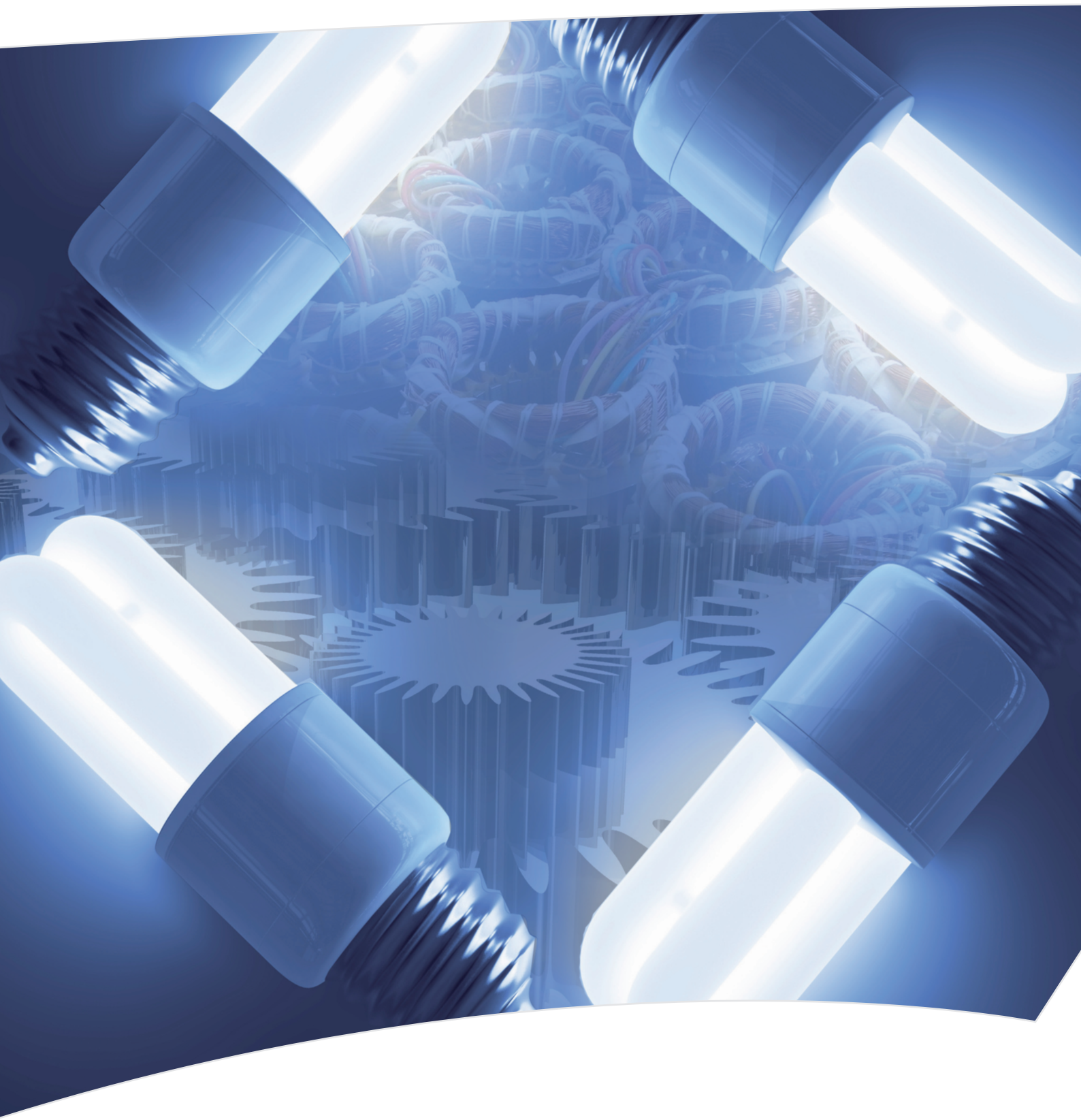
MAKING MODERN LIVING POSSIBLE



Global Standard EN60034-30

Worldwide Energy Efficiency Classification for Low Voltage Motors

BAUER geared motors

The Gear Motor Specialist

Danfoss welcomes the EU-Directives

What do the Directives mean?
EN60034-30 is a new standard emerging for high Efficiency motors across the globe. Higher Efficiency motors are not new and have been with us for many years now helping lower CO^2 emissions. The markets unfortunately have not all readily accepted this new technology as previously it was on a voluntary basis and many products fell outside of its scope. What EN60034-30 will do is force its standards to be adopted throughout the world for high efficiency motors.

Electric motors account for approximately 1.07 Billion kWh of energy in the EU alone. The implication of changing to higher Efficiency motors could give energy savings of 20-30% giving a massive saving in the greenhouse gas emission together with the added benefit of reducing the TCO.

