

# Submersible motors

## Series SM





# Content

## Low-voltage motors - Frequency 50 Hz

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## Low-voltage motors - Frequency 60 Hz

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	SM12FT	High temperature	165-385 kW	27
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## Extremely high-efficient interior permanent magnet motors - IPM

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Higher motor powers and high-voltage motors on request.

# Low-voltage motors

Three-phase asynchronous motors



# Rewindable submersible motor 8"

## Motor type SM8

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 0.4 m<sup>2</sup> or 0.8 m<sup>2</sup>
- Special voltages on demand

### Technical specification

Construction	2-pole asynchronous motor
Size	8"
Motor type	SM8
Power range	30 kW up to 105 kW
Supply mode	3 phases AC
Frequency	50 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	8" NEMA
Installation	vertical, horizontal possible from 30 kW up to 65 kW
Maximum axial thrust	downwards 40 [kN] upwards 4 [kN]
Maximum cable size	57 x 19 mm
Winding	PP
Maximum permissible number of starts per hour	15 (min. stand still period 2 minutes)
Maximum installation depth	350 m

### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

### Technical data sheet

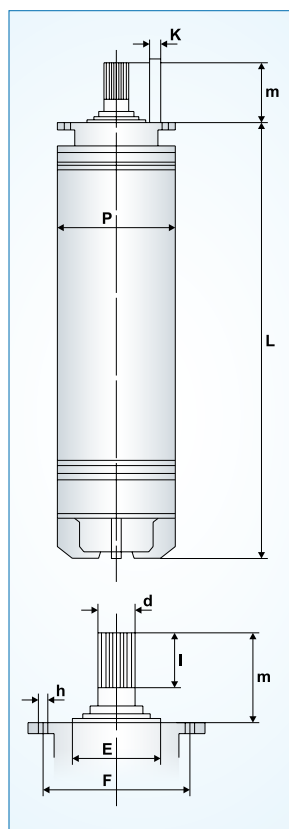
Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>N</sub> [rpm]	Starting values referred to rated data		
		380	400	500	693	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
<b>SM8/30/2</b>	30	63	60	48	35	79.0	82.0	83.0	0.78	0.84	0.87	2865	5.5	1.5	2.7
<b>SM8/40/2</b>	40	83	79	63	45	80.0	82.0	84.5	0.79	0.84	0.87	2885	5.5	1.5	2.7
<b>SM8/52/2</b>	52	107	101	81	59	81.0	84.0	85.0	0.79	0.84	0.87	2890	5.7	1.5	2.7
<b>SM8/65/2</b>	65	134	127	101	73	81.0	84.0	85.0	0.79	0.85	0.87	2890	5.7	1.5	2.7
<b>SM8/75/2</b>	75	150	142	114	82	81.0	85.5	86.5	0.80	0.85	0.88	2890	6.2	1.7	3.0
<b>SM8/85/2</b>	85	170	161	129	93	81.0	85.5	86.5	0.80	0.85	0.88	2900	6.2	1.9	3.4
<b>SM8/95/2</b>	95	189	179	143	103	82.0	86.0	87.0	0.80	0.85	0.88	2900	6.2	1.9	3.3
<b>SM8/105/2</b>	105	208	198	158	114	83.0	86.0	87.0	0.80	0.85	0.88	2900	6.2	1.9	3.0

For other voltages please ask for technical data.

# Rewindable submersible motor 8"

## Motor type SM8

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM8/30/2	1030	122
SM8/40/2	1115	137
SM8/52/2	1235	159
SM8/65/2	1365	183
SM8/75/2	1485	205
SM8/85/2	1590	224
SM8/95/2	1660	237
SM8/105/2	1790	261

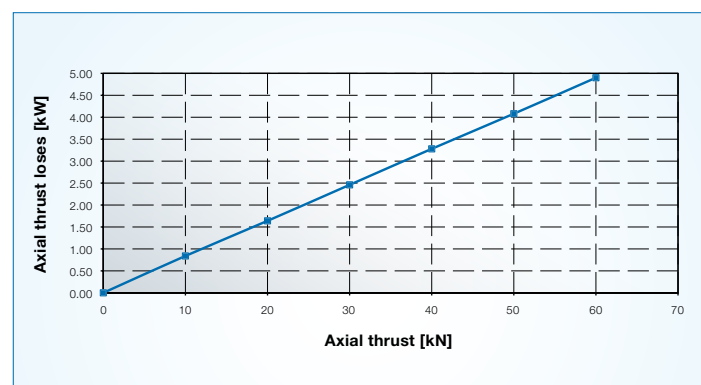
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
0.4	340	21
0.8	710	42

### General dimensions

Dim.	mm	Dim.	mm
P	189	E	127
m	101.6	F	152.4
d	38.1	h	17.7
I	57	S	4

### Axial thrust losses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 750 kg			Water flowing [v > 0.5 m/s] axial thrust < 750 kg			Water standing to slightly flowing axial thrust < 750 kg			Water flowing [v > 0.5 m/s] axial thrust < 750 kg		
	no HE	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	no HE	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	no HE	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	no HE	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>
SM8/30/2	24	32	38	33	39	43	-	18	27	20	28	35
SM8/40/2	21	29	35	31	37	41	-	14	23	16	25	32
SM8/52/2	17	25	32	30	34	39	-	9	18	12	21	28
SM8/65/2	16	24	30	28	32	37	-	6	15	10	19	26
SM8/75/2	16	23	29	26	32	36	-	-	14	10	18	25
SM8/85/2	13	20	26	24	30	35	-	-	10	7	15	22
SM8/95/2	12	19	25	24	29	34	-	-	9	6	14	21
SM8/105/2	11	18	24	23	28	33	-	-	7	5	13	19

HE = Heat exchanger

### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.

# Rewindable submersible motor 8"

## Motor type SM8T

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 0.4 m<sup>2</sup> or 0.8 m<sup>2</sup>
- Special voltages on demand

### Technical specification

Construction	2-pole asynchronous motor
Size	8"
Motor type	SM8T
Power range	30 kW up to 93 kW
Supply mode	3 phases AC
Frequency	50 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	8" NEMA
Installation	vertical, horizontal possible from 30 kW up to 56 kW
Maximum axial thrust	downwards 40 [kN] upwards 4 [kN]
Maximum cable size	57 x 19 mm
Winding	PE2/PA
Maximum permissible number of starts per hour	15 (min. stand still period 2 minutes)
Maximum installation depth	350 m

### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

### Technical data sheet

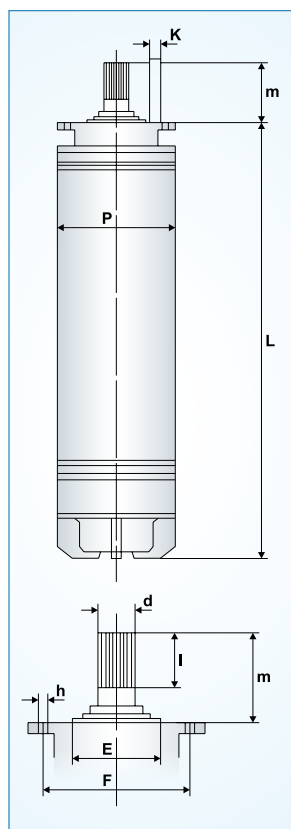
Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>N</sub> [rpm]	Starting values referred to rated data		
		380	400	500	693	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
SM8T/30/2	30	63	60	48	35	79.0	82.0	83.0	0.78	0.84	0.87	2880	5.5	1.5	2.7
SM8T/37/2	37	76	73	58	42	80.0	82.0	84.5	0.79	0.84	0.87	2890	5.7	1.5	2.7
SM8T/45/2	45	92	88	70	51	81.0	84.0	85.0	0.79	0.84	0.87	2900	6.1	1.7	2.9
SM8T/56/2	56	115	109	87	63	81.0	84.0	85.0	0.79	0.85	0.87	2900	6.0	1.6	2.8
SM8T/67/2	67	134	127	102	73	81.0	85.5	86.5	0.80	0.85	0.88	2900	6.2	1.6	2.9
SM8T/75/2	75	150	142	114	82	81.0	85.5	86.5	0.80	0.85	0.88	2900	6.2	1.8	3.0
SM8T/86/2	86	171	162	130	94	82.0	86.0	87.0	0.80	0.85	0.88	2900	6.3	1.7	3.0
SM8T/93/2	93	185	175	140	101	83.0	86.0	87.0	0.80	0.85	0.88	2900	6.3	1.9	3.0

For other voltages please ask for technical data.

# Rewindable submersible motor 8"

## Motor type SM8T

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM8T/30/2	1030	122
SM8T/37/2	1115	137
SM8T/45/2	1235	159
SM8T/56/2	1365	183
SM8T/67/2	1485	205
SM8T/75/2	1590	224
SM8T/86/2	1660	237
SM8T/93/2	1790	261

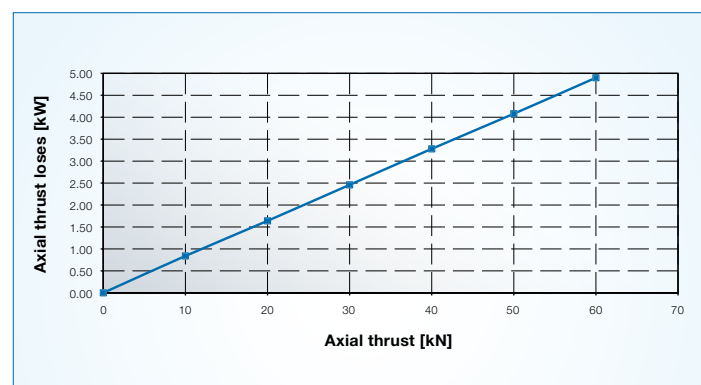
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
0.4	340	21
0.8	710	42

### General dimensions

Dim.	mm	Dim.	mm
P	189	E	127
m	101.6	F	152.4
d	38.1	h	17.7
I	57	S	4

### Axial thrust losses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 750 kg			Water flowing [v > 0.5 m/s] axial thrust < 750 kg			Water standing to slightly flowing axial thrust < 750 kg			Water flowing [v > 0.5 m/s] axial thrust < 750 kg		
	no HE	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	no HE	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	no HE	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	no HE	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>
SM8T/30/2	37	46	52	47	53	58	-	32	41	33	42	49
SM8T/37/2	37	45	51	46	53	57	-	30	39	32	41	48
SM8T/45/2	37	44	50	46	52	57	-	29	38	32	40	47
SM8T/56/2	38	45	50	47	52	56	-	30	37	33	41	47
SM8T/67/2	34	41	47	44	50	54	-	-	33	29	37	43
SM8T/75/2	35	41	46	45	50	53	-	-	32	29	37	43
SM8T/86/2	31	37	43	42	47	52	-	-	27	25	33	39
SM8T/93/2	31	37	42	42	46	51	-	-	27	25	32	38

HE = Heat exchanger

#### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.



