

How can the energy-saving potential of new drive systems be calculated?

Requirement

You are about to replace your drive system. You know that you can save up to 70% of energy costs simply by using energy-efficient motors and frequency inverters, thus allowing the excess costs for highly efficient drive solutions to be covered quickly; and lower electricity costs can directly increase corporate profit.

You are looking for software to support you in the decision-making process!

Fields of application

- Pump systems
- Ventilation systems
- Turbo compressors



**Innovation
award
SinaSave**
easyFair 2010
trade fair for drive
technology and
maintenance

up to
70%
energy savings

Our answer:

Energy-saving software SinaSave for calculating potential savings and payback times



SinaSave is designed for selecting a motor for line-fed operation or a frequency inverter for variable-speed operation. In the case of line-fed operation, cost savings can be calculated as well as the amortization time for our energy-saving motors of classes IE2/IE3 or NEMA Premium. In the case of converter-fed operation, all the necessary plant-specific parameters as well as the values required for the process are taken into consideration. SinaSave uses this information to determine the matching drive system, the price of the appropriate frequency inverter and the saving potential of the variable-speed drive system in comparison to other alternative concepts.

Highlights

Energy efficiency

- The SinaSave software determines the key data required for making investment decisions. On this basis, decisions regarding new acquisitions for drive systems can be made quickly and reliably.

User-friendliness

- Intuitive operation possible in 10 languages
- Online availability on the web
- Possible to save projects online
- Different currencies possible



**Comparative analysis:
Use of an IE3 motor instead of an
IE2 motor in line-fed operation**



The green area illustrates the possible total cost saving after switching to an IE2 motor.
The amortization point indicates the time at which the excess costs for investing in the replacement motor are financed by energy savings.

In this example this is after 7,843.52 hours.





**Comparative analysis:
Pump application – use of a frequency
inverter instead of throttle control**

The green area shows the energy-saving potential of a pump application with variable-speed drive compared to a mechanical throttle control.
In this application example (7.5kW, 2-shift operation, 8ct/kWh), SinaSave has calculated an energy cost saving of €1245, an amortization time of 18 months and a return on investment of 70%.

| | Product | Description of functions |
|---|--|--|
|  | <p>SinaSave software</p> | <p>Allows the energy-saving potential resulting from the use of energy-saving motors and frequency inverters to be calculated and generates the key data required for making investment decisions.</p> <p>Free download from: www.siemens.com/sinasave</p> |
|  | <p>Energy savings calculator for low-voltage motors</p> | <p>Allows you to quickly estimate the potential savings of various efficiency classes IE1, IE2 and IE3, and thus indicates which motor should be used.</p> <p>Free download from: www.siemens.com/energy-saving-calculator</p> |

Products in the low-voltage area, whose energy consumption and payback time can be calculated with the software tool:

| | Product |
|---|---|
|  | <p>High-efficiency low-voltage motors with efficiency class IE1/IE2/IE3/NEE/NPE</p> <p>Available series: 1LE10, 1LE15, 1LE2, 1LA5, 1LA6, 1LA7, 1LA8, 1LA9, 1LG4, 1LG6</p> |
|  | <p>SINAMICS G110 (1-phase) frequency inverter with USS interface Order no. 6SL3211...</p> <p>or</p> <p>SINAMICS G120 (3-phase) Frequency inverter with USS, PROFIBUS and Modbus RTU interface</p> <p>Power Module PM240 Order no. 6SL3224...</p> <p>Control Unit CU240 Order no. 6SL3244-0BB...</p> |

Further information

For details on energy-efficient drive solutions:
www.siemens.com/energy-saving
www.siemens.com/energy-efficiency-machinebuilder

For details on individual products:
www.siemens.com/sinasave
www.siemens.com/energy-saving-calculator
www.siemens.com/energy-saving
www.siemens.com/international-efficiency
www.siemens.com/motors
www.siemens.com/sinamics

For technical assistance regarding the use of products:
www.siemens.com/automation/support-request

Siemens AG
 Industry Sector
 P.O. Box 4848
 90026 NUREMBERG
 GERMANY

Subject to change without prior notice 10/11
 Order No. E20001-A1210-M102-X-7600
 Printed in Germany
 © Siemens AG 2011

The information provided in this brochure contains merely general descriptions or characteristics of performance which in actual case of use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.