SEW EURODRIVE

Systematic Energy Saving –
Our Innovation and Expertise for your Benefit

Energy efficient motors from SEW-EURODRIVE: EFF1, EFF2 and other efficiency classes

Reducing energy costs: A major topic for all plant engineers and system operators

It is astonishing how few plant engineers and system operators are aware that energy costs make up 95 % of the life cycle costs for a motor. This is the reason why only a few plants are currently equipped with energy efficient motors.

However, SEW-EURODRIVE continues to set new standards: On the basis of consistent research and development both in motor development and production, SEW-EURODRIVE is the first company worldwide to successfully implement die-cast copper technology in mass industrial production.

SEW-EURODRIVE uses liquid copper to make the die-cast cage of the motor, which is available in the usual compact design. The result: Highly efficient energy-saving motors at a surprisingly competitive price. It goes without saying that the motors comply with all applicable European and international standards. Depending on the utilization of the production system, investments will pay off in less than one year!

Energy efficient motor and rotors with copper die-cast cage

Driving the world – with innovative drive solutions for all branches of industry and for every application. Products and systems from SEW-EURODRIVE for any application – worldwide! SEW-EURODRIVE products can be found in a variety of industries, e.g. automotive, building materials, food and beverage as well as metal-processing. The decision to use drive technology "made by SEW-EURODRIVE" stands for safety regarding functionality and investment.

Highest quality without compromise thanks to a perfect unit:

The gearmotor in the SEW-EURODRIVE modular system is a combination of two components optimally matched to each other. Without couplings and transmission elements, the gearmotor, comprising an energy efficient motor and an appropriate gear unit, represents the optimum drive solution!

Cost-effective: Energy efficient motors from SEW-EURODRIVE

- Cost-effective, because energy is saved by minimizing energy losses
- Compact, because motors include rotors with copper or aluminum die-cast cage
- Customized, because numerous options, such as connectors, encoders, forced cooling fans, etc., allow the user to match the motor to the specific application
- Country-specific certifications, because a wide range of motor types is available
- High quality, because the most up-to-date methods are used in development and production

International Requirements – Solutions from SEW-EURODRIVE

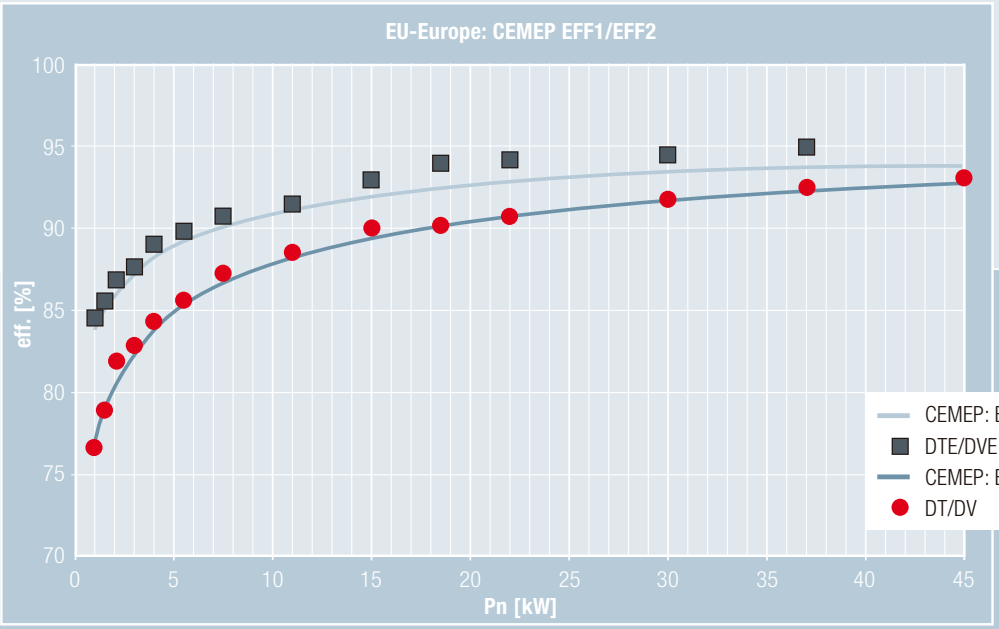
The voluntary agreement that was drawn up in 1999 between the European manufacturers of electric motors and the European Commission's General Directorate for Energy has now been revised and updated for 2004.

