BALDOR-RELIANCE®

EC Titanium™ IEC frame

Beyond EC efficiency & performance

BALDOR • RELIANCE

The Baldor-Reliance EC Titanium IEC motors and integrated drives are a highly efficient integrated motor drive that combines synchronous reluctance and permanent magnet technologies for a sustainable, solution that improves your bottom line.

It is the most efficient low voltage motor available in the market today.

EC Titanium
Ultimate efficiency and reliability

IE5+ efficiency
- Highest system efficiency at full and partial speeds and loads
- Exceed IE5 efficiency per IEC Technical Standard 60034-30-2

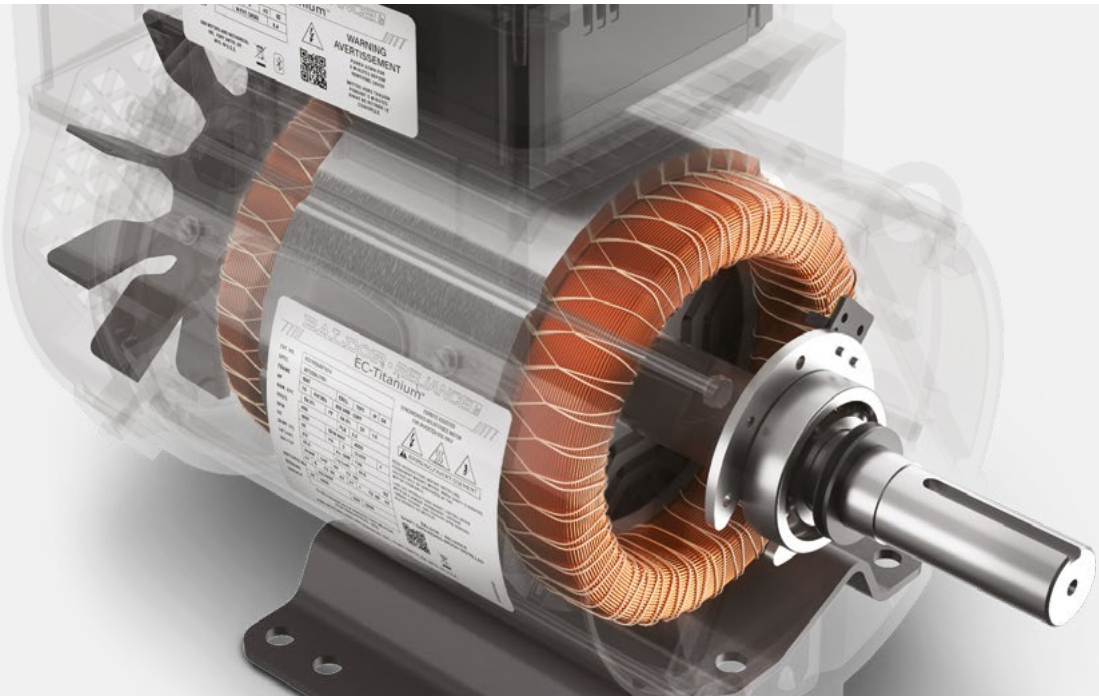
Smart motor solution
- Remote programming & monitoring PC and mobile tool
- Apps that help with calculating energy use and savings

Eco-friendly design
- FASR (Ferrite assisted synchronous reluctance) utilizes non-rare earth magnets
- Motors use recycled metals and materials

Plug-and-play, ready to go
- Pre-programmed motor and drive designed to run out-of-the-box
- Integrated motor-drive eliminates expensive wiring and installation time
- No drive experience necessary

Variable speed operation
- Choose either an integrated motor-drive option or motor-only for flexibility
- Motor-only options allow for multi-motor to drive configurations, ideal for fan arrays
- Fan & pump control

Reliable and quiet operation
- Extremely low starting current and less cogging reduces mechanical stress, increase reliability and produces ultra-quiet operation
- Internally mounted shaft grounding brush included as standard to mitigate bearing currents

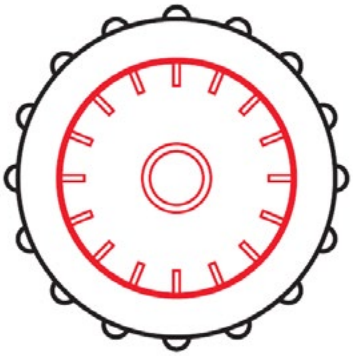


Scan for video

EC Titanium

Newest rotor technology to achieve the highest efficiency

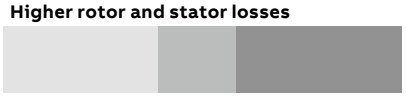
Currently, FASR (ferrite assisted synchronous reluctance) motors offer the most efficient performance available. This type of motor will reliably deliver IE5+ performance when it is paired with a variable speed drive (VSD). Together, magnet-assisted synchronous reluctance motors with VSDs enable significant efficiency gains over induction motors across a wide speed range, and they offer particular benefits when operated with partial loads. Integrated motor drive packages are available in standard sizes meaning that they can be used as drop-in replacements for other IEC motors.



Induction motor

- Slip losses in rotor (I^2R)
- Heats bearing and motor
- Lower efficiency adds to heat generated

