

Submersible Sewage Pumps Type ABS XFP



Main Applications

Submersible sewage pump type ABS XFP is designed for municipal and industrial wastewater equipped with premium efficiency (IE3 level) motor for:

- Hazardous locations
 - Approval for ATEX (Ex II 2G k Ex d IIB T4), FM and CSA as standard for PE1 to PE3
 - Approval for ATEX (Ex II 2G k Ex d IIB T4), FM and CSA available as an option for PE4 to PE6
- Clean water and wastewater
- Sewage with sludge and high contain of rags
- Sewage containing solids and fibrous material
- Industrial raw water
- Municipal combined sewage and storm water systems

Premium Efficiency

The XFP pumps benefit from significant efficiency in both motor and hydraulics, resulting in substantial savings:

- Lower energy consumption
- Reduced operating costs
- Fewer maintenance costs
- Less downtime caused by breakdowns and blockages

Great savings means a healthier environment, reducing your carbon footprint and the risk of harmful overflows. XFP pumps make your operation more competitive while contributing to a greener future.

The Right Installation to Fit Any Needs

The submersible XFP pumps can be installed according to the following installations, to fulfill virtually any customer requirements:

- Wet well installation with pedestal
- Wet well transportable installation
- Dry well vertical installation
- Dry well horizontal installation

Features and Benefits of Hydraulics

1 Versatile range of Contrablock Plus impellers

- This technology has been specially engineered to handle tough requirements, such as reduced water consumption and higher rag and solid content
- Highly reliable and efficient impeller design with single and multi-vane models to ensure exceptional blockage resistance, solid passage min. 75 mm / 3 in and greater
- Optimum balance of impeller vane numbers and solids handling, based on extensive Computational Fluid Dynamics (CFD) research and testing
- Market leading efficiency, without compromising on solid size and rag handling

2 Adjustable bottom plate with intercepted slotting

- Significant energy savings throughout lifetime
- Blockage free operation
- Adjustment of the bottom plate restores pump efficiency
- Maintains efficient rag handling throughout its lifetime

3 Double volute casing from DN 400

- Reduces radial forces and shaft deflection
- Maximizes the life of bearings and shaft seals, thereby reducing lifecycle costs

4 Double mechanical seals

- Silicon carbide/silicon carbide (SiC/SiC) provides maximum resistance from abrasives
- Seal blockage prevention reduces operational costs
- SiC/SiC is chemically resistant in wastewater and most other industrial applications

5 Heavy-duty stainless steel shaft

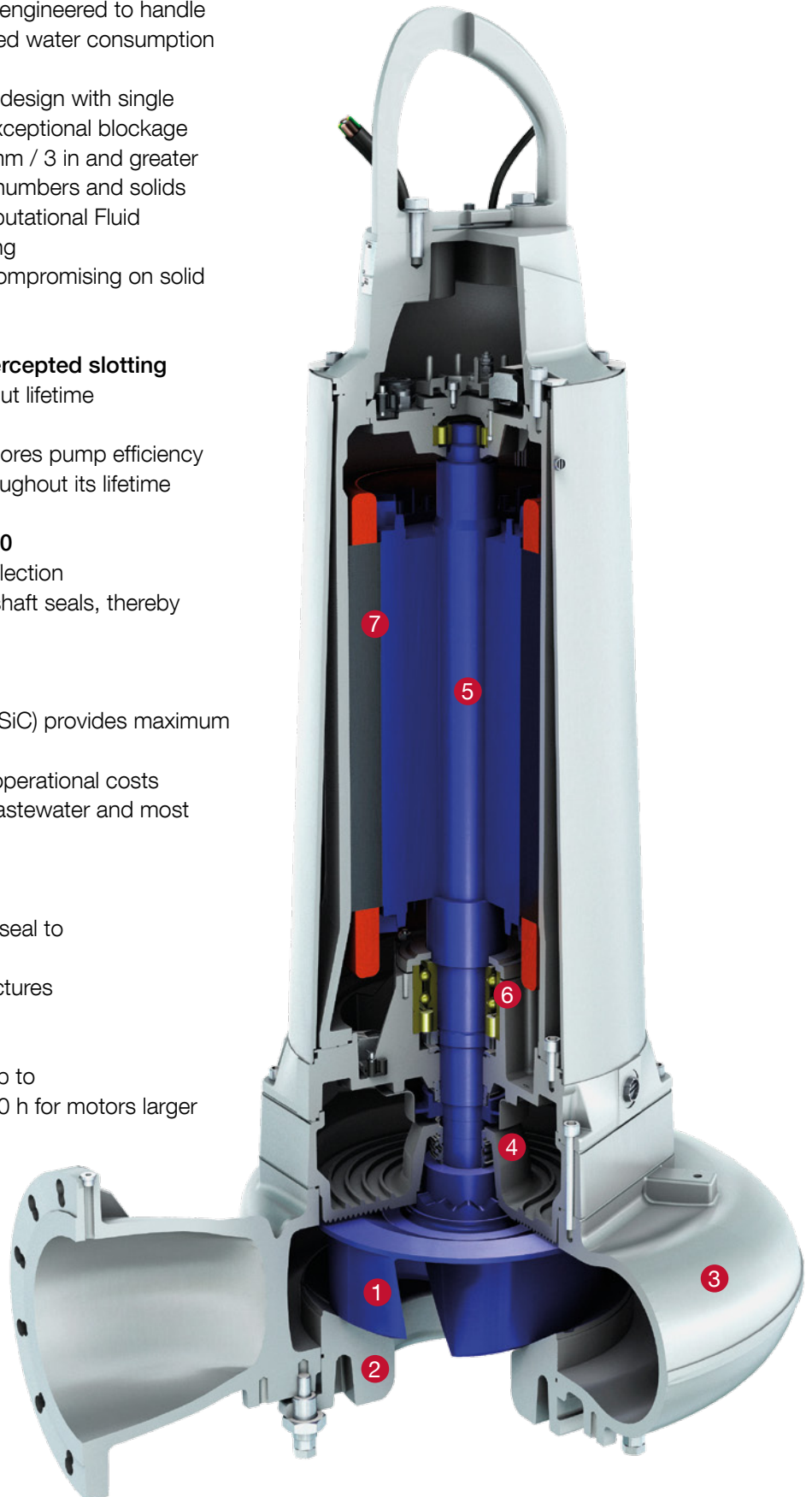
- Minimizes deflection at mechanical seal to <math><0.05\text{ mm}</math> / 0.002 in
- Increased safety against fatigue fractures

