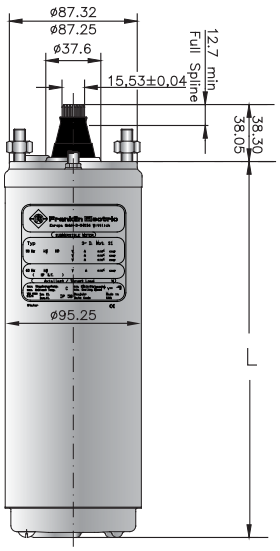
- Motor range: 0,37 – 1,1kW
- 4" NEMA flange
- Rotation: CCW facing shaft end (CW upon request)
- Degree of protection: IP68
- Insulation: Cl.B
- Rated ambient temperature: 30°C
- Required cooling flow: min. 0,08 m/s
- Max. starts/hr.: 20, equally distributed
- Mounting: vertical to horizontal, shaft upwards
- Voltage tolerance 50Hz from nominal: -10% / +6% U_N
- Voltage tolerance 60Hz from nominal: ±10%U_N
- Protection requirements: EN 61947-4-1

Options

- Motor cable VDE, KTW approved (1,5m; special lengths available)
- Motors with factory- installed lead in Single Packing

4" Encapsulated Motors
1~ 2wire / 230 V / 50 Hz

P_N [kW]	Thrust F [N]	U_N [V]	n_N [min^{-1}]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
0,37	3000	220	2875	4,1	24,4	57	0,76	1,24	1,18	228,2	7,8
		230	2890	4,1	25,5	57	0,73	1,23	1,29	228,2	7,8
0,55	3000	220	2870	5,7	35,0	59	0,77	1,85	1,7	248,2	8,5
		230	2890	5,8	36,6	59	0,73	1,85	1,9	248,2	8,5
0,75	3000	220	2875	7,2	46,6	62	0,78	2,5	2,1	282,6	9,9
		230	2890	7,3	48,7	61	0,75	2,5	2,3	282,6	9,9
1,10	3000	220	2880	10,6	57,9	63	0,77	3,7	2,7	338,6	12,3
		230	2895	10,8	59,7	63	0,73	3,7	2,9	338,6	12,3



Franklin Electric

4"
Super Stainless
1~ 3-wire

Submersible Motors

Quality in the Well

Franklin Electric 4" encapsulated submersible motors, built in ISO 9001/14001 certified facilities for outstanding performance in 4" or larger water wells.
The single phase 3-wire motor has been designed for highest achievable starting torque and shaft power from single phase power supplies. It is therefore ideally suited for applications where starting torque is paramount and 3 phase motors cannot be used. It should ideally be combined to the Franklin Electric 3-wire control boxes for maximum system performance, protection and warranty.

Product features

- Hermetically sealed stator with 316SS shell. Anti track, self healing stator resin prevents motor burn out, mechanically supports the winding and provides fast heat dissipation.
- High efficiency electrical design (low operation cost, cool running winding)
- Removable water bloc lead connector
- No-wear, water lubricated radial and thrust bearings for 100% maintenance free operation
- Non-contaminating FES 93 filling liquid
- Various agency approvals for use in drinking water

Technical Specification

- Motor range: 0,25 – 2,2kW
- 4" NEMA flange
- Rotation: CCW facing shaft end
- Degree of protection: IP68
- Insulation: Cl.B
- Rated ambient temperature: 30°C
- Required cooling flow: min. 0,08m/s
- Max. starts/hr.: 20, equally distributed
- Mounting: vertical to horizontal, shaft upwards
- Voltage tolerance from nominal: -10% / +6%
- Protection requirements: EN 61947-4-1

Brackish Water version Specifications:

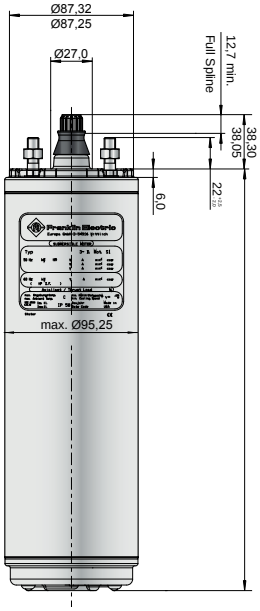
- For use in water that has more salinity than fresh water, but not as much as seawater.
- The novel Franklin Electric Brackish Water Motor proposes a cost-effective solution wherever standard 4" motors are not giving sufficient service life..

Options

- Built in lightning arrestors
- Motors in full 316SS
- Various cable lengths
- Alternative material executions

1~ 4" Encapsulated Motors
3 wire / 230 V / 50 Hz

P_N [kW]	Thrust F [N]	U_N [V]	n_N [min-1]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
0,25	4000	230	2870	2,8	9,7	53	0,75	0,83	1,65	237,2	6,2
0,37	4000	230	2870	4,0	13,7	56	0,74	1,23	2,05	251,1	6,7
0,55	4000	230	2880	5,9	21,6	56	0,73	1,82	3,2	271,2	7,5
0,75	4000	230	2870	7,3	27,8	61	0,76	2,5	4,2	297,2	8,6
1,1	4000	230	2885	8,6	41,2	68	0,84	3,7	6,8	353,2	10,8
1,5	4000	230	2875	10,4	53,3	71	0,88	4,9	9,5	364,2	11,1
2,2	4000	230	2885	15,3	74,5	73	0,88	7,3	15,0	451,2	14,5



4"
1~ 3-wire Motors
High Thrust

Submersible Motors

Quality in the Well

Franklin Electric 4" encapsulated submersible motors, built in ISO 9001/14001 certified facilities for outstanding performance in 4" or larger water wells.

The single phase 3-wire motor has been designed for highest achievable starting torque and shaft power from single phase power supplies. It is therefore ideally suited for applications where starting torque is paramount and 3 phase motors cannot be used. It should ideally be combined to the Franklin Electric 3-wire control boxes for maximum system performance, protection and warranty.

Product features

- Hermetically sealed stator. Anti track, self healing stator resin prevents motor burn out, mechanically supports the winding and provides fast heat dissipation.
- High efficiency electrical design (low operation cost, cool running winding)
- Removable water bloc lead connector
- No-wear, water lubricated radial and thrust bearings for 100% maintenance free operation
- Non-contaminating FES 93 filling liquid
- Various agency approvals for use in drinking water

Brackish Water version Specifications:

- For use in water that has more salinity than fresh water, but not as much as seawater.
- The novel Franklin Electric Brackish Water Motor proposes a cost-effective solution wherever standard 4" motors are not giving sufficient service life..

Technical Specification

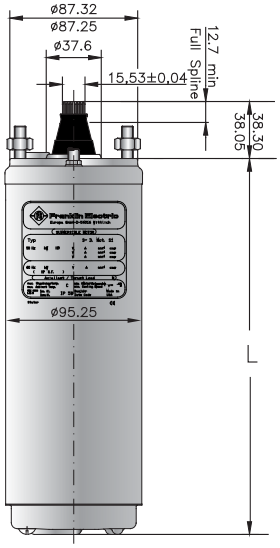
- Motor range: 2,2 – 3,7kW
- Thrust capacity: 6500 N
- 4" NEMA flange
- Rotation: CCW facing shaft end
- Degree of protection: IP68
- Insulation: Cl.B
- Rated ambient temperature: 30°C
- Required cooling flow: min. 0,08m/s
- Max. starts/hr.: 20, equally distributed
- Mounting: vertical to horizontal, shaft upwards
- Voltage tolerance 50Hz from nominal: -10% / +6%
- Voltage tolerance 60Hz from nominal: ±10%
- Protection requirements: EN 61947-4-1

Options

- Motor cable VDE, KTW approved (1,5m; special lengths available)
- Motors with factory- installed lead in Single Packing
- Built in lightning arrestors
- Alternative material executions
- Motor complete in AISI 316SS with SiC seal

1~ 4" Encapsulated Motors
3 wire / 230 V / 50 Hz

P_N [kW]	Thrust F [N]	N_N [min^{-1}]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
2,2	6500	2885	15,3	74,5	73	0,88	7,3	15,0	520,2	21,3
3,7	6500	2895	21,4	101	77	0,99	12,2	17,6	652,5	26,4



4"
Super Stainless
3 Phase

Submersible Motors

Quality in the Well

Franklin Electric 4" encapsulated submersible motors, built in ISO 9001/14001 certified facilities for outstanding performance in 4" or larger water wells.

The three phase motor offers maximum life and highest efficiency under various load conditions. It should ideally be combined to the Franklin Electric SubStart/ SubTronic3P control boxes for maximum system performance, protection and warranty.

Product features

- Hermetically sealed stator with 316SS shell. Anti track, self healing stator resin prevents motor burn out, mechanically supports the winding and provides fast heat dissipation.
- High efficiency electrical design (low operation cost, cool running winding)
- Removable water bloc lead connector
- No-wear, water lubricated radial and thrust bearings for 100% maintenance free operation
- Non-contaminating FES 93 filling liquid
- Various agency approvals for use in drinking water

Brackish Water version Specification

- For use in water that has more salinity than fresh water, but not as much as seawater.
- The novel Franklin Electric Brackish Water Motor proposes a cost-effective solution wherever standard 4" motors are not giving sufficient service life.

Heat Pump Motor-version Specifications

- Many modern heating systems extract heat that is stored in aquifer / river water. Such so-called two-pit or open systems require low-power, high efficiency 3-phase submersible motors. To meet the demands of this niche market, Franklin Electric has developed a special 4" encapsulated submersible motor range optimized for shallow settings and low power consumption available from 0,25kW to 1,1kW.