Higher rotor and stator losses



FASR motor

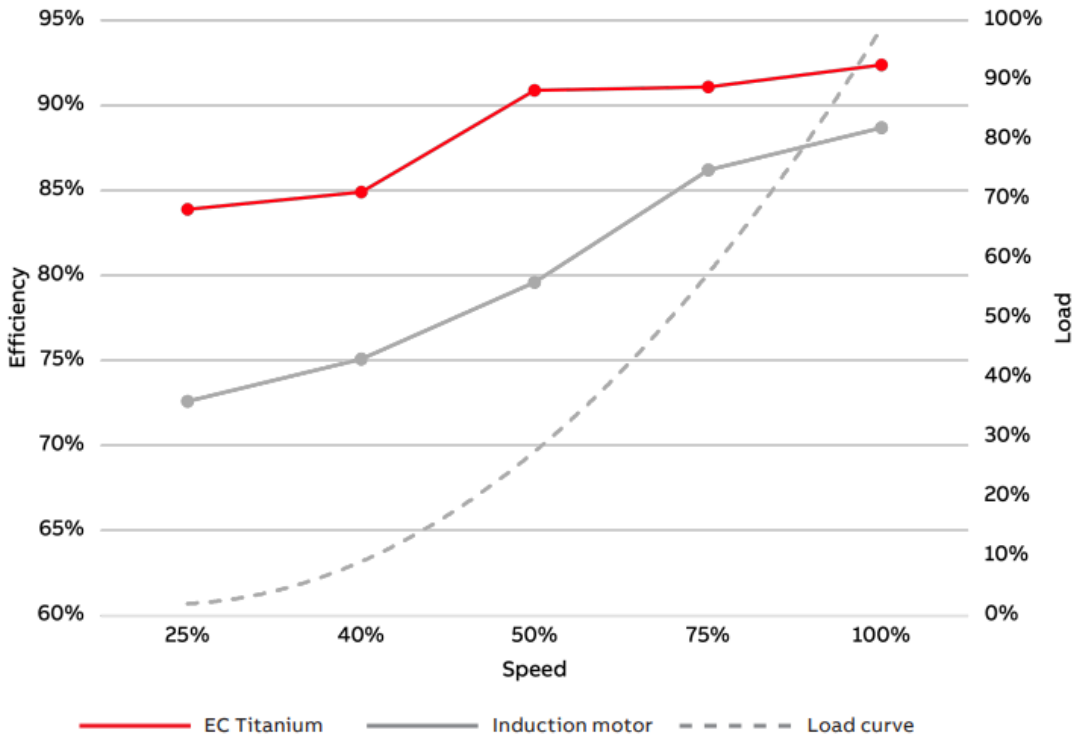
- Synchronous reluctance design eliminates rotor losses
- The addition of ferrite magnets increases field strength (more lines of flux) less work required stator
- Less overall losses, lower current draw and lower motor temperatures

No rotor and lower stator losses

Optimized speed and load curves

EC Titanium motors' wider speed torque range with higher efficiency allows more flexibility to match a fan impeller and reach a nominal fan duty point. Results at partial load points show efficiency gains of as much as 16 percent over IE3 induction motors.

EC Titanium vs Induction:
Efficiency level for speed and load



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For pump and fan applications with variable speed and variable torque (load), EC Titanium integrated motor drives display superior efficiency performance over induction motors at rated and partial load speed points.

EC Titanium innovation

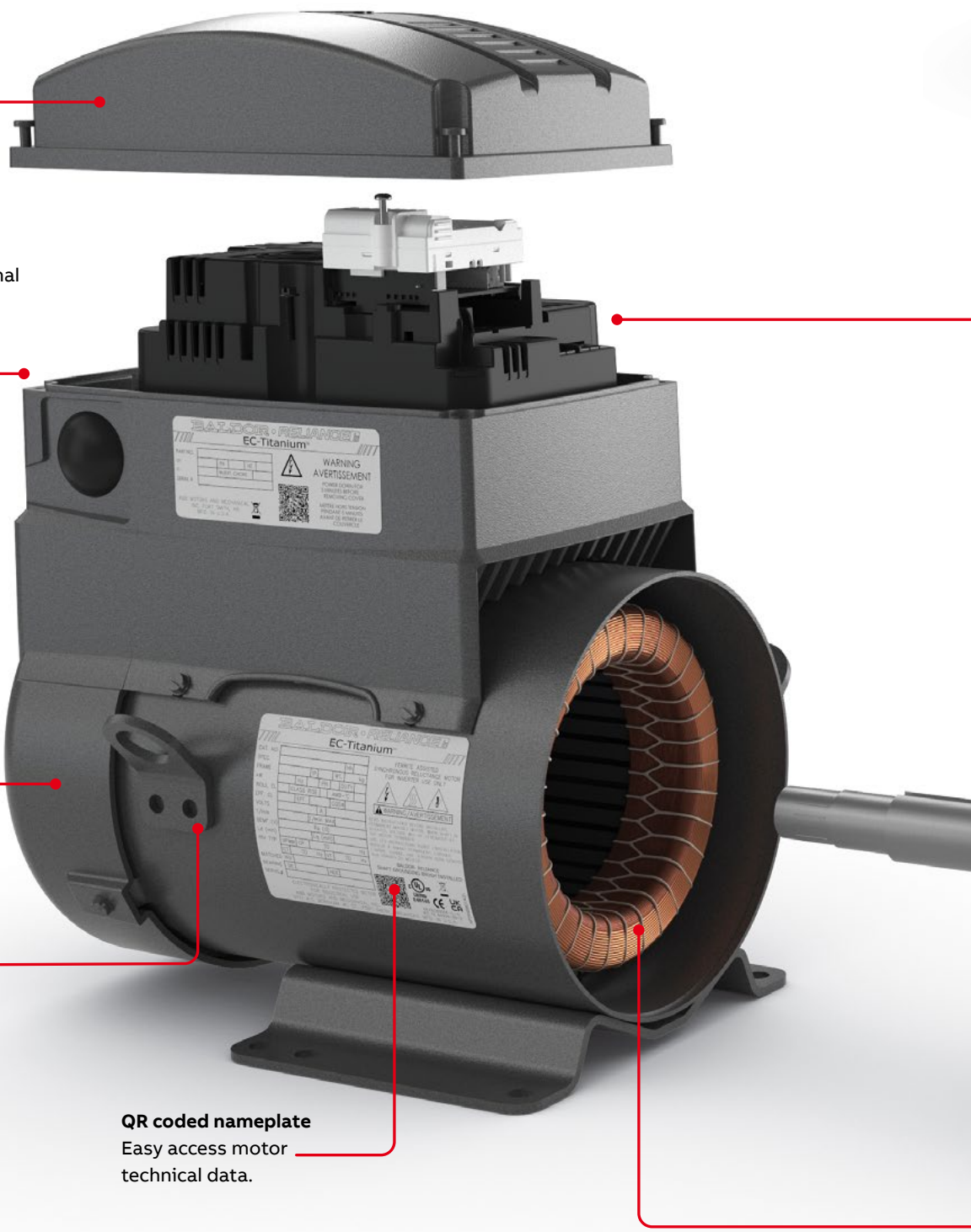
IEC version comes standard with aluminum cover design.

