



CENTRALBIDDING
FROM CENTRAL AUCTION HOUSE

**5000124368 A purchase of (12) 4 Channel Vehicle Detector Cards for the
Department of Engineering
Jefferson Parish Government**

Project documents obtained from www.CentralBidding.com
02-Oct-2018 11:21:48 AM



JEFFERSON PARISH

Department of Purchasing

Michael S. Yenni
Parish President

Renny Simno
Director

July 2018

CHANGES TO JEFFERSON PARISH BIDDING PROCEDURES

The East bank Office of Purchasing is now open! We are located in the Joseph S. Yenni Building, 1221 Elmwood Park Blvd., Suite 404, Jefferson, LA 70123. Bidders may submit bid responses at this location, pending authorization in each bid package. **Bidders should carefully read and must respond accordingly per the requirements of the bid packages. NOTE: Bidders submitting bids on the day of bid opening, bidders must submit at the West Bank location only.**

Other Changes Continued:

- For all advertised sealed bids, written evidence of signature authority must be included with bid submission.
- Current W9 Forms and vendor applications may be submitted at any time; however, if your company is not registered and/or a current W-9 form is not on file, a current W-9 form must be supplied upon contract execution, should you be awarded a contract and/or issued a purchase order.
- **Proof of insurance in the form of a current certificate evidencing coverages is required with bid submission.** Bidders must read the insurance requirements attachment included in each bid package for specific instructions. Upon contract execution, successful bidder must produce final insurance certificates in accordance with Jefferson Parish insurance requirements.

Bidders should reference the "Additional Requirements" section of the bid instructions and/or the "Important Notice to Bidders" included in the bid package for specific requirements to respond accordingly.

For more information, please call Jefferson Parish Purchasing at 504-364-2678.

Joseph S. Yenni Building – 1221 Elmwood Park Blvd., Ste. 404, Jefferson, LA 70123
Office 504.364.2678
General Government Bldg. – 200 Derbigny St – Suite 4400 - Gretna, LA 70053
Office 504.364.2678
Email: Purchasing@jeffparish.net Website: www.jeffparish.net



Bid Number 50 - 00124368

A purchase of (12) 4 Channel Vehicle Detector Cards for the
Department of Engineering

October 5, 2018 at 11:00 am

ATTENTION VENDORS!!!

Please review all pages and respond accordingly, complying with all provisions in the technical specifications and Jefferson Parish Instructions for Bidders and General Terms and Conditions. All bids must be received in the Purchasing Department by the bid due date and time.

**Jefferson Parish Purchasing Department
200 Derbigny Street
General Government Building, Suite 4400
Gretna, LA 70053
Buyer Name: Doris Abraham, Buyer I
Buyer Email: dabraham@jeffparish.net
Buyer Phone: 504-364-2690**

DATE: 10/02/2018

INVITATION TO BID
THIS IS NOT AN ORDER

Page: 1

BID NO.: 50-00124368

JEFFERSON PARISH
PURCHASING DEPARTMENT
P.O. BOX 9
GRETN, LA. 70054-0009
504-364-2678

VENDOR:

BUYER: DABRAHAM@jeffparish.net

Bids will be received until 11:00 AM, 10/05/2018 via online at www.jeffparishbids.net or by hand delivery, USPS mail or other courier service to Purchasing Department, 200 Derbigny Street (General Government Building), Suite 4400, Gretna, LA 70053. For convenience, bidders may also submit bids in the East Bank Purchasing Department, Suite 404, Jefferson Parish Joseph S. Yenni Building, 1221 Elmwood Park Blvd., Jefferson LA 70123. However, if submitting bids on the day of bid opening, bidders must submit at the West Bank location only.

