



SOLUTIONS FOR POWER CONTINUITY AND CALIFORNIA TITLE 20 CERTIFICATION

New regulations put into place for battery management systems are key to power continuity for a wide variety of applications.

Power continuity has become a major focus in many industries, particularly for environmental monitoring of wind and solar power systems, water and wastewater treatment, and engine starter batteries for battery chargers. The latest battery chargers are also tasked with providing testing and communications as an essential part of their operation. This means that they are required to meet a number of standards and certifications, such as UL1236, the standard for safety battery chargers used for charging engine-starter batteries, such as those for the genset market, fire pump controllers, and lighting mobile towers.

This battery care philosophy is why Altech's CB12245AJ battery charger includes CANbus J1939 protocol communications onboard. CANbus allows customers to integrate battery voltage and battery status with their controller to monitor the condition of the batteries regularly using more than 50 key parameters.

The CB12245AJ battery charger is housed in a durable enclosure, is easy to install and configure, and has a Din rail bracket (see Figure 1). Once batteries have been charged, the CB charger checks battery life status and keeps the battery fully charged at all times. These chargers offer four charging stages — recovery, boost, absorption, and float — and an accurate battery diagnosis capability. The units are compact, offer CANbus integration, provide temperature compensation, are IP 20 protected, and can charge all battery types, including AGM, Gel, NiCd, NiMH, and Li-Ion. These battery chargers can be integrated with various OEM installations or panels and smart energy controllers.



Figure 1: Altech's CB12245AJ battery charger offers a wide range of features for use under California's Title 20 certification.

For customers searching for a device that doesn't require a complex power supply recharging system with backup module, the CB battery charger product line provides a reliable, high-tech solution. These battery chargers have a range of microprocessor power supplies that can charge a sealed lead battery to optimize performance and durability. Based on switching technology, they provide voltage stabilization at a set value, even in a no-load condition. These devices also include alarm messages for a number of situations, including "battery to be replaced," "low battery," "AC power not present," and "inverted connection." Units are designed for protection against short circuits, overloads, output overvoltage fluctuations, and polarity reversals.

California Title 20 Certification Requirements

The California Energy Commission (CEC) adopted battery charger system regulations that included efficiency standards and test procedures for backup battery charger systems, limiting which systems could be sold or used in California. Backup battery charger systems must adhere to the State of California's energy efficiency regulations, including those devices used for engine generator starting, whether in automotive, marine, off-highway, or any other standby power applications. The regulation that initially applied only to consumer chargers is also effective for commercial products. Only battery chargers the State of California certifies and lists in the California Appliance Efficiency Database can be legally sold in California for use in California.

These regulations were focused on products with a primary function to provide backup power only during a power failure that is "off" when regular power is available. The regulations also apply to products with a primary function to operate under all conditions, regardless of the power source. This second function concerns products that are often "on" continuously, such as alarm systems, that provide monitoring, sensing, and communications; and that also offer battery backup so that these functions continue to perform during a power failure.

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The test procedure part of the Title 20 documents applies to backup battery charger systems that operate at all covered systems regardless of their operating voltage. Testing is performed by disabling any optional functions performed by controllers that are not associated with the battery charging process.

Meeting all the state's requirements, Altech worked with their partners to produce a certified battery charger that is accurate, rugged, and provides long life for genset engine start applications. The units automatically adjust outputs to meet the changing needs of the battery system, allowing the battery to provide maximum performance. The CB12245A offers fully automated charging modes, output protection modes, and adjustable charging current capabilities. Easy battery diagnosis and fault identification can be performed by LED or external devices connected to fault status contacts. The units offer efficiencies of up to 91% through the use of the latest switching technology. Even under harsh conditions, these battery chargers provide a dependable solution to users and are CEC-certified (see Figure 2). All units in the CB

battery charger line can be powered with 110V/220V or 277V (96VAC-305VAC voltage range) and the input voltage is set automatically. This makes this unit one of the most sought after products on the market and any customer can use this product anywhere in the world without any adjustment or additional input setting.

The Need for Load Protection

Solutions for power continuity include monitoring and control, battery backup systems, interfaces, and charging and testing — which we've been covering here. Load protection is equally important, particularly in complex applications. Protecting your load from short circuit and overcurrent conditions is essential to your overall operating system. In addition, brown-outs and voltage dips are two of the leading causes of power interruption. In many cases when multiple loads are connected to one system, and an overload or short happens, the system will have a power dip or a brown-out. Altech has a series of electronic circuit breakers specifically designed for this application.



