

ReEnergy

ACC™: High-Efficiency AC-Motor with Variable Speed
COMPARISON with AC-motor and AC-drive

Innovation
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**AC-motors consume 40%
of the industrial electrical energy,
ACC™ provides up to 40% energy-savings.**

AC-Motor

ACC™ Motor

Motor + Converter

Compatible
Dimensions

Not
Compatible
Dimensions



low price 100%
Standard Efficiency
Weight 100%
No Speed Variation

low price 150%
High Efficiency IE2-IE3
Low Weight 120%
Full Speed Variation

high price 250%
Low Efficiency 82%
High Weight 150%-200%
Full Speed Variation

- 1) The comparison is based on 4 kV AC-Motor standard efficiency and 4 kV AC-Drive (AC-motor + IGBT Converter).

The ACC™-Motor with the same mechanical dimensions as the equivalent AC Motor, it has high efficiency (IE2 above 1500 rpm and IE3 (above 2500 rpm) it has the same dimensions as the AC-motor it's less expensive and more efficient as an AC-Motor with Converter.

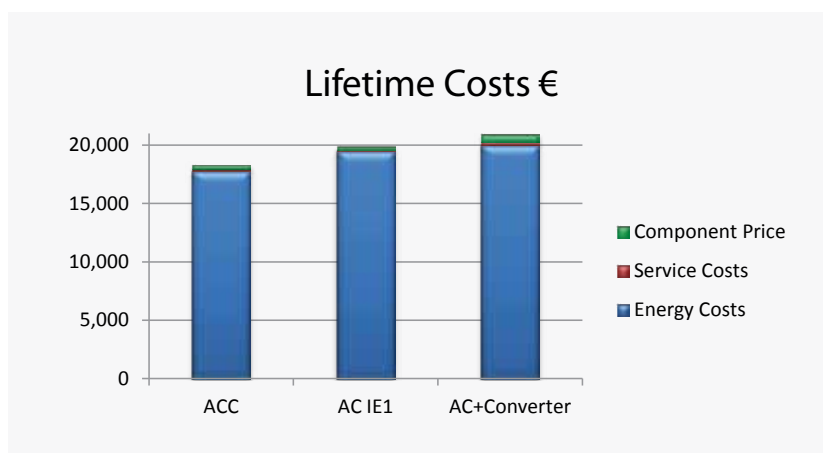
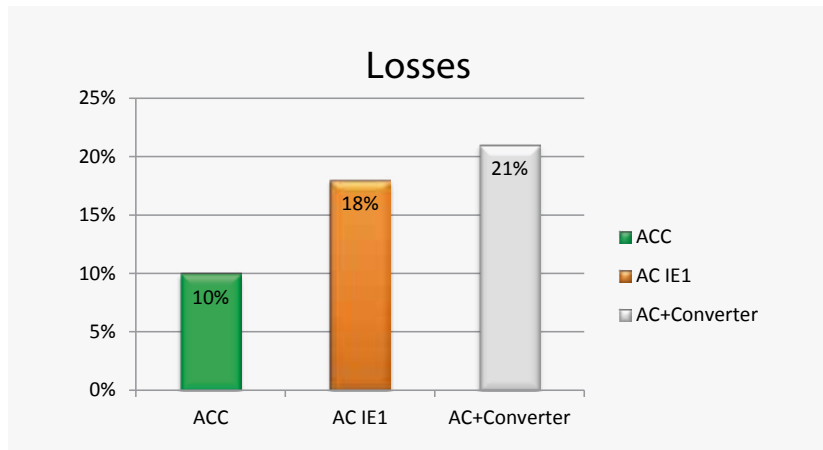
I. Energy Savings by ACC™ - Motor

The ACC™-Motor reduces significant the energy consumption, based on three effects:

- 1.1 The ACC™-Motor uses a high-efficiency motor (efficiency class IE2) and saves up to 12% of the energy of the IE1 Motor, because of the better efficiency, the savings are not depending from the application;
- 1.2 The integration of electronics INCREASES the efficiency of the ACC-motor – patent pending. In the conventional drives (AC-motor and separate converter), the converter DECREASES the efficiency of the system by 2.5 – 3%;
- 1.3 The ACC™ Motor provides variable speed; the power can be adapted to the process. ACC™-Motor saves therefore up to 40% of the energy, depending from the application.

II. ACC™ provides the lowest lifetime costs

ECC™: premium-efficient EC-Motor with variable speed;
AC IE1: AC-motor standard efficiency IE1;
AC+Converter: AC-Motor IE1 plus IGBT-Converter (AC-Drive).



The lifecost calculation is based on 4 kW motor IE1 with 40'000 hr lifetime and 10 ct. per kWhr. The 4 kW ACC cost 200 € more as an AC motor and saves 20'000 kWhr or 2000 € during his lifetime; the payback time is equal to 4000 hr or one year of operation. The value of the saved energy is four times higher as the ACC-sales price.

III. ACC™-Motor warranties the shortest investment-payback time

The ACC™-Motor reduces significantly the energy consumption and the ACC™-price is significantly lower as the price of AC-motor and separate converter. The payback time for the price-difference between an AC-Motor and the ACC™-Motor depends from the application and varies between 0.5 - 2 years. The value of the saved energy during the life-time of the ACC™-Motor is 4-5 times higher as the sales-price of the ACC™-motor.

IV. Low weight, less material, minimal space, compatible dimensions, simple installation

- 1.4 The ACC™-Motor uses motors with low weight and without any rear materials. The weight of the ACC™-Motor is usually 10% less as the weight of the equivalent AC-Motor efficiency class IE2. The weight of the ACC™-Motor is significantly lower as the weight of the equivalent AC- drive (motor + separate converter);
- 1.5 The dimensions of the ACC™-Motor are or equal to the dimensions of the standardised AC-motor IE1 and much smaller as the AC-Motor + converter;
- 1.6 The installation of the ACC™-Motor can be reduced to the connection with the grid, also similar to the installation of an AC-motor and much simpler as the installation of an converter with separate motor.

V. Product standardisation by ACC, automation interfaces of ACC

- 1.7 The ACC™--Speed and ACC-Power don't depend from the local Line-Frequency and Line-Voltage, (50/60 Hz etc.) otherwise as the Speed and Power of the AC-motor. It's possible to export worldwide products including ECC without any changes
- 1.8 The Motor can be easily integrated in automation systems, because of the integrated serial interface, references, fault detections and feedbacks.

ACC™: The product with the lowest lifetime-costs, the best technical performance and shortest payback time for investments

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