SEGMENT BROCHURE

GRAIN HANDLING

NEMA motor solutions

- Built for Harvest. Engineered for Uptime.
- Motors certified for combustible dust environments.

ABB BALDOR RELIANCE

ENGINEERED TO OUTRUN

THE FACE OF AGRICULTURE IS CHANGING

Global food demand is increasing rapidly, placing even-greater pressure on fossil fuel, water and topsoil resources. ABB Baldor-Reliance® motors address these challenges with powerful, efficient motor solutions to help you make the most of your land and your equipment.

Safety

"I need to make my facility and personnel safety a priority."

The well-being of our farmers and agricultural workers is vital to strong communities and the economy

ABB Baldor-Reliance motors offer best-in-class designs that enhance safety

- Robust lifting provisions included on many motors allow for easier and safer movement of the motor during installation and routine maintenance
- Explosion-proof motors are designed and built to provide safe operation in hazardous locations, reducing risk of damage in standard grain environments
- Remote monitoring with ABB Ability™ enhances proactive maintenance planning to reduce costs
- Color-coded leads and oversized conduit boxes for easier installation and startup are standard on all motors

Production

"I can't afford extended shutdowns for maintenance and outages."

Grain business is serious business. Corn and wheat alone make up close to two-thirds of the world's food energy intake

ABB Baldor-Reliance motors are backed by a reputation of quality that improves production

- Motors must be able to withstand outdoor operating environments and seasonal weather fluctuations
- These motors are capable of high-torque operation in varying voltage conditions and are resistant to thermal overloads
- Drip shields, epoxy coating, stainless, various levels of ingress protection, gasketed conduit boxes, sealed bearings, lip seals, slingers all help to keep what should be outside, outside, leading to a longer motor life

Efficiency and sustainability

The future of food means feeding the world in ways that are more equitable, healthy and sustainable

ABB Baldor-Reliance motors help grain facilities save energy and optimize processes

- We stock a variety of motors that meet or exceed NEMA Premium 4 (IE4) efficiency standards to reduce energy by as much as 25%
- All ABB Baldor-Reliance three-phase motors can be used with variable speed drives Drives improve overall system performance, leading to increased efficiency and benefiting the bottom line

Cost savings

Changes in commodity pricing, government policies and tighter regulations mean agricultural operations need focus on saving money

ABB Baldor-Reliance motors offer more lifetime value while helping to avoid unplanned shutdowns

- Up-front cost is only a portion of the lifetime cost of a motor. High-quality ABB Baldor-Reliance motors outlast competitive units, reducing the total cost of ownership
- Sales and service are available when you need them through ABB's industry-leading distribution network and local district offices
- ABB Ability condition monitoring safely delivers accurate, real-time information about motor performance to prevent unplanned downtime

Reliability and availability

ABB offers next-generation products, shorter lead times and the ability to outpace other motor manufacturers with faster, more efficient output and support services.

- Proper crop storage requires planning, and quick responses and commissioning are essential to making sure equipment is ready when it's time to harvest
- Scheduled replacements or upgrades can't wait for equipment to be available, so having a supplier with motors ready on their shelves is important

