



Matched Performance™
Medium voltage drives and motors for
energy efficiency and process control

Advantages of a drive and motor system

Energy consumption is by far the biggest cost associated with electric motors. With the potential to save more than half of their used energy, it's no surprise that variable speed drives operating with motors are now commonplace in industry.

In addition to energy savings, motors powered by drives also deliver operational flexibility and superior performance in a variety of process applications.

High Efficiency for low cost of operation

While designing for performance, ABB and Baldor know that electricity consumption represents the primary ownership cost of an electric motor. ABB and Baldor take great pride in standard designs that typically exceed industry norms for custom designed high efficiency motors. This did not just happen. Our high efficiency motor designs are the result of engineering excellence, years of field experience, R&D testing and acclaimed dedication to leadership in energy efficiency.

Technology Leadership

With more than 200 years of combined experience, ABB and Baldor have developed, designed and manufactured millions of motors and variable speed drives, installed in every type of application. Our combined experience in putting them together affords customers a unique value opportunity. The latest technology and experience has been implemented in the latest designs, to achieve optimal energy saving and process control.

Industry solutions focus

Nobody knows more about their process than the customer. That is why ABB and Baldor employ dedicated Industry teams whose sole purpose is working directly with Industry users, consultants and OEMs. These experienced engineers are dedicated to understanding the customer's specific performance requirements and translating this into solutions and products that exceed customer expectations.



Leadership in industrial power and control

The combined strength of ABB and Baldor

Matched Performance

To further ensure design integrity and optimum performance, the ACS 2000 drive and Baldor•Reliance motors have undergone a rigorous set of combined test in the Kings Mountain test facility, bringing the quality story full circle. Our Matched Performance products ensure performance predictability on every ABB/Baldor customer application.

Single point of contact

The combined power of the ABB/Baldor drive and motor offering is geared to deliver on customer expectations. Together, we can deliver motor-drive solutions that support our customers technical and commercial needs, from quotation, through delivery and service, over the entire product life-cycle.

Installation and commissioning

Proper installation and commissioning of the equipment, done by qualified and certified commissioning engineers, reduces start-up time, increases safety and reliability and decreases life cycle costs. In addition, operators can be given practical training by experienced specialists on site.

With its advanced software tools, such as the commissioning wizard, start-up of an ACS 2000 and Baldor•Reliance motor is fast and easy, which minimizes plant downtime.

Training

We provide comprehensive training for our motors and drives products. A range of training programs is offered from basic tutorials to programs tailored to the customer's specific needs.

Life cycle management

ABB's life cycle management model maximizes the value of the equipment and maintenance investment by maintaining high availability, eliminating unplanned repair costs and extending the lifetime of the system. Life cycle management services include:

- spare parts and product support throughout the life cycle
- maintenance contracts for improved reliability
- remote monitoring and advanced diagnostic tools
- functionality upgrades

Global network, local presence

After-sales service is an integral part of providing the customer with a reliable and efficient motor drive system. The ABB Group of companies operates in more than 100 countries and has a worldwide network of service operations.

Made in the USA

ABB's ACS 2000 drives and Baldor•Reliance motors are manufactured in the United States. Not only does that reduce delivery times and transportation costs, it also affords opportunities where content requirements demand locally produced products.



Baldor•Reliance Motors

A passion for reliability drives Baldor's design process

With zero tolerance for downtime and 24/7 production schedules, customers expect predictable performance. With this in mind Baldor•Reliance motors for variable speed applications are engineered for reliable performance in the most demanding industrial conditions.

Unique design capabilities have been nurtured over the years as our engineers have worked closely with customers in petrochemical, paper, mining, metals, power generation and water industries to seek application specific solutions that exceed customer needs and expectations.

Dependability built into every motor

- Aluminum rotor die casting machines designed to eliminate casting porosity for superior rotor bar and end ring integrity
- A free floating squirrel cage for copper bar rotors that will not fail from expansion and contraction
- The Baldor•Reliance flagship Enduraseal insulation system, where every winding is given an immersion test per NEMA MG1, Part 20.18.1; optimized for inverter duty
- a superior patented PLS bearing lubrication system that positively lubricates when the motor is in any position and has multiple grease relief locations preventing over-greasing
- Insulated bearings on both ends of the motor and shaft grounding brush provide additional protection for the motor and driven equipment bearings
- Winding RTDs and space heater included in all ratings as standard



ACS 2000 Medium Voltage Drives

Simple and reliable motor control for a wide range of applications

The ACS 2000 is designed for high reliability, easy installation and fast commissioning reducing the total cost of ownership.

The integration of an Active Front End (AFE) combined with multilevel control, the ACS 2000 is an Ultra Low Harmonic (ULH) design that minimizes line side harmonics without the use of expensive, specialized transformers with the added benefit of a smaller overall package.

The ACS 2000 direct-to-line configuration combines the cost savings of a transformerless variable speed drive system with the benefits of Voltage Source Inverters (VSIs), including excellent availability and reliability, high and constant power factor and superior dynamic control performance.

The heritage of ABB's VSI topology, along with a patented HV-IGBT-based multi-level control, provides a proven track record for reliable and motor friendly medium voltage AC drive performance.

