

Modular monitoring systems for data centers

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Abstract

The Rittal monitoring system CMC III (Computer Multi Control) uses CANopen to connect sensors to a central processing unit. The CAN network reduces the complexity of the monitoring system and helps the users to save time and effort, while the system also features flexibility and plug-and-play installation capability.



The CMC III is a modular monitoring system for data centers in industrial applications and building automation. Different kinds of sensors can be connected in series to a central processing unit, which is the heart of the system. For every measurement set points can be programmed. In case of exceeding the pre-configured limits, the CMC III automatically sends a message to a technician or reacts in an automated manner by switching relays or plugs. By choosing different types of sensors, the system can be built up individually and cost-effectively with regard to the requirements of any application. The sensors can be connected in series to the central processing unit due to the CAN communica-

tion. Compared to the predecessor – the CMC-TC – the number of required devices is reduced to a minimum and the topology switched from star topology to a linear bus system. The daisy chain connection of the sensors saves a great deal of complicated cabling when installing, maintaining or modifying a system. At the same time, as significantly fewer modules are required the system costs are also lower.

A sensor has two RJ-45 compliant ports for a connection to two other sensors or to a processing unit for data transmission. Equipped with a micro-controller, every CMC III sensor has its own processor and is supplied with power via the CAN network. The modules communicate with

the neighboring bus modules and the data are then simply passed along this “chain” until they arrive at the central processing unit. To realize a flexible connection where every sensor can be the last sensor in a line, every device acts as a terminating resistor. The devices use the CANopen protocol as application layer.

Parallel to the “standard” CMC III Processing Unit, where up to 32 sensors can be connected, Rittal offers a second version called CMC III Processing Unit Compact. This processing unit has fewer functions than the “standard” one, but is more economic for small applications in industrial environments. Therefore, CAN is very suitable because of its high fault detection. ◀

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