# Rewindable submersible motor 8"

## Motor type SM8F

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 0.4 m<sup>2</sup> or 0.8 m<sup>2</sup>
- Special voltages on demand

### Technical specification

Construction	2-pole asynchronous motor
Size	8"
Motor type	SM8F
Power range	30 kW up to 94 kW
Supply mode	3 phases AC
Frequency	60 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	8" NEMA
Installation	vertical, horizontal possible from 30 kW up to 45 kW
Maximum axial thrust	downwards 40 [kN] upwards 4 [kN]
Maximum cable size	57 x 19 mm
Winding	PP
Maximum permissible number of starts per hour	10 (min. stand still period 2 minutes)
Maximum installation depth	350 m

### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

### Technical data sheet

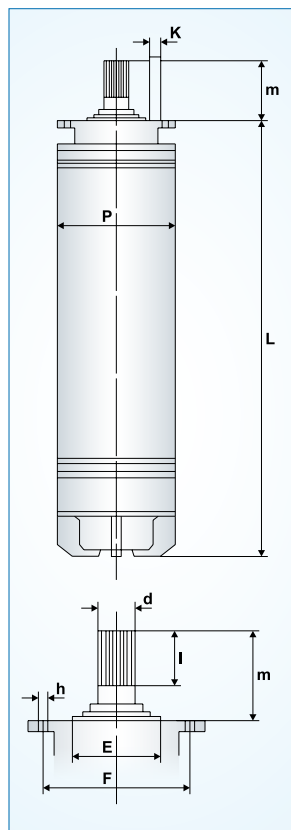
Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>N</sub> [rpm]	Starting values referred to rated data		
		220	380	460	660	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
<b>SM8F/30/2</b>	30	108	62	52	36	76.0	82.0	83.0	0.84	0.86	0.88	3480	5.2	1.0	2.6
<b>SM8F/38/2</b>	38	134	78	64	45	77.0	82.0	83.5	0.84	0.87	0.89	3480	5.5	1.2	2.6
<b>SM8F/45/2</b>	45	158	91	76	53	77.0	83.0	84.0	0.83	0.86	0.89	3500	6.5	1.1	2.9
<b>SM8F/56/2</b>	56	194	112	93	65	78.0	84.0	85.0	0.83	0.86	0.89	3500	6.5	1.3	3.0
<b>SM8F/75/2</b>	75	257	149	123	86	79.0	84.5	86.0	0.83	0.86	0.89	3500	6.3	1.4	3.0
<b>SM8F/94/2</b>	94	317	183	152	106	80.0	85.0	86.5	0.83	0.86	0.90	3500	6.3	1.4	2.9

For other voltages please ask for technical data.

# Rewindable submersible motor 8"

## Motor type SM8F

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM8F/30/2	1030	122
SM8F/38/2	1115	137
SM8F/45/2	1235	159
SM8F/56/2	1365	183
SM8F/75/2	1485	205
SM8F/94/2	1660	237

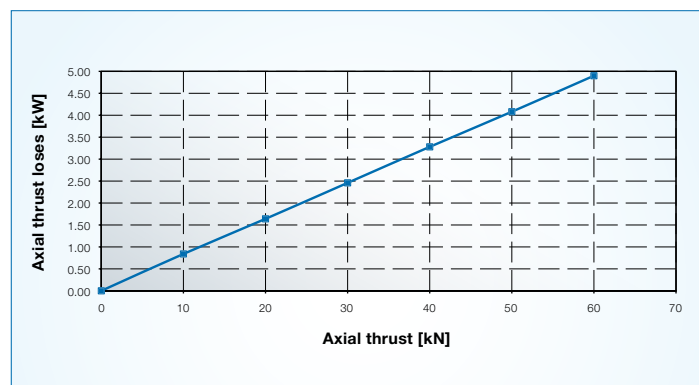
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
0.4	340	21
0.8	710	42

### General dimensions

Dim.	mm	Dim.	mm
P	189	E	127
m	101.6	F	152.4
d	38.1	h	17.7
I	57	S	4

### Axial thrust losses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 750 kg			Water flowing [v > 0.5 m/s] axial thrust < 750 kg			Water standing to slightly flowing axial thrust < 750 kg			Water flowing [v > 0.5 m/s] axial thrust < 750 kg		
	no HE	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	no HE	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	no HE	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	no HE	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>
SM8F/30/2	23	31	37	32	38	42	-	18	26	19	28	34
SM8F/38/2	22	30	35	31	37	41	-	16	24	18	26	33
SM8F/45/2	18	29	34	28	36	40	-	15	23	14	25	31
SM8F/56/2	21	28	33	29	35	39	-	14	21	17	24	30
SM8F/75/2	16	22	28	26	31	36	-	6	14	10	18	24
SM8F/94/2	8	16	22	20	26	31	-	-	5	2	11	18

HE = Heat exchanger

#### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.

# Rewindable submersible motor 8"

## Motor type SM8FT

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 0.4 m<sup>2</sup>, 0.8 m<sup>2</sup> or 1.2 m<sup>2</sup>
- Special voltages on demand

### Technical specification

Construction	2-pole asynchronous motor
Size	8"
Motor type	SM8FT
Power range	30 kW up to 94 kW
Supply mode	3 phases AC
Frequency	60 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	8" NEMA
Installation	vertical, horizontal possible from 30 kW up to 45 kW
Maximum axial thrust	downwards 40 [kN] upwards 4 [kN]
Maximum cable size	57 x 19 mm
Winding	PE2/PA
Maximum permissible number of starts per hour	10 (min. stand still period 2 minutes)
Maximum installation depth	350 m

### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

### Technical data sheet

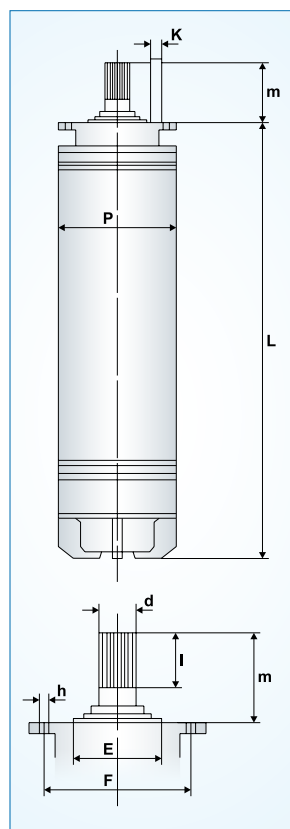
Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]			Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>N</sub> [rpm]	Starting values referred to rated data		
		220	380	460	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
SM8FT/30/2	30	108	62	52	76.0	82.0	83.0	0.84	0.86	0.88	3480	5.0	0.8	2.5
SM8FT/38/2	38	134	78	64	77.0	82.0	83.5	0.84	0.87	0.89	3480	5.4	0.9	2.6
SM8FT/45/2	45	158	91	76	77.0	83.0	84.0	0.83	0.86	0.89	3500	6.0	1.0	3.0
SM8FT/56/2	56	194	112	93	78.0	84.0	85.0	0.83	0.86	0.89	3500	6.5	1.0	3.1
SM8FT/75/2	75	-	149	123	79.0	84.5	86.0	0.83	0.86	0.89	3500	6.2	1.0	3.0
SM8FT/94/2	94	-	186	153	80.0	85.0	86.5	0.83	0.86	0.89	3500	6.2	1.0	2.9

For other voltages please ask for technical data.

# Rewindable submersible motor 8"

## Motor type SM8FT

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM8FT/30/2	1030	122
SM8FT/38/2	1115	137
SM8FT/45/2	1235	159
SM8FT/56/2	1365	183
SM8FT/75/2	1485	205
SM8FT/94/2	1660	237

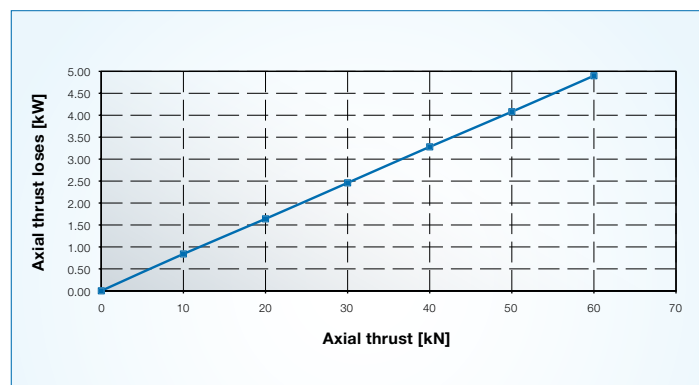
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
0.4	340	21
0.8	710	42
1.2	1060	63

### General dimensions

Dim.	mm	Dim.	mm
P	189	E	127
m	101.6	F	152.4
d	38.1	h	17.7
I	57	S	4

### Axial thrust losses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 750 kg			Water flowing [v > 0.5 m/s] axial thrust < 750 kg			Water standing to slightly flowing axial thrust < 750 kg			Water flowing [v > 0.5 m/s] axial thrust < 750 kg		
	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>
SM8FT/30/2	46	52	55	53	57	60	-	41	46	43	49	53
SM8FT/38/2	44	49	53	51	55	58	-	38	43	40	46	51
SM8FT/45/2	43	48	52	49	54	57	-	36	42	39	45	49
SM8FT/56/2	42	47	51	48	53	56	-	34	40	38	44	48
SM8FT/75/2	36	42	46	45	49	52	-	27	33	31	38	42
SM8FT/94/2	31	37	41	41	46	50	-	-	26	26	33	37

HE = Heat exchanger

#### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.

