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IEEE Guide for the Application of Faulted Circuit Indicators on Distribution Circuits

IEEE Power and Energy Society

Sponsored by the
Insulated Conductors Committee

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USA

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Abstract: Information on what a faulted circuit indicator (FCI) is designed to do, along with methods for selecting and applying FCIs for 200 / 600 A distribution circuits are described in this application guide.

Keywords: fault circuit indicator, fault indicators, fault sensors, FCIs, IEEE 1610™

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Introduction

This introduction is not part of IEEE Std 1610-2016, IEEE Guide for the Application of Faulted Circuit Indicators on Distribution Circuits.

This guide is intended as a supplement to the training in the use of high voltage electrical equipment, established safe operating procedures, and the manufacturer's instructions for the application of faulted circuit indicators (FCIs). Installers and operators of FCIs require formal training in the use of high voltage electrical equipment. It is the users' responsibility to establish safe operating procedures and to provide training. The manufacturers are required to provide installation and operating instructions for their products.

This application guide is the product of close collaboration between representatives of both users and manufacturers of FCIs.

Contents

IEEE Guide for the Application of Faulted Circuit Indicators on Distribution Circuits

1. Overview

Faulted circuit indicators (FCIs) used by the electric utility industry are applied to circuits rated 69 kV and below. This guide will describe the application of FCIs to these circuits.

1.1 Scope

This application guide provides information on what an FCI is designed to do and describes methods for selecting and applying FCIs for 200 / 600 A circuits rated 69 kV and below.

1.2 Purpose

The purpose of this guide is to provide an industry document that is informative for the application and use of FCIs on electric power distribution systems.

2. Definitions, acronyms, and abbreviations

2.1 Definitions

For the purposes of this document, the following terms and definitions apply. The *IEEE Standards Dictionary Online* should be consulted for terms not defined in this clause.[1]

automatic reset faulted circuit indicator (FCI): A type of FCI that resets automatically after an operation. Automatic reset control parameters include voltage, current, and time, and combinations of these three parameters.

backfeed current: Current that is present on one or more phases of an electrical distribution circuit while the phase(s) are disconnected at the source.

backfeed voltage: Voltage that is present on one or more phases of an electrical distribution circuit while the phase(s) are disconnected at the source.

bolted fault: A short-circuit condition that assumes zero impedance at the point of the fault.

[1] *IEEE Standards Dictionary Online* is available at: http://dictionary.ieee.org.