Motors and Drives

Variable frequency/speed drives:

VALUE FOR YOUR BUSINESS

Most motors turn at nearly constant speed. They are designed to operate most efficiently at their horsepower (hp) rating. However, sometimes the work motors need to perform is less than the maximum design speed. You can save energy by only using the power you need from a motor. This speed reduction can be accomplished with either a Variable Frequency Drive (VFD) or Variable Speed Drive (VSD).

VFDs and VSDs vary the frequency of the Alternating Current (AC) power. The motor speed varies in proportion to the drive operated frequency.

Rebates are not available for replacement VFDs or VSDs, soft starts, power factor correction or harmonic correction applications.

HOW DOES IT WORK?

The rebates are available for new drives. Drives must be tied to an automated control system and have a true power factor of .90 or greater.

Approved applications of VFDs/VSDs include:

- HVAC fans
- Pumps
- Cooling towers
- Process equipment
- Industrial fans

The VFD/VSD will be evaluated in conjunction with the equipment operating efficiency and loading. The rebate is based on the rated controlled horsepower or horsepower of the motor, whichever is lowest.

Fractional Horsepower Motors

Replacing inefficient shaded pole or permanent split capacitor motors with fractional horsepower motors can help you consume less wattage. On average ECMs run 60%-75% more efficiently than shaded pole motors and 40%-50% than permanent split capacitor (PSC) motors.

In addition to significant energy cost savings, they deliver:

1. Quieter operation
2. Less energy consumption
3. Reduced heat load
4. Longer equipment lifespan

WHO CAN PARTICIPATE?

Any commercial building or business retrofitting an old standard motor can qualify. New or retrofit motors qualify.

CONTACT US AND START SAVING TODAY

If you have any questions or need assistance in making these savings a reality for your business; please contact your local energy expert at **Lake Region Electric Cooperative.**

Are motors part of your business? Did you know you can save money and energy by changing the speed of the motor as the load on the motor changes?

EC Motors and Drives

Rebate Application

BUSINESS MEMBER INFORMATION

Business Name _____

Installation Address _____

City _____ State _____ ZIP _____

Contact Name _____ Account # _____

Email _____ Phone _____

REBATE RECIPIENT

To release the rebate incentive check to an alternate party other than the cooperative business member, the member must specify an alternative mailing address and authorize with a signature below.

Please Send Rebate to (check one):

☐ Business Member ☐ Alternative Recipient

Recipient Name _____

Mailing Address _____

City _____ State _____ ZIP _____

Contact Name _____

APPLICATION CHECK LIST

☐ Rebate application with signature

☐ Itemized project invoices (labor & materials)

☐ Equipment specifications

The undersigned does hereby certify that the undersigned is solely responsible for the accuracy of the information contained in this application. All rules of the program have been followed and the installation is complete. The undersigned acknowledges that nothing contained in the application imposes any liability on the cooperative for the work performed and information presented by the member, member's engineer, contractor, or vendor. The undersigned also authorized payment of incentive directly to the specified rebate recipient.

Rebate applications due no later than the third Friday in November.

MEMBER SIGNATURE

Member Signature _____ Date _____

Motors and Drives

Rules & Information

WARRANTY INFORMATION

Rebate qualifications do not imply any representation or warranty of such equipment, design or installation by the cooperative. The cooperative shall not be responsible or liable for any personal injury or property damage caused by this equipment. The cooperative does not guarantee that a specific level of energy or cost savings will result from the implementation of energy conservation measures or the use of products funded under this program. In no event shall the cooperative be liable for any incidental or consequential damages.

GENERAL PROGRAM RULES

1. Installation must be complete before application is submitted and funds are issued.
2. Members and vendors must submit itemized equipment invoices, rebate application, and manufacturer equipment specifications. To ensure that the equipment installed meets the cooperative's performance standards, these invoices must itemize labor charges, quantity and price of the equipment installed, as well as information regarding the manufacturer and model numbers for all equipment included in the rebate.
3. The cooperative reserves the right to conduct random inspections of installations.
4. Rebates must be applied for within 12 months of invoice date.
5. Project must comply with all program specific rules and qualifications.
6. The member is responsible for checking with **Lake Region Electric Cooperative** to determine funding availability and to verify program parameters.

