

BALDOR-RELIANCE® MOTORS

RPM AC

High-performance
Inverter Duty AC motors

BALDOR • RELIANCE

Designed for power Refined for performance

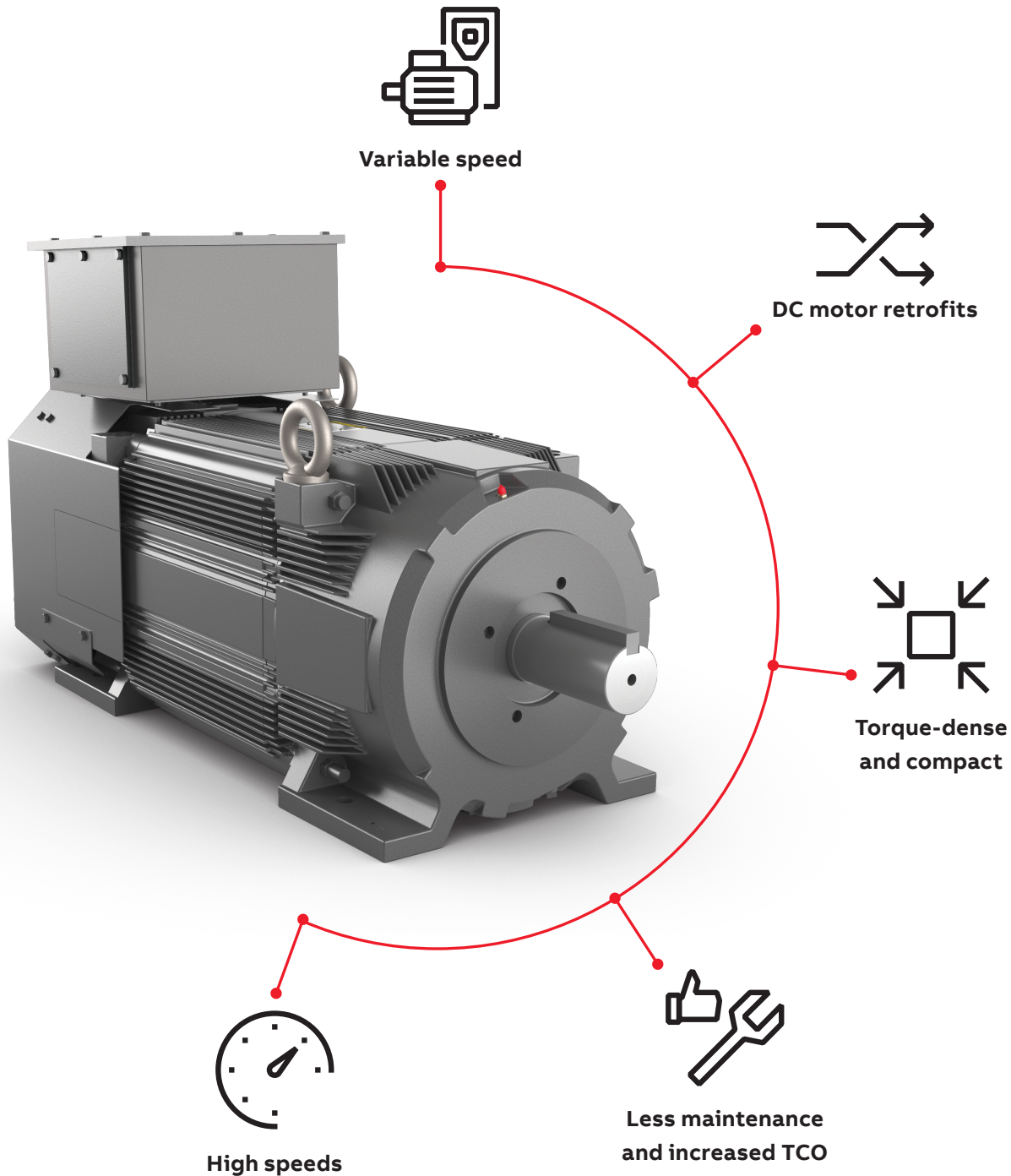
When space is at a premium, the RPM AC motor is the answer. RPM AC offers a power-dense laminated steel frame with custom power and speed ratings to match demanding variable speed application requirements.

RPM AC packs maximum torque into a small space. Available in multiple enclosures, the RPM AC motor can be up to three frame sizes smaller than the traditional NEMA or IEC motor.

Leveraging our knowledge of variable speed DC motors, RPM AC combines square frame design, efficient cooling and premium insulation systems to provide ultimate torque performance in a compact package.



The ultimate in power density just got better

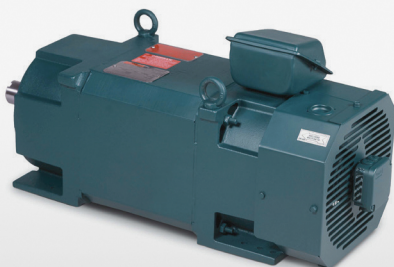
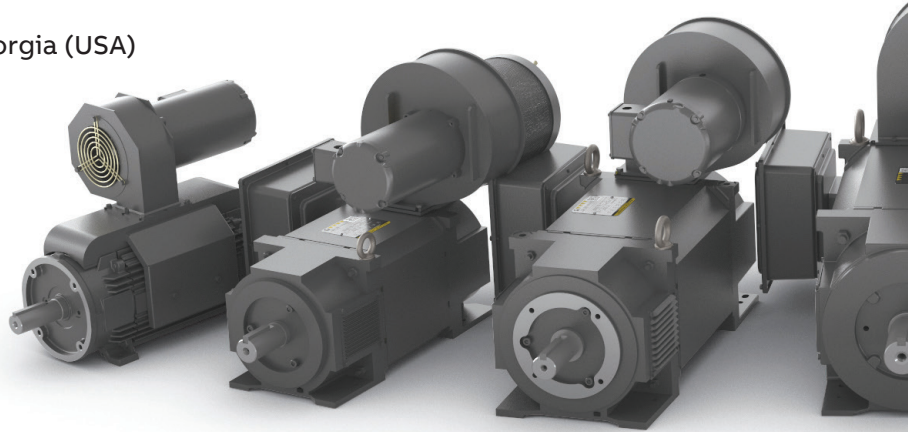


RPM AC, a truly feature-rich lineup

From its beginnings in 1987, RPM AC has always represented a high-performance, power dense, true variable speed motor family. Since those early days, RPM AC has been enhanced and extended to represent one of the broadest variable speed AC motor offerings available.