# Rewindable submersible motor 10"

## Motor type SM10

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 0.4 m<sup>2</sup>, 0.8 m<sup>2</sup> or 1.2 m<sup>2</sup>
- Special voltages on demand

### Technical specification

Construction	2-pole asynchronous motor
Size	10"
Motor type	SM10
Power range	100 kW up to 220 kW
Supply mode	3 phases AC
Frequency	50 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	10" inches
Installation	vertical, horizontal possible from 100 kW up to 140 kW
Maximum axial thrust	downwards 55 [kN] upwards 5 [kN]
Maximum cable size	47 mm
Winding	PP
Maximum permissible number of starts per hour	8 (min. stand still period 3 minutes)
Maximum installation depth	350 m

### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

### Technical data sheet

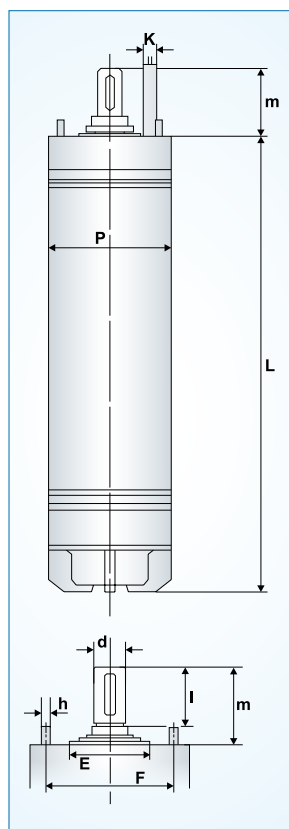
Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>N</sub> [rpm]	Starting values referred to rated data		
		380	400	500	693	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
<b>SM10/100/2</b>	100	202	192	153	111	82.0	85.0	86.5	0.75	0.83	0.87	2900	5.5	1.5	2.5
<b>SM10/120/2</b>	120	241	229	183	132	82.5	85.5	87.0	0.75	0.83	0.87	2900	5.8	1.5	2.8
<b>SM10/140/2</b>	140	279	265	212	153	83.0	86.0	87.5	0.75	0.83	0.87	2905	5.9	1.6	2.9
<b>SM10/160/2</b>	160	314	298	239	172	83.5	86.5	88.0	0.76	0.84	0.88	2910	6.0	1.6	2.9
<b>SM10/180/2</b>	180	353	335	268	194	83.5	86.5	88.0	0.76	0.84	0.88	2910	6.0	1.6	2.9
<b>SM10/200/2</b>	200	392	373	298	215	83.5	86.5	88.0	0.76	0.84	0.88	2910	6.0	1.7	3.0
<b>SM10/220/2</b>	220	429	408	326	235	84.0	87.0	88.5	0.76	0.84	0.88	2910	6.0	1.7	3.0

For other voltages please ask for technical data.

# Rewindable submersible motor 10"

## Motor type SM10

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM10/100/2	1485	282
SM10/120/2	1630	321
SM10/140/2	1760	355
SM10/160/2	1950	406
SM10/180/2	2075	440
SM10/200/2	2245	486
SM10/220/2	2315	505

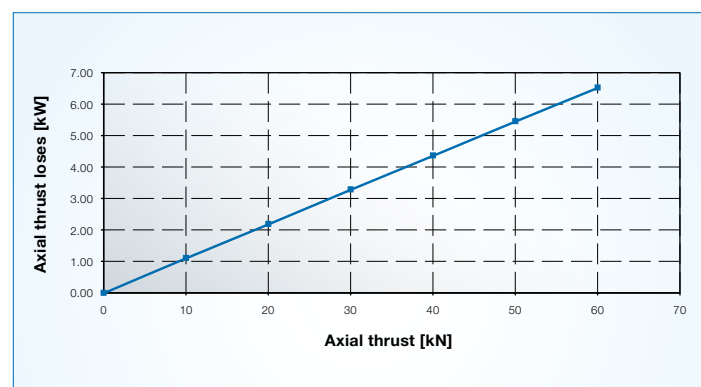
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
0.4	353	25
0.8	706	50
1.2	1153	75

### General dimensions

Dim.	mm	Dim.	mm
P	229	E	110
m	135	F	170
K	47	h	M12
d	40	S	6
I	95		

### Axial thrust losses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 1100 kg			Water flowing [v > 0.5 m/s] axial thrust < 1100 kg			Water standing to slightly flowing axial thrust < 1100 kg			Water flowing [v > 0.5 m/s] axial thrust < 1100 kg		
	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>
SM10/100/2	19	25	30	30	34	38	-	-	16	14	21	27
SM10/120/2	17	24	28	28	33	36	-	-	13	12	19	24
SM10/140/2	16	22	27	27	31	35	-	-	10	10	17	22
SM10/160/2	15	21	25	26	30	34	-	-	-	9	16	20
SM10/180/2	14	20	24	25	30	33	-	-	-	-	14	19
SM10/200/2	12	18	22	24	28	31	-	-	-	-	13	18
SM10/220/2	9	15	20	22	26	30	-	-	-	-	10	14

HE = Heat exchanger

#### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.

# Rewindable submersible motor 10"

## Motor type SM10T

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 0.4 m<sup>2</sup>, 0.8 m<sup>2</sup> or 1.2 m<sup>2</sup>
- Special voltages on demand

### Technical data sheet

Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>N</sub> [rpm]	Starting values referred to rated data		
		380	400	500	693	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
<b>SM10T/90/2</b>	90	182	173	138	100	82.0	85.0	86.5	0.75	0.83	0.87	2900	5.6	1.5	2.6
<b>SM10T/110/2</b>	110	221	210	168	121	82.5	85.5	87.0	0.75	0.83	0.87	2900	5.9	1.5	2.9
<b>SM10T/130/2</b>	130	259	246	197	142	83.0	86.0	87.5	0.75	0.83	0.87	2905	6.0	1.6	3.0
<b>SM10T/150/2</b>	150	294	280	224	161	83.5	86.5	88.0	0.76	0.84	0.88	2910	6.1	1.6	3.0
<b>SM10T/170/2</b>	170	334	317	253	183	83.5	86.5	88.0	0.76	0.84	0.88	2910	6.1	1.6	3.0
<b>SM10T/190/2</b>	190	373	354	283	204	83.5	86.5	88.0	0.76	0.84	0.88	2910	6.1	1.7	3.0
<b>SM10T/210/2</b>	210	410	389	311	225	84.0	87.0	88.5	0.76	0.84	0.88	2910	6.1	1.7	3.0

For other voltages please ask for technical data.

### Technical specification

Construction	2-pole asynchronous motor
Size	10"
Motor type	SM10T
Power range	90 kW up to 210 kW
Supply mode	3 phases AC
Frequency	50 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	10" inches
Installation	vertical, horizontal possible from 90 kW up to 130 kW
Maximum axial thrust	downwards 55 [kN] upwards 5 [kN]
Maximum cable size	47 mm
Winding	PE2/PA
Maximum permissible number of starts per hour	8 (min. stand still period 3 minutes)
Maximum installation depth	350 m

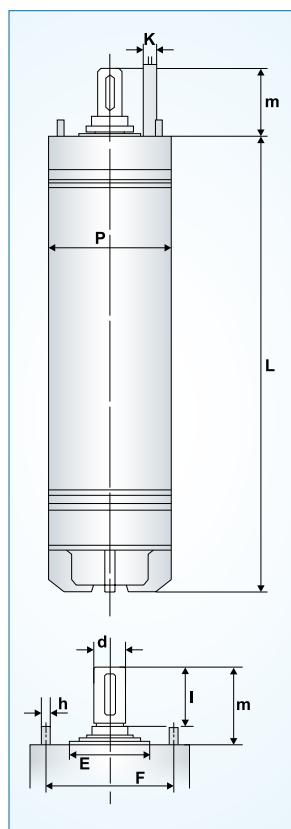
### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

# Rewindable submersible motor 10"

## Motor type SM10T

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM10T/90/2	1485	282
SM10T/110/2	1630	321
SM10T/130/2	1760	355
SM10T/150/2	1950	406
SM10T/170/2	2075	440
SM10T/190/2	2245	486
SM10T/210/2	2315	505

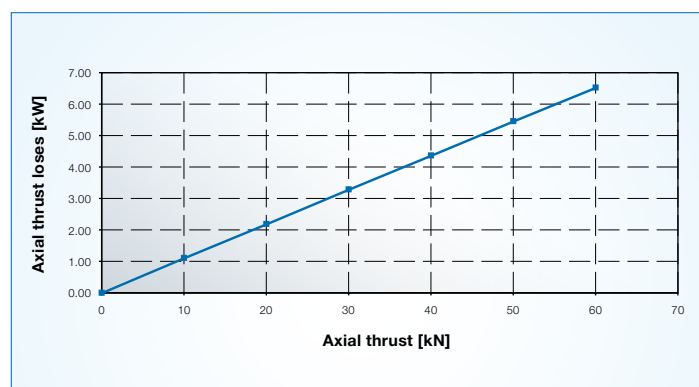
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
0.4	353	25
0.8	706	50
1.2	1153	75

### General dimensions

Dim.	mm	Dim.	mm
P	229	E	110
m	135	F	170
K	47	h	M12
d	40	S	6
I	95		

### Axial thrust losses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 1100 kg			Water flowing [v > 0.5 m/s] axial thrust < 1100 kg			Water standing to slightly flowing axial thrust < 1100 kg			Water flowing [v > 0.5 m/s] axial thrust < 1100 kg		
	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 0.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>
SM10T/90/2	40	46	50	50	54	57	22	31	37	35	42	47
SM10T/110/2	38	44	48	47	52	55	19	27	34	33	39	44
SM10T/130/2	36	42	46	46	51	54	16	25	31	31	37	42
SM10T/150/2	35	40	44	45	50	52	14	22	28	29	35	40
SM10T/170/2	34	39	43	44	48	51	13	20	27	28	34	39
SM10T/190/2	32	37	41	43	47	50	10	18	24	26	32	37
SM10T/210/2	29	34	38	40	45	50	-	13	20	23	30	33

HE = Heat exchanger

#### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.



# Rewindable submersible motor 10"

## Motor type SM10F

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 0.8 m<sup>2</sup>, 1.2 m<sup>2</sup> or 1.6 m<sup>2</sup>
- Special voltages on demand

### Technical data sheet

Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>N</sub> [rpm]	Starting values referred to rated data		
		400	460	693	797	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
<b>SM10F/110/2</b>	110	209	181	120	105	82.0	85.5	86.5	0.82	0.86	0.88	3500	5.5	1.2	2.6
<b>SM10F/132/2</b>	132	250	218	144	126	82.0	85.0	86.5	0.82	0.86	0.88	3500	5.8	1.3	2.9
<b>SM10F/154/2</b>	154	287	250	166	144	82.5	86.0	87.0	0.82	0.86	0.89	3510	5.8	1.4	2.9
<b>SM10F/176/2</b>	176	330	287	190	166	83.0	86.5	87.5	0.80	0.86	0.88	3510	5.9	1.4	2.9
<b>SM10F/198/2</b>	198	371	323	214	186	83.5	86.5	87.5	0.81	0.86	0.88	3520	5.9	1.4	2.9
<b>SM10F/219/2</b>	219	411	357	237	206	83.5	86.5	87.5	0.81	0.86	0.88	3520	6.0	1.4	2.9
<b>SM10F/240/2</b>	240	450	391	260	226	83.5	86.5	87.5	0.81	0.86	0.88	3520	6.0	1.4	2.9

For other voltages please ask for technical data.

