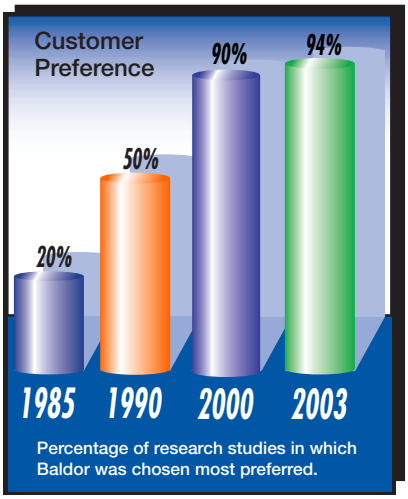
IEC 50 Hertz
Three Phase AC Motors

BALDOR®

BALDOR • DODGE • RELIANCE

Why Baldor?

For over 85 years, Baldor has strived to provide customers with the best value and reliability in industrial electric motors. That dedication shows in customer preference for Baldor motors. To be considered as the most preferred...



Baldor offers the industry's broadest line of stock products.
Save valuable time with just one call to Baldor. We offer more than 7,000 stock motors, drives, generators and gearboxes.

Energy-efficiency leader. We began lowering the energy consumption of our motors in the 1920s, long before others were even talking about it. Today, our expansive line of NEMA Premium® efficient motors ranges through 2000 kW. Baldor's line offers customers the highest overall efficiency levels in the industry. Baldor Electric continues to be a global leader in energy efficiency, working with government efficiency programs in Australia, Singapore, UK, Canada and the United States. In addition to our activities with NEMA Premium® motors, Baldor also works closely with the Standards for Energy Efficiency of Electric Motor Systems (SEEEM) in development of motor test and rating standards and is a member of CEMEP (European Committee of Manufactureers of Electric Machines and Power Electronics).

Baldor products are available at more locations than any other brand.
Our globally located offices across North America, Europe, Asia, Australia and South America offer immediate availability of Baldor products through thousands of distributors.

Continuous innovation to improve reliability.
Baldor leads the motor industry in applying new technologies and materials to improve motor reliability. Baldor was the first to introduce ISR® (Inverter Spike Resistant®) magnet wire, which is up to 100 times more resistant to voltage spikes. Baldor was first to use Exxon's new Polyrex® EM grease, which protects motor bearings better, providing improved lubrication life, greater shear stability, and superior resistance to washout, rust and corrosion.

Industry's shortest lead times/Flexible manufacturing.
Baldor has the industry's shortest lead times on custom motors – just ten working days. Our unique FLEX FLOW manufacturing process lets us produce any order in any quantity, quickly and efficiently.

Industry's best information. Only Baldor offers customers so many choices for product information with a wide variety of catalogs and product brochures,
a CD-ROM electronic catalog, the Baldor Web site (www.baldor.com), or you may talk to a Baldor customer service person at one of our sales offices.

Table of Contents

Baldor Electric Company and Energy Efficiency

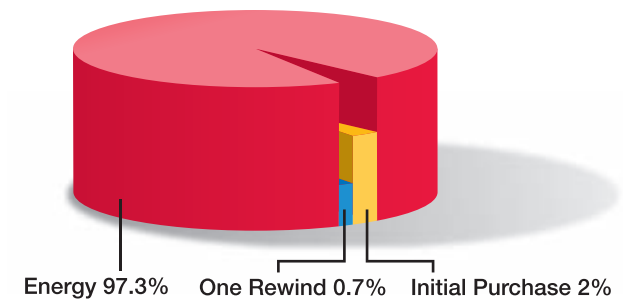
The history of energy efficiency is the real heritage of Baldor Electric Company. In 1920, the founders of our company said that they would "build a better motor which requires a minimum of energy" to produce its work. For the past eight decades, Baldor has led the industry in developing products that deliver greater performance and reliability while using less electricity. From the company's founding in the 1920s through today, Baldor has introduced one efficiency-enhancing advancement after another. In fact, many of the advancements initiated by Baldor have later been adopted as industry standards.

The issue of energy efficiency for electric motors and drives is becoming increasingly relevant as electricity costs continue to rise.

Companies are now competing in an environment of rising energy costs and the uncertainty of available electricity. Global regulations on carbon emissions require equipment and processes to consume less energy than in the past. These dynamics require the kind of forward-thinking industrial motor, drive and generator supplier that anticipates customer needs and delivers products that save money and improve productivity. That company is Baldor.

Why is Energy Efficiency Important?

Electric motor driven equipment represents the primary user of electricity in industry and therefore a major contributor to greenhouse gasses. While little considered in the past, it's clear to see why the efficiency of motors is becoming increasingly important.



A typical example of this can be seen in the United Kingdom, where there is an installed base of 11 million motors with a combined capacity of 90GW. Simply increasing the average efficiency of motors in the United Kingdom by just 1%, would result in an annual energy saving of almost 1.5TWh and a savings of over 600,000 tons in CO_2 emissions.

In the United States, electric motor driven systems installed in industrial processes consume some 679 billion kWh, or 63 percent of all electricity used, according to a Department of Energy report published in 1998. The report reveals that industrial motor electricity consumption could be reduced by up to 18 percent if companies were to apply "proven efficiency technologies and practices". A follow-up survey indicated that actual savings were in reality much higher than this estimated figure by adapting motor efficiency upgrades and addition of adjustable speed drives for variable torque loads, such as pumps and fans.

Many countries have established Minimum Efficiency Performance Standards (MEPS) for electric motors. These MEPS standard establish a minimum efficiency for motors within that country.

MEPS exist in North America, Brazil, Canada, China, Malaysia, Australia, New Zealand, and Mexico. Other countries throughout the world are in the process of enacting their standards. With huge emphasis on carbon emissions, it is expected that many countries will adopt MEPS in the near future. The EU has a voluntary agreement, however is considering target efficiency levels and how MEPS might be adopted.

Motor Efficiency Measurement

When one looks at a motor's efficiency measurement, it should accurately measure the amount of energy consumed to produce a certain amount or work.

To be an accurate efficiency measurement, it should take into account all losses within the motor.

These losses are nominally separated into five categories:

- Iron Core Losses – Magnetic losses in laminations, inductance and eddy current losses.
- Stator Resistance – Current losses in the windings
- Rotor Resistance – Current Losses in the rotor bars and end rings
- Windage and Friction – Mechanical drag in bearings and cooling fans
- Stray Load losses – Magnetic transfer loss in the air gap between the stator and rotor

There are different test methods that are currently used throughout the world and due to the test methods they cannot be directly compared to one another, which can make it rather confusing.

Test methods IEC 60034-2 and IEC 61972 assign a specific value to stray load losses rather than completely measuring the losses.

Test methods IEEE 112 and CSA C390-98 actually compare measured input and output watts giving a true measurement of the motor's actual efficiency. The North American standard test for motor efficiency is IEEE Standard 112, Method B. The equivalent Canadian Standards Association (CSA) test is C390-98 and is also accepted by the U.S. Department of Energy.

Efficiency Standards

There is a real need to improve energy efficiency and reduce greenhouse gasses. To this end, many countries around the world have implemented mandatory Minimum Efficiency Performance Standards (MEPS) or have them scheduled for implementation soon. Where this is not the case some countries have allowed industry to adopt voluntary standards.

