Press Release

www.ecoclean-group.net

Ecoclean DFC: Dynamic volumetric flow control for process systems

Drastically reduces energy consumption and CO_2 emissions

When it comes to systems delivering varying quantities of liquid and gaseous media, such as filtration systems for cooling lubricants, there is often a huge energy-saving potential. This can be exploited by controlling the pumps so that they deliver exactly the volume required. With this in mind, Ecoclean has developed its dynamic volumetric flow controller: Ecoclean DFC. The control is based on the measured variables of pressure and volumetric flowrate and enables energy savings of up to 45 percent with a corresponding reduction in CO_2 emissions.

Cleaning and filtration systems, cooling water circuits and cooling towers, heating and ventilation systems and other process equipment, as well as water supply systems, need to supply liquids or gaseous media based on demand. Since such systems have very long service lives, they are usually designed with sufficient spare capacities so that they can be adapted to future requirements, like changes in delivery rate and delivery pressure. Such oversizing, however, causes unnecessarily high operating costs and energy wastage because these systems are often operated with only coarse control.
This is illustrated by the example of a central cooling lubricant supply system. If the pressure set for the fluid supply is exceeded or undercut, a pump is switched on or off, respectively. If the system is fitted with four pumps, for example, the pressure is controlled in 25 percent increments. The excess

Ecoclean GmbH
Mühlenstraße 12
70794 Filderstadt, Germany

Phone +49 711 7006-0
info.filderstadt@ecoclean-group.net
www.ecoclean-group.net

volume of coolant supplied is then fed back unused into the filter system via a bypass line and the energy used for it is completely wasted.

Accurate, demand-based control with Ecoclean DFC

Due to this coarse control, the systems not only consume significantly more energy than required but also emit correspondingly high levels of CO_2. This is where the Ecoclean DFC dynamic volumetric flow control developed by Ecoclean comes into play. Based on the measured variables of pressure and volumetric flow, the pumps or fluid systems can be controlled precisely and quickly as required. Measuring sensors are integrated into the main outlet of the process system and the pumps are equipped with variable frequency drive units. The pump speed can be so finely controlled by the Ecoclean DFC that the amount of coolant delivered is automatically and quickly adapted to the current fluid requirement at any time. This makes the bypass lines completely superfluous. What is much more important, however, is that only the amount of energy actually required is consumed, thus significantly reducing not only operating costs but also CO_2 emissions. This highly efficient pump control enables energy consumption to be cut by anything up 45 percent. As a result, federal, state and local government funding programs generally subsidize the investment costs for retrofitting existing supply systems with Ecoclean's dynamic volumetric flow control by 30 percent.

Fast amortization due to high energy savings

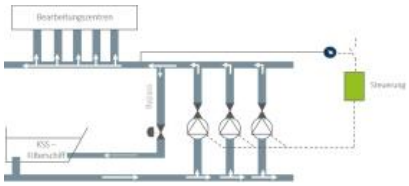
One of the projects realized so far in this field is the central supply system for cooling lubricant at the Bosch Rexroth AG plant in Horb. Before integrating the Ecoclean DFC control system, the annual power consumption was around 256 MWh with CO_2 emissions amounting to approximately 135 metric tons. A saving potential analysis carried out by Ecoclean showed that the demand-dependent control of the system’s pumps with DFC could result in energy savings of around 35 percent. In fact, the consumption figures recorded after installation of the DFC control system revealed that power consumption actually fell by 40 percent (103 MWh). This enabled CO_2 emissions to be

reduced by approximately 54 tons annually. Without taking any subsidies into account, the payback period for integrating the dynamic volumetric flow control was only about two years.

The example demonstrates that, by controlling fluid quantities in line with demand, a marked decrease in operating costs can be achieved with comparatively manageable investments. And this combined with a corresponding contribution to the conservation of resources and reduction of CO_2 emissions.

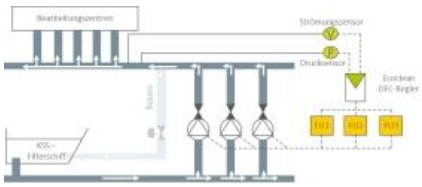
Contact:
Ecoclean GmbH, Jochen Theissen, Director After Sales Service,
52156 Monschau, Germany, Phone +49 2472 83- 501,
jochen.theissen@ecoclean-group.net, www.ecoclean-group.net

Photo: Ecoclean_Filteranlage ohne Regelung



Because the constant pressure control typically implemented in filtration systems for cooling lubricants and other supply systems provide only coarse pressure control, an excessive amount of unused medium has to be fed back to the filtration system via a bypass line. The energy required for this is wasted.

Photo: Ecoclean_Regelung mit DFC



Thanks to the very fine adjustment of the pump speed with the Ecoclean DFC control system, the amount of fluid delivered is always adjusted quickly and automatically to the current demand. This results in energy savings of up to 45 percent.

Photo: Ecoclean_PR_Experts Energy Savings_Label

Due to the high energy savings that can be realized, in Germany investment costs for retrofitting existing supply systems with the DFC control system are usually subsidized by 30 percent.
Photo source: Ecoclean GmbH

The SBS Ecoclean Group develops, produces and markets forward-looking machinery, systems and services for industrial part cleaning and surface treatment applications. These solutions, which are among the best in the world, help companies around the globe to manufacture their products efficiently and sustainably in high quality. Customers come from the automotive and supplier industry, as well as the broad industrial market - from medical, micro and precision engineering through mechanical engineering and the optical industry to power engineering and the aviation industry. Ecoclean's success is based on innovation, cutting-edge technology, sustainability, customer proximity, diversity and respect. The Group has twelve locations in nine countries throughout the world and employs more than 900 people.

Editorial contact

SCHULZ. PRESSE. TEXT., Doris Schulz, Journalist (DJV)
Landhausstrasse 12, 70825 Korntal, Germany, phone +49 711 85408,
ds@pressetexxtschulz.de, www.schulzpressetext.de

Ecoclean GmbH, Kathrin Gross, Marketing
Phone: +49 711 7006-223, Fax +49 711 7006-148
kathrin.gross@ecoclean-group.net, www.ecoclean-group.net