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DETAILED TECHNICAL SPECIFICATION FOR CABLE LOCATOR SET SUITABLE FOR DETECTING BURIED SIGNALLING AND ELECTRICAL CABLES.

The locator set must be suitable for use by a wide range of operatives of all levels of technical knowledge. It must be robust enough to perform reliably in all site conditions and weather situations and for prolonged periods. It must be capable of measuring the depth of buried cables.

The locating set is to consist of the following items:

A. A Locator unit - 1 nos
B. A Signal Generator unit (to include accessories) – 1 nos
C. A Signal Clamp – 1 nos

The locating set must be capable of locating and route tracing cables by three methods :

a. Direct connection method
b. Inductive method by using transmitter
c. By using inductive signal clamp

A. LOCATING UNIT :

It must have 3 modes of detection. It must be able to detect buried power services without any physical connection by means of a 50 Hz/60 Hz Power Mode and other cables whether carrying current or not by means of an RF frequency Radio Mode when used alone. A third Generator Mode must be capable of being used in association with a Signal Generator unit for precise cable identification and route tracing applications using a specific frequency. The locating unit sensitivity must be adjustable.

Technical Specifications

Power supply: AA batteries.
Battery life: >= 40 hours.
Spare Battery: The units must include a built in spare battery pack
Case Sealing: Case to be sealed to IP65 or higher.
Wear Plate: The unit must have a wear plate at its base that can be replaced in the field without the use of special tools.
Antennae: The receiver must be fitted with minimum two antennas. The receiver circuit must use the signal from both antennas to observe the difference signal in all three modes to enhance rejection of unwanted common mode signals

Controls:

1/ Trigger style On/Off switch that does not allow the unit to be left on when not in use. Automatic battery test tone at each switch on.
2/ 3 position function select switch for Power, Radio and Generator Mode.
3/ Sensitivity Control.
4/ Push button for depth measurement.
5/ All controls to be suitable for single handed finger tip operation.

Audio:

1/ Audio response to be produced by an integral Loudspeaker.
2/ Loudspeaker module to be extendable so the user can place it by their ear in noisy environments. Separate headphones are not acceptable.
3/ Loudspeaker module to be replaceable in the field without the use of any tools.
4/ Audio response must be an analogue derivative of the received signal.

Visual: Liquid Crystal Display (LCD) showing:

1/ Battery condition
2/ Received signal strength indication to indicate a good locate signal and proximity to the target utility.
3/ Current selected operating mode
4/ Depth Measurement (when depth is activated)

Performance:

The unit should be based on single or multiple electromagnetic frequency principle. The unit should have ability to indicate a good locate signal and quickly lead the user to target utility line. In addition, the unit should have adjustable sensitivity to allow working in congested areas. The unit should provide continuous depth measurement feature.

Depth Measurement:

1/ Must be provided by a simple push button operation.
2/ When selected the Depth reading must remain 'live' even when the unit is in motion to aid correct verification.
3/ Range: 0.2m to 3m (line)
4/ Accuracy: 5% of depth