6 Heavy-duty bearings

- Minimum life 50,000 h for motors up to 9 kW / 12 hp and minimum 100,000 h for motors larger than 11 kW / 17 hp

7

- Premium efficiency IE3 motor in accordance with IEC 60034-30



PE3-6

Premium Efficiency Submersible Motors (IE3)

Sulzer was the first company in the world to offer premium-efficiency IE3 submersible motors, in order to achieve the perfect balance of reliability and energy consumption. Using premium-efficiency IE3 motors and Contrablock Plus impellers, the submersible sewage pump type ABS XFP is the most efficient wastewater pump on the market.

Main design features, in accordance with IEC 60034-30, for low lifecycle costs by energy saving, significant carbon footprint reduction and increased lifetime by low winding temperature rise. Designed for Variable Frequency Drive (VFD) operation. ATEX, FM and CSA certified motors.

Motor Power and Speed Overview, PE1 - PE6

No of poles		Power P2 (kW)					
		PE1	PE2	PE3	PE4	PE5	PE6
2	50 Hz	3 - 4	5.5 - 11	15 - 25	-	-	-
	60 Hz	4.5	8 - 12.5	18.5 - 30	-	-	-
4	50 Hz	1.5 - 2.9	4 - 9	11 - 22	22 - 45	55 - 110	132 - 350
	60 Hz	1.8 - 3.5	4.5 - 10.5	13 - 25	25 - 52	63 - 125	150 - 400
6	50 Hz	1.3	3	9 - 14	18.5 - 37	45 - 90	110 - 225
	60 Hz	2	3.5	9 - 20	21 - 43	52 - 104	125 - 250
8	50 Hz			-	15 - 30	37 - 75	90 - 250
	60 Hz			12	17 - 35	43 - 86	104 - 200
10	50 Hz					30 - 55	75 - 200
	60 Hz					35 - 63	86 - 200
12	50 Hz						75 - 132
	60 Hz						86 - 150

Features and Benefits of 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**
 - Extremely long lifetime of motor

- 2 **Service factor 1.3**
 - Allows short-time operation at lower voltage, higher frequency (generator sets) and temporary higher medium temperature

- 3 **Versatile cable types**
 - European, FM or CSA approved country-specific cables for use in sewage water

- 4 **Optional shielded cable (EMC)**
 - Operation for frequency controlled AC drives
 - Installation according to EMC directives

- 5 **Moisture DI probe in seal chamber as standard**
 - Early mechanical seal failure indication

- **PE3 to PE6: Additional moisture DI probe, separate for cable connection chamber and motor compartment as option, standard for PE6**
 - Early moisture ingress indication

