



**B210 -  
Energy Saving  
Geared Motor  
Platform  
Future Proof  
Investment**



 **Bauer**<sup>®</sup>  
Gear Motor

*An Altra Industrial Motion Company*



## Bauer Gear Motor

We are all familiar with the figures: around 70 percent of industrial energy demand comes from electric motors. This represents CO2 emissions on the order of some 427 million tons. The European Commission is convinced that savings equal to the electrical power consumption of Sweden could be achieved with suitable measures.

### Bauer Gear Motor welcomes the EU Directive

EU Directive ErP 2009/125/EC (Eco-design Requirements for Energy-using Products) defines the conditions for these savings. The EU member states gave their support to the new rules for reducing the energy demand of industrial motors at a meeting of the ecodesign regulatory committee on March 11, 2009.

### The ordinance sets out three stages:

from June 16, 2011 onward, motors must comply as a minimum with MEPS (Minimum Efficiency Performance Standards) energy efficiency class IE2 (High Efficiency; formerly EFF1). From January 2015 onward, energy efficiency class IE3 (Premium Efficiency) will be the standard

for motors with rated power of 7.5 to 375 kW, and from January 2017 onward for motors with rated power of 0.75 to 375 kW. Motors controlled by frequency converters are exempt from this regulation. For such motors, IE2 is sufficient.

### Company policy

We see ecodesign as an affirmation of our efforts. Bauer Gear Motor strives to reach its goals with minimum consumption of raw materials and energy, the least possible impact on the environment, and efficient use of resources. Bauer Gear Motor fully supports the Directive, especially because most of our developments are committed to energy savings.

### What does the EU directive mean?

IEC 60034-30 is an international standard for energy-efficient motors and will in future years be used worldwide in this area. Electric motors account for approximately 1.07 billion kWh of the total energy demand of the EU. Using energy efficient motors would achieve energy savings of 20 to 30 percent, thereby reducing the total cost of ownership (TCO) and reducing global warming.

Bauer Gear Motor PMSM-Drives already fulfill the future requirements of IE4 laid down in the draft IEC 60034-30 Edition 2 which will be approved shortly.

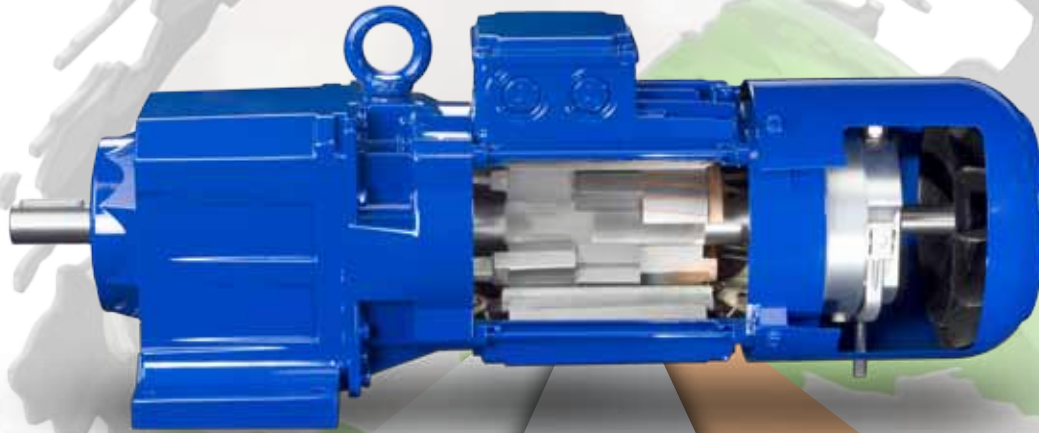
### As things stand today

New IE (International Energy Efficiency) efficiency classes were introduced at the beginning of 2009:

- IE1 = Standard Efficiency (~EFF2)
- IE2 = High Efficiency (~EFF1)
- IE3 = Premium Efficiency (10 - 15% higher efficiency as IE2)
- IE4 = Super Premium Efficiency



## Comparison of the Motor Technologies



### Aluminium

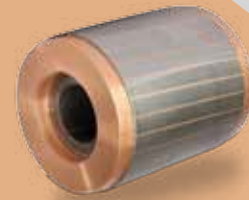
Losses 100%



### Permanent Magnet

No voltage induction in the rotor

- No heat losses in the rotor
- Rotor losses reduced by 100%
- Total losses reduced by approximately 25%
- Total efficiency increased  $\geq 10\%$



### Copper

Higher electrical conductivity of copper

- Rotor resistance reduces by 40%
- Heat losses in rotor reduced by 40%
- Total losses reduced by 10..15%
- Total efficiency increased by 1...2%