### Technical specification

Construction	2-pole asynchronous motor
Size	10"
Motor type	SM10F
Power range	110 kW up to 240 kW
Supply mode	3 phases AC
Frequency	60 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	10" inches
Installation	vertical, horizontal possible from 110 kW up to 154 kW
Maximum axial thrust	downwards 55 [kN] upwards 5 [kN]
Maximum cable size	47 mm
Winding	PP
Maximum permissible number of starts per hour	8 (min. stand still period 3 minutes)
Maximum installation depth	350 m

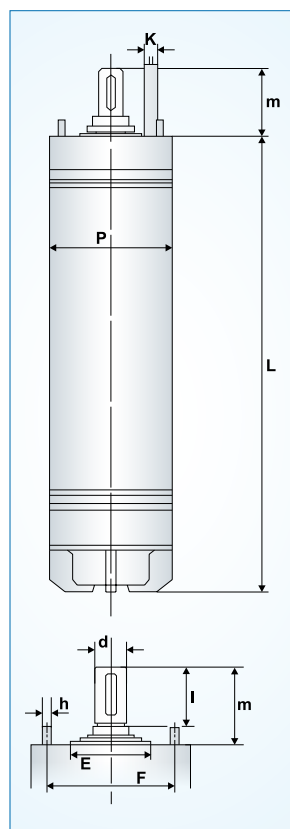
### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

# Rewindable submersible motor 10"

## Motor type SM10F

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM10F/110/2	1485	282
SM10F/132/2	1630	321
SM10F/154/2	1760	355
SM10F/176/2	1950	406
SM10F/198/2	2075	440
SM10F/219/2	2245	486
SM10F/240/2	2315	505

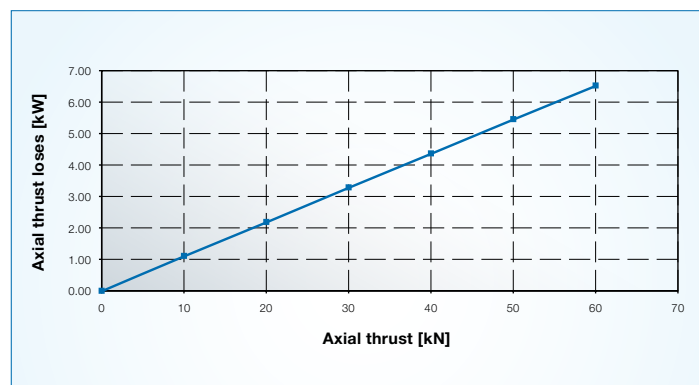
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
0.8	706	50
1.2	1153	75
1.4	1506	100

### General dimensions

Dim.	mm	Dim.	mm
P	229	E	110
m	135	F	170
K	47	h	M12
d	40	S	6
I	95		

### Axial thrust losses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 1100 kg			Water flowing [v > 0.5 m/s] axial thrust < 1100 kg			Water standing to slightly flowing axial thrust < 1100 kg			Water flowing [v > 0.5 m/s] axial thrust < 1100 kg		
	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>
SM10F/110/2	22	27	32	32	36	39	-	-	17	17	23	28
SM10F/132/2	20	25	29	30	34	37	-	-	14	15	21	25
SM10F/154/2	18	23	27	29	32	36	-	-	12	13	19	23
SM10F/176/2	17	22	25	27	31	34	-	-	-	11	17	21
SM10F/198/2	16	20	24	26	30	33	-	-	-	-	15	20
SM10F/219/2	14	19	23	25	29	31	-	-	-	-	13	18
SM10F/240/2	11	16	20	23	27	30	-	-	-	-	11	15

HE = Heat exchanger

### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.

# Rewindable submersible motor 10"

## Motor type SM10FT

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 0.8 m<sup>2</sup>, 1.2 m<sup>2</sup> or 1.6 m<sup>2</sup>
- Special voltages on demand

### Technical data sheet

Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>N</sub> [rpm]	Starting values referred to rated data		
		400	460	693	797	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
<b>SM10FT/110/2</b>	110	209	181	120	105	82.0	85.5	86.5	0.82	0.86	0.88	3500	5.5	1.2	2.6
<b>SM10FT/132/2</b>	132	250	218	144	126	82.0	85.5	86.5	0.82	0.86	0.88	3500	5.8	1.3	2.9
<b>SM10FT/154/2</b>	154	287	250	166	144	82.5	86.0	87.0	0.82	0.86	0.89	3510	5.8	1.4	2.9
<b>SM10FT/176/2</b>	176	330	287	190	166	83.0	86.5	87.5	0.80	0.86	0.88	3510	5.9	1.4	2.9
<b>SM10FT/198/2</b>	198	371	323	214	186	83.5	86.5	87.5	0.81	0.86	0.88	3520	5.9	1.4	2.9
<b>SM10FT/219/2</b>	219	411	357	237	206	83.5	86.5	87.5	0.81	0.86	0.88	3520	6.0	1.4	2.9
<b>SM10FT/240/2</b>	240	450	391	260	226	83.5	86.5	87.5	0.81	0.86	0.88	3520	6.0	1.4	2.9

For other voltages please ask for technical data.

### Technical specification

Construction	2-pole asynchronous motor
Size	10"
Motor type	SM10FT
Power range	110 kW up to 240 kW
Supply mode	3 phases AC
Frequency	60 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	10" inches
Installation	vertical, horizontal possible from 110 kW up to 154 kW
Maximum axial thrust	downwards 55 [kN] upwards 5 [kN]
Maximum cable size	47 mm
Winding	PE2/PA
Maximum permissible number of starts per hour	8 (min. stand still period 3 minutes)
Maximum installation depth	350 m

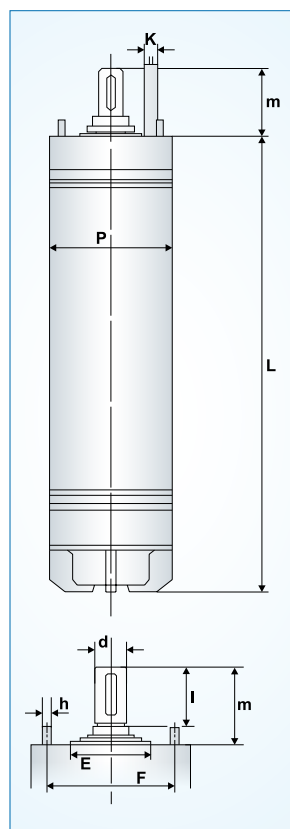
### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

# Rewindable submersible motor 10"

## Motor type SM10FT

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM10FT/110/2	1485	282
SM10FT/132/2	1630	321
SM10FT/154/2	1760	355
SM10FT/176/2	1950	406
SM10FT/198/2	2075	440
SM10FT/219/2	2245	486
SM10FT/240/2	2315	505

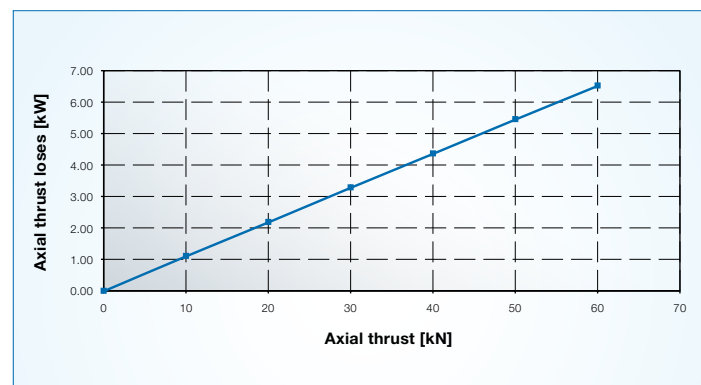
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
0.8	706	50
1.2	1153	75
1.6	1506	100

### General dimensions

Dim.	mm	Dim.	mm
P	229	E	110
m	135	F	170
K	47	h	M12
d	40	S	6
I	95		

### Axial thrust losses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 1100 kg			Water flowing [v > 0.5 m/s] axial thrust < 1100 kg			Water standing to slightly flowing axial thrust < 1100 kg			Water flowing [v > 0.5 m/s] axial thrust < 1100 kg		
	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.2 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>
SM10FT/110/2	42	47	52	52	56	59	-	-	37	37	43	48
SM10FT/132/2	40	45	49	50	54	57	-	-	34	35	41	45
SM10FT/154/2	38	43	47	49	52	56	-	-	32	33	39	43
SM10FT/176/2	37	42	45	47	51	54	-	-	-	31	37	41
SM10FT/198/2	36	40	44	46	50	53	-	-	-	-	35	40
SM10FT/219/2	34	39	43	45	49	51	-	-	-	-	33	38
SM10FT/240/2	31	36	40	43	47	50	-	-	-	-	31	35

HE = Heat exchanger

### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.

# Rewindable submersible motor 12"

## Motor type SM12

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 0.8 m<sup>2</sup>, 1.6 m<sup>2</sup> or 2.4 m<sup>2</sup>
- Special voltages on demand

### Technical specification

Construction	2-pole asynchronous motor
Size	12"
Motor type	SM12
Power range	150 kW up to 350 kW
Supply mode	3 phases AC
Frequency	50 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	12" inches
Installation	vertical, horizontal possible from 150 kW up to 200 kW
Maximum axial thrust	downwards 65 [kN] upwards 5 [kN]
Maximum cable size	47 mm
Winding	PVC
Maximum permissible number of starts per hour	8 (min. stand still period 3 minutes)
Maximum installation depth	350 m

### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

### Technical data sheet

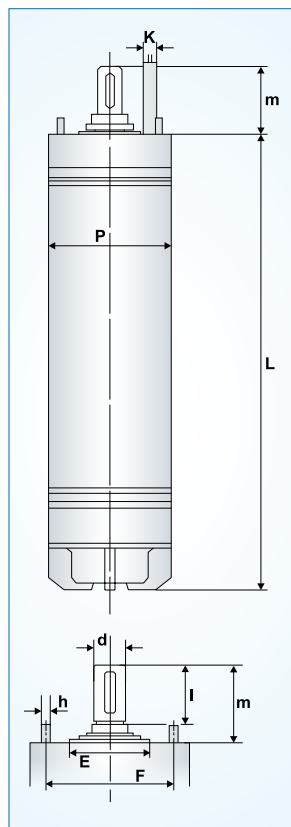
Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>N</sub> [rpm]	Starting values referred to rated data		
		380	400	500	693	50%	75%	100%	50%	75%	100%		I <sub>k</sub> /I <sub>n</sub>	M <sub>a</sub> /M <sub>n</sub>	M <sub>k</sub> /M <sub>n</sub>
<b>SM12/150/2</b>	150	298	283	226	163	84.0	87.5	88.0	0.82	0.86	0.87	2920	5.4	0.9	2.8
<b>SM12/170/2</b>	170	335	319	255	184	84.0	88.0	88.5	0.83	0.86	0.87	2920	5.4	0.9	2.8
<b>SM12/200/2</b>	200	390	371	297	214	84.0	88.0	88.5	0.84	0.87	0.88	2920	5.4	1.0	2.8
<b>SM12/230/2</b>	230	441	419	335	242	84.0	88.5	89.0	0.84	0.88	0.89	2920	5.4	1.0	2.8
<b>SM12/260/2</b>	260	499	474	379	273	84.0	88.5	89.0	0.84	0.88	0.89	2920	5.5	1.0	2.8
<b>SM12/310/2</b>	310	591	562	449	324	85.0	89.0	89.5	0.85	0.88	0.89	2920	5.5	1.0	2.8
<b>SM12/350/2</b>	350	668	634	507	366	85.0	89.0	89.5	0.85	0.88	0.89	2920	5.6	1.0	2.8

For other voltages please ask for technical data.