The current situation
EFF3 = low efficiency
EFF2 = increased efficiency
EFF1 = energy saving motor

Rated voltage	400v 3ph 50hz
Power	1.1 up to 90 kW
No. of poles	2 or 4
Notes	Not covering braked, explosion protection and geared motors

The future situation
As of the beginning of 2009 new IE (**I**nternational **E**nergy **E**fficiency) classes have been introduced :

IE1 =	Standard Efficiency (Comparable to EFF2 Motors)
IE2 =	High Efficiency (Comparable to EFF1 Motors)
IE3 =	Premium Efficiency (10-15% more efficient)
(IE4 =	Super Premium) (As yet to be finalised)

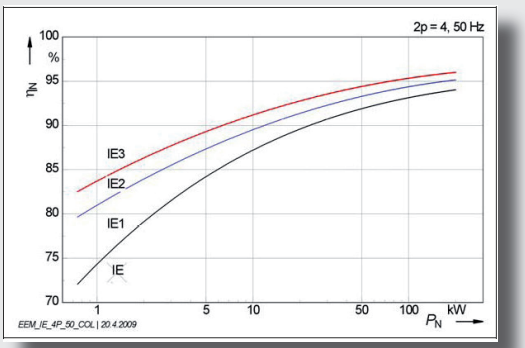
The classes covered are

Rated voltage	up to 1000V
Power	0,75 kW up to 375 kW
No. of poles	2, 4 or 6 (50 and 60 Hz)
Duty types	S1 or S3 with ED> 80%
Notes	Now includes braked and geared motors

When does this happen?

2009	IE60034-30 is approved and validated
16 June 2011	The minimum spec of motor available will be IE2
1 Jan. 2015	The minimum spec of motor available will be IE3. Alterna tively IE2 motors can be supplied but they must be controlled via a frequency inverter.

Designation of the efficiency class		Comparison with the CEMEP Classification	
Efficiency	Code	Efficiency	Logo
Super Premium	**IE4**		
Premium	**IE3**	–	–
High	**IE2**	High	EFF 1
Standard	**IE1**	Improved	EFF 2
below Standard	No designation	Normal	EFF 3



Comparison of the three efficiency classes based on 4 pole motors for 50 Hz

Nominal power PN = 0,75 … 200 kW

The Directives in Practise

How does EN60034-30 help you?
EN60034-30 helps everyone by reducing the greenhouse gasses produced in generating electricity leading to a cleaner planet.

What are the benefits?
As a user of electric motors EN60034-30 will benefit you tremendously over the life time of the motor leading to a much reduced Total Cost of Ownership (TCO). The motors initially will be more expensive due to the changes in design in most cases requiring increased motor frame sizes, the cost will be quickly recouped against the energy saving from using this considerably more efficient motor. Over 95% of the total life cost for a motor is in energy consumption, higher efficiencies bring immense savings.

What is next?
Danfoss Bauer can furnish you with up to date information regarding the progress of EN60034-30.
It will be illegal to supply IE1 motors after June 2011.

The Danfoss Bauer Solution
Danfoss Bauer offers motors with efficiency classifications IE1, IE2 and IE3 according to IEC 60034-30 saving energy in all your applications.

Power range	0,75 kW to 45 kW
Efficiency	acc. 60034-2-1:2008
Ranges	Standard Efficiency
	DSE.. IE1
	High Efficiency
	DHE.. IE2
	Premium Efficiency
	DPE.. IE3

Instant savings can be made by
- combining with higher efficiency gearboxes e.g. bevel instead of worm gearboxes
- using the motors in their optimum operating point
- control by means of frequency inverters from Danfoss

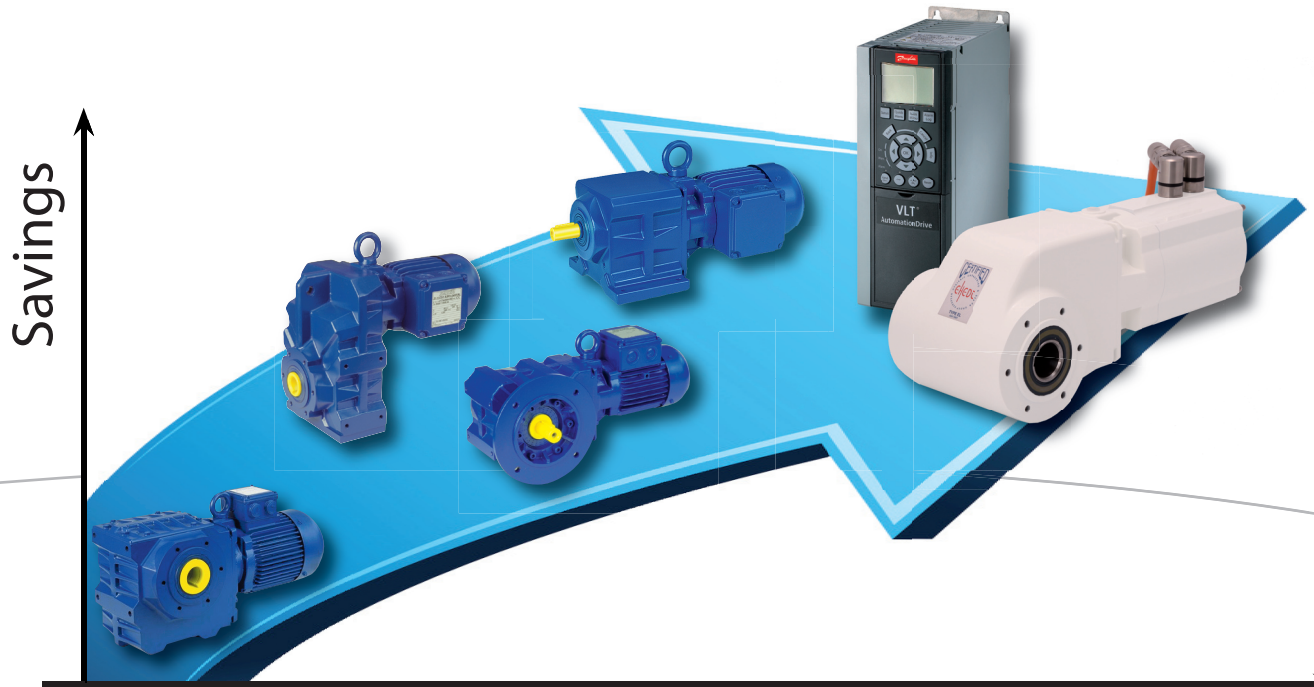
Learn more by calling our competent technicians to discuss methods of increasing your efficiency and saving money in your application.

