

MAKING ENERGY USE TRANSPARENT WITH THE ENERGY ANALYSIS TOOL

Monitoring energy consumption on injection molding machines

Munich, June 8, 2010 – The new Energy Analysis Tool enables processors to monitor the power consumption of their KraussMaffei injection molding machine without a time lag. The specific energy demand for various machine functions is displayed online on the operator panel. This information is essential for determining the optimal operating points with regard to energy consumption.

In production processes where materials undergo a change of state, for example, during plasticizing, substantial energy losses are often considered inevitable. Today, the preferred approach is to reexamine the processes and their energy consumption, because in many cases it will be possible to make savings. This approach requires precise and detailed energy consumption data for the machine and any peripheral equipment.

KraussMaffei is now offering specially developed energy monitoring modules for its injection molding machines. These log consumption data precisely and instantaneously. The Energy Analysis Tool (EAT) was developed within the KraussMaffei PRIMUS network, working together with the department of Engineering and Plastics Machinery at the University of Duisburg-Essen.

The monitoring module is installed in the switch cabinet and once the software is activated, the module is ready to go. The Energy Analysis Tool collects data on the specific energy requirements of a number of machine functions – mold opening and closing, plasticizing, injection and holding pressure, and barrel heating. The data are displayed on the machine's operator panel.

It's now possible to trace the effect of changing machine settings on energy consumption. The concept is comparable to consumption displays in a car. The

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June 8, 2010
Page 1 of 3

tool gives processors active support in finding the most energy efficient machine settings.

Energy consumption data are logged together with the other parameters during the production process. As was previously the case too, the EAT logs energy consumption per cycle or within a specified time period. The cycle data are displayed on the operator panel; the time-period counter can be reset, for example after a mold change. The tool also logs total energy consumption, current consumption and the peak consumption of the last cycle. It thus provides continuous capture and logging of energy consumption and demand data.

The EAT also offers the option of capturing energy consumption data for the connected peripherals. A further possibility is to fit various elements of a manufacturing cell with monitoring modules, connect them up to the tool and feed the resulting consumption data into your total cost calculation.

If the system is fitted with an electronic flow meter and temperature sensor, the cooling water system can be included in the total energy balance. There are two main reasons for wanting to know how much energy the cooling water system is consuming. One is to allocate that cost to a specific product. Another is to track consumption over time based on the data that have been logged. This could provide an early warning of changes as they occur, for example, deposits in the supply lines to the mold cooling system.

Summing up, it's clear that the Energy Analysis Tool that KraussMaffei is showcasing is an effective instrument for monitoring and controlling costs. It also provides the processor with valuable information about the environmental impact of production and production processes. This is important because documented low energy consumption is increasingly becoming a hallmark of quality.

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Page 2 of 3

PRIMUS: the KraussMaffei network for innovation

PRIMUS Network for Innovation provides a framework within which KraussMaffei links its own development resources with those of research institutes and industrial partners. The KraussMaffei Group works with universities and research institutes on a great diversity of research and development projects. The company bundles these activities in the PRIMUS Network for Innovation. PRIMUS stands for Process Integrated Machinery for Unique Solutions. In a wider sense, it also stands for KraussMaffei's claim to leadership in innovation, as a way to open the door to new solutions.

The overall goal is to promote the development of sustainable production solutions for the main technology trends in plastics engineering. Essential to the success of this approach is the capacity to network across industry and research. For example, as exemplified in multitechnology cooperations involving injection molding, reaction and extrusion.

KraussMaffei is at K2010 in Hall 15, Stand C24

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Page 3 of 3