# Rewindable submersible motor 12"

## Motor type SM12

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM12/150/2	1717	480
SM12/170/2	1812	515
SM12/200/2	1932	560
SM12/230/2	2027	595
SM12/260/2	2157	644
SM12/310/2	2367	725
SM12/350/2	2472	767

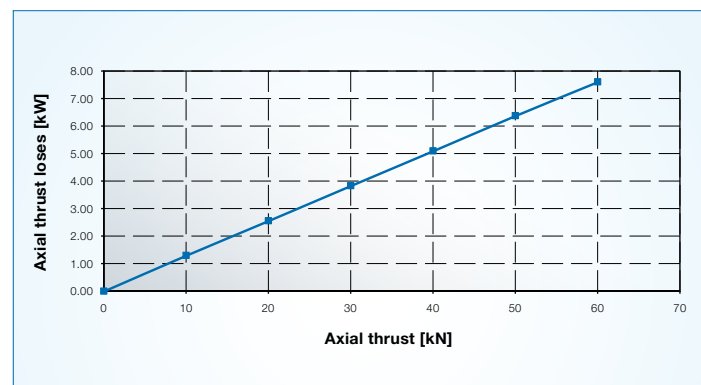
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
0.8	480	45
1.6	960	90
2.4	1440	135

### General dimensions

Dim.	mm	Dim.	mm
P	280	E	120
m	160	F	234
K	47	h	M20
d	50	S	6
I	118		

### Axial thrust loses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 1400 kg			Water flowing [v > 0.5 m/s] axial thrust < 1400 kg			Water standing to slightly flowing axial thrust < 1400 kg			Water flowing [v > 0.5 m/s] axial thrust < 1400 kg		
	with HE 0.8 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>
SM12/150/2	22	30	35	32	37	41	-	14	22	17	26	31
SM12/170/2	21	28	33	31	36	40	-	13	20	16	24	30
SM12/200/2	19	26	31	29	35	39	-	9	17	13	22	27
SM12/230/2	15	22	28	27	32	36	-	-	12	9	18	24
SM12/260/2	13	21	27	25	31	34	-	-	10	8	16	22
SM12/310/2	9	17	22	21	27	32	-	-	-	-	11	18
SM12/350/2	-	12	19	18	24	30	-	-	-	-	7	13

HE = Heat exchanger

### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.

# Rewindable submersible motor 12"

## Motor type SM12T

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 0.8 m<sup>2</sup>, 1.6 m<sup>2</sup> or 2.4 m<sup>2</sup>
- Special voltages on demand

### Technical data sheet

Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>N</sub> [rpm]	Starting values referred to rated data		
		380	400	500	693	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
<b>SM12T/145/2</b>	145	288	273	219	158	84.0	87.5	88.0	0.82	0.86	0.87	2920	5.4	0.9	2.8
<b>SM12T/165/2</b>	165	326	309	247	179	84.0	88.0	88.5	0.83	0.86	0.87	2920	5.4	0.9	2.8
<b>SM12T/195/2</b>	195	380	361	289	209	84.0	88.0	88.5	0.84	0.87	0.88	2920	5.4	1.0	2.8
<b>SM12T/225/2</b>	225	432	410	328	237	84.0	88.5	89.0	0.84	0.88	0.89	2920	5.4	1.0	2.8
<b>SM12T/250/2</b>	250	480	456	364	263	84.0	88.5	89.0	0.84	0.88	0.89	2920	5.5	1.0	2.8
<b>SM12T/300/2</b>	300	572	544	435	314	85.0	89.0	89.5	0.85	0.88	0.89	2920	5.5	1.0	2.8
<b>SM12T/340/2</b>	340	649	616	493	356	85.0	89.0	89.5	0.85	0.88	0.89	2920	5.6	1.0	2.8

For other voltages please ask for technical data.

### Technical specification

Construction	2-pole asynchronous motor
Size	12"
Motor type	SM12T
Power range	145 kW up to 340 kW
Supply mode	3 phases AC
Frequency	50 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	12" inches
Installation	vertical, horizontal possible from 145 kW up to 200 kW
Maximum axial thrust	downwards 65 [kN] upwards 5 [kN]
Maximum cable size	47 mm
Winding	PE2/PA
Maximum permissible number of starts per hour	8 (min. stand still period 3 minutes)
Maximum installation depth	350 m

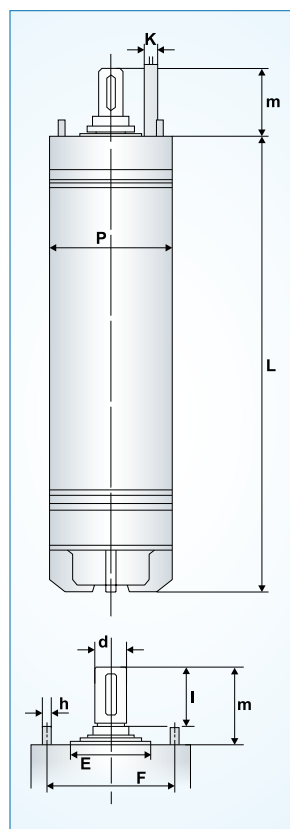
### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

# Rewindable submersible motor 12"

## Motor type SM12T

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM12T/145/2	1717	480
SM12T/165/2	1812	515
SM12T/195/2	1932	560
SM12T/225/2	2027	595
SM12T/250/2	2157	644
SM12T/300/2	2367	725
SM12T/340/2	2472	767

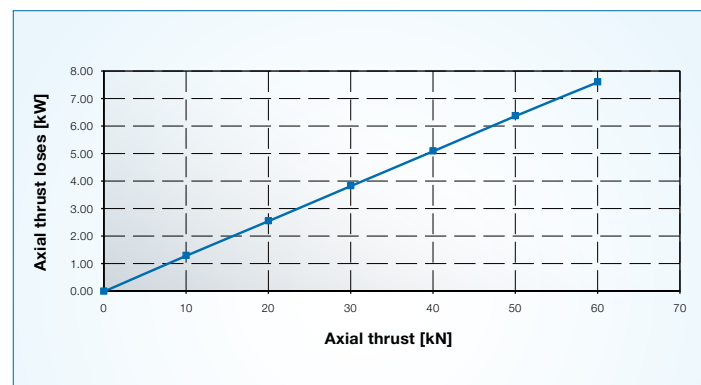
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
0.8	480	45
1.6	960	90
2.4	1440	135

### General dimensions

Dim.	mm	Dim.	mm
P	280	E	120
m	160	F	234
K	47	h	M20
d	50	S	6
I	118		

### Axial thrust loses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 1400 kg			Water flowing [v > 0.5 m/s] axial thrust < 1400 kg			Water standing to slightly flowing axial thrust < 1400 kg			Water flowing [v > 0.5 m/s] axial thrust < 1400 kg		
	with HE 0.8 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>
SM12T/145/2	40	47	52	51	54	58	-	33	40	36	43	48
SM12T/165/2	39	46	50	50	53	57	-	31	38	34	42	47
SM12T/195/2	37	44	48	48	52	55	-	28	35	32	40	45
SM12T/225/2	33	40	45	45	51	53	-	-	30	28	36	41
SM12T/250/2	33	40	45	43	50	52	-	-	30	27	35	41
SM12T/300/2	31	38	43	42	47	51	-	-	-	-	33	38
SM12T/340/2	-	34	39	38	44	50	-	-	-	-	30	35

HE = Heat exchanger

### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.



# Rewindable submersible motor 12"

## Motor type SM12F

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 0.8 m<sup>2</sup>, 1.6 m<sup>2</sup> or 2.4 m<sup>2</sup>
- Special voltages on demand

### Technical data sheet

Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>N</sub> [rpm]	Starting values referred to rated data		
		380	460	658	797	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
<b>SM12F/165/2</b>	165	326	269	188	155	83.5	87.0	87.5	0.82	0.87	0.88	3530	5.8	0.8	2.8
<b>SM12F/187/2</b>	187	367	303	212	175	85.0	87.5	88.0	0.82	0.87	0.88	3530	5.8	0.8	2.8
<b>SM12F/220/2</b>	220	432	357	249	206	85.5	87.5	88.0	0.82	0.87	0.88	3530	5.7	0.8	2.8
<b>SM12F/253/2</b>	253	496	410	287	237	85.5	87.5	88.0	0.82	0.87	0.88	3530	5.7	0.8	2.9
<b>SM12F/286/2</b>	286	549	453	317	262	87.0	88.5	89.0	0.82	0.87	0.89	3530	5.7	0.8	2.9
<b>SM12F/341/2</b>	341	654	540	378	312	87.0	88.5	89.0	0.85	0.88	0.89	3525	5.7	0.8	2.9
<b>SM12F/385/2</b>	385	734	607	424	350	87.5	89.0	89.5	0.85	0.88	0.89	3520	5.7	0.8	2.9

For other voltages please ask for technical data.