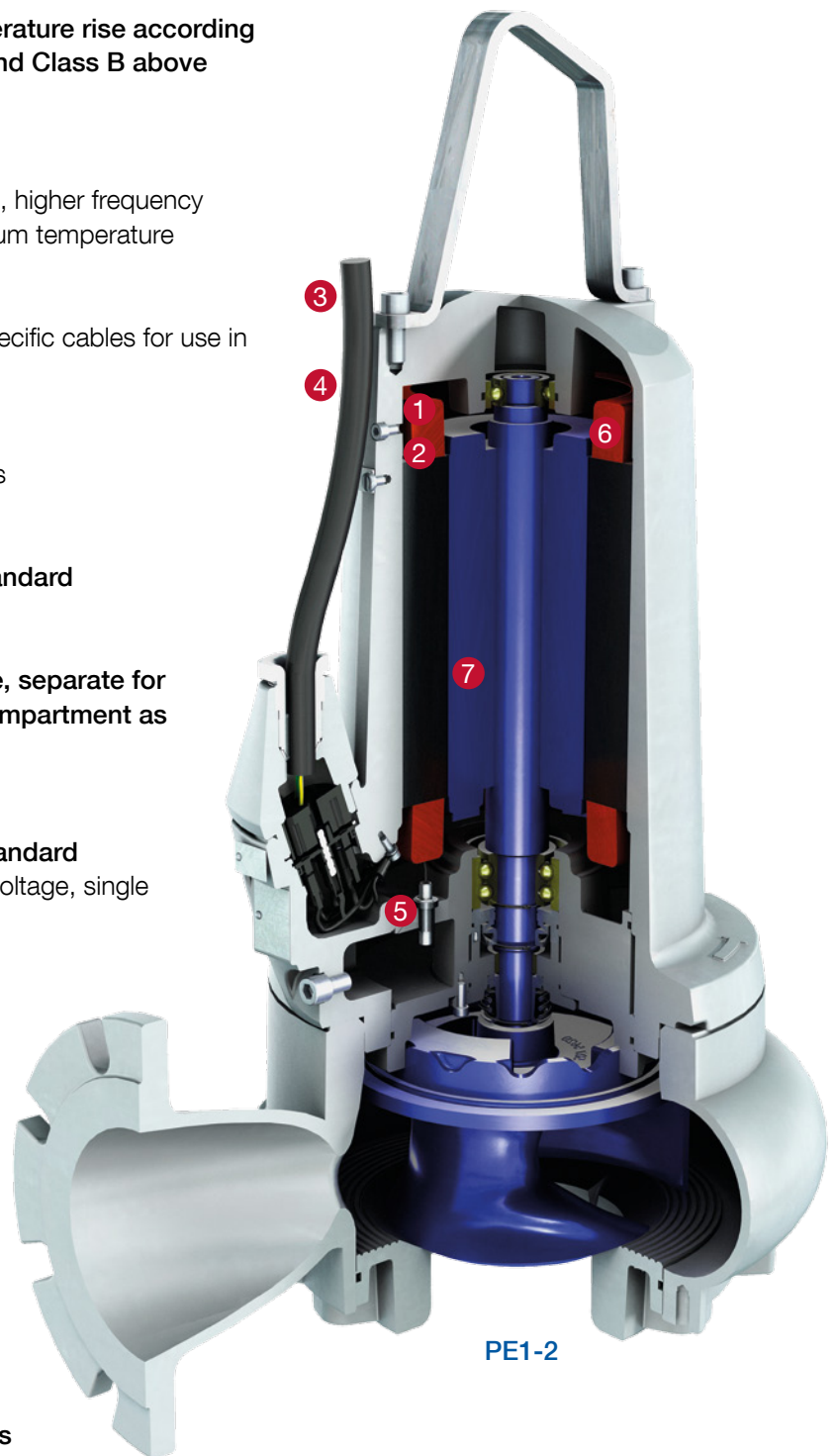
- 6 **Thermal protection switch in stator as standard**
 - Power supply failure motor protection (low voltage, single phase)

- **PE4 to PE6: Additional separate thermal protection switch in upper and lower bearing as option and standard for PE6. Sensor options: Bimetallic Switch, PTC or PT100**
 - Early warning at beginning of bearing malfunction

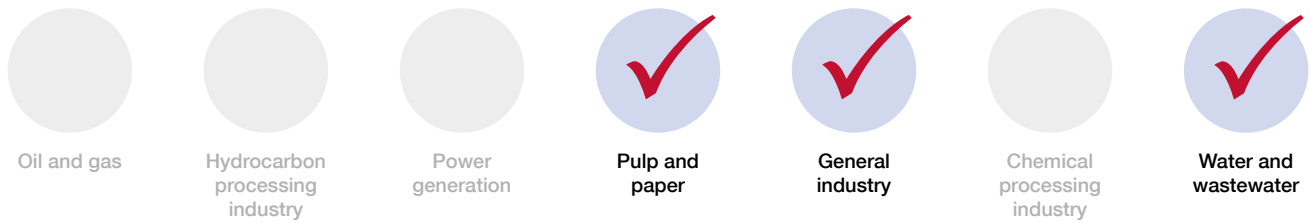
- 7 **PE1 and 2: Oil cooled motor as option in 60Hz, standard in 50Hz**
 - Continuous operation in dry installation

- **PE3 to PE6: Closed loop water cooling system with integrated heat exchanger as option, standard for PE6**
 - Continuous operation in wet well installation with un-submerged motor