IP55 rated
Drive and motor with conformal coated drive components.

Low noise fan and cover
Designed for maximum cooling and quiet operation.

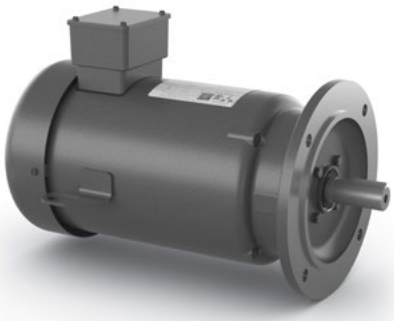
Lifting lug provisions
Convenient and safe for mounting.

QR coded nameplate
Easy access motor technical data.



Top mount integrated drive
B3 foot mounted and
B14 or B5 footless options

Axial mount integrated drive
B3 foot mounted and
B14 or B5 footless options

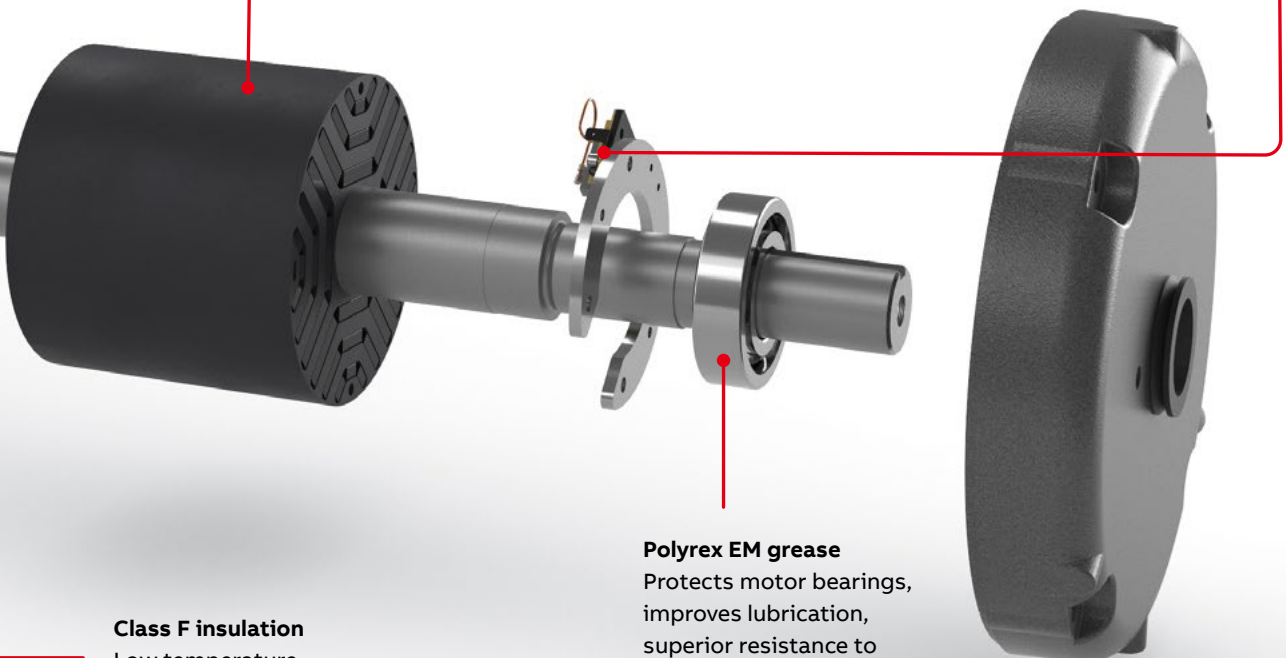


Motor only version
B3 foot mounted and
B14 or B5 footless options

Drive pre-wired and programmed.

IE5 efficiency guaranteed
Ferrite Assisted Synchronous Reluctance rotor (FASR).

Shaft grounding brush
Installed internally to prevent bearing current discharges and minimize shaft voltages.



Polyrex EM grease
Protects motor bearings, improves lubrication, superior resistance to washout, rust and corrosion.

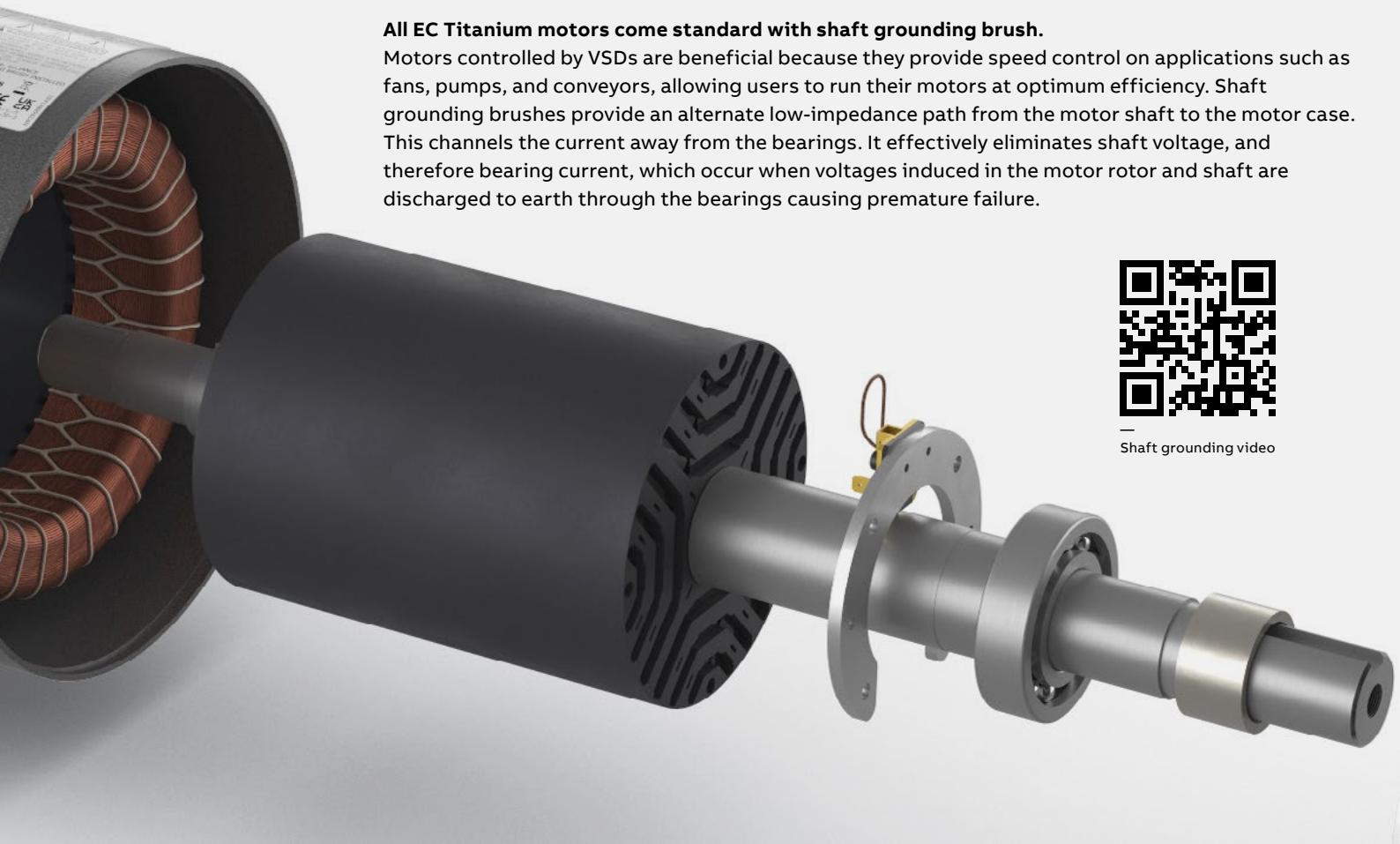
Class F insulation
Low temperature
Class B rise inverter duty.

