



Farmers Electric Cooperative

A Touchstone Energy® Cooperative

PO Box 330
2389 Highway 92
Greenfield, IA 50849-0330
Phone: 641-743-6146
www.farmersrec.com

2023 INCENTIVES

Commercial Adjustable Speed Drives

PLEASE complete ALL sections and sign form to ensure proper and prompt payment of rebate.

Customer Information Check if wind or solar generation is installed.

Form with fields for Company, Account Number, Phone, Facility Address, City, State, Zip Code, Mailing Address, First Name, Last Name, Email Address.

ACCOUNT TYPE where equipment is located: Farm Small Business Commercial/Industrial

GENERAL BUSINESS DESCRIPTION: (e.g. Manufacturing, School, Grocery, Office, etc.)

System Designer/Contractor Information (person responsible for final equipment specifications)

Form with fields for Company, Mailing Address, City, State, Zip Code, First Name, Last Name, Phone, E-mail Address.

Equipment Information

INSTALLATION TYPE: New Construction Additional/New Drives in Existing Facility

DATE INSTALLED

INSTALLED SYSTEM COST

Rebate Table with columns: Load Type, Code, Rebate Per Horsepower Controlled. Rows: Variable (fans, pumps) ASD2 \$40, Fixed (all other) ASD5 \$15.

Note: Minimum annual operating hours is 1,000

Enter Code and rebate per horsepower from Rebate Table:

Table with columns: Code, Type of Usage, Manufacturer, Model, Drive Efficiency %, Motor Efficiency %, Annual Operation Hours, Controlled Motor Horsepower, Rebate per Controlled Horsepower\*, Rebate.

\*DO NOT INCLUDE HORSEPOWER OF REDUNDANT (Secondary Back up) MOTORS TOTAL REBATE

No Rebates for Replacements.

Maximum rebate = \$10,000 per facility

Attach contractor invoice and manufacturer's specification sheets.

Customer and System Designer Agreement

By signing below, system Customer and designer/vendor agree to the Terms and Conditions (see back or separate page) for this program.

Form with fields for Customer Name/Title, System Designer Name/Title, Customer Signature, Date, System Designer Signature, Date, Office Use Only (Cooperative ID, Employee Name), Notes, Authorized Amount.

## Terms and Conditions - Adjustable Speed Drive Incentives

**Program Offer:** The Program covers products purchased and/or services rendered on or after **January 1, 2023**.

### Requirements for ASD Installations:

- The ASD must have either an input line reactor or isolation transformer. The minimum requirement is that a 3% impedance reactor, based on the horsepower rating of the ASD, be installed.
- The National Electric Code should be followed for all applicable wiring and grounding.
- System designer or installing contractor should ensure that the ASD installation meets the Harmonic Test for Eligibility (see below) or ensure that the *entire facility* complies with IEEE Standard No. 519 *after completion* of the ASD installation or retrofit. Failure to comply with this rule may be cause for the Utility to deny the request for a rebate.
- In the case of new motor installations, the motor to be controlled must be NEMA Premium efficiency motor.
- Rebate requests for over \$5,000 shall require pre-approval.
- Maximum rebate is \$10,000 per facility
- Rebates are not available for replacement drives.

### Harmonic Test for Eligibility

1. Enter total ASD load to be supplied by the transformer (include sum of existing ASD loads). Total driven motor HP multiplied by 0.85 is a fair estimate of power in kW..... kW
2. Enter the kVA rating of the transformer supplying power to the ASD loads ..... kVA
3. Divide line 1 by line 2 and multiply by 100..... %
4. If the value on line 3 is less than 5% (*ASD demand is less than 5% of the nameplate kVA of the transformer*), no further evaluation of harmonics is required to qualify the system for this program. This is not a guarantee by the Utility, in any way, that harmonics will not cause any problems for the Customer.
5. If the value on line 3 is 0.05 or greater (*ASD demand is equal or greater than 5% of the nameplate kVA of the transformer*), you must pre-qualify this application by using third party verification of measures taken to ensure compliance with the IEEE 519 Standard.

### Important

ASDs can be sensitive to overvoltages that can occur when power factor correcting capacitor banks on the Utility power system are switched on. To qualify for an incentive payment under this program, each ASD must include a series reactor (inductor, choke) in its AC input connections. Your ASD supplier should assist in the sizing of the reactor while meeting the minimum requirement of a 3% impedance reactor, based on the horsepower rating of the ASD.

As a general rule, a 3% reactor is sufficient to avoid misoperation of ASDs during Utility capacitor switching and will also help reduce the magnitude of harmonic currents generated by the drive. In some instances your supplier may find it necessary to install 5% reactors and additional filtering devices to meet current and voltage harmonic distortion requirements.

If your power factor is less than 0.8 (80%), we recommend that you consider power factor correction concurrent with the installation of drives, because the presence of power factor correction equipment can influence proper reactor sizing, and because the presence of ASDs can influence the design of power factor correction equipment. In situations where the load from ASDs is a substantial part of the facility load, filters are recommended, rather than capacitors, for power factor correction.

