

## One Site One Product Multiple Functions

The **LTM-1000** provides a rugged field service instrument, designed for in-pavement loop analysis. The unit utilises a single loop feeder connection to initiate a measurement operation which displays on an alpha-numeric LCD panel all relevant 'electromagnetic' change associated with the vehicle detection. Additional features include a probe which locates concealed loop windings and a single button actuation for loop insulation integrity evaluation.

### Features:

- Single connection - measurements displayed simultaneously
- Multi-function device
- Weather proof touch-sensitive function selection keypad
- Large LCD panel with user selectable backlight
- Verifies loop wire insulation integrity
- Locates in-pavement loops from moving vehicle
- Locates concealed in-pavement loop winding boundaries
- Robust plastic protective shroud
- Single 9 Volt DC battery operation
- Single momentary switch ON / OFF operation
- Auto timeout operation 15 secs after removal
- Manual LCD backlight operation - pwr consumption control
- Measures immediately when feeders are connected

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

### Identifies:

Short & open  
circuit loop states

Vehicle actuation

### Measures:

DC Resistance

Loop inductance  
(microhenries)

Calculates tuned  
frequency

Calculates  
loop 'Q'



**Operational Specification**

Overall measurement accuracy typically 3% within optimised range

Optimised measurement range 100 <-> 400 Microhenries

Inductance measurement at loop tuned frequency

Self tuning in the range of 50 to 800 microhenries within .5 second of power on

The input loop reading circuitry resonates between 40 KHz and 150 KHz

Operates with loops of the specified inductance range and Q of  $\geq 3$  at typical resonant frequency

Loop insulation integrity verification > 100Megohms

DC resistance range .3 ohms <-> 9 ohms

In-pavement loop location from moving vehicle 'sweep' – maximum speed 110 k/hr

In-pavement loop winding location from walking 'sweep' +/- 1 CM.

**Power Supply & Physical Dimensions**

LTM 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 loop connection current – 115 milliamps

Loop NOT connected current – 30 milliamps

Loop insulation breakdown current – 100 milliamps

Loop location operation current – 80 milliamps

**Connector Specification**

DB Series current rating 1 amp, contact resistance 20 Mohmmax at DC100mA

Mate-en-lock current rating 3 amp per pin, contact resistance 30 Mohmmax at DC100mA

PCB Modular Terminal 'Phoenix style' 10 amp rated voltage 300 volt AC

IDC style connectors withstanding voltage 500 volt RMS for 1 minute - .5 amp current rating

Test leads – 4mm 'banana' style plug-socket cable length 700mms withstanding 500V< 60 seconds

Alligator clips (loop connection) – insulation shroud on metal sprung jaws (20 mm opening)

**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.