The features you've come to expect

- Square laminated steel frame
- Totally enclosed or drip-proof guarded, force ventilated enclosures
- Class H insulation
- Wide range of ingress protection
- Positive lubrication bearing system (PLS)
- Encoder mounting provisions
- Three thermostats
- Designed and manufactured in Gainesville, Georgia (USA)
- Quick Ship program available
- Insulated bearings on larger frame sizes



Generation 1



Generation 2

Generation 3: The ultimate in power density just got better

New for Generation 3:

- RL5000 frame size delivers up to 1750 Hp
- Integral grounding brushes as standard
- ABB Ability™ smart sensor provisions
- Web-based motor selection tool with mobile support
- Oversized, rotatable, mill spec conduit boxes
- QR codes for detailed motor and drive setup



Watch the webinar on
RPM AC Generation 3 updates

Feature-rich product

Optimized variable speed performance

Whether you're replacing a DC motor with an AC alternative, or just wanting a more torque dense product than the standard NEMA offering – look no further than the RPM AC. This product is feature rich across the product family and provides the ultimate variable speed performance for your application.

With RPM AC motors, you don't have to compromise! No over-framing or derating. No speed range limitations. No guesswork. Choose any base speed. 1000:1 constant torque standard!

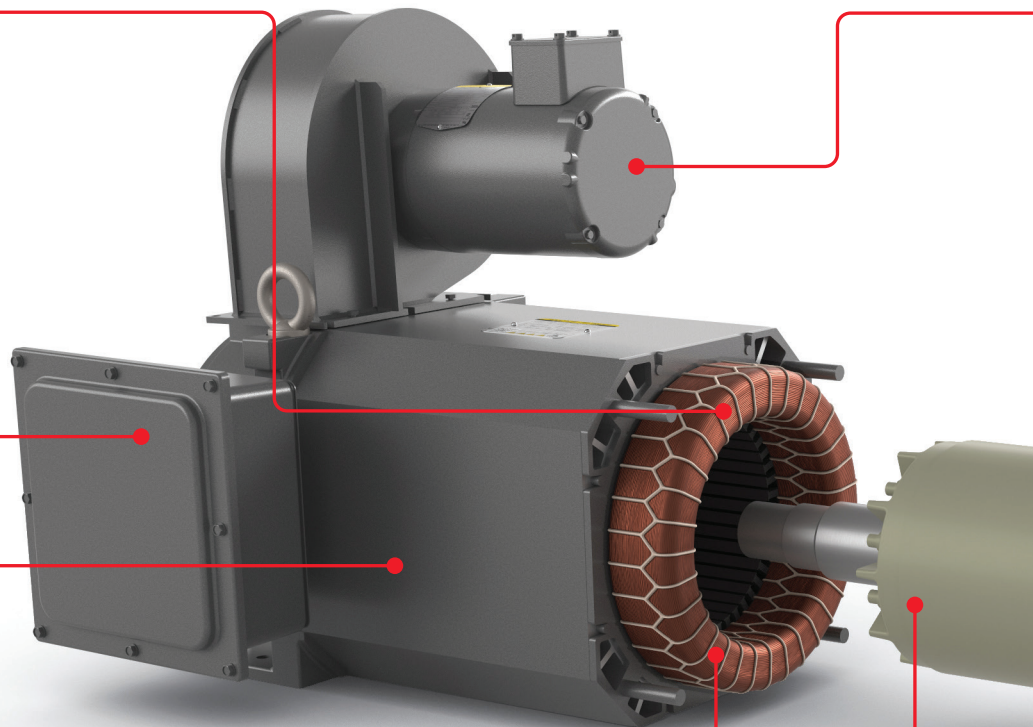
Premium Class H insulation

Mill conduit box

**Square laminated steel frame
optimized for torque density**

Optimal pole design

Optimized for power density or efficiency



Thermal protection and NEC compliance

Premium enclosures

BALDOR • RELIANCE

RPMAC™ INVERTER DUTY

BALDOR ELECTRIC CO. • FT. SMITH, AR. MFG. IN U.S.A.

DUTY	HP	RPM	AMPS	VOLTS	HZ
CONT	200	1760	237	480	60
CONT	200	2700	241	480	52.5

CAT. NO.	1DDRPM282004		SPEC. NO.	P28R0810	
SER. NO.			FR.	RL 2858	
PH. 3	MAX. SAFE SPEED	3000	AMB.	40°C	MIN. AMB. -23°C
DESIGN NO.	11842A	TYPE	ENCL. DP		
S. F.	1.0	D. E. BRG.	733052030X		
ENCL. MOD.	FORCE VENT	D. D. E. BRG.	533052030X		

LR40567

PLANT 15

000613-006MY

QR CODE

LIFT MOTOR ONLY!
USE ALL EYEBOLTS!