Key product features

- Suitable for use with or without an input isolation transformer
- Meets IEEE 519 and IEC 61000-2-4
- Direct-to-line configuration (transformerless) allows 3 in and 3 out power cabling for quick and easy installation
- Multi-level switching topology and built-in dv/dt filtering provides motor-friendly operation
- Regenerative option and ability to maintain near unity power factor across the entire speed range provides additional energy savings
- Modular construction provides high reliability and low maintenance costs



Drive and motor packages

4kV direct to line

Motor							Drive			
P _N		Motor Data					ACS 2000 type code	I _N	kVA	Frame
HP	kW	RPM	Enclosure	Bearings	A	Frame		A		
250	224	3600	TEFC	Anti-Friction	34	G5008	ACS 2040-1L-AN1-a-0C	40	280	1
		1800	TEFC	Anti-Friction	34	G5008				
		1200	TEFC	Anti-Friction	34	G5010				
300	224	3600	TEFC	Anti-Friction	40	G5008	ACS 2040-1L-AN1-a-0C	40	280	1
		1800	TEFC	Anti-Friction	41	G5008				
		1200	TEFC	Anti-Friction	40	G5010				
350	261	3600	TEFC	Anti-Friction	45	G5010	ACS 2040-1x-AN1-a-0D	47	326	1
		1800	TEFC	Anti-Friction	47	G5008				
		1200	TEFC	Anti-Friction	47	G5012				
400	298	3600	TEFC	Anti-Friction	52	G5010	ACS 2040-1x-AN1-a-0E	54	373	1
		1800	TEFC	Anti-Friction	53	G5010				
		1200	TEFC	Anti-Friction	53	G5012				
450	336	3600	TEFC	Anti-Friction	58	G5010	ACS 2040-1x-AN1-a-0F	61	420	1
		1800	TEFC	Anti-Friction	60	G5010				
		1200	TEFC	Anti-Friction	59	G5012				
500	373	3600	TEFC	Anti-Friction	64	G5010	ACS 2040-1x-AN1-a-0H	67	466	1
		1800	TEFC	Anti-Friction	66	G5012				
		1200	TEFC	Anti-Friction	66	G5012				
600	447	3600	WP11	Anti-Friction	76	E5010	ACS 2040-1x-AN1-a-0L	81	560	1
		1800	TEFC	Anti-Friction	79	G5012				
		1200	WP11	Anti-Friction	78	E5012				
700	522	3600	WP11	Anti-Friction	90	E5808	ACS 2040-1x-AN1-a-0Q	94	653	1
		1800	TEFC	Anti-Friction	91	G5012				
		1200	WP11	Anti-Friction	90	O5810				
800	597	3600	WP11	Sleeve	106	O5808	ACS 2040-1x-AN1-a-0R	108	746	1
		1800	WP11	Anti-Friction	104	O5810				
		1200	WP11	Anti-Friction	105	O5812				
900	671	3600	WP11	Sleeve	113	O5810	ACS 2040-1x-AN1-a-0T	121	839	1
		1800	WP11	Anti-Friction	115	O5810				
		1200	WP11	Anti-Friction	116	O5812				
1000	746	3600	WP11	Sleeve	128	O5810	ACS 2040-1x-AN1-a-0V	135	933	1
		1800	WP11	Anti-Friction	132	O5810				
		1200	WP11	Anti-Friction	128	O5812				

Notes:

Typical motor power in normal duty; I_N: Continuous current rating allowing 110% I_N at 40°C for 1 minute every 10 minutes; pump and fan loads. Contact your Baldor District Office for drive and motor sizing for constant torque loads.

Drive and motor packages

4kV direct to line

Motor							Drive			
P _N		Motor Data					ACS 2000 type code	I _N	kVA	Frame
HP	kW	RPM	Enclosure	Bearings	A	Frame		A		
1250	933	3600	WP11	Sleeve	160	O5810	ACS 2040-2x-AN1-a-0Z	168	1166	2
		1800	WP11	Anti-Friction	164	O5812				
		1200	WP11	Anti-Friction	159	O5812				
1500	1119	3600	WP11	Sleeve	191	O5810	ACS 2040-2x-AN1-a-1C	202	1399	2
		1800	WP11	Anti-Friction	191	O5812				
		1200	WP11	Sleeve	195	6811				
1750	1306	3600	WP11	Sleeve	221	O5812	ACS 2040-2x-AN1-a-1F	236	1632	2
		1800	WP11	Anti-Friction	221	O5812				
		1200	WP11	Sleeve	215	6813				
2000	1492	3600	WP11	Sleeve	247	O5812	ACS 2040-2x-AN1-a-1H	269	1865	2
		1800	WP11	Sleeve	258	6811				
		1200	WP11	Sleeve	246	6813				

Notes:

Typical motor power in normal duty; I_N: Continuous current rating allowing 110% I_N at 40°C for 1 minute every 10 minutes; pump and fan loads. Contact your Baldor District Office for drive and motor sizing for constant torque loads.

Contact us

ABB Inc.

Medium Voltage Drives

16250 W. Glendale Drive

New Berlin, WI 53151

Tel: 800-752-0696

Fax: 262-785-3322

E-Mail: mv.drives.sales@us.abb.com

www.abb.us/drives

Baldor Electric Company

A Member of the ABB Group

5711 R.S. Boreham Jr. Street

Fort Smith, AR 72901

Tel: 479-646-4711

Fax: 479-648-5792

www.baldor.com