Motor Control Centers (MCCs)

Motor Control Centers (MCCs) are centralized hubs containing motor control units sharing a common power bus. Used in low-voltage (230V-600V) and medium voltage (2.3kV to 15kV) three-phase applications, MCCs traditionally house startup and drive units. Today’s units go far beyond these basic functions. It is not uncommon for modern “smart” centers to include programmable controllers and metering equipment for complex control schemes and safety features, in addition to the overload relays and contactors.

Advantages of Smart MCCs

Control and Monitoring Over Network:
- No more wires or remote I/Os to for starting/stopping and data collection

Power Monitoring:
- Monitor entire MCC and/or individual loads
- Improved efficiency and reduced power consumption

History and Logging:
- Advanced features for tracking events for troubleshooting

Integration into Safety Systems:
- Integrate MCC mains into plant safety system using Can-Technologies' unique "Dangerous Area Safeguarding"

Updated Technology:
- Latest circuit breaker, motor starter and drive technology

Switchgear

Switchgear incorporates switches, circuit breakers, disconnects and fuses used to route power and in the case of a fault, isolate parts of an electric circuit. In general, switchgear has three basic functions:

- Protection and safety for equipment and workers
- Electrical isolation to permit work and testing
- Local or remote circuit switching

Developments in switchgear design have led to the introduction of network support for monitoring and control as well as advanced diagnostic capabilities for the purposes of monitoring usage, loading and a host of other operational parameters.

Advantages of Modern Switchgear:

Control and Monitoring Over a Network:
- Remote control of the switchgear over a network, removing the risk of arc flash to the operator

Individual Analysis and Power Monitoring:
- Power monitoring and analysis of the main power and individual circuit breakers

Advanced Technology:
- The latest technology in circuit breakers and switching
Can-Technologies Services and Expertise

Can-Technologies has the resources and experience to handle all your MCC and switchgear needs from the earliest design stages to development of web-based solutions for data trending. From start to finish, Can-Technologies is committed to providing quality services and attention to our customer needs.

Some of the many services provided by Can-Technologies include:

- Preparation of MCC and switchgear specifications
- Determination of the load list and grouping of loads
- Negotiation with manufacturers to get the best and most detailed quotes available
- Comparison and analysis of quotes to ensure our customers are able to make an informed decision and get the best system for their money
- Analysis of space requirements for the MCCs based on existing electrical facilities
- Commissioning of the MCCs and switchgears
- Commissioning of remote monitoring and control systems including design of HMI control stations
- Design, implementation and configuration of power monitoring systems
- Development of systems for live and historic power consumption data on site and over the world wide web

Case Study: Steel Plant Power Distribution System

A global steel manufacturer was upgrading its bar mill cold cut line and part of the project included replacement of the low voltage power distribution system. Can-Technologies was hired to determine the specifications for the new MCCs and switchgear for the system.

After discussing the system requirements with the customer, Can-Technologies prepared a detailed comparison between various MCCs and their suitability for the customer's application. A smart MCC was chosen because of the ease of installation and the level of intelligence that is inherent in smart MCC systems.

A load list was then prepared and finalized. The list was broken down into logical operational groups and based on this analysis, it was found that a total of 11 MCCs were necessary to provide the required functionality. With a customer-supplied list of approved manufacturers, Can-Technologies took on the task of acquiring and summarizing quotes on behalf of the customer. Following presentation of the received proposals, Can-Technologies worked with the customer to determine the best supplier based on technical specifications and budgetary considerations.

In addition to researching and designing the MCC system, similar steps were taken to assess and select two low voltage switchgears to be used in conjunction with the MCC system. The MCCs and switchgears were ordered, manufactured and successfully installed and commissioned during the summer shutdown.

Can-Technologies proudly supports a wide range of manufacturers including:

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