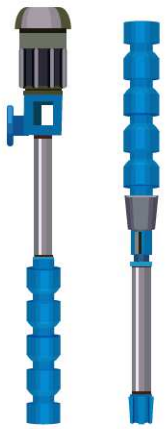
Eliminating starting current in borehole pumps



Borehole pumps, also known as deep-well pumps, are used in dwellings where access to municipal water supply is not available. They are used to pump water out of a borehole (or well) that can be several metres deep in the ground.

Borehole pumps start from as low as 0.5HP up to 10HP and they use CSCR motors since a high starting torque is required.

Current solution

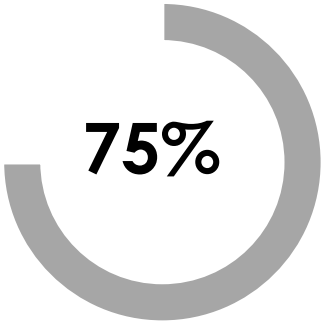
The solution in use today consists of a start capacitor, run capacitor, voltage sensing relay, terminal block and overload protection. This solution is known as a hard start kit.

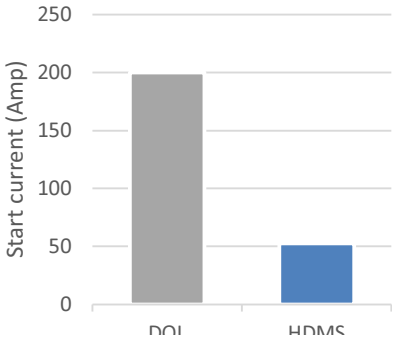
HDMS solution

With HDMS we can start borehole pumps without the start capacitor. At the same time, the voltage sensing relay, terminal block and overload protection can all be removed from the panel because the functions are integrated in HDMS.

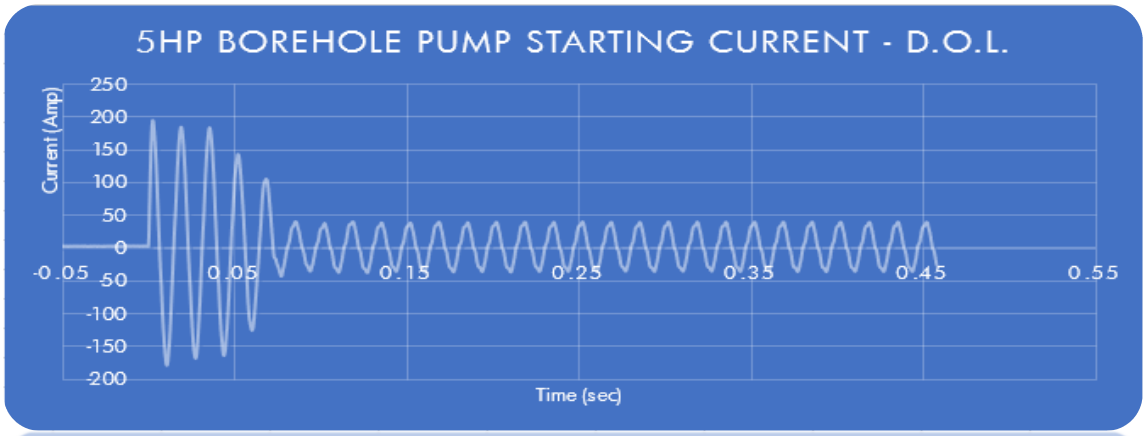
The problem with **hard start kits** is that there are **frequent start capacitor failures** and a **very high starting current**. Well… not anymore – HDMS is designed to overcome these two main issues.

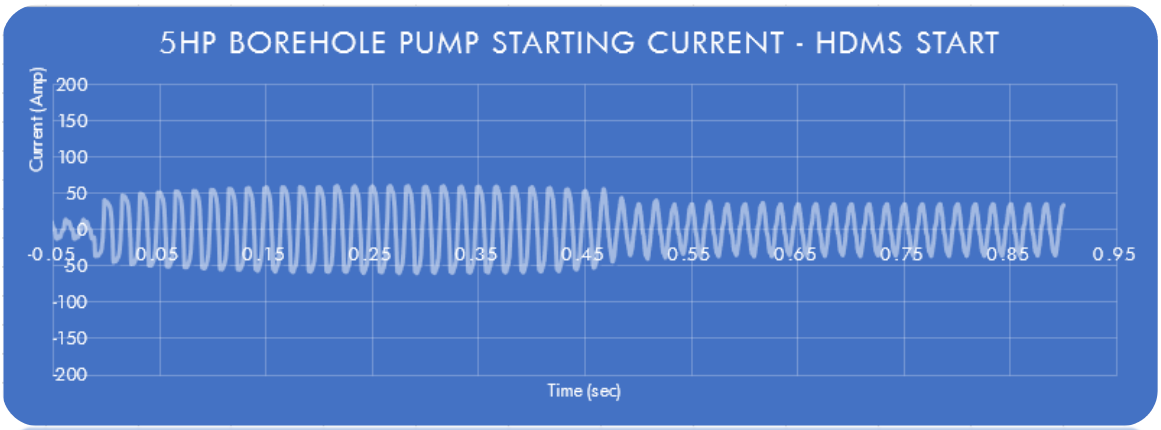
Field test results – Borehole pump





Actual current reduction vs DOL for borehole pump





Main Features and Benefits

No start capacitor

- Less failures in weak grids
- No need to match capacitor to pump
  Benefit: HDMS eliminates the need for the start capacitor. This is a breakthrough since start capacitors are the components that are more prone to fail in fluctuating voltage networks.

Self-learning

- HDMS adapts its start parameters to the load
- No user adjustments are required
  Benefit: When the pumped medium changes the HDMS can adapt the initial starting torque so that the pump starts

Tool-free installation

- HDMS uses push-in type connectors
- Cables as large as 10mm^2 can be used
  Benefit: Installation of HDMS is fun, quick and easy. This solution saves precious installation time and avoids problems related to over and/or under-tightening of screws.