FEEDING THE WORLD
Today and tomorrow

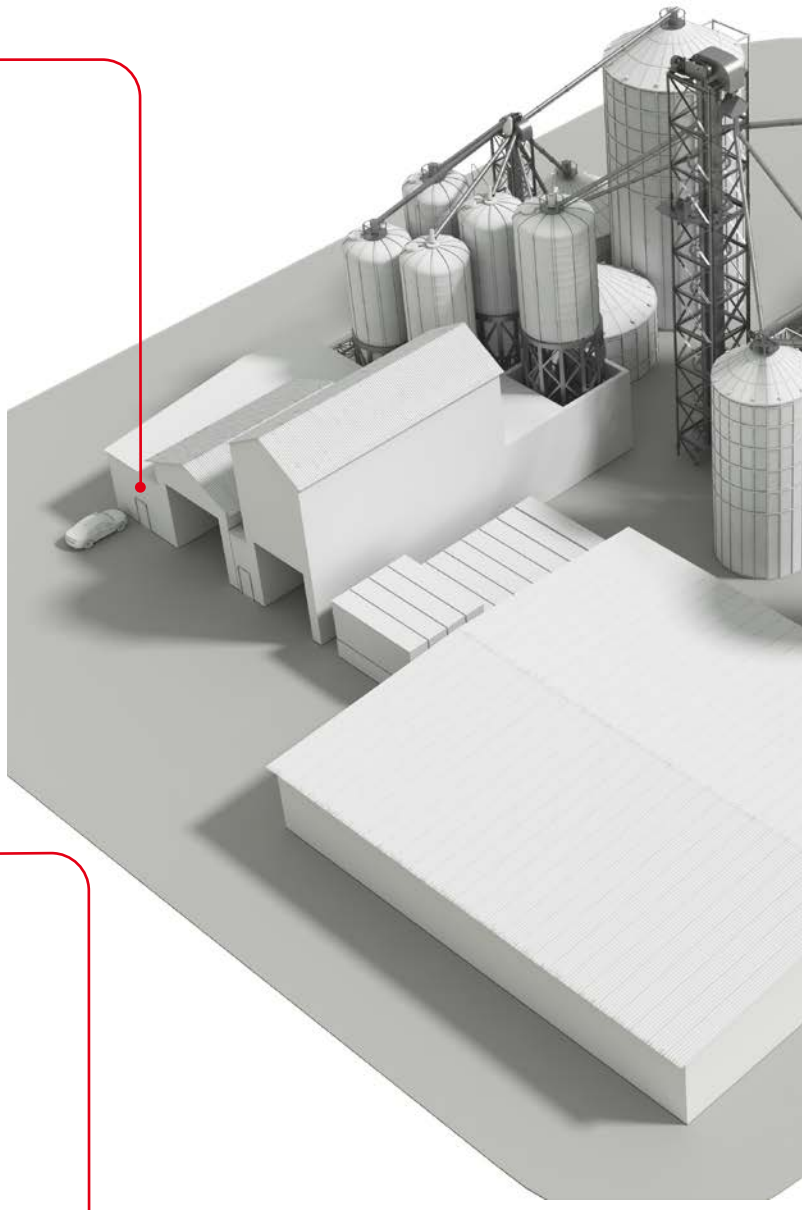
Modern farmers understand the challenges of sustaining a successful grain operation. ABB can provide your grain growing and handling facility with motors that lead the way in efficiency, safety and condition monitoring, allowing you to do more with less while reducing waste and emissions. Our standard-setting service and support give you peace of mind so you can focus on running your business.

RECEIVING AND MOVING

Once grain leaves the farm, shipping begins the first step in the feed, food and fuel supply chains. Receiving is the act of taking delivery and possession of grain from a farm into a grain handling facility. Receiving also includes sampling, grading, weighing and binning. A modern receiving system sends the grain from the truck directly to the material conveying system, avoiding environmental pollution and any kind of contamination. Before it moves toward its storage location, each incoming load is sampled and quality tested for moisture, weight, contamination, infestation and damage.

Applications:
- Feeders
- Centrifugal blowers
- Bucket elevators
- Slide gates
- Screw, belt and drag flight conveyors
- Convection fans

Customer requirements:
- Operate in extreme weather conditions
- High shock loads
- Reliability due to difficult access
- High exposure to dust, fibers and flour



