
NEMA MOTORS

Severe Duty motors

For the most demanding applications

BALDOR • RELIANCE



Safety in the most extreme environments



We know your business operates in challenging environments and difficult conditions. Your need for a reliable, easy to use and maintain and durable motor is more crucial than ever.

Baldor-Reliance® Severe Duty motors from ABB are designed to provide exceptional performance and long life in harsh industrial processing applications. A few typical applications which might require these types of motors include petrochemical plants, mines, foundries, pulp and paper plants, waste management facilities, rock crushers, and chemical plants.

These motors use Super-E® premium efficient electrical designs which are built to handle demanding duty cycles, provide high starting and peak torques, and operate over wide speed ranges.

Severe Duty motors provide safe, long operating life, reliable performance, and reduced energy consumption in the toughest applications.

Baldor-Reliance Severe Duty motors have three guiding principles behind each design:

1. Safer installation:

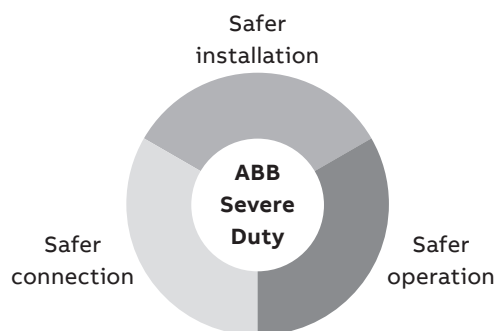
- Rugged lifting provisions ⁽¹⁾
- Oversized conduit box

2. Safer connection:

- Clamp type grounding lug
- Permanently labeled color leads

3. Safer operation:

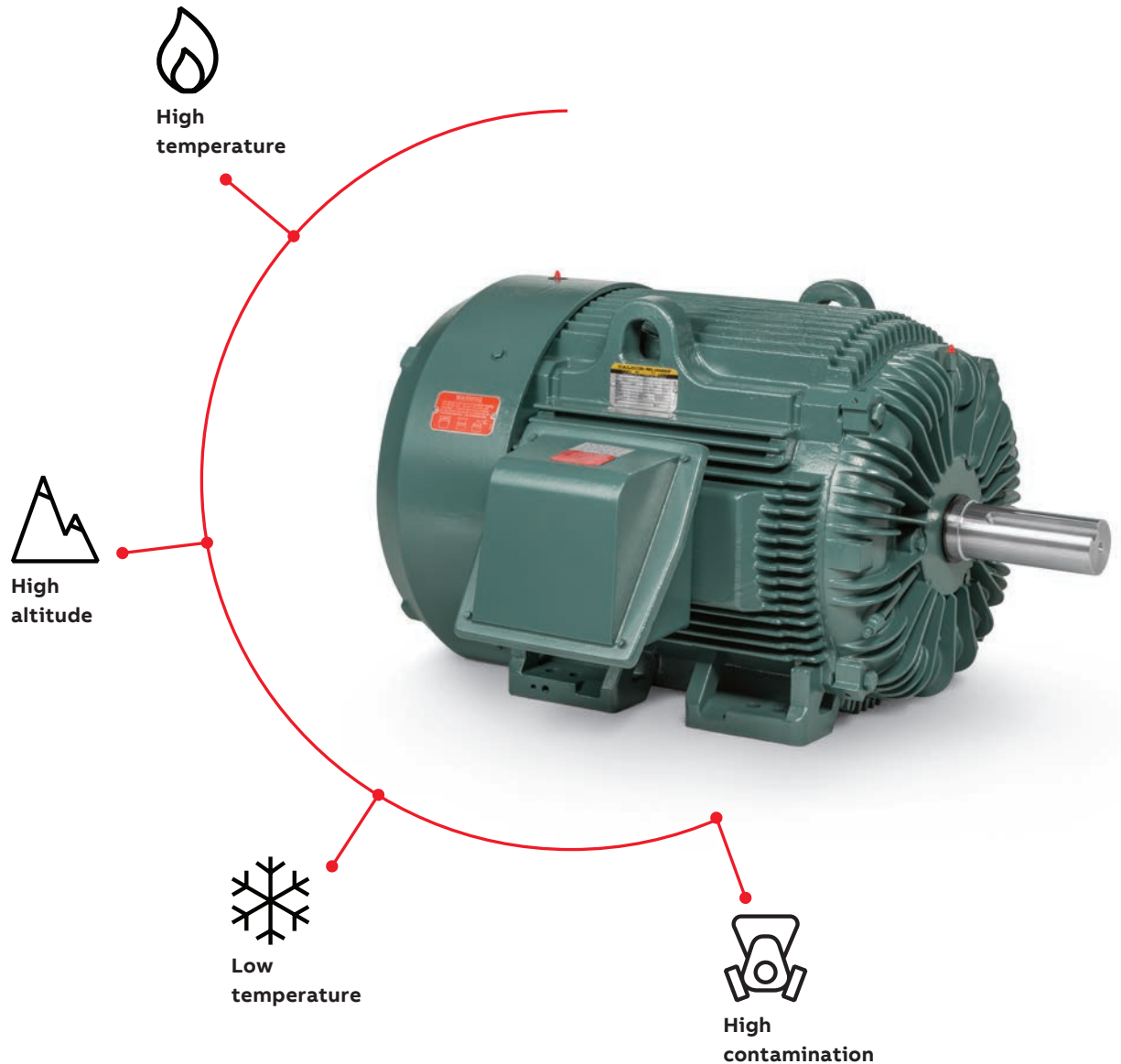
- Division 2 for hazardous locations
- Lead separators on all severe duty ratings protect against shorts and abrasion of power leads
- ABB Ability™ smart sensor for motors provides touch-free condition monitoring



