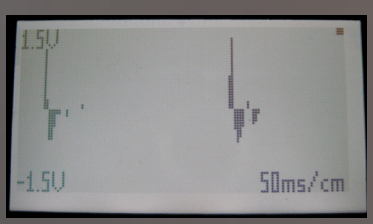
PTM-1000
Piezo Test Meter

www.exceltech.com.au

The PTM-1000 is a rugged field service instrument which has been purpose designed for in-pavement Piezo performance analysis. The test instrument displays individual vehicle actuations and accumulates actuations in order to display the linearity of the sensor. These two modes provide the user with a complete interpretation of an in-pavement piezo's performance characteristics.

The PTM-1000 unit utilises the existing site BNC style piezo feeder connection - remove the BNC from the Field Termination Panel and connect to the PTM. Live data from the in-pavement sensor will be displayed on the Graphic LCD panel. The graphical display provides a two dimensional representation of the signal generated by the piezo strip when pressure is applied to the strip as the wheels and axles of a vehicle pass over the device located within the road surface. The shape and levels of the signals associated with vehicles of varying weight and speed is critical to evaluating piezo performance.

The front panel facilitates the selection of the primary mode, the trigger threshold enabling display and record retention, the time scale of the sample and the voltage scale of the sample. Selection of these sampling controls facilitates displaying optimised axle actuations from a small standard vehicle to a 'B-Double' truck. A button enables a timer controlled backlight function for operation under poor lighting conditions. The device may be operated safely by a single technician.



Designed, Developed and Manufactured by Excel Technology Co in Brisbane, Australia

Features:

Rugged design with robust protective shroud

Single 9V battery operation

Graphical LCD display with numeric indication

Weather proof touch sensitive keypad

Timed back-light

Single switch operation incorporating timer for power consumption management

Single connection (BNC)

Identifies short circuit and open circuit piezo

Identifies vehicle actuation with two dimension true signal voltage display

Contact Us Email: enquiries@exceltech.com.au Web: www.exceltech.com.au Phone: (07) 3279 4322

EXCEL Technology Co

PTM-1000 Operational Specification

Operational Specification
Overall measurement accuracy typically 3% within optimised range
Optimised measurement range 0.5V to 3.0V
Capacitance range 5.0nf to 2.0nf
Maximum voltage input 9V
Maximum resistance 20Mohm
Maximum dissipation 0.04
Operates with PIEZOs specified within the manufacturer specified range
Time base operation within corresponding maximum speed 140km/hr

Power Supply & Physical Dimensions
PTM-1000 requires a single 9 Volt D cell
Weight 0.5 Kg (1.0 lb)
Size 260 mm x 120 mm x 40 mm (10.5 x 4.5 x 1.5inch) including provision for terminals and switch/ buttons
Current consumption: Piezo not connected current - 40 milliamps
Current consumption: Piezo connected - operational display - 115 milliamps

Signal Display
Voltage level: Max 3.0V, Steps 0.5, 1.0, 1.5, 3.0 Volts, Surge protection limit 9V
Trigger threshold: Range - three steps within each voltage step (0.5, 1.0, 1.5, 3.0 Volts)
Signal time base: Range 3, 5, 10, 20, 50, 100, 200, 300 Millisecs

Connector Specification
Piezo Connector: BNC 50 Ohm, frequency <4Ghz
IDC style connectors withstanding voltage 500 volt RMS for 1 minute - 0.5 amp current rating
Mate-en-lock current rating 3 amp per pin, contact resistance 30M Ohm max at DC100mA
PCB Modular Terminal 'Phoenix style' 10 amp rated voltage 300 volt AC.

Environmental
Circuitry implemented on all cards is rated to 65°C operation with a relative humidity of 90%. Circuit cards are conformal coated and will operate within Australian Standard Guidelines for Traffic Control Devices as per TSC/3 and TSC/4. The CONFORMAL coating material used to protect the circuit cards is labelled SCC3 CC from Electrolube. The material is sprayed onto the circuit cards in accordance with the manufacturer recommendations and required Occupational, Health and Safety practices. The conformal coating material has a dielectric strength of 90 KV/mm and an operational temperature range of -70°C to 200°C and is self extinguishing when exposed to a flame

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