subteck

Submersible motors
Models: 8MX/10MX

Submersible motors

Models: 8MX - 10MX

Applications

- Drive motors connected to deep well pumps for water delivery
- Pump drive for applications with special requirements, such as mining, utilisation of geothermal energy as well as in offshore and marine technology
- Drive motors for all submersible electro pumps with connection dimensions according to NEMA standards or international standards, respectively

Advantages

- Motor performance and efficiency are best in class on a global level
- Operate in both directions of rotation
- Easy handling, maintenance-free operation and long service life
- Service-friendly modular design enables the exchangeability of parts and leads to a small amount of stock
- Fully recyclable motors
- Environmentally sound design thanks to the use of physiologically inert materials, great energy utilisation and high resistance to corrosion
- Comprehensive service network

Executions

- Three-phase asynchronous motors for 50 or 60 Hz and voltages up to 1,000 V
- Water-filled motors with rewindable stators, dynamically balanced and with high resistance to thermal stress
- High-quality thrust bearings that operate in both rotation directions and possess a high load-bearing capacity
- Water-lubricated radial bearings for a horizontal and vertical motor application
- Windings for temperatures up to 80 °C of the pumped medium available
- Speed regulation between 30 and 60 Hz via frequency converter possible
- High-quality materials for application in service, industrial and seawater
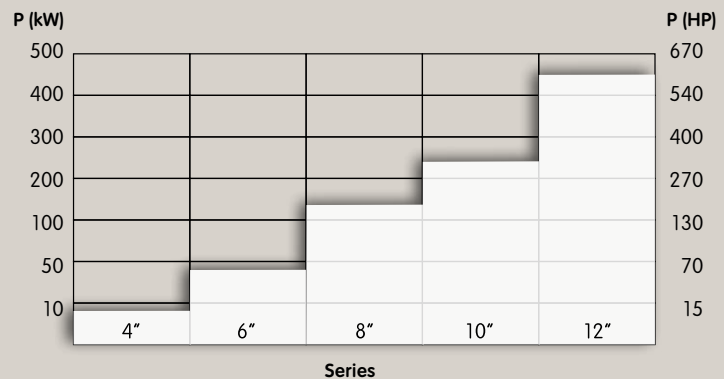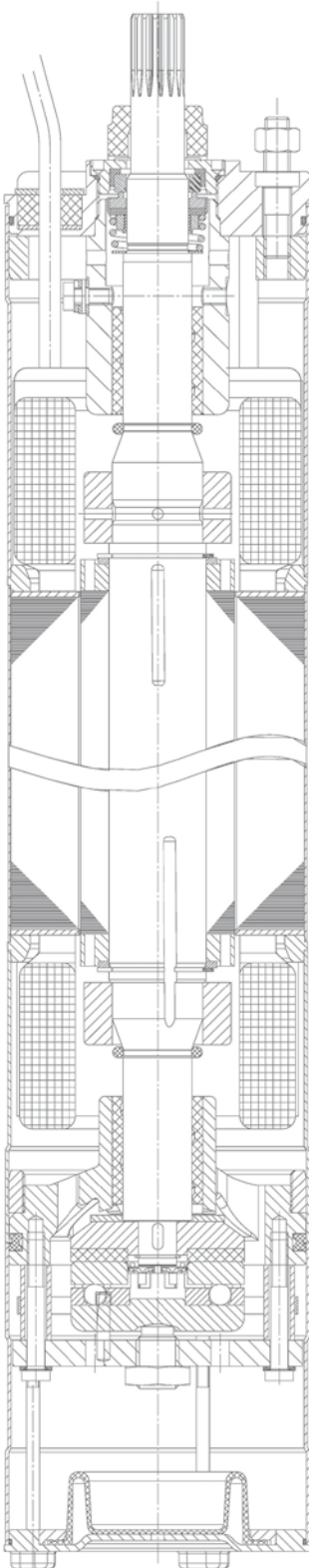
Design

Subteck submersible motor is a three-phase asynchronous motor with a short circuit rotor. It is designed as a wet-running motor with a watertight insulated winding. All motors are rewindable. Ì ÄÁ[¢¦Á&¨{}}^&¢}Á¾Á&&[¦å¶}*Á¢Á ÒT ŒÁ •¦æ}åæå.

