



# Polarr

The Polarr offers full auto-reclose protection and control functionality, for stand alone applications and utilises a lithium battery to eliminate the requirement for a pole-mounted auxiliary supply.

## Principle of Operation

The Polarr measures the 3 phase and residual currents using CTs located in the GVR, and performs auto-reclosing over current, earth fault and sensitive earth fault protection. The low power, microprocessor architecture of the Polarr is unique to the power industry. Its design has been perfected over several years and offers the user significant benefits through the elimination of the need for any external power supply. In addition to this, the Polarr offers several advanced auto-reclosing functions in a comprehensive but cost effective package.

## Weather Protection

The Polarr relay and control batteries are housed in a control box located on the pole at ground height underneath the GVR. Connection to the GVR is via an umbilical cable and weather proof plug and socket that is used to carry the CT currents and the GVR control signals. The IP56 sealed control box is made from stainless steel, with an outer double skinned sun shield of polyester-coated galvalite.

It protects against the harshest environment and maintains an even internal temperature keeping the relay condensation-free.

## Control Batteries

High energy density lithium battery technology makes the GVR with Polarr ideal for applications where an auxiliary power supply is not available.



## Programming Protection Settings

Protection settings can be programmed via the user friendly display and keypad or downloaded through the serial port from a laptop computer using libraries of settings created in Windows based software.

## Data Logging

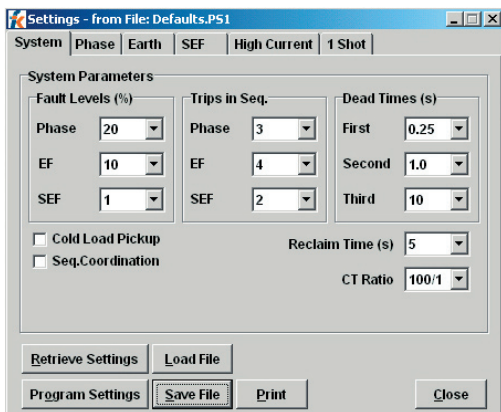
Historical, diagnostic and load current data can be accessed through the local display or the serial port. The Polarr history is held in non-volatile memory, and includes the time and date of the last 20 sequences together with the number of trips in the sequence and fault magnitude of each of the elements.

## Minimum Trip Currents

The multi-ratio CTs located in the GVR and a wide range of programmable minimum trip settings ensure that the GVR and Polarr can be used at any point in the network, from substation through to the feeder ends with the earth fault currents as low as one ampere.

## Short Cut Keys

In addition to large, clear control keys, LED indication and a menu-driven display for entering settings and viewing historic data, the front panel also incorporates three push-buttons for instant access to load current, fault target and battery condition information.



User friendly windows software for programming settings and viewing history (above)

## Sequence Co-ordination

The Polarr's advance sequence co-ordination logic and fast response times of the relay allow co-ordinating delays as low as 60mS to ensure that only the recloser closest to the fault operates.

## Local Control

Push-buttons are provided for the standard auto-recloser functions, while separate keys and LED indication are used for the circuit breaker control.

## OTHER PROTECTION AND CONTROL OPTIONS

### » Panacea

Based on the SEL 351R Relay, the Panacea offers the optimum levels of advanced control and protection for distribution networks. Functions include directional protection, voltage synchronisation, load encroachment logic and underfrequency load shedding.

### » VISIONr

The VISIONr is a high specification relay dedicated to the protection and control of outdoor overhead line circuit breakers and this coupled with its in built RTU offers one of the most cost effective solutions on the market today.

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