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## Motors for the water industry

Resilient, safe and sustainable solutions for moving water every day

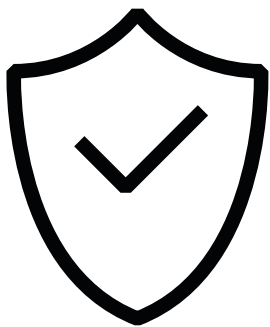
**BALDOR • RELIANCE**

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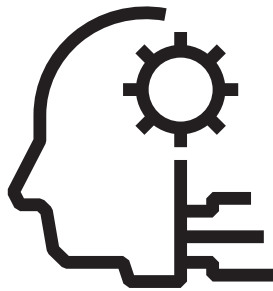
# Motors in water and wastewater treatment

The motor is the heartbeat of your water treatment operations. It powers your pumps and runs your aerators, and it needs to be reliable to operate in some of the most dirty and wet environments.

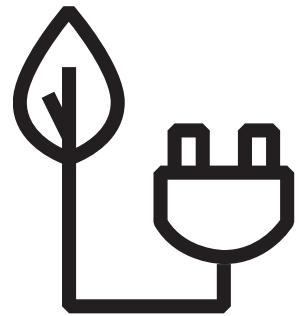
Baldor-Reliance® is a name that is synonymous with quality and a brand you can trust. We offer a full portfolio of jet and close-coupled pump motors, highly efficient variable speed motors as well as corrosion resistant options for added ingress protection.



**Safe**



**Smart**



**Sustainable**



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# 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 motors are designed and built right here – 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.

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.

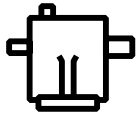




# Finding improvement every step of the way



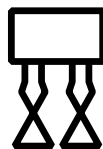
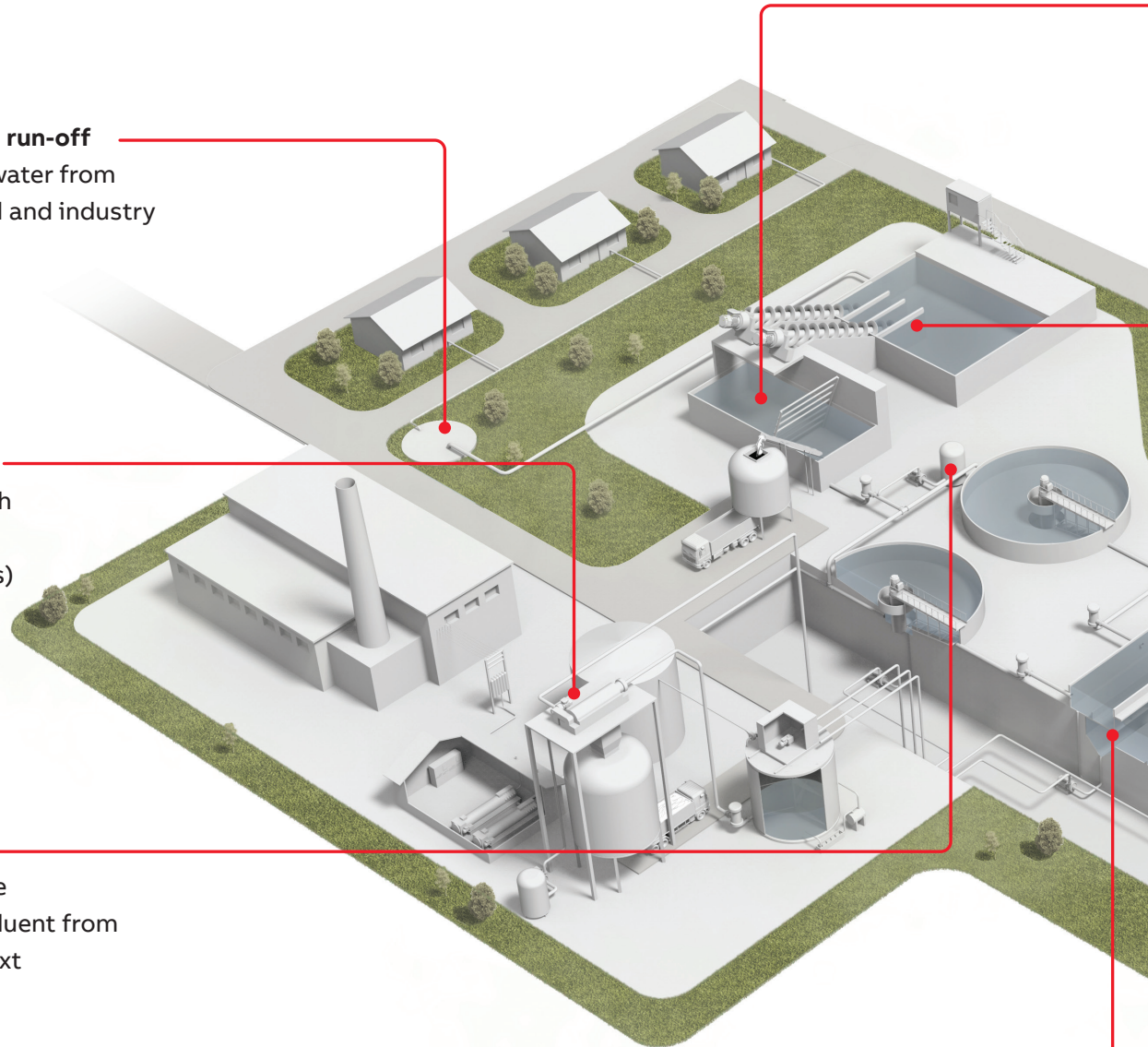
**Wet-well storm water run-off**  
Collecting raw wastewater from domestic, commercial and industry