EC Titanium motor only configuration for expanded capabilities

Pairing EC Titanium with the ABB ACH580 drive enables the use of advanced motor control algorithms for higher efficiencies across the speed and load range than traditional motor solutions.

ABB Drives feature support

- ACH580 V2.12 ID run firmware support
- Integral harmonic mitigation
- Ultra-low harmonics compatible
- Wide range network interfaces
- Extensive pump and fan drive features
- Used also for both variable torque and constant torque loads such as unit handling conveyors



All EC Titanium motors come standard with shaft grounding brush.
Motors controlled by VSDs are beneficial because they provide speed control on applications such as fans, pumps, and conveyors, allowing users to run their motors at optimum efficiency. Shaft grounding brushes provide an alternate low-impedance path from the motor shaft to the motor case. This channels the current away from the bearings. It effectively eliminates shaft voltage, and therefore bearing current, which occur when voltages induced in the motor rotor and shaft are discharged to earth through the bearings causing premature failure.

Shaft grounding video

IE5 efficiency according to IEC TS 60034-30-2

New technical specification IEC TS 60034-30-2 (2016) specify the efficiency classes for variable speed drive (VSD) motors (i.e. motors which cannot be operated direct on line (DOL)). Typical standard low voltage induction motor efficiency is determined according to IEC 60034-30-1 in sinusoidal (DOL)supply.

IEC TS 60034-30-2 highlights

- The IE class limit values in new IEC TS 60034-30-2 are reduced by adding the additional harmonic losses caused by the drive:
  - 15% additional losses for motors up to 90kW
- Limit values available also for IE5 level
- Limit values to be achieved with 90% speed, 100% torque (n90 Efficiency)

DOL or VSD motor – Same IE class, same efficiency performance in VSD duty

This allows direct comparison in IE class level of traditional induction motors in variable speed usage and advanced technology motors designed only for variable speed drive (like EC Titanium motors). It does not matter if the IE classification is done with DOL supply according to IEC 60034-30-1 or with VSD supply according to IEC TS 60034-30-2. The given IE class still illustrates efficiency performance of both solutions in VSD operation very well. Same IE class, same efficiency performance.

Example:

11 kW 4-pole motor efficiency	**Efficiency requirement (IE5)**
IEC 60034-30-1 (DOL)	94.6%
IEC TS 60034-30-2 (VSD)*	93.9%
Baldor-Reliance EC Titanium (actual)	94.4%

* There currently is no IE5 DOL motor available and shown for comparison only.
Actual DOL motor efficiency and IEC 60034-30-1 covers up to IE4 efficiencies only.

Ordering Information

EC Titanium IEC frame product ordering

Baldor-Reliance® EC Titanium stock assembly consists of the standard rolled steel motor with a selection of a (M) motor only, or either a (T) top mount or (A) axial mount motor drive package and defined by voltage and power rating at 1500 RPM base speed. Custom configuration are available and can be selected from the part number definition table EC Titanium.

Product series	Frame	Product code	Variant code
ECS	101	M 0 K 0P8 D F 4	+
		1 2 3 45 6 7 8	9

Product series	
ECS	EC Titanium

Frame	Description
101	Rolled steel motor frame, aluminum fan and drive cover, non-Bluetooth drive, for indoor use/outdoor/and Plenum use, includes (M) motor only

Position 1	Version
M	Motor only
T	Top mount drive
A	Axial mount drive

Position 2		Voltage
0	190 / 380	3-phase
1	115V	1-phase
2	230V	3-phase
3	380 – 400V	3-phase
8	230V	1-phase

Position 3	Power type
K	Kilowatt

Position 4, 5	Power rating (kW)
0P8	0.75
1P5	1.5
2P2	2.2
3	3
4	4
5P5	5.5
7P5	7.5
11	11
15	15