### Technical specification

Construction	2-pole asynchronous motor
Size	12"
Motor type	SM12F
Power range	165 kW up to 385 kW
Supply mode	3 phases AC
Frequency	60 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	12" inches
Installation	vertical, horizontal possible from 165 kW up to 220 kW
Maximum axial thrust	downwards 65 [kN] upwards 5 [kN]
Maximum cable size	47 mm
Winding	PVC
Maximum permissible number of starts per hour	8 (min. stand still period 3 minutes)
Maximum installation depth	350 m

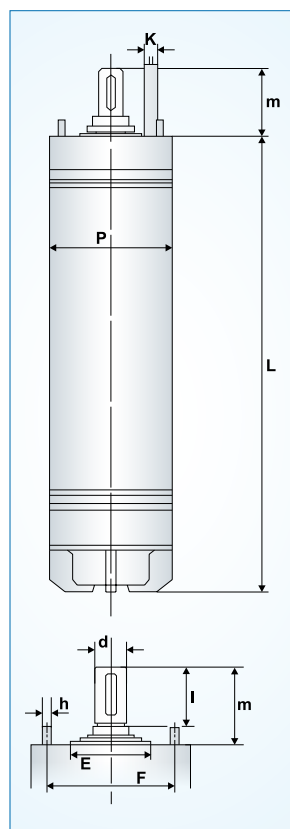
### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

# Rewindable submersible motor 12"

## Motor type SM12F

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM12F/165/2	1717	480
SM12F/187/2	1812	515
SM12F/220/2	1932	560
SM12F/253/2	2027	595
SM12F/286/2	2157	644
SM12F/341/2	2367	725
SM12F/385/2	2472	767

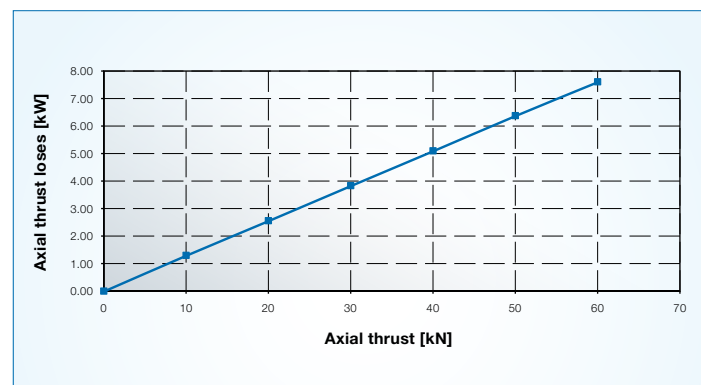
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
0.8	480	45
1.6	960	90
2.4	1440	135

### General dimensions

Dim.	mm	Dim.	mm
P	280	E	120
m	160	F	234
K	47	h	M20
d	50	S	6
I	118		

### Axial thrust losses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 1400 kg			Water flowing [v > 0.5 m/s] axial thrust < 1400 kg			Water standing to slightly flowing axial thrust < 1400 kg			Water flowing [v > 0.5 m/s] axial thrust < 1400 kg		
	with HE 0.8 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 0.8 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>
SM12F/165/2	20	28	33	31	36	40	-	12	20	15	24	30
SM12F/187/2	19	27	32	30	35	39	-	10	18	14	22	28
SM12F/220/2	15	23	28	28	32	36	-	4	13	9	18	24
SM12F/253/2	13	21	26	26	31	35	-	-	10	7	16	22
SM12F/286/2	12	19	25	23	30	33	-	-	8	6	14	21
SM12F/341/2	10	17	23	22	28	32	-	-	-	-	12	18
SM12F/385/2	-	13	19	18	25	30	-	-	-	-	8	14

HE = Heat exchanger

### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.

# Rewindable submersible motor 12"

## Motor type SM12FT

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 1.6 m<sup>2</sup>, 2.4 m<sup>2</sup> or 3.2 m<sup>2</sup>
- Special voltages on demand

### Technical specification

Construction	2-pole asynchronous motor
Size	12"
Motor type	SM12FT
Power range	165 kW up to 385 kW
Supply mode	3 phases AC
Frequency	60 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	12" inches
Installation	vertical, horizontal possible from 165 kW up to 220 kW
Maximum axial thrust	downwards 65 [kN] upwards 5 [kN]
Maximum cable size	47 mm
Winding	PE2/PA
Maximum permissible number of starts per hour	8 (min. stand still period 3 minutes)
Maximum installation depth	350 m

### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

### Technical data sheet

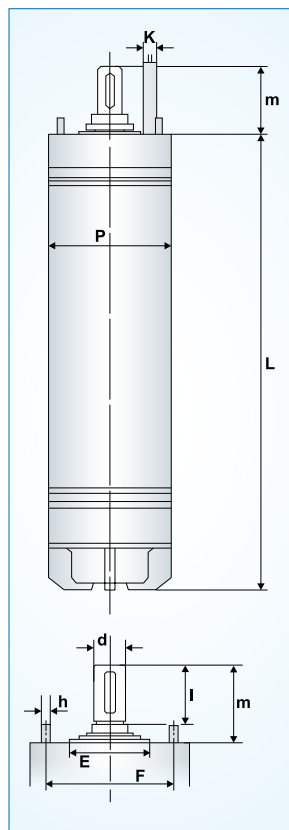
Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>n</sub> [rpm]	Starting values referred to rated data		
		380	460	658	797	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
SM12FT/165/2	165	329	272	190	157	83.5	87.0	87.5	0.82	0.87	0.87	3530	5.8	0.8	2.8
SM12FT/187/2	187	371	307	214	177	85.0	87.5	88.0	0.82	0.87	0.87	3530	5.8	0.8	2.8
SM12FT/220/2	220	437	361	252	208	85.5	87.5	88.0	0.82	0.87	0.87	3530	5.7	0.8	2.8
SM12FT/253/2	253	502	415	290	239	85.5	87.5	88.0	0.82	0.87	0.87	3530	5.7	0.8	2.9
SM12FT/286/2	286	561	464	324	268	87.0	88.5	89.0	0.82	0.87	0.87	3530	5.7	0.8	2.9
SM12FT/341/2	341	662	546	382	315	87.0	88.5	89.0	0.85	0.88	0.88	3525	5.7	0.8	2.9
SM12FT/385/2	385	743	614	429	354	87.5	89.0	89.5	0.85	0.88	0.88	3520	5.7	0.8	2.9

For other voltages please ask for technical data.

# Rewindable submersible motor 12"

## Motor type SM12FT

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM12FT/165/2	1717	480
SM12FT/187/2	1812	515
SM12FT/220/2	1932	560
SM12FT/253/2	2027	595
SM12FT/286/2	2157	644
SM12FT/341/2	2367	725
SM12FT/385/2	2472	767

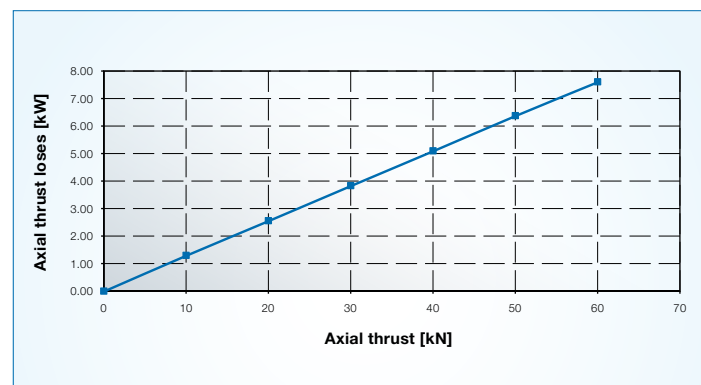
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
1.6	960	90
2.4	1440	135
3.2	1920	180

### General dimensions

Dim.	mm	Dim.	mm
P	280	E	120
m	160	F	234
K	47	h	M20
d	50	S	6
I	118		

### Axial thrust loses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 1400 kg			Water flowing [v > 0.5 m/s] axial thrust < 1400 kg			Water standing to slightly flowing axial thrust < 1400 kg			Water flowing [v > 0.5 m/s] axial thrust < 1400 kg		
	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 3.2 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 3.2 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 3.2 m <sup>2</sup>	with HE 1.6 m <sup>2</sup>	with HE 2.4 m <sup>2</sup>	with HE 3.2 m <sup>2</sup>
SM12FT/165/2	43	48	52	52	55	58	-	35	41	39	45	49
SM12FT/187/2	42	47	51	51	54	57	-	33	39	37	43	48
SM12FT/220/2	38	43	48	49	52	55	-	28	34	33	39	44
SM12FT/253/2	36	41	46	47	51	53	-	-	31	31	37	42
SM12FT/286/2	34	40	45	44	50	52	-	-	30	29	36	41
SM12FT/341/2	32	38	42	43	47	51	-	-	-	-	33	38
SM12FT/385/2	-	34	39	40	44	50	-	-	-	-	30	34

HE = Heat exchanger

### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.

# Rewindable submersible motor 14"

## Motor type SM14

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 2.0 m<sup>2</sup> or 4.0 m<sup>2</sup>
- Special voltages on demand

### Technical specification

Construction	2-pole asynchronous motor
Size	14"
Motor type	SM14
Power range	210 kW up to 500 kW
Supply mode	3 phases AC
Frequency	50 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	14" inches
Installation	vertical, horizontal possible from 210 kW up to 290 kW
Maximum axial thrust	downwards 50 [kN] upwards 5 [kN]
Maximum cable size	58 mm
Winding	PVC
Maximum permissible number of starts per hour	4 (min. stand still period 5 minutes)
Maximum installation depth	350 m

### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

### Technical data sheet

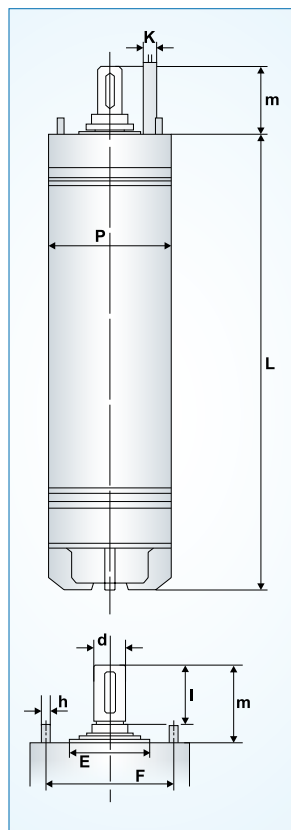
Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>n</sub> [rpm]	Starting values referred to rated data		
		400	500	693	866	50%	75%	100%	50%	75%	100%		I <sub>k</sub> /I <sub>n</sub>	M <sub>a</sub> /M <sub>n</sub>	M <sub>k</sub> /M <sub>n</sub>
SM14/210/2	210	394	315	227	182	86.0	88.0	89.0	0.84	0.87	0.88	2925	5.0	0.5	2.4
SM14/250/2	250	465	372	269	215	86.5	89.0	89.5	0.84	0.87	0.88	2925	5.1	0.5	2.4
SM14/290/2	290	537	430	310	248	87.0	89.5	90.0	0.84	0.87	0.88	2925	5.1	0.5	2.5
SM14/330/2	330	608	487	351	281	88.0	90.0	90.5	0.84	0.87	0.88	2925	5.0	0.5	2.5
SM14/390/2	390	-	568	410	328	89.0	90.0	90.5	0.86	0.88	0.89	2925	5.0	0.5	2.5
SM14/450/2	450	-	653	471	377	88.5	90.0	90.5	0.86	0.88	0.89	2925	5.0	0.5	2.5
SM14/500/2	500	-	-	524	419	88.5	90.0	90.5	0.87	0.88	0.89	2925	5.0	0.5	2.5

For other voltages please ask for technical data.