The use of ASDs which incorporate pulse width modulation (PWM) may produce overvoltages which may cause premature failure of AC induction motors not rated for use with an inverter. When installing PWN drives you may consider utilizing inverter rated motors or suitable overvoltage mitigation devices that may include additional line reactors between the drive and the motor. Consider shaft grounding, insulated bearings, load side filters or conductive lubricants to prevent possible bearing frosting or fluting. This is particularly important for installations where the motor will operate in a narrow speed band for long periods of time.

### General Terms and Conditions

Rebates shall be pro-rated based on the percent of power supplied by the utility if the customer has distributed generation.

**Application Information:** Missing or incorrect information on the application may delay processing and delivery of the rebate. An invoice is required and should include specific product information, including the brand, model, serial number and date of purchase of the energy efficient measures. Other information including manufacturer's equipment performance sheets may be required upon request.

The Utility reserves the right to verify sales transactions and to have reasonable access to the Customer's facility to inspect pre-existing equipment (if applicable) and energy efficient measures installed under this program.

**Warranty Information:** The Utility makes no warranties, expressed or implied, with respect to equipment operation, material, workmanship or manufacturing. The Utility does not guarantee that a certain level of energy or cost savings will result from the use of products covered by this program.

**Limitation of Liability:** The Utility's liability in connection with this program is limited to paying the rebate specified when all terms and conditions have been satisfied. Under no circumstances shall the Utility be liable for any consequential or incidental damages or tax liability resulting from participation in this program.

**Participant Certification:** Participating Customer certifies that he/she purchased and installed the equipment listed on their application at the defined location served by the Utility. The Customer agrees that all information provided is true and that he/she has conformed to all program requirements. If the equipment and application does not comply with the Utility's rules and qualifications, the rebate amount may be denied or adjusted.

**Program Changes/Termination:** The Utility reserves the right to extend, modify (including incentive levels) or terminate this Program at any time without prior or further notice. The Customer is responsible for checking with the Utility to determine whether the program has been changed or is still in effect.

**Customers must apply for rebates within six (6) months of the purchase date (as shown on the Customer's invoice) and are subject to the current year program offer if received after January 31st.** Past eligibility, however, does not guarantee that equipment will meet criteria for current programs in effect.

# Adjustable Speed Drive Incentive Program

## PRE-APPROVAL APPLICATION

The purpose of this pre-approval form is to assure the Utility and the Customer that the Adjustable Speed Drive (ASD) installer and the engineer or other persons responsible for specifying the equipment and its installation are familiar with the terms and conditions that must be met to ensure eligibility for rebates made available through the ASD program.

Customers should request that the specifying engineer/individual and installing contractor read and sign this document prior to installation to ensure that the installed ASD will qualify for a rebate through this program.

Failure to complete this pre-approval form, may result in the denial of a rebate request made by the Customer upon completion of the ASD installation.

Send a completed copy of this pre-approval form to the Utility for pre-approval of this project prior to equipment installation to ensure full payment of the requested rebate.

Customer Information			
Company		Account Number	Phone
Facility Address (equipment location)		City	State      Zip Code
Mailing Address (if different than facility address above)		City	State      Zip Code
First Name (contact person)	Last Name	Email Address	

## Vendor or ASD System Designer (person responsible for final specifications of ASD equipment to be installed)

### Agreement of Understanding

By signing below, I acknowledge that:

- I have read and understood the information and requirements on the Terms and Conditions for ASD
- All equipment being specified does satisfy the requirements for the type of incentives under consideration
- The system specified is appropriate for the application and meets applicable codes, standards and regulatory requirements
- The electric Utility will be notified of any design specification changes

I also agree that the proposed system (check one of the following):

- meets the Harmonics Test for Eligibility (below)
- is based on a complete and thorough analysis of the affected electrical system to establish compliance with the IEEE 519 Standard in regard to harmonics once the Adjustable Speed Drive system(s) is in place

Signature \_\_\_\_\_ Date \_\_\_\_\_

### Project Information:

Application (fan, pump, etc.) \_\_\_\_\_ Expected Completion Date \_\_\_\_\_

Approximate Horsepower to be controlled \_\_\_\_\_ Estimated ASD Project Cost \_\_\_\_\_

### Harmonic Test for Eligibility:

1. Enter total ASD load to be supplied by the transformer (include sum of existing ASD loads). Total driven motor HP multiplied by 0.85 is a fair estimate of power in kW..... \_\_\_\_\_ kW
2. Enter the kVA rating of the transformer supplying power to the ASD loads..... \_\_\_\_\_ kVA
3. Divide line 1 by line 2..... \_\_\_\_\_ %
4. If the value on line 3 is less than .05 (ASD demand is less than 5% of the nameplate kVA of the transformer), no further evaluation of harmonics is required to qualify the system for this program. This is not a guarantee by the Utility, in any way, that harmonics will not cause any problems for the Customer.
5. If the value on line 3 is .05 or greater (ASD demand is equal or greater than 5% of the nameplate kVA of the transformer), you must pre-qualify this application using third party verification showing measures that will be taken to ensure compliance with the IEEE 519 Standard.

Utility Use Only:		Pre-Approved Incentive \$ _____	
Pre-Installation Verification _____	Date _____	Utility Pre-Approval _____	Date _____
Technical Review _____	Date _____	Post-Installation Verification _____	Date _____