Australia and New Zealand have defined two mandatory levels of MEPS, both have different efficiency tables when measured using the different test methods IEEE 112, IEC 61972 or IEC 60034-2. MEPS2006 is now the minimum standard efficiency for electric motors whose efficiency levels are comparable with EFF1 (EU) and EPAct (US). There is also MEPS2005 classed as High Efficiency and is comparable with NEMA Premium® (US).

In Europe, CEMEP (European Committee of Manufacturers of Electrical machines and power Electronics) defined an energy rating system with 3 bands. The Standard Efficient motors are EFF3, Improved Efficiency motors are EFF2 and High Efficiency motors are EFF1. The EFF1 efficiency levels are comparable to MEPS2006 (AUS/NZ) and EPAct (US) efficiencies. CEMEP makes no definition for the higher efficiency motors comparable to MEPS2005 (AUS/NZ) or NEMA Premium® (US) designs.

In North America, the National Electrical Manufacturers Association (NEMA) publishes Standard MG 1 that defines two levels of motor efficiency: Energy Efficient (EPAct level) comparable to MEPS2006 (AUS/NZ) and EFF1 (EU). There is also a higher level NEMA Premium® comparable to MEPS2005 (AUS/NZ) efficiency levels.

As you can see later in this brochure, we have two motor ranges that cover all today's requirements for energy efficient motors.

Metric-E® – where applicable exceed the minimum requirements for the listed national minimum efficiency levels.

EU	EFF1 labeling scheme
UK	Enhanced Capital Allowance Scheme (ECA) WIMES
Australia	MEPS2006
New Zealand	MEPS2006
Canada	EPAct
USA	EPAct
Mexico	EPAct

Super-E® – where applicable exceed the minimum requirements for the listed national minimum efficiency levels.

EU	EFF1 labeling scheme & future Premium
UK	Enhanced Capital Allowance Scheme (ECA) WIMES
Australia	MEPS2005
New Zealand	MEPS2005
Canada	NEMA Premium®
USA	NEMA Premium®
Mexico	NEMA Premium®

Baldor Electric is the leader in the production and sale of NEMA Premium® motors and has sold higher efficiency, premium level IEC motors for many years.

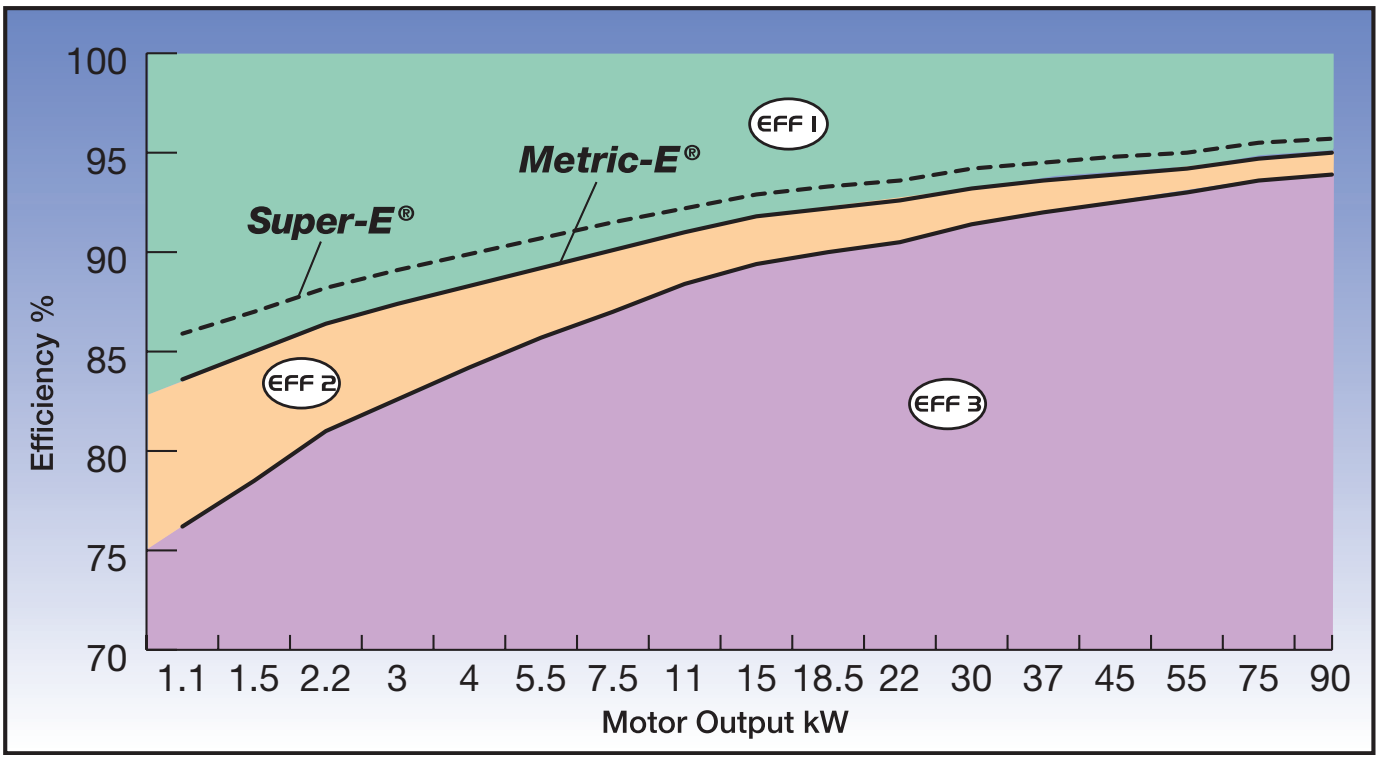
Baldor Electric continues to be a global leader in energy efficiency, working with government efficiency programs in Australia, Singapore, UK, Canada and the United States. In addition to our activities with NEMA Premium® motors, Baldor also works closely with the Standards for Energy Efficiency of Electric Motor Systems (SEEEM) in development of motor test and rating standards. We are a member of CEMEP (European Committee of Manufacturers of Electric Machines and Power Electronics) and also a stakeholder on the EU Energy Using Product (EuP) Directive Preparatory Study.

Trust Baldor Electric's many years of energy efficiency experience along with our high quality motor and drive products to help your company save energy and reduce carbon emissions.

We have tools such as the Baldor Energy Savings Tool® (BE$T) to help your company make the calculations to show potential savings. This free program is downloadable from www.baldor.com/support/energy_savings.asp.

If you are an OEM, Baldor can help you provide the most energy efficient solutions for your customers. Downloadable from www.baldor.com.

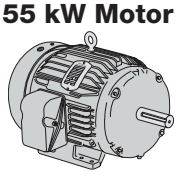
Efficiencies



NOTE: Efficiency per IEC 60034-2

Life Cycle Costs – Electric Motor versus Automobile

Previously in this brochure, we discussed the life cycle cost of an electric motor. Only 2% of its life cycle cost was the purchase price, 97% was the cost of electricity for operation. A similar comparison could be made between an electric motor and an automobile. The auto has a high purchase price but relatively low operations costs (petrol). The motor's cost is low but has an annual operating cost (electricity) that is over eight times its initial price.