- **PE5 to PE6: Optional vibration sensor**
 - Early indication of vibration



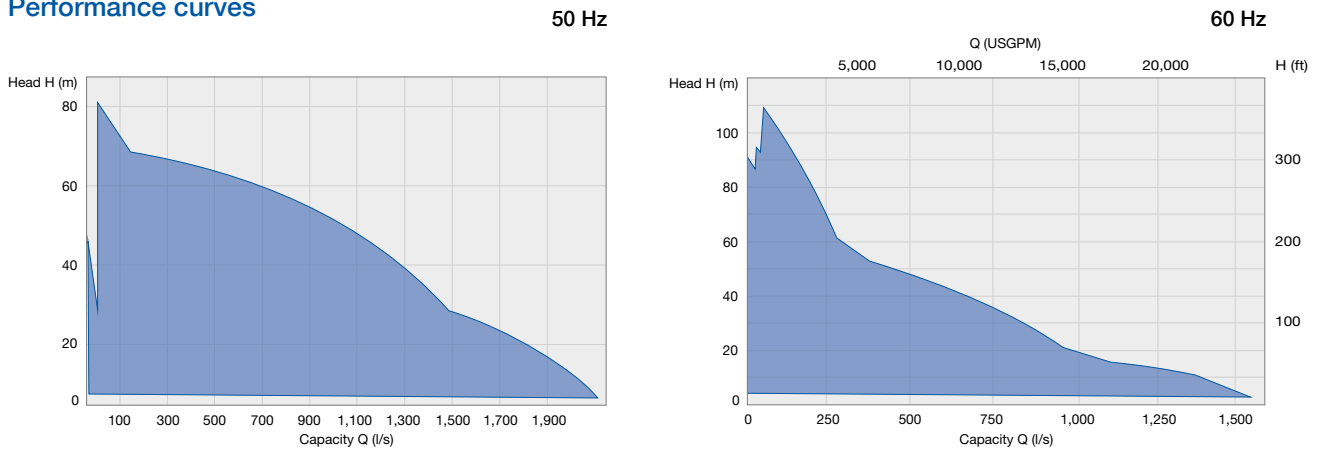
Submersible Sewage Pumps Type ABS XFP



Operating data

50 Hz		60 Hz
80 to 600 mm	Pump sizes	80 to 600 mm 3.2 to 23.6 in
up to 2,000 l/s	Capacities	up to 1,400 l/s up to 22,220 USgpm
up to 78 m	Heads	up to 110 m up to 360 ft
1.3 to 350 kW	Motor powers	2 to 400 kW 2.7 to 536 hp

Performance curves



Materials

Pump part	Material
Volute	EN-GJL-250, 1.4470* or 1.4469*
Impeller / bottom plate	EN-GJL-250, EN-GJL-250 flame hardened, 1.4470 or 1.4469*
Motor shaft	1.4021 or 1.4462
Motor housing / connection chamber	EN-GJL-250
Cooling jacket	1.0036 , 1.4571* or 1.4462*
Pedestal	EN-GJL-250, 1.4470* or 1.4469*

*available for PE4-6 and PE1-3 on request

Submersible Sewage Pump Type ABS XFP 80C - 201G

SULZER

Robust, reliable, submersible pumps, with Premium Efficiency motors from 1.3 to 25.0 kW. For the pumping of wastewater and sewage from buildings and sites in private, commercial, industrial and municipal areas.

Features

- The water-pressure-tight, encapsulated, flood-proof motor and the pump section form a compact, robust, modular construction.
- NEMA Class A temperature rise.
- Premium Efficiency motors in accordance with IEC 60034-30 level IE3 with testing in accordance with IEC60034-2-1.
- Continuously rated motor in submerged and non-submerged applications.
- Double mechanical seals; SiC-SiC at the medium side, SiC-C at the motor. All seals are independent of rotation direction and resistant to temperature shock.
- Anti-wicking cable plug solution (80C - 150E), or water-pressure-sealed connection chamber (100G - 201G).
- Hydraulic options of Contrablock and Contrablock Plus impellers for high efficiency, or vortex impellers for maximum solids handling.
- Lubricated-for-life bearings with a calculated lifetime of minimum 50,000 hrs. (80C - 150E), and 100,000 hrs. (100G - 201G).
- Stainless steel shaft. Designed with high safety factor to prevent fatigue fracture.
- Temperature monitoring by thermal sensors (140 °C) in the stator windings.
- Seal monitoring by a moisture probe (DI) in the seal chamber (80C - 150E), or dry chamber (100G - 201G), which signals an inspection alert if there is leakage at the shaft seals.
- Smooth outer design to reduce rag build-up.
- Stainless steel lifting hoop.
- DN 80, DN 100, DN 150 and DN 200 radial slot DIN flange discharge.
- Maximum allowable temperature of the medium for continuous operation is 40 °C.
- Maximum submergence depth of 20 m.
- Explosion-proof as standard, in accordance with international standards Ex d IIB T4 and ATEX.



Motor

Premium Efficiency IE3, three-phase, squirrel-cage motor; 400 V; 50 Hz; 2-pole (2900 r/min), 4-pole (1450) and 6-pole (980). Protection type IP 68, with stator insulation Class H.

Start-up: 1.3 - 3.0 kW = direct on line (DOL)
4.0 - 25.0 kW and 3.0 kW 6-pole = star-delta (YΔ).

Service factor: 1.3

Motors with other operating voltages and frequencies are also available.

Identification Code: e.g. XFP 80C CB1.3 PE22/4-C-50

Hydraulics:

XFP Product range

8 Discharge outlet DN (cm)

0Hydraulic type

C Volute opening (dia. mm)

CB..... Impeller type: CB = Contrablock, VX = vortex

1 Number of impeller vanes

3 Impeller size

Motor:

PE Premium Efficiency

22 Motor power P_2 kW x 10

4 Number of poles

C Volute opening (dia. mm)

