



Autogas Dispensers Installation and Operation Handbook

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READ THIS HANDBOOK BEFORE INSTALLING YENEN LPG DISPENSERS

Dispensers are powered by electrical energy and contain dangerous, inflammable and potentially explosive liquid. Failure to observe the precautions and warning instructions given in this handbook may cause serious accidents. Observe all rules, codes and laws applicable in your area and your installation.

SAFETY PRECAUTIONS – INSTALLATION AND MAINTENANCE

ALWAYS disconnect the power supply before opening dispenser cabinet for maintenance. Ensure that the valves under the dispenser are closed BEFORE commencing maintenance.

Make sure that you know how to disconnect power input to the dispenser and pump, in case of an emergency. Have all leaks and faults repaired immediately.

Contact Yenen

Any problem relevant to the installation and operation of the Dispenser should be notified to an authorized Yenen Service Partner or Yenen Technical Support Department. (+90 216 487 5924).

Explanation of Symbols



Notice: indicates a special comment or instruction.



Warning: Indicates a hazard, which may cause serious personal injury damage to property if not observed cautiously.



This handbook provides instructions and rules. Remarks and warnings inform the operator about the dangers relevant to the installation and operation of LPG Dispensers. Reading these instructions and thus preventing possible dangerous events is absolutely in the operator's power. Any omission of this responsibility is beyond Yenen's control.

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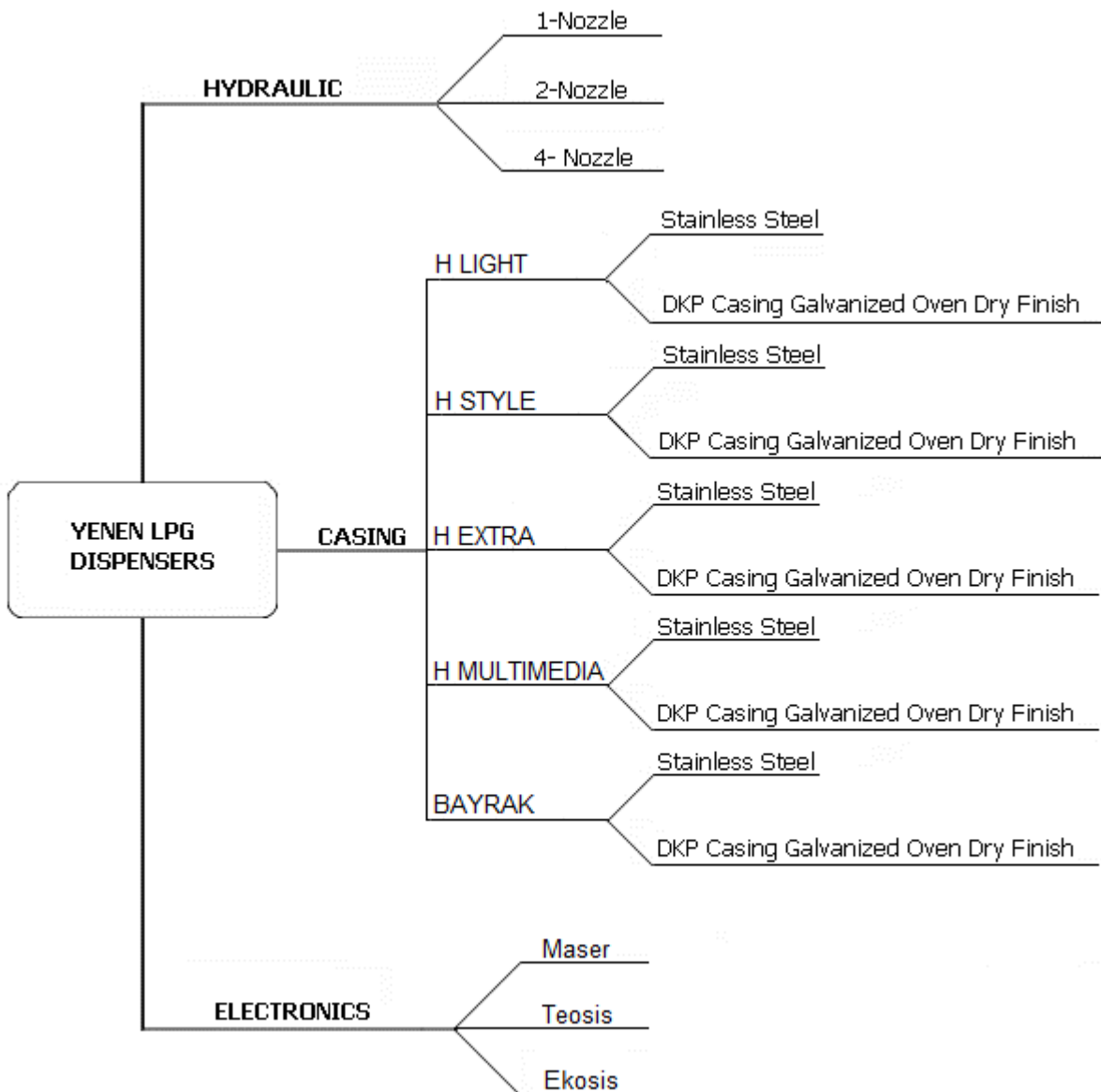
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1.0 About this handbook

This handbook describes the installation and operation of Yenen autogas (LPG) dispensers. For the installation and operation of the employed electronic systems refer to the operation guides of the relevant systems.