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CB12245A* x

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<input type="checkbox"/>	CB12245A*	Small Battery Chargers	ADEL SYSTEM	ADEL SYSTEM	Non Federally-Regulated	11/29/2021

Figure 2: This screenshot from the CEC indicates that the CB12245A is listed as certified.

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The MRF102 is a two-channel electronic circuit breaker with DIN rail mounting (see Figure 3). The unit is designed for current distribution and protection of 12V or 24V load circuits (9V DC to 32V DC voltage range). The rated output current can be individually set for each channel at a rate of 1A through 10A via push button operation. Thanks to electronic locking, unintentional adjustment of current values is not possible, keeping your system safe.

the connected loads, an alarm signal will be initiated visibly and/or sent to your control panel. Only the affected load will get the alarm, while all other loads stay unaffected and continue to operate (see Figure 4). With a width of only 18mm, these circuit breakers save space in your control panel. Even when connecting two units together in series, these devices remain one of the smallest and smartest solutions on the market.

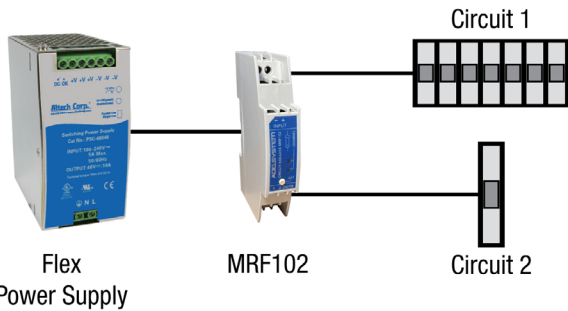


Figure 3: Once you've connected your power solution to your system, an electronic circuit breaker can protect the load from undue stress.

The electronic circuit breaker will secure your system components from damage and separate the load outputs. If something goes wrong with any of

Conclusion

Adhering to California Title 20 certification specifications focusing on efficiency standards and test procedures for backup battery charger systems is now a requirement. Companies such as Altech have designed their devices to meet these challenges and provide the maximum support and operational safety to your application. The company's CB12245AJ battery charger also provides a rugged design for various harsh environments. Staying on top of the latest federal or state regulations MRP 102 means having the expertise to adapt to an ever-changing market.

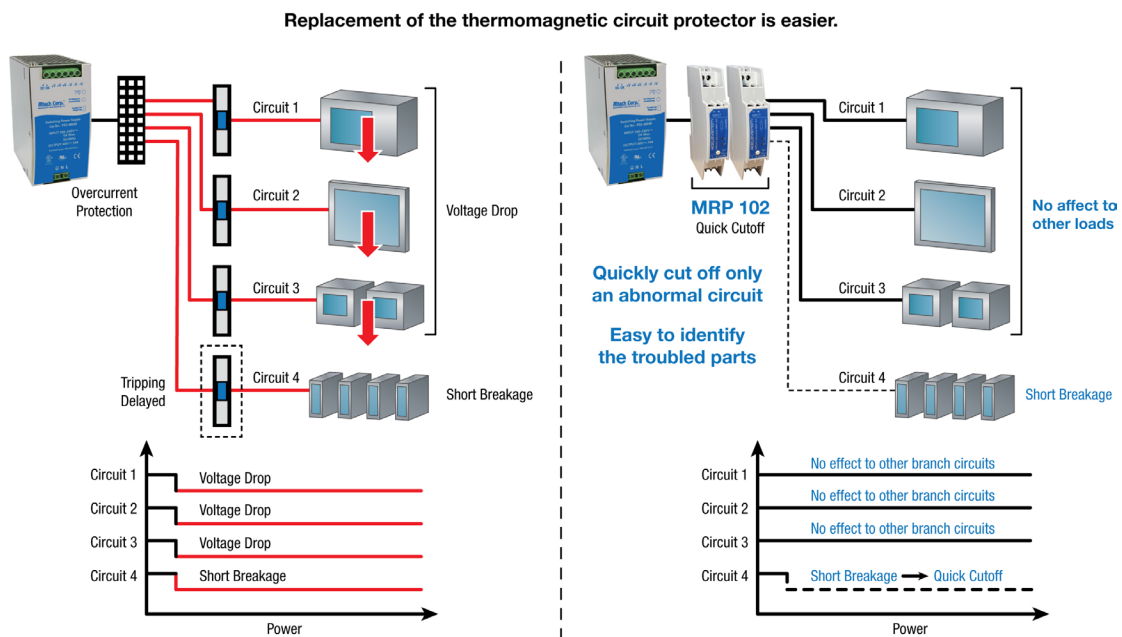


Figure 4: When using an electronic circuit breaker to protect your system, note that abnormal circuits are quickly cut off to prevent damage that could impact other systems.

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