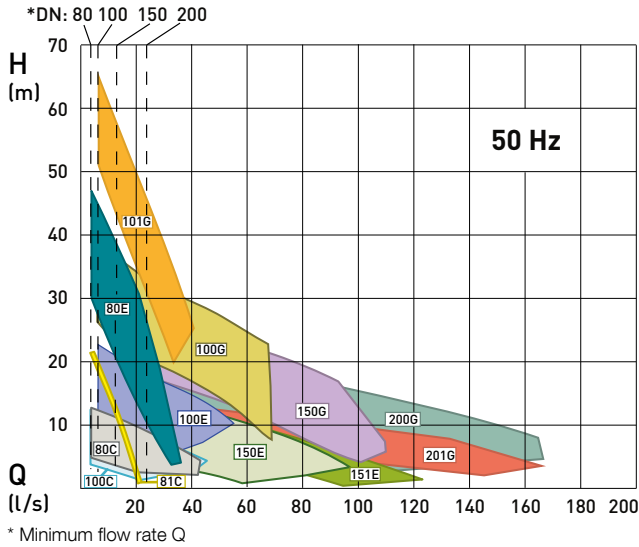
50 Frequency

Technical data

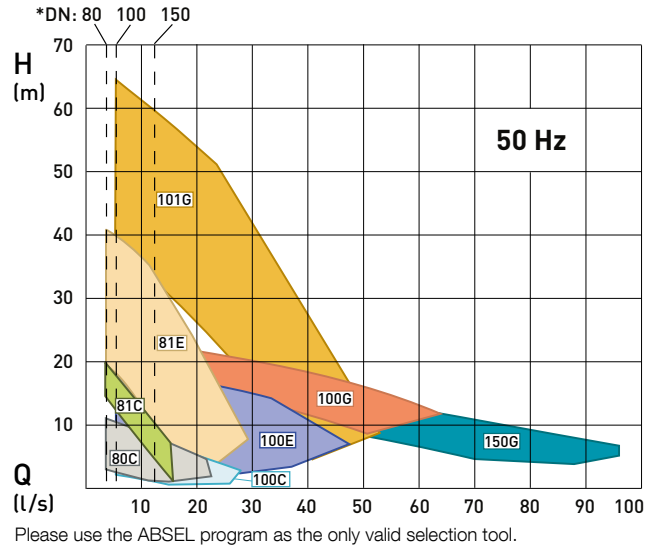
XFP	Motor	Impeller size	Rated voltage (V)	Motor power* (kW)		Rated current (A)	Speed (r/min)	Cable size	Weight** (kg)
				P ₁	P ₂				
80C-CB1	PE 22/4	3, 4	400 3~	2.5	2.2	4.6	1450	7G1.5	110 / n.a.
	PE 29/4	2	400 3~	3.4	3.0	6.4	1450	7G1.5	110 / n.a.
	PE 13/6	1, 2, 4	400 3~	1.6	1.3	3.6	980	7G1.5	110 / n.a.
80C-VX	PE 15/4	4, 5, 6, 7	400 3~	1.8	1.5	3.2	1450	7G1.5	100 / n.a.
	PE 22/4	2, 3,	400 3~	2.5	2.2	4.6	1450	7G1.5	110 / n.a.
	PE 29/4	1	400 3~	3.4	3.0	6.4	1450	7G1.5	110 / n.a.
80E-CB1	PE 70/2	4	400 3~	7.7	7.0	13.5	2900	10G1.5	150 / n.a.
	PE 110/2	1, 2, 3	400 3~	12.1	11.0	20.1	2900	10G1.5	180 / n.a.
81C-CB1	PE 40/2	1	400 3~	4.5	4.0	7.4	2900	10G1.5	120 / n.a.
81C-VX	PE 30/2	2	400 3~	3.4	3.0	5.6	2900	7G1.5	110 / n.a.
	PE 40/2	1, 2	400 3~	4.5	4.0	7.4	2900	10G1.5	120 / n.a.
81E-VX	PE 55/2	5	400 3~	6.1	5.5	10.3	2900	10G1.5	140 / n.a.
	PE 70/2	4	400 3~	7.7	7.0	13.5	2900	10G1.5	140 / n.a.
	PE 110/2	1, 2, 3	400 3~	12.1	11.0	20.1	2900	10G1.5	160 / n.a.
100C-CB1	PE 22/4	3, 4	400 3~	2.5	2.2	4.6	1450	7G1.5	110 / n.a.
	PE 29/4	2	400 3~	3.4	3.0	6.4	1450	7G1.5	110 / n.a.
	PE 13/6	1, 2, 4	400 3~	1.6	1.3	3.6	980	7G1.5	110 / n.a.
100C-VX	PE 15/4	4, 5, 6	400 3~	1.8	1.5	3.2	1450	7G1.5	100 / n.a.
	PE 22/4	2, 3,	400 3~	2.5	2.2	4.6	1450	7G1.5	110 / n.a.
	PE 29/4	1	400 3~	3.4	3.0	6.4	1450	7G1.5	110 / n.a.
100E-CB1	PE 40/4	5	400 3~	4.4	4.0	8.4	1450	10G1.5	160 / n.a.
	PE 60/4	3, 4	400 3~	6.7	6.0	13.6	1450	10G1.5	170 / n.a.
	PE 90/4	1, 2	400 3~	9.9	9.0	18.1	1450	10G1.5	190 / n.a.
100E-VX	PE 40/4	4, 5, 6	400 3~	4.4	4.0	8.4	1450	10G1.5	140 / n.a.
	PE 60/4	2, 3, 4	400 3~	6.7	6.0	13.6	1450	10G1.5	150 / n.a.
	PE 90/4	1, 2, 3	400 3~	9.9	9.0	18.1	1450	10G1.5	170 / n.a.
100G-CB1	PE 110/4	5	400 3~	12.0	11.0	23.4	1450	10G1.5	340 / 380
	PE 140/4	4	400 3~	15.2	14.0	27.8	1450	10G1.5	340 / 380
	PE 160/4	3	400 3~	17.4	16.0	33.1	1450	10G2.5	360 / 400
	PE 185/4	2	400 3~	20.0	18.5	36.9	1450	10G2.5	360 / 400
100G-VX	PE 110/4	4	400 3~	12.0	11.0	23.4	1450	10G1.5	330 / 370
	PE 140/4	3	400 3~	15.2	14.0	27.8	1450	10G1.5	330 / 370