Pollution Recovery Motor-version Specifications

- Fluorelastomere (Viton®) rubber parts
- Special Polyuretane (PUR) lead assemblies
- 304 graded stainless steel as standard, 316SS as an option

Technical Specification

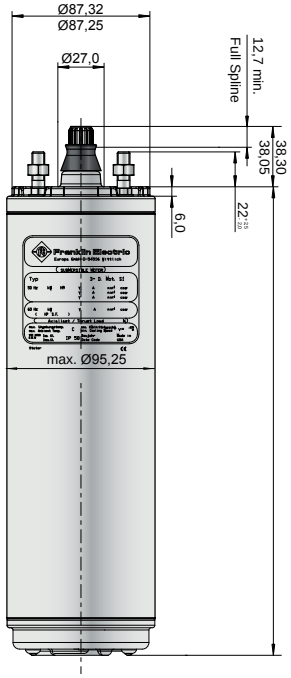
- Motor range: 0,37 – 3kW
- 4" NEMA flange
- Rotation: reversible
- Degree of protection: IP68
- Insulation: Cl.B
- Rated ambient temperature: 30°C
- Required cooling flow: min. 0,08m/s
- Max. starts/hr.: 20, equally distributed
- Mounting: vertical to horizontal, shaft upwards
- Voltage tolerance from nominal: -10% / +6%
- Protection requirements: EN 61947-4-1

Options

- Built in lightning arrestors
- Motors in full 316SS
- Various cable lengths
- Special voltages
- Alternative material executions

3~ 4" Encapsulated Motors 400V / 50Hz

P_N [kW]	Thrust F [N]	U_N [V]	n_N [min^{-1}]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
0,37	4000	400	2870	1,10	5,41	66	0,74	1,22	3,00	237,2	6,05
0,55	4000	400	2870	1,6	7,4	68	0,74	1,82	4,20	251,1	6,65
0,75	4000	400	2865	2,0	10,6	70	0,77	2,49	6,70	271,2	7,55
1,1	4000	400	2850	2,8	16,0	74	0,78	3,67	11,33	297,2	8,80
1,5	4000	400	2855	3,9	20,7	73	0,78	5,00	14,10	321,2	9,75
2,2	4000	400	2845	5,5	29,8	75	0,77	7,37	22	353,2	11,4
3,0	4000	400	2845	7,5	42,0	76	0,77	10,06	31,93	408,2	13,8



4"
3 Phase Motors
High Thrust

Submersible Motors

Quality in the Well

Franklin Electric 4" encapsulated submersible motors, built in ISO 9001/14001 certified facilities for outstanding performance in 4" or larger water wells.

The three phase motor offers maximum life and highest efficiency under various load conditions. It should ideally be combined to the Franklin Electric SubStart/SubTronic3P control boxes for maximum system performance, protection and warranty.

Product features

- Hermetically sealed stator. Anti track, self healing stator resin prevents motor burn out, mechanically supports the winding and provides fast heat dissipation.
- High efficiency electrical design (low operation cost, cool running winding)
- Removable water bloc lead connector
- No-wear, water lubricated radial and thrust bearings for 100% maintenance free operation
- Non-contaminating FES 93 filling liquid
- Various agency approvals for use in drinking water

Brackish Water version Specifications

- For use in water that has more salinity than fresh water, but not as much as seawater.
- The novel Franklin Electric Brackish Water Motor proposes a cost-effective solution wherever standard 4" motors are not giving sufficient service life.

Pollution Recovery Motor-version Specifications

- Fluorelastomere (Viton®) rubber parts
- Special Polyuretane (PUR) lead assemblies
- 304 graded stainless steel as standard, 316SS as an option

Technical Specification

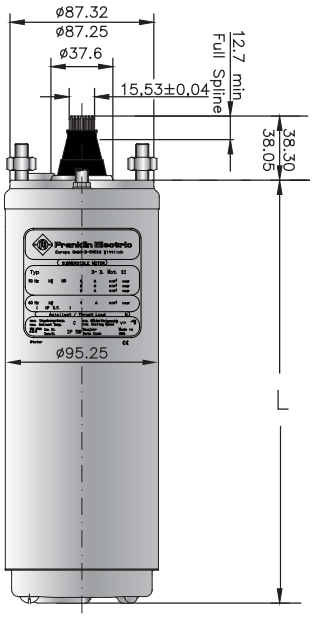
- 3 phase motor range: 2,2 – 9,3kW
- 4" NEMA flange
- Thrust capacity: 6500 N
- Rotation: reversible
- Degree of protection: IP68
- Insulation: Cl.B
- Rated ambient temperature: 30°C
- Required cooling flow: min. 0,08m/s
- Max. starts/hr.: 20, equally distributed
- Mounting: vertical to horizontal, shaft upwards
- Voltage tolerance 50Hz from nominal: -10% / +6%
- Voltage tolerance 60Hz from nominal: ±10%
- Protection requirements: EN 61947-4-1

Options

- Motor cable VDE / ACS / KTW approved (1,5m; 2,5m; special lengths available)
- Motors with factory- installed lead in Single Packing
- Special voltages on request
- Motor complete in AISI 316SS with SiC seal

3~ 4" Encapsulated High Thrust Motors 400V / 50Hz

P_N [kW]	Thrust F [N]	U_N [V]	n_N [min^{-1}]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
2,2	6500	400	2845	5,5	29,8	75	0,77	7,37	22,0	422,2	15,0
3,0	6500	400	2845	7,5	42,0	76	0,77	10,06	31,93	477,2	17,0
3,7	6500	400	2840	9,0	52,3	78	0,78	12,5	41,5	520,2	19,1
4,0	6500	400	2840	9,9	57,0	78	0,77	13,4	44,0	543,2	20,0
5,5	6500	400	2865	12,6	77,2	79	0,81	18,3	56,5	652,5	26,6
7,5	6500	400	2855	17,1	99,3	79	0,81	25,1	73,1	730,5	33,1
9,3	6500	400	2850	21,4	96,9	79	0,86	31,1	45,0	855,1	38,8



6"
Encapsulated Motors

Standard: SAND FIGHTER

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 -15ºC storage temperture. The Sand fighter® SiC seal system is standard.

Product features

- 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 (KTW approved)
- „Sand fighter®“ Motor with SiC-Mechanical Seal
- High efficiency electrical design for low operation cost
- All motors prefilled and 100% tested
- Max. storage temperature -15°C - + 60°C
- Non contaminating FES91 -filling
- 45kN High Thrust Version on request (standard in 37kW and 45kW motors)

Technical Specification

Standard Motor:

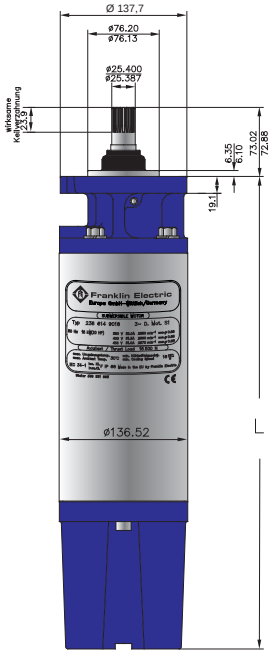
- 4 ... 45 kW
- 6" NEMA flange
- Protection: IP 68
- Starts per hour: 20
- Installation: vertical/horizontal
- Standard Voltage: 380-415V/50Hz, 460V/60Hz
- Voltage tolerance 50Hz: -10% / +6% U_N [380-415V = (380-10%) – (415+6%)]
- Voltage tolerance 60Hz: ±10%U_N
- Motor protection: Select thermal overloads according to DIN 61947-4-1
- Insulation: Class F
- YΔ - start (pos. of cables 90°)
- „Sand fighter®“ Motor with SiC-Mechanical Seal
- 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 (KTW approved)

Options

- Other voltages
- 45kN High Thrust Version on request (standard in 37kW and 45kW motors)
- Motors complete in 304SS and 316 SS
- 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" Encapsulated Motors Standard
3~/ 400 V / 50 Hz

P_N [kW]	Thrust F [N]	n_N [min^{-1}]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
4,0	15.500	2860	9,3	43	78,0	0,82	12,3	20,2	581,2	37,5
5,5	15.500	2870	12,5	64	79,0	0,82	18,6	35,0	614,4	41,1
7,5	15.500	2860	16,0	83	79,0	0,86	25,0	47,7	646,2	45,2
9,3	15.500	2870	20,7	112	81,0	0,80	31,1	68,2	678,7	47,5
11,0	15.500	2860	23,3	129	81,0	0,85	37,3	78,3	711,2	50,9
15,0	15.500	2860	31,3	169	81,0	0,85	49,9	107,3	776,2	56,7
18,5	15.500	2860	38,5	231	82,0	0,85	62,4	154,6	841,5	63,3
22,0	15.500	2860	45,3	268	83,0	0,86	74,7	177,6	906,5	69,3
30,0	27.500	2860	63,5	393	83,0	0,84	99,4	263,1	1036,6	83,9
37,0	45.000	2875	79,0	411	81,0	0,85	123,6	280,8	1476,7	140
45,0	45.000	2875	95,2	509	82,0	0,84	148,4	332,3	1629,2	156



6"
Encapsulated Motors
„HighTemp 90°C“

Standard: SAND FIGHTER

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 with ambient temperature up to 90°C.
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 FES92 fluid, providing frost protection down to -15ºC storage temperture.
The Sand fighter® SiC seal system is standard.

