

Submersible Sewage Pump Type ABS AFP M8

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, independent 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](http://absel.sulzer.com/Hydraulic%20selection) -> Enter: Duty point -> Select: Hydraulics -> Select: Motor



60 Hz

Hydraulics

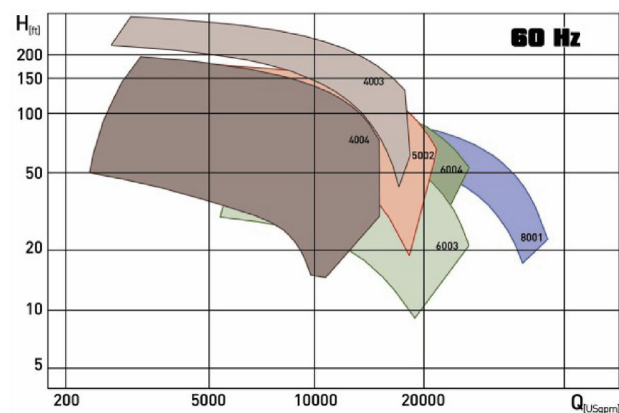
You have the choice of the following hydraulics in the range of DN 400 to DN 800 (16 to 32 ins) discharge:

Hydraulics / Impeller type

| | |
|----------|-------------------|
| 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 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/60Hz |
| 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 bracket |
| 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 | | Standard | Ex/ATEX | FM |
|---------------------------------|--------------------|----------|---------|----|
| Winding | Bi-metallic switch | ● | ● | ● |
| | Thermistor (PTC) | ○ | ○ | ○ |
| | PT 100 | ○ | ○ | - |
| Seal protection | Seal chamber | ● | ○ | ● |
| | Motor chamber | ● | ● | ● |
| | Connection chamber | ● | ● | ● |
| Temperature bearing upper/lower | Bi-metallic switch | ● | ● | ● |
| | Thermistor (PTC) | ○ | ○ | ○ |
| | PT 100 | ○ | ○ | ○ |

● = Standard; ○ = 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 | High grade st. st. |

Connection system

| | | |
|--------------------|---------------|--------------------|
| Pedestal | EN-GJL-250 | Non sparking |
| Fastening elements | Galv. steel | High grade st. st. |
| Guide rail | Galv. steel | St. steel |
| Pipe retainer | EN-GJS-400-18 | 1.4470 |
| Support frame | 1.0036 | Galv. steel |

Hydraulics

| | | |
|------------------------------|------------|--------|
| 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

| 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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