CENTER PIVOT IRRIGATION

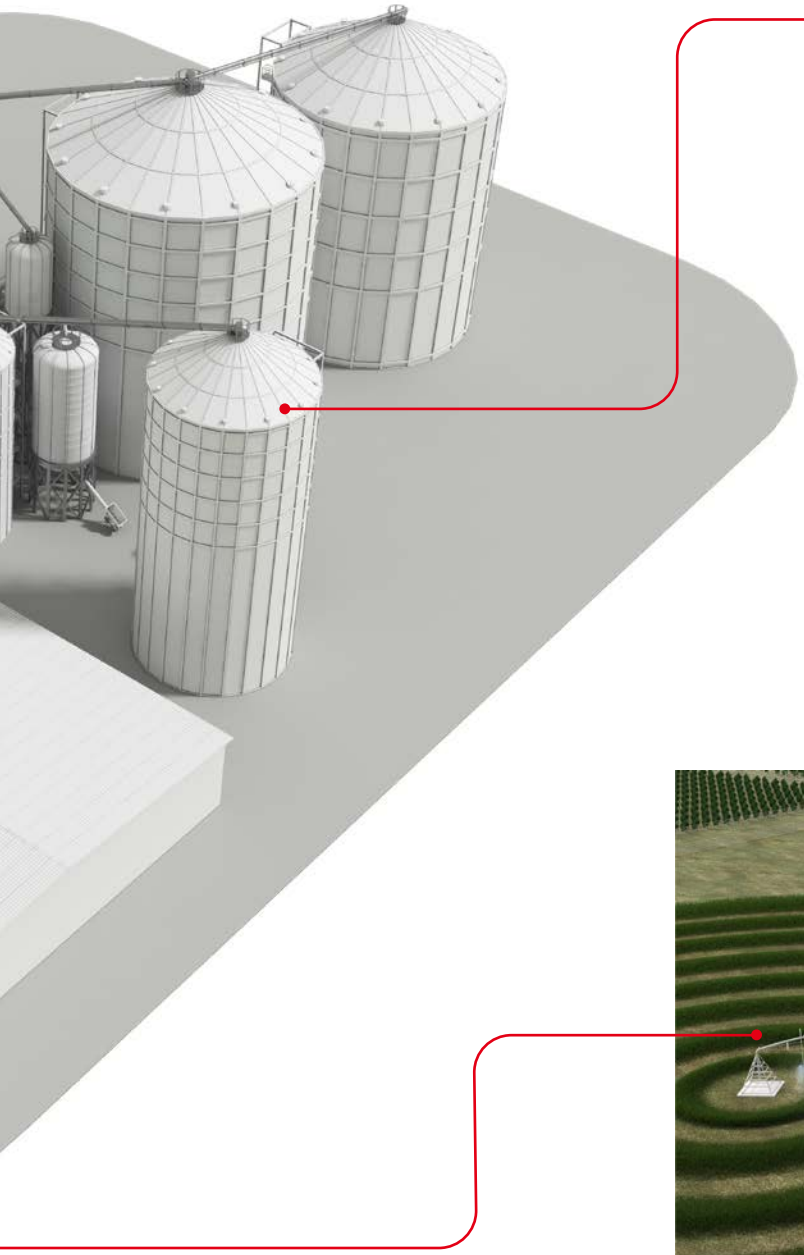
An Irrigation system requires a water source, a method to transport the water and a method to distribute the water to the soil. Irrigation is used to supplement water during dry periods, increase productivity of coarse soils, improve quality of water-sensitive crops and reduce risk of crop loss. Improper crop irrigation wastes water and money, and ongoing issues can result in reduced yields and poor crop quality, both of which can affect price.

The center pivot is the system of choice for agricultural irrigation because of its low labor and maintenance requirements, convenience, flexibility, performance and easy operation. When properly designed, operated, and equipped with high efficiency water applicators, a center pivot system conserves three precious resources - water, energy and time - but only when operating efficiently.

Applications:
- Tower drive systems
- Booster pumps

Customer requirements:
- Smooth operation to ensure even water distribution and prevent equipment damage
- Constant pressure to maintain proper water flow

The next generation of agriculture means using technology to feed the world in ways that are more equitable, healthy, and sustainable. As we move toward a farming system that is more sustainable - environmentally, economically, and socially - new state-of-the-art practices and equipment will help maximize productivity and profit while minimizing environmental damage.



STORAGE

Grain storage is vital to successful distribution, marketing and sale of a quality product. Moisture content and temperature are critical factors in keeping grain in good condition, and motors are vital in controlling temperature and moisture while fully emptying train silos or bins. Grain storage is a critical step to protect crops and obtain the highest revenue possible, and improving the facility's aeration and controlling the overall temperature can make or break a price when it comes time to sell.