(1) For our larger frame sizes, we provide enhanced lifting provisions that are cast-in for added safety

Demanding applications

Severe Duty motors are installed in the most demanding applications. Rain or shine, these motors are expected to run to peak performance without disruptions. Baldor-Reliance Severe Duty motors offer protection from contaminants as small as dust particles that can get into small crevices and can damage the electrical components inside the motor. The rugged cast iron design also protects from falling debris often seen in harsh applications. These motors are capable of withstanding extreme low and high temperatures and will operate in high altitude where the air is thinner or at sea level conditions where salt corrosion eats up the equipment.



Challenges to overcome



Reliability

Equipment and motor are exposed to the open environment, rain or shine. They need to be protected against contaminants such as rocks, gravel and dust frequently contact the motor.



Easy

Customization for the application and considering all the NEMA mounting options can be tough to find a “one size fits all”.



Safety

From the installation process to operating process – these motors are used in unsafe environments.



Our solution

The Baldor-Reliance Severe Duty motors are capable of handling it all. Selecting the right motor will increase your operation's reliability, easy to select and install, and safe to operate.

Extended reliability

Performance and protection from any application

Rugged, durable motor construction protects rotating and electrical components to provide **extended operating life in industrial applications prone to dusty, dirty, wet, outdoor, and potentially high vibration environments.**

Severe Duty motors are suited for normal torque applications in harsh industrial environments where reliability and highest operating efficiency is desired, and they are built with heavy-duty cast-iron enclosure and regreasable bearings to maximize the life of the motor. The entire Severe Duty line harnesses a feature-rich philosophy that is standard on all frame sizes of the product family.



It's all in the details

15 ways we designed Severe Duty differently



1. All-cast iron construction for longer life across all frame sizes



2. **1.15 service factor** on across-the-line power. 1.25 service factor for Crusher Duty up to 100HP.



3. **Conduit box**, oversized and in cast iron, provides for an **easy and reliable** installation process.



