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MOLDING SOLUTIONS

PRESS RELEASE

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Everything on one page of the display: The G25 hot runner controller offers portrait-format ease of use

The new G25 hot runner controller from Gammaflux is now available. For the first time, Gammaflux is using the Linux operating system – and has also redesigned everything else. The modular design is consistently geared towards user needs: For 80 percent of daily operations, only one page of the display is required. Field tests confirm its ease of use.

The new G25 has been optimized specifically for applications with a high number of cavities, low shot weights, and very precise temperature profiles. Up to 192 zones can be individually controlled, with scaling always occurring in two-zone increments. Numerous modifications to the G25 are based on customer requests – including the move away from the Windows operating system to Linux, which offers a much leaner system and more convenient updates. Since the IT infrastructure was already completely new, the development team completely redesigned the controller in approximately one and a half years of development. It was deliberately designed to be modular, allowing users to delve deeper into the process for analysis or troubleshooting. In contrast, everyday production operations largely take place on one side of the display. This is helpful for providing the greatest possible security even for less trained users. The display was rotated from landscape to portrait format, allowing the keyboard to be compactly positioned in the lower area and

as much content as possible above it. User management provides individual access and various authorization levels for users.

Integrated Material Database

For all functions – such as setup – there are so-called "Mold Wizards" that provide step-by-step support. A novelty in the controller world is the integrated material database, from whose information the setpoints can be directly imported. The task of the hot runner controller is to measure the temperature at various points on the mold (such as the nozzle and manifold), compare it with the material-specific setpoint, and adjust it if necessary. To achieve this, the G25 uses its sensors to measure 20 times per second and adjust the temperature with a precision of 0.017 degrees Celsius.

While simple systems attempt these corrections using time-proportional control (heating on/off at defined intervals), Gammaflux manufactures so-called PIDD controllers, in which algorithms modulate the manipulated variable using three components (proportional, integral, and differential). This considers both the immediate and accumulated deviations over time, as well as an anticipated deviation. As with dimmers for lighting systems, Gammaflux uses phase-angle control, which curtails the current flow of the alternating voltage so that it is no longer sinusoidal. A major advantage over resistor-based circuits is the low power loss.

Mold Doctors for Analysis

Process control is one thing, monitoring and analysis are another. The G25also features modular "Mold Doctors" that step in and guide the user step by step. If a fault occurs, for example, a wiring analysis can first be performed and then examined to determine whether certain heating elements are working correctly. The hot runner performance can also be recorded, documented, and referenced over longer periods of time. Are the nozzles still responding as they did at the beginning? Has power consumption remained the same? The G25 provides answers to questions like these. Production information is stored in a fully functional

database integrated directly into the controller, with storage capacity sufficient to accommodate approximately five to ten years of production. Even if the controller is used on a different injection molding machine, the data is retained and ensures complete traceability – particularly important in the medical and automotive sectors. Evaluation by an MES is also possible, as is simple readout and storage on a central computer.

Intuitive Operation

The new generation of plastics professionals grew up with smartphones and want equally intuitive operation for industrial machines. At the same time, plastics processors are striving to train even less well-trained personnel to counteract the shortage of skilled workers. The G25 addresses both requirements and focuses on ease of use with standardized menus and possible integration into the machine control system. All OPC UA interfaces comply with the Euromap 82.2 standard.

The new hot runner controller is a joint effort between Gammaflux and Barnes Molding Solutions Group, which includes the renowned companies Männer, Synventive, Thermoplay, Priamus, Gammaflux, and Foboha. The development of the G25 was possible almost independently because the entire know-how in mold construction, hot runners, temperature control, and process control is available within the group.

Figures

Fig. 1& 2: New Gammaflux Hot Runner Controller G25 (© Barnes Molding Solutions)

About Molding Solutions

Molding Solutions brings together leading brands in tooling, hot runner, and control systems for industrial plastic injection molding. Under the Molding Solutions umbrella, **Foboha, Männer, Synventive, Thermoplay, Priamus, and Gammaflux** combine their expertise—each recognized as a technology leader in its respective field.

With deep application knowledge across the **automotive, medical and pharmaceutical, packaging, and electronics industries**, Molding Solutions supports customers with high-performance technologies and tailored system and turnkey solutions.

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