The bearings are lubricated by the motor filling. That is a mixture of glycerine and water. Glycerine is biodegradable and secures the anti freeze protection up to -25 °C. If necessary, it can be changed with pure drinking water.

Axial down thrust ã absorbed by the axial thrust bearing with individual tilting pads.

Motors are encapsulated by a high quality mechanical seal. A reliable balance system grants the pressure compensation between motor and its environment.

The motors are completed with pressure-water tide cable. They are inside earthed.

Construction complies with VDE-regulations and the motors are conform to the EC declaration of conformity as defined by machinery directive 2006/42/EEC.

Motors are usable in horizontal and diagonal position depending of the nominal power, they work electrical clock- and anticlockwise.

A high efficiency guarantees lowest operating costs.

For all the motors **Subteck** holds a detailed supply of control and monitoring equipment.

Operating data

- Nominal power: up to 132 kW
- Voltage: up to 1000 V
- Kind of currency: 3 ~
- Frequency : 50 Hz and 60 Hz
- Degree of protection: IP 68
- Ambient temperature: up to 30 °C (50 °C with XLPE/PA-wire,   higher temperatures on request)
- Switching frequency: max. 20 / h
- Nominal speed: 2850 rpm and 3460 rpm

Special design (on request)

- higher temperatures
- other quality of pumped liquid, for example sea water use
- chemically polluted liquids
- other materials
- suction jacket
- temperature monitoring with PTC / Pt100 including reporting device
- microprocessor controlled motor monitoring

Frequency transformer operation

Every **Subteck** motor is usable for frequency transformer operations. Following recommendations should be considered:

- the frequency transformer must be conform to the nominal currency of the submersible motor,
- the maximal working range from 30 Hz up to 60 Hz, corresponding speed from 1.740 up to 3.460 1/min,
- the using of a sine-wave generator protects against high voltage peaks
- the minimum rate of flow must be 10 % of the nominal rate of flow of the pump.

Soft starter operation

Soft starters are very qualified to start a submersible motor. They grant:

- reduction of starting current
- avoidance of water hammer while starting causing switch off of the pump.

8MX - 10MX - 575V/60Hz - threephase - S.F. 1,15 - Direct Starting

Motor type	kW	HP	Starting mode	Frequency	Frame size	Rated power [kW]	Rated current [A]	Power factor	Efficiency	Motor cable	Cooling flow [m/s]	Installation length L [mm]	Weight [Kg]
8MX-3700/XP	37	50	DOL or inverter			37 SF 1.15	55	0,83	84%	4 m 1 fl 4G16	1,00	1202	138
8MX-5500/XP	55	75	DOL or inverter			55 SF 1.15	77	0,86	86%	4 m 1 fl 4G16	1,00	1362	163
8MX-7500/XP	75	100	DOL or inverter		8 Inch	75 SF 1.15	108	0,84	86%	4 m 1 fl 4G16	1,00	1542	192
8MX-9000/XP	90	125	DOL or inverter			90	124	0,84	86%	4 m 1 fl 4G25	1,00	1602	202
8MX-13200/XP	132	175	DOL or inverter	60 Hz		132	192	0,84	83%	4 m 2 fl 4G16 parrallel	0,80	1752	225
10MX-9000/XP	90	125	DOL or inverter			90 SF 1.15	145	0,85	87%	7 m 3 rd 1 x 35 + 1 rd 1 x 25 (PE)	1,00	1643	339
10MX-11000/XP	110	150	DOL or inverter			110 SF 1.15	150	0,86	87%		1,00	1773	378
10MX-15000/XP	150	200	DOL or inverter		10 Inch	150 SF 1.15	200	0,86	88%	7 m 3 rd 1 x 70 + 1 rd 1 x 35 (PE)	1,00	1973	438
10MX-19000/XP	190	260	DOL or inverter			190 SF 1.15	255	0,87	88%		1,00	2123	482
10MX-22000/XP	220	300	DOL - star delta - inverter			220 SF 1.15	303	0,87	88%	7 m 6 rd 1 x 50 + 1 rd 1 x 25 (PE)	1,00	2183	482