30" MAX
SINGLE EYEBOLT OR LUG

45" MAX
MULTIPLE EYEBOLTS OR LUGS

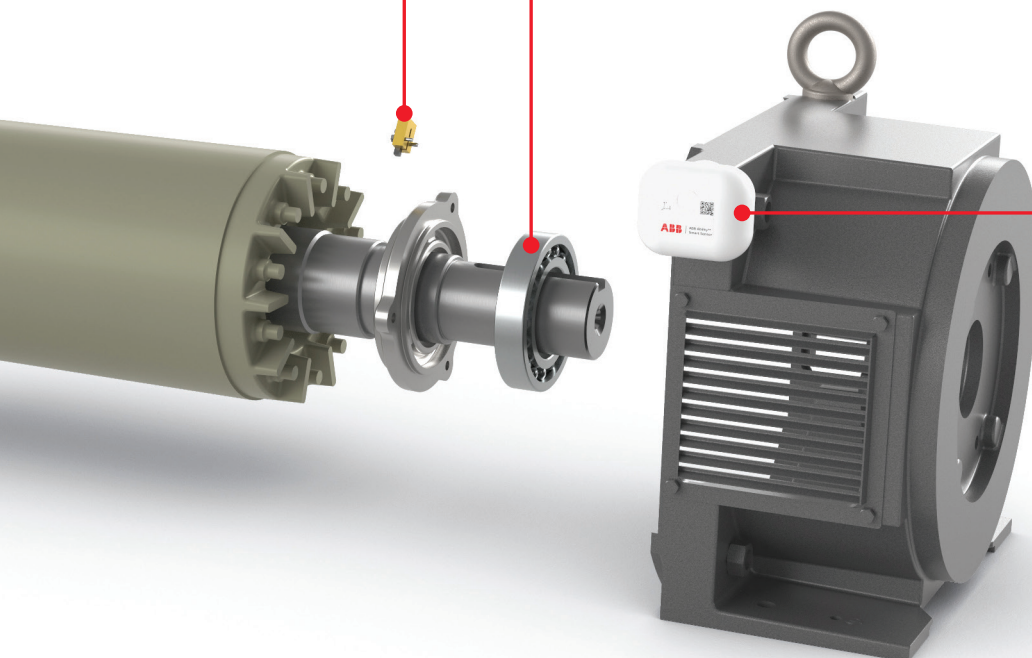
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DPFV enclosure

Shaft grounding

PLS – Positive Lubrication
Bearing System

ABB Ability™ Smart sensor
optional



Constant torque to base speed

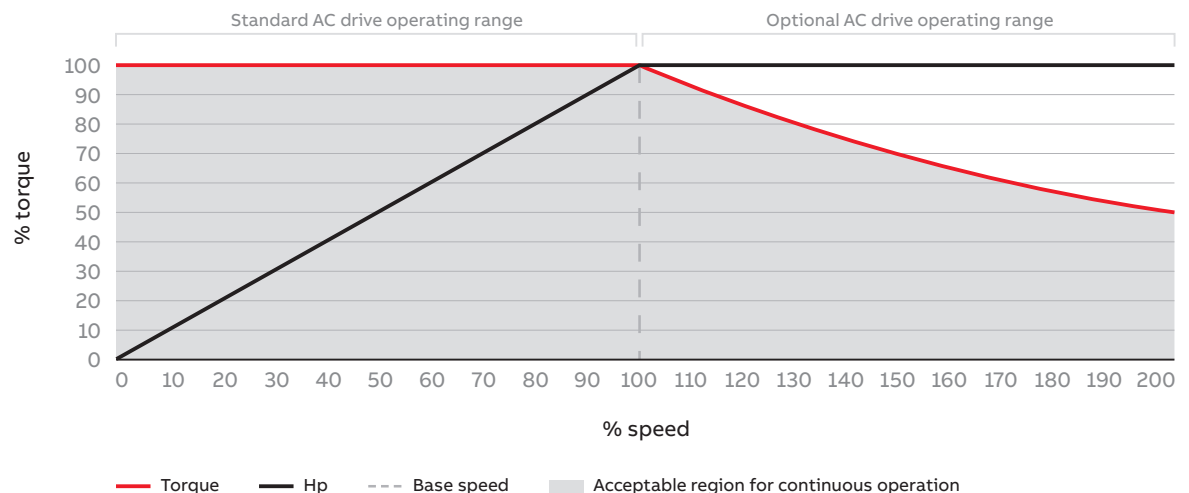
— 01 Continuous Constant Torque (CCT) to zero speed

Every RPM AC motor design is optimized for variable speed applications - not just a re-rate or over framing of a standard motor.

All RPM AC motors are designed to provide continuous constant torque from base speed down to and including zero speed. Unlike conventional sine wave motors, this means that at any speed below base speed, the RPM AC motor will generate full rated torque, run continuously and not overheat. Almost unbelievable, but true. Above base speed the RPM AC motor produces constant horsepower up to its maximum capabilities.

- Greater than 1000:1 turn down.
- Up to 200% maximum overload torque from zero to base speed for 1 minute.
- 2:1 constant horsepower above base speeds on most ratings.
- High torque to inertia ratio – up to 80% lower rotor inertia than the corresponding standard NEMA frame for better dynamic response.
- Custom power ratings, custom base speeds, and custom CHP speeds are available upon request.

