

# Specialized circuit protection for engine generator applications



A longtime industry partner, Eaton designs, manufactures and tests a comprehensive range of circuit protection solutions for engine generator applications. Eaton is the only manufacturer to provide customers with the choice of exclusive, dedicated breakers designed specifically for engine generator applications or traditional, adjustable electronic trip breakers. These solutions are relied on in a spectrum of applications where continuous, reliable power is critical.

## Application solutions

As component leader for engine generator applications, Eaton provides circuit breakers for original equipment manufacturers (OEMs) who produce engine generator sets, paralleling gear and transfer switchgear, as well as system integrators who provide engine generator packages. Typical applications include diesel generator sets and portable or temporary power units providing a range of power ratings.

Engine generator applications rely on circuit breakers to provide circuit protection for valuable assets and to keep critical facilities and processes running. Eaton circuit protection solutions enable:

- Reliable operation
- Robust performance
- Enhanced safety

## Exclusive, application-specific design engineering for engine generator applications

Eaton offers the only circuit breakers that are designed specifically to meet the requirements of engine generator applications, providing closer protection of and coordination with generator circuits. Eaton engine generator circuit breakers are also suitable for reverse feed applications.

Eaton specialty engine generator breakers are equipped with a distinct trip unit, which includes standard thermal overload protection and unique low magnetic pickup range—allowing customers to adjust the breaker to the generator's output. The standard thermal trip unit provides overload protection for conductors per the National Electrical Code® (NEC®). The unique low-magnetic pickup range is approximately two to five times the continuous current rating and delivers closer low-level short-circuit protection when applied to generators with low short-circuit capacity.



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### **Flexibility: robust adjustable design**

Eaton also offers a full line of electronic trip molded-case circuit breakers (MCCBs) that provide reliable protection for generator circuits. Compact and globally certified, these circuit breakers provide flexible trip curve shaping capabilities, which allow the user to customize close protection of generator circuits. The electronic trip molded-case circuit breakers provide superior coordination and protection, and are available from 15 to 2500A.

### **Comprehensive solutions engineered for reliable, safe protection**

The Eaton circuit breaker solutions span the range of engine generator applications. Electronic trip and thermal magnetic 100% rated circuit breakers are available. When higher interruption ratings are required, Eaton offers high-performance breakers from 65 to 200 kA.

For larger engine generator applications, where continuous currents are above 2500A, air circuit breakers provide appropriate circuit protection. The Eaton compact air circuit breakers provide circuit protection for continuous loads up to 6000A ANSI and 6300A IEC. They are designed to provide high current protection, remote operation and monitoring. Air circuit breakers are available as fixed mount breakers to minimize cost or withdrawable designs that facilitate maintenance and fast change-out for mission-critical applications.

Eaton also offers paralleling generator applications depending upon the application to provide high withstand ratings (e.g., 100 kA for 0.5 seconds), maximizing system uptime by remaining closed under high fault currents and allowing downstream molded-case circuit breakers to open the circuit closest to the fault. In addition, the Magnum® SB and Series NRX UL® 489 breakers can provide protection similar to an engine generator MCCB by providing instantaneous tripping to prevent fault currents from exceeding levels that could damage generator circuits.

### **Customize for specific requirements**

Additionally, energy metering, monitoring and communications capabilities are available. Eaton circuit breakers are complemented with a variety of accessories, including:

- Terminal options
- Auxiliary switches
- Shunt trips
- Undervoltage release
- Electrical operators
- Enclosures
- Handle mechanisms
- Onsite engineering service

### **Rated for global applications**

Eaton engine generator breakers satisfy local and international codes by meeting the following relevant certifications and standards:

- Underwriters Laboratories Standard UL 489 molded-case circuit breakers and circuit breaker enclosures file E7819
- Canadian Standards Association (CSA) Standard C22.2 No. 5 for service entrance and branch circuit breakers
- International Electrotechnical Commission recommendations IEC 947-2 circuit breakers



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Printed in USA  
Publication No. PA01214002E / Z11745  
November 2011



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