

## Technical Specification for DISPENSING PUMPS

Technical specifications for single dispenser pump

1. Applicable standards:

The dispenser and its accessories shall meet the requirements of (ANSI/UL87 – latest edition).

2. Frame & base:

Dimensions and construction details.

3. Casing:

To be stainless steel except lowers front rear doors, to be colored in green, white tableau with black writing in arabic & english as in figure 1.

4. Pump unit:

Self-priming gear or blades type with by pass and check valves, with suitable easy dismantled filter, to deliver not less than 60 liter/min (when the used nozzle spout diameter is 13/16 inch) it is provided with priming point and test points.

5. Meter:

To be positive displacement proofs with adjustable mechanism for calibrating. Its accuracy to be not less than +/- 0.2% for any rate of flow.

The calibrating system to be one of these two cases:

a) Electronic calibration with electromechanical totalizer (if possible with mechanical totalizer).

b) Mechanical calibration with mechanical totalizer.

The calibrating system to be with range of calibration not less than +/- 1.5%

6. Air separator:

To be efficient enough to prevent any quantity of air and vapor from reaching the meter.

7. Solenoid valve:

To be used with the preset electronic system to control the discharged (quantity cash or volume) from the dispenser.

8. Tensioning device:

An efficient tensioning device it is provided to enable easily retighten the V-belt (which transmit the power from the motor to the pump)

9. Electrical equipment:

All electrical equipment to be flame and explosion proof as specified in the ANSI UL standard mentioned before.

a. Motor:

To be continuous duty 0.75HP, 220V 50c/s single phase, tropically wound, with built-in over load protection.

It is preferable to be in suitable place to prevent reaching gasoline to the motor in case of any leaking inside the dispenser.

b. Illumination:

Efficient system of illumination,

Type:

Method:

The electric wiring to be through flame and explosion proof conduit.

The dispenser to be provided with a switch fixed on the external frame

to turn on & off the illumination system.

c. The junction box to be in suitable place, the wiring diagram to be posted to the inside face of the junction box cover.

d. The power supply line to be in four separated connector as follow:

- First line for motor.
- 2nd line for computer.
- 3rd line for illumination.
- 4th line for ground or earth.

10. Electronic computer:

Computer have the following features:

a) Indicating device (display)

Dispenser will be installed under direct sun without canopies, so the reading under all conditions is

clear, precise, easy and non-ambiguous, the display to be as follow:

SALE	(DINAR)	(FILS)
	XXX	XXX
LITER	(LITER)	
	XXX,XX	
PRICE PER LITER	(FILS)	
	XXX,X	

With electronic totalizer for sale and liters, method of reading these totalizers to be easy and to be separated from the method of changing the price (price setting) or setting the program (the method of reading preferable to be by means of a separate switch without using the preset unit).

- b) The display to be backlit liquid crystal display 1 (L.C.D), fitted with mounting display socket (shall mentioned clearly).
- c) The software programmed to give rounding for the last digit of sale. (i.e. to display the sale in the form of XX,XX0 or XX,XX5 only).
- d) All programming procedures of the computing head configuration parameters (options) to be programmed after turning a toggle switch having metrical relevance.
- e) Preset system for sale and volume to be by keypad (protected by membrane).
- f) The software programmed to setting a desired time interval (0,10,20,30,40,60,etc.) from the nozzle hang-up (stop of delivery) in which a preset operation is permitted.
- g) The electrical motor must be controlled by the electronic computer by means of DC/AC relay (the DC/AC relay preferable to be solid state) the software must be programmed to switch-off the motor automatically after programmable time (10,15,20,...second) from stopping pulse signal and not from nozzle rise from its boot (restarting the motor must not be done before resting the display to zero in any case).
- h) The illumination system to be completely separated from the electronic computer.

Type:

Method of illumination.

- i) In addition to the electronic totalizer each dispenser to be provided with nonreversible mechanical totalizer for liters, coupled directly to the meter. If manufacture used electromechanical or other type totalizer in case of using the electronic calibration.

The type of transmitting mechanism:

Between the meter and mechanical totalizer.

The type of pulser used used clearly.