# Rewindable submersible motor 14"

## Motor type SM14

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM14/210/2	1785	738
SM14/250/2	1885	811
SM14/290/2	2015	885
SM14/330/2	2100	935
SM14/390/2	2225	1015
SM14/450/2	2345	1089
SM14/500/2	2515	1194

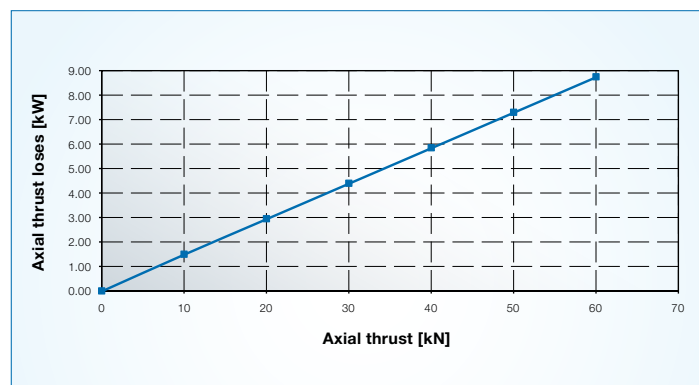
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
2.0	1100	78
4.0	2200	136

### General dimensions

Dim.	mm	Dim.	mm
P	350	E	160
m	160	F	300
K	58	h	M20
d	70	S	6
I	110		

### Axial thrust loses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 1500 kg			Water flowing [v > 0.5 m/s] axial thrust < 1500 kg			Water standing to slightly flowing axial thrust < 1500 kg			Water flowing [v > 0.5 m/s] axial thrust < 1500 kg		
	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>
SM14/210/2	-	29	39	19	37	44	-	14	28	-	25	36
SM14/250/2	-	26	36	17	34	42	-	10	25	-	22	33
SM14/290/2	-	25	35	16	33	41	-	8	23	-	20	32
SM14/330/2	-	23	34	14	32	40	-	-	21	-	18	30
SM14/390/2	-	18	30	9	28	37	-	-	15	-	13	26
SM14/450/2	-	13	26	-	24	34	-	-	9	-	7	21
SM14/500/2	-	10	23	-	22	32	-	-	6	-	-	19

HE = Heat exchanger

#### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.

# Rewindable submersible motor 14"

## Motor type SM14T

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 2.0 m<sup>2</sup> or 4.0 m<sup>2</sup>
- Special voltages on demand

### Technical specification

Construction	2-pole asynchronous motor
Size	14"
Motor type	SM14T
Power range	180 kW up to 450 kW
Supply mode	3 phases AC
Frequency	50 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	14" inches
Installation	vertical, horizontal possible from 180 kW up to 260 kW
Maximum axial thrust	downwards 50 [kN] upwards 5 [kN]
Maximum cable size	58 mm
Winding	PE2/PA
Maximum permissible number of starts per hour	4 (min. stand still period 5 minutes)
Maximum installation depth	350 m

### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

### Technical data sheet

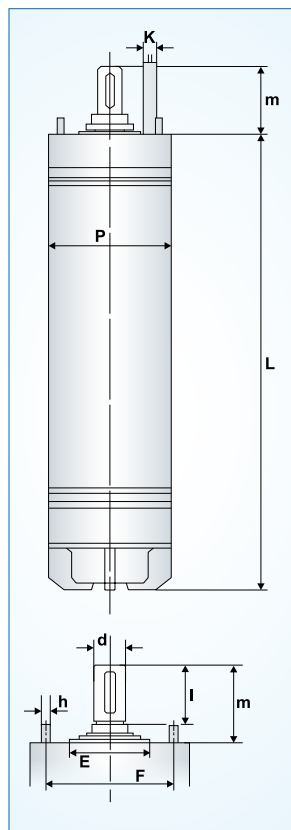
Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>n</sub> [rpm]	Starting values referred to rated data		
		400	500	693	866	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
<b>SM14T/180/2</b>	180	342	274	197	158	85.0	88.0	89.0	0.81	0.86	0.87	2930	5.3	0.6	2.7
<b>SM14T/220/2</b>	220	409	327	236	189	86.5	89.0	89.5	0.82	0.87	0.88	2930	5.3	0.6	2.7
<b>SM14T/260/2</b>	260	481	385	277	222	87.0	89.5	90.0	0.82	0.87	0.88	2930	5.6	0.6	2.7
<b>SM14T/300/2</b>	300	554	443	320	256	88.0	89.5	90.0	0.83	0.87	0.88	2930	5.4	0.6	2.7
<b>SM14T/350/2</b>	350	-	506	365	292	88.5	90.0	90.5	0.85	0.88	0.89	2930	5.3	0.6	2.7
<b>SM14T/400/2</b>	400	-	578	417	334	88.5	90.0	90.5	0.85	0.88	0.89	2930	5.3	0.6	2.7
<b>SM14T/450/2</b>	450	-	-	471	377	88.5	90.0	90.5	0.85	0.88	0.89	2930	5.4	0.6	2.7

For other voltages please ask for technical data.

# Rewindable submersible motor 14"

## Motor type SM14T

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM14T/180/2	1785	738
SM14T/220/2	1885	811
SM14T/260/2	2015	885
SM14T/300/2	2100	935
SM14T/350/2	2225	1015
SM14T/400/2	2345	1089
SM14T/450/2	2515	1194

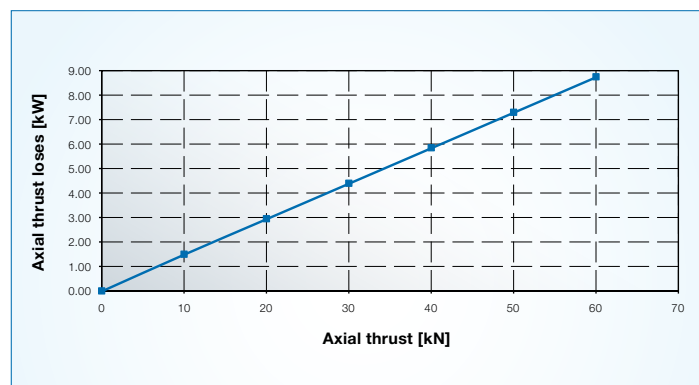
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
2.0	1100	78
4.0	2200	136

### General dimensions

Dim.	mm	Dim.	mm
P	350	E	160
m	160	F	300
K	58	h	M20
d	70	S	6
I	110		

### Axial thrust loses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 1500 kg			Water flowing [v > 0.5 m/s] axial thrust < 1500 kg			Water standing to slightly flowing axial thrust < 1500 kg			Water flowing [v > 0.5 m/s] axial thrust < 1500 kg		
	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>
SM14T/180/2	32	51	60	43	58	64	-	39	51	-	48	57
SM14T/220/2	28	48	57	40	56	62	-	34	47	-	45	55
SM14T/260/2	26	46	55	38	54	61	-	31	44	-	42	53
SM14T/300/2	20	42	53	34	52	59	-	-	40	-	38	49
SM14T/350/2	18	40	51	32	50	57	-	-	37	-	36	47
SM14T/400/2	14	36	48	-	46	55	-	-	33	-	31	44
SM14T/450/2	11	33	45	-	44	53	-	-	29	-	-	41

HE = Heat exchanger

#### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.



# Rewindable submersible motor 14"

## Motor type SM14F

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 2.0 m<sup>2</sup> or 4.0 m<sup>2</sup>
- Special voltages on demand

### Technical specification

Construction	2-pole asynchronous motor
Size	14"
Motor type	SM14F
Power range	230 kW up to 490 kW
Supply mode	3 phases AC
Frequency	60 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	14" inches
Installation	vertical, horizontal possible from 230 kW up to 320 kW
Maximum axial thrust	downwards 50 [kN] upwards 5 [kN]
Maximum cable size	58 mm
Winding	PVC
Maximum permissible number of starts per hour	4 (min. stand still period 5 minutes)
Maximum installation depth	350 m

### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

### Technical data sheet

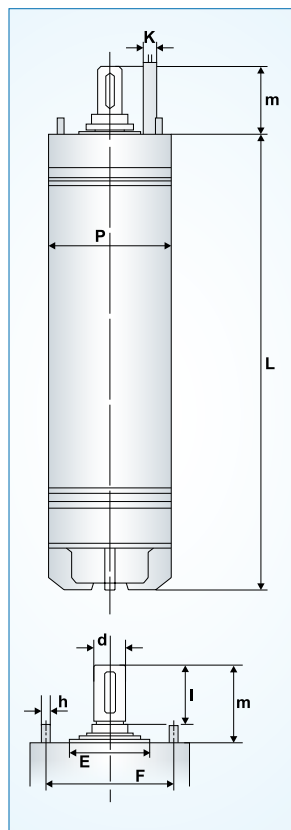
Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>n</sub> [rpm]	Starting values referred to rated data		
		400	460	500	866	50%	75%	100%	50%	75%	100%		Ik/In	Ma/Mn	Mk/Mn
<b>SM14F/230/2</b>	230	430	374	344	199	85.0	87.5	88.5	0.83	0.86	0.88	3525	5.2	0.5	2.6
<b>SM14F/270/2</b>	270	499	434	399	231	86.5	89.0	89.5	0.84	0.87	0.88	3525	5.2	0.5	2.6
<b>SM14F/320/2</b>	320	581	505	465	268	87.0	89.5	90.0	0.84	0.88	0.89	3525	5.3	0.5	2.7
<b>SM14F/370/2</b>	370	661	575	529	305	88.5	90.0	90.5	0.86	0.89	0.90	3525	5.0	0.5	2.5
<b>SM14F/430/2</b>	430	-	668	615	355	88.5	90.0	90.5	0.87	0.89	0.90	3525	5.0	0.5	2.4
<b>SM14F/490/2</b>	490	-	-	-	414	88.5	90.0	90.5	0.84	0.87	0.88	3525	5.5	0.5	2.7

For other voltages please ask for technical data.

