



**Sensors**

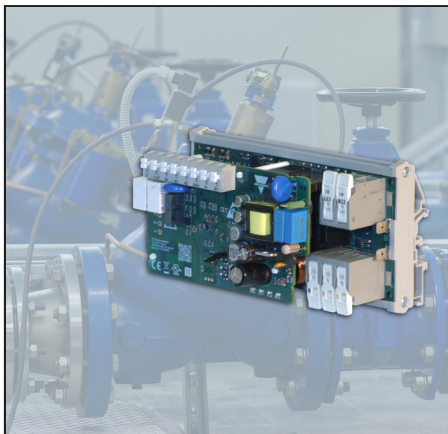


**Switches**



**Controls**

## Application notes



**Application Note : January 2020**

**Market involved : Agriculture**

**Product : HDMS**

**Customer : Panel builders**

**Subject : Eliminating starting current in borehole pumps**

### CUSTOMER ISSUE :

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

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

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.

The problem with the hard start kit is that there are frequent start capacitor failures and a very high starting current.

### OUR SOLUTION :

By using the HDMS, bore-hole pumps can be started 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 into the HDMS.

Another advantage of HDMS is that the pump starting current is reduced significantly to <1.2 times the pump nominal current.

The HDMS is designed to be very user friendly also when it comes to wiring. We have terminals dedicated for every connection to help the panel builder save time and panel space.

For troubleshooting, the HDMS offers multiple options, such as Modbus, through which the user can download data in real time through our software and/or through the NFC interface via the HDMS mobile App.

### BENEFITS :

- Higher level of reliability and less maintenance required
- Panel space savings
- Less wiring required
- Easier to install than the hard start kit
- Can work in unstable voltage grids
- No need for oversize cables and protection devices
- Cost savings as there is no need for oversize generators
- Faster troubleshooting