ALL-PUMPS

Submersible mixed-flow column pump type ABS AFLX

Main industries and applications

The submersible mixed-flow column pump type ABS AFLX equipped with a Premium Effciency IE3 motor is designed for use where large volumes of process water or wastewater containing solid effluent must be pumped up to moderate heads. Suitable for:

- Storm water protection, irrigation and aquaculture
- Industrial raw water and process water
- Combined sewage and surface water
- Recirculation sludge or return activated sludge (RAS)
- Hazardous locations:
  - Certification for ATEX (Ex II 2G Ex h db IIB T4 Gb), FM and CSA available as an option

Water and wastewater

General industry

Pulp, paper and board

Chemical process industry

Key customer benefits

Premium Efficiency

The AFLX pump, equipped with a Premium Efficiency IE3 motor, benefits from significant efficiency in both motor and hydraulics, resulting in substantial savings.

Great savings means a healthier environment, reducing your carbon footprint and the risk of harmful overflows. The AFLX pump makes your operation more competitive while contributing to a greener future.

Easy installation into rising main

The submersible AFLX pump can be installed according to the following, to fulfill virtually any customer requirements:

- Steel column pipe installation
- Concrete rising main installation

Automatic self-centering of the pump and column pipe by means of a conical coupling ring. No screw or bolt fixing needed.

Slimline design (optional 4-pole motor with gearbox) results in a smaller rising main design and compact pump station construction. Reduces capital investment.

Superior reliability

The AFLX pump, equipped with high standard components in hydraulic and motor, leads to outstanding reliability.

Features and benefits

Versatile range of mixed-flow impellers

- Highly efficient three-to five-blade open-type mixed-flow impellers
- Low-vibration design
- Low-NPSH design
- Trouble-free pumping of liquids containing solids in combination with screens (For detailed information please contact your local Sulzer representative)
- Applicable for delivering recirculation sludge or return activated sludge (RAS) at wastewater treatment plants

Adjustable inlet bellmouth with slotting

- Significant energy savings throughout the pump lifetime
- Ability to restore pump efficiency after wear by adjusting the inlet bellmouth
- Efficient handling of fibrous material throughout the hydraulic lifetime
- Slotted casing wear ring adapted from the Contrablock Plus series to ensure blockage-free operation

Slim motor design

- Opportunities for compact rising main and pumping station design
- Gearbox available from 132 kW for AFLX 1202 to 1207
  - Wide range of gearbox ratios to meet the duty point with the best efficiency
  - Better adaptation compared to a direct high-pole motor drive
  - Higher efficiency and lower current due to the better power factor of 4-pole motors compared to high-pole motors
  - Lower weight

1. Mixed-flow impeller
2. Double mechanical seals
3. Heavy-duty bearings
4. Stainless steel shaft
5. Premium Efficiency motor

Double mechanical seals

- Silicon carbide/silicon carbide (SiC/SiC) for maximum resistance against abrasives
- Chemical resistance in wastewater and most other industrial applications
- Seal blockage prevention that reduces operational costs

Heavy-duty stainless steel shaft

- Deflection at the mechanical seal minimized to <0.05 mm / 0.002 inches
- Increased safety against fatigue fractures
- Extended seal and bearing life

Heavy-duty bearings

- Minimum lifetime of 100’000 hours
- Electrically insulated upper bearing as standard for PE6 and PE7, optional for PE5, which protects against stray electrical currents and avoids micro-cratering in the raceway of the inner and outer rings

Installation into rising main

- Automatic self-centering of the pump and column pipe by means of a conical coupling ring
- No screw or bolt fixing needed

Premium Efficiency IE3 motor in accordance with IEC 60034-30

Hydraulics / impeller type	
AFLX 0601	3 blades
AFLX 0701	3 blades
AFLX 0801	3 blades (skew)
AFLX 0803	4 blades (skew)
AFLX 1202	5 blades
AFLX 1203	5 blades
AFLX 1207	5 blades

Premium Efficiency submersible motors (IE3)

1 Class H (140°C / 284°F) insulation, temperature rise according to NEMA Class A up to 110 kW / 168 hp and Class B above

- Unprecedented motor reliability due to low winding temperature
- Extremely long motor lifetime

2 Service Factor up to 1.3

- A multiplier which indicates a permissible occasional power overloading, due to:
- Voltage variations, especially on long power supply lines
- Frequency deviation from the power line's frequency, (e.g. Generator-Set; very long or overloaded power lines)
- In accordance to NEMA MG1