For any questions relevant to the installation and operation of the dispenser that are not covered in this handbook, please contact Yenen through info@yenen.com or call +90 216 487 5924.





1.1 Applied Standards and Codes

Yenen dispenser is a component of autogas filling system. All parts such as tanks, pumps, pipes and fittings, anti-corrosion devices, cables (electrical and electronic), control system, etc. should be furnished in compliance with the instructions of manufacturers and international and regional standards. Yenen has no obligation to follow above-mentioned standards and codes or modify products pursuant to the amendments made to those codes.

Yenen autogas dispensers may be used with Liquid Petroleum Gas (LPG) that is compliant with TS11939, EN 14678-1 and EN 589.

1.2 Accuracy Requirements

Yenen dispensers comply with the OIML R117 directive, which specifies following LPG dispensers:

Accuracy Class: 1.0

General Accuracy: %1

1.3 Safety Precautions



Only qualified staff, which obtained training for the liquids operating under pressure such as LPG may service Yenen equipment.



ALWAYS disconnect the power supply before commencing maintenance. There may more than one latch to disconnect. Use a multimeter to make sure that all circuits in the dispenser are closed. Failure to take this precaution may cause personal injury.



Ensure that all valves are closed. It may be required to close more than one valve to lock the system. To make sure that ALL valves are closed, review the station piping diagram. Failure to take this precaution may cause personal injury.



Keep all vehicle and unauthorized staff at least 6 meters away from the dispenser.

- Make sure that all required safety precautions have been taken. Make sure that all required ventilation, fire protection, evacuation and fire procedures are provided.
- Make sure that all fire extinguishing tools are easy to reach. Obtain comprehensive knowledge about all safety regulations.
- Read this handbook and all available literature and drawings.
- Yenen recommends you to employ a qualified mechanical and electrical technician. As an explosive liquid is being handled, it is compulsory to make sure that all safety precautions are completely taken at any time.
- Read **DOs** and **DON'T's** in the appendix.



In case of a gas leakage:

1. Shut the leakage by closing closest valve or pushing the shut-down button.
2. Use protective gloves to avoid cold burns.
3. Avoid using fire or any igniting tools around the dispenser.
4. Beware that LPG is heavier than air and therefore settles lower.
5. Evacuate everyone off the danger zone.
6. Make sure that the area is safe for operation. If in doubt, inform the fire department thereof.

In case of gas flare;

1. Shut the leakage if its location is safe to reach.
2. If it is a flare that cannot be controlled safely, contact fire department.
3. If it is a small, controllable ignition, use a proper extinguisher. If in doubt, inform the fire department.

1.4 Required Tools for Installation

- 5mm Allen screwdriver
- Standard screwdriver kit
- Pincers
- Voltage tester screwdriver
- 13mm monkey wrench
- 17mm monkey wrench
- 19mm monkey wrench
- Side cutter (to cut cables)
- 2 adjustable wrenches
- Philips screwdriver
- Curved knife (to open packaging)
- M12 (10.9) bolt and nut
- Cleaning cloth



2.0 Installation

Examine the dispenser immediately upon delivery to make certain that no damage has been occurred. Damaged or lost equipment should be informed to the carrier. Any damage or loss, which may occur during shipping, is not covered under warranty.

Make sure that all components like switches and any optional equipment are present. Check invoice, bill of lading and any similar document relevant to the purchase order and save a copy of them.