All bids submitted are subject to these instructions and general conditions and any special conditions and specifications contained herein, all of which are made part of this bid proposal reference. By submitting a bid, vendor agrees to comply with all provisions of Louisiana Law, as well be in compliance with the Jefferson Parish Code of Ordinances, Louisiana Code of Ethics, applicable Jefferson Parish ethical standards and Jefferson Parish Resolution No. 113646 and/or Resolution No. 113647. A copy of these resolutions may be obtained from the Office of the Parish Clerk, Suite 6700, Jefferson Parish General Government Building, 200 Derbigny Street, Gretna, LA 70053. You may also obtain a copy by visiting the Purchasing Department webpage at purchasing.jeffparish.net and clicking on On-line forms.

All vendors submitting bids should register as a Jefferson Parish vendor if not already yet registered. Registration forms may be downloaded from <http://purchasing.jeffparish.net> and by clicking on Vendor Information. Current W-9 forms with respective Tax Identification numbers and vendor applications may be submitted at any time; however, if your company is not registered and/or a current W-9 form is not on file, vendor registration is mandatory. Further, a current W-9 form and respective Tax Identification number must be supplied upon contract execution, should you be awarded a contract and/or issued purchase order. Failure to do so may result in delay of payment.

As per LSA-RS 47:301 et seq., all governmental bodies are excluded from payment of sales taxes to any Louisiana taxing body. Quotations shall be based on F.O.B. Delivered, anywhere within the Parish as designated by the Purchasing Department. JEFFERSON PARISH WILL ACCEPT ONE BID ONLY FROM EACH VENDOR. Items bid must meet specifications. JEFFERSON PARISH will accept one price for each item unless otherwise indicated. Two or more prices for one item will result in bid rejection. Bidders are required to complete, sign and return the bid form and/or complete and return the associated line item pricing forms as indicated. The price quoted for work shall be stated in figures. In the event there is a difference in unit prices and totals, the unit prices shall prevail.

JEFFERSON PARISH reserves the right to award contracts or place orders on a lump sum or individual item basis, or such combination, as shall in its judgment be in the best interest of JEFFERSON PARISH. Every contract or order shall be awarded to the LOWEST RESPONSIVE and RESPONSIBLE BIDDER, taking into consideration the CONFORMITY WITH THE SPECIFICATIONS and the DELIVERY AND/OR COMPLETION DATE

PROTESTS: Only those vendors that submitted a bid in response to this solicitation may submit a protest in writing to the Director of the Purchasing within 48 hours of bid opening. The Purchasing Director will review it in connection with the Parish Attorney's Office as appropriate and a written response will be provided as soon as possible.

JEFFERSON PARISH reserves the right to cancel all or any part of an order if not shipped promptly. No charges will be allowed for parking or cartage unless specified in the quotation. The order must not be filled at a higher price than quoted. JEFFERSON PARISH reserves the right to cancel at any time and for any reason by issuing a THIRTY (30) day written notice to the contractor.

JEFFERSON PARISH requires all products to be new (current) and all work must be performed according to standard practices for the project. Unless otherwise specified, no aftermarket parts will be accepted. Unless otherwise specified, all workmanship and materials must have at least one (1) year guaranty, in writing, from the date of delivery and/or acceptance of the project. Any deviations or alteration from the specifications must be indicated on the bid form for each item and upon request, product data for same must be submitted by the time specified by the Purchasing Department.

If this bid requires a pre-bid conference (see Additional Requirements section), bidders are advised that such conference will be held to allow bidders the opportunity to identify any discrepancies in the bid specifications and seek further clarification regarding instructions. The Purchasing Department will issue a written response to bidders' questions in the form of an Addendum.

All formal Addenda require written acknowledgment on the bid form by the bidder. Failure to acknowledge an Addendum on the bid form shall cause the bid to be rejected; JEFFERSON PARISH reserves the right to award bid to next lowest responsive and responsible bidder in this event.

USE OF BRAND NAMES AND STOCK NUMBERS: Where brand names and stock numbers are specified, it is for the purpose of establishing certain minimum standards of quality. Bids may be submitted for products of equal quality, provided brand names and stock numbers are specified. Complete product data may be required prior to award.

Quantities listed are for bidding purposes only. Actual requirements may be more or less than quantities listed.