Applications:
- Bin sweepers
- Augers
- Screw conveyors
- Dryers
- Blowers

Customer requirements
- Motors sealed to prevent damage and decrease downtime
- Safety operation to ensure equipment doesn't damage products or injure people
- Machinery that runs reliably

THE BROADEST OFFERING

For all grain handling applications

General purpose motor
- Single-phase 1/12 - 15 Hp
- Three-phase 1/8-450 Hp
- NEMA frame 42-500

SP4 Severe Duty motors
- 25 - 300 Hp
- NEMA frame 284T - L449T
- NEMA Premium 4 (IE4) efficient
- Division 2, Class II, Groups F&G
- IP55

Severe Duty XEX motor
- 1 - 800 Hp
- NEMA frame 143T – 588
- Division 2, Class I, Groups A, B, C & D
- Division 2, Class II, Groups F&G, T4 on 586/7/8 frames

Explosion proof motor
- Three-phase 1/4 - 60 Hp
- NEMA frame 48 - 364T
- Division 1, Class I Group D, Class II Group F & G

Auger drive motor
- 1/3 - 1.5 Hp
- Capacitor start
- Mechanical protection of centrifugal switch
- Manual reset thermal protection
- NEMA 56N flange mounts to drive/gear box assembly

Universal crop dryer motor
- 5 - 15 Hp
- PSC switchless design for increased reliability
- OPAO (open air over) design
- Shaft length 3/4" longer than NEMA standard

Irrigation tower drive motor
- 3/4 - 2 Hp
- Sheds water
- Conduit box cast into opposite drive endplate
- High overload capabilities

Grain stirring motor
- 1.5 Hp
- Single phase TEFC
- Slotted fan cover
- Gasketed manual reset thermal overload protection

General farm duty motor
- Single phase 1/3-16 Hp
- Three phase 1/2-100 Hp
- NEMA Frame 56-405T
- Three phase suitable for inverter use per NEMA MG1 Part 31.4.4.2
- TEFC and TEAO

Grain dryer/vane axial fan motor
- 1.5-15 Hp
- 1/4-20 tapped & keyed shaft, shaft length 3/4" longer than NEMA standard
- Thermostats standard
- TEAO and OPAO

Grain dryer/centrifugal fan
- Single phase 5-16 Hp
- Three phase 3-50 Hp
- NEMA Frame 184T - 326T
- Shaft length 1" longer than NEMA standard

Instant reversing motor
- Single phase 1/3-1 Hp
- High starting torque
- Electrically designed for optimal performance in instant reversing applications

GP100
- 1 - 250 Hp
- NEMA frame 143T - 405T
- IP54 (FS 140 - 250), IP55 (FS 280 - 440)

SD100
- 1 - 100 Hp
- NEMA frame 143T - 405T
- FS 360 - 400T Division 2, Class II, Groups F&G

XP100
- 1 - 300 Hp
- NEMA frame 143T - 449T
- Division I, Class I, Groups C&D

—

Advanced protection that increases performance and extends motor life

Double sealed bearings

- Low-friction seals
- Non re-greaseable, eliminates potential for over-greasing
- Superior protection against contaminant ingress

Lip seal

- Provides secondary protection against contaminant ingress
- Maintains constant contact with rotating shaft
- Nitrile rubber seal material for long life

External V-ring slinger

- Seals against face of endplate when motor is at rest
- When motor is running, V-ring is pulled away by inertia
- When seal is spinning, contaminants are expelled by seal

TRUSTED MOTORS FOR YOUR GRAIN HANDLING APPLICATIONS

Reliability, improved productivity and greater safety are just a few of the benefits of using ABB Baldor-Reliance motors. Between general purpose, farm duty, explosion proof and other specialty motors, you'll find the ideal motor designed and engineered for the demanding indoor and outdoor environments of a wide variety of agricultural and industrial applications.