3 Versatile cable types

- Country-specific cables with European, FM or CSA approval for use in sewage water

4 Optional shielded cable (EMC)

- For operation with frequency-controlled AC drives
- Installation according to EMC directives

5 Moisture DI probe in inspection chamber in standard execution

- Early indication of mechanical seal failure
- Additional moisture DI probe (separate for cable connection chamber and motor compartment) to provide early indication of moisture ingress, standard for PE6 and PE7 and optional for PE4 and PE5

6 Thermal protection switch in stator as standard

- Motor protection in the event of a power supply failure, e.g. low line voltage or single-phase operation
- Additional separate thermal protection switch (bimetallic, PTC or PT100) in the upper and lower bearing as an early warning of bearing malfunction, standard for PE6 and PE7 and optional for PE4 and PE5
- Vibration sensor for indication of vibration and warning when the set limit is exceeded, optional for PE4 to PE7

Motor power

No. of poles		Power P2 (kW)				
		PE3	PE4	PE5	PE6	PE7
4	50 Hz	-	-	-	132-300	350-500
	60 Hz	-	-	-	150-335	400-468
6	50 Hz	9.5-22	9-37	45-90	110-200	-
	60 Hz	14-25	21-43	52-104	-	-
8	50 Hz	9-18.5	7.5-30	45-89	90-110	160-450
	60 Hz	-	17-35	43-86	104-150	-
10	50 Hz	-	-	30-55	90-132	160-350
	60 Hz	-	-	35-63	150	185-415
12	50 Hz	-	-	-	110-132	160-300
	60 Hz	-	-	-	104-150	185-290

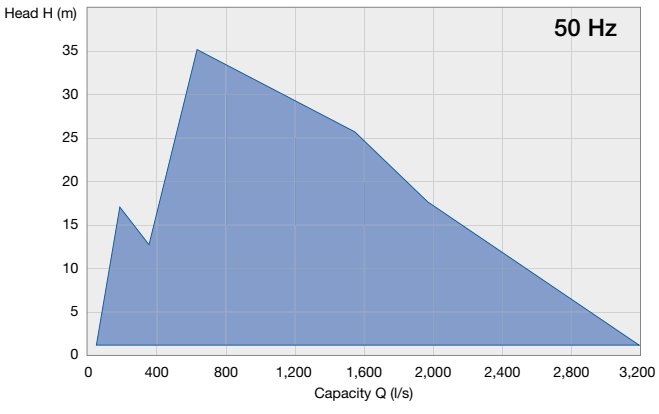
Materials

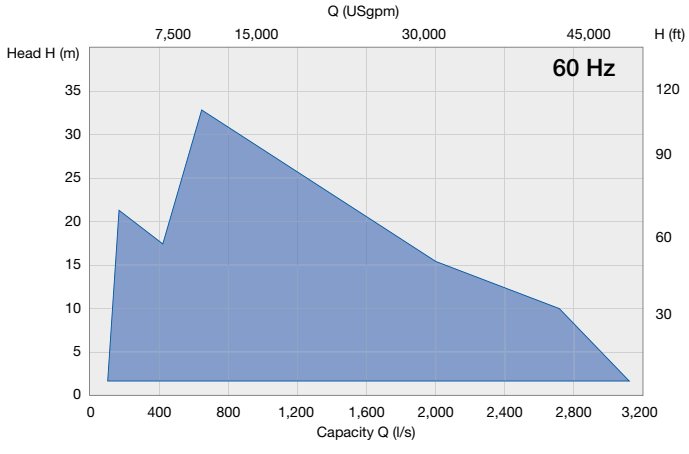
Pump part	Material
Motor housing / connection chamber	EN-GJL-250
Oil chamber / bearing flange	EN-GJL-250
Motor shaft	1.4021, 1.4462
Outlet diffuser	EN-GJL-250
Inlet bellmouth	EN-GJL-250, 1.4470
Impeller	EN-GJL-250, 1.4470 or 1.4469
Lifting hoop (PE3)	1.4401
Lifting hoop (PE4 and PE5)	EN-GJS-400-18, 1.4470
Lifting hoop (PE6 and PE7)	1.0060, 1.4462

Operating data

	50 Hz	60 Hz
Pipe diameters	600 to 1’200 mm	600 to 1’200 mm / 23 to 48 in.
Capacities	up to 3’100 l/s	up to 3’100 l/s / 49’000 USgpm
Heads	up to 35 m	up to 33 m / 108 ft.
Motor power	7.5 to 500 kW	17 to 468 kW / 23 to 628 hp

Performance ranges





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