MITSUBISHI ELECTRIC
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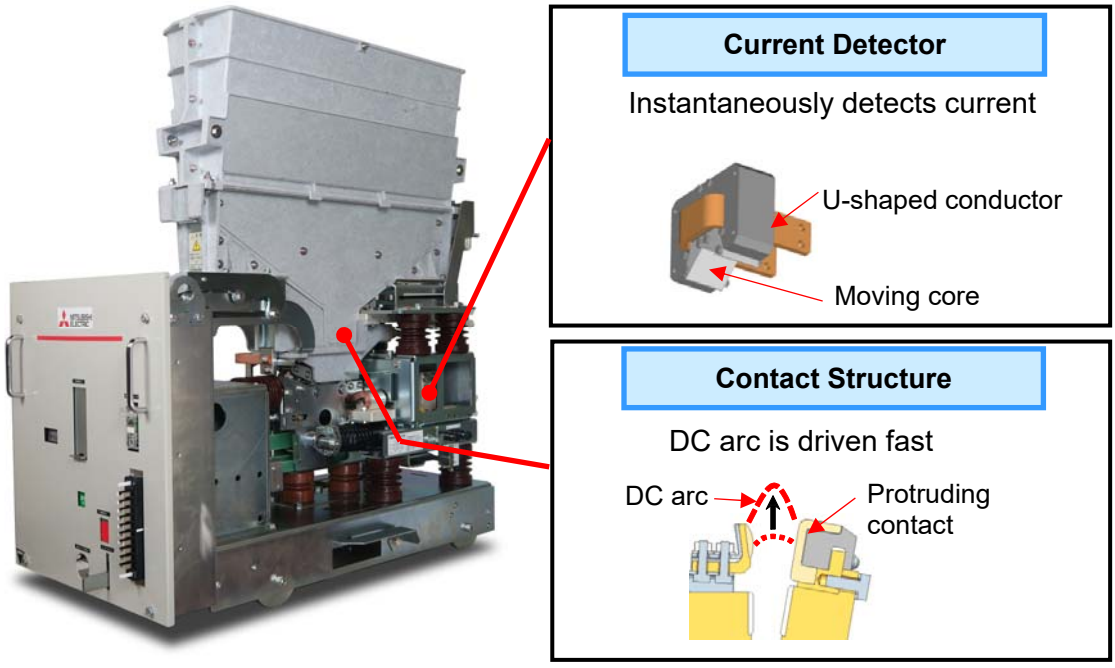
# Mitsubishi Electric Develops World's Fastest DC Circuit Breaker Technology for Railway Power-Supply Systems

*World's fastest DC circuit-interruption technology ensures safer operation of railway systems*

**TOKYO, January 30, 2017** – Mitsubishi Electric Corporation (TOKYO: 6503) announced today that it has developed a high-speed direct-current (DC) circuit-interruption technology for railway power-supply systems that detects short-circuit faults instantly and isolates faulty circuits in just 13 milliseconds, which the company believes is a world's first. The technology is expected to enhance railway safety in terms of equipment protection and operational stability for power-supply systems, which supply railcars with power from off-board locations.

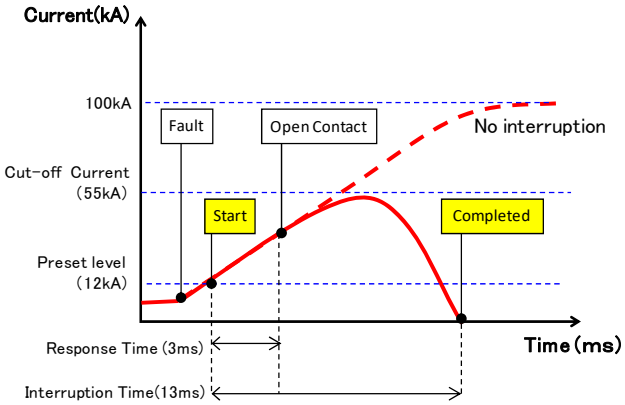



New High-speed Circuit Breaker

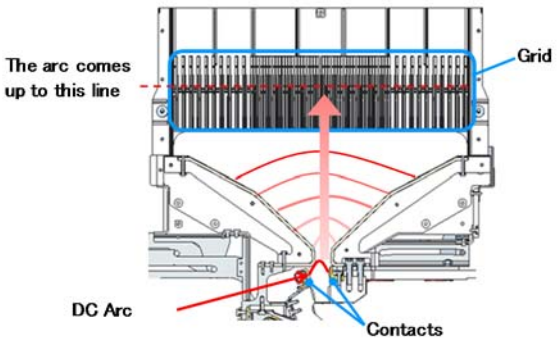
The new technology interrupts faulty current with unsurpassed speed by overcoming two key problems. First, a conventional DC circuit breaker detects a faulty current using an electromagnet that is driven by the faulty current itself and the weight of the moving core slows the time required for detection. The newly developed technology, however, uses a lightweight core driven by a strong electromagnetic force, which is achieved with a new U-shaped conductor instead of a conventional I-shaped conductor. Consequently, Mitsubishi Electric's DC circuit breaker takes less than 13 milliseconds from fault occurrence to contact separation.

Secondly, a conventional DC circuit breaker drives the arc generated between the contacts to the grid in order to shut off the high current. The new technology achieves faster current interruption by utilizing a new contact material and a new rib-shaped contact, which strengthens the electromagnetic force applied to the arc.

The new breaker complies with Japanese Industrial Standards (JIS E 2501-2) for high interruption capacity (100 kA), high di/dt (10 kA/ms) and high cut-off current (55 kA). The new technology safely protects equipment by suppressing the amplitude of a short-circuit current under standard value (55 kA) even if the capacity of the power source is very large (6 MW-class rectifier).




Waveform of a short circuit current interruption




Cross section of the new High-speed Circuit Breaker

**About Mitsubishi Electric Corporation**

With over 90 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 4,394.3 billion yen (US$ 38.8 billion*) in the fiscal year ended March 31, 2016. For more information visit:
www.MitsubishiElectric.com

*At an exchange rate of 113 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2016