DRIVES – VARIABLE FREQUENCY (VFDS) & VARIABLE SPEED

1. Rebates apply to new drive installations only. Replacement drives do not qualify for a rebate.
2. Rebates apply to drives in systems that:
   - Are tied to an automated control system
   - Have a Power Factor of .90 or greater
3. Approved application include:
   - HVAC fans
   - Cooling towers
   - Industrial fans
   - Pumps
   - Process equipment
4. Applications not eligible for the prescriptive program (but can be evaluated under other programs):
   - Chillers
   - VFDs greater than 200 hp
   - Refrigeration compression
   - Irrigation (see Agricultural programs)
5. Non-approved applications may be submitted for evaluation through the Custom Rebate Program. The drive will be evaluated in conjunction with the equipment operating efficiency and loading. Additional applications not approved for drive rebates include soft-start, power-factor correction or related equipment.
6. Rebates are based on the rated VFD controlled horsepower or horsepower of motor, whichever is lower.
7. ECM or DC motors with controls for speed regulation also qualify for the VFD rebate on a cumulative HP basis as long as all other requirements are met.

FRACTIONAL HORSE POWER MOTORS

1. Rebates are available for new or retrofit motor installations. Rewound or repaired motors do not qualify.
2. Retrofit motor rebates are available only if an existing fractional AC motor of comparable size is replaced. Replacement of existing ECM or brushless DC motors do not qualify.
3. Rebates apply to motors from 1/64 hp to 3/4 hp.
4. The nameplate of the new motor must clearly state the efficiency in order to qualify for rebates.
5. Motors greater than 3/4 hp must be evaluated through the Custom Rebate Program.
6. Motors controlled to vary speed depending on load conditions may qualify for a variable speed rebate of $30/cumulative HP under the VFD prescriptive rebate.

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Equipment & Rebate Information

ECM BLOWER MOTORS

Note: Not eligible for new construction applications

This measure is the retrofit of a less efficieny (PCS) motor to a two-stage BPM or ECM motor in an existing furnace

Manufacturer _____ Model _____

Is AC Present? ☐ Yes ☐ No

Quantity _____

ECM CIRCULATOR

Requirements:

Applicable to commercial facilities with domestic hot water and space heating/cooling circulation pumps

- Pump motor must be EC, DC brushless, or permanent magnet style
- Pump motor must be capable of variable speed operation
- Motor must include integrated "smart" controls that will modulate flow based on demand
- Motor must be < 1 hp

Manufacturer _____ Model _____

Motor Application

☐ Domestic Hot Water ☐ Heating Water ☐ Cooling Water

Quantity _____

Motor Wattage

☐ <100 W ☐ 101-500 W ☐ 501-750 W

ECM FAN MOTOR

Manufacturer _____ Model _____

Design Airflow of Fan (Ft_3/min) _____ Quantity _____

VARIABLE FREQUENCY DRIVE

This measure applies to variable speed drives installed on HVAC systems including:

- HVAC Fans – supply fans, return fans, and cooling tower fans
- HVAC Pumps – hot water heating and chilled water cooling pumps

Manufacturer _____ Model _____

Size (HP) _____

Application type

☐ Pump – Hot Water Pump
☐ Pump – Chiller Water or Condenser Water Pump
☐ Pump – Industrial
☐ Pump – Other
☐ Fan – Constant Volume (no flow control)
☐ Fan – Cooling Tower Fan
☐ Fan – Industrial
☐ Fan – Other

Speed (RPM) (If unknown, use 1800) _____

Motor Type (If unknown, use ODP)

☐ Open Drip Proof (ODP) ☐ Totally Enclosed Fan-Cooled (TEFC)

Annual Operating hours _____ Quantity _____