	Car* 	55 kW Motor 
UK Pounds		
Purchase Price	£ 20,000	£ 2,600
Annual Use	12,000 miles	8736 Hrs/Yr
Efficiency	34.9 MPG	93.0%
Fuel/Energy Cost	£ 4.09/gallon	£0.043/kWh
Annual Operating Cost	£ 1,245	£ 22,216
Capital Cost as % of Purchase Price	6.2%	854%
EURO		
Purchase Price	€ 29,000	€ 3,770
Annual Use	20,000 km	8736 Hrs/Yr
Efficiency	8.1 Ltr/100km	93.0%
Fuel/Energy Cost	€ 1.22/Litre	€ 0.057/kWh
Annual Operating Cost	€ 1,976	€ 29,449
Capital Cost as % of Purchase Price	6.82%	781%

*Based on Audi A4 Saloon 2.0L

Metric-E® and Super-E®

Electrical Design Characteristics

Specification	Description
Efficiency	High efficient EFF 1 Metric-E® and premium efficient Super-E® designs per IEC 60034-2 are standard, providing reduced operating cost. Efficiency as tested per IEEE 112b is also shown on the nameplate for 60 Hz performance.
Operating Voltage	230/380-415 volts through 4 kW, through 380-415 (YΔ) on larger ratings. Motors are available in a wide range of voltages, three phase and single phase. All motors designed to ± 15% voltage variance.
Rated Frequency	Motors are designed and built for operation at 50 Hertz ± 5 Hertz.
Adjustable Speed	Suitable for use with Inverter power, 20:1 speed range – constant torque on most ratings < 75 kW.
Service Factor	1.00 service factor standard for Metric-E® high efficiency, and 1.15 for Super-E® premium efficiency.
Lamination	Low carbon, premium electrical grade steel lamination
Winding	Motors have ISR® Inverter Spike Resistant® 200˚C moisture resistant copper magnet wire.
Insulation System	Cross linked polyethylene or glass silicone Class F sleeving on lead wires, Nomex or Dacron-Mylar-Dacron Class F slot liner and top sticks, all dipped and baked in polyester phenolic varnish. High potential test voltage is twice rated voltage plus 1000 volts for a period of one second.
Temperature Rise	All motors operate at or below a Class B temperature rise at rated load with a Class F insulation system, providing extended motor life. In addition, all motors 11 kW and higher are equipped with winding thermistors.

Mechanical Design Characteristics

Specification	Description
Enclosures	Available in Totally Enclosed Fan Cooled (TEFC) IP55. Cast iron frames for rugged use.
Mounting	Motors are available in (Rigid Base) IEC-B3, (Flanged) IEC-B5 and (C-Face) IEC-B14 mounts.
Conduit Box	Conduit Box is mounted in the right hand (facing shaft) position. IEC 6-pin terminal block.
Cooling Fan	All motors have a non-sparking polypropylene external cooling fan standard. (Meets Div. II and EEXN)
Rotor	High pressure aluminum die cast, precision balanced.
Shaft Material	High strength cold rolled steel. Machined run-out tolerance maximum 0.025 mm.
Bearings	Motors have regreasable ball bearings on frame size D160 and larger.
Lubricant	Exxon Polyrex®EM.
Balance Specifications	All motors balanced to IEC Grade N specifications or better.
Drain Plugs	Non-corrosive condensation drain plugs standard on motor frame D160 and larger
Nameplate	Laser etched nameplate with non-corrosive hardware. Dual nameplated for 50 Hz and 60 Hz.
Paint	All exterior surfaces are painted with gray epoxy paint.
UL, CSA, and CE	CSA File # LR48703, LR63414. UL File # E6951. CE compliant.
Warranty	3 years

TEFC - Metric-E® and Super-E® Capabilities

Three Phase

Typical Frame Size / Speed - RPM				
kW	**3000**	**1500**	**1000**	**750**
.75	D80M	D80M	D90S	D100L
1.1	D80M	D90L	D90L	D100L
1.5	D90L	D90L	D100L	D112M
2.2	D90L	D100L	D112M	D132S
4.0	D112M	D112M	D132M	D160M
5.5	D132S	D132S	D132M	D160M
7.5	D132S	D132M	D160M	D160L
11	D160M	D160M	D160L	D180L
15	D160M	D160L	D180L	D200L
18.5	D160L	D180M	D200L	D225S
22	D180M	D180L	D200L	D225M
30	D200M	D200L	D225M	D250M
37	D200M	D225M	D250M	D280S
45	D225S	D225M	D280S	D280M
55	D250S	D250M	D280M	D315S
75	D280S	D250M	D315S	D315M
90	D280S	D280M	D315M	D315L
110	D315S	D280M	D315L	D315L
132	D315S	D315M	D315L	—
160	D315S	D315M	—	—
200	D315M	D315M	—	—

NOTE: Ratings through 20,000 kW are available. Contact Baldor with your requirements.
Performance data is subject to change. Please contact Baldor for current performance data or a detailed drawing on the specific motor you require. Data and drawings may be available from our CD-ROM or website at www.baldor.com.

Premium Efficiency in NEMA Frames

Baldor Super-E® motors are available in NEMA frames 56 through 5812 with base, D-flange or C-face. Motors can be supplied for 50 or 60 Hz operation. Contact your Baldor District Office for more information.

