IRS

Self-Powered Relay for Industry and Utility Secondary Substations

Overcurrent and Breaker Failure Protection with Harmonic Blocking

Where dependable auxiliary power source is not available, the **IRS Relay** can be energized either directly from **Main Current Transformers**, **AC/DC Auxiliary Voltage** or through the **USB Front Port**.

50/51	Phase O/C.
50N/51N	Neutral O/C.
50G/51G	Ground O/C.
50Q/51Q	Negative Sequence O/C.
46	Open Phase Detector.
37	Phase Undercurrent.
49	Thermal Image.
50BF	Breaker Failure Protection.
	Cold Load.
	Harmonic Blocking.
	Trip Bus.
	Trip Logic and Command.

IRS Self-Powered Relay features **Modular and Compact design** (1/2 19" rack and 3U-High) easily adaptable to **P&C Cabinets** and **RMUs**, **Electromagnetic Flag Indicator** (two-colour disc showing last status in power-failure conditions), very **low consumption** (<2,5VA) and very **fast start-up**: protection units active in less than 100ms.
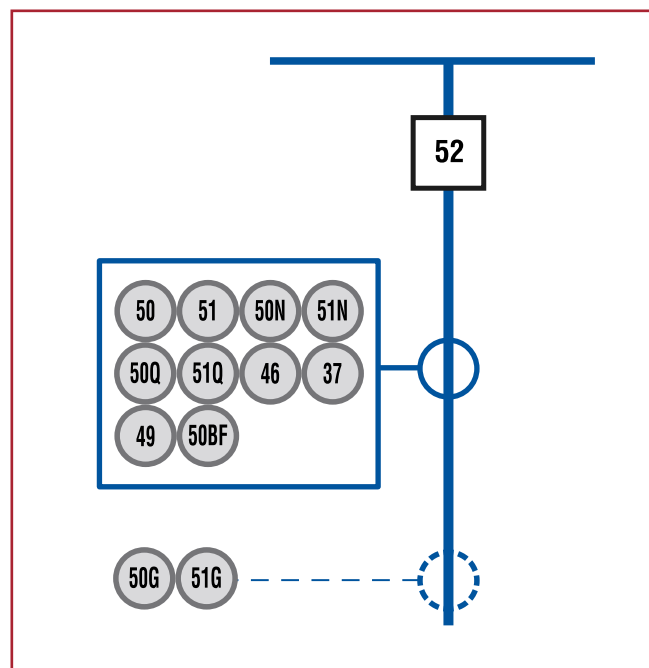
Application

Secondary substations in **airports**, **hospitals**, **shopping centers**, **renewable plants**, **factories** and **urban areas** in general are equipped with Ring Main Units (RMUs), a simple, compact and expandable solution that requires easy and reliable operation. Most of the cases are 12/24/33kV networks with a ring topology to secure the energy supply under any fault condition.

The introduction of Smart Grids into those medium voltage distribution grids for automation and supervision purposes has made necessary the development of **new solutions** to address the **evolving requirements** of the **grid**.

The **self-powered feature** becomes a must for this application, as in many cases the installations are not equipped with any external battery. Additionally the relay must have the **ability to provide and keep** certain indications (**alarms** / **interlocks**) in **power-failure conditions**.

IRS relay models are **mainly intended** for installation in those RMUs, with the aim of simplifying the maintenance and improving the supervision.

Features

- ✓ Two low energy pulse output trip contacts / functions for RMU coil and flag indication
- ✓ Two potential free alarm contacts: one latched type (bi-stable relay) and one non-latched.
- ✓ Four digital inputs for remote trip (potential free) and three spares.
- ✓ Trip indication via electromagnetic flag indicator with mechanical reset.

- ✓ 1-month duration non-volatile memory for records storage under power-failure conditions
- ✓ Sampling rate: 800 Hz
- ✓ Up to 500 events, 10 fault reports and 10 s total oscillo duration.
- ✓ 2 setting groups
- ✓ High protection degree: IP52

Physical Description

① **LEDs**: One (1) In Service LED and seven (7) configurable LEDs.

② **Electromagnetic Flag Indicator (TRIP).**

③ **Alphanumeric Display**. 128 x 64 matrix display

④ **Keypad:** 7 push-buttons to control the information displayed, such as measures, events, fault indications, I/Os status, etc.

⑤ **USB Power / Local Communication Port**.

⑥ **Nameplate**. Information about HW model, FW version, Serial Number, Power Supply and Rated Frequency.

⑦ **Slot B.** 24-pin terminal block for digital inputs, energy pulse and potential free contacts, RS485 and Power Supply.

⑧ **Slot A.** 8-ring lug terminal block for phase and ground current inputs.

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