Product features

- Up to 90°C ambient temperature
- Increast thrust capacity up to 30°C
- No cooling flow in larger wells (12" / open reservoirs) up to 30°C ambient
- Hermetically sealed encapsulated stator, anti track, self healing stator resin
- Removable “Water Bloc” lead connector
- „Sand fighter®“ Motor with SiC-Mechanical Seal
- High efficiency electrical design for low operation cost
- All motors prefilled and 100% tested.
- Max. storage temperature -15°C - + 60°C
- High temperature leads
- Non contaminating FES92 -filling
- 45kN High Thrust version on request (standard in 22kW and 30kW motors)

Technical Specification

Standard Motor:

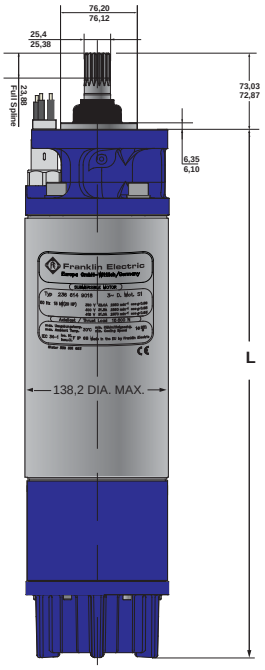
- 3,7 ... 30 kW
- 6" NEMA double flange
- Protection: IP 68
- Starts per hour: 20
- Installation: vertical/horizontal
- Standard Voltage: 380-415V/50Hz, 460V/60Hz
- Voltage tolerance 50Hz: -10% / +6% U_N [380-415V = (380-10%) – (415+6%)]
- Voltage tolerance 60Hz: ±10%U_N
- Motor protection: Select thermal overloads according to DIN 61947-4-1
- Insulation: Class F
- Rated ambient temperature: 90°C
- Cooling flow: min. 0,16 m/s
- DOL / YΔ - start (pos. of cables 90°)
- Motor lead in 4m length

Options

- Other voltages
- 45kN High Thrust version on request (standard in 22kW and 30kW motors)
- Motors complete in 316 SS

6" Encapsulated Motors HighTemp 90°C
3~ / 400V / 50 Hz

P_N [kW]	Thrust F [N]	U_N [V]	n_N [min^{-1}]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
3,7	15.500	400	2880	8,5	52,5	75	0,86	12,3	31,4	716	53
5,5	15.500	400	2890	12,3	83,0	77	0,86	18,3	48,36	752	59
7,5	15.500	400	2890	16,0	110	81	0,85	24,9	76,6	780	66
11,0	15.500	400	2890	24,2	160	80	0,82	36,6	111,4	846	71
15,0	15.500	400	2885	33,0	205	80	0,83	49,9	161,3	909	79
18,5	27.500	400	2890	40,5	266	83	0,82	61,5	227,8	1041	92
22	45.000	400	2885	48,0	304	81	0,85	74,0	221,0	1476,7	140
30	45.000	400	2885	64,5	441	83	0,82	98,7	301,0	1629,2	156



8"
Encapsulated Motors

Optional: SAND FIGHTER

Submersible Motors

Quality in the Well

These 8" encapsulated motors, manufactured in ISO 9001 certified facilities, are built for dependable operation in 8" diameter or larger water wells.
It is fitted with water lubricated radial and thrust bearings for 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 -15ºC storage temperture.
The Sand fighter® SiC seal system is the option for sandy applications.

Product features

- Hermetically sealed stator, anti track, self healing stator resin prevents motor burn out
- Removable “Water Bloc” lead connector
- Cable material according to drinking water regulations (KTW approved)
- Sand slinger and Mechanical seal for high performance in sand
- High efficiency electrical design for low operation cost
- All motors prefilled and 100% tested
- Max. storage temperature -15°C - + 60°C
- Non contaminating FES91 -filling

Technical Specification

Standard Motor:

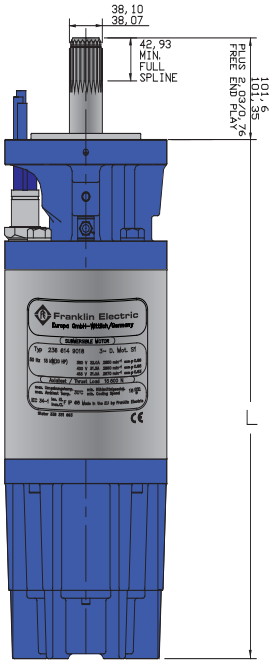
- 30 ... 150 kW
- 8" NEMA flange
- Protection: IP 68
- Starts per hour: 10
- Installation: vertical/horizontal
- Standard Voltage: 380-415V/50Hz, 460V/60Hz
- Voltage tolerance 50Hz: -10% / +6% U_N [380-415V = (380-10%) – (415+6%)]
- Voltage tolerance 60Hz: ±10%U_N
- Motor protection: Select thermal overloads according to DIN 61947-4-1
- Insulation: Class F
- DOL / YΔ - start (pos. of cables 90°)
- Rated ambient temperature: 30°C
- Cooling flow: min. 0,16 m/s
- Built-in Subtrol Heat Sensor
- Motor lead in 8 m length (KTW approved)

Options

- Other voltages
- Motors complete in 316 SS
- PT 100 temperature sensor (sold separately)
- „Sand fighter®“ Motor with SiC- Mechanical seal

8" Encapsulated Motors Standard
3~ /400 V / 50 Hz

P_N [kW]	Thrust F [N]	n_N [min^{-1}]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
30	45000	2900	61	418	86	0,84	97	255	925	145
37	45000	2920	74	534	87	0,86	121	295	1000	157
45	45000	2920	89	645	87	0,85	145	395	1077	172
55	45000	2920	108	862	88	0,87	182	563	1204	202
75	45000	2925	151	1157	87	0,83	242	561	1394	240
93	45000	2930	190	1332	87	0,83	302	567	1748	318
110	45000	2930	222	1597	88	0,84	363	769	1976	381
130	45000	2920	252	1738	88	0,87	424	927	2179	420
150	45000	2920	284	1858	88	0,88	485	1034	2408	494



8"
Encapsulated Motor „HighTemp 75°C“

Standard: SAND FIGHTER

Submersible Motors

Quality in the Well

These 8" encapsulated motors, manufactured in ISO 9001 certified facilities, are built for dependable operation in 8" diameter or larger water wells with ambient temperature up to 75°C.
It is fitted with water lubricated radial and thrust bearings for maintenance-free operation. The motor is filled with a special FES92 fluid, providing frost protection down to -15ºC storage temperture.
A special diaphragm ensures pressure compensation inside the motor.The Sand fighter® SiC seal system is standard.

Technical Specification

Standard Motor:

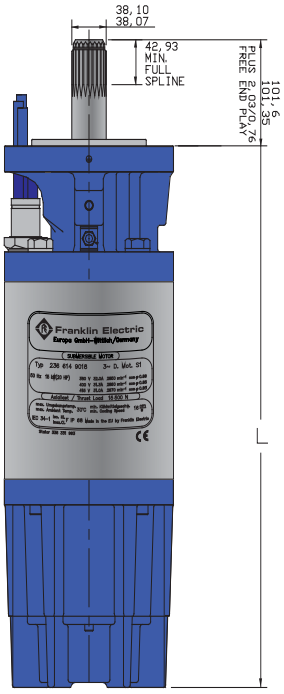
- 30 ... 110 kW
- 8" NEMA double flange
- Protection: IP 68
- Starts per hour: 10
- Installation: vertical/horizontal
- Standard Voltage: 380-415V/50Hz, 460V/60Hz
- Voltage tolerance 50Hz: -10% / +6% U_N [380-415V = (380-10%) – (415+6%)]
- Voltage tolerance 60Hz: ±10%U_N
- Motor protection: Select thermal overloads according to DIN 61947-4-1
- Insulation: Class F
- Rated ambient temperature: 75°C
- Cooling flow: min. 0,16 m/s
- DOL / YΔ - start (pos. of cables 90°)
- Motor lead in 4m length

Product features

- Up to 75°C ambient temperature
- Increast thrust capacity up to 30°C
- No cooling flow in larger wells (open reservoirs) up to 30°C ambient
- Hermetically sealed encapsulated stator, anti track, self healing stator resin
- Removable “Water Bloc” lead connector
- „Sand fighter®“ Motor with SiC-Mechanical Seal
- High efficiency electrical design for low operation cost
- All motors prefilled and 100% tested.
- Max. storage temperature -15°C - + 60°C
- High temperature leads
- Non contaminating FES 92 filling

Options

- Other voltages
- Motors complete in 316 SS
- Motor lead in 8m length



8" Encapsulated Motors HighTemp 75
3~ / 400V / 50Hz

P_N [kW]	Thrust F [N]	U_N [V]	n_N [min^{-1}]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
30	45000	400	2930	65,5	499	80	0,83	97,8	298	1138	182
37	45000	400	2940	79,6	692	82	0,84	120	398	1265	207
45	45000	400	2945	93,1	884	84	0,84	146	465	1455	252
56	45000	400	2930	115	927	84	0,85	182	526	1748	318
75	45000	400	2935	151	1254	86	0,85	244	695	1976	382
93	45000	400	2925	186	1482	86	0,86	304	949	2179	421
110	45000	400	2935	224	1690	86	0,85	358	1002	2408	473

6"
Rewindable Motor

Standard: SAND FIGHTER

Optional: STAINLESS STEEL 316 SS, STAINLESS STEEL 904 L

Submersible Motors

Quality in the Well

These 6" rewindable 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 FES93 fluid, providing frost protection down to -15ºC storage temperture.
The Sand fighter® SiC seal system is the option for sandy applications. For applications in aggressive media, motors made of 316SS and 904L are available.

Product features

- Cable material according to drinking water regulations (KTW approved)
- Sand slinger and mechanical seal for high performance in sand
- High efficiency electrical design for low operation cost
- All motors prefilled and 100% tested
- Max. storage temperature -15°C - + 60°C
- Design for retrofitable PT100 sensor
- Approved Franklin Electric „Kingsbury Type“ thrust bearing
- Non contaminating FES 93 -filling
- Sand fighter® SiC seal system is standard
- Standard motors in complete 304SS

Technical Specification

Standard Motor:

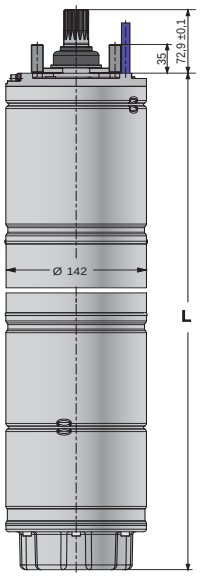
- 4,0 - 37,0kW
- 6" NEMA flange with Studs (M 12)
- Protection: IP 68
- Starts per hour: max. 20
- Installation position: vertical / horizontal (**37 kW** motors may not be installed horizontally)
- Motor Lead in 4m length (KTW approved)
- Standard Voltage: 380-415V/50Hz, 460V/60Hz
- Voltage tolerance 50Hz: -10% / +6% U_N [380-415V = (380-10%) – (415+6%)]
- Voltage tolerance 60Hz: ±10%U_N
- Motor protection: Select thermal overloads according to EN 61947-4-1
- YΔ - start (pos. of cables 90°)
- Standard motor with PVC winding insulation(37kW in standard with PE2/PA insulation) for max. ambient temp. of 30ºC with a min.cooling flow:
  4 kW - 15 kW v = 0,2 m/s
  18,5 kW - 37 kW v = 0,5 m/s