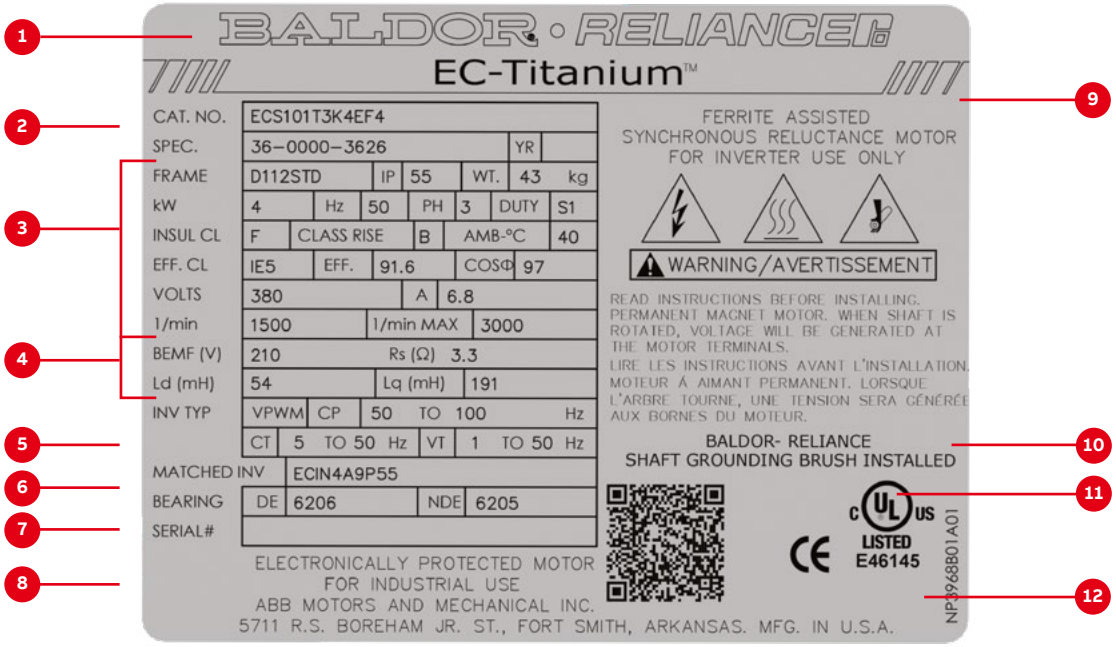
Position 6	NEMA frame
D	90
E	112
F	132

Position 7	Mounting
B	B34 Foot flange mount
C	B14 Footless flange mounted
D	B5 Footless flange mounted
E	B35 Foot flange mount
F	B3 Foot-mounted

Position 8	Base speed (r/min)
2	3000
4	1500
6	1000
8	750

Position 9	Variants
+	"+" designates minor construction variation(s) (e.g. paint color, shaft length, etc.) that do not affect the performance safety of the product

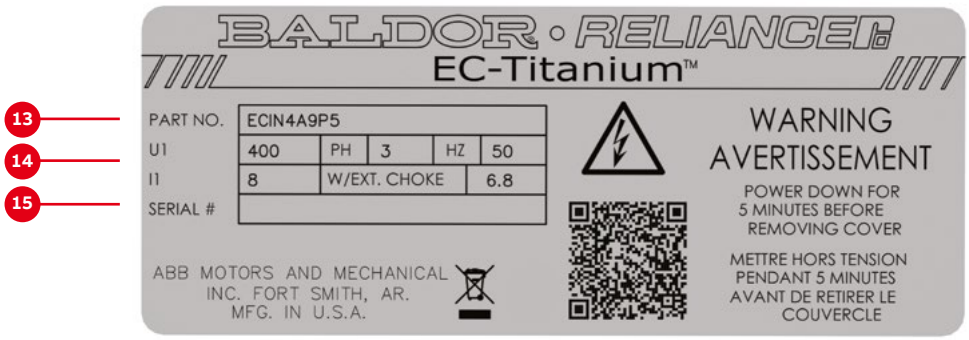
Rating Plates



1 - Baldor-Reliance ABB logo
2 - Catalog, specification number, manufacturing year
3 - Motor information
- Frame size, IP class, weight, power, frequency phase, duty, insulation class, rise, ambient rating, efficiency class, efficiency power factor, volts, amps, RPM, RPM maximum

4 - Motor drive tuning information
- BEMF (v), stator Rs inductance Ld (mH), Lq (mH)

5 - Speed range
6 - Bearing size
7 - Serial number
8 - Manufacturing place
9 - Product description
10 - Shaft ground brush installed
11 - cUL, CE, UKCA mark
12 - Manufacturing standard
13 - Drive model number
14 - Input voltage, phase, frequency
15 - Input current



Technical data

BALDOR · RELIANCE

SHAFT GROUNDING BRUSH INSTALLED

IP55

Specification	
Voltage & power requirements:	200V - 240Vac (+/- 10%) - 1-phase
	200V - 240Vac (+/- 10%) - 3-phase
	380V - 480Vac (+/- 10%) - 3-phase
Input frequency:	50/60 Hz
Overload capacity:	150% for 1 minute (most models)
Switching frequency:	4kHz, 8Khz, 12kHz, 16kHz, 24kHz, 32kHz
IEC frames:	90, 112, 132
Efficiency	IE5 per IEC TS60034-30-2
Mounting:	B3, B14, B34, B35, B5
Analog references:	0-10Vdc, 0-20mAdc, 4-20mAdc
Digital inputs:	24Vdc - (1 = 8 - 30Vdc; 0 = 0 - 4Vdc)
Input configurations:	2 Fixed DI's; 2 Configurable (AI or DI)
Output relay:	No contact; 250Vac, 6A / 30Vdc, 5A
Standards & certifications:	cUL, CE, UKCA

Environmental	
Enclosure	TEFC/IP55 Motor with CE
	IP55 Drive
Operating temperature	-10 to 50°C
	(de-rate output 2% per °C above 40 °C)
Storage temperature	-40 to 70°C
Relative humidity	0 to 95% (non-condensing)
Vibration (operating)	1 G Peak at 20 Hz
Vibration (non-operating)	0.2G Peak at 20 to 50Hz
Maximum elevation	Up to 1000 meters
Elevation for de-rated operation	Up to 2000 meters De-rate above 1000 meters-1% for every 100 meters

Applications:
- Fans
- Pumps
- Compressors
- Blowers
- Unit handling conveyors
- HVAC systems
- Variable speed applications
- General purpose applications

Drive features:
- Permanent magnet PWM AC drive control
- Serial Modbus or BACnet (RJ45 or +/- terminal inferface)
- 2 Digital inputs, 2 configurable inputs (analog or digital), 1 relay output
- Designed for longevity with 2-year drive warranty

