Large AC motors

ABB Large AC (Above NEMA) motors are designed with higher than standard torques and low vibration levels which allows for a longer and safer operating life in applications requiring 250 Hp or greater, all while meeting the industry’s reliability and efficiency standards. The ABB line of Large AC motors offer constructions which make them suitable for petro-chemical plants, mines, quarries, foundries, pulp and paper plants, waste management facilities, as well as many other processing industry applications.

Key features:
- Low vibration, cast iron frame construction.
- Minimum NEMA Design B torques except 2 pole is 1/2 NEMA, allowing for operation across a variety of applications
- 1.15 SF as standard
- Class F insulation with Class B (80°C) temperature rise at rated power
- V-Ring slinger for increased bearing protection
- Designed for longevity with a 3 year warranty
- ABB motors meet or exceed all efficiency requirements for US, Canada and Mexico regulations

250 - 1750 Horsepower

<table>
<thead>
<tr>
<th>Product line</th>
<th>NXR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame size range for products</td>
<td>5008-7110 (1)</td>
</tr>
</tbody>
</table>

### Electrical features
- **Efficiency**: Baldor-Reliance motors meet or exceed all efficiency requirements for US, Canada and Mexico regulations
- **Torque**: Meet or exceed NEMA Design B torques (2)
- **Service factor & temperature rise**: 1.15 service factor – continuous
- **Class F insulation with Class B rise @ 1.0 service factor**
- **Inverter**: Inverter ready - meets NEMA MG1 Part 31.4.4.2 (3)

### Mechanical features
- **IP code**: IP54 enclosure ingress protection
- **Frame**: Cast iron frame & endplates
- **Fan covers**: Fabricated steel fan covers
- **Shaft seals**: Shaft seals: Neoprene V-ring slinger – DE & ODE
- **Bearings and lubrication**: Ball bearings designs
- **Paint**: 2 part modified epoxy with enhanced UV protection topcoat
- **Conduit box**: Conduit box: fabricated steel. Oversized and rotatable in 90 degree increments
- **Nameplate**: Nameplate: Stainless steel with embossed raised letter

### Other key features
- **Accessories**: Winding resistance temperature detectors (RTDs) - 100 Ohm platinum - 2 per phase
- **Certifications**: Nameplate marked Class I, Division 2, Groups C, D
- **Warranty**: Warranty - in years from date of manufacture

S = Standard
O = Optional

(1) Frame sizes range from 5008-7110 ANSI mounting.
(2) For medium voltage motors and motors with frames 5000 and larger standard torque values are represented in NEMA MG-1 2014 part 20.10.1.
(3) For use on VFD, it is highly recommended to insulate the drive end bearing and add a shaft grounding system in order to address concerns regarding shaft currents that may be imposed upon the motor by a VFD as defined in NEMA MG1, Part 31.4.4.3. Motor is suitable for use on Inverter only in conjunction with an isolation transformer or other common mode voltage elimination. 1.0 service factor when used on VFD.

For more information visit baldor.com or new.abb.com/motors-generators
Above NEMA NXR rib cooled motors
250 thru 1750 Hp

<table>
<thead>
<tr>
<th>Main specifications:</th>
<th>Features:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output power: 250 to 1750 HP</td>
<td>- High efficiency for lower total cost of ownership</td>
</tr>
<tr>
<td>Frame size: 5008 - 7110</td>
<td>- High power density for more Hp per pound</td>
</tr>
<tr>
<td>Number of poles: 2 to 8</td>
<td>- Optional ingress protection level available up to IP55</td>
</tr>
<tr>
<td>Voltages: 460V, 2300/4000V</td>
<td>- Compact size for smaller overall installations</td>
</tr>
<tr>
<td>Frequency: 50 Hz Reratable, 60 Hz, VSD</td>
<td>- Rigid, weight-optimized frame is engineered to minimize vibration</td>
</tr>
<tr>
<td>Cooling: IC411</td>
<td>- Fixing points make accessory fitting straight forward</td>
</tr>
<tr>
<td>Protection: IP54 (optionally IP55)</td>
<td>- Flexible repositioning of main terminal box on site by ABB service personnel</td>
</tr>
<tr>
<td>Enclosed material: Cast iron</td>
<td>- Designed for easy deployment of ABB condition monitoring systems</td>
</tr>
<tr>
<td>Bearings: Anti-friction</td>
<td>- Based on more than 125 years of experience manufacturing electric motor</td>
</tr>
<tr>
<td>Motor types: NXR</td>
<td></td>
</tr>
<tr>
<td>Mounting: Horizontal</td>
<td></td>
</tr>
<tr>
<td>Ex protection types: Hazardous area location Class I Div 2 area capable</td>
<td></td>
</tr>
<tr>
<td>Standards: NEMA feature set and mounting dimensions</td>
<td></td>
</tr>
</tbody>
</table>

NEW! NXR motors can now be configured and ordered through the online tool, MachSize.

Your local Sales Channel can assist you with configuring and ordering your NXR motors. Performance software and drawings can also be provided immediately using MachSize.

ABB's latest generation of industrial purpose rib cooled motors (NXR) for the above NEMA market offer high power density, customizable motors with built-in serviceability, allowing for a compact footprint and improved efficiencies.