	PE 160/4	2	400 3~	17.4	16.0	33.1	1450	10G2.5	350 / 390
	PE 185/4	1	400 3~	20.0	18.5	36.9	1450	10G2.5	350 / 390
101G-CB1	PE 150/2	2, 3	400 3~	16.0	15.0	27.5	2900	10G1.5	320 / 360
	PE 185/2	1	400 3~	20.0	18.5	33.7	2900	10G2.5	320 / 360
	PE 250/2	1	400 3~	26.9	25.0	44.0	2900	2x4G4 + 2x0.75	340 / 380
101G-VX	PE 150/2	6, 7	400 3~	16.0	15.0	27.5	2900	10G1.5	330 / 370
	PE 185/2	4, 5, 6, 7	400 3~	20.0	18.5	33.7	2900	10G2.5	330 / 370
	PE 250/2	1, 2, 3, 4, 5	400 3~	26.9	25.0	44.0	2900	2x4G4 + 2x0.75	350 / 390
150E-CB1	PE 40/4	5, 6	400 3~	4.4	4.0	8.4	1450	10G1.5	170 / n.a.
	PE 60/4	3, 4, 5	400 3~	6.7	6.0	13.6	1450	10G1.5	170 / n.a.
	PE 90/4	1, 2, 3	400 3~	9.9	9.0	18.1	1450	10G1.5	190 / n.a.
	PE 30/6	1, 2, 3, 4	400 3~	3.5	3.0	6.4	980	10G1.5	170 / n.a.
150G-CB1	PE 110/4	5	400 3~	12.0	11.0	23.4	1450	10G1.5	340 / 390
	PE 140/4	4	400 3~	15.2	14.0	27.8	1450	10G1.5	340 / 390
	PE 160/4	3	400 3~	17.4	16.0	33.1	1450	10G2.5	370 / 410
	PE 185/4	2	400 3~	20.0	18.5	36.9	1450	10G2.5	370 / 410
	PE 220/4	1	400 3~	23.7	22.0	42.5	1450	2x4G4 + 2x0.75	380 / 430
150G-VX	PE 110/4	4	400 3~	12.0	11.0	23.4	1450	10G1.5	330 / 380
	PE 140/4	3	400 3~	15.2	14.0	27.8	1450	10G1.5	330 / 380
	PE 160/4	2	400 3~	17.4	16.0	33.1	1450	10G2.5	360 / 400
	PE 185/4	1, 2	400 3~	20.0	18.5	36.9	1450	10G2.5	360 / 400
151E-CB2	PE 49/4	5	400 3~	5.5	4.9	10.2	1450	10G1.5	180 / n.a.
	PE 60/4	4	400 3~	6.7	6.0	13.6	1450	10G1.5	180 / n.a.
	PE 90/4	2, 4	400 3~	9.9	9.0	18.1	1450	10G1.5	200 / n.a.
200G-CB1	PE 110/4	5	400 3~	12.0	11.0	23.4	1450	10G1.5	380 / 420
	PE 140/4	4	400 3~	15.2	14.0	27.8	1450	10G1.5	380 / 420
	PE 160/4	3	400 3~	17.4	16.0	33.1	1450	10G2.5	400 / 450
	PE 185/4	2	400 3~	20.0	18.5	36.9	1450	10G2.5	400 / 450
	PE 220/4	1	400 3~	23.7	22.0	42.5	1450	2x4G4 + 2x0.75	410 / 470
	PE 90/6	1, 2, 3	400 3~	10.1	9.0	20.9	980	10G1.5	380 / 430
201G-CB2	PE 90/6	5, 6	400 3~	10.1	9.0	20.9	980	10G1.5	380 / 430
	PE 110/6	3	400 3~	12.2	11.0	23.8	980	10G1.5	380 / 430
	PE 140/6	1	400 3~	15.4	14.0	29.4	980	10G2.5	400 / 440

* P₁ = power at mains. P₂ = power at motor shaft. **Without / with cooling jacket; includes 10 m cable. Data for alternative voltages available on request.