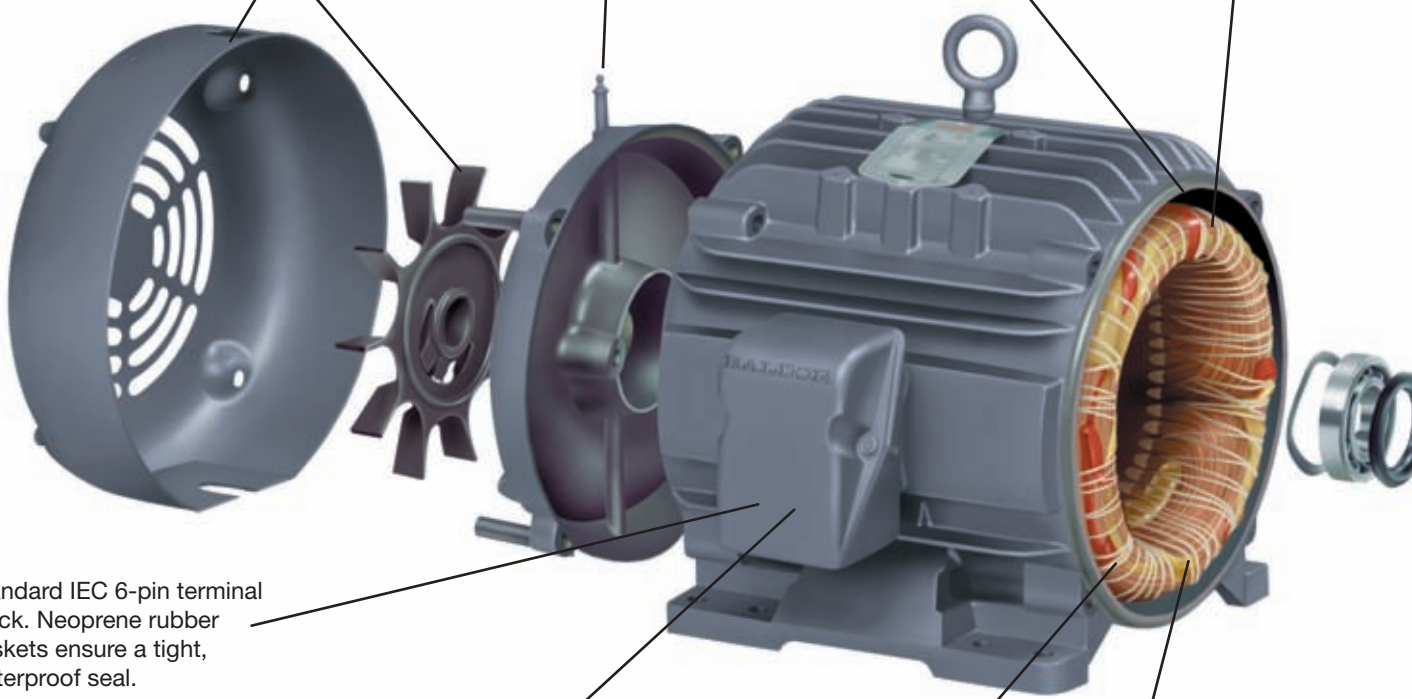
Baldor Metric-E® and Super-E®

Regreasing provisions with Baldor's lube-lock standard on D160 frame and larger.

Fan and fan cover designed for maximum cooling, efficiency and quiet operation.

Standard winding thermistors on 11 kW and larger.

End turns laced at both ends.



Standard IEC 6-pin terminal block. Neoprene rubber gaskets ensure a tight, waterproof seal.

Simple left to right hand conversion on cast iron frame motors.

Baldor's exclusive ISR® (Inverter Spike Resistant®) magnet wire is up to 100 times more resistant to voltage spikes.

Class B temperature rise with high temperature (Class F) insulation systems for long life.

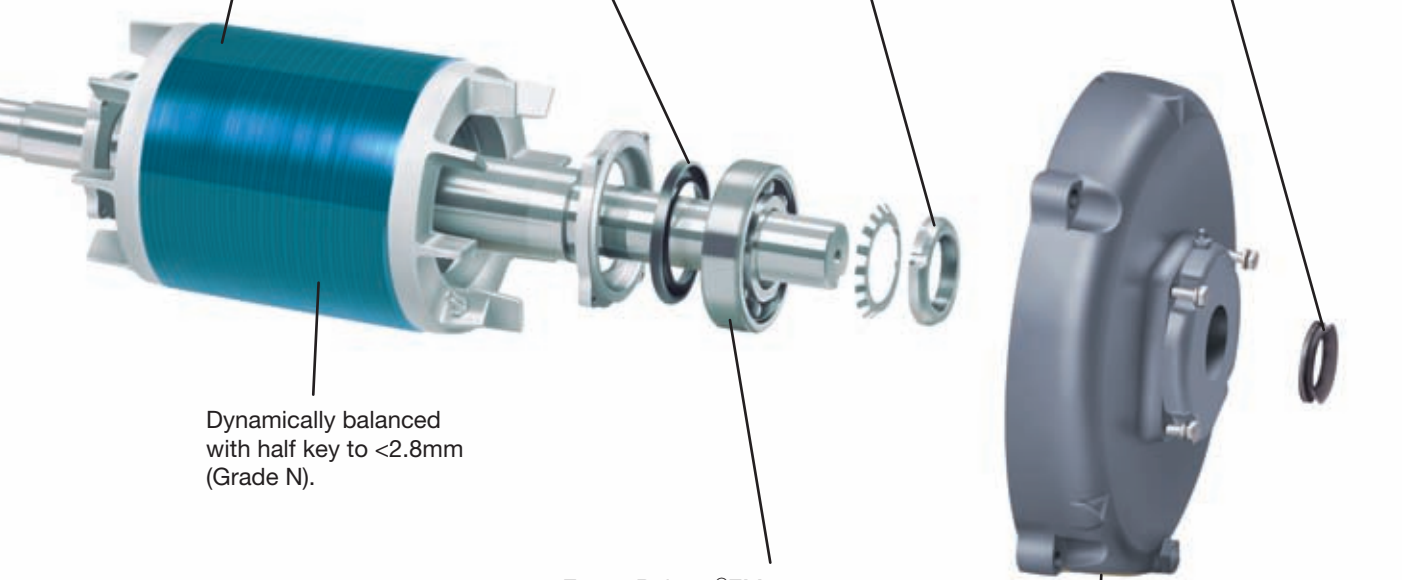
Options:
- Brake Motor
- Encoder Feedback
- Blower Cooling

High-pressure die cast aluminum rotor through D315 frames with coating to prevent corrosion.

Locked bearing construction reduces endplay.

Greasing provisions with patented Lube-Lok retainer grease seal on both ends, D160 frame and up.

Neoprene rubber shaft slinger on opposite fan end of motor prevents contaminants from entering.



Dynamically balanced with half key to <2.8mm (Grade N).

Exxon Polyrex®EM grease protects motor bearings better, providing improved lubrication life, greater shear stability, and superior resistance to washout, rust and corrosion.

B5 and B14 mounting available.

Baldor Super-E® Motor

EFF 1

Baldor's new Super-E cast iron motors exceed efficiencies required for the CEMEP Eff 1 level as well as complying with Australia MEPS AS/NZS 1359.5-2005 "High Efficiency". Motors are also rated for use on 460 volts, 60 Hz and will comply with the NEMA Premium® efficiency requirements for sale in the US.

These new Super-E motors are completely metric, right down to the last bolt and nut. Like all Baldor motors, the Super-E motors feature ISR® (Inverter Spike Resistant®) magnet wire and phase insulation to ensure long life when used on inverter power supplies. Additionally, Super-E motors receive a corona inception test for additional reliability when operated by inverters.

Performance Data:

