

Energy monitoring: reduce carbon footprint and save costs



EnergyMaster

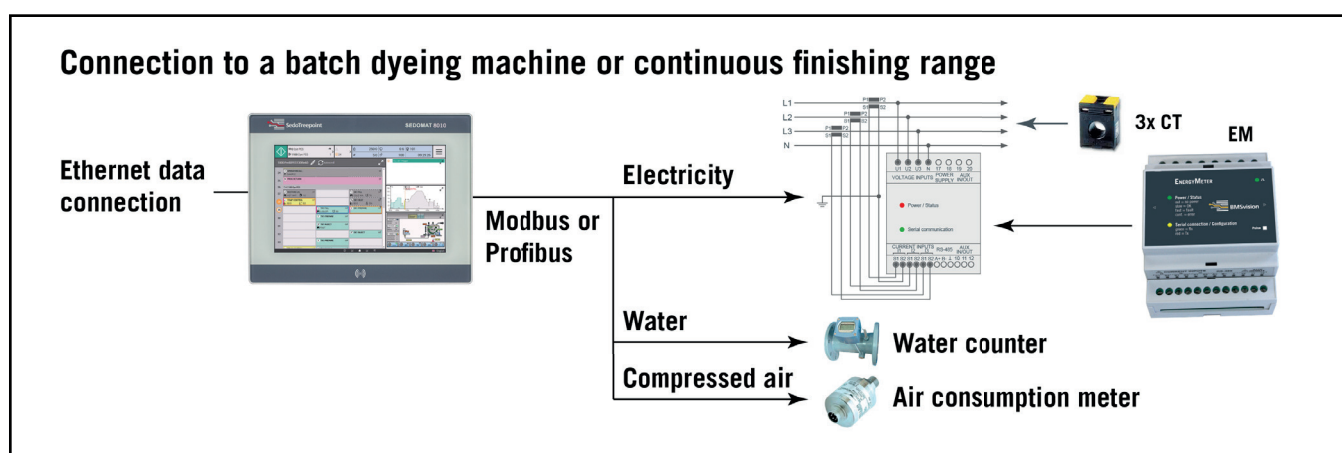
Today it is no longer sufficient to optimize output, quality and production planning, also energy consumption is becoming a very important factor in the operating cost of a textile plant. A sudden increase in the energy consumption of a production run can push an order easily in the red figures. With ever rising energy prices and increasing environmental legislation, efficient energy management has become a very critical success factor to run a profitable business in today's global economy.

EnergyMaster is a necessary tool to monitor and target your energy consumption of electricity, gas, compressed air, water, steam, effluent, CO₂ emissions for further analysis and optimization.



Step 1: Measure your energy consumption

In order to achieve energy monitoring, consumption meters need to be installed. They can be placed in the power switch panel to monitor the consumption of a department or group of machines. These simple meters allow measurement of the active energy consumption. Such a meter typically consists of three coils, one per phase, clamped on each electrical supply cable. The meter then converts the signals of the three coils into consumption pulses. These pulses are counted by the Sedomat controller and passed on in real time to SedoMaster, exactly like stop times and production and quality data are transmitted. In many cases, Sedomat controllers are already present at the machine to control the machine and to collect production data for the SedoMaster system. As such, energy data can be transmitted via the existing network to the PC server of the system. The integration of the energy parameters with the production data of SedoMaster provides a perfect insight into the relationship between energy consumption and production.



By monitoring the energy consumption, the company gets answers on important questions such as:

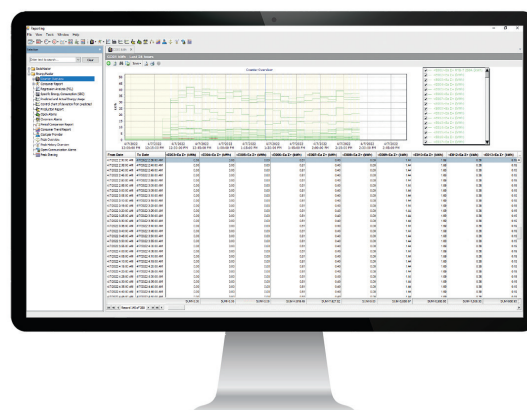
- Which machines or departments are the largest energy users?
- What is causing our peak consumption?
- What about the power factor (cos phi) of our company?
- What about the energy consumption fluctuation of a machine or department over time?
- What is the energy consumption or cost by production order and product?
- What is the remnant energy consumption when production is shut down (base load)?
- What abnormal consumptions occur and when?

