

PATHFINDER 360 ALPHA

Permanently installed Overhead Line Fault Passage Indicator for 6.6kV /33kV Wood/Concrete Pole Lines



Bowden Bros. introduce the Pathfinder 360 Alpha, a sophisticated overhead line fault passage indicator that will detect earth faults and phase to phase faults of either a permanent or a transient nature, and indicate with both a high intensity Xenon Gas flashing light and a bright LED. For remote communications functionality see PATHFINDER 360 ALPHA GSM

Features

- Microprocessor technology gives dual logic to sense SEF earth faults, and high value earth or phase to phase faults.
- Purpose moulded single piece polycarbonate casing with screw top lid, pressure tested to 10 p.s.i. for 24 hours.
- C.E. mark certified with full EMC (Electro-magnetic Compatibility) compliance to BSEN50081-1 and BSEN50082-1. (Heavy Industrial).
- Auto Gain adjusts initial sensitivity automatically according to the value and balance of load current.
- Changeable 16A.H. Lithium battery gives over 1000 flashing hours (depending on temperature).
- Dual indication from High intensity Xenon flashing light, and red LED to give long time and transient fault indications.
- Type 'F' Alpha will operate for low level faults cleared by SEF at source where a fuse has insufficient current to rupture.
- Timed reset of flashing light to suit customer (3, 4, 6, or 8 hour), and reset of LED on restoration of line voltage for normal operation.
- Designed to respond to live line faults, or to a fault following a Circuit Breaker reclosure onto a dead line.
- A unique field monitoring feature incorporates a 40 msec delay which will inhibit operation from stray capacitive currents and magnetising inrush current.

Benefits

- Reduced Fault Outage Times
- Reduced Manpower Costs and Effort
- Reduced Plant Duty
- Fewer Customer Complaints
- Reduction in Consumer Hours Lost

Pathfinder, the concept

Pathfinder technology has helped engineers find overhead distribution line faults for the past 25 years, using the balance of electro-magnetic field that exists under a healthy line and comparing that with the out of balance under fault condition.

Pathfinder, when positioned 3 metres under the conductors will monitor load currents and voltage. If a fault occurs on the line, Pathfinder will sense fault current and flash.

An engineer can then follow the instruments installed down a line and the fault will lie between the last Pathfinder to flash and the first Pathfinder not giving an indication.

The use of Pathfinder enables quicker fault location and restoration of supply, with associated reduction in consumer hours lost, less customer complaints and more efficient use of engineering resource during fault location.

PATHFINDER 360 ALPHA

The latest instrument in the Pathfinder range of fault passage indicators, the PATHFINDER 360 ALPHA uses microprocessor technology allowing infinite flexibility in producing model variations and a better defined logic to identify the passage of fault current.

The new instrument retains many of the features common to the 360 model, with Auto Gain, which continuously samples the residual electromagnetic field according to the prevailing load conditions and automatically adjusts the sensitivity to fault current.

The dual logic in PATHFINDER 360 ALPHA requires very low values of fault current to be continuously sensed for at least 200 msec. This gives additional security in identifying fault current over fluctuations in load, or spurious line currents.

It will also identify higher values of fault current within 50 msec to allow successful operation with the very quick clearance times of the modern ground or pole mounted reclosers.

Apart from the 'F' model, all ALPHA'S require confirmation of fault condition, with the recognised loss of voltage field 30 seconds after identification of fault current before alarm.

All models are designed to be permanently installed 3 metres below either a flat or triangular construction overhead line.

MODEL TYPES

Type 'S'

The standard instrument that will detect a permanent fault on mainline or spur lines. A permanent fault will be indicated by the Xenon Gas flashing light, which will flash for 3 hours, or reset by the restoration of line voltage. At the same time a super bright LED will remain flashing until line volts are restored.

Type 'F'

The model for operation downstream of fuses. The Type 'F' will alarm for faults cleared by a single, or multiphase fuse, where line voltage may be present on other phases. Both the Xenon Flashing light and the super bright LED will flash for 3 hours before resetting. The dual current logic will allow the Type 'F' to detect low value faults that will not rupture a fuse, but are sensed and cleared on SEF at the source of pole mounted recloser.

Type 'D'

The Type 'D' will respond to both transient and permanent faults. For transient faults the Xenon light will not flash, as line volts will have been restored, but the super bright LED will stay tripped for 24 hours, regardless of line volts. This will enable an engineer to track the path of an illusive intermittent fault.

Type 'ROSCO' Incorporates a communications interface for system automation via radio, telecom lines or pilot wires. Facilities for indication of the passage of fault current, as well as line voltage are available.

The Type 'ROSCO' can be applied to each of the above instrument types.

Specification

- ▶ System voltage :6.6 kV to 33 KV wood pole lines
- ▶ Installation:- -- 3 metres from lowest conductors
- ▶ Battery:- -- 1 x Lithium Thionyl Chloride 16AH
- ▶ Live/dead line trip level:- -- 7 to 20 amps dependant on AGC
- ▶ Installation:- -- 3 metres from lowest conductors
- ▶ Flash Capacity:- -- 1000
- ▶ Battery life:10 years average dependant on temperature
- ▶ Flash Rate:- -- 10/5secs interval
- ▶ Temperature range:- -- -4 0 deg C to + 70 deg C
- ▶ Humidity 0-100%
- ▶ Specification subject to change without notice
- ▶ Line Voltage:- -- 6-33 KV
- ▶ Initial time delay:- -- 40 msecs