Options

- Other voltages
- Motors in 316 SS and 904 L
- Motors up to 30kW with PE2/PA winding insulation for max. ambient temp. of 50°C at the same cooling conditions as standard (37 kW max. 45°C)
- PT 100 temperature sensor (sold separately)
- Lead in different lengths up to 50m

6" Rewindable Motors
3~ /400 V / 50 HZ

P_N [kW]	Thrust F [N]	n_N [min-1]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
4	15500	2930	10,6	51	0,76	0,73	13,1	17,3	679	43
5,5	15500	2890	13,3	51	0,76	0,81	18,2	17,3	679	43
7,5	15500	2880	17,7	63	0,77	0,82	24,8	21,5	699	45
9,3	15500	2870	21,4	78	0,78	0,82	31,0	29,0	729	48
11	15500	2880	25,2	98	0,79	0,83	36,4	35,3	759	51
13	15500	2900	29,6	125	0,80	0,81	42,8	50,3	809	56
15	15500	2890	33,1	148	0,81	0,83	49,4	60,4	854	61
18,5	15500	2880	42,0	182	0,81	0,80	61,2	84,3	899	65
22	15500	2900	49,0	231	0,82	0,80	72,5	102,2	989	74
26	15500	2900	56,7	284	0,83	0,83	85,6	134,7	1094	85
30	27500	2910	66,4	347	0,83	0,80	98,4	151,0	1194	95
37	27500	2900	81,9	433	0,83	0,80	121,6	215,8	1274	102



6" High Efficiency System

In consideration of environmental relief and energy saving Franklin Electric developed a High Efficiency Submersible Borehole System, consisting of a synchronous 6" Submersible motor associated variable frequency drive, output filter and submersible pump.

System Product features

- Standard Motor in full 304SS
- One-stop shop – perfectly matching components guarantee first class performance
- Up to **20% energy saving***
  ⇨ *System payback < 2 years*
- Up to **13% improved motor efficiency** (system up to 11%) with excellent partial load behaviour*
  ⇨ *SKU Reduction*
- Significant lower motor heat rise
  ⇨ *Increased lifetime*
- Higher power density*
  ⇨ *Lightweight*
- Easy installation/ set-up due to tailored pre-setting, user interface and software
- Speed control
  ⇨ *Optimum aggregate operation - pump matches system any time*
- Incorporated Soft start and protection features
  ⇨ *Increased lifetime*
  ⇨ *No additonal investment*
- Reduced amps
  ⇨ *Smaller drop lead cross size*
- Top class protection with Electronics in IP66/54**
  ⇨ *Easy retrofit - no additional cabinet cost*
- Power factor corrected input
  ⇨ *No power compensation needed*
- Communication Modbus (RS485 and Ethernet)

*In comparison to current asynchronous technology

**Alternative Electronics in IP21/00 for cabinet assembly available

Technical System Specification

- Rating: 4 - 37kW
- Power Supply: Voltage 400V +/- 10%
  Frequency 50Hz +/- 6%

System Options

- Plug-in card 6x DI/DO
- Plug-in card PT100
- Plug-in card 1x AI & 2x AO
- Plug-in card Profibus
- Power Supply: 200V & 500V
- Sinus output filters in IP54 and IP00
- PT100 protection
- Motors in 316SS and 904L

High Efficiency Motors 304SS

Motor Features:

- Standard Motor complete in 304SS
- Motors also in 316SS and 904L available
- PE2/PA winding as a standard
- SandFighter® SIC seal system
- Easy rewinding - winding housings removable
- Non-contaminating FES93 filling
- All motors pre-filled and 100% tested
- Max. storage temperature -15 ... +60°C
- Drinking water approved (KTW, ACS)

Variable Speed Drive (VFD)

VFD Features:

- Supports induction and permanent magnet motors
- Top class protection IP66 with Aluminium die casting powder coated enclosure . Alternative in IP21 with plastic enclosure
- Optimized for submersible permanent motor feeding – first class performance (Tailored pre-setting, user interface and software)

Output Filter

Output Filter Features:

- du/dt filter for lead lengths up to 120m, for lead lengths >120m please consult Franklin Electric.
- filter available in IP54 and IP00
- Optimized for submersible permanent motor feeding – first class performance

Pumps

For any pump support please refer to:

http://www.franklinwater.eu

8"
Rewindable Motor

Optional: SAND FIGHTER | STAINLESS STEEL 316 SS | STAINLESS STEEL 904 L

Submersible Motors

Quality in the Well

These 8" rewindable motors, manufactured in ISO 9001 certified facilities, are built for dependable operation in 8" diameter or larger water wells. It is fitted with water lubricated radial and thrust bearings for maintenance-free operation. The motor is filled with a special FES93 fluid, providing frost protection down to -15ºC storage temperture.
A special diaphragm ensures pressure compensation inside the motor.The Sand fighter® SiC seal system is standard. For applications in aggressive media, motors made of 316SS and 904L are available.

Technical Specification

Standard Motor:

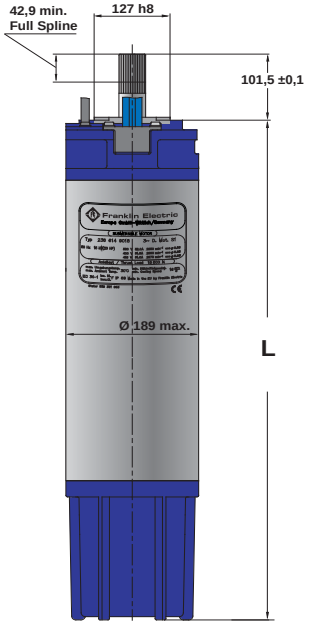
- 30,0 - 93,0kW
- 8" NEMA flange
- Protection: IP 68
- Starts per hour: max. 10
- Installation position: vertical / horizontal (**93 kW** motors may not be installed horizontally)
- Motor Lead in 6 m length (KTW approved)
- Standard Voltage: 380-415V/50Hz, 460V/60Hz
- Voltage tolerance 50Hz: -10% / +6% U_N [380-415V = (380-10%) – (415+6%)]
- Voltage tolerance 60Hz: ±10%U_N
- Motor protection: Select thermal overloads according to EN 61947-4-1
- DOL / YΔ - start (pos. of cables 90°)
- Standard motor with PVC winding insulation
- for max. ambient temp. of 30ºC with a min.cooling flow:
  30 kW - 52 kW v = 0,2 m/s
  55 kW - 93 kW v = 0,5 m/s

Product features

- Easy to assemble with double flange
- Cable material according to drinking water regulations (KTW approved)
- Sand fighter® SiC seal system for high performance in sand
- High efficiency electrical design for low operation cost
- All motors prefilled and 100% tested
- Max. storage temperature -15°C - + 60°C
- Design for retrofitable PT100 sensor
- Non contaminating FES 93 filling

Options

- Other voltages
- Motors in complete 316 SS and 904 L
- YΔ - start (pos. of cables 90°)
- PE2/PA winding insulation for max. ambient temp. of **50**°C at the same cooling conditions as standard
- PT 100 temperature sensor (sold separately)
- Lead in different lengths up to 50m



8" Rewindable Motors
3~/400 V / 50 Hz

P_N [kW]	Thrust F [N]	n_N [min^{-1}]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
30	45 000	2900	60	318	0,84	0,89	99	141	1140	140
37	45 000	2900	76	400	0,84	0,86	122	176	1140	140
45	45 000	2910	90	520	0,86	0,86	148	241	1230	156
52	45 000	2910	103	608	0,86	0,87	175	318	1340	179
55	45 000	2915	110	660	0,86	0,86	181	340	1340	179
60	45 000	2910	116	725	0,87	0,88	197	357	1470	198
67	45 000	2910	133	797	0,87	0,86	220	359	1470	198
75	45 000	2910	148	942	0,87	0,87	246	472	1560	215
83	45 000	2920	160	1077	0,88	0,88	273	544	1560	247
93	45 000	2920	183	1276	0,88	0,86	305	626	1740	247

8" High Efficiency System

Franklin Electric is pleased to introduce the extended power range up to 150kW for its High Efficiency Submersible Borehole systems (HES). The system consists of an 8" synchronous submersible NEMA motor with associated variable frequency drive and matching output filter.

Ever since their introduction, our 6" HES have proven their world-class efficiency in more than 400 applications to date, saving up to 20% of electrical energy when compared to standard asynchronous motor system.

System Product advantages:

- One-stop shop - perfectly matching components guarantee first class performance/ efficiency
  - ⇨ *System payback < 2 years*
- Up to **8% improved motor efficiency** with excellent partial load behaviour
  - ⇨ *SKU Reduction*
- Significant lower motor heat rise
  - ⇨ *Increased lifetime*
- Higher power density
  - ⇨ *Lightweight*
- Easy set-up due to tailored pre-setting, user interface and own **Franklin Electric software**
- Speed control
  - ⇨ *Optimum aggregate operation - pump matches system any time*
- Incorporated Soft start and protection features
  - ⇨ *Increased lifetime*
  - ⇨ *No additonal investment*
- Reduced amps
  - ⇨ *Smaller drop lead cross size*
- Power factor corrected input
  - ⇨ *No power compensation needed*
- Communication Modbus (RS485, Ethernet and optional Profibus)

Technical System Specification

- Rating: 75 / 100 / 150kW
- Power Supply: Voltage 400V +/- 10%
  Frequency 50Hz +/- 6%

System Options

- Plug-in card 6x DI/DO - 308 170 201
- Plug-in card PT100 - 308 170 202
- Plug-in card Profibus - 308 170 203
- Plug-in card 1x AI & 2x AO 308 170 206
- Other voltages
- Sinus output filters in IP54 and IP00
- PT100 protection
- Motors in 316SS and 904L

High Efficiency Motors 304SS

Motor Features:

- 75 / 100 / 150kW
- Power supply 400V/100Hz
- 8" NEMA flange
- 8" Motor in 304SS / CI (Powder Coated)
- PE2/PA winding as a standard
- SandFighter® SIC seal system
- Non-contaminating FES93 filling
- All motors pre-filled and 100% tested
- Max. storage temperature -15 ... +60°C
- Drinking water approved

Variable Speed Drive (VFD)

VFD Features:

- Supports induction and permanent magnet motors
- Top class protection IP21 with plastic enclosure
- Optimized for submersible permanent motor feeding – first class performance (Tailored pre-setting, user interface and software)

Output Filter

Output Filter Features:

- dV/dt filter for lead lengths up to 120m, for lead lengths >120m please consult Franklin Electric.
- filter available in IP54 and IP00
- Optimized for submersible permanent magnet motor feeding

Pumps

For any pump support please refer to:

http://www.franklinwater.eu

10"
Rewindable Motor

Optional: SAND FIGHTER | STAINLESS STEEL 316 SS | STAINLESS STEEL 904 L

Submersible Motors

Quality in the Well

These 10" rewindable motors, manufactured in ISO 9001 certified facilities, are built for dependable operation in 10" diameter or larger water wells.
It is fitted with water lubricated radial and thrust bearings for maintenance-free operation. The motor is filled with a special FES93 fluid, providing frost protection down to -15ºC storage temperture.
A special diaphragm ensures pressure compensation inside the motor.The Sand fighter® SiC seal system is standard. For applications in aggressive media, motors made of 316SS and 904L are available.