Engineered motors

ABB's configurable design of the rib cooled motors are available as N-series config to order motors – NXR 5000 - NXR 5800 and NXR 7100.

N-series motors are engineered to meet demanding applications, while also being easy to configure, purchase, install and maintain.

The NXR series can be configured with different bearing configurations, various temperature monitoring devices and other equipment to meet the customer’s specific needs.

NXR motors are available for both direct-on-line (DOL) and variable speed drive (VSD) operation.

High power density for compact installations

The NXR sets a benchmark for the industry, offering more HP per pound than has been achieved before with rib cooled motors. High power density means that for a given output you can often use a motor one frame size smaller than with conventional products. This helps to save space and enables more compact installations.

ABB's engineering team achieved high power density by leveraging the proven performance of the NXR frame rib cooled platform which has an internal cooling loop and maximized cooling fin coverage.

Internal air circulation has been increased throughout the motor, while the external cooling is maximized through surface area optimization. Auxiliary wiring can be routed inside the motor as well as out side the motor, depending on the customers preference and requirements. The end shields have also been designed for optimized cooling.

Easy configurability

The NXR product family is designed for modifications to be quick and easy. This means you can reduce the number of spare units needed if your plant is running several motors with the terminal boxes on different sides.

- Ready-made fixing points on side of motor make mounting accessories straightforward
- End shields are pre-engineered for accessories such as instrumentation
- Auxiliary terminal box can be mounted on either side and positioned along the motor

Built-in serviceability cuts service downtime

Built-in serviceability makes maintenance straight-forward, and therefore reduces downtime.

- Cable routing ensures that the cables are clearly routed and always secured in the same position.
- Pre-designed fixing points enable easy mounting of condition monitoring systems. These systems collect and analyze operating data from the motors, providing early warnings of problems before failures can occur.

Optimized for variable speed drive use

By controlling the motor with a variable speed drive, you can optimize the motor's performance, minimize energy consumption and control your process more accurately. ABB's motor-drive packages are easy to install and operate.

For more information visit baldor.com or new.abb.com/motors-generators

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Configurable options available for Above NEMA NXR products in MachSize

Options listed below may not align with Motor Mod Express®. Please use the online MachSize tool to properly configure and order the correct options.

- M1 – Balance
- M17 – Industrial Red Motor Paint
- M17 – White Motor Paint
- M17 – Traffic Yellow Motor Paint
- M17 – Charcoal Gray Motor Paint
- M17 – Industrial Gray Motor Paint
- M17 – Black Motor Paint
- M17 – Blue Motor Paint
- M2B – Ball to Roller Conversion
  - M2D – Bearing Temperature Detector (100 Ohm)
- M2F – Insulated Bearing
- M26A – Protection from Tropical Environment
- M26C – Corrosion Treatment of Windings
- M27B – Upgrade to IP55
- M12B – Labyrinth seal (DE)
- M26 – Insulated Bearing
- M26A – Protection from Tropical Environment
- M26B – Labyrinth seal (ODE)
- M26C – Corrosion Treatment of Windings
- M28B – Labyrinth seal (ODE)
- M29J – Shaft Modification
- M31D – Add Encoder
- M32B – Witness CSA C390 Method 1: (IEEE 112 Method B)
- M32B – Witness CSA C390 Method 1: (IEEE 112 Method B)
- M39C – Shaft Ground Brush (Non- Hazardous area only)
- M39E – Division 2 Ground Probe
- M40A – Provision for Vibration Detection (1/4-28)
- M41A – Vibration Switch “Robert Shaw”
- M41C – Velocity Transducer 1 each end B/N 9200
- M41C – Velocity Transducer 2 each end B/N 9200
- M41C – Velocity Transducer 3 each end B/N 9200
- M41D – Accelerometer 1 each end B/N 33040
- M41D – Accelerometer 2 each end B/N 33040
- M41D – Accelerometer 3 each end B/N 33040
- M43A – Smart Sensor

NEW! Shaft extension modifications

This new enhancement in MachSize will allow the user to select from predefined options to meet competitors shaft extension allowing drop in replacements.

NXR motors can now be configured online using ABB’s MachSize tool.

The NXR product can be configured by using the modifications to meet the customers needs. Your local Sales Channel can assist you with configuring and ordering your NXR motors. Performance software and drawings can also be provided immediately using MachSize. Short lead times for configured motors allow quick delivery to the customer.

CSA certification – Class I Division 2 Hazardous area

Modifications are available for Above NEMA NXR 5000 – NXR 5800 – NXR 7100

Modification numbers are for reference only, features are selectable in the MachSize tool.

For more information visit baldor.com or new.abb.com/motors-generators
Ammonia refrigeration compressor motors, three phase, open drip proof, 460 and 2300/4160 volt, foot mounted

500 to 1000 Hp

Features:
- Low noise design
- 1.15 SF
- High efficiency designs
- Rated for across the line start
- Class F insulation with Class B temperature rise
- Cast iron frame for reduced vibration and increased strength

Applications:
- Ammonia refrigeration compressors
- Pumps

Standard 2300/4160 volt motor

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</tbody>
</table>

(a) See notes on inside back flap.

Cast iron frame

Custom induction motors available up to 30,000 Hp, contact your sales representative for additional information.
Conversion base kits are available in the Motor Accessories section.