

Submersible Propeller Pump Type ABS VUPX PE4 to PE6

SULZER

50 Hz



The submersible propeller pump type ABS VUPX is designed for use where larger water volumes without fibrous materials must be pumped up to relatively low heads (up to approx. 10 m). Equipped with a Premium Efficiency IE3 motor, it is suitable for:

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

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 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; double mechanical seals and a lipseal.
- 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.
- Hydraulic parts with axial propeller with 3 or 4 adjustable propeller blades or 3-blade propeller in the new Skew design for VUPX 0403/0503 and inlet diffuser on discharge side.
- Gearbox available from 132 kW for VUPX 1001 to VUPX 1202.
- Option: Available in ATEX explosion-proof version in accordance with international standards e.g. ATEX II 2G Ex db IIB T4 Gb, FM or CSA.

Motor

Water pressure sealed Premium Efficiency motors, (3-phase, squirrel cage induction motors), from 7,5 to 250 kW and depending on hydraulic requirements as 4- to 12-pole versions.

Voltage: 380...420 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 (winding protection by 140 °C 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:**

-> Enter: Duty point -> Select: Hydraulics -> Select: Motor

Hydraulics



You have the choice of the following hydraulics for the nominal pipe diameter 600 to 1400 mm. For power demand beyond available range PE4 to PE6 please refer to technical data sheet VUPX PE7.

Installation

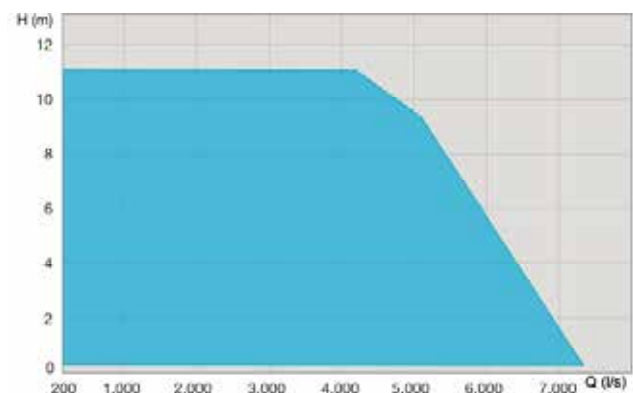
Suitable for installation in steel or concrete riser pipes for economical operation and simple installation. The centering of the pump and sealing between pump and pipeline is achieved automatically by means of conical coupling ring. No additional installation work required.

Hydraulics / Propeller type

| Hydraulics / Propeller type | | | |
|-----------------------------|----------------|-----------|----------------|
| VUPX 0401* | 3-blades, adj. | VUPX 0602 | 4-blades, adj. |
| VUPX 0402 | 4-blades, adj. | VUPX 0801 | 3-blades, adj. |
| VUPX 0403 | 3-blades, fix. | VUPX 0802 | 4-blades, adj. |
| VUPX 0501 | 3-blades, adj. | VUPX 1001 | 3-blades, adj. |
| VUPX 0502 | 4-blades, adj. | VUPX 1002 | 4-blades, adj. |
| VUPX 0503 | 3-blades, fix. | VUPX 1201 | 3-blades, adj. |
| VUPX 0601 | 3-blades, adj. | VUPX 1202 | 4-blades, adj. |

adj. = adjustable; fix. = fixed (Skew design), *on request

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 | 400 V ± 10 %; multi-voltage ± 5 % | |
| 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 | H07RN8-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 (NBR) | |
| 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 sump | |
| Motor cooling | By surrounding medium | |
| Moisture sensor motor housing | | DI (sensor for moisture detection)* |
| Moisture sensor separation chamber | DI (sensor for moisture detection) | |
| Vibration sensor | | on request |

* standard for PE6 motor range

Monitoring options

| PE4 to PE6 | | non Ex | Ex/ATEX |
|---------------------------------|--------------------|---------------|---------------|
| Winding | Bi-metallic switch | X | X* |
| | Thermistor (PTC) | O | O* |
| | PT 100 | O | O |
| Seal protection | Separation chamber | X | O |
| | Motor housing | O (X for PE6) | X |
| | Connection box | O (X for PE6) | O (X for PE6) |
| Temperature bearing upper/lower | Bi-metallic switch | O (X for PE6) | O (X for PE6) |
| | Thermistor (PTC) | O | O |
| | PT 100 | O | O |
| Vibration sensor | 0 - 20 mm/s | O | O |

X = Standard; O = Option; * PTC to be used when operated via VFD.

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 | |
| Lifting device | | |
| Lifting hoop (PE4 & PE5) | EN-GJS-400-18 | 1.4470 |
| Lifting hoop (PE6) | 1.0060 | 1.4462 |
| Connection system | | |
| Coupling ring | 1.0446 | 1.4408 |

| Hydraulics | Standard | Option |
|----------------------------|---------------|--------|
| Diffuser | EN-GJL-250 | 1.4470 |
| Bellmouth | EN-GJL-250 | 1.4470 |
| Wear ring | 1.4008 | |
| Propeller hub | EN-GJS-400-18 | 1.4581 |
| Propeller blades | 1.4340 | 1.4581 |
| Propeller cap | PUR | |
| Propeller (VUPX 0403/0503) | 1.4340 | 1.4581 |
| Fasteners (medium contact) | 1.4401 | |

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

www.sulzer.com

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