Technical Specification

Standard Motor:

- 85,0 - 185,0kW
- 10" flange
- Protection: IP 68
- Starts per hour: max. 10
- Installation position: vertical / horizontal (**185 kW** motors may not be installed horizontally)
- Motor Lead in 6 m length (KTW approved)
- Standard Voltage: 380-415V/50Hz, 460V/60Hz
- Voltage tolerance 50Hz: -10% / +6% U_N [380-415V = (380-10%) – (415+6%)]
- Voltage tolerance 60Hz: ±10%U_N
- Motor protection: Select thermal overloads according to EN 61947-4-1
- DOL / YΔ - start (pos. of cables 90°)
- Standard motor with PVC winding insulation for max. ambient temperature of **25ºC** with a min. cooling flow: v = 0,5 m/s

Product features

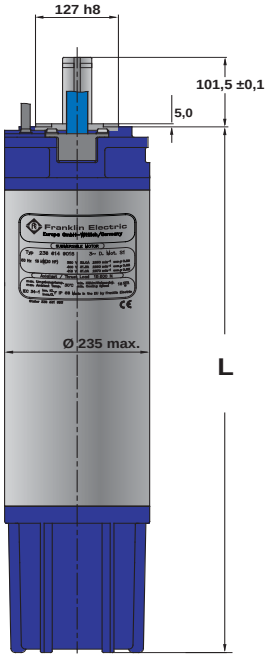
- Easy to assemble with double flange
- Cable material according to drinking water regulations (KTW approved)
- Sand fighter® SiC seal system for high performance in sand
- High efficiency electrical design for low operation cost
- All motors prefilled and 100% tested
- Max. storage temperature -15°C - + 60°C
- Design for retrofitable PT100 sensor
- Non contaminating FES 93 filling

Options

- Other voltages
- Motors in complete 316 SS and 904 L
- PE2/PA winding insulation for max. ambient temp. of **45**°C at the same cooling conditions as standard
- PT 100 temperature sensor (sold separately)
- Lead in different lengths up to 50m

10" Rewindable Motors
3~/400 V / 50 Hz

P_N [kW]	Thrust F [N]	n_N [min^{-1}]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
85	60 000	2900	174	828	0,85	0,85	280	316	1419	280
110	60 000	2920	232	1158	0,86	0,82	360	467	1529	315
130	60 000	2920	256	1344	0,88	0,86	425	546	1659	362
150	60 000	2920	298	1590	0,87	0,85	491	635	1769	413
185	60 000	2920	384	2148	0,88	0,81	605	1022	1919	449



12"
Rewindable Motor

Standard: SAND FIGHTER

Submersible Motors

Quality in the Well

These 12" rewindable motors, manufactured in ISO 9001 certified facilities, are built for dependable operation in 12" diameter or larger water wells.
It is fitted with water lubricated radial and thrust bearings for maintenance-free operation. The motor is filled with a special FES93 fluid, providing frost protection down to -15ºC storage temperture.
A special diaphragm ensures pressure compensation inside the motor. For applications in aggressive media, motors made of 316SS are available.

Technical Specification

Standard Motor:

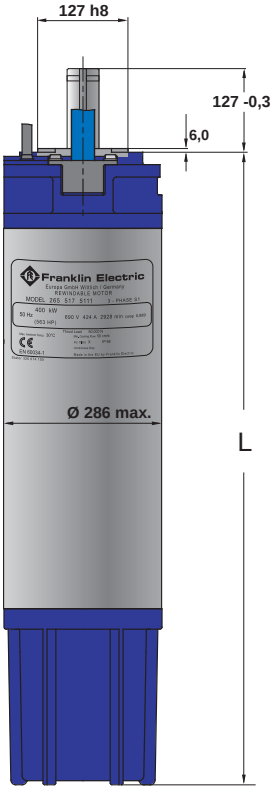
- 185kW - 400kW
- 12" flange
- Protection: IP 68
- Starts per hour: max. 5
- Installation position: vertical / horizontal
- Motor Lead in 6 m length (KTW approved)
- Standard voltage:
  - 380-415V/50Hz, 460V/60Hz
  - 500V/50Hz
  - 1000V/50Hz
- Voltage tolerance 50Hz: -10% / +6% U_N [380-415V = (380-10%) – (415+6%)]
- Voltage tolerance 60Hz: ±10%U_N
- Motor protection: Select thermal overloads according to EN 61947-4-1
- DOL / YΔ - start (pos. of cables 90°)
- 30ºC ambient temperature with a min. cooling flow: v = 0,5 m/s

Product features

- Easy to assemble with double flange
- Cable material according to drinking water regulations (KTW approved)
- Sand fighter® SiC seal system for high performance in sand
- High efficiency electrical design for low operation cost
- All motors prefilled and 100% tested
- Max. storage temperature -15°C - + 60°C
- Design for retrofitable PT100 sensor
- Non contaminating FES 93 filling

Options

- Motors in complete 316SS
- 80kN thrust load
- Other voltages
- PT 100 temperature sensor (sold separately)
- Special lead lengths upon request



12" Rewindable Motors
3~/400 V / 50 Hz

P_N [kW]	Thrust F [N]	U_N [V]	n_N [min-1]	I_N [A]	I_A [A]	η [%]	cos φ [%]	T_N [Nm]	T_A [Nm]	L [mm]	m [kg]
185	60 000	400	2940	357	1892	87	0,87	600	666	1893	663
220	60 000	400	2940	418	2257	88	0,88	714	850	1893	663
250	60 000	400	2935	481	2501	88	0,88	812	772	1893	663
300	60 000	400	2945	551	3085	88	0,90	971	913	2043	726
350	60 000	400	2930	676	3515	87	0,88	1137	1024	2143	769
400	60 000	400	2930	750	3600	90	0,87	1301	1093	2193	794

FHoton Solar*PAK*

The Fhoton SolarPAK is the system solution to your solar pumping requirements. By utilizing quality components, innovative thinking based on global market inputs, and a technical expertise in groundwater pumping, Franklin Electric has developed a rugged, high-output system which tackles the challenges of harsh and remote environments. No other system delivers the features, benefits, and reliability of Fhoton SolarPAK in just one package!

Features

- High-flow system for faster tank-fill and significant water output
- Proven motor and pump technology for long-term reliability
- Robust IP66, NEMA 4 enclosure minimizes impact from wildlife, insects, dust, and weather
- DC solar array
- Operating status indicated by multi-color LED
- Terminals provided for an optional data communications board
- Max Power Point Tracking (MPPT) for maximizing efficiency of input power
- Soft-start feature prevents water hammer and increases system life
- Allows use of new solar array or retrofit to existing array (subject to size and performance check)
- Simple installation with no required maintenance
- Built-in diagnostics and protection
- CE, C-Tick, cULus and UL approved

SolarPAK Contents

- Franklin Electric 4" submersible motor
- Franklin Electric 4" submersible pump
- Fhoton Solar controller
- Flow switch
- Variety of flow rates available: 17, 30, 67, 100, 117 lpm (1, 2, 4, 6, 7 m³/h)
- Motor and drive ratings available: 0.55 or 1.1 kW

Solar Controller Specification

	0.55 kW Model	1.1 kW Model
Controller Model No.	58101300086C-62IS000	58101420086C-62IS002
Output		
Max. Output Voltage	100V AC, 3-phase	200V AC, 3-phase
Max. Amps (RMS)	8.6 A, each phase	6.8 A, each phase
Output Frequency	20-60 Hz	
Efficiency at Max Power	98%	
PV Source / Input		
Max. Input Voltage	*45 - 300 VDC	**115 - 420 V DC
Max. Amps Input	7.2 A DC, continuous	6.2 A DC, continuous
Power at MPP	Up to 1200 watts	Up to 2000 watts
VOC	300 V	420 V

* 45 and ** 115 VDC for the 0.55 kW and 1.1 kW models respectively should not be interpreted as an adequate rated PV array output voltage for any installation. See the PV Solar Array Specifications and System Sizing program for indication of adequate array voltage to provide useful pumping capability.

6" High Efficiency Solar System

Franklin Electric is pleased to announce the introduction of the extended SOLAR feature for its 6" High Efficiency Submersible Borehole systems (HES).
These systems, consisting of a full stainless, synchronous submersible NEMA motor associated with a variable frequency drive and matching output filter have proven their world-class efficiency in over 300 applications to date, saving up to 20% of electrical energy when compared to standard synchronous motor systems.