Motor features:
- IE5+ motor efficiency per IEC TS60034-30-2
- FASR - Ferrite Assisted Synchronous Reluctance Rotor
- Class F insulation with Class B motor temperature rise
- IP55 motor enclosure with shaft seal
- Internal grounding brush for bearing current mitigation
- 1600V/insulation system
- Designed for longevity with 3-year motor warranty

Standard product, motor and drive:
- IP55 gasket aluminum drive enclosure and fan cover

EC Titanium motor, Inverter Duty, IE5+, IC411

0.75 thru 11kW

IP55

190/380V AC (+/-10%), three phase, B3 foot mount

kW	Base speed RPM	C.H. speed RPM	IEC frame	Catalog number	"L" dim.	Aprx. wt. (kg)	Full load efficiency	Eff class	Full load amps
0.75	1500	3000	90	**ECS101M0K0P8DF4**	338	18	87.7%	IE5	2.6/1.3
1.5	1500	3000	90	**ECS101M0K1P5DF4**	338	19	89.1%	IE5	5.2/2.6
2.2	1500	3000	90	**ECS101M0K2P2DF4**	363	25	91.1%	IE5	8/4
			112	**ECS101M0K2P2EF4**	410	30	91.1%	IE5	8/4
3	1500	3000	112	**ECS101M0K3EF4**	410	30	92.4%	IE5	10.6/5.3
4	1500	3000	112	**ECS101M0K4EF4**	410	30	92.4%	IE5	13.6/6.8
5.5	1500	3000	132	**ECS101M0K5P5FF4**	447	57	92.7%	IE5	21/10.5
7.5	1500	3000	132	**ECS101M0K7P5FF4**	476	76	93.8%	IE5	24.2/13.6
11	1500	3000	132	**ECS101M0K11FF4**	551	98	94.4%	IE5	39/19.5

190/380V AC (+/-10%), three phase, B14 footless

kW	Base speed RPM	C.H. speed RPM	IEC frame	Catalog number	"L" dim.	Aprx. wt. (kg)	Full load efficiency	Eff class	Full load amps
0.75	1500	3000	90	**ECS101M0K0P8DC4**	324	18	87.7%	IE5	2.6/1.3
1.5	1500	3000	90	**ECS101M0K1P5DC4**	324	19	89.1%	IE5	5.2/2.6
2.2	1500	3000	90	**ECS101M0K2P2DC4**	349	25	91.1%	IE5	8/4
			112	**ECS101M0K2P2EC4**	403	30	91.1%	IE5	8/4
3	1500	3000	112	**ECS101M0K3EC4**	403	30	92.4%	IE5	10.6/5.3
4	1500	3000	112	**ECS101M0K4EC4**	403	30	92.4%	IE5	13.6/6.8
5.5	1500	3000	132	**ECS101M0K5P5FC4**	493	57	92.7%	IE5	21/10.5
7.5	1500	3000	132	**ECS101M0K7P5FC4**	522	76	93.8%	IE5	24.2/13.6
11	1500	3000	132	**ECS101M0K11FC4**	596	98	94.4%	IE5	39/19.5

190/380V AC (+/-10%), three phase, B5 footless

kW	Base speed RPM	C.H. speed RPM	IEC frame	Catalog number	"C" dim.	Aprx. wt. (kg)	Full load efficiency	Eff class	Full load amps
0.75	1500	3000	90	**ECS101M0K0P8DD4**	305	18	87.7%	IE5	2.6/1.3
1.5	1500	3000	90	**ECS101M0K1P5DD4**	305	19	89.1%	IE5	5.2/2.6
2.2	1500	3000	90	**ECS101M0K2P2DD4**	330	25	91.1%	IE5	8/4
			112	**ECS101M0K2P2ED4**	455	30	91.1%	IE5	8/4
3	1500	3000	112	**ECS101M0K3ED4**	455	30	92.4%	IE5	10.6/5.3
4	1500	3000	112	**ECS101M0K4ED4**	455	30	92.4%	IE5	13.6/6.8
5.5	1500	3000	132	**ECS101M0K5P5FD4**	493	57	92.7%	IE5	21/10.5
7.5	1500	3000	132	**ECS101M0K7P5FD4**	522	76	93.8%	IE5	24.2/13.6
11	1500	3000	132	**ECS101M0K11FD4**	596	98	94.4%	IE5	39/19.5

EC Titanium, top mount, integrated drive motor, IE5+, IC411

0.75 thru 5.5kW

IP55

B3 foot mount

kW	Base speed RPM	C.P. speed RPM	IEC frame	Catalog number	"L" dim.	Aprx. wt. (kg)	Full load efficiency	Eff class	Motor input amps	Drive module	Drive output amps
1-phase 50 HZ, 230V AC (+/-10%) - The power ratings are valid at nominal voltage											
1.5	1500	3000	90	**ECS101T8K1P5DF4**	314	23	89.1%	IE5	2.8	ECIN8A7P0	7
3-phase 50 HZ, 230V AC (+/-10%) - The power ratings are valid at nominal voltage											
0.75	1500	3000	90	**ECS101T3K0P8DF4**	314	20	87.7%	IE5	2.6	ECIN2A4P3	4.3
1.5	1500	3000	90	**ECS101T3K1P5DF4**	314	23	89.1%	IE5	5.2	ECIN2A7P0	7.0
2.2	1500	3000	112	**ECS101T3K2P2EF4**	424	39	91.4%	IE5	8	ECIN2A10P5	10.5
3-phase 50 HZ, 400V AC (+/-10%) - The power ratings are valid at nominal voltage											
0.75	1500	3000	90	**ECS101T3K0P8DF4**	314	20	87.7%	IE5	1.3	ECIN4A2P2	2.2
1.5	1500	3000	90	**ECS101T3K1P5DF4**	314	23	89.1%	IE5	2.6	ECIN4A5P8	5.8
2.2	1500	3000	112	**ECS101T3K2P2EF4**	424	39	91.4%	IE5	4.4	ECIN4A5P8	5.8
3	1500	3000	112	**ECS101T3K3EF4**	424	45	92.4%	IE5	5.3	ECIN4A9P5	9.5
4	1500	3000	112	**ECS101T3K4EF4**	424	45	92.4%	IE5	6.8	ECIN4A9P5	9.5
5.5	1500	3000	132	**ECS101T3K5P5FF4**	460	67	92.9%	IE5	10.5	ECIN4A12P0	12