— Speed/torque curve

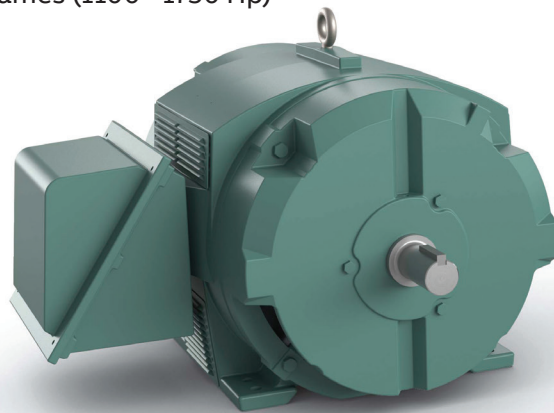


RPM AC vs. NEMA induction motors

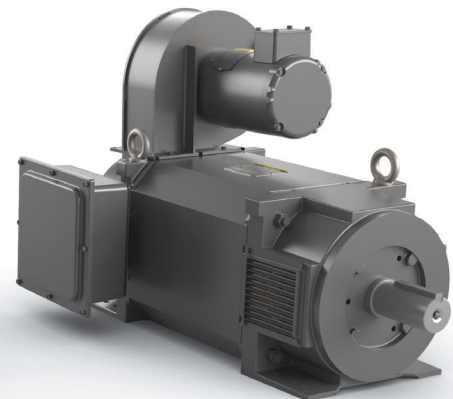
Drip-proof guarded force ventilated (DPFV) designs are ideal for compactness in relatively dry and clean environments. Up to three frame sizes smaller than corresponding NEMA ODP (open drip proof) fixed speed motors.

Optimum pole design

- 4 pole in RL210 - RL400 frames (3 - 600 Hp)
- 6 pole in RL440 frames (700 - 1000 Hp)
- 4 pole in RL5000 frames (1100 - 1750 Hp)



NEMA ODP

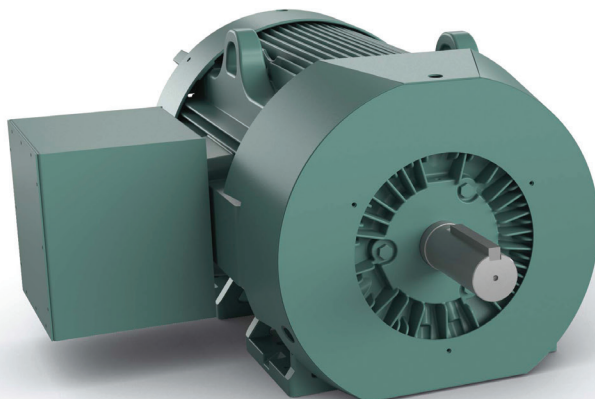


RPM AC DPFV

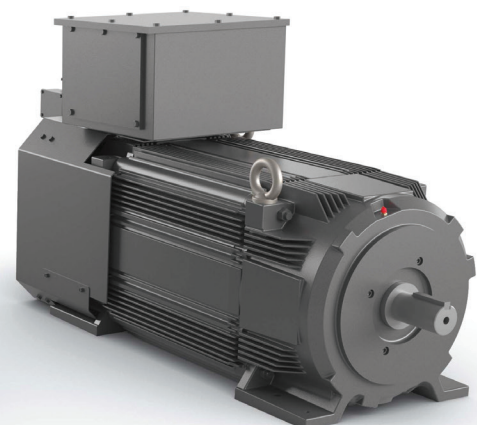


RPM AC totally enclosed motors provide the highest level of performance and additional protection from harsh environments. Offered in IP44, IP54, IP55 and IP56 with optional enclosure enhancements.

- Rugged laminated steel frame construction for FL210 - FL5800 frames up to 1000Hp



NEMA enclosed



RPM AC enclosed



Build your RPM AC

Customization made easy

You are no longer limited to conventional NEMA or IEC ratings. With the RPM AC Wizard tool, you design the motor that best satisfies your application requirements. You can select or input your unique horsepower, base speed, top speed, and overload requirements. With one click, the Wizard will design a motor that best fulfills your needs.

Step 1: Wizard for quick selection of frame sizes

Step 2: Configurator for custom selection matched to your application.

ABB Motor Builder Home Configurators ▾

RPMAC Motor

Find an option 🔍 5 options selected...

Basic Configuration ⚠️

Electrical

RPMAC - Wizard / Configurator Wizard ➡️

Motor Standard NEMA

Enclosure DPG-FV ➡️

Division None ▾

Rating ☒ HP ☐ KW

Custom Power Rating 1000

Custom Base Speed (RPM) 1800

Duty Cont ▾

Custom Voltage 460

Inverter Torque 1000:1 Constant Torque ▾

Frame Selection ➡️

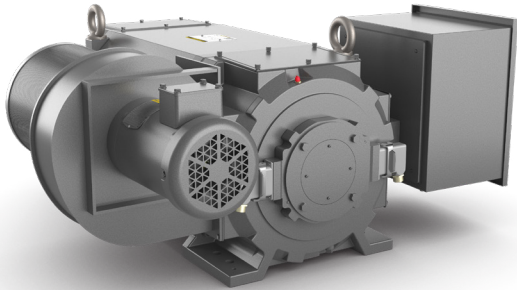
Frame Size	KVA	Amps	Rotor Inertia	Rotor Type
RL4461	961	1206	207	Induction
RL4070	0	0	100	Perm Magnet

ABB Drive Recommendation Yes ➡️

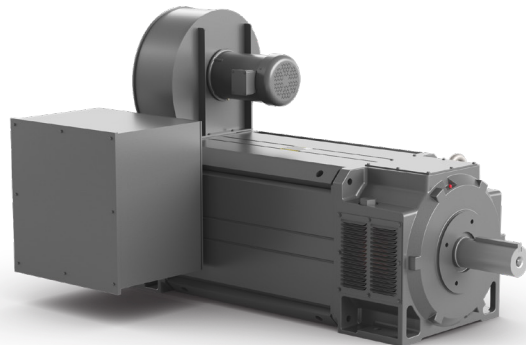
ABB Drive Number ACS880-07-1800A-5+C129F255H359 ➡️

Click [here](#) to visit the ABB Drives Site.