240/380-415 and 380-415 Volts, Three Phase, 50 Hz, 2.2-200 kW

Motor kW	Equiv Hp	Nominal RPM	Frame IEC	Catalog Number	Amps @ Full Load (400V)	IEC 60034-2 Efficiency @ Full Load	Power Factor @Full Load	Volt Code	Connection Diagram Number	Weight kg
2.2	3	950	D112M	EM11026-57	5.0	85.5	70	R	CD0382A	40
3	4	950	D132M	EM13036-57	6.4	86.9	73	R	CD0382A	55
4	5	2900	D112M	EM11042-57	7.0	89.5	86	R	CD0382A	50
		1450	D112M	EM11044-57	8.5	89.9	75	R	CD0382A	56
		950	D132M	EM13046-57	8.6	87.9	72	R	CD0382A	65
5.5	7.5	2900	D132S	EM13062-58	9.2	90.2	88	S	CD0382A	78
		1465	D132S	EM13064-58	11.1	90.7	82	S	CD0382A	81
		950	D132M	EM13066-58	11.2	89.1	75	S	CD0382A	75
7.5	10	2910	D132S	EM13082-58	13.0	90.9	92	S	CD0382A	91
		1460	D132M	EM13084-58	14.4	91.5	84	S	CD0382A	91
		950	D160M	EM16086-58	15.0	90.1	75	S	CD0382A	115
11	15	2920	D160M	EM16112-58	20.3	92.4	91	S	CD0382A	105
		1475	D160M	EM16114-58	20.5	92.4	81	S	CD0382A	115
		950	D160M	EM16116-58	22.2	91.2	74	S	CD0382A	135
15	20	2910	D160M	EM16152-58	26.0	93.0	91	S	CD0382A	110
		1465	D160L	EM16154-58	27.5	93.0	81	S	CD0382A	135
		950	D180L	EM18156-58	30.2	92.0	72	S	CD0382A	177
18.5	25	2920	D160L	EM16192-58	32.0	93.0	92	S	CD0382A	118
		1470	D180M	EM18194-58	33.5	93.6	81	S	CD0382A	175
		950	D200L	EM20196-58	35.5	92.5	76	S	CD0382A	245
22	30	2935	D180M	EM18222-58	38.5	92.4	90	S	CD0382A	178
		1475	D180L	EM18224-58	43.5	93.6	81	S	CD0382A	203
		950	D200L	EM20226-58	41.5	92.9	77	S	CD0382A	260
30	40	2850	D200M	EM20302-58	51.5	93.9	87	S	CD0382A	250
		1465	D200L	EM20304-58	51.6	94.5	87	S	CD0382A	276
		950	D250S	EM25306-58	54.6	93.6	80	S	CD0382A	320
37	50	2940	D200M	EM20372-58	63.0	94.5	92	S	CD0382A	270
		1480	D225M	EM22374-58	72.5	94.5	84	S	CD0382A	310
		950	D250M	EM25376-58	66.6	94.0	79	S	CD0382A	415
45	60	2850	D225S	EM22452-58	77.8	94.6	85	S	CD0382A	335
		1480	D225M	EM22454-58	79.7	94.8	83	S	CD0382A	330
		950	D280S	EM28456-58	81.0	94.4	80	S	CD0382A	605
55	75	2960	D250S	EM25552-58	96.5	95.0	91	S	CD0382A	420
		1480	D250M	EM25554-58	100	95.0	84	S	CD0382A	420
		950	D280M	EM28556-58	98.8	94.8	81	S	CD0382A	645

NOTE: Full load amps @ 400 volt nominal – 50 Hz
R = 240 / 380-415 volts 50 Hz, usable on 460 volt 60 Hz
S = 380-415 volts 50 Hz, usable on 460 volt 60 Hz
Above data subject to revision without notice

SHADED RATINGS ARE CAST IRON FRAMES

Baldor Super-E® Motor (Continued)

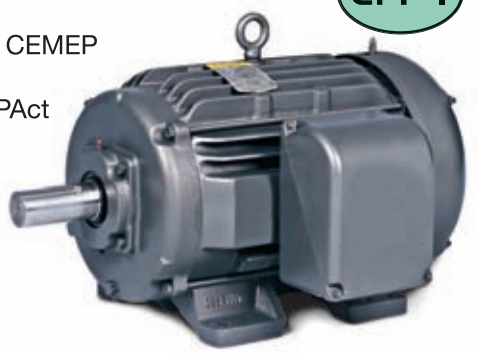
Motor kW	Equiv Hp	Nominal RPM	Frame IEC	Catalog Number	Amps @ Full Load (400V)	IEC 60034-2 Efficiency @ Full Load	Power Factor @Full Load	Volt Code	Connection Diagram Number	Weight kg
75	100	2850	D280S	EM28752-58	130	95.4	85	S	CD0382A	625
		1475	D250M	EM25754-58	128	95.5	91	S	CD0382A	569
		950	D315M	EM31756-58	140	95.2	77	S	CD0382A	830
90	125	2850	D280S	EM28902-58	151	95.5	87	S	CD0382A	665
		1450	D280M	EM28904-58	158	95.7	83	S	CD0382A	665
		950	D315M	EM31906-58	160	95.5	80	S	CD0382A	930
110	150	2910	D315S	EM31112-58	191	95.8	89	S	CD0382A	880
		1485	D315M	EM31114-58	195	96.2	86	S	CD0382A	900
		950	D315S	EM31116-58	197	95.8	80	S	CD0382A	1000
132	177	2970	D315S	EM31132-58	219	96.1	92	S	CD0382A	940
		1485	D315M	EM31134-58	235	96.2	86	S	CD0382A	960
		950	D315M	EM31136-58	235	96.1	80	S	CD0382A	1150
160	215	2850	D315S	EM31162-58	269	96.1	86	S	CD0382A	1025
		1450	D315M	EM31164-58	286	96.3	82	S	CD0382A	1000
200	268	2850	D315M	EM31202-58	337	96.1	87	S	CD0382A	1190
		1450	D315M	EM31204-58	351	96.3	83	S	CD0382A	1160

NOTE: R = 240 / 380-415 volts 50 Hz, usable on 460 volt 60 Hz
S = 380-415 volts 50 Hz, usable on 460 volt 60 Hz. Full load amps @ 400 volt nominal – 50 Hz.
Above data subject to revision without notice

SHADED RATINGS ARE CAST IRON FRAMES

Baldor Metric-E® Motor

EFF 1



Baldor's new Metric-E® cast iron motors exceed efficiencies required for the CEMEP Eff 1 level as well as complying with Australia MEPS AS/NZS 1359.5-2004. Motors are also rated for use on 460 volts, 60 Hz and will comply with the EPAct efficiency requirements for sale in the US.

These new Metric-E motors are completely metric, right down to the last bolt and nut. Like all Baldor motors, the Metric-E motors feature ISR® (Inverter Spike Resistant)® magnet wire and phase insulation to ensure long life when used on inverter power supplies.

Performance Data:

240/380-415 and 380-415 Volts, Three Phase, 50 Hz, 2.2-200 kW

Motor kW	Equiv Hp	Nominal RPM	Frame IEC	Catalog Number	Amps @ Full Load (400V)	IEC 60034-2 Efficiency @ Full Load	Power Factor @Full Load	Voltage Code	Connection Diagram Number	Weight kg
2.2	3	950	D112M	M11026-57	5.2	83.4	72	R	CD0382A	37
3	4	950	D132M	M13036-57	6.6	84.9	75	R	CD0382A	51
4	5	2900	D112M	M11042-57	7.1	87.6	90	R	CD0382A	45
		1450	D112M	M11044-57	8.0	88.5	76	R	CD0382A	56
		950	D132M	M13046-57	8.8	86.1	74	R	CD0382A	60
5.5	7.5	2900	D132S	M13062-58	9.7	88.5	89	S	CD0382A	61
		1450	D132S	M13064-58	10.2	89.5	84	S	CD0382A	81
		950	D132M	M13066-58	11.4	87.4	77	S	CD0382A	70
7.5	10	2900	D132S	M13082-58	13.0	89.5	90	S	CD0382A	80
		1460	D132M	M13084-58	15.0	90.2	78	S	CD0382A	91
		950	D160M	M16086-58	15.3	88.5	77	S	CD0382A	107
11	15	2940	D160M	M16112-58	20.3	92.4	90	S	CD0382A	98
		1450	D160M	M16114-58	21.8	92.4	84	S	CD0382A	130
		950	D160L	M16116-58	22.5	89.8	76	S	CD0382A	126

