



# IRS-B

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-B 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.
- 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-B** Self-Powered Relay features **Modular and Compact design** (1/2 19" rack and 3U-High) easily adaptable to **P&C Cabinets** and **RMUs**, very **low consumption** (<2,5VA) and very **fast start-up**: protection units active in less than 100ms.

**IRS-B** has a **battery** to wakes up when the current is not available, so the user will be able to access all the **stored information**.



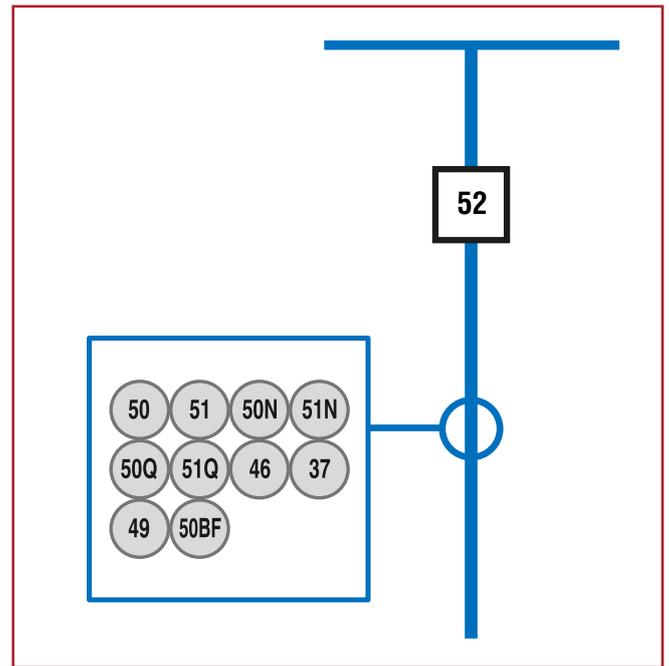
## Application

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

- ✓ One low energy pulse output trip contact / functions for RMU coil.
- ✓ Two potential free alarm contacts: one latched type (bi-stable relay) and one non-latched.
- ✓ Two digital inputs for remote trip (potential free).
- ✓ Battery.
- ✓ 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: IP54.

## Physical Description



- 6 **Nameplate.** Information about HW model, FW version, Serial Number, Power Supply and Rated Frequency.
- 7 **Slot B.** 18-pin terminal block for digital inputs, energy pulse and potential free contacts, RS485 and Power Supply.
- 8 **Slot A.** 6-ring lug terminal block for phase current inputs.
- 9 **Removable Battery.** Battery is accessible from the back side of the IED by means of an easily removable cover.

- 1 **LEDs (5):** In service and 4 configurable LEDs, the first two ones with default manufacturing configuration for Trip and Low Battery indications
- 2 **Battery push-button** to access all the stored information: last trip, fault reports, protection settings.
- 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.**