2.1 Dangerous Zones

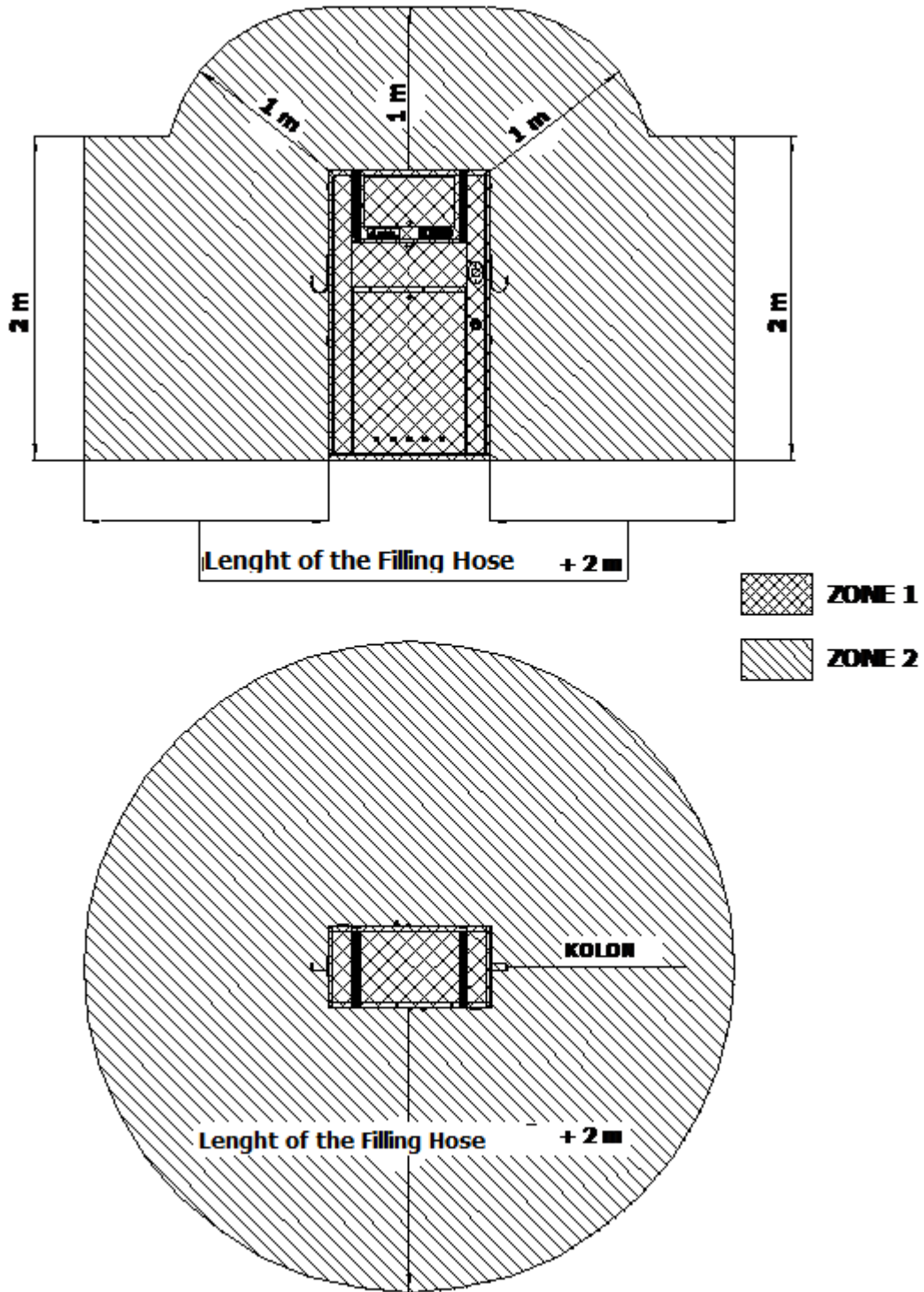
Review relevant codes, standards and regulations first.

Figure 2.1 shows dangerous zones in accordance with European CEN regulations.

Zone 0	Constant or long-term presence of an inflammable and explosive atmosphere. >1000 hours/year Where: In the hydraulic system, in the pipe, meter and control devices.
Zone 1	Where inflammable and explosive atmosphere is high under normal working conditions. =10 – 1000 hours/year Where: Left and right casing columns and around the hydraulic system
Zone 2	Where inflammable and explosive atmosphere is seen rarely or for a short-term under normal working conditions. < 10 hours/year Where: All around the dispenser casing and 1 meter above the casing
Non-dangerous zone	Where inflammable and explosive atmosphere is non-existent. Where: Inside of the electronic system



Figure 2.1 Dangerous Zone Diagram





2.2 Dispenser island construction, dispenser anchoring and piping



Take necessary safety actions at the work site. Consider the safety precautions stated in the article 1.3 and DOs and DON'Ts in Appendix D.



Disconnect and anchor.

More than one switch may be utilized to disconnect power supply. Use a multimeter to make sure that all the circuits in the dispenser are closed. Failure to take these precautions may result in personal injury.



Be sure that all valves are closed.

More than one switch may be required to be closed to shut the system down. Refer to station piping drawings to make sure that all valves are closed. Failure to take these precautions may result in personal injury.



- A chassis is required for the dispenser.



Do not pour concrete around the liquid inlet and steam return lines or electrical conduits. Instead, it is recommended to use sand or sandbags to prevent steam build-up under the dispenser.

- Unlatch and remove cap locks to reach the bottom section of the dispenser. Place the caps in a place where they would not be damaged.
- There are bolt holes on the bottom of the dispenser for anchoring it to the chassis. Tightly mount the dispenser to the island.
- Remove the plastic caps located on the liquid inlet and steam return line. There may be some test liquid left in the dispenser and may pour out from one of the pipes.
- Connect the liquid and steam return lines. Use flexible pipes in the connection of dispenser and underground pipe tips in order to allow ground movement. Underground piping (steam return and liquid lines) should be at least 1".