System Product advantages

- One-stop shop – perfectly matching components guarantee first class performance / efficiency
  ⇨ *Less panels, more water respectively*
- Direct DC feeding
- Special MPP algorithm for centrifugal borehole pumps
- Top class protection with Electronics in IP66/IP54
  ⇨ *No cabinet - no cooling fan/ dust filter - no maintenance*
- GORE® vent
  ⇨ *No condensation*
- Easy set-up due to tailored pre-setting, user interface and **Franklin Electric software**
- Reduced amps
  ⇨ *Smaller drop lead cross size*
- Higher power density
  ⇨ *Lightweight*
- Significant lower motor heat rise
  ⇨ *Increased lifetime*
- Communication Modbus (RS485 and Ethernet)

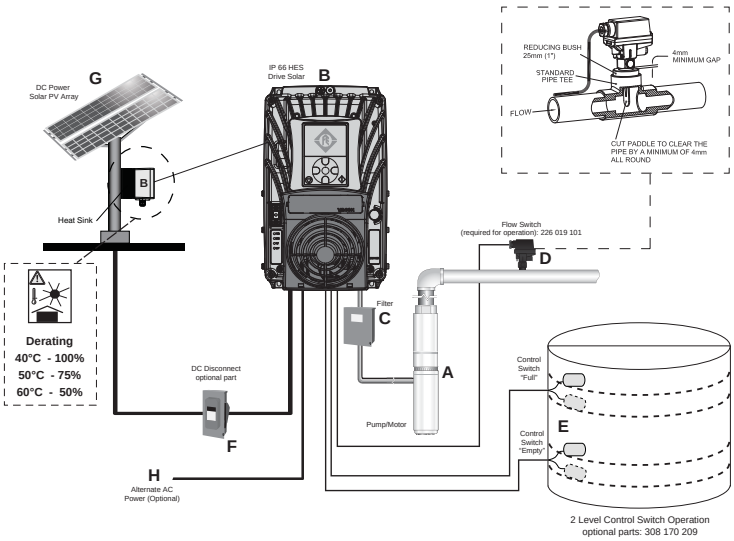
Technical System Specification:

- Rating: 4 - 30kW
- Power Supply: Voltage 400 - 800V DC (min. starting voltage 440V)
- Frequency 30 - f_N (50 respectively 60Hz)

System Options

- Plug-in card 6x DI/DO - 308 170 201
- Plug-in card PT100 - 308 170 202
- Plug-in card Profibus - 308 170 203
- Plug-in card 1x AI & 2x AO 308 170 206
- Other voltages
- Sinus output filters in IP54
- PT100 protection
- Motors in 316SS and 904L

A. High Efficiency Motor and Pump
B. IP66 HES Drive Solar
C. OutputFilter
D. Flow Switch
E. Level Control Switch (not included)
G. Solar Array (not included)
H. AC Alternative Power supply (not included)
F. DC Disconnect (not included)



To find the right System please use Selection & Payback link on: http://www.franklinwater.eu

6" High Efficiency Rewindable Motors

Motor Features

- Rating 4 - 37kW
- Motor complete in 304SS, 316SS and 904L available
- PE2/PA winding as a standard
- SandFighter® SIC seal system
- Easy rewinding - winding housings removable
- Non-contaminating FES93 filling
- All motors pre-filled and 100% tested
- Max. storage temperature -15 ... +60°C
- Drinking water approved

Variable Speed Drive (VFD)

VFD Features

- Supports induction and permanent magnet motors
- Top class protection IP66 with Aluminium die casting powder coated enclosure . Alternative in IP21 with plastic enclosure
- Optimized for submersible permanent motor feeding – first class performance (Tailored pre-setting, user interface and software)

Output Filter

Features:

- du/dt filter for lead lengths up to 120m, for lead lengths >120m please consult Franklin Electric.
- filter available in IP54 and IP00
- Optimized for submersible permanent magnet motor feeding

Flow Paddle Switch

The flow switch utilizes the force of liquid flow to propel its paddle and to detect the incoming flow or movement of the existing liquid in the pipe. A required Part of the 6" High Efficiency Solar System.

Level Switch

A float switch is a device used to detect the level of liquid within a tank. A required Part of the 6" High Efficiency Solar System.

DC Disconnect

To disconnect the drive even under load safely from the solar generator, Franklin Electric offers suitable DC disconnect switches for different power ratings.

0 - 11A/800V DC - 308 170 313

12 - 22A/800V DC - 308 170 325

SS Pumps

For any pump support please refer to:

http://www.franklinwater.eu

SubMonitor
Motor Protection

The SubMonitor is designed to protect 3-phase pumps with horsepower ratings between 3 and 200 Hp. Current, voltage and motor temperature are monitored using three integrated current transformers. A digital display provides current and voltage readings for all three legs and allows the user to set up the SubMonitor quickly and easily.

The SubMonitor is the latest innovation in 3-phase pump protection from Franklin Electric. Using state-of-the-art technology, the SubMonitor provides the ultimate protection for a pump and motor. There is simply no better way to protect a large 3-phase submersible pump investment than with a SubMonitor.

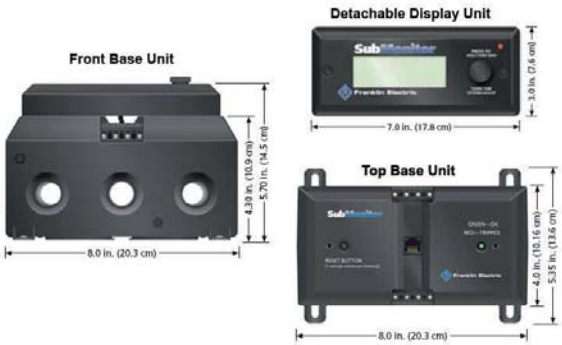
It‘s the protection device that can sense overheating straight from the motor windings! And it is made by the world leader in submersible motors - Franklin Electric.

Model number	
Premium Package	586 000 5100
Input Voltage	190 – 600 VAC
Frquency	60/50 Hz
Motor Service Factor Amps	3 to 359 Amps
Maximum Conductor Size Through Sensors	
Max. Diameter	0.920 in. (23 mm)
Trip Response	
Motor, Under / Overload, Under / Overvoltage, Overheat Unbalance	3 seconds
Control Circuit Rating	1.5 Amp AC, up to 600 volts
Signal Circuit Rating	1 Amp AC, up to 250 volts (Incandescent: 100 watts max.)
Wiring Terminals	
Wire Gauge	#12 to #18 AWG
Tighten to	4.5 in-lbs
Weight (SubMonitor)	3.3 lbs/7,3 kg
Carton Size (Std. Unit)	7,75 in x 11,5 in x 6,75 in (19,7 см x 29,2 см x 17,1 см)
Shipping Weight (Std. Unit)	3.5 Lbs./7.5 kg

Product features

- Quick setup to monitor a motor, simply enter the Line Frequency (Hz), Line Voltage (volts), and Motor Service Factor Amp rating
- Digital display indicates voltage and current on all three legs at the same time, and fault messages are in easily understandable text
- Monitors - Under/Overload; Under/Overvoltage; Current Unbalance; Overheated Motor (Subtrol Equipped); False Start (Chattering); Phase Reversal
- For motors with service factor amp ratings between 3 and 359 amps
- One unit covers the entire range from 190 to 600 Volts
- No need to make additional turns around the CT or add external CTs
- Password Protection Option
- DIN Rail Mounting Option
- Stores fault, setting changes, and pump run-time, that can be accessed through the display
- Detachable NEMA 3R display unit can be mounted on panel door
- UL 508 Listed

Dimensions



SubStartSC® Single phase Submersible Motor Starter

The SubStartSC® range covers all PSC motors from 0.25kW to 2.2kW for all voltages. Ergonomic design, attention to detail and unique features make the SubStartSC® motor starter range your first choice when considering submersible motor protection. In conjunction with Franklin Electric submersible motors you now have an tangible water system advantage resulting in ease of installation and reliable protection.

Product features:

- Attention to detail – every aspect engineered for the application
- The complete package – The device is 100% compatible with the motor characteristics
- All in one name – Reliability backed by the leader in submersible motors

Ergonomically designed	
Mounting	Easy wall mounting without destroying the protection rating of the enclosure.
Wiring	Sufficient space is provided for ease of wiring.
Enclosure	
Protection	IP54
Material	PVC / Polycarbonate
Components	
ON/OFF switch	Iluminated integral ON/OFF switch for ease of power
Circuit breaker	Thermal circuit breaker for protection of the motor.
Capacitor	High quality motor run capacitor for long life
Terminal board	Terminal board suitable for ease of reliable connections
Cable glands	Cable glands to ensure IP54 rating

Submersible Motor Starter Specifications

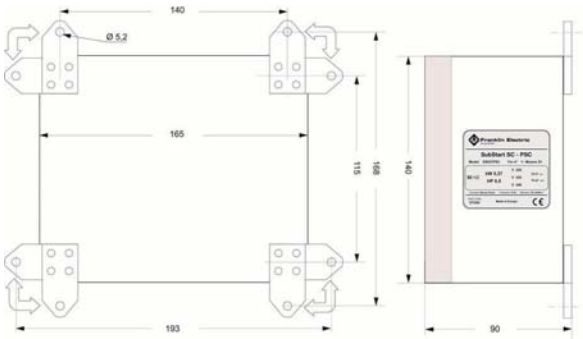
Part Number[1]	Type[2]	Motor rating (kW)	Nominal Current[3] (A)	Maximal expected current[4] (A)	Capacitor (µF) 450V ac
284 623 3510	SS025SC	0,25	2,4	9,4	12,5
284 624 3510	SS037SC	0,37	3,3	12,6	16
284 625 3510	SS055SC	0,55	4,3	17,7	20
284 626 3510	SS075SC	0,75	5,7	22,7	35
284 627 3510	SS110SC	1,10	8,4	33,9	40
284 628 3510	SS150SC	1,50	10,7	41,7	50
284 629 3510	SS220SC	2,20	14,7	61,8	70

Notes:

1. Can be used with both 220-230V and 230-240V PSC motor ranges.
2. Type indicates motor power rating and motor type.
3. Nominal supply current at nominal voltage
4. Motor starting current under nominal conditions

Technical Specifications	
Mechanical	
Protection level	IP54
External dimensions	168 x 142 x 85mm
Weight	0,6 - 1,0 kg
Mounting	Wall mounting (mounting hardware provided)
Temperature	-5°C - +40°C
Humidity	50% at 55°C (without condensation)
Electrical	
Voltage	220 - 240V; - 6 / +10 %; 50Hz single phase
Current	16 A
Power	0,25 - 2,2 kW
Standards	
IEC 60439-1	

Dimensions



SubStart3P® 3 Phase Submersible Motor Starter

The SubStart3P® range covers all 3 phase motors from 0.37kW to 7,5kW. Ergonomic design, attention to detail and unique features make the SubStart3P® motor starter range your first choice when considering submersible motor protection. In conjunction with Franklin Electric submersible motors you now have an tangible water system advantage resulting in ease of installation and reliable protection.