Basic energy measurement

- Active energy (kWh)

Advanced energy analysis

- Active power (kW)
- Apparent power (kVA)
- Reactive power (kVAr)
- Time (hours)
- and much more



Energy consumption by time, e. g. last 24h

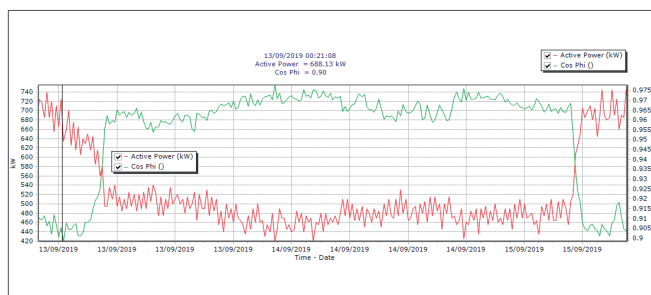
Step 2: Control and target your energy consumption

Reporting

EnergyMaster comes with a powerful and flexible report generator. With the “create once, use always”-principle, each user can define his own set of reports needed for the analysis and follow up of the various consumptions in the different departments. The ‘dashboard’ allows the visualization of reports, graphs and graphical meters from any computer with web access. The system comes with a set of predefined reports and includes industry standard reports, as PCL SEC and CUSUM charts.

Counter reports

These diagrams display the measured data from different counters e.g. water or electricity meters. With the counter reports, the most important measured values of the factory can be easily monitored.

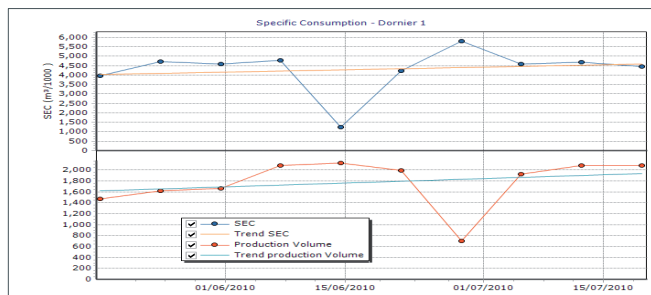


Combination reports

In these reports, energy consumption is related to effective production. For example, in the dye house, energy consumption is reported by batch; in weaving, energy consumption is reported per million picks and in spinning per 10,000 lbs produced. By analyzing this data by type of machine and by type of product, one can determine easily which machine is most energy efficient to produce a specific product or style.

Specific Energy Consumption (SEC)

The Specific Energy Consumption report relates the kWh per unit of production. A typical graph is the monthly evolution of the SEC, which shows whether the plant is gaining or losing energy efficiency.

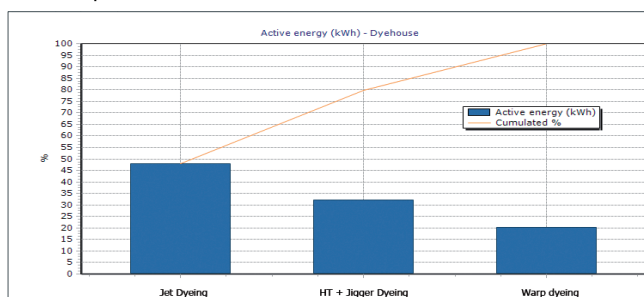


Cumulative Sum of deviations (CUSUM)

A special type of report is the CUSUM trend. It enables the comparison of the actual energy consumption with the budget. The gradient line in the trend graph allows immediate detection of an increasing or decreasing energy consumption. These reports help to raise energy awareness.

Consumer reports

Consumption measurements can be grouped together into one department e.g. dyeing, finishing, weaving, knitting or administration. The reports are used to trace abnormal peak consumption, to eliminate abnormal consumption and to evaluate if reduced night or weekend shifts make sense, considering the higher energy consumption per unit of production.

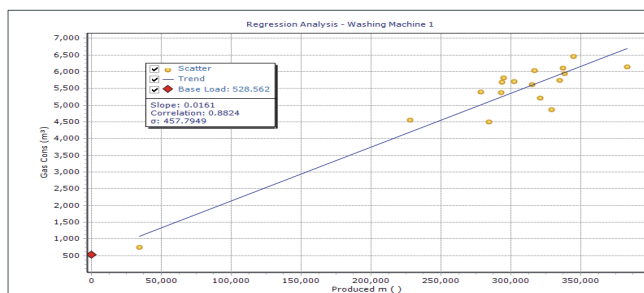


History reports

These reports show the energy consumption of a specific machine, product, department, or the entire plant over time. They allow an evaluation of the energy share of the total production costs for each product.

Performance Characteristic Line (PCL)

The PCL is the result of a regression analysis between energy consumption and production output. It can be recorded e.g. for a machine, a complete department or the whole plant as well as for the energy resources monitored by EnergyMaster. Based on this regression analysis, the base load is calculated. The PCL can also be used to plan future energy consumption based on production budgets.



Step 3: Save costs and reduce your carbon footprint

With EnergyMaster, the Sedo Treepoint MES systems are extended to monitor the important factor of energy. By using the existing data collection network, database and server configuration, investment costs are kept to a minimum, while monthly energy savings are significant.

Automatic alerts from the system to management and/or the operator enable quick responses to achieve immediate savings. The use of energy monitoring creates a “culture of energy awareness” within the company and by establishing an energy efficiency plan with clear targets, significant energy savings are also realized.

Furthermore EnergyMaster is the right tool to meet government rules for carbon reduction, environmental legislation and last but not least, it will help to protect our environment and leave a better world for future generations.



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Technical specifications are subject to change without prior notice.