B14 footless

kW	Base speed RPM	C.P. speed RPM	IEC frame	Catalog number	"L" dim.	Aprx. wt. (kg)	Full load efficiency	Eff class	Motor input amps	Drive module	Drive output amps
1-phase 50 HZ, 230V AC (+/-10%) - The power ratings are valid at nominal voltage											
1.5	1500	3000	90	**ECS101T8K1P5DC4**	301	23	89.1%	IE5	2.8	ECIN8A7P0	7
3-phase 50 HZ, 400V AC (+/-10%) - The power ratings are valid at nominal voltage											
0.75	1500	3000	90	**ECS101T3K0P8DC4**	301	20	87.7%	IE5	1.3	ECIN4A2P2	2.2
1.5	1500	3000	90	**ECS101T3K1P5DC4**	301	20	89.1%	IE5	2.6	ECIN4A5P8	5.8
2.2	1500	3000	112	**ECS101T3K2P2EC4**	408	39	91.4%	IE5	4.4	ECIN4A5P8	5.8
3	1500	3000	112	**ECS101T3K3EC4**	408	45	92.4%	IE5	5.3	ECIN4A9P5	9.5
4	1500	3000	112	**ECS101T3K4EC4**	408	45	92.4%	IE5	6.8	ECIN4A9P5	9.5
5.5	1500	3000	132	**ECS101T3K5P5FC4**	454	67	92.9%	IE5	10.5	ECIN4A12P0	12

B5 footless

kW	Base speed RPM	C.P. speed RPM	IEC frame	Catalog number	"L" dim.	Aprx. wt. (kg)	Full load efficiency	Eff class	Motor input amps	Drive module	Drive output amps
1-phase 50 HZ, 230V AC (+/-10%) - The power ratings are valid at nominal voltage											
1.5	1500	3000	90	**ECS101T8K1P5DD4**	301	23	89.1%	IE5	2.8	ECIN8A7P0	7
3-phase 50 HZ, 400V AC (+/-10%) - The power ratings are valid at nominal voltage											
0.75	1500	3000	90	**ECS101T3K0P8DD4**	301	20	87.7%	IE5	1.3	ECIN4A2P2	2.2
1.5	1500	3000	90	**ECS101T3K1P5DD4**	301	23	89.1%	IE5	2.6	ECIN4A5P8	5.8
2.2	1500	3000	112	**ECS101T3K2P2ED4**	408	39	91.4%	IE5	4.4	ECIN4A5P8	5.8
3	1500	3000	112	**ECS101T3K3ED4**	408	45	92.4%	IE5	5.3	ECIN4A9P5	9.5
4	1500	3000	112	**ECS101T3K4ED4**	408	45	92.4%	IE5	6.8	ECIN4A9P5	9.5
5.5	1500	3000	132	**ECS101T3K5P5FD4**	454	67	92.9%	IE5	10.5	ECIN4A12P0	12

EC Titanium, axial mount, integrated drive motor, IE5+, IC411

0.75 thru 4kW

IP55

B3 foot mount

kW	Base speed RPM	C.P. speed RPM	IEC frame	Catalog number	"L" dim.	Aprx. wt. (kg)	Full load efficiency	Eff class	Motor input amps	Drive module	Drive output amps
1-phase 50 HZ, 230V AC (+/-10%) - The power ratings are valid at nominal voltage											
1.5	1500	3000	90	**ECS101A8K1P5DF4**	424	23	89.1%	IE5	2.8	ECIN8A7P0	7
3-phase 50 HZ, 230V AC (+/-10%) - The power ratings are valid at nominal voltage											
0.75	1500	3000	90	**ECS101A3K0P8DF4**	424	20	87.7%	IE5	2.6	ECIN2A4P3	4.3
1.5	1500	3000	90	**ECS101A3K1P5DF4**	424	23	89.1%	IE5	5.2	ECIN2A7P0	7.0
2.2	1500	3000	112	**ECS101A3K2P2EF4**	565	39	91.4%	IE5	8	ECIN2A10P5	10.5
3-phase 50 HZ, 400V AC (+/-10%) - The power ratings are valid at nominal voltage											
0.75	1500	3000	90	**ECS101A3K0P8DF4**	434	20	87.7%	IE5	1.3	ECIN4A2P2	2.2
1.5	1500	3000	90	**ECS101A3K1P5DF4**	434	23	89.1%	IE5	2.6	ECIN4A5P8	5.8
2.2	1500	3000	112	**ECS101A3K2P2EF4**	434	39	91.4%	IE5	4.4	ECIN4A5P8	5.8
3	1500	3000	112	**ECS101A3K3EF4**	565	45	92.4%	IE5	5.3	ECIN4A9P5	9.5
4	1500	3000	112	**ECS101A3K4EF4**	565	45	92.4%	IE5	6.8	ECIN4A9P5	9.5

B14 footless

kW	Base speed RPM	C.P. speed RPM	IEC frame	Catalog number	"L" dim.	Aprx. wt. (kg)	Full load efficiency	Eff class	Motor input amps	Drive module	Drive output amps
1-phase 50 HZ, 230V AC (+/-10%) - The power ratings are valid at nominal voltage											
1.5	1500	3000	90	**ECS101A8K1P5DC4**	424	23	89.1%	IE5	2.8	ECIN8A7P0	7
3-phase 50 HZ, 400V AC (+/-10%) - The power ratings are valid at nominal voltage											
0.75	1500	3000	90	**ECS101A3K0P8DC4**	434	20	87.7%	IE5	1.3	ECIN4A2P2	2.2
1.5	1500	3000	90	**ECS101A3K1P5DC4**	434	23	89.1%	IE5	2.6	ECIN4A5P8	5.8
2.2	1500	3000	112	**ECS101A3K2P2EC4**	434	39	91.4%	IE5	4.4	ECIN4A5P8	5.8
3	1500	3000	112	**ECS101A3K3EC4**	565	45	92.4%	IE5	5.3	ECIN4A9P5	9.5
4	1500	3000	112	**ECS101A3K4EC4**	565	45	92.4%	IE5	6.8	ECIN4A9P5	9.5