Bidders are not to exclude from participation in, deny the benefits of, or subject to discrimination under any program or activity, any person in the United States on the grounds of race, color, national origin, or sex; nor discriminate on the basis of age under the Age Discrimination Act of 1975, or with respect to an otherwise qualified handicapped individual as provided in Section 504 of the Rehabilitation Act of 1973, or on the basis of religion, except that any exemption from such prohibition against discrimination on the basis of religion as provided in the Civil Rights Act of 1964, or Title VI and VII of the Act of April 11, 1968, shall also apply. This assurance includes compliance with the administrative requirements of the Revenue Sharing final handicapped discrimination provisions contained in Section 51.55 (c), (d), (e), and (k)(5) of the Regulations. New construction or renovation projects must comply with Section 504 of the 1973 Rehabilitation Act, as amended, in accordance with the American National Standard Institute's specifications (ANSI A117.1-1961).

Jefferson Parish and its partners as the recipients of federal funds are fully committed to awarding a contract(s) to firm(s) that will provide high quality services and that are dedicated to diversity and to containing costs. Thus, Jefferson Parish strongly encourages the involvement of minority and/or woman-owned business enterprises (DBE's, including MBE's, WBE's and SBE's) to stimulate participation in procurement and assistance programs.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS**IN ACCORDANCE WITH STATE REGULATIONS JEFFERSON PARISH OFFERS ELECTRONIC PROCUREMENT TO ALL VENDORS**

This electronic procurement system allows vendors the convenience of reviewing and submitting bids online. This is a secure site and authorized personnel have limited read access only. Bidders are encouraged to submit electronically using this free service; while the website accepts various file types, one single PDF file containing all appropriate and required bid documents is preferred. Bidders submitting uploaded images of bid responses are solely responsible for clarity. If uploaded images/documents are not legible, then bidder's submission will be rejected. Please note all requirements contained in this bid package for electronic bid submission.

Please visit our E-Procurement Page at www.jeffparishbids.net to register and view Jefferson Parish solicitations. For more information, please visit the Purchasing Department page at <http://purchasing.jeffparish.net>.

ADDITIONAL REQUIREMENTS FOR THIS BID

PLEASE MATCH THE NUMBERS PRINTED IN THIS BOX WITH THE CORRESPONDING INSTRUCTIONS BELOW.

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1. All bidders must attend the MANDATORY pre-bid conference and will be required to sign in and out as evidence of attendance. In accordance with LSA R.S. 38:2212(l), all prospective bidders shall be present at the beginning of the MANDATORY pre-bid conference and shall remain in attendance for the duration of the conference. Any prospective bidder who fails to attend the conference or remain for the duration shall be prohibited from submitting a bid for the project.
2. Attendance to this pre-bid conference is optional. However, failure to attend the pre-bid conference shall not relieve the bidder of responsibility for information discussed at the conference. Furthermore, failure to attend the pre-bid conference and inspection does not relieve the successful bidder from the necessity of furnishing materials or performing any work that may be required to complete the work in accordance with the specification with no additional cost to the owner.
3. Contractor must hold current applicable JEFFERSON PARISH licenses with the Department of Inspection and Code Enforcement. Contractor shall obtain any and all permits required by the JEFFERSON PARISH Department of Inspection and Code Enforcement. The contractor shall be responsible for the payment of these permits. All permits must be obtained prior to the start of the project. Contractor must also hold any and all applicable Federal and State licenses. Contractor shall be responsible for the payment of these permits and shall obtain them prior to the start of the project.
4. A LA State Contractor's License will be required in accordance with LSA R.S. 37-2150 et. seq. and such license number will be shown on the outside of the bid envelope. Failure to comply will cause the bid to be rejected. Additionally if submitting the bid electronically, then the license number must be entered in the appropriate field in the Electronic Procurement system. Failure to comply will cause the bid to be rejected.
5. It is the bidder's responsibility to visit the job site and evaluate the job before submitting a bid.
6. Job site must be clean and free of all litter and debris daily and upon completion of the contract. Passageways must be kept clean and free of material, equipment, and debris at all times. Flammable material must be removed from the job site daily because storage will not be permitted on the premises. Precautions must be exercised at all times to safeguard the welfare of JEFFERSON PARISH and the general public.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