4. **Foot flatness** for better alignment and balance, easier install, and increased reliability



5. **IP55 rating** to protect from harsh duty environment



6. **Gaskets** are premium lead separators which prevent friction and abrasion between the leads which **eliminates electrical shorts and failures for enhanced safety operations**



7. **Colored leads**, which are permanently labeled and numbered, provide two factor identification for **easier and safer connections**



8. **Grounding lugs** located on the foot of the motor and in the conduit box for a safer and easier installation.



9. **Vertical jacking provisions** make the difficult and critical task of aligning the motor a lot easier. It allows the installer to micro-adjust the final and critical adjustments required to ensure the motor's shaft is aligned to perfection, which ensures the motor performs to its prime.



10. **Dowel pin holes** speed up the maintenance process. Users are able to drill their base using dowel pins. So when the motor needs to be taken out for regular maintenance, the installation process is a breeze.



11. **Embossed stainless steel nameplate** ensures that sensitive and sometimes critical information is available when it is needed the most.



12. **60/50 Hz** information is available on the nameplate. This is a feature much anticipated and requested by most OEMs.



13. **Connection diagrams** are easy to find and ensure a safe and easier connection.



14. **Inverter data** is standard on all stock product. This gives the customer greater flexibility by allowing operation on across-the-line power or paired with a VFD.



15. For our larger frame sizes, we provide enhanced lifting provisions that are cast-in for added safety

Lower operating cost

Optimizing total cost of ownership

Select the right product

to avoid premature failure due to environmental conditions



Reduce inventory with stocking flexible options

Easy installation saves time

$$\text{TCO} = \$ + \triangle + \square \square$$

Total cost of ownership Purchase cost Cost of running Cost of NOT running

High quality product prevents downtime:

- Phase paper – This provides another level of reliability, ensure a safe and long motor life.
- Class H wire – Premium motor materials ensure a low total cost of ownership.
- Class B rise at 1.00 SF – Premium design ensures the motor runs cooler, which increases the life of the motor.

Smart motor connectivity (ABB Ability smart sensor) allows you to conduct condition monitoring for predictive maintenance and increased safety through minimal contact.



Learn more with educational online tutorials that explain motor total cost of ownership

Severe Duty product offering

Uniquely suited for every rugged application



General Severe Duty

- 1 to 800HP, frame 143T thru 588

Built with a heavy-duty cast iron enclosure and regreasable bearings to maximize the life of the motor. The entire Severe Duty line harnesses a feature-rich philosophy that is standard on all frame sizes of the product family.



841XL & 661XL

- 841XL(1 to 250HP, frame 143T thru 449T)
- 661XL (5 to 75HP, frame 182T thru 365T)

These motors meet and exceed the requirements of the IEEE 841-2009 standard. Built for the demanding applications in the chemical, oil and gas industry. The patented PLS lubrication system, paired with inpro seals, provides maximum life in the application. Embossed stainless steel, inverter ready nameplate, and IEEE 841 test report ship with every motor.



IEEE 841XL p-base motors

- 3 to 75HP, frame 182HP-365VP, totally enclosed
- 3 to 60HP, frame 182HP thru 326HP, open drip proof

Designed and manufactured for normal, medium and high thrust applications. Vertical solid shaft motors have lower vibration and superior positive bearing lubrication, making this the ideal motor for your severe duty pumping applications.



Crusher Duty

- 5 to 600 HP, frame 180T thru 588T

Crusher Duty motors are designed to meet demanding aggregate industry challenges. Equipped with industry leading locked rotor and breakdown torques and above average service factor up to 1.25, Crusher Duty motors are capable of reliable operation during peak loading conditions.