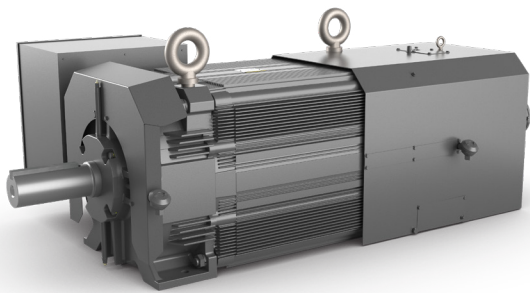
Selection Summary 🔴



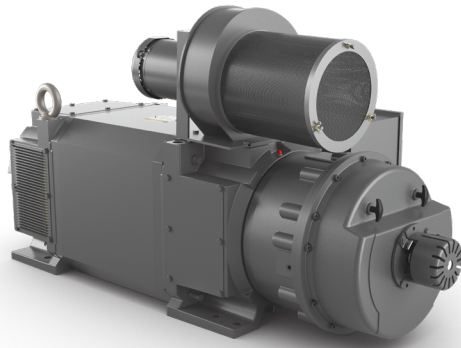
DPFV 360 frame F2 blower with filter, F1 conduit box and C-face encoder



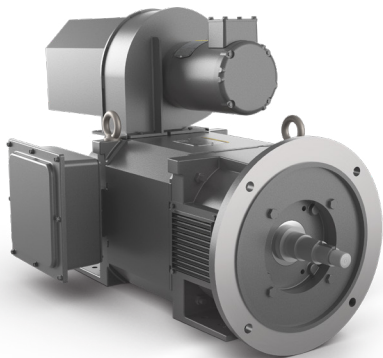
DPFV (RL5000 frame now available up to 1750 Hp)



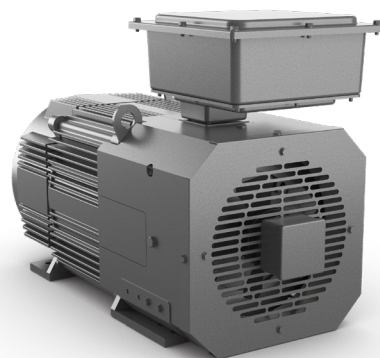
Totally enclosed fin laminated design
(5800 frame now available up to 1250 Hp)



DPFV 400 frame brake, blower, filter and encoder



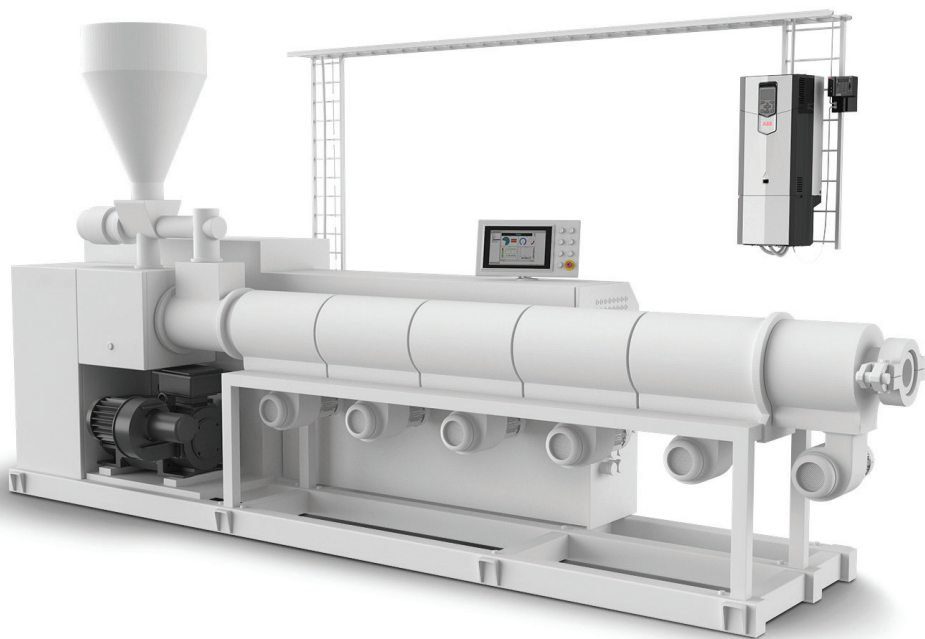
DPFV F3 blower, D-Flange and special shaft options



TEBC with F3 conduit box

Enclosure modifications and enhancements

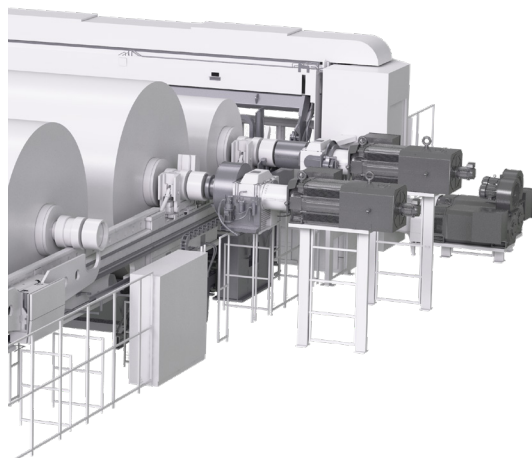
RPM AC is the ultimate AC variable speed motor, and it can be enhanced through our configurator options to meet your specific application needs. Whether you need separately ventilated air that is piped from an external source, a TEAO piggyback motor, or washdown duty (IP56) — we've got you covered.