Make sure that all connections are leak-proof when making pipe connections.



Use a liquid sealant compound, such as Loxeal 58.11 or other similar liquid compounds (liquid sealant) that is used for LPG applications on male threads only. Be careful not to let compound to leak into the fittings.



2.3 Hose Connection

- For an accurate connection, clean all threads and use a liquid sealant (liquid washer).



Make sure that all connections are tight and leak-proof when making pipe connections.



Use a liquid sealant compound, such as Loxeal 58.11 or other similar liquid compounds (liquid sealant) that is used for LPG applications on male threads only. Be careful not to let compound to leak into the fittings.

- Connect hose assembly to the dispenser outlet and hose hooks to the side doors. If the dispenser has a pipe retraction system, refer to the instructions for the connection as well.
- Connect the steel rope of the safety cable of the break-away coupling to the dispenser frame. It is designed so that LPG is present on both sides of the point, where break-away is located and it should be connected to each hose. Only a couple cubic centimeters of LPG escape during removal.
- Check the electrical continuity on the hose/nozzle connection. There should be no continuity between the dispenser outlet and the nozzle to prevent static discharge during filling. In order to make sure that the nozzle is grounded, each hose assembly should be checked.
- Connect crocodile clips to the dispenser chassis.



2.4 Dispenser Sealing Test

After completing the steps in the sections 2.2 and 2.3, the dispenser connections should be checked for leakages.

- Slowly open the valves on the tank section.
- Slowly open steam return line and liquid line (V1) valves (See. Figure 2.2.)
- Open the valve between the filter and gas separator (V2) (See. Figure 2.2)
- Check all connections with lather for leakages.
- In case of a leakage, close all valves, repair the leakage and check again.
- When all connections are tightened, close all valves and continue with electrical connection. (Section 2.5).



The above steps are just guidelines. Consider standards and regulations for legal tests.

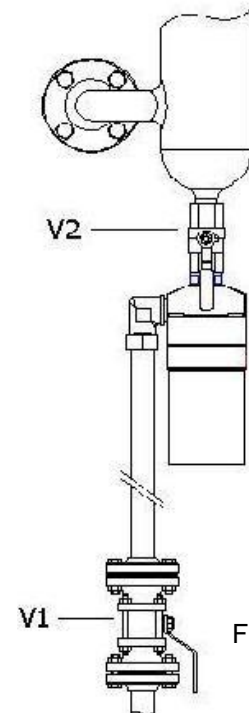


Figure 2.2



2.5 Electrical Connection



All dispensers and electrical connection boxes should be grounded.



ALWAYS make sure that the power supply is disconnected and locked before commencing maintenance of the dispenser. There may be more than one button to disconnect the power supply. Use a multimeter to make sure that ALL circuits of the dispenser are closed. Failure to take these precautions may cause personal injury.

Electrical specifications:

- a. Voltage: 220 Volts AC (180 – 250 Volts AC)
- b. Frequency: 50Hz or 60Hz
- c. Energy consumption: <40 Watt (in maximum configuration)



A stable power supply is required for the operation of the electrical components within the dispenser. Precautions should be taken thereof, where a stable and constant power supply is not available.

- Review the location of the dispenser junction box.
- For full service and stand-alone operation, make electrical installation in accordance with the electrical connection scheme in the Appendix A.
- A display lighting circuit that is connected to the power control circuit at the terminal adjustment strip in the dispenser junction box is delivered along with the dispenser. The display lighting may be connected to a separate circuit breaker or switch via those terminals. Jumping these terminals shall keep display light activated permanently – see. Appendix A.
- In addition to the connections required for stand-alone operation, the dispenser may be connected to a remote host or POS system.
- If optional data cables are required for future use, those should not be connected to the data terminals in the junction box. Instead, separate glands should be used for each of them.
- Do not connect the connections of the equipment irrelevant to the dispenser to the dispenser wiring circuit. Those cables should be connected to another circuit.
- Connect the dispenser to a grounding line in order to dissipate charge.



2.6 Function Test



Before applying power to the dispenser, double-check the connections to make sure that the wires are connected and polarized correctly. See Section 3.



Commissioning procedures specified in this section should be performed sequentially for correct operation of the new installations.



Before dispensing any product, make sure that above-ground pumps are commissioned.
– Refer to the manufacturer's handbook thereof.

- Turn on the dispenser power control circuit breaker, lighting circuit breaker, if connected, and pump engine circuit breaker. Make sure that the dispenser is started-up. Dispenser displays shall show a couple test messages and usually the last sale in the factory tests.

If the dispenser has not been powered or used for a while, an error message like “no electricity” shall be shown due to discharged condensers. Wait for a while until the condensers are charged.

