

Detection of Bearing Faults for a Grundfos Pump System

Master Thesis Project

Cooperated between Aalborg University Esbjerg and Grundfos ApS

1. INTRODUCTION

Faults in induction motors can have big economic consequences when the induction motor is running a vital process. Bearing faults constitute 40% of the induction motor failures, which makes bearing health monitoring or fault detection an important and interesting task. In Grundfos's E-products it is possible to measure the current and the voltage in the motor already. Often it is also possible to measure the pressure.



Fig.1 Grundfos E-pump with Testing facility

2. OBJECTIVE

In this project alternative ways to predict a fault in the bearings are to be investigated using only measurements of current, voltage, pressure and temperature in the pump.

3. STRATEGY

The methods used for the fault detection includes time-domain as well as frequency-domain based methods.



Fig.2 Outer raceway hole and inner raceway scratch

4. RESULTS