NOTE: R = 240 / 380-415 volts 50 Hz, usable on 460 volt 60 Hz
S = 380-415 volts 50 Hz, usable on 460 volt 60 Hz. Full load amps @ 400 volt nominal – 50 Hz.
Above data subject to revision without notice

SHADED RATINGS ARE CAST IRON FRAMES

Baldor Metric-E® Motor (Continued)

Motor kW	Equiv Hp	Nominal RPM	Frame IEC	Catalog Number	Amps @ Full Load (400V)	IEC 60034-2 Efficiency @ Full Load	Power Factor @Full Load	Voltage Code	Connection Diagram Number	Weight kg
15	20	2910	D160M	M16152-58	26.0	92.4	91	S	CD0382A	110
		1465	D160L	M16154-58	27.8	92.4	82	S	CD0382A	144
		950	D180L	M18156-58	30.6	90.7	74	S	CD0382A	165
18.5	25	2915	D160L	M16192-58	31.5	93.6	92	S	CD0382A	116
		1480	D180M	M18194-58	37.8	92.4	82	S	CD0382A	198
		950	D200L	M20196-58	36.0	91.3	78	S	CD0382A	228
22	30	2850	D180M	M18222-58	37.9	92.2	91	S	CD0382A	166
		1470	D180L	M18224-58	44.5	92.6	82	S	CD0382A	216
		950	D200L	M20226-58	42.0	91.8	79	S	CD0382A	242
30	40	2850	D200M	M20302-58	52.0	92.9	90	S	CD0382A	233
		1465	D200L	M20304-58	52.6	94.1	87	S	CD0382A	276
		950	D250S	M25306-58	55.2	92.5	82	S	CD0382A	298
37	50	2850	D200M	M20372-58	64.4	93.3	90	S	CD0382A	251
		1480	D225M	M22374-58	72.5	94.1	84	S	CD0382A	288
		950	D250M	M25376-58	67.4	93.0	81	S	CD0382A	386
45	60	2950	D225S	M22452-58	76.5	94.1	92	S	CD0382A	312
		1470	D225M	M22454-58	85.5	94.5	85	S	CD0382A	367
		950	D280S	M28456-58	81.8	93.5	82	S	CD0382A	563
55	75	2965	D250S	M25552-58	93.5	94.1	91	S	CD0382A	391
		1480	D250M	M25554-58	94.5	94.5	91	S	CD0382A	544
		950	D280M	M28556-58	99.7	93.9	83	S	CD0382A	600
75	100	2850	D280S	M28752-58	131	94.6	88	S	CD0382A	581
		1475	D250M	M25754-58	128	95.4	91	S	CD0382A	569
		950	D315S	M31756-58	141	94.4	79	S	CD0382A	772
90	125	2850	D280S	M28902-58	152	94.8	90	S	CD0382A	618
		1480	D280M	M28904-58	158	95.4	86	S	CD0382A	660
		950	D315M	M31906-58	161	94.8	82	S	CD0382A	865
110	150	2850	D315S	M31112-58	194	95.1	86	S	CD0382A	649
		1485	D315M	M31114-58	195	95.4	86	S	CD0382A	843
		950	D315L	M31116-58	198	95.1	82	S	CD0382A	930
132	177	2850	D315S	M31132-58	228	95.4	88	S	CD0382A	874
		1485	D315M	M3114-58	235	96.2	86	S	CD0382A	893
		950	D315M	M31136-58	237	95.4	82	S	CD0382A	1070
160	215	2850	D315S	M31162-58	271	95.5	89	S	CD0382A	953
		1450	D315M	M31164-58	288	95.7	85	S	CD0382A	930
200	268	2850	D315M	M31202-58	339	95.5	90	S	CD0382A	1107
		1450	D315M	M31204-58	353	95.7	86	S	CD0382A	1079

NOTE: R = 240 / 380-415 volts 50 Hz, usable on 460 volt 60 Hz
S = 380-415 volts 50 Hz, usable on 460 volt 60 Hz
Full load amps @ 400 volt nominal – 50 Hz
Above data subject to revision without notice

SHADED RATINGS ARE CAST IRON FRAMES

SSE Washdown Duty™ Stainless Motors

EFF I

Over the years, Baldor has worked with industry leaders in food processing to design Washdown Duty motors that meet and exceed their application demands.

Our new Stainless Super-E® Washdown Duty motors are another example of the best getting better. Baldor's SSE™ Stainless Super-E is designed to perform longer than any other industrial electric motor available today, in the most corrosive and caustic applications subjected to frequent high-pressure sanitizing (IP65).

With unmatched quality and superior reliability, Baldor's new SSE Stainless Super-E motors have again set the standard that all other washdown duty motors will be judged against.

Performance Data:

240/380-415 and 380-415 Volts, Three Phase, 50 Hz, 0.37 through 4 kW

kW	RPM	IEC Frame	Catalog Number	Amps FL	Efficiency FL	Power Factor FL	Voltage Code	Connection Diagram
B14 C-Face with B3 Base								
1.1	1440	D90C	CSSEWDM90114C-57	2.3	85.9	80	R	CD0382A
1.5	1440	D90C	CSSEWDM90154C-57	3.1	87.0	80	R	CD0382A
B5 Flange without Base								
0.37	1440	D80D	VSSEWDM80044D-57 ▮	1.0	70.1	71	R	CD0382A
0.55	1440	D80D	VSSEWDM80064D-57 ▮	1.5	74.0	69	R	CD0382A
0.75	1440	D80D	VSSEWDM80084D-57 ▮	1.9	75.5	73	R	CD0382A
1.1	1440	D90D	VSSEWDM90114D-57	2.3	85.9	80	R	CD0382A
1.5	1440	D90D	VSSEWDM90154D-57	3.1	87.0	80	R	CD0382A

NOTE: R = 240 / 380-415 volts 50 Hz, usable on 460 volt 60 Hz
S = 380-415 volts 50 Hz, usable on 460 volt 60 Hz
Full load amps @ 400 volt nominal – 50 Hz
▮ = TENV, others TEFC
Above data subject to revision without notice