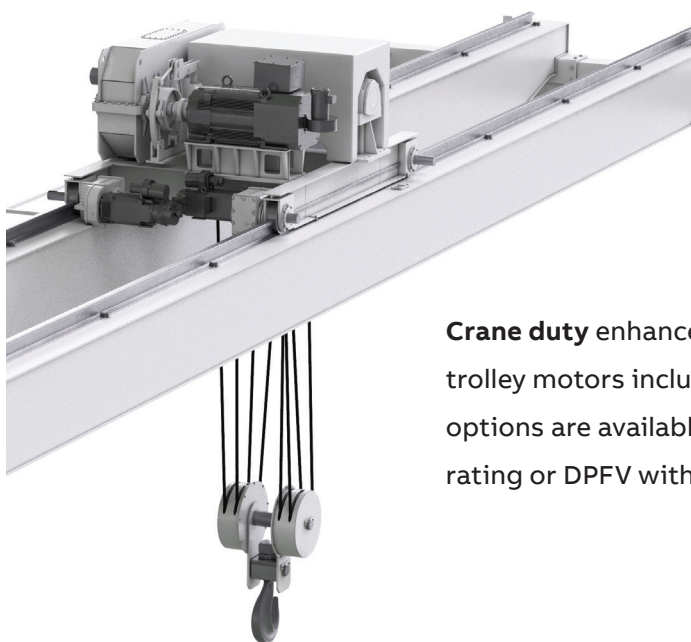


XT features

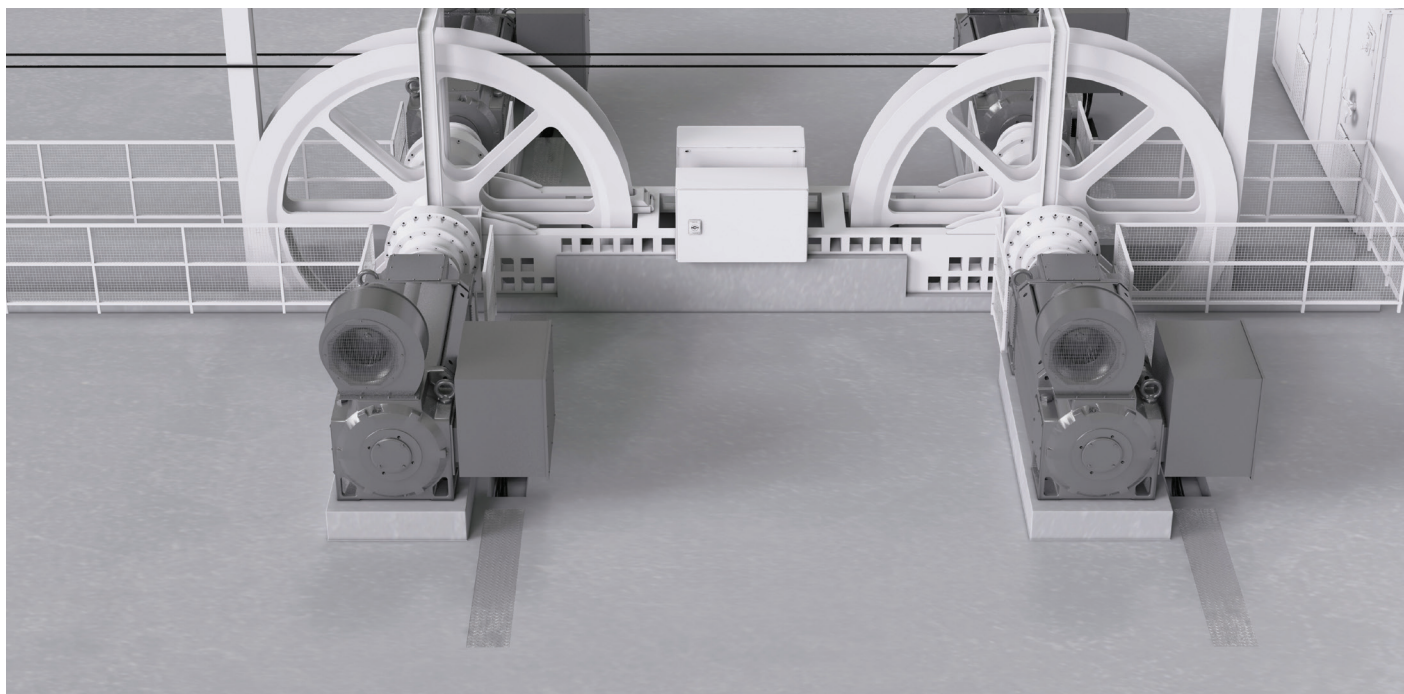
The Baldor-Reliance XT (or eXtra Tough) features are designed for operation in damp locations where the motor will be subjected to corrosive conditions. Typical applications are paper, chemical, petroleum, fertilizer and plastics industries.

Paper mill duty motors are designed for operation at the wet end of the paper mill and in harsh environments. Modification includes separately ventilated or totally enclosed motors in frames FL and RL 210/ FDL and RDL 132 and up. For DPV in harsh environments, VPI insulation systems are recommended.





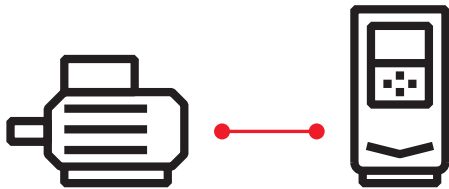
Crane duty enhancements for hoist, gantry and trolley motors include severe duty features. Two options are available, totally enclosed with IP56 rating or DPFV with IP23 rating and VPI insulation.



Outdoor duty / weatherproof is suitable for outdoor operations subject to direct weather conditions. Outdoor duty motors include space heaters to protect against condensation when the motor is not operating. Motor accessories such as brakes must be specified and priced as suitable for outdoor use. Standard encoders are not recommended for outdoor duty. Motors operating in dirty areas with fine abrasive dust, such as taconite, surrounding the motor should have dustproof / taconite features added in addition to this modification.

RPM AC and ACS880

ABB matched performance



Achieve IE5 (Ultra-Premium) efficiency levels

RPM AC is designed for variable speed applications and has been tested and proven effective with our ACS880 VFD. The permanent magnet rotor design, paired with an ACS880, allows users to minimize their power consumption, thus lowering their overall system operating costs.

