



## **Guidelines, Standards and Regulations**

**ErP 2009/125/EG**

**IEC60034-30-1**

**640/2009/EG**



 **Bauer**<sup>®</sup>  
Gear Motor

An Altra Industrial Motion Company



## ErP Directive 2009/125/EC

Directive 2009/125/EC of the European Parliament and the Council, issued in 2009, specifies requirements for the environmentally responsible design of energy-related products (ErPs). In November 2009 it superseded Directive 2005/32/EC, which formed the framework for requirements for the environmentally responsible design of energy-using products (EuPs). This change has no effect on already proclaimed implementation measures.

**From 16 June 2011 onward**, new motors or geared motors marketed in the EU must comply with the requirements of **energy efficiency class IE2**. **From 1 January 2015 onward, motors with rated outputs from 7.5 to 375 kW** destined for the European market must comply with **energy efficiency class IE3**, and **from 1 January 2017 onward this requirement also applies to smaller motors rated at 0.75 kW** or more.

### Objectives

The ErP Directive has several objectives:

#### 1. Mitigating the environmental impact of energy-using products

This objective is intended to be achieved by the documentation and labelling of products, by regulations for inspection, and by the formulation of individual requirements in implementation measures. As the entire product life cycle is taken into consideration, action must be taken as early as the design phase.

#### 2. Climate protection

Achievement of the EU climate protection objectives is to be supported. This can be implemented by reducing energy consumption and the emission of global warming gasses in the production, operation and disposal of energy-using products.

#### 3. Harmonised legislation

The directive creates a framework for the European regulation of environmental design requirements. This avoids trade impediments resulting from differences in national regulations. This can be achieved by means of the proclamation of legally binding implementation measures for the entire Community and protection of free trade in goods against further-reaching regulations of the Member States.

## IEC 60034-30-1

### Rotating electrical machines. Efficiency classes of line operated AC motors (IE-Code)

The new edition IEC 60034-30-1 addresses now all types of single speed electrical motors which are rated for a sinusoidal power supply and for mains and constant duty according to IEC 60034-1 or IEC 60079-0. This includes, without any differentiation of the motor technology, single and three phase low voltage motors independent of their rated voltage or frequency together with Line Start permanent magnet motors.



| Efficiency class designation |                | Comparison with CEMEP classification |   |
|------------------------------|----------------|--------------------------------------|---|
| Efficiency                   | Code           | Efficiency                           | Logo  |
| Super Premium                | IE4            | -                                    | -   |
| Premium                      | IE3            | -                                    | -   |
| High                         | IE2            | High                                 |  |
| Standard                     | IE1            | Improved                             |  |
| Lower than Standard          | No designation | Standard                             |  |

**640/2009/EG**

**Motors subject to the ErP Directive as specified by the Electric Motors Regulation 640/2009/EC**

- Single-speed, three-phase, 50 Hz and 50/60 Hz
- 2-, 4- or 6-pole motors
- Rated output from 0.75 to 375 kW
- Rated voltage up to 1000 V
- Duty type S1 (continuous running)
- For operation directly from the mains (50 Hz or 60 Hz)
- For Design N motors complying with IEC 60034-12
- Motors with two switchable rated voltages, under the condition that the magnetic flux is the same with both voltages
- Geared motors

The new Electric Motors Regulation has a broader scope than the standard previously used in Europe.

**Motors excluded from the regulation**

- Motors exclusively manufactured for converter operation in accordance with IEC 60034-25
- Pole-changing motors
- Motors fully integrated into a machine (such as pumps, fans and compressors) that cannot be tested separately from the machine
- At altitudes exceeding 4000 meters above sea-level
- Where ambient air temperatures exceed 60°C
- Where ambient air temperatures are less than -30 °C
- From 16 June 2011 onward: IE1 motors for none S1 duty destined for the European market
- Explosion-proof motors (explosion protection has higher priority)
- Brake motors
- as from 2015/2017, IE2-Motors for use with variable speed drives (Additional name plate)

**Example :**



**Method for determining motor efficiency according to IEC 60034-2-1**

- Individual loss method
- Additional losses using the residual loss method
- Low measurement uncertainty

**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 Turboflex***Disc, Gear, Grid Couplings, Overload Clutches*

Dewsbury, England

+44 (0) 1924 460801

Boksburg, South Africa

+27 (0) 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 Dynatorx***Precision Couplings and Air Motors*

Hertford, England

+44 (0) 1992 501900

Chambersburg, PA - USA

1-888-829-6637

**Lamiflex Couplings***Flexible Couplings, Bearing Isolators, and Coupling Guards*

São Paulo, SP - Brasil

+55 (11) 5679-6533

**Guardian Couplings***Flywheel, Jaw, Shear, Gear, Grid, Disc and Engine Couplings*

Michigan City, IN - USA

1-219-874-5248

**Engineered Bearing Assemblies****Kilian Manufacturing***Engineered Bearing Assemblies*

Syracuse, NY - USA

1-315-432-0700

**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

Saint Barthélemy 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*

Brechtin, 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

**Belted Drives and Sheaves****TB Wood's***Belted Drives*

Chambersburg, PA - USA

1-888-829-6637 – Press #5

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1-888-829-6637 – Press #7

**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

**Svendborg Brakes***Industrial Brakes and Brake Systems*

Vejrstrup, Denmark

+45 63 255 255

**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***Geared Motors*

Esslingen, Germany

+49 (711) 3518-0

Somerset, NJ - USA

1-732-469-8770

**Nuttall Gear and Delroyd Worm Gear***Worm Gear and Helical Speed Reducers*

Niagara Falls, NY - USA

1-716-298-4100

**Linear Products****Warner Linear***Linear Actuators*

Belvidere, IL - USA

1-800-825-6544

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