



## WATER ENERGY DISTRIBUTORS, INC.

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### Reducing Well Pumping Costs

#### Method #1 CRC Control

#### Technical Bulletin 2007-15

##### GENERAL

A submersible well pump without a variable frequency speed control can save energy with a CRC control. The CRC box is available through well pump suppliers and is manufactured by the primary submersible pump motor supplier in the world, Franklin Electric.

With the addition of a run capacitor to the well motor circuit the motor will operate with higher efficiency and typically draw less amps than a common induction motor with the same load. The installation of a CRC Box on a geothermal heat pump open well system can save substantial energy and operational costs.

Typical savings are based upon standard well pump motors without and with the CRC Control Box. Shown below are typical motor electrical loads in watts.

##### Watts at RATED Water Pumping Load \*

Horse Power	Without CRC	With CRC	Savings %
1/2	700	660	6%
3/4	980	940	4%
1	1240	1160	6%

##### Watts at MAXIMUM Water Pumping Load \*

Horse Power	Without CRC	With CRC	Savings %
1/2	1050	880	16%
3/4	1400	1225	13%
1	1700	1480	13%

\*data may vary from application to application, relative differences are valid

As the CRC corrects the power factor of the inductive motor current (ampere) draws are typically 23 - 29%. With the corrected (more nearly 100%) power factor about 1/2 of the current reduction is absorbed into power factor correction.

The majority of well pump applications use MAXIMUM pumping loads, on that basis we would recommend you always specify a CRC control for your geothermal well pumps.

##### NOTES