

MK8 RIGHTWAY PATHFINDER

The Portable Overhead Line Fault Indicator



BOWDEN'S

The Pathfinder MK8 is the natural successor to the highly successful MK7A instrument, and includes these improvements.

CHANGES AT A GLANCE

- * Improved IP rating to IP67 ensures weatherproofing during prolonged use.
- * Sealed switches (without rubber over-boots) gives this improved IP rating.
- * Modern PIC selection allows zero standing current when alarmed and reduced current demand when listening, with associated improvement in battery life.
- * Use of current day components keeps production costs low, and ensures continuity of supply with reduced lead times.

BENEFITS

- * Quicker Fault Location
- * Reduces Need for Line Patrols
- * Aid to Identifying Faulty Cable Sections in OHL Networks
- * Helps to Indicate OHL Transformer Winding Faults
- * Used by Operator at Ground Level

FEATURES

- * Integral and Factory Changeable Lithium Battery - Up to 10 Years Life
- * Lightweight and Portable
- * Reliable and Robust
- * Responds to Phase/Earth and Phase /Phase Faults
- * Auto Battery Test Facility
- * Bright Red Flag Alarm
- * Sensitivity Switch
- * Identifies Permanent, Transient and Intermittent Faults

INTRODUCTION

The Portable Rightway Pathfinder MK 8 is an instrument for indicating the passage of fault current in overhead 11KV and 33KV power lines. It has been developed from the highly popular Pathfinder MK 7A retaining the same reliability but now incorporates additional features, which provide additional benefits to the power system engineer.

DESCRIPTION

The MK 8 comprises a grey Polycarbonate case with a clear front viewing panel. The unit seal is to IP67. An elasticated strap captured in two side mounted loops is used to hold the instrument in position on an overhead line pole. Alternatively a nylon buckle strap can be provided.

The micro-chip controlled electronics is powered by a Lithium Thionyl Chloride Battery with a service free life of up to 10 years, dependant on usage.

A bright red flip flop Flag Indicator behind the clear lens gives a positive visual indication of the passage of fault current in the overhead line conductors.

Two new weatherproof external switches on the front of the instrument provide an ON/OFF battery test control and a dual sensitivity option.



INSTALLATION

The Mk 8 should be mounted on a clean intermediate pole symmetrically below the line conductors and about 5 metres below the lowest conductor.

An elasticated strap or nylon buckle strap is provided to wrap around the pole and hook over metal hoops on either side of the instrument case.

Alternatively, the MK 8 can be laid on a convenient hedgerow or held by an operator below the line.

OPERATION

When the MK 8 is in position the following instructions must be followed.

1. Switch on the instrument.
This action automatically checks the battery. If it is healthy the flag indicator will first register black, before flipping over to 'red' for about 1 sec, and then resetting to black again. This indicates that the unit is ready to sense fault current.
This testing must be carried out in an area of low field strength - i.e. not near a transformer or a motor that will cause the instrument to indicate red'.
Any other behaviour on the part of the flag shows that the instrument is not serviceable.
2. Strap the MK 8 to the overhead line pole (ideally a clean intermediate wood pole) using the elasticated straps provided.
3. Select the sensitivity switch to high or low, High for fault levels up to 150 MVA, 'Low for fault levels above 150 MVA, as a general rule.
4. Attempt to re-energize the line. If the circuit trips, note which Pathfinders have flipped their indicators to Red. The faulty section of line lies between the last Pathfinder to flag red and the first instrument not to flag.

At the instant the line is re-energized onto a sustained fault, the Pathfinder reacts by desensitizing its circuits for a period of 35 milli-seconds. This prevents mag inrush and other switching effects from causing incorrect operation of the Instrument. If the fault current is sustained beyond this period the indicator will flip to 'red' and remain in that condition until reset manually.

SPECIFICATION

Description	– Portable Pathfinder MK 8
Size	– 120 mm x 80 mm x 60 mm (length over mounting bracket 150 mm)
Weight	– 330 grams
Weatherproofing	– 1P67
Battery	Lithium Thionyl Chloride 3.7 V 2.2 AH providing between 6 and 10 years service dependant on usage.
Mounting	– Hand-held or attached to pole with an elastic strap, or nylon buckle strap.
Sensitivity	– 14 Amps at 5 metres from line (High switch position) 70 Amps at 5 metres from line (Low switch position)
Aerial angle	30 degrees to horizontal for sensing phase to phase and phase to earth fault.
Delay for magnetising inrush protection	35 to 50 milliseconds.
Operating Temperature	+60 to -20 degrees C.