B5 footless

kW	Base speed RPM	C.P. speed RPM	IEC frame	Catalog number	"L" dim.	Aprx. wt. (kg)	Full load efficiency	Eff class	Motor input amps	Drive module	Drive output amps
1-phase 50 HZ, 230V AC (+/-10%) - The power ratings are valid at nominal voltage											
1.5	1500	3000	90	**ECS101A8K1P5DD4**	424	23	89.1%	IE5	2.8	ECIN8A7P0	7
3-phase 50 HZ, 400V AC (+/-10%) - The power ratings are valid at nominal voltage											
0.75	1500	3000	90	**ECS101A3K0P8DD4**	434	20	87.7%	IE5	1.3	ECIN4A2P2	2.2
1.5	1500	3000	90	**ECS101A3K1P5DD4**	434	23	89.1%	IE5	2.6	ECIN4A5P8	5.8
2.2	1500	3000	112	**ECS101A3K2P2ED4**	434	39	91.4%	IE5	4.4	ECIN4A5P8	5.8
3	1500	3000	112	**ECS101A3K3ED4**	565	45	92.4%	IE5	5.3	ECIN4A9P5	9.5
4	1500	3000	112	**ECS101A3K4ED4**	565	45	92.4%	IE5	6.8	ECIN4A9P5	9.5

Note: B34 and B35 mounting available on customer orders

Energy savings

How does this translate to power consumption reduction and energy savings?
Here are results on actual customer test result in the US market; however, depending on energy costs, these savings could be significantly greater.

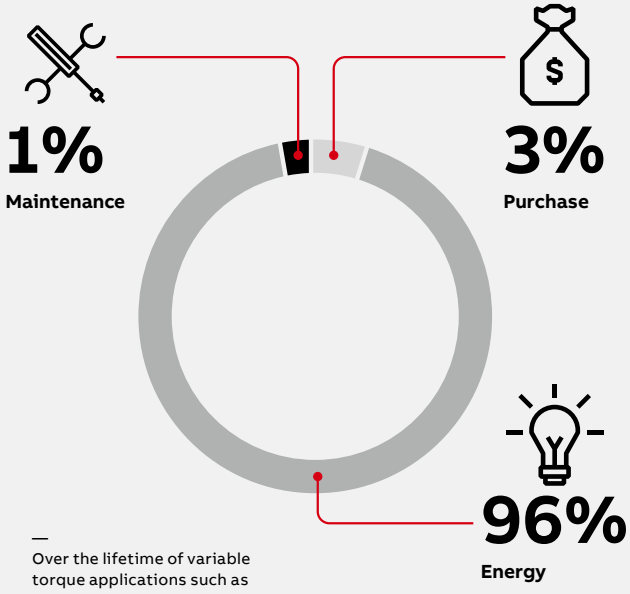
Induction motor (IE3)	EC Titanium FASR motor (IE5)
Average unit consumption per day (based on seven-day average) 57.7 kWH	Average unit consumption per day (based on seven-day measurement) 45.1 kWH
Estimated annual energy cost (based on 0.25 € per kWh) € 5,265	Estimated annual energy cost (based on 0.25 € per kWh) € 4,115
Energy cost savings per motor	€ 1,150

Energy reduction:
22%

Annual Savings
€1,150 per unit

Estimated return
on investiomen
18 to 24 months

Better lifetime efficiency for the whole system
EC Titanium motors and integrated drivess enable better overall system efficiency. With pumps and fans, which are usually run at partial load, this translates to better wireto-water and wire-to-air efficiency. And, although replacing older motor systems with more efficient ones does carry an initial financial cost, the long-term savings over the lifetime of the application far outweigh the cost of purchase. In fact, the initial investment can often be paid back in as little as one to three years.



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Over the lifetime of variable torque applications such as fans and pumps, the majority of the cost comes from the energy used to run the motor.

Sustainability

ABB has set ourselves the ambitious target of helping our customers reduce their annual CO_2 emissions in excess of 100 megatonnes by 2030. This is equivalent to the annual emissions of 30 million combustion cars. An example of how this can be accomplished is the ability of ABB drives powering electric motors that can reduce electricity consumption by up to 25%.

Smart sensor for energy consumption
The ABB Ability™ calculates several parameters of datapoints including speed, motor power and torque. With this information, we can accurately calculate energy usage and help our customers optimize their operations.

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White paper:
Improving end-to-end system efficiency

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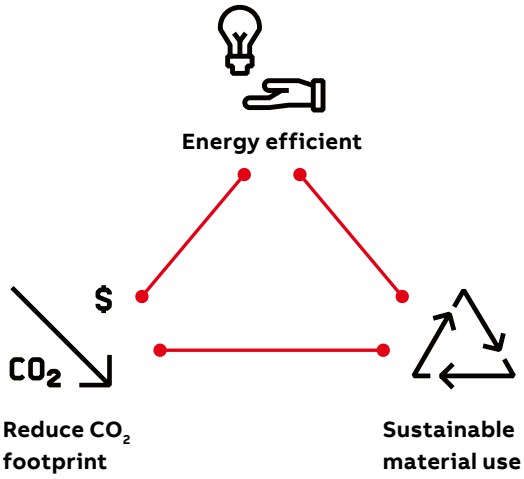
Learn more about:
Energy Efficiency Movement



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Time to make a difference

Join the Energy Efficiency Movement

Electric motors consume **over 45% of the world's electricity.**

By 2040 the number of motors **will double.**

Adoption of high-efficiency motor systems would **cut global electricity consumption by up to 10%.**

Changing just one motor can make a difference.

ABB, your global value partner

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

Global reach
ABB operates in over 100 countries with its own manufacturing, logistics and sales operations together with a wide network of local channel partners that can quickly respond to your needs. They bring our products and services straight to your front door. ABB channel partners have in-depth knowledge of local markets and are conversant with the defined ABB products and processes.

Energy efficiency
ABB has what it takes to help every industry and application reach new levels of efficiency and energy savings even under the most demanding conditions. Combining the best available materials with superior technology, our motors are designed to operate reliably no matter how challenging the process or application, and to have low life cycle costs.

ABB Motors and Mechanical Inc.
5711 R.S. Boreham, Jr. Street
Fort Smith, AR 72901
Ph: 1.479.646.4711

new.abb.com/motors-generators

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