The efficiency levels of SEW-EURODRIVE's 4-pole motors in the DT and DV series exceed the requirements of category EFF2, and the levels of the 4-pole motors in the DTE and DVE series exceed the limit value for EFF1.

The measuring process stipulated for Europe (IEC 60034-2) leads to different values compared to other standards and measuring regulations.

Standards / Regulations / Agreements		Solutions from SEW-EURODRIVE
Europe	EFF I	– Energy efficient motors, 4-pole – 1.1 ... 37.0 kW – Copper die-cast cage
	EFF 2	– Energy efficient motors, 4-pole – 1.1 ... 75.0 kW – Aluminum die-cast cage

Efficiency level EFF2 for DT/DV and EFF1 for DTE/DVE



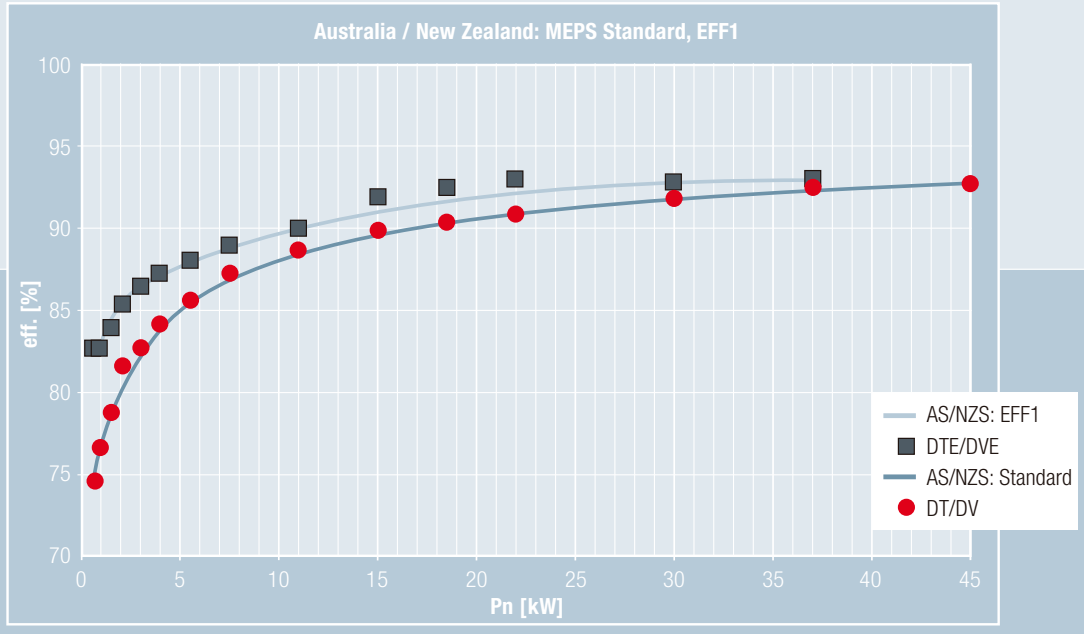
In 2002, the legislative body for Australia and New Zealand stipulated minimum efficiency levels for motors (MEPS = Minimum Energy Performance Standards). As of October 1, 2006 use of EFF1 motors will be mandatory.

The efficiency levels of SEW-EURODRIVE's 4-pole motors in the DT and DV series exceed the requirements for the standard class. The 4-pole motors in the DTE and DVE series exceed the limit value for EFF1.

The measuring process stipulated for Australia / New Zealand (IEC 61972) leads to different values compared to other standards and measuring regulations.