Performance fields with Contrablock impeller



Performance fields with vortex impeller



Standard and options

Description	Standard	Option
Mains voltage	400 V 3~	230, 500, 695 V *
Voltage tolerance	± 10%	-
Motor efficiency	Premium Eff. IE3	-
Insulation class	H	-
Start-up	Direct on line (DOL), star-delta (YΔ)	-
Approvals	Ex / ATEX	-
Mechanical seal (at medium side)	SiC-SiC-NBR	SiC-SiC-Viton
Mechanical seal (at motor side)	SiC-C-NBR	-
O-rings	NBR	Viton (external seals)
Cables	HO7RN8-F	EMC
Cable length (m)	10	20, 30, 40, 50
Protective coating	2k Epoxy 120 µm	2k Epoxy 400 µm
Preparation for lifting hoist	Lifting hoop	-
Cooling	Self-cooling (80C - 150E); by the medium (100G - 201G)	Closed cooling (100G - 201G)
Installation	Wet-well	Dry well or transportable

* Selected motors only. Contact Sulzer for details.

Monitoring

Description		Standard	Option
Motor (temperature)	Bi-metallic switch in windings	●	-
	PTC thermistor in windings	-	●
Seals (leakage)	Moisture sensor (DI) in oil chamber (80C - 150E)	●	-
	Moisture sensor (DI) in dry chamber (100G - 201G)	●	-
	Moisture sensor (DI) in connection chamber (100G - 201G)	-	●

Materials

Description	Material	Option
Motor housing	Cast iron EN-GJL-250	-
Volute	Cast iron EN-GJL-250	Ceramic coated EN-GJL-250**
Impeller	Cast iron EN-GJL-250	Stainless steel 1.4470 (AISI 329)**, Flame hardened or ceramic coated EN-GJL-250**
Bottom plate	Cast iron EN-GJL-250	Stainless steel 1.4470 (AISI 329)**, Flame hardened or ceramic coated EN-GJL-250**
Motor shaft	Stainless steel 1.4021 (AISI 420)	-
Lifting hoop	Stainless steel 1.4401 (AISI 316)	-
Fasteners	Stainless steel 1.4401 (AISI 316)	-

** Selected models only. Contact Sulzer for details.

Accessories

	Description	Size	XFP	Part no.
Fixed installation - wet well with Sulzer Automatic Coupling System	Pedestal* (cast iron EN-GJL-250) 90° cast bend (single guide rail) - DIN flange connection	DN 80	80C - 81E	62320649
		DN 100	100C - 100G	62320652
		DN 100 (high-head)	101G	DPR31211A
		DN 150	150E - 150G	62320655
		DN 200	200G	DPT91211A
	90° cast bend (single guide rail) - plug/clamp connection	DN 80 (pipe Ø90 mm)	80C - 81E	62320650
		DN 100 (pipe Ø109 mm)	100C - 100G	62320653
		DN 100 high head (Ø109 mm)	101G	DPR32211A
		DN 100 (pipe Ø115 mm)	100C - 100G	62320654
		DN 150 (pipe Ø160 mm)	150E - 150G	62320656
	90° cast bend (twin guide rail) - DIN flange connection	DN 80	80C - 81E	62325025
		DN 100	100C - 101G	62325026
		DN 150	150E - 150G	62325027
		DN 200	200G & 201G	62325028
	Pedestal bracket fasteners single guide rail version (galvanised steel)		80C - 81E	62610632
		100C - 101G	62610633	
single guide rail version (stainless steel)		150E - 150G	62610635	
		200G & 201G	62610883	
twin guide rail version (galvanised steel)		80C - 81E	62610899	
		100C - 101G	62610637	
		150E - 150G	62610639	
		200G & 201G	62610862	
Pedestal base anchor bolts single and twin guide rail (galvanised steel)		80C - 81E	62615053	
		100C - 101G	62615054	
		150E - 150G	62615055	
		200G & 201G	62615056	
Chain Kit (galvanized steel) including shackle	3 m	80C - 101G	62610775	
	4 m	150E - 150G	62610784	
Chain Kit (stainless steel) including shackle	6 m	200G & 201G	62610785	
	7 m			
	3 m	80C - 201G	61265065	
	4 m		61265093	
Fixed installation - dry well, (horizontal)	Pump Support Kit (EN-GJL-250) head and volute supports with fixing bolts and vibration damper	6 m		61265069
		7 m		61265096
		3 m	80C - 201G	61265081
		4 m		61265099
		6 m		61265085
(vertical)	Ground Support Stand	7 m		61265102
		80C, 81C.		61825023
		80C, 81C, 100C.		61825033**
		80E.		61825029
Transportable	Skirtbase	81E.		61825038
		100C.		61825024
		100E.		61825030
		150E, 151E.		61825031
		101G.		61825036***
		100G, 101G, 150G, 200G, 201G.		61825037
		80C, 81C.		61355014
		80E & 81E.		61355020
		100C.		61355015
		100E.		61355021
150E, 151E.		61355022		
101G.		61355024***		
100G, 101G, 150G, 200G & 201G.		61355023		
Adapter kit (required with support stand)		80C.		62665347***
		100C.		62665348***
General	Cathodic Protection (zinc anodes)	80C, 81C, 100C.		61355016
		80E & 81E.		61355017
		100E.		61355018
		150E, 151E.		61355019
		101G.		61355026***
		100G, 101G, 150G, 200G & 201G		61355025
		80C - 201G		13905000

*Guide rail not included **Vortex version of pumps (VX) *** Contrablock version of pump (CB)

Submersible Sewage Pump Type ABS XFP 150J - 600X

Submersible sewage pump type ABS XFP 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 contain of rags, solids and fibrous material.