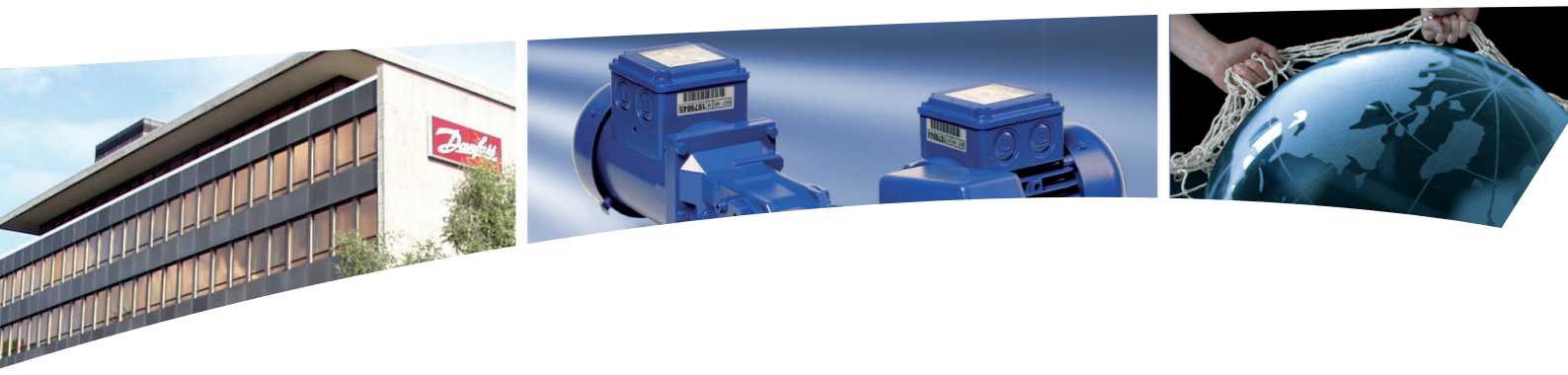
FAQ

Do all motors have to be scrapped?
Existing installations are not affected this standard only applies to new products.

What happens when motors are repaired?
If a motor is repaired in such a way that it does not effect the motor properties, the new regulations concerning minimum efficiencies do not apply.

What if I need to replace an existing motor or geared motor ?
Replacement from stocks prior to June 2011 (e.g. Distribution) are considered to be already in circulation and can be used without restriction.
Any motors manufactured after June 2011 must fully comply with EN60034-30





Danfoss Bauer - The Gear Motor Specialist

For over three-quarters of a century we have been solving drive problems everywhere where electric drives with high torques are needed for plant and machinery. Since 1927 we are located in Esslingen and successful throughout the world. Specialisation in geared motors has paid off for our customers and the company.

Numerous requirements have enabled us to grow.

Precision and technical perfection are only one side of the coin. The deciding factors behind our work are the individual problems of our customers. We regard these as a challenge and offer tailor-made, comprehensive solutions. It is frequently a matter of countering severe operating conditions. Great cold, heat, dust, dirt and spraywater demanded much commitment, know-how and creativity. Today, we as your drive specialists do everything to achieve the optimum for you. Whether it is difficult applications or ecomomic solutions in particular, you can be sure of our commitment.

Wherever you are in the world, we are there, too.

Proximity to our customer, both geographically and psychologically, is an important pre-condition for good cooperation. Our highly-qualified advisors, technicians and fitters are working for you round the world.

We speak your language - even in the transmitted sense.

BAUER geared motors

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