	**Extreme temperatures**	For protection against weather on a farm, motors need additional protection, such as sealed-for-life bearings, slingers and contact seals, epoxy paint and IP54 for rugged performance.
	**Wet weather and high humidity**	Moisture ingress is a leading cause of rotor and stator rust and bearing failure. Seals, drip shields, epoxy coating, stainless hardware, gasketed conduit boxes, insulation and drainage in the right locations prevent water from entering the motor and protect the exposed external components.
	**Hazardous locations**	Agriculture is an inherently dangerous industry. Reduce risks with motors specifically designed for hazardous locations and constructed for dusty environments. Look for UL listing, Division 1 Class I, Groups C & D, and other third-party certifications.
	**High vibration**	Dynamically balanced rotors reduce motor vibration, while quality manufacturing of the motor frame and internals mean tight tolerances and robustness of materials.
	**Distance from power source to motor**	Farms and agriculture facilities in remote areas must deal with voltage fluctuations in power delivery. Motors engineered with a higher service factor can handle intermittent fluctuations without a significant reduction in performance or long-term damage to the motor.
	**Accessibility**	Motor mounting locations for farm equipment are often difficult to access for installation and maintenance. Lifting provisions, QR codes, multiple mounting bolt locations in the frame, oversized and rotatable conduit boxes, colored leads and ABB Ability™ smart sensors makes it easier to install, repair and monitor the health of the motor with safety in mind.
	**Prolonged periods between uses**	An electric motor that does not experience regular usage while being exposed to the elements may develop corrosion or contamination. Sealed bearings and conduit boxes, lips seals, slingers, gaskets, epoxied internals and dipped/baked stators help mitigate damage when not in use.

ABB ABILITY™ CONDITION MONITORING

Extending the life of your motor

Changes in temperature and vibration can indicate potential problems in equipment. Yet monitoring low voltage motors is considered expensive and often overlooked, leaving problems unnoticed until the motor fails. ABB now makes it easier and safer to know how your motor feels.

The ABB Ability smart sensor converts traditional motors into smart, wirelessly connected devices. It enables users to monitor the health of their motors and to plan maintenance in advance. Unplanned downtime can be avoided, efficiency optimized and safety improved.

ABB Ability combines our deep domain expertise with software innovation to empower real-time, data-driven decisions for safer, smarter operations.

Increased safety

Increased productivity

Reduced maintenance

Eliminated unplanned stops

Easy to use

We build not only motors, but relationships

More than 100 years ago, we set out to build a better motor, and that's still our goal. Today, ABB is the world's number-one manufacturer of NEMA motors, and we are the only manufacturer of ABB Baldor-Reliance motors. Our motors are manufactured in Arkansas, Georgia, Mississippi, and Oklahoma, and our production facilities are committed to quality and dependability so that we can provide you with a reliable motor every time.

Our team understands the challenges you face to stay productive and profitable while meeting the demands of industry and government regulations. We realize the importance of US-made products to many of our customers, and we can help you navigate the standards and regulations in the industries in which you operate to provide you with the right product when you need it.

Every year, thousands of customers make the choice to trust ABB and ABB Baldor-Reliance motors. Your success is our success, and we work with you every step of the way to deliver a motor that exceeds your expectations.
We have a simplified approach to providing industry-specific solutions, with next-generation technology, shorter lead times and the ability to outpace other motor manufacturers with faster, more efficient output and support services.

The voice of our customers drives our strategy. You are the engine that helps guide decisions in our business. We strive to keep your applications running safely, reliably, effectively and sustainably, and we look for ways to continuously create value and provide a world-class customer experience. You don't settle for second best, and neither will we.

WITH YOU, WHEREVER YOU ARE IN THE WORLD

More than 90% of ABB Baldor-Reliance motors meet the Buy American Act. Scan to learn more.

From the American heartland to any of the more than 100 countries with ABB logistics and sales operations, we have you covered with a wide network of local value providers that can quickly respond to your needs.

Customer support offices are located where you are for fast, convenient service.

Our local engineering centers facilitate a closer collaboration on projects and are backed by the knowledge of more than 8,000 technologists in seven global R&D centers.

ABB collaborates with grain producers around the world to develop custom products, services and solutions and invests $1.5 billion annually in innovation.