Construction

- Premium efficiency IE3 motors in accordance with IEC 60034-30. 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.
- 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 rotor shaft dynamically balanced.
- Upper and lower bearings lubricated-for-life, maintenance-free.
- Insulated upper bearing for VFD operation standard for PE6 and optional for 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 various impeller options: 2- or 3-channel Contrablock, 2- or 3-channel closed or 3-channel skew.
- Option: Available in ATEX explosion-proof version in accordance with international standards e.g. Ex d IIB T4/ATEX II 2Gk, FM or CSA.

Motor

Water pressure sealed premium efficiency motors, (3-phase, squirrel cage induction motors), from 15 to 350 kW and, depending on hydraulic requirements as 4- to 12-pole versions.

Voltage: 380...420 V, 3~, 50 Hz (other voltages on request).

Insulation components: Class H (winding protection by 140 °C sensor).

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

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

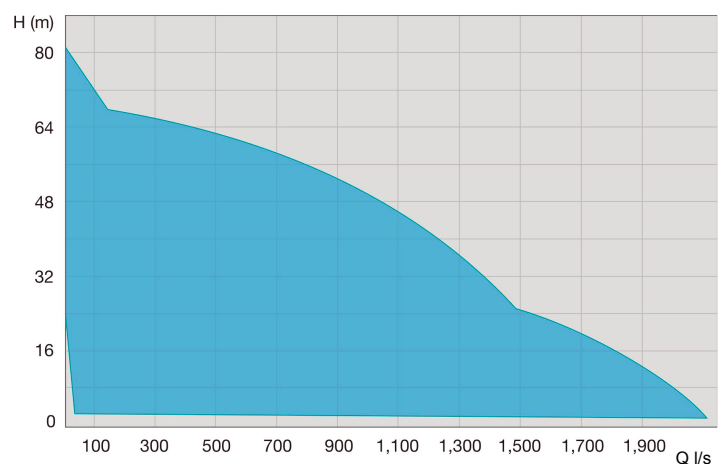
You have the choice of the following hydraulics in the range of DN 150 to DN 600 discharge:

Hydraulics / Impeller type

XFP 150M	CB2	XFP 300M	CH2
XFP 150J	CH2	XFP 301M	CH2
XFP 200J	CB2	XFP 350M	CH3
XFP 200J	CH2	XFP 351M	CH3
XFP 200M	CH2	XFP 400M	CH2
XFP 201J	CB2	XFP 400R	CH3
XFP 250J	CB2	XFP 500U	CH3
XFP 250M	CH2	XFP 501U	SK3
XFP 300J	CB3	XFP 600V	CH3
XFP 300J	CH2	XFP 600X	SK3

CB... = Contrablock, CH... = closed channel, SK... = skew;
last digit (2 or 3) = Number of impeller vanes

Performance field



Standard and options

Description	Standard	Option
Max. ambient temperature	40 °C	60 °C
Max. submergence depth	20 m	
Mains voltage	380...420 V/50 Hz	other voltage on request
Voltage tolerance	± 10 % at 400 V	
Insulation components	Class H (140°C)	Class H (160°C) (not for explosion-proof)
Start-up	DOL, star-delta, VFD or soft starter	
Approval	non Ex	Ex/ATEX
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)	SiC-SiC	
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	Dry-well vertical/horizontal
Motor cooling	Cooling by surrounding medium	Closed loop cooling system*
Moisture sensor motor housing		DI (sensor for moisture detection)*
Moisture sensor inspection chamber	DI (sensor for moisture detection)	
Vibration sensor		on request (only PE5/PE6)

* standard for PE6 motor range

Motor protection

PE4 to PE6		non Ex or Ex/ATEX	Ex/ATEX VFD drive
Winding	Bi-metallic switch	X	-
	Thermistor (PTC)	0	X
	PT 100	0	0
Seal protection	Inspection chamber	X	X
	Motor housing	0 (X for PE6)	0
	Connection box	0 (X for PE6)	0
Temperature bearing upper/lower	Bi-metallic switch	0 (X for PE6)	0
	Thermistor (PTC)	0	0
	PT 100	0	0
Vibration sensor	4....20mA	0 (only PE5/PE6)	0 (only PE5/PE6)

X = Standard; 0 = Option; - = not possible

Materials

Motor	Standard	Option
Connection chamber	EN-GJL-250	
Cooling chamber	EN-GJL-250	
Cooling jacket	1.0036	
Motor housing	EN-GJL-250	
Motor shaft	1.4021	1.4462
Fasteners (medium contact)	1.4401	
Lifting hoop (PE4 & PE5)	EN-GJS-400-18	1.4470
Lifting hoop (PE6)	1.0060	1.4462
Hydraulics	Standard	Option
Volute	EN-GJL-250	1.4470
Impeller	EN-GJL-250	1.4470*
Bottom plate (only CB version)	EN-GJL-250	1.4470*
Shroud (XFP 501U and 600X)	EN-GJL-250	
Wear ring (only CH version)	EN-GJL-300	1.4581
Wear ring impeller (only CH version)		1.4571

*or EN-GJL-250 flame hardened for CB version

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