



May 18, 2009

Sauer-Danfoss Microcontrollers Advance Machine Control and Design Differentiation Capabilities

New MC038-010 and MC050-055 microcontrollers offer additional key features to extend the PLUS+1™ family for complete vehicle control solutions.

AMES, Iowa, USA, May 18, 2009 – Sauer-Danfoss Inc. (NYSE:SHS) Release of the Sauer-Danfoss MC038-010 and MC050-055 microcontrollers expands the range of control functions and design options available to OEM designers for off-road vehicles. As part of the flexible, powerful, expandable and growing PLUS+1™ family of mobile machine management products, these new microcontrollers are versatile. They are general purpose controllers, equally suited for use as part of a distributed machine control system, with intelligence in every node, or as a stand alone controller – for both hydraulics and other machine functions.

“When we first introduced PLUS+1 in 2004, we envisioned an easily programmable and versatile family of control system tools for OEMs to use in their new machine designs,” says Dan Ricklefs, Product Portfolio Manager. “In addition to the essentials of hydraulic control, we’re now able to offer options for control of small DC motors, lighting and other electrical functions plus expanded input functionalities. The bottom line is the new microcontrollers help address machine productivity and the effect of emission requirements on machine design – so that vehicles will work faster, longer and with lower fuel consumption. They also add new vehicle differentiation possibilities to the PLUS+1 family. Now designers can create new solutions that leverage the electronics of a vehicle, controlling anything from dome lights, to raising ladders or opening hoods.”

MC038-010 Microcontrollers

Designed as a 38-pin controller, the MC038-010 features 15 inputs and 13 outputs, including 6 amp and 10 amp outputs. With the highest output current capability in the PLUS+1 family, it’s suitable for night lighting, control of variable speed DC electric motors and high current solenoids – and can reduce the need for fuses and relays.

The MC038-010 is also the first PLUS+1 controller to feature a “sleep mode”. When in sleep mode, outputs are disabled and the microcontroller enters a low power consumption condition. When one or more inputs change state, this micro “wakes up”. This ultimately enables the designer to power certain functions without the machine running, opening the possibility for more automotive style features.

MC050-055 Microcontrollers

The MC050-055 features 36 input pins, three Controller Area Network (CAN) ports, three output pins and three levels of sensor power supply. With its high number of inputs and multiple CAN ports, this 50-pin controller facilitates CAN bus system capabilities and data management between multiple CAN bus systems.

This microcontroller can capture several operator inputs and make data available to the CAN networks. It’s ideal for machines requiring a large number of switch and analog inputs on the

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operator control panel. Due to multiple sensor voltage levels, it can be used for digital signal fault detection, making a broad range of digital diagnostics possible. Machine designers now have an easily employed tool to increase vehicle system safety, reliability and serviceability.

Integrating Machine Control

Ricklefs adds, “Our two new controllers add valuable capabilities for the OEM designer who wants to look beyond hydraulic control and add functionality to machines. Obviously these controllers are well suited for many applications in agriculture, construction and road building. They’re naturals for machines like tractors, harvesters and trenchers to mention a few.”

Common to both controllers is the PLUS+1 GUIDE software development tool. Users enjoy a graphical drag and drop approach to developing machine control software. An extensive application software library is available for machine development. Sauer-Danfoss further supports PLUS+1 users with classroom training, e-learning, Web, e-mail and help desk telephone support. PLUS+1 Compliant products such as graphical displays, joysticks, pumps, motors and sensors complete the PLUS+1 family.

Built with the same robust environmental and mechanical features as other PLUS+1 products, a rugged IP67 enclosure keeps out the elements and EMI immunity extends to 100 volts/meter.

“The new microcontrollers continue to expand the PLUS+1 product line and increase our capabilities to serve customer needs based on both market requirements and emission regulations worldwide. Development of PLUS+1 products will continue. It’s the future of machine management,” said Ricklefs.

About Sauer-Danfoss

Sauer-Danfoss Inc. is a worldwide leader in the design, manufacture, and sale of engineered hydraulic, electric and electronic systems and components for use primarily in applications of mobile equipment. Sauer-Danfoss had revenues of \$2.1 billion in 2008 and has sales, manufacturing and engineering capabilities in Europe, the Americas and the Asia-Pacific region.

More details online at www.sauer-danfoss.com.

PLUS+1™ Microcontrollers and I/Os

| PLUS+1 Microcontrollers and I/Os | 12-pin | 24-pin | 38-pin | 50-pin | 88-pin |
|---|---------------|---------------|------------------|------------------|---------------|
| Controllers | MC012-010 | MC024-010 | MC038-010 | MC050-010 | MC088-015 |
| | | MC024-020 | | MC050-020 | |
| | | | | MC050-055 | |
| I/O Modules | IX012-010 | IX024-010 | | | |
| | OX012-010 | OX024-010 | | | |
| | IOX012-010 | | | | |

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PHOTO CAPTION:

New PLUS+1™ MC038-010 and MC050-055 microcontrollers from Sauer-Danfoss expand the range of off-road vehicle control options available to machine designers.

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