7. **PUBLIC WORKS BIDS:** All awards for public works in excess of \$5,000.00 will be reduced to a formal contract which shall be recorded at the contractor's expense with the Clerk of Court and Ex-Officio Recorder of Mortgages for the Parish of Jefferson. A price list of recordation costs may be obtained from the Clerk of Court and Ex-Officio Recorder of Mortgages for the Parish of Jefferson. All awards in excess of \$25,000.00 will require both a performance and a payment bond. Unless otherwise stated in the bid specifications, the performance bond requirements shall be 100% of the contract price. Unless otherwise state in the bid specifications, the payment bond requirements shall be 100% of the contract price. Both bonds shall be supplied at the signing of the contract.
8. **NON-PUBLIC WORKS BIDS:** A performance bond will be required for this bid. The amount of the bond will be 100% of the contract price unless otherwise indicated in the specifications. The performance bond shall be supplied at the signing of the contract.
9. **NON-PUBLIC WORKS BIDS:** A payment bond will be required for this bid. The amount of the bond will be 100% of the contract price unless otherwise indicated in the specifications. The payment bond shall be supplied at the signing of the contract.
10. All bidders must comply with the requirements stated in the attached "Standard Insurance Requirements" sheet attached to this bid solicitation. Prior to contract executions/purchase order issuance, the successful bidder will be required to provide final insurance certificates which shall name Jefferson Parish as an additional insured in accordance with the instructions in the aforementioned "Standard Insurance Requirements" sheet.
11. A bid bond will be required with bid submission in the amount of 5% of the total bid, unless otherwise stated in the bid specifications. Acceptable forms shall be limited to cashier's check, certified check, or surety bid bond. All sureties must be in original format (no copies). If submitting a bid online, vendors must submit an electronic bid bond through the respective online clearinghouse bond management system(s) as indicated in the electronic bid solicitation on Central Auction House. No scanned paper copies of any bid bond will be accepted as part of the electronic bid submission.
12. This is a requirements contract to be provided on an as needed basis. JEFFERSON PARISH makes no representations on warranties with regard to minimum guaranteed quantities unless otherwise stated in the bid specifications.
13. Freight charges should be included in total cost when quoting. If not quoted FOB DELIVERED, freight must be quoted as a separate item. Bid may be rejected if not quoted FOB DELIVERED or if freight charges are not indicated on bid form.
14. **PUBLIC WORKS BIDS - Completed, Signed and Properly Notarized Affidavits Required;** This applies to all solicitations for construction, alteration or demolition of public buildings or projects, in conformity with the provisions contained in LSA-RS 38:2212.9, LSA-RS 38:2212.10, LSA-RS 38:2224, and Sec 2-923.1 of the Jefferson Parish Code of Ordinances. For bidding purposes, all bidders must submit with bid submission COMPLETED, SIGNED and PROPERLY NOTARIZED Affidavits, including: Non-Conviction Affidavit, Non-Collusion Affidavit, Campaign Contribution Affidavit, Debt Disclosures Affidavit and E-Verify Affidavit. For the convenience of vendors, all affidavits have been combined into one form entitled PUBLIC WORKS BID AFFIDAVIT. This affidavit must be submitted in its original format, and without material alteration, in order to be compliant and for the bid to be considered responsive. A scanned copy of the completed, signed and properly notarized affidavit may be submitted with the bid, however, the successful bidder must submit the original affidavit in its original format and without material alteration upon contract execution. Failure to comply will result in the bid submission being rejected as non-responsive. The Parish reserves the right to award bid to the next lowest responsive and responsible bidder in this event.
15. **NON PUBLIC WORK BIDS - Completed, Signed and Properly Notarized Affidavits Required** in conformity with the provisions contained in LSA – RS 38:2224 and Sec 2-923.1 of the Jefferson Parish Code of Ordinances. For bidding purposes, all bidders must submit with bid submission COMPLETED, SIGNED and PROPERLY NOTARIZED Affidavits, including: Non-Collusion Affidavit, Debt Disclosures Affidavit and Campaign Contribution Affidavit. For the convenience of vendors, all affidavits have been combined into one form entitled NON PUBLIC WORKS BID AFFIDAVIT. This affidavit must be submitted in its original format, and without material alteration, in order to be compliant and for the bid to be considered responsive. A scanned copy of the completed, signed and properly notarized affidavit may be submitted with the bid, however, the successful bidder must submit the original affidavit in its original format and without material alteration upon contract execution. Failure to comply will result in the bid submission being rejected as non-responsive. The Parish reserves the right to award bid to the next lowest responsive and responsible bidder in this event.
16. The ensuing contract for this bid solicitation may be eligible for FEMA reimbursement and/or Federal funding/reimbursement. As such, the referenced appendix will be applicable accordingly and shall be considered a part of the bid documents. All applicable certifications must be duly completed, signed and submitted with bid submission. Failure to submit applicable certifications with bid submission will result in bid rejection.