- Remove the plug from the nozzle tip.
- Connect the nozzle to the filler inlet on the dispenser casing.
- Open the globe valve under the inlet.
- Switch the dispenser “on” with the “on/off” switch.
- Now the reset sequence shall start. Display shall reset itself.
- Observe that the solenoid valve opens – hear the click sound of the valves.
- The dispenser shall circulate LPG back into the tank through the steam return line. Observe the process on the display(s).
- Before continuing, make sure that sufficient LPG is circulated to ensure that all the air in the dispenser and lines is completely disposed.
- Switch the dispenser “off”.
- Close the globe valve under the nozzle tip.
- Pull out the nozzle and place the plug back.





2.6.1 Preset

- Enter price and amount to the preset control panel.
- Switch the dispenser “on” with “on/off” switch.
- Reset sequence shall start. Display shall reset itself.
- The dispenser shall circulate LPG into the tank through the steam return line. Observe the process on the display(s).
- The flow rate shall slow down toward the end of the process in order to complete the process at the preset value.
- The dispenser shall cease to fill at the preset value.
- Switch the dispenser “off”.

2.6.2 Non-volatile memory check.

- Switch the dispenser “on” with the “on/off” switch.
- Reset sequence shall start. Display shall reset itself.
- The dispenser shall circulate LPG into the tank through the steam return line. Observe the process on the display(s).
- Shut down the main power supply to the dispenser during the process.
- Solenoid valves shall be closed and filling shall stop immediately.
- Switch the dispenser “off”.
- The display shall show “no electricity” message and the last process for 20 minutes.
- The data shall be stored in EPROM and displayed again when the power is restored. The last process is saved permanently.

2.6.3 Emergency Shut-down System (ESS)

- Switch the dispenser “on” with the “on/off” switch.
- Reset sequence shall start. Display shall reset itself.
- The dispenser shall circulate LPG into the tank through the steam return line. Observe the process on the display(s).
- Press ESS button during the process.
- Solenoid valves shall be closed and the delivery shall stop immediately.
- Switch the dispenser “off”.
- The display shall show “no electricity” message and the last process.

2.6.4 Flow Interruption

- Switch the dispenser “on” with the “on/off” switch.
- Reset sequence shall start. Display shall reset itself.
- The dispenser shall circulate LPG into the tank through the steam return line. Observe the process on the display(s).
- Close the globe valve on the liquid line during the process.
- Observe that the product is not dispensed.
- The CPU shall cease the delivery in 60 seconds.
- Switch the dispenser “off”.



3.0 Operation

3.1 Before Commissioning the Dispenser

- Learn how to shut down the power supply to the dispenser and pump in case of an emergency.
- Test break-away coupling by pulling its both ends.
- Regularly check hose, nozzle and break-away coupling.
- Regularly check dispenser casing and hydraulic section against damages and leakage.

3.2 Programming the ATC System

For the dispensers equipped with Automatic Temperature Compensation - ATC System, the LPG compound should be defined into the ATC System. Default from factory, this compound is preset to 30% butane and 70% propane.



For accurate measurements, it is important to set ATC in accordance with the LPG compound.



Neglect this responsibility may result in inaccurate readings and it is beyond Yenen's control.

4.0 Rules to consider during transportation and shipping

- Dispenser should not be removed from its packing during transportation and storage packaging.
- Dispenser must be transported by paying attention to the directional arrows on the meter box during the transportation.
- Do not place heavy objects on the dispenser package.
- Dispenser should be protected from water and moisture during transportation.
- Dispenser should be moved slowly and carefully. Otherwise CPU and displays may be damaged.



5.0 General Maintenance

5.1 General Safety Precautions

A safe operation is critical for the safety of the staff and customers. Read and comprehend following recommendations:

- Do not allow pumpers to use damaged/broken components like hose assembly.
- Prevent them from using dispensers with open or missing caps.
- Place an explicit and comprehensible operation instructions on the dispensers.

5.2 Preventive Maintenance

Consider the safety precautions specified in the Section 1.3 when conducting any maintenance on the dispenser. As long as the maintenance of a correctly installed dispenser is done appropriately and regularly, it rarely needs an emergency service.

Perform following inspections regularly.

- Keep the dispenser clean at all times. Apply a non-abrasive, silicon based polish at least 4 times a year, in order to maintain glossy looks and prevent corrosion on all stainless steel parts. Painted parts may be applied with a regular automobile polish. Application intervals may be adjusted in accordance with climate and regional conditions.
- Wipe dusty and dirty areas regularly with a soft cloth. Do not use excessive water.
- Check all LPG carrier parts like hose, break-away and nozzle against possible leaks and damages.



If you detect damage on the hose assembly, immediately cease to use the dispenser. Continuing to operate it may result in personal injury and property loss. Close all valves and fix hose assembly.

- Check for sharp edges that may cause slashes on the casing.
- Check hydraulics for leakage.