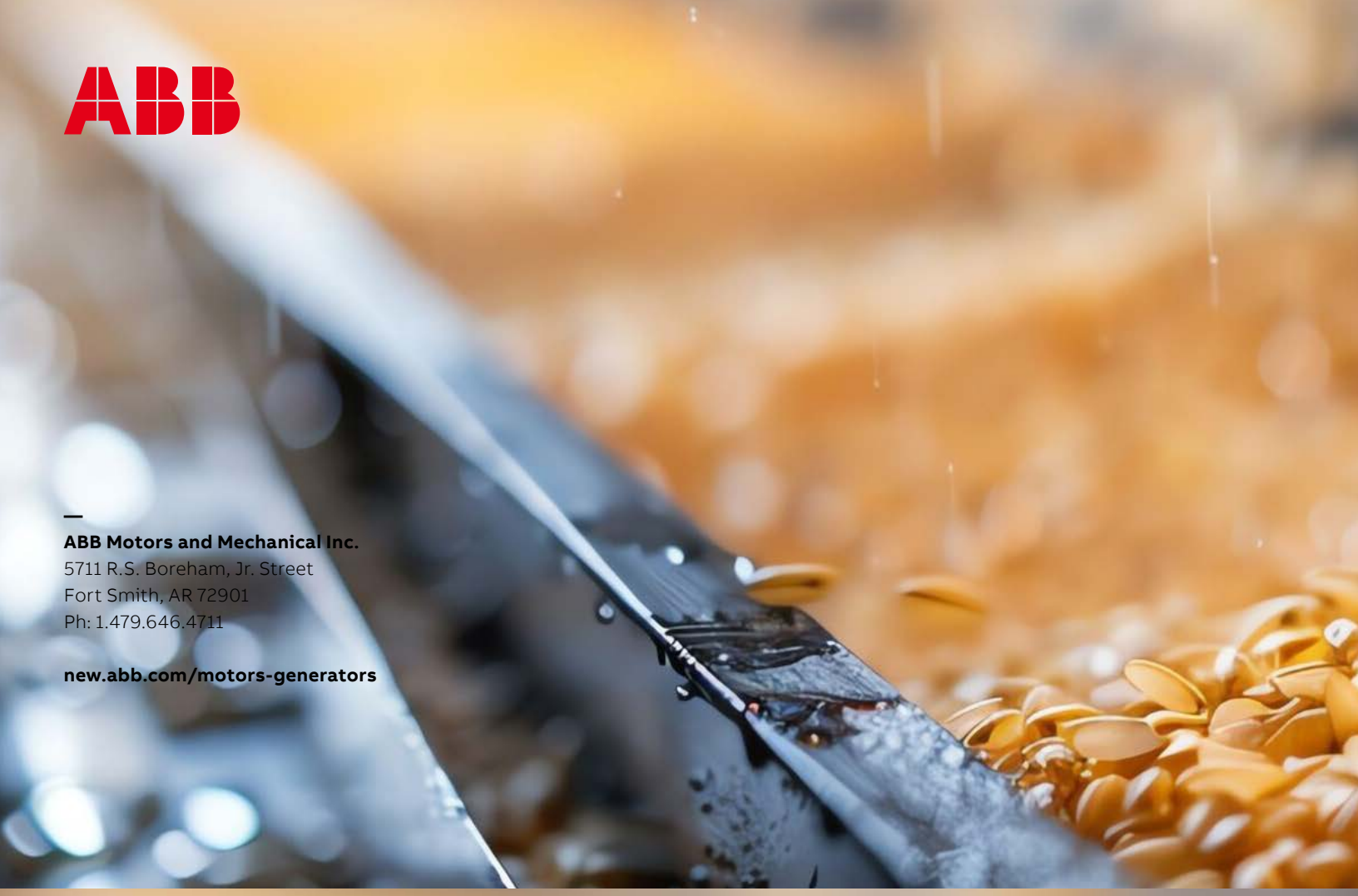


ABB Motors and Mechanical Inc.
5711 R.S. Boreham, Jr. Street
Fort Smith, AR 72901
Ph: 1.479.646.4711

new.abb.com/motors-generators

BR265 02.2026