It shall be the duty of every parish officer, employee, department, agency, special district, board, and commission: and the duty of every contractor, subcontractor, and licensee of the parish, and the duty of every applicant for certification of eligibility for a parish contract or program, to cooperate with the Inspector General in any investigation, audit, inspection, performance review, or hearing pursuant to Jefferson Parish Code of Ordinances Section 2-155.10(19). By submitting a bid, vendor acknowledges this and will abide by all provisions of the referenced Jefferson Parish Code of Ordinances.

DATE: 10/02/2018

INVITATION TO BID
THIS IS NOT AN ORDER

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BID NO.: 50-00124368

JEFFERSON PARISH

PURCHASING DEPARTMENT
P.O. BOX 9
GRETN, LA. 70054-0009
504-364-2678

VENDOR:

BUYER: DABRAHAM

As per LSA-RS 47:301 et seq., all governmental bodies are excluded from payment of sales taxes to any Louisiana taxing body. Quotations shall be based on F.O.B. Agency warehouse or jobsite, anywhere within the Parish as designated by the Purchasing Department.

JEFFERSON PARISH reserves the right to cancel all or any part of an order if not shipped promptly. No charges will be allowed for parking or cartage unless specified in quotation. The order must not be filled at a higher price than quoted. JEFFERSON PARISH reserves the right to cancel at any time and for any reason by issuing a THIRTY (30) day written notice to the contractor.

JEFFERSON PARISH is expecting all products to be new and all work to be done in workman-like manner, according to standard practices. Any deviations or alteration from the specifications must be indicated on the bid form for each item and upon request, product data for same must be submitted by the time specified by the Purchasing Department.

DELIVERY: FOB JEFFERSON PARISH

INDICATE DELIVERY DATE ON EQUIPMENT AND SUPPLIES

2 Weeks ARO

INDICATE STARTING TIME (IN DAYS) FOR CONSTRUCTION WORK

INDICATE COMPLETION TIME (IN DAYS) FOR CONSTRUCTION WORK

In the event that addenda are issued with this bid, bidders MUST acknowledge all addenda on the bid form. Bidder must acknowledge receipt of an addendum on the bid form as indicated. Failure to acknowledge any addendum on the bid form will result in bid rejection.

Acknowledge Receipt of Addenda: NUMBER: _____

NUMBER: _____

NUMBER: _____

NUMBER: _____

LOUISIANA CONTRACTOR'S LICENSE NO.: (if applicable) _____

***** ALL BIDDERS MUST COMPLETE SECTION BELOW *****

FIRM NAME:

Signal Equipment Co. - South

SIGNATURE:

(Must be signed here)

TITLE:

Vice-President

PRINT OR TYPE NAME:

John I. Vaughn

ADDRESS:

PO Box 78172

CITY, STATE:

Shreveport, LA

ZIP:

71137

TELEPHONE:

() 318 222 7373

FAX:

