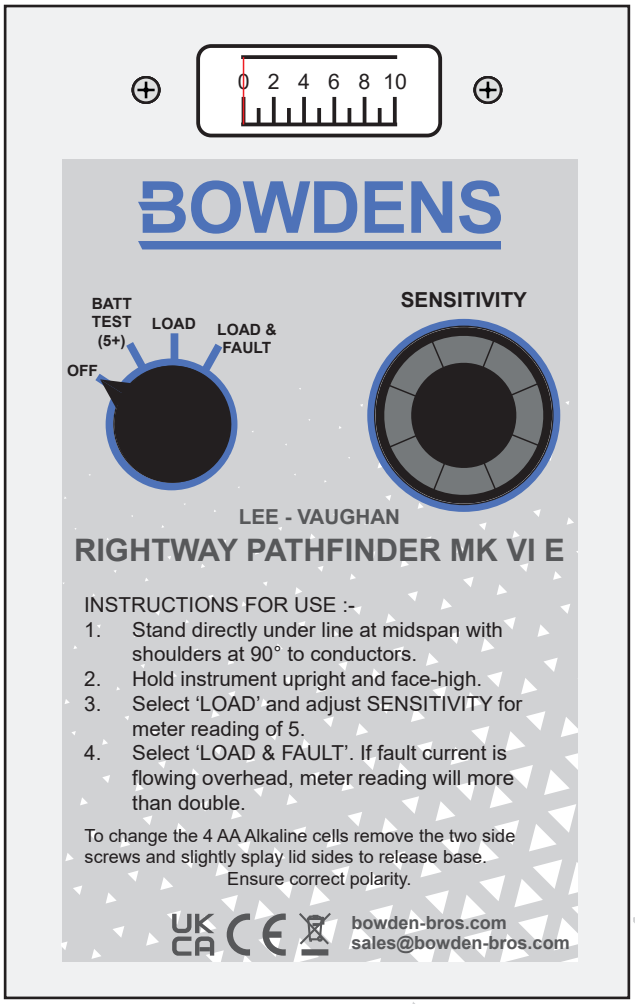
BOWDENS

RIGHTWAY PATHFINDER MK VI E



AN OVERHEAD LINE FAULT PASSAGE INDICATOR THAT WORKS IN CONJUNCTION WITH ARC SUPPRESSION COIL NETWORKS

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1.0 OVERVIEW

The MKVIE is an overhead line fault passage indicator designed specifically to operate in conjunction with arc suppression coil networks. It is a hand-held instrument that will determine the exact position of an ASC overhead line fault. The MKVIE is easy to use and quickly identifies the fault location resulting in less network stress. The unit is an inexpensive linesman's tool which saves on CML and customer interruptions.

The use of Arc Suppression Coil (ASC) as a means of earthing overhead line distribution systems is becoming more widespread, as pressure increases to save customer interruptions and CML.

The ASC, when properly tuned, will limit fault current to very small values which can be sustained on the network, and save consumers being disconnected, as in traditionally earthed systems. The problem then faced is the identification of the fault location.

Bowdens introduced the Pathfinder MKVIE as a specialist instrument to do just that. The instrument is tuned to compare the harmonic values in two electro-magnetic planes. The one plane is derived from the load current, and acts as a reference to establish whether the signal from the second plane adds or subtracts from the reference. From this the engineer can determine if he is upstream or downstream of an earth fault.

2.0 OPERATION

TYPICAL OPERATING SEQUENCE

1. Alarm is received at the Control room. Earth fault being sustained by ASC.

2. Engineer visits Primary substation. Takes the Pathfinder MKVIE from vehicle and carries out test underneath each feeder out of that substation. One feeder will be identified as having fault current present.

3. The engineer will drive to a convenient point on the feeder, and test the line again. Fault current still present? - Yes.

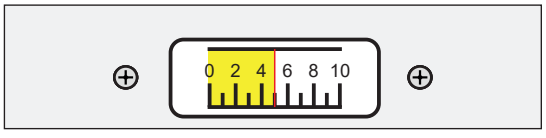
4. The engineer will drive further down the feeder and carry out another test. Is fault current present? - No.

5. The engineer must patrol the line between these two points. The faulty pole will be identified by the Pathfinder giving a positive response under the span on one side of the pole, but a negative response on the adjacent span.

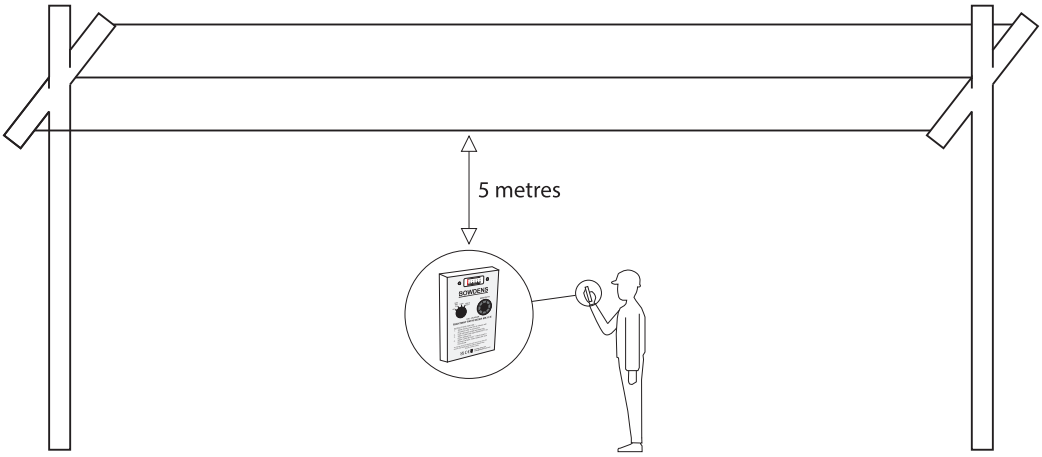
OPERATING INSTRUCTIONS:

