Your solutions will help build new heights of energy efficiency

The world faces growing populations, booming urbanization and rapid climate change. At Danfoss, we engineer ready-to-use solutions to these challenges. We build energy-efficient solutions that reduce food loss and make cities cleaner – using digital technology to make systems smarter and more connected – and we engineer innovative new ways to save energy and transition to clean energy for the good of our climate.

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Get a general understanding of the hydrostatic components and shaft speed pattern for pumps and motors
Investigate different speed sensor technologies and the needed accuracy to measure angular irregularities
Develop algorithms for pattern recognition for normal and non-normal behavior and feed with existing test lab data
Equip pump/motor with sufficient speed sensor and test develop algorithm

Master-Thesis Speed Sensor (m/f/d)
Neumünster, Germany

Typical hydrostatic units convert rotation energy into flow energy or vice versa. The angular rotation of a hydrostatic pump contains more information than “just” the shaft speed. Cylinder block and piston frequencies are superimposed to the actual shaft speed. The raw signal of a speed sensor contains information about distant changes between the target ring and sensor itself and influences by temperature. Any kind of non-uniformity in the angular speed pattern is an indicator of wear or other defect in the hydrostatic unit. Different defects can show different patterns in the speed signal. Possible is also a pattern amplification over defect progression.

Master-Thesis
The aim is a working condition monitoring concept/demonstrator if the technology is promising.

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Student Qualification

- Current matriculation in a master’s degree program of mechanical or mechatronics engineering
- Some knowledge in hydraulics, especially for off-highway machines as well as about sensor technologies, especially speed sensors
- Good communication and team oriented working skills
- Good English language skills – writing and speaking
- Some skills in MatLab/Simulink or FAMOS

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Danfoss gives you unique opportunities to put your skills to good use, make an impact and shape an exciting career. We encourage employees to take charge, do extraordinary things and run the business like it was their own. Danfoss is respected around the world for its innovative, high-quality technologies and solutions. You will learn a lot by working with the experts who develop them. Join Danfoss to be part of a world-class team of over 27,000 people in 56 countries that engineer tomorrow and build a better future.

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Questions?
For further details about the job please contact Eva Isselstein, Talent Acquisition Specialist, at +49 461 4301 4623.