



THE BASICS OF OVERCURRENT PROTECTION

Circuit Protection and the Real World

The design function of electronic and electrical circuits is inevitably complicated by the presence of two conflicting design considerations—normal operation and abnormal operation. Significant design effort is devoted to normal operating conditions since this is the benchmark by which customer satisfaction is measured. Whether it may be an obscure probability or a routine condition, the abnormal operating situation must also be addressed.

No matter how carefully designed, electrical circuits are occasionally subject to fault or overload operating conditions. This is true whether those circuits carry power loads or support micro-amp communications. It is in those abnormal operating situations that circuit breakers become a design engineer's best friend. Circuit protection is generally, however, the last thing considered in the design scheme. Even so, it needs to be carefully selected and specified.

The problem a design engineer faces is that most technical training is weak in its handling of protection at the appliance or equipment level. There is much written about power plant protection, and many specifications and codes exist for electrical power within a building. This is not so, however, for low-power equipment protection. If your need for information extends beyond the limits of this article, you may be interested in the book ***The Theory and Practice of Overcurrent Protection*** written by Dr. Patrick J. McCleer. This 233-page book is an in-depth look at low-power circuit protection and the many devices used to meet the industry need. It may be obtained by calling MP.

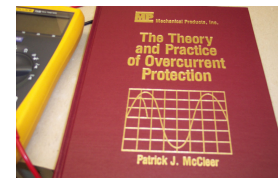


Fig. 1 - *The Theory and Practice of Overcurrent Protection* textbook by Dr. Patrick J. McCleer, available through MP.

MP Circuit Protection — Designed for the Real World

MP offers a comprehensive line of circuit protectors that are uniquely suited to the requirements of electric appliances and equipment. The MP family includes a broad range of devices. Some balance the conflicting needs of product size and amp range. Some deal with issues of economy and offer an abundance of options. Others provide significant fault protection for critical functions. Yet another group addresses today's need for flexible design options, world markets, and aesthetics.

MP is proud of its circuit breaker line and is ready to assist you in meeting your circuit protection requirements.

MARKET AND PRODUCT CATEGORIES

Applications for MP Circuit Protection

The same precision engineering that prompted NASA to select MP circuit protection devices for the Space Shuttle Program is also available for a wide range of commercial applications.

Commercial applications including manufacturing machinery and equipment such as welders, electric carts, robots, generator sets, and any electro-mechanical operation in which wire, motors, relays, process control panels, power supplies, or transformers need to be guarded from overload conditions.

The uninterruptible power supply (UPS) that provides short-term power to computers in the event of a commercial power outage is a good example of a commercial application for MP circuit protection. Another is the marine industry, which is finding that customer satisfaction increases dramatically when old-style fuses are replaced with a panel design that incorporates MP push-to-reset circuit breakers.

The applications for MP circuit protection devices are as broad as the electrical products produced. Ultimately, anywhere there is electrical power distributed to or from a device, MP is ready to assist in its protection. Whether it is plugged into a receptacle, motor driven, battery operated, or solar powered, there is an MP circuit protection device that is equal to the task.

Markets We Serve

MP circuit protectors are used in all electronic fields—including the world of **computers and computer peripherals**. MP is ready to support the many options that this field requires with varying electrical configurations, and many product features. We also serve the **medical industry** with highly reliable products—all supported by our rigorous quality control activities.

The **communications industry** has a need for higher DC-voltage-rated devices. Such applications are a sure fit for MP circuit protection devices. Our products have the best ratings in this class.

MP has products protecting **industrial controls**— machine, process, and automation. These demanding environments depend on robust product design, another key attribute of MP circuit breakers.

For the **consumer products** market, devices from MP serve the demanding task of meeting explicit specifications at the lowest possible cost.

In the **marine market**, boat manufacturers require aesthetically pleasing designs coupled with robust product performance. This demanding requirement is met once again by MP products.

MP circuit protection devices are also specified for **industrial products, laboratory and production test equipment, and transportation products**. In many other commercial markets, MP has products specifically adapted to individual requirements.

MP is ready to work with you to solve your specific design requirements.

For additional information please contact:

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