

Phase and Feeder Identification

RETRACE aids the enhancement of the accuracy of a utility's Low Voltage System records. The RETRACE works by superimposing a low power signal on the feeders from an LV substation. Further downstream of the single phase supply the correct LV Feeder & Phase can be detected. This can all occur with no need to disconnect the supply.



Typical Applications

- ◀ Mapping for fault location, especially in conjunction with Kelman's Delta V fault location system
- ◀ For record verification or billing purposes
- ◀ For network planning

Background

The RETRACE has been developed to meet a very basic need of the electricity distribution industry - the need to know exactly how customers are connected to the supply system. The increasing regulatory pressures within the market place mean that this need has become more acute in recent times.

With growing residential and commercial development electricity distribution records can easily become out of date and inaccurate. Even the simple task of recording the actual connection details during construction or restoration is not always achieved. Many organisations have not effectively closed the loop between what is planned and what is constructed. In some cases, during periods of rapid expansion, records may not even exist.

The supply of efficient and dependable electricity can only be assured if the supply chain is clearly defined and understood. The RETRACE allows the management of basic supply point data to be carried out in a cost effective manner.

The Equipment

The RETRACE for LV phase and feeder identification consists of two separate units:

Transmitter Unit

The Transmitter Unit is connected at the low voltage substation and consists of a multi channel signal generator. It can be placed safely on the floor of the substation with each channel linked via a split core CT to the cable or to the phase core of a cable under test. There is no galvanic connection to the cable and the CT's provide electrical isolation between the Transmitter Unit and the cables. The Transmitter Unit uses series injection to induce a voltage signal of around 300mV through the CT and onto the cable. Each channel uses a unique discrete frequency permitting accurate identification at any point along the cable run. Two versions of the Transmitter Unit are available with either 3 or 6 channels. Multiple transmitters can be used together giving up to 15 channels.

Receiver Unit

The Receiver Unit is a hand held device which is plugged into the supply point downstream of the substation where the RETRACE transmitter has been installed. The display on the Receiver Unit shows the correct phase and feeder.

Specification	
Max permissible load in cable:	350A rms
Output Channels:	Two versions: 3 or 6 channels
Test signals:	300mV (norm)
Transmitter Power Supply:	240V rms, 50Hz
Transmitter Dimensions / Weight:	265 x 245 x 125mm / 2.6kg
Receiver unit display:	Alphanumeric LCD
Receiver Dimensions / Weight:	225 x 110 x 78mm / 750g

Related Products



DELTA V

The Delta V is the new fault location system from Kelman designed to locate intermittent and permanent faults. Often Delta V will even permit faults to be located using data gathered as the fault develops and before the Rezap needs to interrupt the circuit. Together with the Rezap Sigma the Delta V provides a revolutionary method of Fault Location.



REZAP Fault Master

This version of the Rezap is equipped with a 2 channel transient recorder (to record V & I during fault conditions) and a GPRS modem that can be programmed to alert the engineer of REZAP operation by SMS. Once again it is particularly useful under intermittent fault conditions and comes in 400 A and 630 A versions.