

MODULAR DATA-LOGGER

Works as a gateway

With the Tinybox TBa53, TQ (Germany) has released a modular data logger based on the TQMa53 module. It features CAN interfaces and it can also be used as a gateway in a wireless Bacnet environment.

THE DEVICE, CONSISTING OF MOTHERBOARD, MODULE, AND CASING allows for implementation of custom system solutions. Two system slots are available for expansions. The data logger can be integrated directly into the control cabinet as a DIN rail device, thus forming the basis for a system solution. The TQMa53 module, a high-performance Cortex-A8 module, is used in the process. The device has protection level IP20 and an extended temperature range of -40 °C to 70 °C. It measures 120 mm x 130 mm x 60 mm and runs Linux.

On the carrier board, the data logger or the gateway makes a wide range of interfaces available to the user, such as RS232, two CAN (electrically isolated), two USB 2.0 and two Ethernet interfaces. To enhance it, an SD card interface accessible from the outside was installed.

In addition to these interfaces, the board is expandable via two expansion module plug-in connectors. These are of the same design and offer different interfaces (two UART/SPI/I²C/USB/GPIO). Any number of expansion modules can be implemented on the basis of these interfaces. Wireless solutions such as UMTS/GPRS, Wifi as well as Bluetooth are planned in addition to the RS232 and RS485 expansion modules already available. Furthermore, via the available interfaces various I/O features can be implemented on the expansion modules.

Corenetix (Germany) has utilized these features and is currently developing an expansion card on the basis of the CNX100 wireless radio module. The wireless radio module operates in the 868 MHz frequency band. It offers a wireless Bacnet, as well as a mesh network protocol stack, which, thanks to its AES128 encryption, is also suitable for security-related applications. This serves as a basis for a Bacnet implementation, optimized for embedded systems, which now allows the wireless integration of terminals into a Bacnet environment as well. A gateway constitutes the link between the wireless network and the wired world. In addition, it provides management systems with access to the Bacnet devices in the wireless network. Through the wireless system components, terminals which are integrated wirelessly into a Bacnet environment are no longer distinguished from wired devices.

Typical areas of application for the data logger are multi-hop, mesh network solutions for applications in the sectors of building automation, smart metering, smart home, security & monitoring, industrial automation, process control as well as service management.