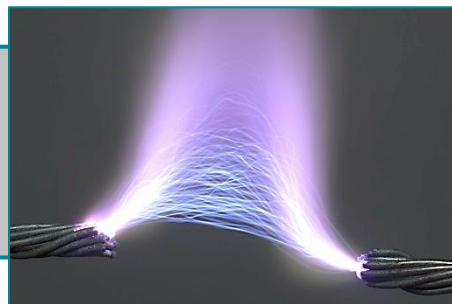


Reproducible and calibrated arc fault generator

electric arc / arc fault / arc detector / circuit interrupter



CONTEXT

Several methods are currently used to generate electric arcs to test the reliability of an arc detector. However, the known tests do not produce calibrated and reproducible electric arcs, which are essential conditions for evaluating the safety of the detector.

DESCRIPTION

Recently, a research team at the Jean Lamour Institute (France) developed a reproducible and calibrated arc fault generator to perform reliable tests on electric arc detectors. This innovative device allows to produce the four main types of arcs: AC and DC arcs and serial or parallel arc configurations. The characteristics of these arcs are reproducible. In addition, it is possible to control the amplitude and duration of the generated arcs and also to adjust their experimental production conditions (temperature and pressure). The operating principle of the generator is based on the method of overvoltage priming by means of a step-up transformer (inductive switching). The system ensures the production of electrical arcs between two electrodes or cables.

COMPETITIVE ADVANTAGES

- Electric arc reproducibility
- Generation of arcs controlled in amplitude and duration
- Control of the experimental conditions of arc production (temperature and pressure)
- Integration of arcs in simulation tools for analogue or digital electronic circuits



Markets & applications

Domestic, Aeronautics, Automotive & Photovoltaics: arc fault circuit interrupter testing

Nanotechnology, Metallurgy & Lighting: electric arc generation



Development stage

Device validated via reproducible and calibrated arc fault generation according to serial, parallel, AC and DC modes



Research team

Jean Lamour Institute
CNRS - University of Lorraine



Intellectual property

2 Patents registered:
FR2961968 & WO2011161200



Target partnership

Patent licensing

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