**Couplings**

**Ameridrives Couplings**

*Mill Spindles, Ameriflex, Ameridisc*

Erie, PA - USA  
**1-814-480-5000**

*Gear Couplings*

San Marcos, TX - USA  
**1-800-458-0887**

**Bibby Turboxflex**

*Disc, Gear, Grid Couplings, Overload Clutches*

Dewsbury, England  
**+44 (0) 1924 460801**

Boksburg, South Africa  
**+27 11 918 4270**

**TB Wood's**

*Elastomeric Couplings*

Chambersburg, PA - USA  
**1-888-829-6637** – Press #5

*For application assistance:*  
**1-888-829-6637** – Press #7

*General Purpose Disc Couplings*

San Marcos, TX - USA  
**1-888-449-9439**

**Ameridrives Power Transmission**

*Universal Joints, Drive Shafts, Mill Gear Couplings*

Green Bay, WI - USA  
**1-920-593-2444**

**Huco Dynatork**

*Precision Couplings and Air Motors*

Hertford, England  
**+44 (0) 1992 501900**

Chambersburg, PA - USA  
**1-800-829-6637**

**Linear Products**

**Warner Linear**

*Linear Actuators*

Belvidere, IL - USA  
**1-800-825-6544**

*For application assistance:*  
**1-800-825-9050**

St Barthelemy d'Anjou, France  
**+33 (0) 2 41 21 24 24**

**Electromagnetic Clutches and Brakes**

**Warner Electric**

*Electromagnetic Clutches and Brakes*

New Hartford, CT - USA  
**1-800-825-6544**

*For application assistance:*  
**1-800-825-9050**

St Barthelemy d'Anjou, France  
**+33 (0) 2 41 21 24 24**

*Precision Electric Coils and Electromagnetic Clutches and Brakes*

Columbia City, IN - USA  
**1-260-244-6183**

**Matrix International**

*Electromagnetic Clutches and Brakes, Pressure Operated Clutches and Brakes*

Brechin, Scotland  
**+44 (0) 1356 602000**

New Hartford, CT - USA  
**1-800-825-6544**

**Inertia Dynamics**

*Spring Set Brakes; Power On and Wrap Spring Clutch/Brakes*

New Hartford, CT - USA  
**1-800-800-6445**

**Overrunning Clutches**

**Formsprag Clutch**

*Overrunning Clutches and Holdbacks*

Warren, MI - USA  
**1-800-348-0881** – Press #1

*For application assistance:*  
**1-800-348-0881** – Press #2

**Marland Clutch**

*Roller Ramp and Sprag Type Overrunning Clutches and Backstops*

South Beloit, IL - USA  
**1-800-216-3515**

**Stieber Clutch**

*Overrunning Clutches and Holdbacks*

Heidelberg, Germany  
**+49 (0) 6221 30 47 0**

**Heavy Duty Clutches and Brakes**

**Wichita Clutch**

*Pneumatic Clutches and Brakes*

Wichita Falls, TX - USA  
**1-800-964-3262**

Bedford, England  
**+44 (0) 1234 350311**

**Twiflex Limited**

*Caliper Brakes and Thrusters*

Twickenham, England  
**+44 (0) 20 8894 1161**

**Industrial Clutch**

*Pneumatic and Oil Immersed Clutches and Brakes*

Waukesha, WI - USA  
**1-262-547-3357**

**Gearing**

**Boston Gear**

*Enclosed and Open Gearing, Electrical and Mechanical P.T. Components*

Charlotte, NC - USA  
**1-800-825-6544**

*For application assistance:*  
**1-800-816-5608**

**Bauer Gear Motor**

*Gearred Motors*

Esslingen, Germany  
**+49 (711) 3518-0**

**Nuttall Gear and Delroyd Worm Gear**

*Worm Gear and Helical Speed Reducers*

Niagara Falls, NY - USA  
**1-716-298-4100**

**Belted Drives and Sheaves**

**TB Wood's**

*Belted Drives*

Chambersburg, PA - USA  
**1-888-829-6637** – Press #5

*For application assistance:*  
**1-888-829-6637** – Press #7

**Engineered Bearing Assemblies**

**Kilian Manufacturing**

*Engineered Bearing Assemblies*

Syracuse, NY - USA  
**1-315-432-0700**

**Bauer Gear Motor**

**Bauer Gear Motor GmbH**

Eberhard-Bauer-Strasse 36-60  
 73734 Esslingen - Germany

**+49 711 3518 0**  
**+49 711 3518 381 (Fax)**

www.bauergears.com

**Bauer Gear Motor s.r.o.**

Tovarenská 49  
 953 01 Zlate Moravce - Slovakia

**+421 37 6926100**  
**+421 37 6926181 (Fax)**

www.bauergears.com

**Bauer Gear Motor Limited**

Nat Lane Business Park  
 Winsford, Cheshire  
 CW7 3BS - United Kingdom

**+44 1606 868600**  
**+44 1606 868603 (Fax)**

www.bauergears.com

**Bauer Gear Motor Finland Oy Ab**

Yrittajankuja 3  
 01800 Klaukkala - Finland

**+358 207 189 700**  
**+358 207 189 701 (Fax)**

www.bauergears.com

**Bauer Gear Motor LLC**

31 Schoolhouse Rd.  
 Somerset NJ 08873-1212 - USA

**+1 732 469 8770**  
**+1 732 469 8773 (Fax)**

www.bauergears.com

**Altra Industrial Motion (Shenzhen) Co., Ltd.**

18# HuanZhen Road Dabo  
 Industrial Zone - BoGoang Village  
 ShaJing Town - BaoAn District  
 Guangdong Province  
 518 104 ShenZhen City / China

**+86 755 27246308**  
**+86 755 27246017 (Fax)**

www.bauergears.com

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