

Submersible Propeller Pump Type ABS VUPX PE7

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/33 ft). Equipped with a Premium Efficiency IE3 motor, it is suitable for:

- Hazardous locations - approval for ATEX II 2G Ex h db IIB T4 Gb FM, CSA see table "Motor power and speed overview".
- 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 IE3 motors in accordance with NEMA and EC 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.
- 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 (284 °F).
- Rotor and rotor shaft dynamically balanced.
- Upper and lower bearings lubricated-for-life, maintenance-free.
- Insulated upper bearing for VFD operation.
- Triple shaft sealing.
- Upper and lower mechanical seals in SiC/SiC, 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.
- Gearbox available from 400 kW (536 hp) for VUPX 1001 to VUPX 1202.

Motor

Water pressure sealed Premium Efficiency motors, (3-phase, squirrel cage induction motors), from 185 to 750 kW (248 to 1006 hp) and depending on hydraulic requirements as 4-, 10- or 12-pole versions.

Voltage: 460 V, 3~, 60 Hz (other voltages on request)

Temperature rise: According to NEMA class A up to 125 kW and class B above.

Insulation components: Class H (winding protection by 140 °C (284 °F) sensor)



60 Hz



Protection type: IP68

Start-up: DOL (direct on line), VFD or soft starter.

Motor power and pole overview

| Pole | Motor Power P2 in kW (50 Hz) | | | | | | |
|------|------------------------------|------|------|-----|-----|-----|-----|
| 4 | 468* | 500* | 560* | 640 | 700 | 750 | 650 |
| 10 | 220* | | | | | | |
| 12 | 230 | 290 | 350 | | | | |

*available in FM

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 for the nominal pipe diameter 1200 or 1400 mm (47 or 55 in).

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

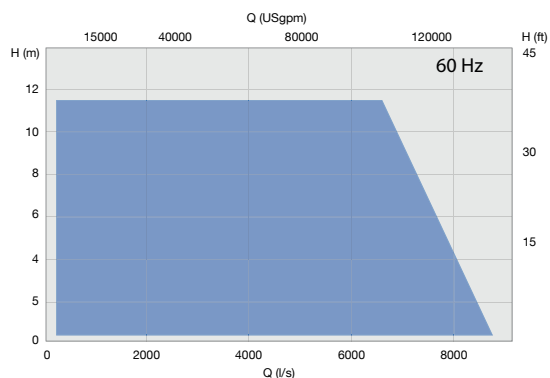
Installation

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 a conical coupling ring. No additional installation work is required.

Hydraulics / Propeller type

| Hydraulics | Propeller type |
|------------------|-------------------------------|
| VUPX 801 / 802 | 3-blade / 4-blade; adjustable |
| VUPX 1001 / 1002 | 3-blade / 4-blade; adjustable |
| VUPX 1201 / 1202 | 3-blade / 4-blade; adjustable |

Performance field



Standard and options

| Description | Standard | Option |
|------------------------------------|---|--|
| Max. ambient temperature | 40 °C (104 °F) | 60 °C (140 °F) |
| Max. submergence depth | 20 m (65 ft) | - |
| Mains voltage | 460 V/60 Hz | Other voltage on request |
| Voltage tolerance | ± 10 % | - |
| Insulation components | Class H (140 °C / 284 °F) | Class H (160 °C / 320 °F) (not for explosion-proof) |
| Start-up | DOL (direct on line), VFD or soft starter | Star-delta |
| Approval | Non-Ex | NEC Class I, Division 1, Groups C and D, FM; CSA |
| Cables | H07RN8-F | EMC shielded cables |
| Cable length | 10 m (33 ft) | 15 m (49 ft), 20 m (65 ft). Other lengths 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 connection chamber | DI (sensor for moisture detection) | - |
| Moisture sensor inspection chamber | DI (sensor for moisture detection) | - |
| Vibration sensor | - | On request |

Motor protection

| PE7 | | Standard | Ex / ATEX |
|---------------------------------|--------------------|----------|-----------|
| Winding | Bi-metallic switch | ● | ●* |
| | Thermistor (PTC) | ○ | ○* |
| | PT 100 | ○ | ○ |
| Seal protection | Inspection chamber | ● | ● |
| | Motor housing | ● | ● |
| | Connection box | ● | ● |
| Temperature bearing upper/lower | Bi-metallic switch | ● | ● |
| | Thermistor (PTC) | ○ | ○ |
| | PT 100 | ○ | ○ |
| Vibration sensor | 0 - 20 mm/s | ○ | ○ |

● = Standard; ○ = 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 | - |

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

| Lifting device | Standard | Option |
|----------------|----------|--------|
| Lifting hoop | 1.0060 | 1.4462 |

| Connection system | Standard | Option |
|-------------------|----------|--------|
| Coupling ring | 1.0446 | 1.4408 |

| Material comparison | |
|------------------------|-----------------------|
| Europe | USA |
| EN 1561; EN-GJL-250 | ASTM A48; Class 35 B |
| EN 1563; EN-GJS-400-18 | ASTM A536; 60-40-18 |
| 1.4021; 1.4401 | ASTM / AISI 420; 316 |
| EN 1.0060 | ASTM / AISI A572 (65) |
| 1.4462, 1.4581 | BS 318 S 13 / C 17 |
| 1.4008 | ASTM A217 CA-15 |
| 1.4408 | ASTM A351 CF8M |
| 1,4340, 1.0446, PUR | |

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