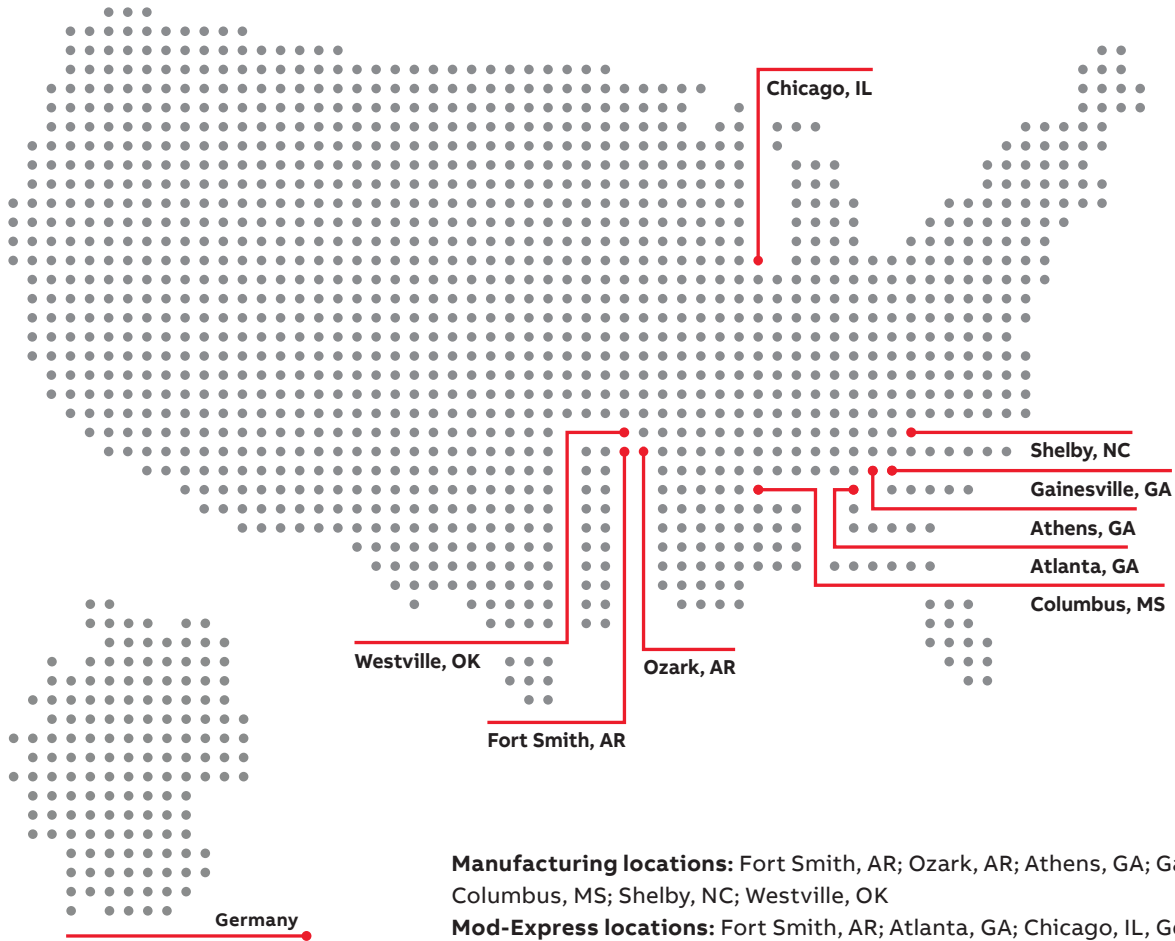
Dirty Duty Plus

- ½ - 10HP, frame 56 thru 215TC

Built for highly corrosive environments, the Dirty Duty Plus family boasts a 2-part epoxy paint system. designed to pass the 2,000+ hour salt fog test per ASTM B 117. Permanently lubricated, double-sealed ball bearings increase reliability and reduce downtime. Includes standard IP56 enclosure with an inverter-ready nameplate and are IEEE 45 compliant.

Flexibility, manufacturing and Mod-Express

Bringing the motor closer to you



Manufacturing locations: Fort Smith, AR; Ozark, AR; Athens, GA; Gainesville, GA; Columbus, MS; Shelby, NC; Westville, OK

Mod-Express locations: Fort Smith, AR; Atlanta, GA; Chicago, IL, Germany



Additional information

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