Standards / Regulations / Agreements		Solutions from SEW-EURODRIVE
Australia / New Zealand	EFF I	– Energy efficient motors, 4-pole – 0.75 ... 37.0 kW – Copper die-cast cage
	Standard	– Energy efficient motors, 4-pole – 0.75 ... 75.0 kW – Aluminum die-cast cage

Standard efficiency levels with DT/DV values and EFF1 with DTE/DVE values (AS/NZS)



International Requirements – Solutions from SEW-EURODRIVE

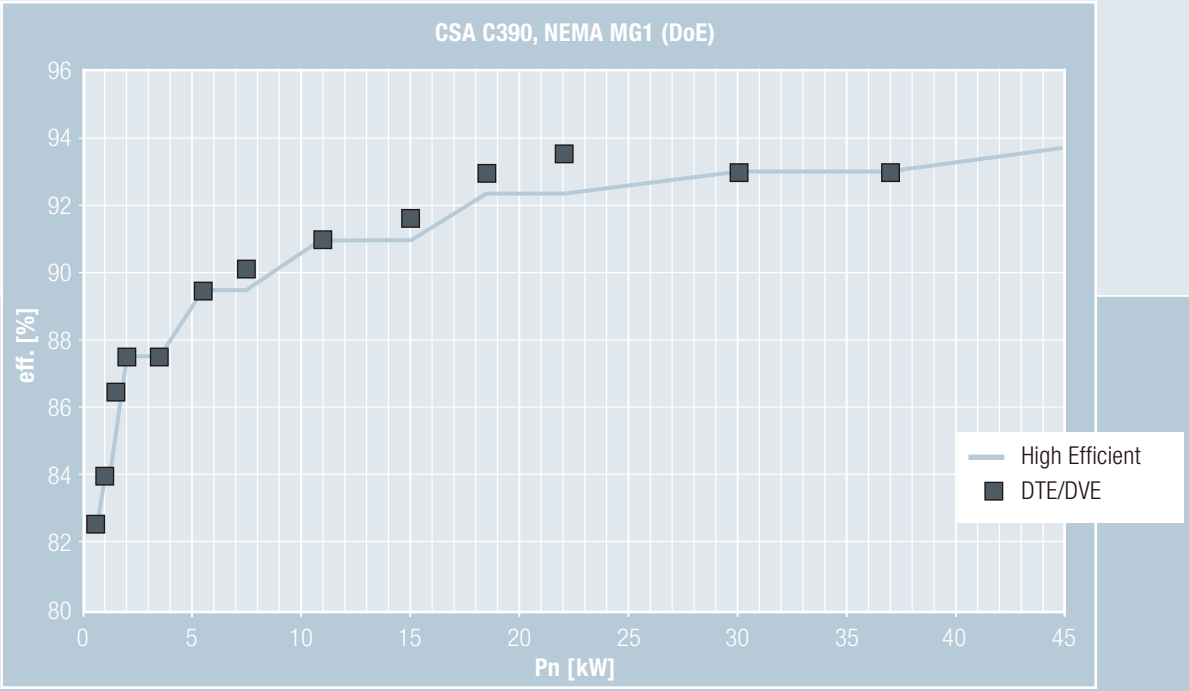
The standards and regulations in North America and Canada have been mandatory since the beginning of the 90s. The limit values for the "high efficient" motors (abbreviated to HE) are listed in the NEMA regulation MG1 and in the CSA C390.

The efficiency levels of the 4-pole motors in the DTE and DVE series offered by SEW-EURODRIVE reach or exceed the limit value for HE motors.
The measuring process stipulated for USA / Canada (IEEE 112) leads to different values compared to other standards and measuring regulations.

The motors must go through an approval process in both countries. The approval tests are carried out by the CSA authorities in Canada and the Department of Energy (DoE) in the USA. Energy efficient motors are identified with a logo.

Standards / Regulations / Agreements		Solutions by SEW-EURODRIVE
USA	ee CC056A	– Energy efficient motors, 4-pole – 0.75 ... 37.0 kW (1 ... 50 hp) – Copper die-cast cage
Canada	CSA ® E	

High-efficient efficiency classes in accordance with CSA C390 and NEMA MG1 (DoE) and DTE/DVE values



For the Brazilian market, the legislative body has stipulated the efficiency level in accordance with NBR7094.

The measuring process stipulated for Brazil leads to different values compared to other standards and measuring regulations.

The efficiency levels of the 4-pole motors in the DTE and DVE series offered by SEW-EURODRIVE exceed the limit value for Alto Redimento.

Standards / Regulations / Agreements		Solutions from SEW-EURODRIVE
Brazil		– Energy efficient motors, 4-pole – 0.75 ... 37.0 kW (1 ... 50 hp) – Copper die-cast cage

Alto Redimento efficiency level and DTE/VDE values