# Rewindable submersible motor 14"

## Motor type SM14F

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM14F/230/2	1785	738
SM14F/270/2	1885	811
SM14F/320/2	2015	885
SM14F/370/2	2100	935
SM14F/430/2	2225	1015
SM14F/490/2	2345	1089

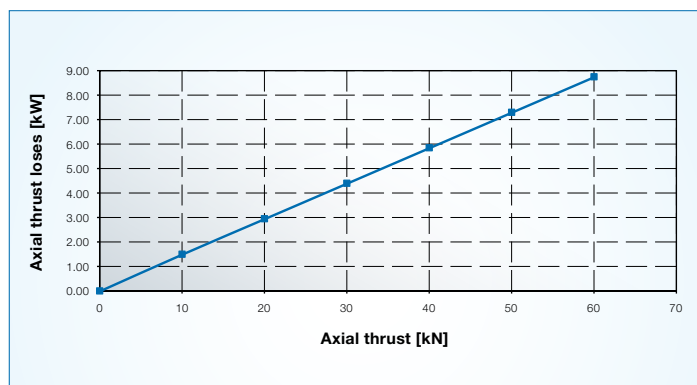
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
2.0	1100	78
4.0	2200	136

### General dimensions

Dim.	mm	Dim.	mm
P	350	E	160
m	160	F	300
K	58	h	M20
d	70	S	6
I	110		

### Axial thrust losses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 1500 kg			Water flowing [v > 0.5 m/s] axial thrust < 1500 kg			Water standing to slightly flowing axial thrust < 1500 kg			Water flowing [v > 0.5 m/s] axial thrust < 1500 kg		
	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>
SM14F/230/2	-	25	36	14	34	42	-	-	24	-	21	33
SM14F/270/2	-	23	35	13	32	41	-	-	23	-	20	32
SM14F/320/2	-	21	33	12	31	40	-	-	19	-	17	29
SM14F/370/2	-	19	31	-	29	38	-	-	17	-	14	27
SM14F/430/2	-	14	27	-	25	35	-	-	11	-	-	23
SM14F/490/2	-	-	23	-	22	32	-	-	-	-	-	19

HE = Heat exchanger

#### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.

# Rewindable submersible motor 14"

## Motor type SM14FT

### Product view



### Product benefits

- Executions for media temperatures up to 75 °C available
- Drinking water as the cooling liquid
- High efficiency up to partial load operational range for minimum operating costs
- Zero maintenance

### Options

- Temperature control by PT100
- Heat exchanger, optional with cooling area 2.0 m<sup>2</sup> or 4.0 m<sup>2</sup>
- Special voltages on demand

### Technical specification

Construction	2-pole asynchronous motor
Size	14"
Motor type	SM14FT
Power range	230 kW up to 490 kW
Supply mode	3 phases AC
Frequency	60 Hz
Operating voltage	up to 866 volts
Voltage tolerance	+6% / -10%
Starting method	Star-delta, DOL
Enclosure	IP68
Coupling	14" inches
Installation	vertical, horizontal possible from 230 kW up to 320 kW
Maximum axial thrust	downwards 50 [kN] upwards 5 [kN]
Maximum cable size	58 mm
Winding	PE2/PA
Maximum permissible number of starts per hour	4 (min. stand still period 5 minutes)
Maximum installation depth	350 m

### Materials

Casing parts	Cast iron, bronze, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

### Technical data sheet

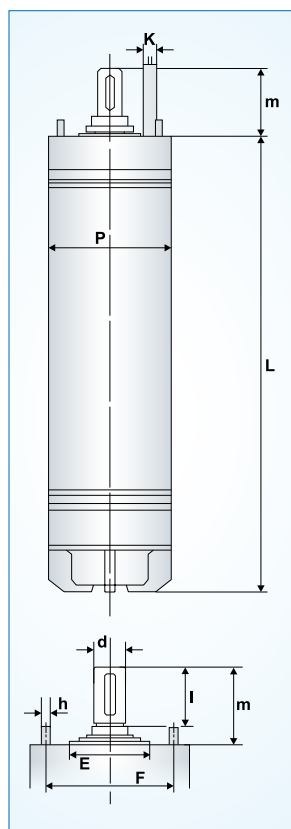
Motor type	Rated output [kW]	Rated current I <sub>N</sub> [A] at U <sub>N</sub> [V]				Efficiency η [%] at nom. load			Power factor cos φ at nom. load			Nominal speed n <sub>n</sub> [rpm]	Starting values referred to rated data		
		400	460	500	866	50%	75%	100%	50%	75%	100%		I <sub>k</sub> /I <sub>n</sub>	Ma/Mn	Mk/Mn
<b>SM14FT/230/2</b>	230	430	374	344	199	85.0	87.5	88.5	0.83	0.86	0.88	3525	5.2	0.5	2.6
<b>SM14FT/270/2</b>	270	499	434	399	231	86.5	89.0	89.5	0.84	0.87	0.88	3525	5.2	0.5	2.6
<b>SM14FT/320/2</b>	320	581	505	465	268	87.0	89.5	90.0	0.84	0.88	0.89	3525	5.3	0.5	2.7
<b>SM14FT/370/2</b>	370	661	575	529	305	88.5	90.0	90.5	0.86	0.89	0.90	3525	5.0	0.5	2.5
<b>SM14FT/430/2</b>	430	-	668	615	355	88.5	90.0	90.5	0.87	0.89	0.90	3525	5.0	0.5	2.4
<b>SM14FT/490/2</b>	490	-	-	-	414	88.5	90.0	90.5	0.84	0.87	0.88	3525	5.5	0.5	2.7

For other voltages please ask for technical data.

# Rewindable submersible motor 14"

## Motor type SM14FT

### Dimensions and weights



Motor type	L [mm]	Weight [kg]
SM14FT/230/2	1785	738
SM14FT/270/2	1885	811
SM14FT/320/2	2015	885
SM14FT/370/2	2100	935
SM14FT/430/2	2225	1015
SM14FT/490/2	2345	1089

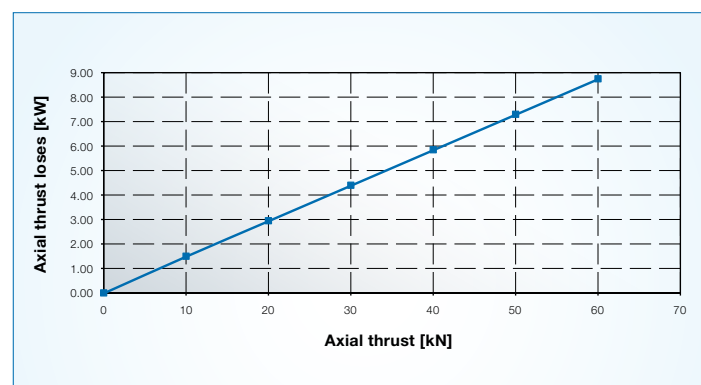
### Heat exchanger - as option

Heat exchanger [m <sup>2</sup> ]	L [mm]	Weight [kg]
2.0	1100	78
4.0	2200	136

### General dimensions

Dim.	mm	Dim.	mm
P	350	E	160
m	160	F	300
K	58	h	M20
d	70	S	6
I	110		

### Axial thrust losses



### Guide values for maximum coolant temperature

Motor type	Clean water, no sediments on motor						Slightly polluted water, sediments on motor < 0.5 mm					
	Water standing to slightly flowing axial thrust < 1500 kg			Water flowing [v > 0.5 m/s] axial thrust < 1500 kg			Water standing to slightly flowing axial thrust < 1500 kg			Water flowing [v > 0.5 m/s] axial thrust < 1500 kg		
	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>	no HE	with HE 2 m <sup>2</sup>	with HE 4 m <sup>2</sup>
SM14FT/230/2	-	45	56	34	54	62	-	-	44	-	41	53
SM14FT/270/2	-	43	55	33	52	61	-	-	43	-	40	52
SM14FT/320/2	-	41	53	32	51	60	-	-	39	-	37	49
SM14FT/370/2	-	39	51	-	50	58	-	-	37	-	34	47
SM14FT/430/2	-	34	47	-	45	55	-	-	31	-	-	43
SM14FT/490/2	-	-	43	-	42	52	-	-	-	-	-	39

HE = Heat exchanger

#### Notes for guide values

- The table shows the maximum permissible coolant temperatures in °C at different operating conditions, considering the pump axial thrust on the axial thrust bearing.
- In standard execution all motors are designed without built-on heat exchanger.
- If heat exchangers are used, please clearly state when ordering.
- For higher temperatures motors with heat resisting winding isolation are available.

## Low-voltage motors

### Interior Permanent Magnet Motor



# Rewindable submersible motor IPM

Extremely high efficient interior permanent magnet motors

## Product view



## Technical specification

Construction	synchronous motor
Sizes	8"-12"
Motor types	SM8T, SM10T, SM12T
Power range	50 kW up to 450 kW
Supply mode	3 phases AC
Operating voltage	up to 690 volts
Voltage tolerance	+6% / -10%
Starting method	Frequency converter
Enclosure	IP68
Coupling	8" NEMA, 10 and 12 ZOLL
Installation	vertical
Maximum axial thrust SM8T, SM10T, SM12T	downwards 40, 55, 75 [kN] upwards 4, 5, 5 [kN]
Winding	PE2/PA
Maximum installation depth	350 m

## Product benefits

- Enormous increase in efficiency up to over 100% for the same size
- A broad range of application reduces storage and logistics costs
- Extremely high efficiencies up to the part-load operational range guarantee lowest energy costs
- High efficiencies and an excellent power factor go along with lower power consumption and thus enable the use of smaller cable cross-sections
- Flexible adaptation of pump performance to the duty point via frequency converter without losses

## Materials

Casing parts	Cast iron, stainl. steel
Stator shroud	Stainless steel
Shaft end	Stainless steel

## Options

- Temperature control by PT100
- Heat exchanger
- Special voltages on demand

## Technical data sheet

Motor type	Rated output [kW]	Rated voltage $U_N$ [V]	Rated current $I_N$ at $U_N$ [A]	Efficiency $\eta$ [%] at nom. load			Power factor $\cos \varphi$ at nom. load			Nominal speed $n_N$ [rpm]	Lenght [mm]	$\varnothing$ [mm]	Weight [kg]
				50	75	100	50	75	100				
<b>SM8T/100/4 IPM</b>	100	400	171	90.5	91.0	91.5	0.97	0.95	0.92	3000	1245	189	165
<b>SM8T/150/4 IPM</b>	150	400	256	90.5	91.0	91.5	0.97	0.95	0.93	3000	1523	189	195
<b>SM10T/150/6 IPM</b>	150	400	253	90.5	91.5	92.0	0.97	0.94	0.93	3000	1410	229	300
<b>SM10T/250/6 IPM</b>	250	400	419	89.5	91.5	92.5	0.97	0.94	0.93	3000	1700	229	320
<b>SM12T/250/6 IPM</b>	250	690	244	91.0	91.5	92.0	0.97	0.94	0.93	3000	1807	280	730
<b>SM12T/450/6 IPM</b>	450	690	435	92.0	92.5	93.0	0.97	0.94	0.93	3000	2032	280	760

For other voltages please ask for technical data.



## Close to our customers



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