

SVANEHØJ ECA Fuel Pump

Model EFPS

Description

Cryogenic multi-stage centrifugal pump suitable for a vacuum insulated Cryosump. Designed for continuous variable frequency operation.

Capacity: 0.25 - 40 m³/h

Head: 20 - 510 mlc, however max 20 bar

differential pressure NPSHR: 0.25 mlc

Temperature: -163°C to +50°C

Typical applications

LNG, Ethane and LPG fuel pump, spraying and stripping pump.

Benefits

- All electrical components located outside fuel tank
- No heat transfer from motor to liquid gas
- 5 year or 25,000 h service interval,
- Pump can be retracted even with gas in the tank.

Standard materials

All materials handling liquid gas are made of cryogenic stainless steel.



Technical specifications

| Pump Model | Capacity range* (m ³ /hr) | Head (mlc) | Differential pressure for LNG** (Bar) | Power consumption at nominal duty point (kW) | Motor size*** (kW) | A (mm) |
|--------------|--------------------------------------|------------|---------------------------------------|--|--------------------|--------|
| EFP11-4....S | 0.6 - 13 | 20 - 260 | 1 - 11 | 8 | 10 | 2140 |
| EFP24-4....S | 0.8 - 40 | 20 - 260 | 1 - 11 | 16 | 20 | 2170 |
| EFP11-8....S | 0.6 - 13 | 40 - 510 | 1 - 20 | 15 | 20 | 2590 |
| EFP24-8....S | 0.8 - 40 | 40 - 510 | 1 - 20 | 31 | 34 | 2660 |

The Svanehøj EFPS is a cryogenic multi-stage centrifugal pump designed for continuous operation with variable speed drive.

The pump is available in two flowsizes with nominal flow at 11 and 24 m³/h at 10 Bar, each size is available in two pressure versions: 10 and 20 Bar, designed to supply any combination of flow and pressure according to demand. The

pumps have a minimum flow as shown in the above table, but can in shorter periods operate at flows as low as 0.25 m³/h.

The pump is designed with a hermetically sealed MagDrive coupling, separating the gas in the tank system from the surroundings.

All electrical components, including the motor as well as main bearings are

* The pumps can operate down to 0.25 m³/h in short intervals up to 15 minutes.

** Calculated for LNG at specific gravity 500 kg/m³.

*** Motor size calculated for LNG for 3 x 440, 60 Hz. All other voltages are available on request. Pump discharge flange EN DN40. ASME and JIS available on request.

situated outside the cryosump. This allows us to use standard motors and standard ball bearings, giving a service interval of 5 years or 25,000 hours of operation between oil change.

The Svanehøj control system is a standard panel that maintains the desired pressure at the gas valve unit inlet, following the engine load.

MagDrive Coupling

The MagDrive consists of an inner and outer magnet coupling. The two magnetic couplings are separated by a hermetically sealed barrier. When the motor rotates the outer magnet, the inner magnet will then rotate the pump drive shaft due to the magnetic forces. This systematically removes any risk of gas leakages through a shaft sealing.

Svanehøj Cryosump

The Svanehøj Cryosump is a vacuum isolated pump sump to be placed outside the fuel tank. It is made of cryogenic stainless steel and includes valves etc. for purging with nitrogen.

Svanehøj Control System

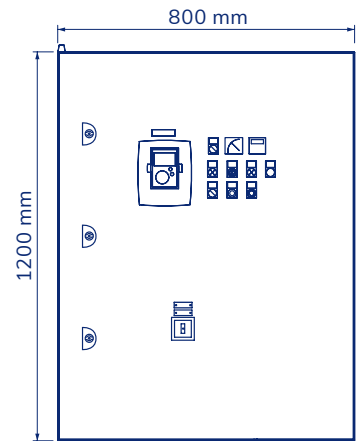
Standard Variable Frequency drive (VFD) control panel. The PID-regulator will keep a steady pressure from the pump.

Set-value and sensor feed-back can be applied from SAS (Ship Automation System) or from a 4-20 mA pressure sensor. Interface for control from SAS can be hardwired signals or via ModBus.

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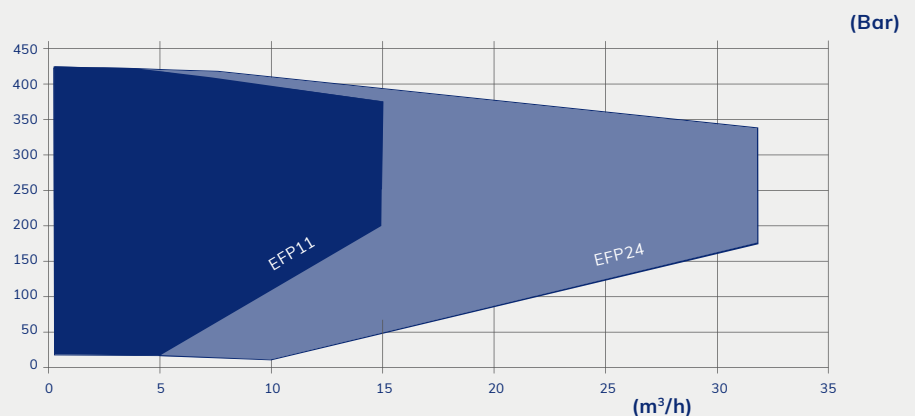
includes valves etc. for purging with nitrogen.

A remote control panel for installation in the control room can be applied. In the control panel front there is a manual control panel for emergency cases, enabling the pump to run even if the pressure feedback fails.



Capacity range

The pump curves show the operation area of each pump when controlled by variable frequency drive at 3600 rpm.



Note: Other capacities are available with variable frequency drive.

Learn more at svanehoj.com, contact us at svanehoj@svanehoj.com or give us a call on +45 9637 2200