Product features:

- Attention to detail – every aspect engineered for the application
- The complete package – The device is 100% compatible with the motor characteristics
- All in one name – Reliability backed by the leader in submersible motors

Ergonomisches Design	
Mounting	Easy wall mounting without destroying the protection rating of the enclosure.
Wiring	Sufficient space is provided for ease of wiring.
Enclosure	
Protection	IP54
Material	PVC / Polycarbonate
Components	
ON/OFF Switch	Manual motor starter switch
Circuit breaker	Integrated thermal and magnetic overload protection
Auxiliary relay	Powered auxiliary contactor for use with external switches
Cable glands	Ensure IP54 rating

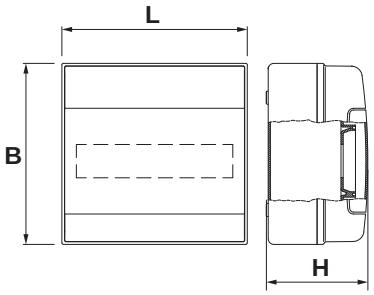
Submersible Motor Starter Specifications

Motor Rating (kW)	Type 3~ 400V 50Hz	Model Number	Nom. Current (A)	Starting Current (A)
0,37	SS037P3	288 500 3510	1,1	5,4
0,55	SS055P3	288 501 3510	1,6	7,4
0,75	SS075P3	288 502 3510	2	10,6
1,10	SS110P3	288 503 3510	2,8	16
1,50	SS150P3	288 504 3510	3,9	20,7
2,20	SS220P3	288 505 3510	5,5	29,8
3,0	SS300P3	288 506 3510	7,5	42
3,7	SS370P3	288 507 3510	9	52,3
4,0	SS400P3	288 508 3510	9,9	57
5,5	SS550P3	288 509 3510	12,6	77,2
7,5	SS750P3	288 510 3510	17,1	99,3

Technical Specifications	
Mechanical	
Protection level	IP 54
Environment	This equipment is suitable for environment B according to IEC/EN 61439 - 1 : 2010
Altitude	max 2000m above sea level
External dimensions	190x184x106mm <= 4kW
	250x256x140mm >= 5,5kW
Weight	1,2 kg <= 4kW
	2,3 kg >= 7,5kW
Mounting	Wall mounting (mounting hardware provided)
Storage temperature	-25°C to +55°C
Operation temperature	-5°C to +40°C
Humidity	50% at 40°C (without condensation)
Electrical	
Working Voltage	3~ / 50Hz 380 - 415V / -10% +6%
Voltage tolerance	380V -10% / 415V+6%
Rated insulation voltage	400 Vac
Rated short-time withstand current	50 kA
Rated conditional short-circuit current	50 kA
Current	5A, 9A, 16 A
Power	0,37kW - 7,5kW
Standards	
IEC/EN 61439 - 1 : 2010	

Dimensions

Motor Ratings (kW)	B (mm)	L (mm)	H (mm)
0,37kW - 4,0kW	190	184	106
5,5kW - 7,5kW	250	256	140



SubTronicSC® Single Phase Motor Protection

The SubTronicSC® range covers all PSC motors from 0.25kW to 2.2kW for all voltages. Ergonomic design, attention to detail and unique features make the SubTronicSC® motor starter range your first choice when considering submersible motor protection. In conjunction with Franklin Electric submersible motors you now have an tangible water system advantage resulting in ease of installation and reliable protection.

Product features:

- Attention to detail – every aspect engineered for the application
- The complete package – The device is 100% compatible with the motor characteristics
- All in one name – Reliability backed by the leader in submersible motors

Ergonomically designed	
Mounting	Easy wall mounting offering various options without destroying the protection rating of the enclosure.
Wiring	Reliable connectors are provided for ease of wiring.
Motor compatible design	
Matching range	The SubTronicSC® Protector range was designed to match the Franklin Electric range of PSC motors.
Wide range of operation	Compatibility with motor design allows for a wide range of operation resulting in minimized nuisance tripping.
Intelligent Protection and Management features	
Dry-run detection (without probes)	Prevents motor and pump damage due to running the pump without water based on a proprietary reliable detection method.
Dry-run auto- reset	Automatic dry-run reset time is based on a proprietary search algorithm to find the best operating point for weak wells. Reset time 6 to 60 minutes.
Over & Under voltage	Prevents motor damage that may be caused by abnormal voltage conditions without limiting the range of operation, made possible by matching the design of the SubTronicSC® Protector with the motor. Reset time approximately 3 minutes.
Over current protection	Prevents operation under conditions where motor current may exceed safe levels due to bound pump or other fault condition. Detection is based on current heating capacity measurement to prevent unnecessary nuisance tripping. Reset time approximately 10 minutes.
Faulty Start Protection	Prevents system damage due to factors such as faulty contacts or switch. Contact failure detection reacts fast and will prevent damage to system components.
Rapid Cycle Protection	Prevents system damage due to factors such as continuous rapid cycling and excessive motor thermal cycling caused by waterlogged tank, faulty contacts or faulty pressure switch.
Indicators	
Status	Indication shows normal operation or other condition.
Voltage	Faulty voltage condition is indicated.
Fault conditions	Dry-run, Over current, Rapid Cycling, and Faulty start are indicated.

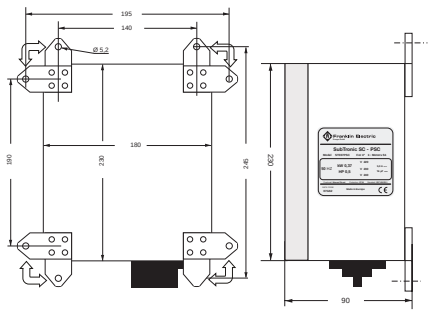
Technical Specification

Mechanical	
Protection level	IP54
External dimensions	290 x 230 x 95mm
Weight	0,6 - 1,0 kg
Mounting	Wall mounting (with options)
Temperature	-5°C - +40°C
Humidity	50% at 55°C (without condensation)
Electrical	
Voltage	220 - 240V; ± 10 %; 50Hz single phase
Current	16 A
Power	0,25 - 2,2 kW
Standards	
IEC 60439-1 when supplied with suitably fused supply.	

SubTronic SC Motor Protection Specifications

Part Number	Type	Motor rating (kW)	Nominal Current (A)	Maximal expected current (A)	Capacitor (µF) 450V ac
284 623 3511	ST025PSC	0,25	2,4	9,4	12,5
284 624 3511	ST037PSC	0,37	3,3	12,6	16
284 625 3511	ST055PSC	0,55	4,3	17,7	20
284 626 3511	ST075PSC	0,75	5,7	22,7	35
284 627 3511	ST110PSC	1,10	8,4	33,9	40
284 628 3511	ST150PSC	1,50	10,7	41,7	50
284 629 3511	ST220PSC	2,20	14,7	61,8	70

Dimensions



SubTronic3P® 3 Phase Motor Protection

The SubTronic3P® range covers all 4 inch 3 phase motors from 0.37kW to 7,5kW. Ergonomic design, attention to detail and unique features make the SubTronic3P® range your first choice when considering submersible motor protection and management. Together with Franklin Electric submersible motors you have an undisputable advantage, resulting in ease of installation, sophisticated system management and peace of mind.

Ergonomically designed	
Mounting	Easy wall mounting offering various options without destroying the protection rating of the enclosure.
Wiring	Reliable connectors are provided for ease of wiring.
Motor compatible design	
Matching range	The SubTronic3P® Protector range was designed to match the Franklin Electric range of 3 phase motors.
Wide range of operation	Compatibility with motor design allows for a wide range of operation resulting in minimized nuisance tripping.
Intelligent Protection and Management features	
Dry-run detection (without probes)	Prevents motor and pump damage due to running the pump without water based on a proprietary reliable detection method.
Dry-run auto- reset	Automatic dry-run reset time is based on a proprietary search algorithm to find the best operating point for weak wells. Reset time in max. 60 minutes.
Over & Under voltage	Prevents motor damage that may be caused by abnormal voltage conditions without limiting the range of operation, made possible by matching the design of the SubTronic3P® Protector with the motor. Reset time approximately 3 minutes.
Over current protection	Prevents operation under conditions where motor current may exceed safe levels due to bound pump or other fault condition. Detection is based on current heating capacity measurement to prevent unnecessary nuisance tripping. Auto-reset in 15 minutes. Manual reset possible in approximately 5 minutes by reapplying power.
Rapid Cycle Protection	Prevents system damage due to factors such as continuous rapid cycling and excessive motor thermal cycling caused by waterlogged tank, faulty contacts or faulty pressure switch. Auto-reset in 5 minutes if condition clears. Manual reset possible in approximately 5 minutes by reapplying power.
Indicators	
Status	Indication shows normal operation or other condition.
Voltage	Faulty voltage condition is indicated.
Fault conditions	Dry-run, Over Current, Rapid Cycling, Over Voltage and Under Voltage are indicated.

