Submersible Sewage Pump Type ABS XFP CB Plus

SULZER

60 Hz

Submersible sewage pump type ABS XFP CB Plus is designed for municipal and industrial wastewater equipped with Premium Efficiency IE3-level motor. Suitable for clean water and wastewater, sewage with sludge and high rag content, solids and fibrous material.

Construction

- Premium Efficiency IE3 motors in accordance with NEMA and IEC 60034-30. Testing in accordance with IEC60034-2-1.
- 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.
- 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 (284 °F).
- Rotor and shaft dynamically balanced, upper and lower bearings lubricated-for-life, maintenance-free.
- Insulated upper bearing for VFD operation standard for PE6 and optional for PE4 and PE5.
- Triple shaft sealing.
- Upper and lower sealing by means of a silicon carbide/silicon carbide mechanical seal, independent of the direction of rotation.
- Inspection chamber with sensor for moisture protection to indicate water leakage through mechanical seal.
- Option: Blockage- and maintenance-free internal closed looped cooling system. Cooling medium: Glycol - water mixture (standard for PE6 range).
- Hydraulic parts with 2-channel Contrablock Plus impeller.
- These pumps are available as standard (PE4 - PE6) and explosion-proof construction in accordance with international standards such as NEC 500 Class I, Division 1, Groups C and hazardous (classifield) locations.

Motor

Water pressure sealed Premium Efficiency motors, (3-phase, squirrel cage induction motors), from 20 to 280 kW (27 to 375 hp) and depending on hydraulic requirements as 4- to 8-pole versions.
Voltage: 460 V, 3~, 60 Hz (other voltages on request).
Insulation components: Class H (winding protection by 140 °C (284 °F) sensor)
Temperature rise: According to NEMA class A up to 125 kW and class B above.
Protection type: IP68
Start-up: DOL (direct on line), 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:
https://absel.sulzer.com/
Hydraulic selection
-> Enter: Duty point
-> Select: Hydraulics
-> Select: Motor

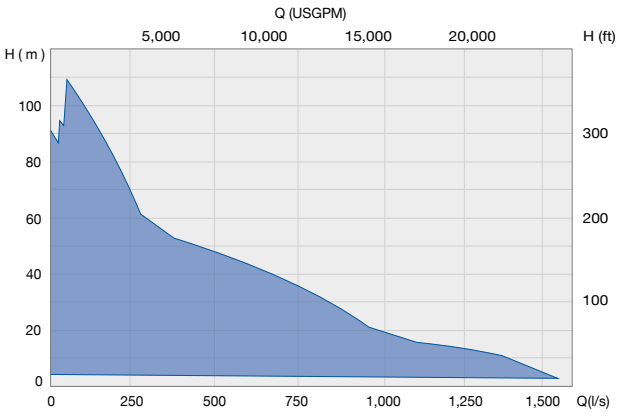
Hydraulics

You have the choice of the following hydraulics in the range of DN 100 to DN 400 (4 to 16 in) discharge:

Hydraulics / Impeller type

Hydraulics / Impeller type			
XFP 105J / 4 inch	CB2	XFP 255J / 10 inch	CB2
XFP 106J / 4 inch	CB2	XFP 255L / 10 inch	CB2
XFP 155J / 6 inch	CB2	XFP 305J / 12 inch	CB2
XFP 205J / 8 inch	CB2	XFP 305M / 12 inch	CB2
XFP 205L / 8 inch	CB2	XFP 306M / 12 inch	CB2
XFP 205M / 8 inch	CB2	XFP 356M / 14 inch	CB3
XFP 206J / 8 inch	CB2	XFP 405M / 16 inch	CB2

Performance field



H = Total Head; Q = Discharge Volume

Standard and options

Description	Standard	Option
Max. ambient temperature	40 °C (104 °F)	60 °C (140 °F)
Max. submergence depth	20 m (66 ft)	-
Mains voltage	460 V/60 Hz	230 V, 380 V, 575 V, 600 V / 60 Hz
Voltage tolerance	± 10 % at 460 V	
Insulation components	Class H [140 °C/284 °F]	Class H [160 °C/320 °F] (not for Ex)
Start-up	DOL (direct on line), VFD or soft starter	-
Approval	Non-FM	NEC Class I, Division 1, Groups C and D*
Cables	G-GC, H07RN8-F	EMC shielded cables
Cable length (m [ft])	10 [33]	15 [49], 20 [66], 30 [98], 40 [131], 50 [164]
Mechanical seal (medium side)	SiC-SiC (NBR)	SiC-SiC (Viton execution)
Mechanical seal (motor side)	SiC-SiC	-
O-rings	NBR	Viton
Preparation for lifting hoist	Lifting hoop	Lifting hoop in stainless steel*
Protective coating	Two component epoxy resin coating	Special coatings on request
Cathodic protection	-	Zinc anodes on request
Installation	Wet-well	Dry-well vertical/horizontal
Motor cooling	Cooling by surrounding medium	Closed loop cooling system**
Moisture sensor motor housing	PE6	PE3 - PE5
Moisture sensor inspection chamber	PE3 - PE6	-
Vibration sensor	-	PE4 - PE6

* Standard for PE3. ** Standard for PE6.

Motor protection

PE3 to PE6		non-FM	FM
Winding	Bi-metallic switch	●	●*
	Thermistor (PTC)	O	O*
	PT 100	O**	O**
Moisture sensor	Inspection chamber	●**	O (● for PE3)
	Motor housing	O (● for PE3 and PE6)	O** (● for PE6)
	Connection chamber	O** (● for PE6)	O** (● for PE6)
Temperature bearing upper/lower	Bi-metallic switch	O** (● for PE6)	O** (● for PE6)
	Thermistor (PTC)	O**	O**
	PT 100	O**	O**
Vibration sensor	0 - 20 mm/s	O**	O**

● = standard. O = option. * PTC to be used when operated via VFD. ** Not available for PE3.

Materials

Motor	Standard	Option
Connection chamber	EN-GJL-250	-
Cooling chamber	EN-GJL-250	-
Cooling jacket	1.0036*	Stainless steel
Motor housing	EN-GJL-250	-
Motor shaft	1.4021	1.4462
Fasteners (medium contacted)	1.4401	-
Lifting hoop (PE3)	1.4401	-
Lifting hoop (PE4 & PE5)	EN-GJS-400-18	1.4470
Lifting hoop (PE6)	1.0553	1.4462
Hydraulics		
Volute	EN-GJL-250	1.4470
Impeller	EN-GJL-250	1.4470**
Bottom plate	EN-GJL-250	1.4470**

* PE3 = EN-GJL-250. ** or EN-GJL-250 flame hardenend.

Connection system (wet)	Standard	Option
Pedestal	EN-GJL-250	Non sparking
Fastening elements	Stainless steel	-
Protective coating	Epoxy resin based	-
Guide rail	Galvanized steel	Stainless steel
Pipe retainer	EN-GJS-400-18	1.4470
Connection system (dry)		
Support frame	1.0036	Galvanized steel

Material comparsion	
Europe	USA
EN 1561; EN-GJL-250	ASTM A48; Class 35 B
EN 1563; EN-GJS-400-18	ASTM A536; 60-40-18
EN 10025; 1.0036; S235JRG1	ASTM / AISI A283 (C)
EN 10025; 1.0060; E335	ASTM / AISI A572 (65)
1.4021; 1.4401	ASTM / AISI 420; 316
1.4470	ASTM A 890 4A (CD 3MN)