A) Turn the selector switch to 'Batt Test'. If the meter needle reads below five then change the four AA batteries by removing the two nylon thumb screws at the side of the instrument and prize the lid away from the body.

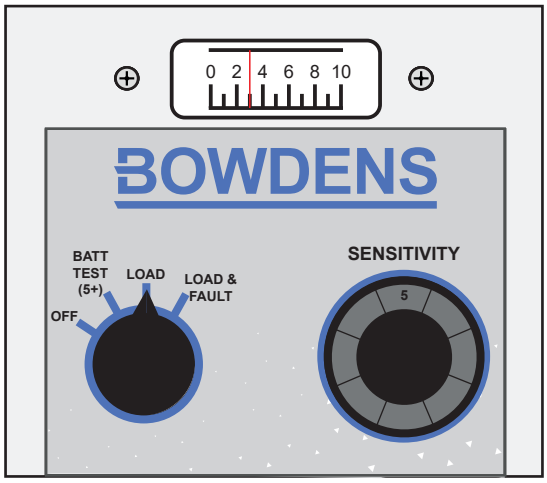
If needle is below '5' for 'Batt Test' then change battery.



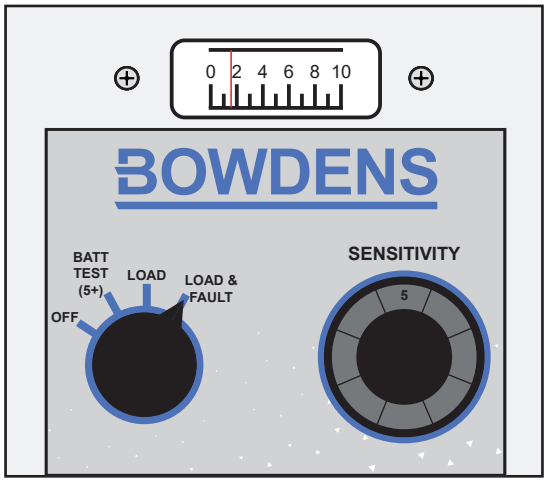
B) Stand directly under the overhead line at mid span ideally, with shoulders at right angles to the conductors. Hold the Pathfinder MKVIE face high and upright (as shown) and steady. The conductors should be approximately five metres above the instrument.



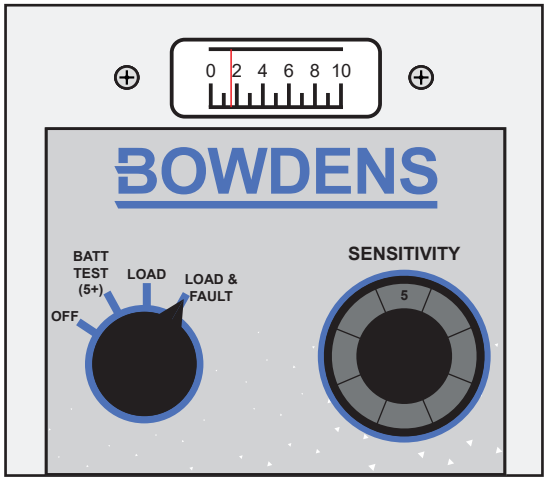
C) Turn the selector to ‘Load’ and adjust the sensitivity knob until the meter reading is five. If the Meter will not read five, leave sensitivity adjusted to maximum.



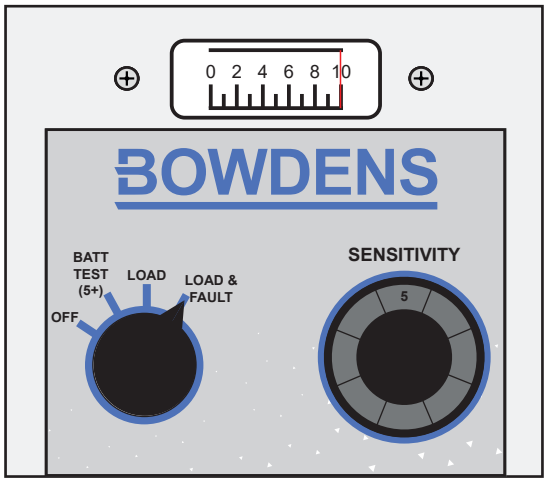
D) Turn the selector to ‘Load + Fault’ and observe the meter.



E) If the meter increases slightly, stays the same or decreases there is no fault current flowing.



F) If the reading increases by a factor of two or more, there is fault current flowing and the fault lies further down the line.



3.0 SPECIFICATION

Sensitivity: Adjustable by engineer

Battery: 4 x AA batteries

Auto-switch off: None

VERSION 2.0

RELEASE 26.02.24