

Specification for an Automated Fuel Control and Data Acquisition System

1.0 General

1.1 Scope The bidder shall supply and install an automated fuel management and data acquisition system per the attached specifications.

1.1.1 Any exceptions to the bid specifications must be noted by line item number.

1.2 System Description

NOTE: The use of the term “KEY” is intended to mean: key or equivalent/superior technology used to access the system and identify the bearer of the “key”.

1.2.1 The system shall automatically control the dispensing of fuel to authorized vehicles through the use of special keys or equivalent technology.

1.2.2 Based on how the keys are encoded, fuel access shall require a single key or separate keys identifying the driver and vehicle or a vehicle key and manual entry of the driver ID.

1.2.3 Based on information supplied by the key, the system shall control which fuels are allowed to be accessed and limit the amount of fuel for each transaction.

1.2.4 The system shall prompt for odometer readings and check for reasonability based on the last odometer reading and reasonableness range stored on the key. Accepted odometer readings shall then be recorded on the key to be used at the next fueling.

1.2.5 The system shall record fueling transactions in the system memory for later recall.

Transactions shall include:

- a transaction number
- the key id data
- date and time
- pump number
- product number
- quantity dispensed
- odometer reading
- miles between fueling
- and error message.

1.3 Warranty & Service

1.3.1 The system shall include a minimum one year parts and labor warranty.

1.3.2 The system shall include start-up and training by a factory-trained Authorized Service Representative.

1.3.3 Local service and parts supply are required.

2.0 System Controller Components

- 2.1 The system controller shall contain:
 - system microprocessor
 - battery-backed memory
 - real-time clock with battery back-up
 - pump control electronics and relays
 - manual override switch per hose
 - pulsar, AC, and communication terminations
- 2.2 The system controller shall control up to eight dispenser hoses.
- 2.3 The system controller shall be housed in a security locked enclosure.
- 2.4 The system controller shall be weatherproof for mounting on the fueling island.
- 2.5 The system controller shall contain the necessary heating and cooling system for reliable operation in the local climate.
- 2.6 The system controller shall contain an optional internal modem for remote communication.
- 2.7 The system controller shall contain a pump disable button on the face of the island reader which will terminate all transactions when depressed in case of emergency.
- 2.8 The system controller shall contain an island reader with a key receptacle, LCD, and membrane keypad.
- 2.9 The key receptacle shall contain an audible key left in reader alarm.
- 2.10 The system controller must be Listed by Underwriter's Laboratories and have a FCC approval.

3.0 System Software

- 3.1 System shall be designed to allow all hoses to be activated at the same time.
- 3.2 System shall provide a supervisor key function which will prompt for id information normally encoded on the key for fueling vehicles not equipped with a key.
- 3.3 The system shall record the following information for each fueling transaction:

Transaction number

Key 1 number

Key 2 number (if needed)

Vehicle identification up to 20 alphanumeric digits

Transaction type

Calendar date 6 digits

Military time 4 digits

Pump number 2 digits

Product number 2 digits

Quantity dispensed 5 whole digits, 3 decimal places

Price per gallon 1 whole digit, 3 decimal places

\$ Total 6 whole digits, 2 decimal places

Odometer 7 digits

Miles since last transaction	4 digits
Miles per gallon	2 whole digits, 1 decimal place
Error message	

- 3.4 The system shall handle pulser resolution up to 1000:l.
- 3.5 The system shall have before and after pump activation no pulse timers, loadable up to a minimum of 180 seconds.
- 3.6 The system controller shall hold approximately 600 transactions in battery-backed RAM with remote communication capability for on-demand transmission of stored transactions.
- 3.7 The system shall be able to handle a minimum of 1,000 vehicles.
- 3.8 All vehicles shall be able to be locked out - individually, string, or by range.
- 3.9 System shall have the capability to print transactions on an optional logger printer upon transaction completion.
- 3.10 System shall be able to be controlled by a terminal on-site and communicate via a modem and telephone line to a remote location.
- 3.11 System shall provide fuel tank inventory totalizers with loadable reorder levels for up to eight tanks.
- 3.12 System shall provide pump totalizers for up to eight hoses.
- 3.13 System shall automatically disable a dispenser after a user-defined amount of no quantity transactions.
- 3.14 System shall provide the following reports:
 - Current date, time, transaction number, and program revision
 - Pump status, assignments, price, and totalizer amount
 - Pump pulses per gallon and timeouts table
 - Tank inventory totalizers and reorder levels
 - Valid key list
 - Invalid key list
 - Chronological transaction listing
 - First and second level sort of transactions by specified transaction headings with totals
 - Fuel limit table
 - Fuel authorization table
 - User commands
- 3.15 System shall have a maintenance reminder option where you have the ability to display **maintenance due soon, due now, or overdue** messages for up to three maintenance types on the system LCD display depending upon the mileage and/or time interval between maintenance.