If you detect damage on the hose assembly, immediately cease to use the dispenser. Continuing to operate it may result in personal injury and property loss. Close all valves and fix the leakage. (See Section 2.4)

- As the LPG taken from the refinery may contain water, dirt and aggressive hydrocarbons, check the tank regularly. Contaminated LPG may cause serious damage in the dispenser. (See Section 1.1)
- Use only genuine spare parts provided by Yenen on the dispenser. Using spare parts other than genuine Yenen spare parts may impose safety risks and therefore shall violate all obtained permissions and warranty.

5.3 Filter

- Generally speaking, a clogged filter shall slow down the flow rate. For new installations, it may be necessary to replace filter several times within the first week of operation, as there may be some debris and pipe insulation parts left from the installation.
- Depending on the quality of gas, the filter should be replaced for every 1 million liters, 6 months or if flow rate slows down.
- A 2 bar or more difference at the pump outlet and dispenser liquid line during the operation of the dispenser and pump indicates that the filter is clogged.
- Read Yenen's filter replacement instructions. ITL-SRV-7.5.1-008



5.4 Calibration and Counter Maintenance

Calibration intervals of the dispenser are regulated by local specifications. OIML R117 specifies calibrations at least once a year or if there are any changes in the LPG inventory.



Some precise measurement parts are sealed in order to restrict their repair and modification. Only authorized and certified persons may break and reseal those.

For the adjustment of the dispenser, follow the procedures that are defined by local authorities and read Yenen LPG flow meter and operation handbook. LFM-02.



EKOSIS E22 LPG-FUEL DISPENSER CONTROL UNIT (CPU) OIML-R 117 REV. 2007

CONTENTS:

1. GENERAL FEATURES
2. TECHNICAL FEATURES
3. PARAMETER SETTINGS
4. USAGE
5. ERROR MESSAGES
6. CONNECTION DIAGRAM
7. ATC PRODUCT LIST
8. ATTACHMENTS

6.1 GENERAL FEATURES

E22 control unit is designed to be employed in both LPG and FUEL dispensers with high accuracy. The device has the feature of temperature compensation for 22 different LPG and FUEL types. Two nozzles are active at the same time. Two MCU's are used for each nozzle sake of reliable operation. Main LCD screen and the embedded keyboard LCD are backlight and easily seen by the user. ATC unit has a high accuracy of compensation and temperature measurement. The computer has a self-diagnostic system that allows the user to see all possible errors via LCD screens. Calibration facility is capable to overcome any error of the meter used. Any 5vdc two channel pulser can be used with the system E22.



6.2 TECHNICAL SPECIFICATIONS

SYSTEM VOLTAGE	: 220VAC + 10%-10% : 165 VAC LOWER LIMIT : 275 VAC UPPER LIMIT : 50-60 Hz
RATED POWER	: 25 W
KOVERAJ (COMPLIANCE)	: IP20
HUMIDITY	: % 0-90% NON CONDENSED
WORKING TEMPERATURE RANGE	: -20+ 60
DISPLAY	: LCD BACKLIGHT HIGH-CONTRAST SINGLE-PART 3-LINE LCD AMOUNT : 6 DIGITS VOLUME : 6 DIGITS PRICE : 4 DIGITS
KEYPAD	: 16-KEY MATRIX AND INTEGRATED LCD BACKLIGHT
MOTOR OUTPUT	: INDEPENDENT SINGLE DRY CONTACTS (CLOSED TYPE RELAY)
HYDRAULIC OUTPUT	: 1 INPUT 2 OUTPUT DRY CONTACTS COMMON VOLTAGE- INPUT (CLOSED TYPE RELAY)
ATC	: 22 PRODUCTS DISABLED CAN BE LEFT
TEMPERATURE PROBES	: 0.1-DEGREE SENSITIVITY SEMICONDUCTOR SENSOR
CALIBRATION SENSITIVITY	: % 0.01 PRECISION % 0.1 PULSER WITH ROUGH SETTING
PULSER	: 5 VDC TWO CHANNEL CHANNEL NUMBER 25-250
COMMUNICATION	: 2-WIRE CURRENT LOOP
MECHANICAL TOTAL	: 12-24 VDC
ELECTRONIC TOTAL	: 10 DIGITS
SHIFT TOTAL	: 10 DIGITS
PRESETS	: P1,P2,P3 PROGRAMMABLE MONEY P1,P2,P3 PROGRAMMABLE LITRES
PARAMETER PROTECTION	: PASSWORD AND THE SERVICE TERMINAL IN ADDITION TO THE SERVICE TERMINAL THERE IS A PASSWORD
EMC TEST	: OIML R-117 (PASSED)



6.3 PARAMETER SETTINGS

6.3.1 INPUT PARAMETER SETTINGS

The user must know the primary CODE to Access the parameter menu. After first CODE entered the second CODE must be entered while the service terminal is connected to the device. All system parameters are under the service menu but the UNIT PRICE is independent. The UNIT PRICE can be changed by the user without use of service terminal if the computer is not in AUTO/CASH REGISTER mode. The connection plug of service terminal is protected by a seal. For different manufacturers different codes are provided.