() 318 222 7376

EMAIL ADDRESS:

TOTAL PRICE OF ALL BID ITEMS: \$ \$ 3.462.00

DATE: 10/02/2018

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INVITATION TO BID FROM JEFFERSON PARISH - continued

BID NO.: 50-00124368

SEALED BID

| ITEM NUMBER | QUANTITY | U/M | DESCRIPTION OF ARTICLES | UNIT PRICE QUOTED | TOTALS |
|----------------|----------|-----|--|----------------------|---------|
| 1 | 12.00 | EA | <p>A purchase of (12) 4 channel vehicle detector cards for the Department of Engineering</p> <p>0010 FOUR CHANNEL INDUCTIVE LOOP VEHICLE DETECTOR CARDS TS-1</p> <p>SPECIFICATIONS ATTACHED ***</p> <p>EDI LMD604T and LMD624T meet this specifications and either can be provided. LMD604T, is a TS1 type LMD624T, is a TS1 and TS2 type.</p> | \$288.50 | 3462.00 |

Four Channel Inductive Loop Vehicle Detector Specifications

Call Strength Indicator:

Provides the technician with a one-step method for accurately setting the optimum level of sensitivity that ensures accurate vehicle detection of all vehicles, including motorcycles and high-bed trucks.

Frequency Meter:

Built-in Frequency Meter reports the operating frequency of the loop network. Ensuring that adjacent loops are separated by at least 5 KHz will avoid crosstalk problems and future service calls.

Delay and Extension Timing:

Delay and Extension Timing is provided for all four channels via PCB mounted DIP switches **Output CALL**

Test Mode:

The Output Call Test Mode provides a way to test that the Controller Unit is receiving an active output from the detector

Advanced Loop Diagnostics:

The Fault (FLT) indicator displays the type of fault: Short, Open or 25% change of inductance. The Fault Monitor will report and store three types of loop faults; Open Loops, Shorted Loops, and 25% sudden changes in inductance. Each type of fault is indicated by a unique sequence of flashes allowing the user to diagnose loop failures at a glance.

STANDARD FEATURES

Delay & Extension Timing on All Four Channels

Automatic Tuning

Lightning & Surge Protection

Four (4) Frequency Levels

Separate Color Coded LED indicators

Wide Loop Inductance Range: 20 to 2500 micro Henries.

FOUR CHANNEL INDUCTIVE LOOP VEHICLE DETECTOR SPECIFICATIONS

General Characteristics

Controls: Front panel push buttons allow the user to set the Sensitivity Level, Operational mode, and nominal Frequency independently on each channel. PCB mounted DIP switches allow the user to set the Delay and Extension timers.

Setting Sensitivity - Front Panel Push Buttons

(front panel 7-segment LED) aids in setting the DETECTOR quickly and easily to the most optimum sensitivity level to ensure the trouble-free detection of all vehicles, including motorcycles and high bed vehicles. For typical vehicles (mid-size vehicle / small pickup) utilizing properly installed roadway loops, a Call Strength of 5 displayed on the detector during the DETECT output period indicates an optimum sensitivity setting. For high profile vehicles (commercial trucks, 4x4's, etc...), a Call Strength value of 4 will be optimum. For low profile vehicles (sports cars, etc...), a Call Strength value of 6 will be optimum.

Adjusting sensitivity using the Detector (recommended):

The Detector should read zero (0) with no vehicle over the roadway loop. When a typical mid-sized vehicle is completely in the detection zone (DET indicator On), the Call Strength value should be adjusted up or down until the detector displays the desired optimum value of 5 (or 4 or 6 as described above).

If a typical vehicle located over the roadway loop causes the Call Strength "7" to be displayed on the detector, the sensitivity should be decreased two levels. This can be done by pressing the front panel SENS button two times to achieve the Call Strength value of 5. If a typical vehicle located over the roadway loop causes the number "2" to be displayed on the detector, the sensitivity should be increased three levels. This can be done by pressing the front panel SENS button three times to achieve the Call Strength value of 5.

