

District Heating Fyn

Since December 2020 our until now biggest screw compressor heatpump is providing cosy temperatures to the homes of people in ODENSE, FYN in Denmark. Another piece of the puzzle falls into place to achieve replacing the last 30% coal energy by renewable energy until 2025. Our partner [NH3 Solutions](#) designed and installed 2 x heatpumps with SRM34S ammonia screw compressors skids to provide 2 x 5,5 MW heat.

The district heating plant is operating already on a mix of energy sources: wood chips, straw and waste incineration. Coal and gas is only required to cover peak demand and shall be phased out. To increase efficiency, heat normally rejected to atmosphere and therefore wasted, is recovered and used as the source for the electrical heatpump. With an evaporation temperature of 9 °C and a condensing temperature of 62 °C the operation envelope of this compressor is maximised to operate at best efficiency. In line with the concept of renewable energy and environmental benign processes and materials the choice fell for the nature –identical ammonia as refrigerant. This working medium is highly efficient and without any negative influence to global warming or the ozone layer and at the same time very cost efficient compared to most potential alternatives.



High efficient Plate Heat Exchangers, Motors, Insulation, optimized Piping reduce refrigerant charge and increase system efficiency whereas dual oil filters, oil temperature regulation valves and other control devices assure smooth operating and process security.



SRM open-shaft compressors are the work horse of industrial refrigeration and legendary for their reliability. The main features are:

- newest 5/7-i-profile for highest efficiency and lowest demand of oil for sealing and lubrication.
- wear- resistant roller bearings designed for a life span of 100.000 operating hours.
- rotor is made of high- quality forged steel with micron- machining accuracy, high strength, high wear resistance, and long durability.
- housing is made of high- strength ductile iron, design pressure: 2.8Mpa.
- innovative shaft seal with wear- resistant sealing surface made of silicon carbide.
- The internal compression ratio V_i can be adjusted to the existing operating conditions manually or automatically for highest efficiency, even under varying conditions.
- Stepless capacity control (10- 100%) by a mechanical slider.
- Integrated oil channels for secure lubrication of all critical spots within the compressor.

SRMTec offers a range of refrigeration technology equipment focused on natural refrigerants like NH₃, CO₂ and Hydrocarbons like Propane, Isobutane etc. for all kind of applications in every aspect of modern life. The compressors are the development of Svenska Rotor Maskiner, the pioneer of screw compressor engineering since 1908.

SRMTec EU is the Organization for European and American customer support and sales of industrial refrigeration solutions. We cooperate closely with our agents and distributors to be a reliable local partner for our customers.

PROJECT DESCRIPTION

Heatpump

SRMTec : SRM34S
single stage

Refrigerant: Ammonia R717

Technical Data

Capacity @2960 rpm

Q₀ Heating: 5100 kW
T_e: +9°
T_c: +62 °
COP: 4,74

Commissioning: Dec 2020

Learn more at srmtecgroup.com/products/SRM34

Contacts/Partners of SRMTec Europe www.srmtecgroup.com

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