6.3.2 ADJUSTMENTS AND DESCRIPTIONS

UNIT PRICE SETTING

Enter the price change code while the device is in manual mode

XXXXXXXXX PRESS THE ENTER KEY

SCREEN

UNIT PRICE	OLD
XXXX	

P3 PRESS

SCREEN

UNIT PRICE	NEW
XXXX	

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

UNIT PRICE SAVED



6.4 PARAMETERS

The secondary CODE (service code) is entered via keyboard while the service terminal is plugged .If the service terminal is not connected and / or wrong code is entered any operation is impossible.P1 is used for next parameter and P2 is used for previous parameter screen.P3 is used for entering new value. Enter key is used to save the entered value and C key is used to quit.

1. LANGUAGE SELECTION
2. P1 MONEY / P1 LITERS.
3. P2 MONEY / P2 LITERS
4. P3 MONEY / P3 LITRE
5. PULSE
6. FAST UP
7. SLOW DOWN
8. HIDE PULSES
9. DISPLAY POINTS
10. ATC
11. CALIBRATION
12. LOW FLOW
13. LOW FLOW TIME
14. NO LOW TIME
15. AUTOMATION / ADDRESS

PARAMETERS

SCREEN

TBNC	M1	4	+ 25.8
-----	.	---	PRICE

MENU ACCESS PASSWORD

XXXXXXXXX PRESS THE ENTER KEY

SCREEN

ENTER THE MENU CODE

SERVICE PASSWORD

XXXXXXXXX PRESS THE ENTER KEY



6.4.1 LANGUAGE SELECTION

SCREEN

LANGUAGE XXX	OLD
-----------------	-----

"000 TURKISH"

"001 ENGLISH"

P3 PRESS

SCREEN

LANGUAGE XXX	NEW
-----------------	-----

ENTER THE VALUE

PRESS THE ENTER

6.4.2 P1 MONEY / P1 VOLUME

SCREEN

P1 MONEY XXXXXX	OLD
--------------------	-----

P3 PRESS

SCREEN

P1 MONEY XXXXXX	NEW
--------------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

SCREEN

P2 MONEY XXXXXX	OLD
--------------------	-----

P1 PRESS



LITER/MONEY BUTTON PRESS
SCREEN

P1 VOLUME XXXXXX	OLD
---------------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

P1 VOLUME XXXXXX	NEW
---------------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

6.4.3 P2 MONEY / P2 VOLUME

SCREEN

P2 MONEY XXXXXX	OLD
--------------------	-----

P3 PRESS

SCREEN

P2 MONEY XXXXXX	NEW
--------------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

SCREEN

P3 MONEY XXXXXX	OLD
--------------------	-----

P1 PRESS

LITER / MONEY BUTTON PRESS



SCREEN

P2 VOLUME XXXXXX	OLD
---------------------	-----

P3 PRESS

SCREEN

P2 VOLUME XXXXXX	NEW
---------------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

6.4.4 P3 MONEY / P3 VOLUME

SCREEN

P3 MONEY XXXXXX	OLD
--------------------	-----

P3 PRESS

SCREEN

P3 MONEY XXXXXX	NEW
--------------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

SCREEN

PULSE XXXX	OLD
---------------	-----

P1 PRESS

LITER / MONEY BUTTON PRESS

SCREEN



P3 VOLUME XXXXXX	OLD
---------------------	-----

P3 PRESS

SCREEN

P3 VOLUME XXXXXX	NEW
---------------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

6.4.5 PULSE

SCREEN

PULSE XXXX	OLD
---------------	-----

* 1 TOUR 1 LITRE METERS 2X50 CHANNEL PULSER FOR
XXXX = 500

** 2 TOUR 1 LITRE METERS 2X50 CHANNEL PULSER FOR
XXXX = 1000

P3 PRESS

SCREEN

PULSE XXXX	OLD
---------------	-----

P3 PRESS

SCREEN

PULSE XXXX	NEW
---------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED



6.4.6 HIGH FLOW VALVE

SCREEN

FAST UP XXX	OLD
----------------	-----

P3 PRESS

SCREEN

FAST UP XXX	NEW
----------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

6.4.7 LOW FLOW VALVE

SCREEN

SLOW DOWN XXX	OLD
------------------	-----

P3 PRESS

SCREEN

SLOW DOWN XXX	NEW
------------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED



6.4.8 HIDE PULSES

SCREEN

HIDE PULSES XXX	OLD
--------------------	-----

P3 PRESS

SCREEN

HIDE PULSES XXX	NEW
--------------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

6.4.9 DISPLAY POINTS

SCREEN

DISPLAY PNTS XXX	OLD
---------------------	-----

223 --- STANDARD VALUE

P3 PRESS

SCREEN

DISPLAY PNTS XXX	NEW
---------------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

