

# Submersible Mixed Flow Column Pump Type ABS AFLX PE7

50 Hz



Submersible mixed flow impeller pump type ABS AFLX series are used everywhere where large volumes of process water or wastewater containing solid effluent must be pumped up to approx. 25 m.

The AFLX can be applied as any of the following: Sewage pumps in combination with screens, active sludge pumps, combined sewage and surface water pumps, storm water pumps for storm protection, industrial raw water and for a multitude of other applications.

## Construction

- Premium efficiency motors in accordance with IEC 60034-30 level IE3 with testing in accordance with IEC 60034-2-1.
- Premium efficiency motors designed for VFD operation in accordance with IEC/TS 60034-25 A ( $U_{peak} < 1300$  V).
- The water-tight fully flood-proof motor and the pump section form a compact and robust unit, easy to clean and easy to service.
- Optimum motor cooling by directing the medium being pumped over the motor.
- Water pressure sealed connection chamber, with two stage cable entry, protected against excessive cable tension and bending.
- Bimetallic thermal sensors in the stator which open at 140 °C.
- Rotor and shaft dynamically balanced.
- Upper and lower bearings lubricated-for-life, maintenance-free.
- Insulated upper bearing for VFD operation.
- Triple shaft sealing.
- Double mechanical seals, silicon carbide/silicon carbide at the medium side. Carbon/chrome steel at the motor side. All seals are independent of rotation direction and resistant to temperature shock.
- Inspection chamber with sensor for moisture protection to indicate water leakage through mechanical seal.
- Gearbox available from 400 kW for AFLX 1203.
- Hydraulics with mixed flow impeller. Hydraulics with diffuser and adjustable wear gap at the suction side.

## Motor

Water pressure sealed premium efficiency motors, (3-phase, squirrel cage induction motors), from 160 to 650 kW and, depending on hydraulic requirements as 4- to 12-pole versions.

**Voltage:** 400 V, 3-, 50 Hz (other voltages on request)

**Temperature rise:** According to NEMA class A up to 110 kW and class B above.

**Insulation components:** Class H (motor winding protected by temperature sensor 140 °C)

**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 programme:

<http://absel.sulzer.com/>

**Hydraulic selection:**

-> Enter: Duty point

-> Select: Hydraulics

-> Select: Motor



## Hydraulics

You have the choice of the following hydraulics for the nominal pipe diameter 1200 mm and larger.

For power demand beyond available range PE7 please refer to technical data sheet AFLX PE4 to PE6.

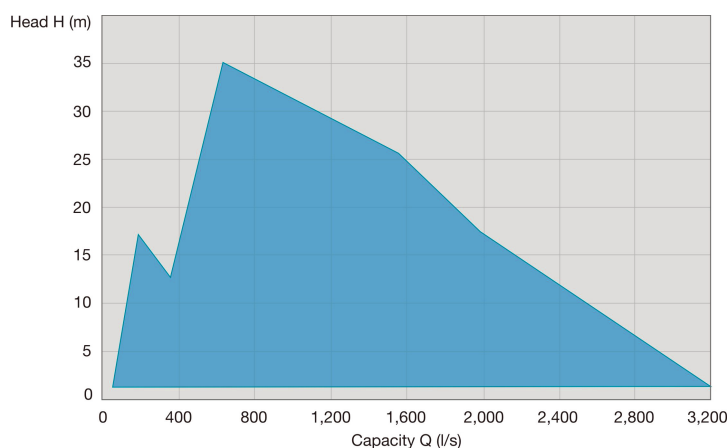
## Installation

Suitable for installation in steel or concrete riser pipes for economical operation and simple installation. The centering of the pump and sealing between pump and pipeline is achieved automatically by means of conical coupling ring. No additional installation work required.

## Hydraulics / Impeller type

AFLX 1202	5-blades
AFLX 1203	5-blades
AFLX 1207	5-blades

Performance field



## Standard and options

Description	Standard	Option
Max. ambient temperature	40 °C	60 °C
Max. submergence depth	20 m	
Mains voltage	400 V/50 Hz	690 V/50 Hz other voltage on request
Voltage tolerance	± 10 % on 400 V	
Insulation components	Class H (140°C)	Class H (160°C)
Start-up	DOL, star-delta, VFD or soft starter	
Approval	non Ex	
Cables	S1BN8-F	EMC shielded cables
Cable length	10 m	15 m, 20 m, other length 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	Lifting hoop	Lifting hoop in stainless steel
Protective coating	Two component coating epoxy resin	Special coatings on request
Cathodic protection		Zinc anodes on request
Installation	Wet-well in steel pipe or concrete riser pipe	
Motor cooling	By surrounding medium	
Moisture sensor motor housing	DI (sensor for moisture detection)	
Moisture sensor Connection chamber	DI (sensor for moisture detection)	
Moisture sensor Inspection chamber	DI (sensor for moisture detection)	
Vibration sensor		on request

## Motor protection

PE7		Std.
<b>Winding</b>	Bi-metallic switch	X
	Thermistor (PTC)	0
	PT 100	0
<b>Seal protection</b>	Inspection chamber	X
	Motor housing	X
	Connection chamber	X
<b>Temperature bearing upper/lower</b>	Bi-metallic switch	X
	Thermistor (PTC)	0
	PT 100	0
<b>Vibration sensor</b>	4....20mA	0

X = Standard; 0 = Option

## Materials

Motor	Standard	Option
Connection chamber	EN-GJL-250	
Cooling/oil chamber	EN-GJL-250	
Motor housing	EN-GJL-250	
Motor shaft	1.4021	1.4462
Fasteners (medium contact)	1.4401	
<b>Lifting device</b>		
Lifting hoop	1.0060	1.4462
<b>Connection system</b>		
Coupling ring	1.0446	1.4408

Hydraulics	Standard	Option
Diffuser	EN-GJL-250	
Bellmouth	EN-GJL-250	
Impeller	EN-GJL-250	1.4470
Impeller washer	EN-GJS-400-18	1.4462
Fasteners (medium contact)	1.4401	

Please contact your SULZER representative for proposal of an effective suction chamber design!