**Anaerobic digesters**  
Process through which bacteria breaks down organic matter (solids)

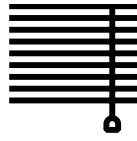


**Pumping**  
Found throughout the plant to transport effluent from one process to the next



**Agitation and mixing**  
From rapid and flash mixing to sludge mixing, this process is critical to cleaning the water





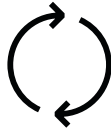
**Bar screens and grit removal**

Removes large debris from wastewater



**Screw conveying**

Process for removing sand, silt and grit from water



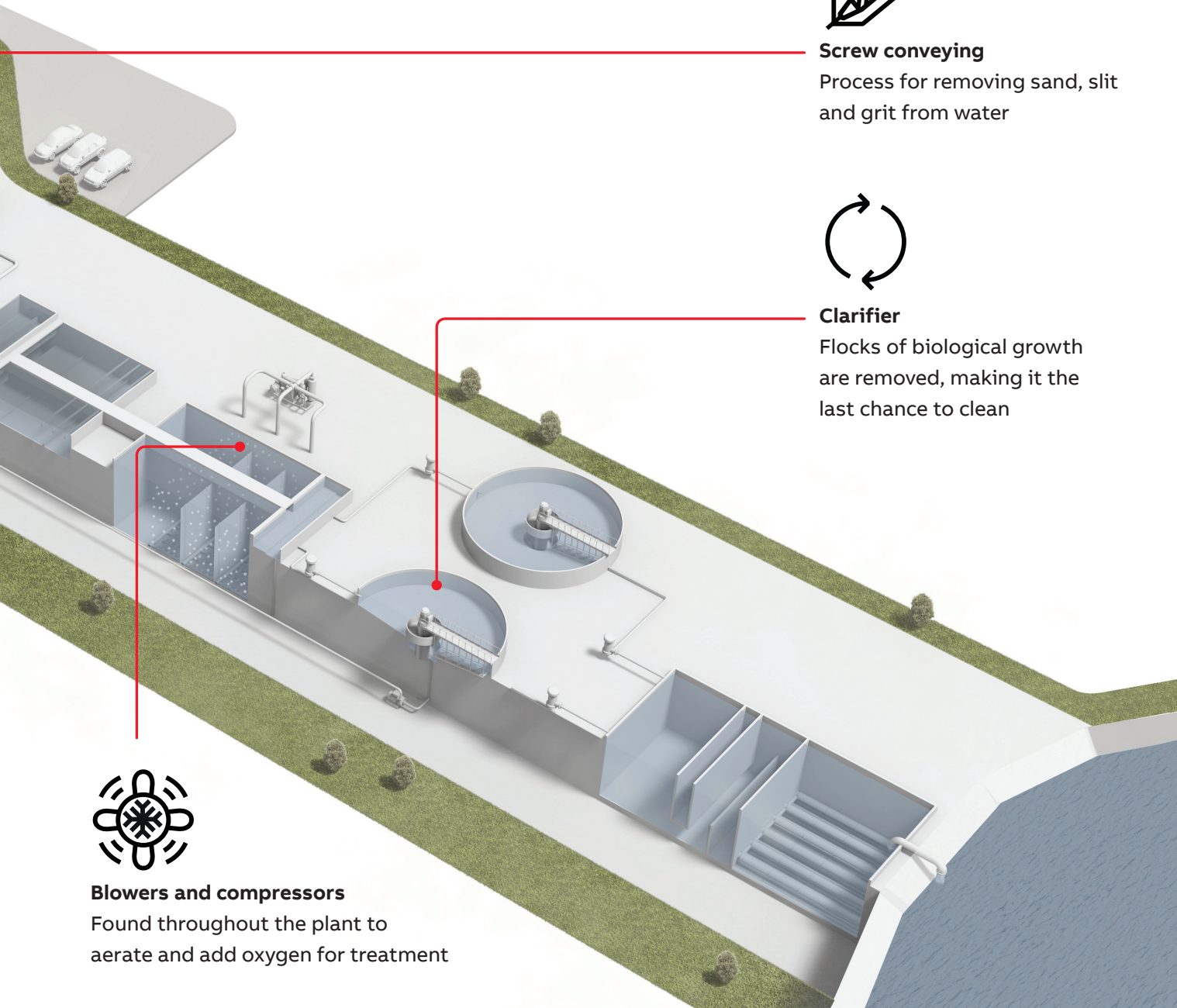
