

Product SPECIFICATION SHEET

SX125 / SX131



SX125
5mm bright LED on detection.

SX131
5mm bright LED and audio alarm on detection.

OVERVIEW

The SX125 and SX131 monitor the negative phase sequence (NPS) voltage component off a three phase supply, providing reliable detection of phase imbalance, phase failure or reversed phase sequence. The power supply for the unit is tapped off the voltage sensing inputs.

ACTION

When power is applied the relay energises after ± 1 sec provided all three phases are balanced and in the correct sequence. The relay will de-energise when any one of the following faults occur:

- Reversal of phase sequence.
- Excessive imbalance between phases.
- Excessive phase angle error.
- Failure of one or more phases (single phasing).

The relay will energise again when correct power supply conditions are established. (Imbalance sensitivity i.e. percentage NPS voltage tolerance is pre-set at 7.5%.

APPLICATIONS

- Detection of phase failure and phase reversal on voltage transformers of HT switchgear.
- Protection of 3 phase motors against single phasing.
- Overhead line supervision in rural areas.
- Protection against reverse phase sequence on forward and reverse operating machines.
- Detection of phase angle areas.
- Detection of unbalanced supply voltage.

FEATURES

- Failsafe.
- Insensitive to regenerated EMF.
- Extremely stable under harmonic distortion.
- Insensitive to balanced supply voltage variations.
- Fast response to reversed phase sequence.
- SX125 Has a Hi-bright LED on fault detection.
- SX131 Has a Hi-bright LED and audio alarm on fault detection.

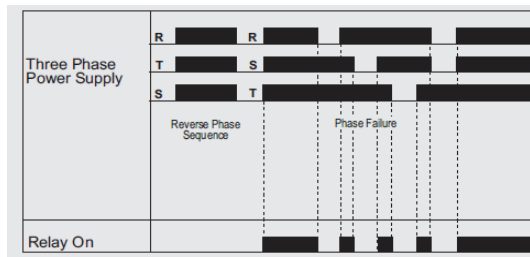
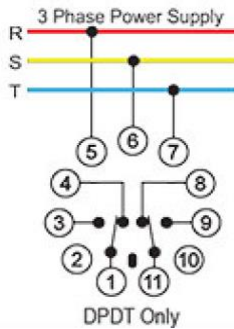
NEGATIVE PHASE SEQUENCE NPS VOLTAGE

The negative phase sequence voltage component is a measure of the imbalance of a three phase supply. Any imbalance due to unequal voltage amplitude of the three phases or a phase angle error between phases, results in the generation of NPS voltage. A completely balanced system with positive phase sequence does not generate NPS voltage. Complete loss of one phase results in 50% NPS voltage, a 100% NPS voltage would result from a balanced system with reversed phase sequence.

$$\% \text{ NPS Voltage} = \frac{71}{V \text{ average}} (V \text{ high} - 1/4 V \text{ middle} - 3/4 V \text{ low})$$

E.g.: Measured voltages, 400V, 380V, 360V

$$\% \text{ NPS} = \frac{71}{1/3(400+380+360)} (400 - 1/4 \times 380 - 3/4 \times 360) = 6,5\%$$



BRANCH CONTACT DETAILS

Johannesburg 010 202 3300
Germiston 011 418 9600
Cape Town 021 510 0710
Pinetown 031 700 4215
Riverhorse 031 492 4800

NATIONAL CALL CENTRE

Sales 010 202 3400
Technical 010 202 3500

www.acdc.co.za