Specifications

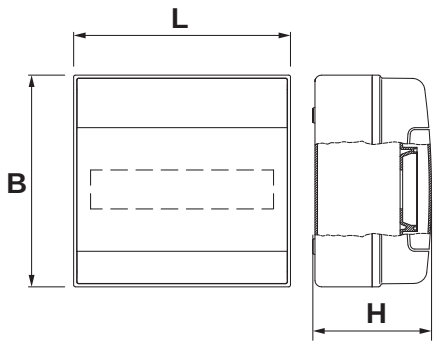
Mechanical Specification	
Protection level	IP 54
Environment	This equipment is suitable for environment B according to IEC/EN 61439 - 1 : 2010
Altitude	max 2000m above sea level
External dimensions	190 x 184 x 106 mm <= 3kW
	250 x 256 x 140 mm >= 3,7kW
Weight	1,2 kg <= 3kW
	2,5 kg >= 3,7kW
Mounting	Wall mounting (mounting hardware provided)
Storage temperature	-25°C to +55°C
Operation temperature	-5°C to +40°C
Humidity	50% at 40°C (without condensation)
Electrical Specifications	
Rated Voltage	3~ / 50Hz 380 - 415V
Voltage tolerance	380V -10% / 415V+6%
Rated insulation voltage	400 Vac
Rated short-time withstand current	50 kA
Rated conditional short-circuit current	50 kA
Current	5 A ; 9 A ; 25 A
Power	0,37 - 7,5kW
Standards	
IEC/EN 61439 - 1 : 2010	

SubTronic 3P Motor Protection Specifications

Motor Rating (kW)	Type 3phase / 400V 50Hz	Model Number	Nom. Current (A)	Max.Current (A)
0,37	ST037P3	288 500 3511	1,1	5,4
0,55	ST055P3	288 501 3511	1,6	7,4
0,75	ST075P3	288 502 3511	2	10,6
1,10	ST110P3	288 503 3511	2,8	16
1,50	ST150P3	288 504 3511	3,9	20,7
2,20	ST220P3	288 505 3511	5,5	29,8
3	ST300P3	288 506 3511	7,5	42
3,7	ST370P3	288 507 3511	9	52,3
4	ST400P3	288 508 3511	9,9	57
5,5	ST550P3	288 509 3511	12,6	77,2
7,5	ST750P3	288 510 3511	17,1	99,3

Dimensions

Motor Rating (kW)	B (mm)	L (mm)	H (mm)
0,37kW - 3kW	190	184	106
3,7kW - 7,5kW	250	256	140



SubDrive® Connect

This new generation of our proven constant pressure system, includes all the functionality of the current design, as well as the benefits and advanced features of the new SubDrive Connect System. Taking into account over 16 years of field experience with the SubDrive Family, the new platform is capable to optimize system performance, water pressure supply and system operating diagnostics.
In addition to the enhanced features below, the Connect models offering Wi-Fi connection for use with the FE Connect mobile application. With state of the art technology and well-chosen components, the new SubDrive Controllers provides constant pressure through variable speed control of submersible pumps.

Features:

- Constant water pressure with a wide range of settings (0.5 to 9.5bar)
- User-defined motor frequency range
- FE Connect Mobile Application for advanced settings and monitoring
- Plug and play system
- Built-in diagnostics and protection
- Easy-to-read LCD display for system pressure and fault identification
- Built-in duplex alternator for dual drive operation
- Proven components for long-term reliability
- Backwards compatibility and easy installation
- Single-phase 3-Wire motor operation (60Hz)
- Advanced motor soft-start feature increases motor life
- CE, cULus and UL approved

System Options:

- Moisture Sensor – Weet floor identification
- 4-20mA analog pressure transducer – 6, 10, 16bar
- Outdoor rated cable kit for analog pressure transducer
- Communication cable kit for built-in duplex alternator
- Replacement Kit for Input and Display Board
- Input and Output Filter
- Lightning Arrestor
- Fan Replacement Kit
- Standard SubDrive Pressure Switch

Service / Support:

- Easy commissioning by plug and play system
- User defined set-up
- Spare part kits for electronic controller and motor (on Request)
- Franklin Electric Connect Mobile Application

SubDrive Connect ordering Information:

Drive Model	Order Nb.	Three Phase Motors		Single-Phase (3-Wire) Motors 60 Hz
		50 Hz	60 Hz	
SubDrive 1100	**5870205153C**	0,75kW - 1,1kW	0,75kW - 1,1kW	0,37kW - 1,1kW
SubDrive 1500	**5870205353C**	0,75kW - 1,5kW	0,75kW - 1,5kW	0,37kW - 1,5kW
SubDrive 2200	**5870205453C**	0,75kW - 2,2kW	0,75kW - 2,2kW	0,37kW - 2,2kW

SubDrive Connect Specification:

Drive Model	SD 1100	SD 1500	SD 2200
SubDrive Model Nb.	**5870205153C**	**5870205353C**	**5870205453C**
Input Voltage	230V AC, 3-phase	230V AC, 3-phase	230V AC, 3-phase
Max. Input Amps	12 A	19 A	23 A
Output Frequency	30 - 77 Hz	30 - 77 Hz	30 - 77 Hz
Max. Output Amps	5,9 A (3-phase) 10,4 (single-phase)	8,1 A (3-phase) 13,2 (single-phase)	0,9 A (3-phase) 13,2 (single-phase)
Pressure Range	0,5 - 9,5 bar	0,5 - 9,5 bar	0,5 - 9,5 bar

Termination Kit 4"

This proven, sturdy solution is your choice of cable joining in temporary pump applications or when re-usage if the drop cable is desired. Furthermore, the flexibility and safety it provides for under field service conditions makes it the preferred choice over conventional, not breakable splicing kits.

Technical Description:

- Max. current 18 Ampere in air @ max. 50°C ambient temperature
- Max. current 23 Ampere submersed in water @ max. 30°C ambient temperature
- Max. voltage 750 V

Double Plug Lead for Termination Kit

Required for use of lead termination kit. Connected between termination kit and 4" motor.

- max. current 18 Ampere in air @ max. 50°C ambient temperature
- max. current 23 Ampere submersed in water @ max. 30°C ambient temperature
- max. Voltage 750V AC
- PSC / 2-wire / 3-wire Motors and 3 ~ Motors
- Optional strain relief
- Approvals: KTW

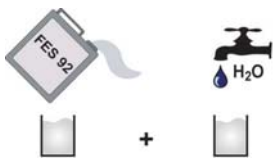
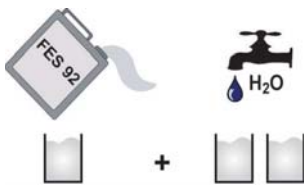
Splicing Kit 1,5 - 10mm²

- 4 wire
- 1,5 - 10mm²
- up to 1,2kV

Filling Liquid

Filling liquid 5 L FES92

4" Encapsulated	→	**FES93**	**8" Encapsulated Standard**	→	**FES91**
6" Encapsulated Standard	→	**FES91**	**8" Encapsulated HighTemp75**	→	**FES92**
6" Encapsulated HighTemp90	→	**FES92**	**Rewindable Motors All**	→	**FES93**

FES91	FES92	FES93
		

Motor Filling Kit

This kit contains all necessary tools to check and replenish Franklin Electric submersible motors with FES 91, 92 or 93 filling liquid (fill solution/concentrate must be ordered separately)

6" Permanent Star Plug

Application

For some applications it may be necessary to permanently run a star-delta submersible motor in star connection. This may be achieved by using the PERMANENT-STAR-PLUG . This connector short - circuits all three pins in one of the two motor sockets and is designed to replace one lead.

Couplings

Application

Franklin Electric offers this line of motor-pump couplings for maximum customer convenience in matching the Franklin motor to a variety of pump shafts. Couplings are designed to transmit the pump thrust to the motor in order to provide maximum benefits from the Franklin internal thrust bearing construction.

Hardened stainless steel spacer discs in the 4" and 6" couplings assure positive bearing between motor and pump shafts, and assure full support for downward thrust created by the pump.

8" couplings DO NOT contain hardened spacer discs, since the motor shaft itself is hardened.

Surge Arrestor

Application

These surge arrestors or their equivalents are highly recommended for protecting submersible motors from a variety of commonly occurring high voltage spikes which can damage the motor insulation system and cause motor winding failure. These arrestors will not, as is true of any surge protection equipment, protect the motor from a direct lightning strike.

Corrosion Protection 4"

Application

The sacrificial anode attaches to the bottom end bell of Franklin Electric 4" Super Stainless submersible motors. Since cast iron is more chemically active than the metals that make up the motor and pump, it is the cast iron that reacts to the corrosive elements in the water. This results in longer motor and pump life in aggressive / corrosive water conditions.

LT **HT**

PT100 for 6" and 8" Encapsulated Motors

Application

The PT100 is a precision platinum wire resistor that is specifi ed occasionally as a temperature input for process control equipment. A jacketed control lead must be run from the PT100 lead to the above-ground equipment. The above-ground equipment is not available from Franklin Electric and is typically part of a custom panel or data acquisition system.
PT100 sensor retrofi t kits from Franklin Electric come with complete instructions and allow for easy fi eld installation

Standard Motors

HighTemp Motors

PT100 Rewindable Motors

- Fitted into the upper end bell flange , all end bells 6",8",10" and 12" Rewindable are prepare for installation PT 100
- Measures the temperature of the filling liquid
- Conductor with a resistance proportional to the temperature
- Allows monitoring the temperature continuously

The above-ground equipment is not available from Franklin Electric and is typically part of a custom panel or data acquisition system . PT100 sensor retrofit kits from Franklin Electric come with complete instructions and allow for easy field installation.

Flow Paddle Switch

The flow switch utilizes the force of liquid flow to propel its paddle and to detect the incoming flow or movement of the existing liquid in the pipe. A required Part of the 6" High Efficiency Solar System.

Level Switch

A float switch is a device used to detect the level of liquid within a tank. A required Part of the 6" High Efficiency Solar System.

DC Disconnect

To disconnect the drive even under load safely from the solar generator, Franklin Electric offers suitable DC disconnect switches for different power ratings.

0 - 11A/800V DC - 308 170 313

12 - 22A/800V DC - 308 170 325

Inline Flow Switch

The Inline Flow Switch operates magnetically. The piston within the switch body should be a free fit and spring back to its off position as soon as flow stops. For flow rates up to 4 m³/h; Connection: G1 "

Pressure Switch SubDrive Constant- pressure Controller

The pressure switch signals continuously prevailing in the water supply system pressure to the SubDrive controller. The factory setting of the desired pressure is 3,4bar; However, they can be changed.

Franklin Electric

QUALITY

AVAILABILITY

SERVICE

INNOVATION

Quality in the Well

Franklin Electric

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54516 Wittlich / Germany

franklinwater.eu

DOC.NB. 308-018-485 REV. 24 05-17