

CITY OF AUSTIN  
PURCHASE SPECIFICATION  
IFB GLB0038  
FOR  
VEHICLE LOOP DETECTORS WITH LCD DISPLAY

**1.0 Scope and Classification**

**1.1 Scope**

This specification provides the minimum requirements for the Oracle 2E or buyer approved equal vehicle loop detector with LCD display and programming options.

**1.2 Classification**

The equipment to be furnished under this bid shall be used in the City of Austin's Traffic Signal System. The detectors must be compatible with CALTRANS 332 cabinet input file and meet all the requirements specified in CALTRAN's "Traffic Signal Control Equipment Specification" January 1989 edition and the criteria mentioned in this specification. Detector units shall be in full compliance with NEMA standards TS1-1994 Section 15 and TS2-2003 Section 6.5. Should a conflict in wording occur the City specification shall take precedence. This specification, until revised or rescinded, shall apply to each future purchase and contract for the commodity described herein.

**2.0 General Requirements**

- 2.1 The Detector shall have two independent channels, microprocessor controlled, fully digital and be self-tuning.
- 2.2 The detector shall be configured as a rack mounted printed circuit board for insertion into Caltrans 332, 336, and 342 ITS cabinets.
- 2.3 The detector unit shall include optically isolated, solid state outputs designed to provide a continuous "fail-safe output" (constant call) output in the event of power loss to the detector, open inductance loop or shorted inductance loop.
- 2.4 The detector unit shall record and display the occurrence of an "open loop", "shorted loop", or excess inductance change greater than "25%  $\Delta L/L$ " and shall log the 10 most recent events. All information shall be stored in a non-volatile memory device. When an event is recorded, The LCD display shall indicate fault type.
- 2.5 The vehicle loop detector module being provided shall be able to **detect vehicles as small as a 50cc motorcycle**. The detector shall include a red LED for each channel. The LED shall be active when detection is achieved. There will be one red detection LED for each channel. A yellow Fault LED indicator shall be provided for each channel. It shall be possible for the Fault LED to display an Open loop, Shorted Loop, and a 25% change in loop inductance.
- 2.6 The detector shall have the ability for the user to select a minimum of eight different frequencies on a per channel basis.
- 2.7 The detector shall have the ability for the user to select a minimum of 9 different sensitivity settings.
- 2.8 The detector shall be capable of delay time programming allowing the user to select the amount of time the call will be delayed to the controller.

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- 2.9 The detector shall be capable of carryover programming allowing the user to program the amount of time the call will be extended beyond the last actuation.
- 2.10 The detector unit shall utilize a Liquid crystal display (LCD) to display and program all functions of the detector including but not limited to the following:
- Loop Type (presence or pulse)
  - Sensitivity settings
  - Frequency settings
  - Bar or Pie graph showing inductance change when loop is actuated
  - Loop Inductance in micro henry's
  - Delay timing
  - Carryover timing
- 2.11 The LCD shall display a graph indicating the change in inductance when a loop actuation occurs. The graph will reference its beginning point based on the sensitivity setting. The graph reference point will shift in respect to selected sensitivity settings.
- 2.12 The detector shall be capable of displaying the loop inductance and change in inductance in micro henrys on the LCD display.
- 2.13 The Liquid Crystal Display (LCD) shall incorporate a white LED backlight. The backlight shall be turned on when any switch is actuated and remains on for 1 hour after the last switch actuation.
- 2.14 The detector shall have a minimum tuning range of 20 to 2,500 micro henrys with a Q factor greater than 5. The detector shall be capable of operating with lead in cable lengths of 5,000' using appropriate loops and proper lead in cable.
- 2.15 The detector shall automatically and continuously compensate for component drift and environmental effects throughout the tuning range and across the entire temperature range.
- 2.16 The loop inputs shall incorporate transient protection devices and the loop oscillator circuitry shall be transformer-isolated for each channel. The transient protection shall withstand the discharge of a 10 uF capacitor charged to 2,000V across the loop inputs or between a loop input and Earth Ground for each channel. The transformer isolation shall allow operation with a loop which is grounded at a single point.
- 2.17 Every 10 loop detector units shall be shipped with a user's manual and a theory of operations manual (i.e. 100 units would come with 10 sets of manuals).

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**3.0 Warranty**

- 3.1 The loop detector units shall be warranted for 3 years from date of delivery.
- 3.2 Units sent in for repair shall be returned within 20 calendar days after being received.
- 3.3 Units shipped to and from the manufacture for repair shall be done so at the expense of the manufacture. The City shall bear none of the shipping expense for the repaired/replaced units.

**4.0 TRAINING**

Eight (8) hours of class room training shall be provided for 15 technicians within 30 calendar days of the first delivery. The vendor shall make arrangements with the Traffic Signal Supervisor at 512-974-4095 and at [guadalupe.alvarado@austintexas.gov](mailto:guadalupe.alvarado@austintexas.gov) for a specific date and time within 10 calendar days after the first delivery with the class being held within 30 calendar days after the first delivery. The class will be held at 1501 Toomey Rd., Austin TX. 78704. All required class room material shall be provided by the vendor.

The class room training presentation and material shall include but not be limited to loop theory, design, and applications.

The eight (8) hour class shall be repeated every twenty four (24) months for the duration of the contract from the date of contract award at no additional cost to the City of Austin. The 12 month extensions, if applicable, shall be calculated in as part of the original contract term to determine the specific training dates.