**Clarifier**

Flocks of biological growth are removed, making it the last chance to clean



**Blowers and compressors**

Found throughout the plant to aerate and add oxygen for treatment



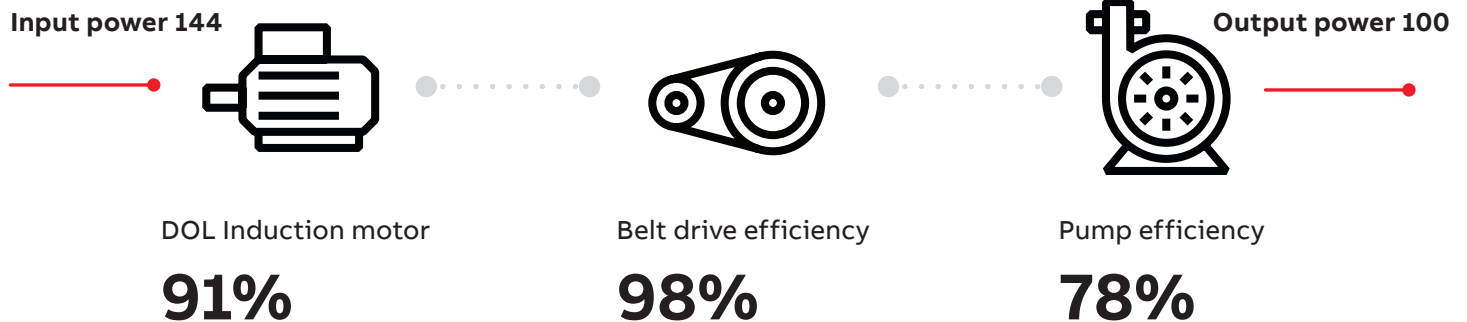


# Variable speed motors for energy management

Over 60% of motors are over a decade old, and most run directly across the line (DOL), without the benefit of a variable frequency drive (VFD).<sup>1</sup> VFDs can help motors run much more efficiently. In fact, by adding a VFD to a standard mid-sized motor you can typically reduce power consumption by 25%.<sup>2</sup>