Material of construction

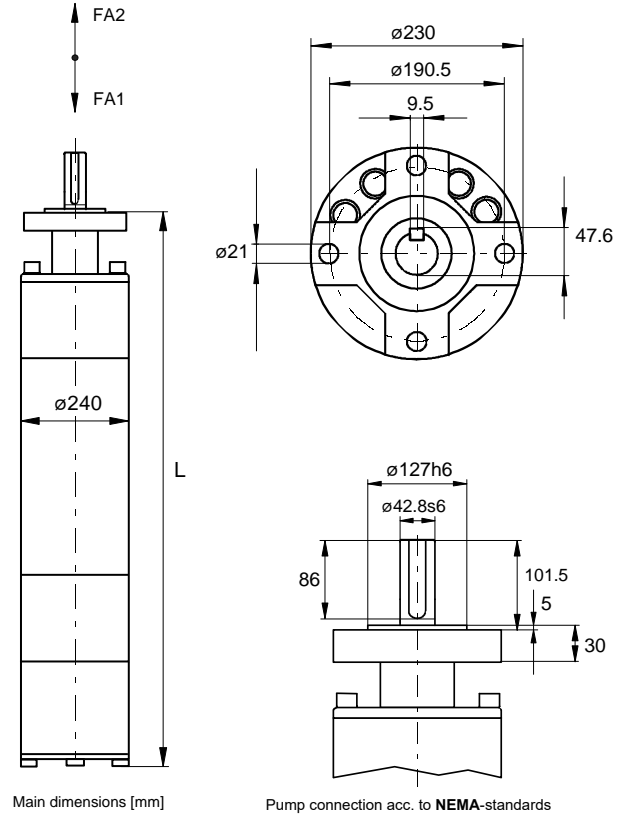| Motor type	Motor casing	Shaft	Radial bearing	Axial bearing	Winding wire	Mechanical seal	Connection flange	Fasteners
8MX-3700/XP	Stainless steel / 1.4571	Stainless steel / 1.4462	carbon	carbon	PE2/PA	SiC / SiC	Stainless steel / 1.4571	Stainless steel / 1.4401
8MX-5500/XP	Stainless steel / 1.4571	Stainless steel / 1.4462	carbon	carbon	PE2/PA	SiC / SiC	Stainless steel / 1.4571	Stainless steel / 1.4401
8MX-7500/XP	Stainless steel / 1.4571	Stainless steel / 1.4462	Steel / carbon	Steel / carbon	PE2/PA	SiC / SiC	Stainless steel / 1.4571	Stainless steel / 1.4401
8MX-9000/XP	Stainless steel / 1.4571	Stainless steel / 1.4462	Steel / carbon	Steel / carbon	PE2/PA	SiC / SiC	Stainless steel / 1.4571	Stainless steel / 1.4401
8MX-13200/XP	Stainless steel / 1.4571	Stainless steel / 1.4462	Steel / carbon	Steel / carbon	PE2/PA	SiC / SiC	Stainless steel / 1.4571	Stainless steel / 1.4401
10MX-9000/XP	Stainless steel / 1.4571	Stainless steel / 1.4462	carbon	carbon	PE2/PA	SiC / SiC	Stainless steel / 1.4408	Stainless steel / 1.4401
10MX-11000/XP	Stainless steel / 1.4571	Stainless steel / 1.4462	carbon	carbon	PE2/PA	SiC / SiC	Stainless steel / 1.4408	Stainless steel / 1.4401
10MX-15000/XP	Stainless steel / 1.4571	Stainless steel / 1.4462	carbon	carbon	PE2/PA	SiC / SiC	Stainless steel / 1.4408	Stainless steel / 1.4401
10MX-19000/XP	Stainless steel / 1.4571	Stainless steel / 1.4462	carbon	carbon	PE2/PA	SiC / SiC	Stainless steel / 1.4408	Stainless steel / 1.4401
10MX-22000/XP	Stainless steel / 1.4571	Stainless steel / 1.4462	carbon	carbon	PE2/PA	SiC / SiC	Stainless steel / 1.4408	Stainless steel / 1.4401