NOTE: THE DETECTOR CALL STRENGTH DYNAMICALLY UPDATES AFTER EACH SENSITIVITY LEVEL CHANGE, ALLOWING YOU TO CHANGE SENSITIVITY SETTINGS WHILE A VEHICLE REMAINS IN THE LOOP DETECTION ZONE.

Adjusting sensitivity without using the Detector (manually setting sensitivity):

The detector offers 9 levels of sensitivity (1 to 9). Level 9 is the highest sensitivity. Sensitivity Level can be manually set to any desired value by pressing the front panel SENS buttons when a vehicle is NOT over the roadway loop (DET indicator Off). The first time a SENS button is pressed, the current Sensitivity Level is displayed on the Detector for 3 seconds. If either SENS button is pressed again before the 3 second period ends, the Sensitivity Level will increase or decrease. The new Sensitivity Level value will be displayed on the Detector display for 3 seconds. The factory default Sensitivity setting is level 6.

| Sensitivity | $\Delta L / L$ | Sensitivity | $\Delta L / L$ |
|-------------|----------------|-------------|----------------|
| 9 | 0.01% | 4 | 0.32% |
| 8 | 0.02% | 3 | 0.64% |
| 7 | 0.04% | 2 | 1.28% |
| 6 | 0.08% | 1 | 2.56% |
| 5 | 0.16% | - | - |

Loop Frequency / Loop Frequency Display:

One of four frequency settings may be selected via the front panel FREQ push button to alleviate interference which may occur when loops connected to different detectors are located adjacent to one

another. To help prevent or diagnose crosstalk problems, the loop frequency is displayed on the front panel Detector. The current loop frequency is displayed after pressing the FREQ button to display the current Frequency Level. The frequency is shown in KHz with a “-” symbol displayed both before and after the numeric digits shown on the Detector.

For example, after pressing the FREQ button once the display sequence might show:

“3” → “-” → “2” → “7” → “-”

This sequence would indicate Frequency Level “3” and a loop reference frequency of 27 KHz. Detectors on adjacent loops should all be separated by at least 5 KHz.

Loop Fault Monitoring: The Detector continuously checks the integrity of the loop. The system is able to detect shorted or open circuit loops, or sudden changes in inductance exceeding 25% of the nominal inductance. If a fault is detected, the OUT and FLT indicators continuously emit a sequence of flashes. Additionally, the Detector displays the letter “F” indicating a current loop fault. Each type of fault is identified by a unique flash sequence:

| Flash Sequence | Fault |
|----------------|-------------------------------------|
| 1 flash | Open Circuit Loop. |
| 2 flashes | Shorted Circuit Loop. |
| 3 flashes | 25% excessive change in inductance. |

If the Open or Shorted fault condition self-heals, the DET indicator and Detector will return to normal operation. The FLT indicator will continue to flash with the sequence signifying the type of fault that was last detected. In the case of the excessive inductance change fault, the unit will retune to the new inductance after a period of two seconds and continue operation. The fault condition will be indicated by the flash sequence of the FLT indicator.

Operational Modes

Presence: For each channel, a Presence output mode may be selected from the front panel MODE push button. If presence mode is selected then a choice of short (S) or long (L) can be selected. Short Presence is defined as 30 minutes and Long Presence is defined as 120 minutes. **Pulse:** For each channel, a Pulse output mode (P) may be selected from the front panel MODE push button. In Pulse mode, a 125 ms ± 25ms width pulse will be output for each vehicle entering the loop.

Call: For each channel, a continuous CALL output (C) may be selected from the front panel MODE push button which will simulate the presence of a vehicle. This mode is used for testing the CALL output of a channel.

Channel Off: For each channel, the Channel Off (-) may be selected from the front panel Mode push button. This option turns OFF the channel and disables the oscillator. An additional option allows the Status Output to be turned ON while the channel is OFF.

