Automation

Focus Areas

- Home automation
- Industrial automation
- Building management system

Technology

- Modbus (RTU, TCP)
- BACnet (MS/TP, IP, Ethernet)
- LONWorks
- EtherCAT
- CANbus
- Fieldbus
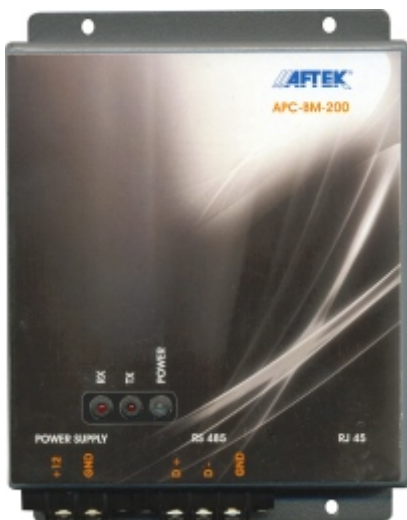- PROFIBUS
- SNMP

Overview

In modern day lifestyle, automation, monitoring and control of industrial as well as household appliances has become a necessity. Ensuring optimal utilization of devices and gadgets at home, tracking and optimizing energy consumption at offices and commercial establishments, monitoring of security and surveillance systems and integrating all these gadgets with building management or network management systems is the need of the hour today.

Aftek Expertise

Aftek's expertise in area of industrial as well as household automation segments spans across hardware, firmware, embedded and enterprise applications. Each automation segment has different requirements. Household automation typically deals with controlling lighting, appliances and devices, whereas industrial automation requires standards and protocols being used in BMS (Building Management System) and monitoring/control systems. With a serious focus on R&D, Aftek's team has kept current with the latest developments in these segments. This has enabled Aftek to provide innovative end-to-end solutions to many of its customers in both these automation segments

Aftek's Automation skills encompass

- Hardware design, development and prototyping in industrial and household automation
- Firmware development
- Design and development of reliable embedded system software for automation systems
- Implementation of various industrial automation protocols like Modbus, CANbus, BACnet, LONWorks, Fieldbus, SNMP etc.
- Conversion and interoperability between different protocols
- Development of and integration with enterprise level systems
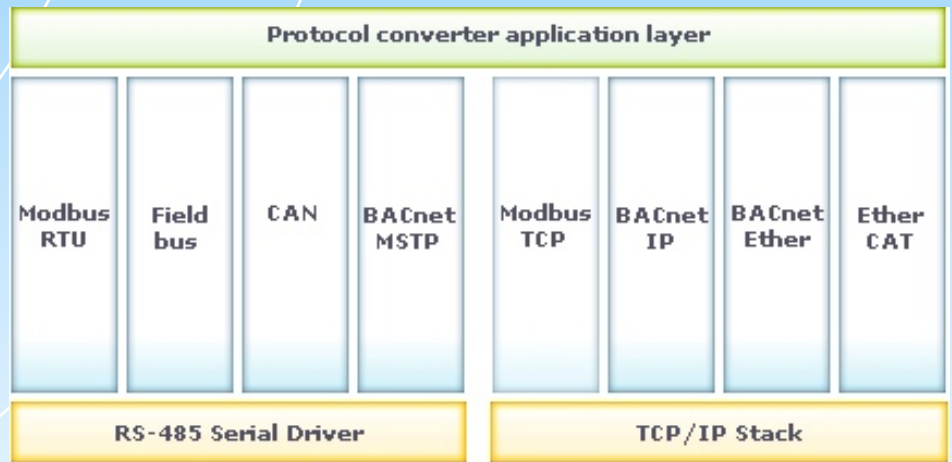
Aftek's Experience

Protocol Converters

Aftek has implemented range of protocol converter devices supporting various industrial automation protocols. These include customized solutions for specific applications such as HVAC control, temperature control system as well as generic protocol converter devices which are used for mapping one protocol over other for interoperability in BMS systems. These include protocols like

- Modbus (RTU / TCP)
- BACnet (MSTP / IP / Ethernet)
- LONWorks
- EtherCAT
- CANbus
- PROFIBUS

Protocol converter application layer

| Modbus RTU | Field bus | CAN | BACnet MSTP | Modbus TCP | BACnet IP | BACnet Ether | Ether CAT |

RS-485 Serial Driver | TCP/IP Stack

Few examples of industrial automation solutions implemented by Aftek are as follows

- Integration of a large scale air conditioning system with BMS – Implementation of engineering unit (AC controller) communication as a custom protocol and mapping of the same to industry standard BACnet and Modbus protocols for BMS integration.
- Power monitoring system for AC units – Implementation of total measurement of electricity consumption using Modbus energy meters and calculation of distribution according to demand and gathering data for billing systems

Home automation and security system

Aftek has designed and developed the state-of-the-art digital lifestyle system which caters to automation, safety, security, telecommunication and entertainment requirements of a modern household. It is a fully customizable system comprising features like -

- Automation of lighting and appliances in home including support for dimmer, fan control etc.
- Monitoring of current status and controlling of appliances from multiple user interfaces like remote control, LCD console, SMS, internet and phone.
- Interfacing with various sensors like smoke, fire, gas leakage detector etc. and providing alerts and alarms for notifying disasters

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