Material of construction

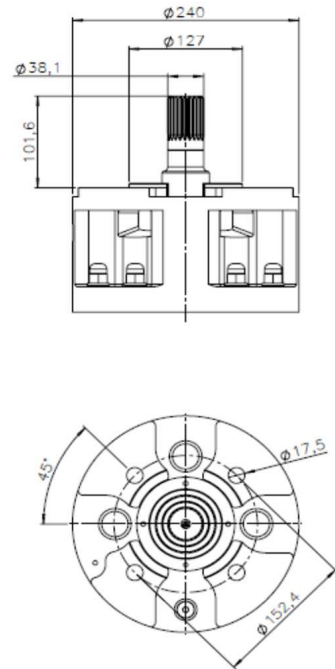| Components	Version AISI 316
shaft	duplex steel
motor flange	stainless steel / AISI 316 TI
motor jacket	stainless steel / AISI 316 TI
radial bearing	stainless steel / carbon
thrust bearing	stainless steel / carbon
screws nuts and bolts	stainless steel A4 / AISI 316
mechanical seals	SIC / SIC

8" Motor

Main dimensions [mm]

Pump connection acc. to **NEMA**-standards

10" Motor

Main dimensions [mm]

Pump connection acc. to **NEMA**-standards
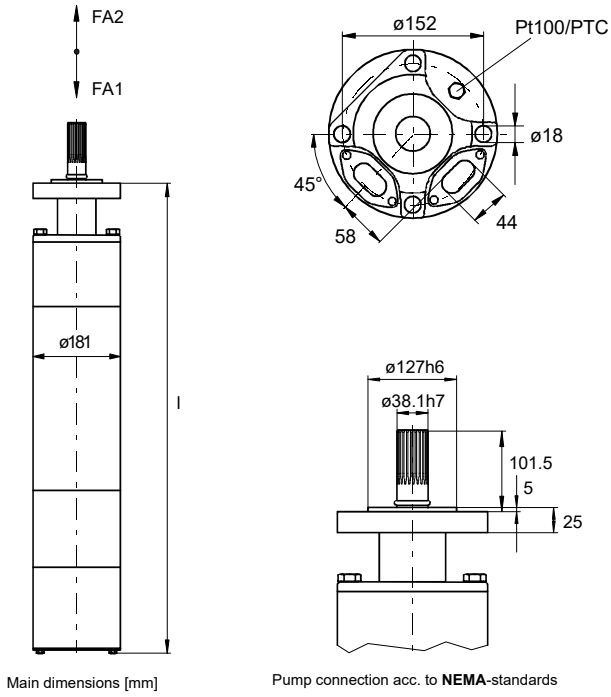
Motor type	L		W	
	m	inch	kg	lb
8MX-3700/XP	1202	47,3	138	304
8MX-5500/XP	1362	53,6	163	359
8MX-7500/XP	1542	60,7	192	423
8MX-9000/XP	1602	63,1	202	445
8MX-13200/XP	1752	69,0	225	496
10MX-9000/XP	1643	64,7	339	747
10MX-11000/XP	1773	69,8	378	833
10MX-15000/XP	1973	77,7	438	966
10MX-19000/XP	2123	83,6	482	1063
10MX-22000/XP	2183	85,9	482	1063