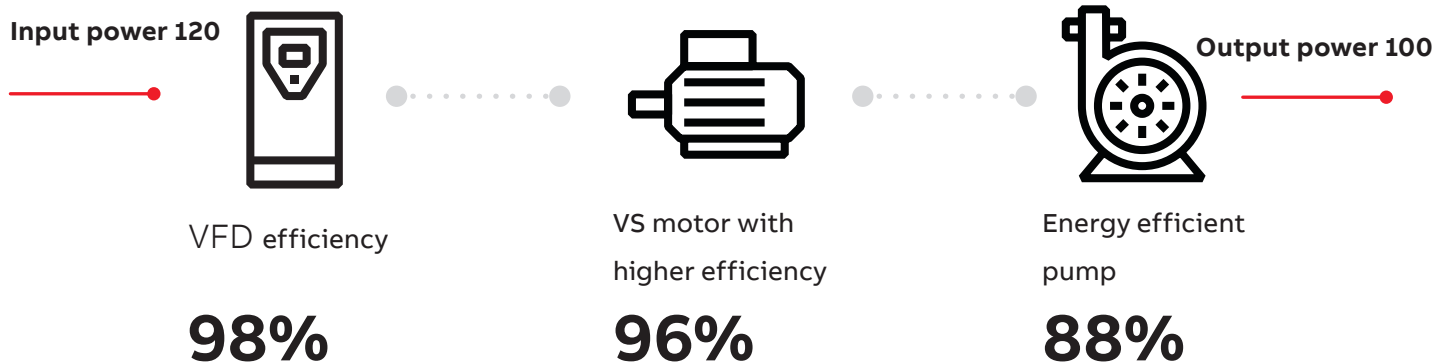
## Conventional pump systems

System efficiency = 69%



## Energy-efficient pump system

System efficiency = 83%



### MOTOR SAVINGS CALCULATOR

<sup>1</sup> Lawrence Berkeley National Laboratory, U.S. industrial and commercial motor system market assessment report, Volume 1: characteristics of the installed base, January 2021, Page 67, permalink: <https://escholarship.org/uc/item/42f631k3>

<sup>2</sup> U.S. Green Building Council, 2018.

<sup>3</sup> VSDs: Lawrence Berkeley National Laboratory, U.S. industrial and commercial motor system market assessment report, Volume 1: characteristics of the installed base, January 2021, Executive summary, permalink: <https://escholarship.org/uc/item/42f631k3>



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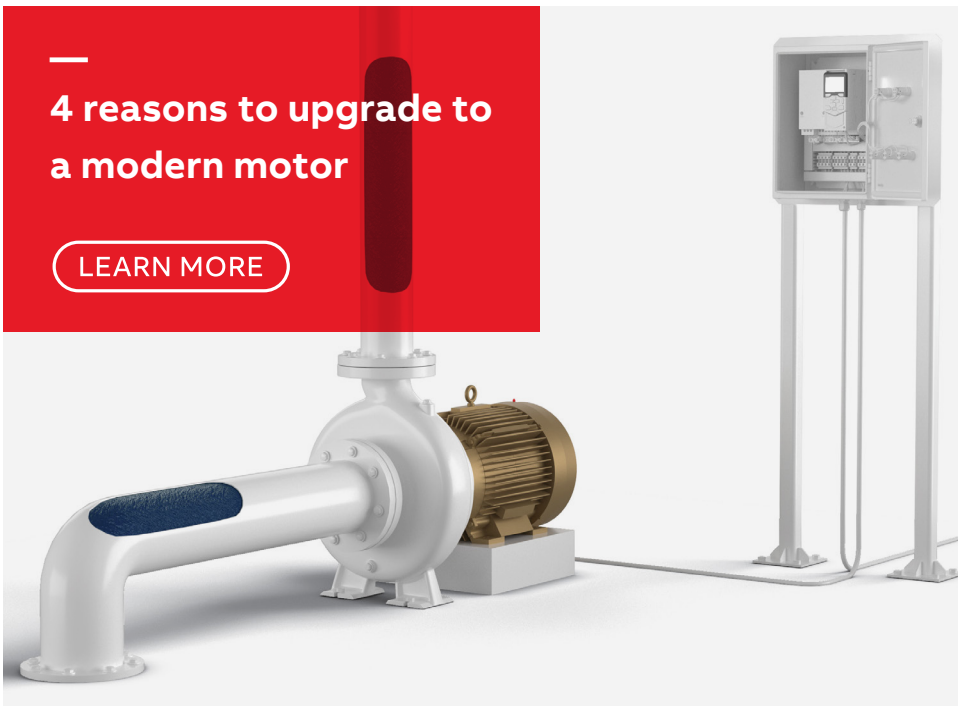
# Safe and sustainable motor upgrades on VFD

In the US, on average, only 16% of industrial motor systems use a VFD.<sup>3</sup> In order to achieve higher efficiencies, motors rely on VFD. A VFD controls the frequency and voltage of the electricity fed to the motor. A VFD can vary the torque and speed of the motor so that no energy is wasted through mechanical speed controls including valves, gears, belts, throttles or brakes.

