Submersible Sewage Pump Type ABS AFP M8 and M9

SULZER

60 Hz

Submersible sewage pump, type ABS AFP are suitable for clear and wastewater, for sewage with sludge containing solids and fibrous material.

Construction

- The water-tight fully flood-proof motor and the pump section form a compact and robust unit.
- Water pressure sealed connection chamber, with two stage cable entry, protected against excessive cable tension and bending.
- Water pressure sealed motor, insulation class H with bimetallic temperature monitors in the stator.
- Rotor and rotor shaft dynamically balanced, upper and lower bearings lubricated-for-life, maintenance-free.
- Blockage-free cooling system. Cooled by the medium.
- Double shaft sealing.
- Lower sealing by means of a silicon carbide mechanical seal, independent of the direction of rotation.
- Upper mechanical seal carbon/chrome steel, independant of direction of rotation.
- Seal chamber with seal monitor sensor to indicate water leakage through mechanical seal.
- Hydraulic parts with open or closed 3-channel or 5-channel impeller.
- These pumps are available both in standard and explosion-proof versions in accordance with international standards e.g. explosion- proof in accordance with NEC 500 for Class I, Division 1, Groups C and D in hazardous (classified) locations.

Motor

Water pressure sealed high efficiency motors, (3-phase, squirrel cage induction motors), from 185 to 600 kW (248 to 805 hp) and depending on hydraulic requirements as 4- to 12-pole versions.
Voltage: 460 V, 3~, 60 Hz (other voltages on request).
Insulation components: Class H (winding protection by 140 °C / 284 °F sensor)
Protection type: IP68
Start-up: DOL (direct on line), star-delta, VFD or soft starter.

Pump selection

To access more detailed information like pump performance curves, dimensional drawings, product description and motor performance curves, please use our ABSEL program:
http://absel.sulzer.com/
Hydraulic selection
-> Enter: Duty point
-> Select: Hydraulics
-> Select: Motor

Hydraulics

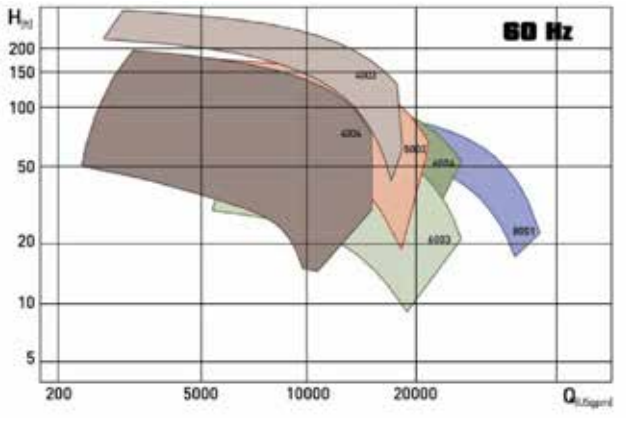
You have the choice of the following hydraulics in the range of DN 400 to DN 800 (16 to 32 ins) discharge:

Hydraulics / Impeller type

Hydraulics / Impeller type	
AFP 4003	3-channel, closed
AFP 4004	3-channel, closed
AFP 5002	3-channel, closed
AFP 6003	3-channel, open
AFP 6004	3-channel, closed
AFP 8001	5-channel, open

For power demand beyond available range M8/M9 please refer to technical data sheet XFP 105J-600X or XFP CB Plus.

Performance field



Standard and options

Description	Standard	Option
Max. ambient temperature	40 °C (104 °F)	
Max. submergence depth	20 m (66 ft)	
Mains voltage	460 V/60 Hz	230 V (not for all versions), 380 V, 575 V, 600 V/50Hz
Voltage tolerance	± 10%	
Insulation components	Class H (140 °C / 284 °F)	Class H (160 °C / 320 °F)
Start-up	DOL (direct on line), star-delta, or soft starter	
Approval		NEC 500 (USA)
Cables	S1BN8-F	EMC shielded cables
Cable length	10 m (33 ft)	15 m (49 ft), 20 m (66 ft) other lenght on request
Mechanical seal (medium side)	SiC-SiC (NBR)	SiC-SiC (Viton execution)
Mechanical seal (motor side)	carbon/chrome steel	
O-rings	NBR	Viton
Preparation for lifting hoist	Eyelet bolts	Lifting hoop
Protective coating	Two component coating epoxy resin	Special coatings on request
Cathodic protection		Zinc anodes on request
Installation	Wet-well	Dry-well vertical/horizontal
Cooling	Open cooling system	
Filling of the seal chamber	Lubrication oil ISO VG class 46	other filling on request
Leakage monitoring motor housing	Sensor for leakage detection (DI)	
Leakage monitoring seal chamber	Sensor for leakage detection (DI)	

Motor protection

M8 and M9		Standard	FM
Winding	Bi-metallic switch	X	X
	Thermistor (PTC)	O	O
	PT 100	O	O
Seal protection	Seal chamber	X	X
	Motor chamber	X	X
	Connection chamber	X	X
Temperature bearing upper/lower	Bi-metallic switch	X	X
	Thermistor (PTC)	O	O
	PT 100	O	O

X = Standard; O = Option; - = not possible

Materials

Motor	Standard	Option
Connection chamber	EN-GJL-250	1.4470
Seal chamber	EN-GJL-250	1.4470
Cooling jacket	1.0036	
Motor housing	EN-GJL-250	
Motor shaft	1.4021	1.4418
Eyelet bolts	Galv. steel	Highgrade st. st.
Hydraulics	**Standard**	**Option**
Volute	EN-GJL-250	1.4470
Impeller	EN-GJL-250	1.4470
Shroud (only AFP 6003/8001)	EN-GJL-250	1.4470
Wear ring volute*	EN-GJL-300	1.4581
Wear ring impeller (option)*	1.4571	
Washer	0.7660	1.4462
Fasteners (medium contact)	1.4401	

* Hydraulic version: AFP 5002 and 6004

Connection system	Standard	Option
Pedestal	EN-GJL-250	Non sparking
Fastening elements	Galv. steel	Highgrade st. st.
Guide rail	Galv. steel	St. steel
Pipe retainer	EN-GJS-400-18	1.4470
Support frame	1.0036	Galv. steel

Material comparison: Europe	USA
EN 1561; EN-GJL-250	ASTM A48; Class 35 B
EN 1561; EN-GJL-300	ASTM A48; Class 45 B
EN 1563; EN-GJS-400-18	ASTM A536; 60-40-18
1623-2; 1.0036; S235JRG1	ASTM / AISI A283 (C)
1.4418 (X4 CrNiMo 16 5)	
1.4401	ASTM / AISI 316
1.4470	ASTM A 890 4A (CD 3MN)
1.4462	BS 318 S 13
1.4571	ASTM / AISI 316 Ti
1.4581	BS 318 C 17
0.7660	ASTM / AISI A439:D2

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