5916
SUBMARINE CABLE ELECTRODING DETECTOR

DATASHEET

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PRECISION INSTRUMENTS

TYPE 5916 ELECTRODING DETECTOR

Designed to be an updated replacement for the former 5916 the Detector is used to locate submarine cables in water of up to 180 metres (100 fathoms) in depth. A signal in the range of 4 Hz to 40 Hz is transmitted down the submarine cable by an Electroding Generator such as the Tinsley type 5915 unit. This signal is picked up by trailed electrodes connected to the detector.

The Detector and receiving probes are normally aboard the repair vessel, however, as they are portable, the detector may be operated from any locally available boat, RIB or launch. The received signal is processed and passed to the analogue front panel meter and chart recorder. Normally, the Electroding Generator, Tinsley type 5915, is located in the submarine cable terminal nearest to the fault area.

The Electroding Detector, Tinsley type 5916 is aboard the ship. When the ship is in the vicinity of the cable area, the 5915 Electroding Generator is powered thus applying the low frequency signal to the cable under test. At these frequencies, the field of the signal extends into the water surrounding the cable for a considerable distance. The ship would normally steer a course to cross the cable on the landward side of the expected fault position. Before this position is reached, the ship launches the receiving probes which are connect to the input of the 5916 detector. The Detector is set (by thumbwheel switch) to the frequency being transmitted by the Electroding Generator on shore. As the ship crosses the cable, the field of the signal current on the cable induces a voltage into the probe/s. This signal is then processed by the Electroding Detector and a deflection on the meter is registered. This may also be recorded by the built-in chart recorder.

For identification purposes, the Electroding Generator may be keyed on and off periodically. Once the cable signal has been identified and confirmed, the ship then follows the cable on a zigzag course until the signal disappears or is much reduced. When this happens, the fault or break has been passed. Use of NAVSAT on a marker buoy would mark the point where the signal was last detected. Further runs may be made for a more precise fix of the fault position.

KEY FEATURES

- High sensitivity
- Frequency range 4Hz to 40Hz
- Analogue signal strength meter
- Electrostatic input (trailed electrodes)
- Auxiliary input for magnetic detector
- Signal strength chart recorder
- Event timer

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5916 SPECIFICATION

Frequency Range		4Hz to 40Hz in increments of 0.1Hz with thumbwheel selection
Detector Bandwidth		0.5Hz
Sensitivity	Electrostatic input	1µV RMS for full scale deflection
	Auxiliary input	10µV RMS for full scale deflection
Input Impedance	Electrostatic input	Balanced low impedance
	Auxiliary input	10kΩ
Auxiliary Input Connector		7 way DIN socket
Electrostatic Input Connector		4mm binding post terminals
Power		Built-in rechargeable batteries - typically 5 hours continuous use
Mains Supply		Single phase 115V AC to 240V AC
Display		Analogue signal strength meter with battery and signal test
Event timer		Front panel digital elapsed timer and clock
Recorder		Chart recorder
Event marker		An event marker button is included on the front panel for marking the recording chart and activating a relay for external event recording
Detection Range	Electrostatic input	Typically 180 metres but depths of 300 metres are possible. Limited by external factors such as: signal to noise ratio, attenuation of the signal in the cable and lateral distance at which the ship is operating away from the cable
	Magnetic Detector Input	Typically 20 metres but may be limited by external factors such as signal to noise ratio and attenuation of signal in the cable
Case Type		
Dimensions		470mm x 360mm x 175mm
Weight		Approximately 15Kg

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