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**4 reasons to upgrade to a modern motor**

[LEARN MORE](#)



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ARTICLE

**How motor upgrades can improve pump system efficiency**

[READ MORE](#)





# Sustainability

## Through remote condition monitoring

ABB is committed to being your partner in sustainable water conservation and flow: from municipal water and wastewater treatment, desalination, irrigation and industrial water treatment.

Our products meet the demand with advanced technology, solution and service which provide increased energy efficiency, reliability, uptime, longer machinery life and less maintenance.

We understand that the cost of not being in operation due to unplanned and interrupted water-flow is costly. ABB Ability™ condition monitoring helps you avoid these unwanted costs.

**Cost of not in operation**

Operational costs

Capital costs

**Total cost of ownership**

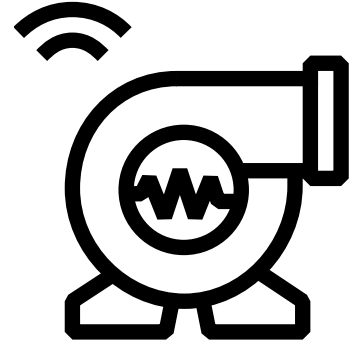
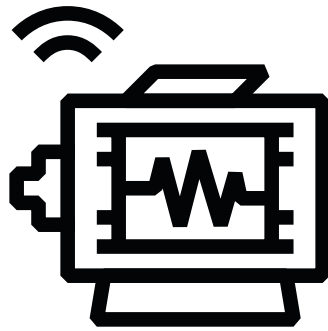
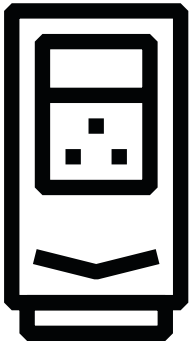




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# ABB Ability™ Digital PowerTrain

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.



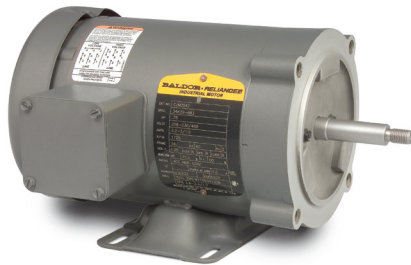
# Motors for the water industry

ABB's line of Baldor-Reliance pump motors serve customer needs from commercial swimming pools to very demanding water / wastewater and petrochemical applications. The motors are available locally in a variety of enclosures and ratings. These motors are designed to the same reliable industrial standards that ABB customers have come to expect.

## Jet pump

1/3 - 3Hp (.25 - 2.2kW)

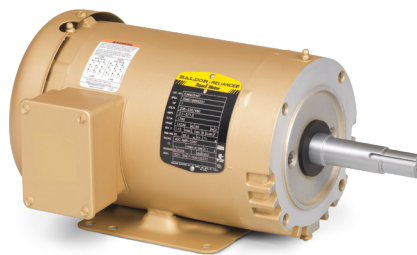
Used for commercial and industrial pumping applications. All come with corrosion resistant stainless steel shaft.



## Close-coupled motors

1-75 Hp (.75 - 56kW)

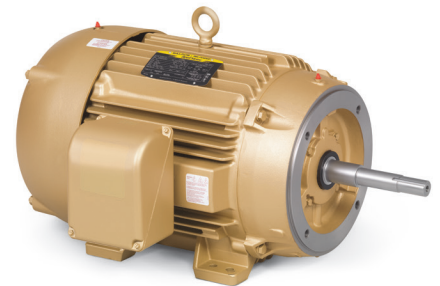
For commercial and industrial pump applications requiring JM, JP and West Coast Fit.