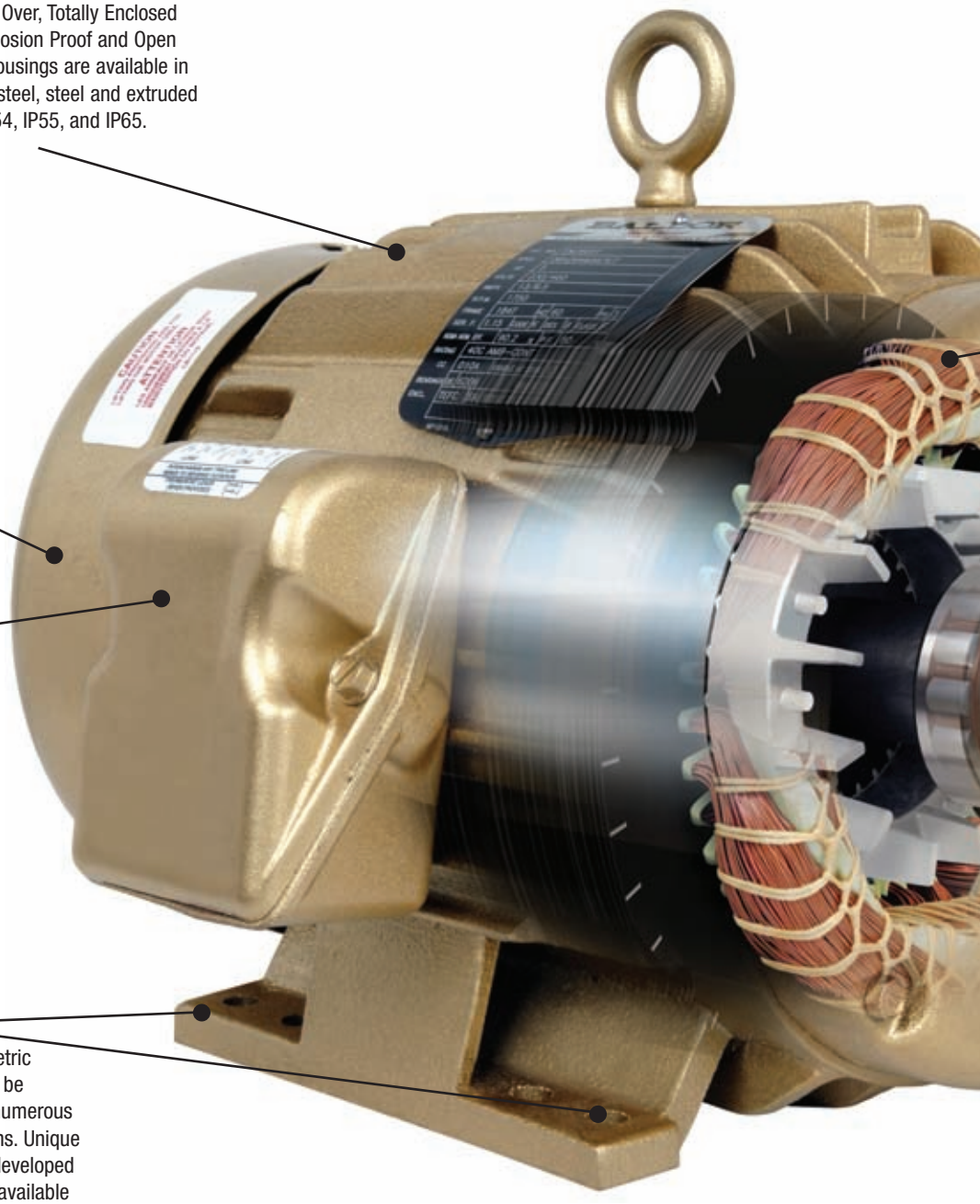
Custom Motor Capabilities

Enclosures

Motors are available in Totally Enclosed Fan Cooled, Totally Enclosed Non-Ventilated, Totally Enclosed Air Over, Totally Enclosed Blower Cooled, Explosion Proof and Open Drip Proof. Stator housings are available in cast iron, stainless steel, steel and extruded aluminum. IP22, IP54, IP55, and IP65.

Custom Colors and Finishes

Baldor is able to supply motors in practically any color, shade or finish. Just provide the color you want and we'll match it. Hammer tone, epoxy finishes or food grade paints are also available.



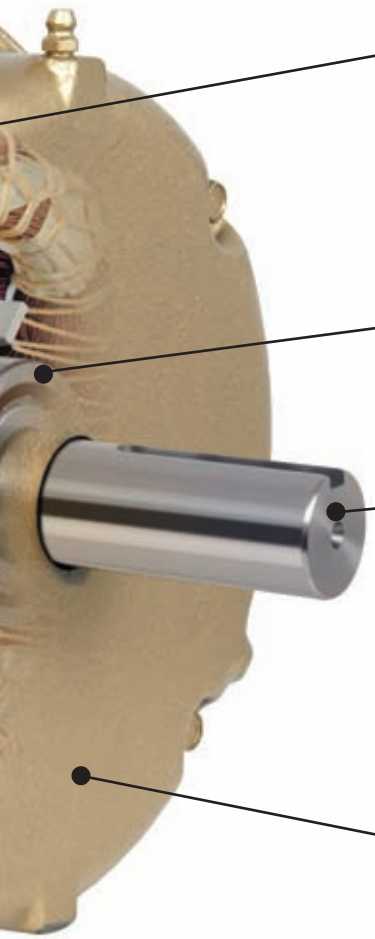
Conduit Box

Conduit box location can vary depending on your application. Terminal blocks are provided. Special boxes for Explosion Proof and Washdown applications are also available.

Base Mounts

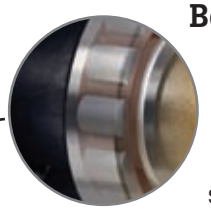
In addition to the standard IEC metric mountings, NEMA mountings can be produced. We also manufacture numerous sidewall and ceiling mount designs. Unique mounting configurations can be developed to match your specs. Motors are available without mounting bases.

We'll never say it can't be done.



Windings

Part winding, start, wye-delta, multi-speed and other special winding configurations, in 50 or 60 Hz are available. Special winding protection includes vacuum pressure impregnation (VPI), epoxy encapsulation, tropicalization and weatherproofing. Power cords with plugs, connectors, or special lengths and lead colors are available.



Bearings

Open, single shield, double shield or sealed bearings can be provided. Depending on your application, rolling element bearings (ball, roller, thrust or sleeve bearings) may be available. All bearing choices can be provided with standard temperature, low temperature, high temperature, food grade or customer supplied grease. Thermocouples added to the bearing housing or BTDs (bearing temperature detectors) can be included.

Shafts

Baldor has designed and manufactured custom shafts in over 30,000 different configurations. Motor shafts can be designed to fit applications requiring special lengths, diameters, materials or custom machining. A few other custom shaft features available include: flats on shafts, threads, drilled and tapped holes, tang shafts, tapered shafts, and shafts requiring internal or external splines. Motors can be ordered in double shaft configurations with custom machining on both ends. Shaft materials include many types of steel alloys including stainless steel.

Mounting Configurations

Numerous face mounting designs are available including standard IEC and NEMA C or D flanges as well as P base designs. Other mounting types include hydraulic two and four bolt pump mounts, square flange pump mounts and close-coupled pump mounts. Custom variations on any of the listed mountings can be performed.

Industry's Shortest Lead Times

After engineering, motors may be produced in as little as 2-weeks production time ex-works.