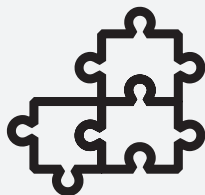


BROCHURE

**ACS880 VFDs and
RPM AC motors**

[READ MORE](#)

Better together



Power matched



Optimized
performance



RPM AC Extruder Duty

These motors are designed to provide features important to extruder applications, including insulated bearings, shaft grounding brush, winding RTDs and an extruder duty nameplate.

Quick ship program is also available.



ACS880

These compact drives offer precise control, flexible integration and broad compatibility with existing systems. ACS880 provides the latest in AC controls, allowing the drive to be incorporated into an extruder and enabling quick commissioning on site.



**Accurate
motor control**



One vendor

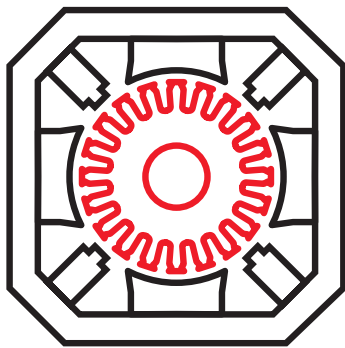


**Quick ship
motors and drives**

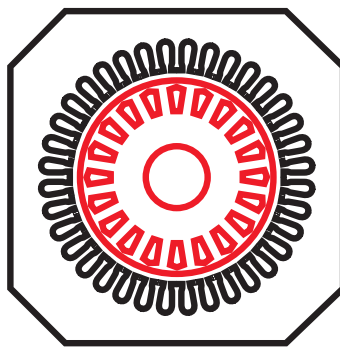
DC to AC conversion made easy

Rotor design

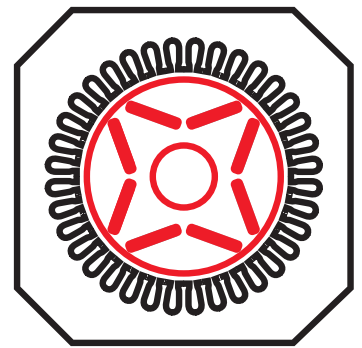
For RPM AC, you have the option of a standard induction rotor or a permanent magnet rotor which enables IE5 (Ultra Premium) efficiency in a torque dense design. These AC rotor designs allow for drop-in replacement of DC square framed motors.



DC motor



RPM AC induction rotor



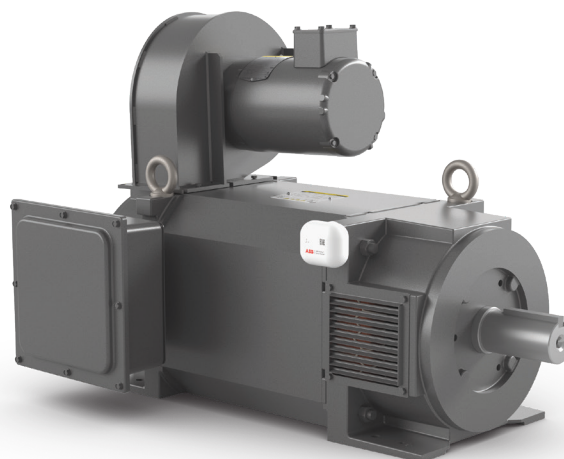
RPM AC PM rotor



ABB Ability™ condition monitoring

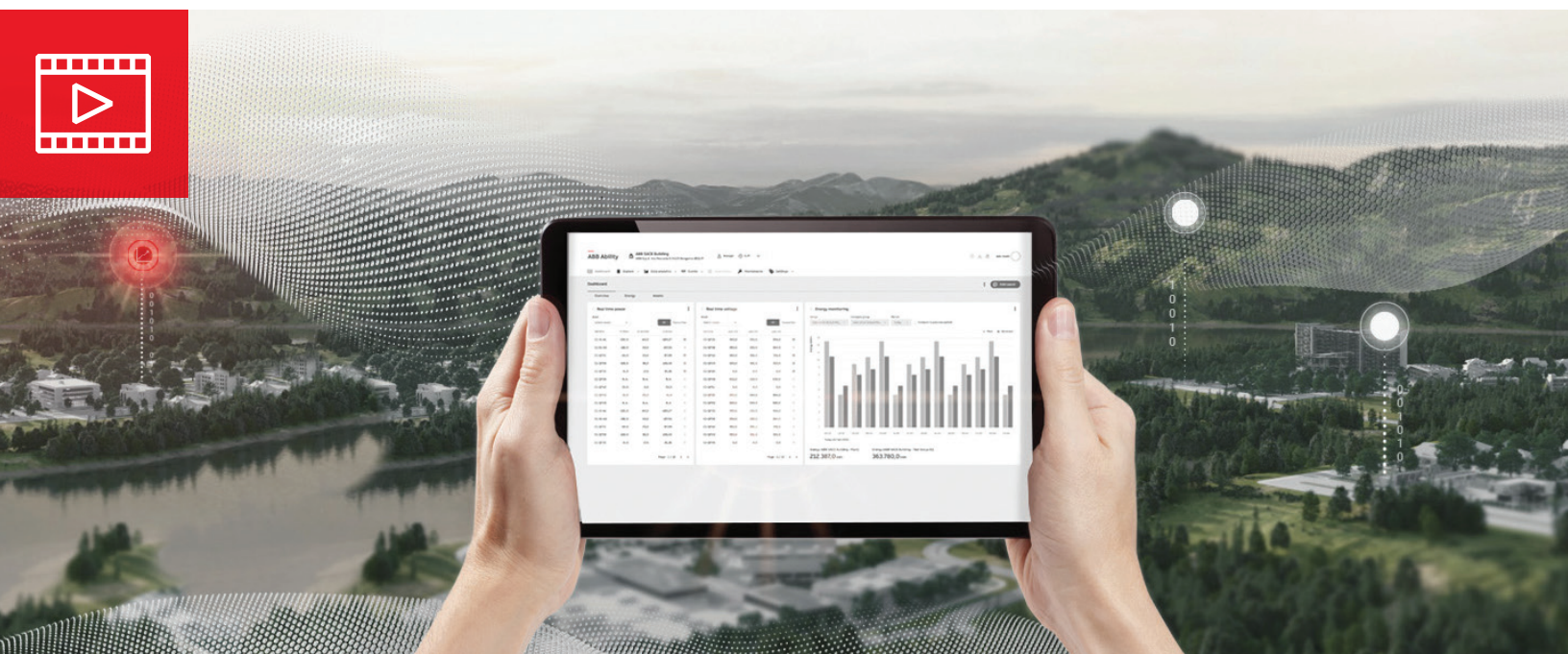
Extending the life of your motor

- Increased safety
- Increased productivity
- Reduced maintenance
- Eliminated unplanned downtime
- Easy to use



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.



