IRX Multifunctional Protection, Control and Metering IED

Compact and flexible solution for modular applications

- Designed for mounting in LV compartments
- Allows flexible architecture combining auxiliary external elements
- Facilitates integration using standard protocols: 870-5; DNP3; ModBus and IEC61850

Contributing to improved Safety, Quality of Service and Profitability of Electrical Systems
IRX units are designed to provide integrated protection, control and metering solutions in overhead lines, underground cables and feeders in general, as well as in backup protection of bus-bars and transformers.

It incorporates a programmable unit that allows the user to define the operational logic of both protection and control functions, to suit specific application needs.

The IRX models are complemented by a series of easy-to-use communications and programming tools that provide a user-friendly environment in which to configure applications.

### Protection Functions

- **50** Instantaneous Phase Overcurrent (2 units).
- **50Q** Instantaneous Negative Sequence Overcurrent (I2) (2 units).
- **50G** Instantaneous Ground Overcurrent (2 units).
- **50SG** Instantaneous Sensitive Ground Overcurrent.
- **51** Time Delay Phase Overcurrent (Inverse/Definite) (3 units).
- **51Q** Time Delay Negative Sequence Overcurrent (Inverse/Definite) (3 units).
- **51G** Time Delay Ground Overcurrent (Inverse/Definite) (3 units).
- **51SG** Time Delay Sensitive Ground Overcurrent (Inverse/Definite).
- **51V** Overcurrent with Voltage Restraint (3 units).
- **67** Directional Phase Overcurrent.
- **67G** Directional Ground Overcurrent.
- **67SG** Directional Sensitive Ground Overcurrent.
- **67Nu** Directional Ungrounded / Petersen Coil Neutral Overcurrent.
- **37** Time Delay Phase Undercurrent.
- **27** Undervoltage (3 units) (Selectable Input L-L or L-N).
- **59** Overvoltage (3 units) (Selectable Input L-L or L-N).
- **59N** Neutral Overvoltage Calculated from the Phase Voltages (2 units).
- **64** Neutral Overvoltage with dedicated Voltage Channel.
- **47** Negative Sequence Overvoltage.
- **81M** Overfrequency (4/8 units).
- **81m** Underfrequency (4/8 units).
- **81D** Rate of Change (4/8 units).
- **81DU** Rate of Change Independent of 81m (8 units).
- **81DA** Mean Rate of Change (8 units).
- **79** Recloser.
- **25** Synchrocheck with Voltage, Phase and Frequency Elements.
- **32P/Q** Directional Power (Active/Reactive).
- **49** Thermal Image.
- **50BF** Breaker Failure.
- **46** Phase Balance (I2/I1).
- **87N** Restricted Earth Fault.
- **78** Phase Angle Measuring (Out-of-Step).

---

**Description**

The IRX models are equipment designed to provide complete protection of feeders, incorporating also programmable control logic.
Application

**IRX** units are designed for all applications that require multifunctional protection in different distribution networks, in systems both grounded as well as ungrounded or with Petersen Coil.

Because of its modular construction and reduced size, the **IRX** is especially designed for application in MV switchgear.

The **IRX** equipment makes possible a drastic reduction of the wiring inside the LV compartment.

Due to their versatile communications structure, **IRX** units can be optimally used as stand-alone components or as parts of an integrated protection and control system, both conventional as well as IEC 61850 compliant.

The modular design of **IRX** allows to drastically reduce the amount of internal cabling in the MV switchgear.

There are two communication ports to each IED: one for protection and one for control functions. Interfacing each subsystem (protection and control) with independent networks is possible.

Independent network architectures can use the different communications protocols supported by the **IRX**.