## Inverter-Duty close coupled pump

1 - 50Hp (.75 - 37kW)

Internal AEGIS bearing protection ring used for bearing current mitigation ideal for variable speed pumping applications.



SUCCESS STORY

**ABB Solution enables reliable automation of wastewater treatment plant**

[READ MORE](#)





**P-base vertical solid shaft pump**

3 - 75Hp (2.2 - 56kW)

Severe duty construction for harsh environment. Normal, medium and high thrust applications. (IP55)

**Submersible motors**

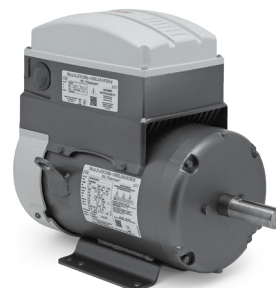
1 - 100Hp (.75 - 75kW)

Ideal for slurry pumps and wet pit applications, this motor can be submerged for continuous duty in water or sewage. (IP68)

**EC Titanium™**

1 - 20Hp (.75 - 15kW)

Highly efficient variable speed AC motor available in the market today. Available as integrated motor-drive package or stand-alone motor design. (IP54)

**General purpose**

1/12 - 250Hp (.06 - 186kW)

Designed for use in a wide variety of industrial applications, these motors are durable and reliable (IP44)

**Severe Duty XT**

1 - 300Hp (.75 - 224kW)

Versatile motor with severe duty features - this motor is ideal for wastewater applications. (IP54)

**Close coupled pump washdown**

25 - 75Hp (19 - 56kW)

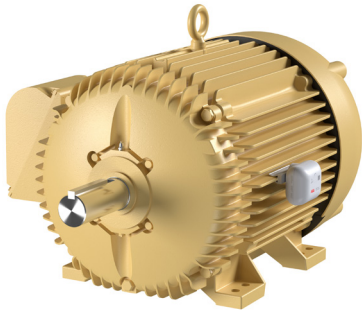
IP55 totally enclosed pump ideal for wet and corrosive environments. (IP55)



# Lower operating cost

## Optimizing total cost of ownership

Partnering with ABB provides access to some of the world's most innovative technology and thinking.



### It all starts here:

Select the right product

### Choose a brand that is preferred and available

Over 90% of Baldor-Reliance motors meet the Buy American Act

### Easy installation saves time



### High quality product prevents downtime:

- **Construction** – heavy duty cast-iron motors
- **Protection** – premium sealing to ensure ingress protection
- **Quality** – dynamically balanced rotor to reduce noise and increase bearing life
- **Efficient** – premium efficient electrical designs
- **Smart and safe** – Remote condition monitoring available for predictive maintenance and increased safety through minimal contact





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SUCCESS STORY

## **Baldor-Reliance motors improve performance in wastewater plants**

- VLR (Vertical Loop Reactor) upgrade helps to biological treatment process
- Energy optimization for pumps and blowers at Glasgow wastewater plant
- Flocculators get an upgrade with VSD driven motors

[READ MORE](#)



# Keep your treatment plant running

From spare parts and technical support to cloud-based remote monitoring solutions, ABB offers the most extensive service offering to fit your needs. The global ABB service units, complemented by external authorized value providers, from a service network on your doorstep. Maximize performance, uptime and efficiency throughout the life cycle of your assets.

We understand that your operation needs to be running without interruptions. Fast and quick response times are key to being your trusted service provider.

ABB service teams and authorized value partners can provide help whether it is with installation commissioning or aftermarket replacement.

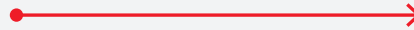
We also provide preventive maintenance programs to help maximize the operational performance, uptime and efficiency of your motor-driven system. Count on ABB as your drive train experts!



**Installation & commissioning**



**Service agreements**

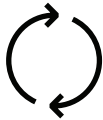


**ABB Ability™ solutions**

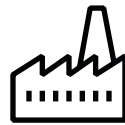


**Training**





Replacements



Maintenance



## 24/7 service network

"I need operational excellence, rapid response, improved performance and life cycle management."



Technical support & repairs



Spares & consumables



Extensions, upgrades & retrofits



**Motors water web page**

**Drives water web page**

**Motors and Generators web page**