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Contact your nearest Baldor-Dodge-Reliance District Office at these World Wide locations, or visit www.baldor.com

UNITED STATES

ARIZONA
PHOENIX
4211 S 43RD PLACE
PHOENIX, AZ 85040
PHONE: 602-470-0407
FAX: 602-470-0464

ARKANSAS
CLARKSVILLE
1001 COLLEGE AVE.
CLARKSVILLE, AR 72830
PHONE: 479-754-9108
FAX: 479-754-9205

CALIFORNIA
LOS ANGELES
6480 FLOTILLA
COMMERCE, CA 90040
PHONE: 323-724-6771
FAX: 323-721-5859

HAYWARD
21056 FORBES STREET
HAYWARD, CA 94545
PHONE: 510-785-9900
FAX: 510-785-9910

COLORADO
DENVER
2520 W BARBERRY PLACE
DENVER, CO 80204
PHONE: 303-623-0127
FAX: 303-595-3772

9980 PARK MEADOWS DRIVE
SUITE 214
LONE TREE, CO 80124-6739
PHONE: 303-339-9629
FAX: 303-339-9633

CONNECTICUT
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WALLINGFORD, CT 06492
PHONE: 203-269-1354
FAX: 203-269-5485

FLORIDA
TAMPA/PUERTO RICO/ VIRGIN ISLANDS
3906 EAST 11TH AVENUE
TAMPA, FL 33605
PHONE: 813-248-5078
FAX: 813-247-2984

GEORGIA
ATLANTA
62 TECHNOLOGY DR.
ALPHARETTA, GA 30005
PHONE: 770-772-7000
FAX: 770-772-7200

5490 MCGINNIS FERRY PLACE
SUITE 133
ALPHARETTA, GA 30005
PHONE: 770-752-4254
FAX: 770-752-4257

ILLINOIS
CHICAGO
1601 FRONTENAC ROAD
NAPERVILLE, IL 60563
PHONE: 630-848-5100
FAX: 630-848-5110

INDIANA
COLUMBUS
3300 TENTH ST
COLUMBUS, IN 47201
PHONE: 812-378-2556
FAX: 812-378-2555

INDIANAPOLIS
5525 W. MINNESOTA STREET
INDIANAPOLIS, IN 46241
PHONE: 317-246-5100
FAX: 317-246-5110

IOWA
DES MOINES
1800 DIXON STREET, SUITE C
DES MOINES, IA 50316
PHONE: 515-263-6929
FAX: 515-263-6515

KANSAS
5030 BOB BILLINGS PKWY STE B
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FAX: 785-749-4217

MARYLAND
BALTIMORE
6660 SANTA BARBARA RD.
SUITE 22-24
ELKRIDGE, MD 21075
PHONE: 410-579-2135
FAX: 410-579-2677

MASSACHUSETTS
BOSTON
6 PULLMAN STREET
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FAX: 508-854-0291

MICHIGAN
DETROIT
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STERLING HEIGHTS, MI 48312
PHONE: 586-978-9800
FAX: 586-978-9969

GRAND RAPIDS
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GRAND RAPIDS, MI 49504
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FAX: 616-785-1788

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ROGERS, MN 55374
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FAX: 763-428-4551

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ST LOUIS
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FAX: 314-298-7660

KANSAS CITY
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NEW YORK
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PHONE: 315-255-3403
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NORTH CAROLINA
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GREENSBORO, NC 27416
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CARROLLTON
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PHONE: 425-952-5000
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FAX: 780-822-7878

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VANCOUVER, BRITISH COLUMBIA
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BRITISH COLUMBIA V3C 5M5
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FAX: 604-421-3113

WINNIPEG, MANITOBA
54 PRINCESS STREET
WINNIPEG, MANITOBA R3B 1K2
PHONE: 204-942-5205
FAX: 204-956-4251

AUSTRALIA

UNIT 3, 6 STANTON ROAD
SEVEN HILLS, NSW 2147, AUSTRALIA
PHONE: (61) (2) 9674 5455
FAX: (61) (2) 9674 2495

UNIT 8, 5 KELLETTS ROAD
ROWVILLE, VICTORIA, 3178 AUSTRALIA
PHONE: (61) (3) 9753 4355
FAX: (61) (3) 9753 4366

AMÉRICA DEL SUR
AVE. RICARDO J. ALFARO
EDIFICIO SUN TOWERS MALL
PISO 2, LOCAL 55
CIUDAD DE PANAMÁ, PANAMÁ
PHONE: +507 261-5347
FAX: +507 236-5155

CENTRO AMÉRICA Y CARIBE
RESIDENCIAL PINARES DE SUIZA
POL. 15 #44,
NVA. SAN SALVADOR, EL SALVADOR
PHONE: +503 2288-1519
FAX: +503 2288-1518

CHILE
SOUTHERN CONE & BRAZIL, CENTRAL AMERICA & CARIBBEAN
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PISO 6 - PROVIDENCIA
SANTIAGO, CHILE
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CHINA
ROOM NO. A-8421
JIAHUA BUSINESS CENTER
808 HONG QIAO ROAD
SHANGHAI 200030, CHINA
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FAX: (86-21) 6407 8620

4/F, OFFICE TOWER 1, HENDERSON CTR
18 JIANGUOMENNEI AVENUE
DONGCHENG DISTRICT
BEIJING 100005 CHINA
PHONE: 86 10 6518 2535
FAX: 86 10 6518 2573

GERMANY
DIESELSTRASSE 22
D-85551 KIRCHHEIM
MUNICH, GERMANY
PHONE: +49 89 90 5080
FAX: +49 89 90 50 8492

HERMANN-HEINRICH-GOSSEN-STRASSE 3
D-50858 KÖLN, GERMANY
PHONE: 49 2234 37941 0
FAX: 49 2234 37941 64

INDIA
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PUNE - 411 038
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FAX: 91 20 25 45 95 30

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GUANAJUATO
KM. 2.0 BLVD. AEROPUERTO
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PHONE: 52 477 761 2030
FAX: 52 477 761 2010

JALISCO
DODGE DE MEXICO S.A. DE C.V.
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EL SALTO, JALISCO 45680 MEXICO
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FAX: 52-33-3285-1618

MEXICO CITY
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PEDREGAL DE ATIZAPÁN
ATIZAPÁN DE ZARAGOZA,
EDO. DE MÉXICO 52947 MEXICO
PHONE: 52-55-5824-9470
FAX: 52-55-5822-9744

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N.L. 66260 MEXICO
PHONE: 52-81-8625-6532
FAX: 52-81-8625-6699

MIDDLE EAST & NORTH AFRICA
VSE INTERNATIONAL CORP.
P. O. BOX 5618
BUFFALO GROVE, IL 60089-5618
PHONE: 847 590 5547
FAX: 847 590 5587

SINGAPORE
51 KAKI BUKIT ROAD 2
K B WAREHOUSE COMPLEX
SINGAPORE 417863
PHONE: (65) 6744 2572
FAX: (65) 6747 1708

SWITZERLAND
POSTFACH 73
SCHUTZENSTRASSE 59
CH-8245 FEUERTHALEN
SWITZERLAND
PHONE: +41 52 647 4700
FAX: +41 52 659 2394

TAIWAN
1F, NO 126 WENSHAN 3RD STREET,
NANTUN DISTRICT,
TAICHUNG CITY 408
TAIWAN R.O.C
PHONE: (886) 4 238 04235
FAX: (886) 4 238 04463

UNITED KINGDOM
6 BRISTOL DISTRIBUTION PARK
HAWKLEY DRIVE
BRISTOL BS32 0BF U.K.
PHONE: +44 1454 850000
FAX: +44 1454 859001

VENEZUELA
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EDF. ALLEN BRADLEY
ZONA INDUSTRIAL LA TRINIDAD,
CARACAS, VENEZUELA
PHONE: 58 212 949 0611
FAX: 58 212 943 3955

Baldor Electric Company
P.O. Box 2400
Fort Smith, AR 72902-2400 U.S.A
Ph (479) 646-4711 • Fax (479) 648-5792
International Fax (479) 648-5895
www.baldor.com

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