- j) Resting of the electronic computer (clear of RAM) through very secure system.
- k) The electronic computer to be with memory backup to keep the displayed data alive and storage method.
- l) The electronic computer easily upgradeable to have communication port for interfacing to PC link POS, or any control system with card reader, software, retrofit, for card payment at fuel point ... etc.

These systems separately:

- m) Effective protection system for the electronic computer to prevent it from fluctuating in voltage or current, (which guaranteed for supply main fluctuation of 90 VAC up to 280 VAC), type:

Method of protection details:

- n) (i.e. traditional model (kerbside), or models with two separate units one for the computer, the other for mechanical system, or for overhead system...)

11. Hose:

4 MT length, 25 mm I.D. to be according to BS 3395/1989 type 1C, with male reusable coupling on both ends, B.S.P threading.

12. Nozzle:

B.S.P 25mm (1 inch) (or of 19 mm with reducer 19x25 mm) inlet I.D B.S.P threading, 20 mm (13/16 inch) O.D spout, fully automatic nozzle, with internal outlet check valve.

Type and manufacturer of nozzles:

13. Swivel:

- a) Single plane swivel to connect between hose and dispenser.
- b) Two planes swivel to connect nozzle to the hose.

Type and manufacturer of swivels:

14. Suction flanges & flexible:

Flexible connector with flanges B.S.P threading.

15. Lock & keys:

Each pump to be provided with lock and two keys (the keys to be the same for all dispensers) for the front and rear doors, and a lock, two keys for the nozzle.

16. Sight glass & hose extend a mechanism:

Sight glass, hose extend a mechanism and high hose design as optional parts.

Current prices per liter as follow

Kerosene 091.0 Fils/Liter

Gasoil 106.0 Fils/Liter

Normal Gasoline 221.0 Fils/Liter

Super Gasoline 301.0 Fils/Liter

Non leaded Gasoline 351.0 Fils/Liter

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**Technical Specifications for SUBMERSIBLE PUMPS**

1. Applicable standards:

a. Standard applied

b. Full system requirements specifications for installation and operating them from the remote dispensers.

c. All requirements for safety and reality of using submersible pumps.

2. Frame & base:

a. Specify

b. Design.

c. Material.

d. Dimensions.

e. Construction.

f. Detail.

3. Submersible pump features:

a. Submersible pumps of total flow rate (150- 200) LPM to deliver product from (1-4) under ground tanks, connected with at least up to (4) remote dispensers in service stations.

b. Mode of suitable materials for petroleum products (normal and super gasoline (contain lead components), non leaded gasoline, kerosene and gasoline).

c. The submersible pumps contain at least the following functional elements:

Check valve, air eliminator, expansion relief valve, pressure test point, siphon tube (nozzle), siphon check valve.

All the devices require to assure safety performance & convenient access to all elements for service or replacement.

d. Leak detector indicate leakage in the piping system.

e. Level device that indicate the level of liquid in the tank and prevent the level to reach below the bottom clearance.

4. Electrical equipment:

All electrical equipment to be flame and explosion proof:

a) Motor:

To be continuous duty of suitable power, 220V 50c/s single phase, tropically wound, with built-in over load protection.

b) A run light which indicates the submersible pump is running.

c) The control box to be in suitable place, the wiring diagram to be posted to the inside face of the box cover which allows convenient access to the submersible wiring and the control box includes the following:

1) The electric motor of the submersible pump controlled by electronic board by means of DC/AC relay (preferable solid state).

- The software program to switch off motor automatically after program time (10,20,30,40 ... sec).

- From the time of stopping dispensing product from al remote dispensers connected to the submersible pump and to start when any of the remote dispensers begin to dispense.

2) 220 Volt line contractor relay to carry full motor current.

3) Starting, running capacitors and overload protection.

4) A lockable on/off toggle switch to electronically "lock" pump power in the off position.

5) JOPETROL operation features:

1) The dispensers have 13/16" nozzles and 4 meter, 1" hoses.

- 2) The dimensions and capacities of JOPETROL Co.'s under ground tanks are:
- Capacity (11850) imperial gall, (ID = 2748) mm.
  - Theoretical total length of the tank (9000) mm.
  - With the following manhole dimensions:  
Diameter (C=700mm), Height (E=180mm), cover thick (F=10mm)