

INSTRUCTION MANUAL

**AUTO WARNING EXTENSOMETER / TELLTALE.
MODEL SME 2480 - S**

Sensors & Measurements Enterprises

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AUTOWARNING EXTENSOMETER INSTALLATION AND OPERATION

Description:

Sensors & Measurements Enterprises has developed electro-mechanical auto warning extensometer to achieve considerable improvements in mine safety.

The Auto warning extensometer model SM E 2480-S is designed to give flashing LED indication when deformation reaches by a pre-set level of 5mm in strata movement of vertical hole.

Pre-installation activity:

- 1) Remove the Auto warning telltale from its box /packing.
- 2) Remove the plastic packing bag from the body.
- 3) Remove the cable tie by sharp knife/cutter. This will allow the color scale tube to move freely into the reference tube.
- 4) Check the operation of the trigger mechanism by pushing the scale towards inside the box. The LED will start flashing when scale red band reaches reference point of the housing box.
- 5) Now drill the hole of dia. 40mm approximately up to the required height.

Installation Procedure :

- 1) Take the installation tool & Insert spring anchor attached to wire to top of hole into the guide head of installation tool as shown in the figure no. 2
- 2) Insert the guide head of tool into the drilled hole.
- 3) Joint the 1 meter PVC pipe to extend the length of installation tool & push the spring anchor upward.
- 4) Go on jointing the PVC pipe till the spring anchor reaches required height.
- 5) Be sure that suspension cable is under tension.
- 6) The reference tube / housing can now be inserted into the hole. The reference tube should be pushed fully into the hole to ensure that its triangle pipe touches the hole mouth firmly.
- 7) Position indicator zero line (top of green band) to be level with bottom of reference tube.
- 8) Ensure bottom of indicator is in contact with the LED trigger level adjustment clamp.
- 9) Crimp ferrule in position against bottom of LED trigger level adjustment tube using crimping pliers.
- 10) The installation is over and only data recording to be done.
- 11) The LED will start flashing when deformation in roof layer reaches trigger level which is 5mm.
- 12) Place the reference number & location for this extensometer so that proper reporting with date can be done regularly.

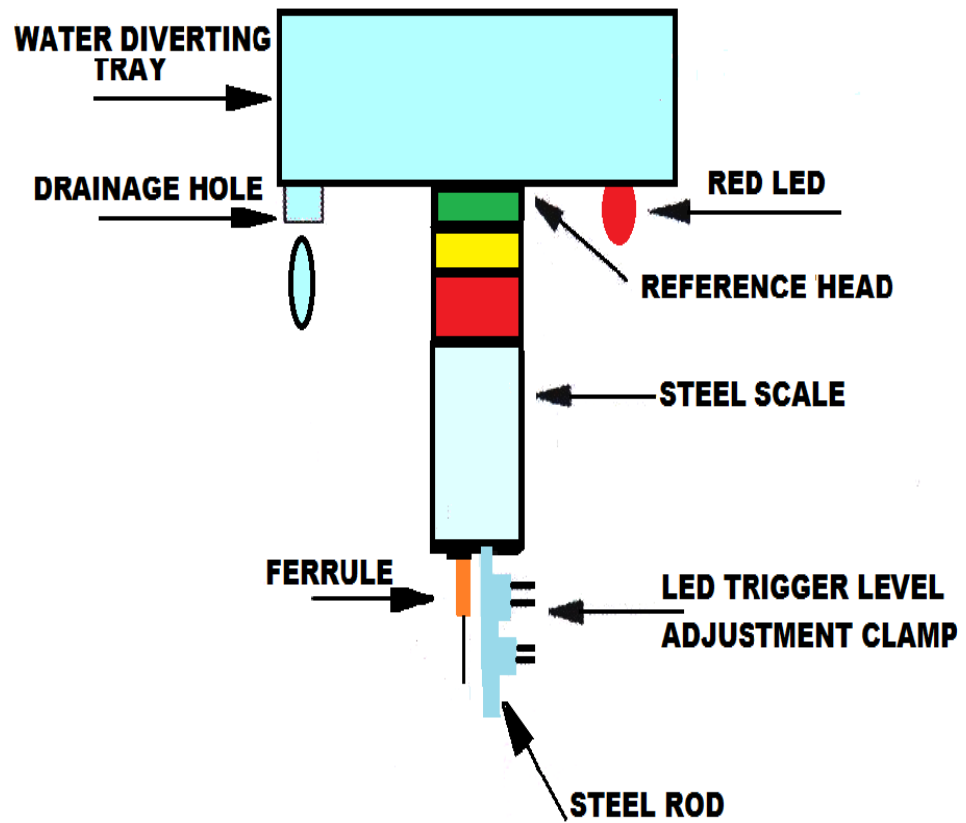


Figure - 1



Figure - 2

GENERAL SPECIFICATION :

Instrument Life	If instrument does not consume any power prior to installation can remain in storage for months before operation of LEDs.
Trigger threshold	Factory set at 5 mm travel, user adjustable.
Accuracy	± 0.5 mm trigger level.
Measurement range	0 to 75 MM
LED Display	02 nos. Red flashing LEDs
Operational life (once triggered)	Normally approx . 30 days (continuous flashing) and can be made 40 days on request.
Intrinsically safe	The instrument is tested for intrinsically safe to be use in gas group 1 by CIMFR Dhanbad.
BIS approval	License no. 930004008.
Product marking	Ex ib I T6 IP54 as per CIMFR approval
Operating temperature range	0 to 50°C
Storage temperature	0 to 40°C
Power source	Battery Pack of 1.5 volts x 4 AA size cells-Non chargeable
Hole diameter	35mm/45mm
Anchor wire length	1 to 12 meters (06 m standard)
Installation Height	3 M to 10 meters std. 15 m on request
Weight	1.10 Kg
Dimensions	320 mm long x 120 mm diameter

Note:

Also note that the maximum travel for the indicator tube is approximately 80 mm. The trigger level can be adjusted up to 25 mm in this case.

Reading the Visual Indicator

The battery power is only used when the LEDs start flashing. The yellow color band of scale is adjusted for 5mm trigger level. When 5mm deformation in strata reaches the LED will start flashing. The LED will continue to flash for 30 days.

The scale reading to be recorded every shift or day as per requirement. The battery in this unit will deteriorate with time & the battery is not user replaceable.

Precaution

If at any time the encapsulated electronics module and battery is damaged or exposed then the unit must be removed from the mine for safe disposal.

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