RPM AC product family

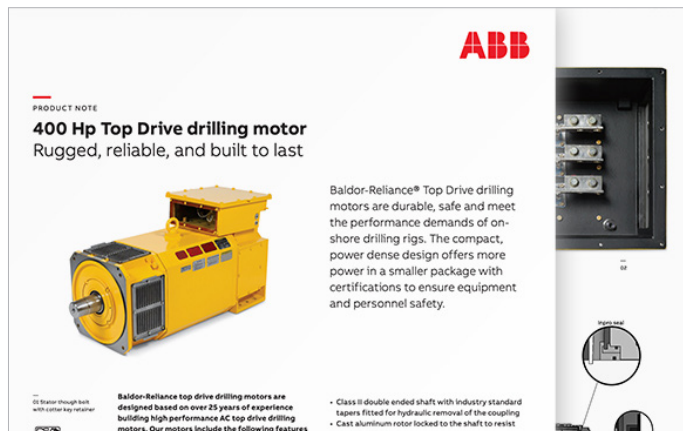
Product extensions that complete the lineup



RPM AC Extruder Duty

25 – 1000 Hp, FL1844 thru RL4473

Extruder Duty motors are available as a quick ship option and include insulated bearings, shaft grounding brush, winding RTDs, an Extruder Duty nameplate and VS gray paint color as standard features.



RPM AC Top Drive

400 Hp, L4046Y

Top drive drilling motors are durable, safe and meet the performance demands of on-shore drilling rigs. The compact, power dense designs offer more power in a smaller package with certifications to ensure equipment and personnel safety.



RPM AC Cooling Tower Direct Drive (CTDD)

7.5 – 335 Hp, FL2554Y thru FL5832Y

By combining the technologies of the RPM AC motor with permanent magnet (PM) salient pole rotor designs and an adjustable speed drive, the direct drive solution offers the benefits of variable speed control and eliminates the cost and maintenance required for traditional gearboxes or belted solutions.



ABB


PRODUCT NOTE
RPM AC CTDD motors
for air cooled heat exchangers



Baldor-Reliance® RPM AC CTDD (Cooling Tower Direct Drive) motors are a new approach to maintaining continuous availability of air-cooled heat exchangers for process cooling. By utilizing optimum pole winding technology, RPM AC CTDD motors operate at very low speeds with very high torque outputs.

Air cooled heat exchangers for process cooling are a challenging application. While the heat exchanger itself is a simple device, the requirement to maintain a high operational tempo with minimum downtime to

RPM AC CTDD motors also improve system efficiency. Not only are the losses from belts or gearboxes eliminated, the motor itself is very efficient. By utilizing a permanent magnet rotor, the direct drive



BALDOR • RELIANCE®

Cooling Tower Direct Drive (CTDD) Air Cooled Heat Exchangers

7.5 – 75 Hp, FL250 thru FL400

CTDD motors are new approach to maintaining continuous availability of air-cooled heat exchanger for process cooling. The exchanger fans are mounted directly to the motor shaft, eliminating the need for speed reduction device such as pulleys, belts and gearboxes.



ABB

VARIABLE SPEED MOTORS
Air cooled condenser motor and drive system
For industrial applications



BALDOR • RELIANCE®



Air Cooled Condenser (ACC)


50 – 250 Hp FL440 thru FL5800

With an ACC motor, the fan couples directly to the motor and is controlled by a unique AC drive to provide optimal speed and air cooled condenser performance that runs quieter with reduced electricity consumption.




ABB

PRODUCT NOTE
RPM XE – eXtreme efficient
AC motors



Ideally suited for continuous operation on pumps and compressors, the Baldor-Reliance® RPM XE is an innovative, NEMA drop-in replacement motor which achieves leading efficiency and lower lifetime costs. This synchronous motor is unique as it starts across the line and offers IE4+ efficiencies. The motor is also capable of operating on a standard inverter without feedback.



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RPM XE

10 – 100 Hp, HL215T thru HL405T

Ideally suited for continuous operation on pumps and compressors, the RPM XE is an innovative, NEMA drop-in replacement motor and offers IE4+ efficiencies.



Local availability, quality and reliability - because it all counts.

When you choose a Baldor-Reliance motor, you get a motor backed by more than 100 years of heritage. Our RPM AC motor is built in Gainesville, GA (USA) – and our facilities are committed to quality and dependability so that we can provide you with a reliable motor every time. Over 90% of Baldor-Reliance motors meet the Buy American Act.

Every year, thousands of customers make the choice to trust ABB. Your success is our success, and we work with you every step of the way to deliver a motor that exceeds your expectations.

Some RPM AC motors are available for a Quick Ship program - please contact your local ABB representative for more information.





SUCCESS STORY

Power and precision: upgrading to electric thruster system utilizing RPM AC and VFD:

- Safer operation
- Requires less maintenance
- Runs quieter
- Environmentally friendly

[READ MORE](#)



AC Laminated Frame - RPM AC Motors product page

Motor Builder