Selectable Options:

Call Delay Timer for Presence & Pulse Modes: For each channel, a delay time of 1 to 63 seconds may be selected by setting the appropriate PCB mounted DIP switches to the ON position. Call Delay time starts counting down when a vehicle enters the loop detection area. During the Delay time the DET indicator will flash two times per second and the DEFLECTOMETER® will display the letter “d”. Delay time can be overridden by a True (low) signal at the Timer Control input.

Call Extension Timer for Presence Mode: For each channel, an extend time of 0.25 to 15.75 seconds can be set via the EXTEND DIP switches. The numeric sum of the switches in the On position is equal to the Extend time. Two modes are provided:

Extend Always (default): Call Extend time starts counting down when the last vehicle clears the loop detection zone. During the Extend time the DET indicator will flash four times per second and the DEFLECTOMETER® will display the letter “E”. Any vehicle entering the loop detection

zone during the Extend time period causes the Extend timer to be reset and the output maintained. The Timer Control input has no effect on this mode.

Extend on Green (EOG)

Call Extend time starts counting down when the last vehicle clears the loop detection zone if the Timer Control input is True (low). During the Extend time the DET indicator will flash four times per second and the Detector will display the letter "E". Any vehicle entering the loop detection zone during the Extend time period causes the Extend timer to be reset and the output maintained. The Extend on Green mode is enabled by a factory installed jumper located at E6 on the pcb. Consult the factory for details.

Timer Control Inputs: Timer Control inputs are provided for each channel to modify the operation of the Delay and Extension functions. The application of a True (low) state voltage will inhibit the Delay timing function and/or enable the Extend timing function. Timer Control inputs are primarily provided for downward compatibility.

Pin Assignment:

| PIN | FUNCTIONS | PIN | FUNCTIONS |
|-----|------------------|-----|----------------------------|
| A | Logic Ground | 1 | Ch. 1 Timer Control Input |
| B | DC Supply | 2 | Ch. 2 Timer Control Input |
| C | Ext. Reset | 3 | Ch. 3 Timer Control Input |
| D | Ch. 1 Loop Input | 4 | Ch. 1 Redundant Loop Input |
| E | Ch. 1 Loop Input | 5 | Ch. 1 Redundant Loop Input |
| F | Ch. 1 Output (+) | 6 | Reserved |
| H | Ch. 1 Output (-) | 7 | Reserved |
| J | Ch. 2 Loop Input | 8 | Ch. 2 Redundant Loop Input |
| K | Ch. 2 Loop Input | 9 | Ch. 2 Redundant Loop Input |
| L | Chassis Ground | 10 | Ch. 4 Timer Control Input |
| M | Reserved | 11 | Reserved |
| N | Reserved | 12 | Reserved |
| P | Ch. 3 Loop Input | 13 | Ch. 3 Redundant Loop Input |
| R | Ch. 3 Loop Input | 14 | Ch. 3 Redundant Loop Input |
| S | Ch. 3 Output (+) | 15 | Reserved |
| T | Ch. 3 Output (-) | 16 | Reserved |
| U | Ch. 4 Loop Input | 17 | Ch. 4 Redundant Loop Input |
| V | Ch. 4 Loop Input | 18 | Ch. 4 Redundant Loop Input |
| W | Ch. 2 Output (+) | 19 | Reserved |
| X | Ch. 2 Output (-) | 20 | Reserved |
| Y | Ch. 4 Output (+) | 21 | Reserved |
| Z | Ch. 4 Output (-) | 22 | Reserved |

DC Supply Voltage: Minimum.....10.8 Vdc
Maximum.....28.8 Vdc
DC Supply Current: Maximum.....100 mA
DC Timer Control Inputs: True (low).....Less than 8 Vdc
False (high)Greater than 16 Vdc
Optical Isolated Outputs: True (low, 50 mA).....Less than 1.5 Vdc
Maximum Current.....100 mA

Environmental: Operating Temperature Range: -30o F to 165o F (-34oC to 74o C)

Mechanical: International Card with 44 pin double sided edge connector

Height 4.5" (114.3mm)

Width 2.34" (59.4mm)

Depth (excluding handle).....6.875" (174.6mm)