6.4.10 ATC

SCREEN

ATC XXXX	OLD
-------------	-----



99XX --- ATC OFF
00XX --- ATC ON
XX : PRODUCT ASSIGNMENT (DENSITY)

P3 PRESS

SCREEN

ATC XXXX	OLD
-------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

6.4.11 CALIBRATION

SCREEN

CALIBRATION XXXXX	OLD
----------------------	-----

100000 ----- STANDARD VALUE

P3 PRESS

SCREEN

CALIBRATION XXXXX	NEW
----------------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

6.4.12 LOW FLOW

SCREEN

LOW FLOW XXX	OLD
-----------------	-----



P3 PRESS

SCREEN

LOW FLOW XXX	NEW
-----------------	-----

PRESS THE ENTER

SCREEN

REGISTERED

6.4.13 LOW FLOW TIME

SCREEN

LOW FLOW TIME XXX	OLD
----------------------	-----

P3 PRESS

SCREEN

LOW FLOW TIME XXX	NEW
----------------------	-----

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

6.4.14 NO FLOW TIME

SCREEN

NO FLOW TIME XXX	OLD
---------------------	-----

P3 PRESS

SCREEN

LOW FLOW TIME XXX	NEW
----------------------	-----



ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

6.4.15 AUTOMATION / ADDRESS

SCREEN

AUTO	OLD
XXXX	

99XX ---- AUTOMATION OFF

00XX ---- AUTOMATION ON

XX : ----- PUMP ADDRESS

P3 PRESS

SCREEN

AUTO	NEW
XXXX	

ENTER THE VALUE

PRESS THE ENTER

SCREEN

REGISTERED

RETURN BACK TO THE SCREEN

SCREEN

COMPANY	M1	4	+ 25.8
-----			PRICE



6.5 USAGE

6.5.1 PRESET TRANSACTION

6.5.1.1 MONEY PRESET TRANSACTION

While the device in MONEY (DEFAULT) mode enter the desired value VIA 0- 9 keys or P1-P3 keys then hook the nozzle or turn the nozzle switch the delivery stars.

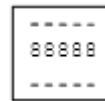
LCD SCREEN SHOT-----



6.5.1.2 VOLUME PRESET TRANSACTION

While the device in MONEY (DEFAULT) mode enter the desired value VIA 0- 9 keys or P1-P3 keys then hook the nozzle or turn the nozzle switch the delivery stars.

LCD SCREEN DISPLAY-----



6.5.2 MANUAL TRANSACTION

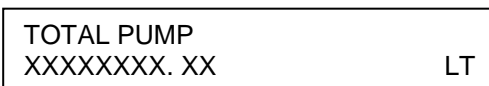
Hook the nozzle or turn switch and delivery starts.

In preset or manual delivery mode transaction will be ended by low flow-flow time or no flow functions whichever acts first. And if the cpu is in automation mode delivery will not start unless authorization by cash register or host system.

6.5.3 READING VOLUME TOTAL

PRESS 1 THEN PRESS ENTER

SCREEN

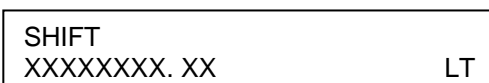


PRESS C OR WAIT 10 SECONDS TO QUIT

6.5.4 READING RESETTING SHIFT VOLUME TOTAL

PRESS 2 THEN PRESS ENTER

SCREEN





PRESS P3 TO RESET HIFT VOLUME TOTAL

PRESS C OR WAIT 10 SECONDS TO QUIT

6.5.5 READING LAST TRANSACTION WITHOUT ATC CORRECTION

PRESS 3 THEN PRESS ENTER

SCREEN

LAST TRANS.NO ATC XXXXXXXX. XX	LT
-----------------------------------	----

PRESS C OR WAIT 10 SECONDS TO QUIT

6.5.6 READING FLOW RATE/MIN

PRESS 0 WHILE DELIVERY

SCREEN

COMPANY	M1 4	+23.4
XXXXX. XX		PRICE / MIN



6.6 ERROR MESSAGES

EE 01: NO PULSER CONNECTED

EE 02: PULSER IDLE MOVEMENT OR VALVE LEAK

EE 03: PULSER ROTATION OR CAHANNEL ERROR

EE 04: LIMIT EXCEEDED IN PREST TRANSACTION (VALVE LEAK)

EE 05: MECHANICAL TOTALIZER NOT CONNECTED

EE 06: MECHANICAL TOTALIZER SHORT CIRCUITED

EE 07: UNIT PRICE ZERO OR NOT SET

EE 08: COMMUNICATION ERROR (WHILE DELIVERY)

EE 09: ATC PROBE ERROR-NOT CONNECTED

EE 10: CALIBRATION PARAMETER ERROR-ZERO

EE 11: PULSE PARAMETER ERROR-ZERO

EE 88: LCD DISPLAY ERROR (READ KEYBOARD LCD)

EE 99: POWER FAILURE-LOW VOLTAGE (165 VAC)

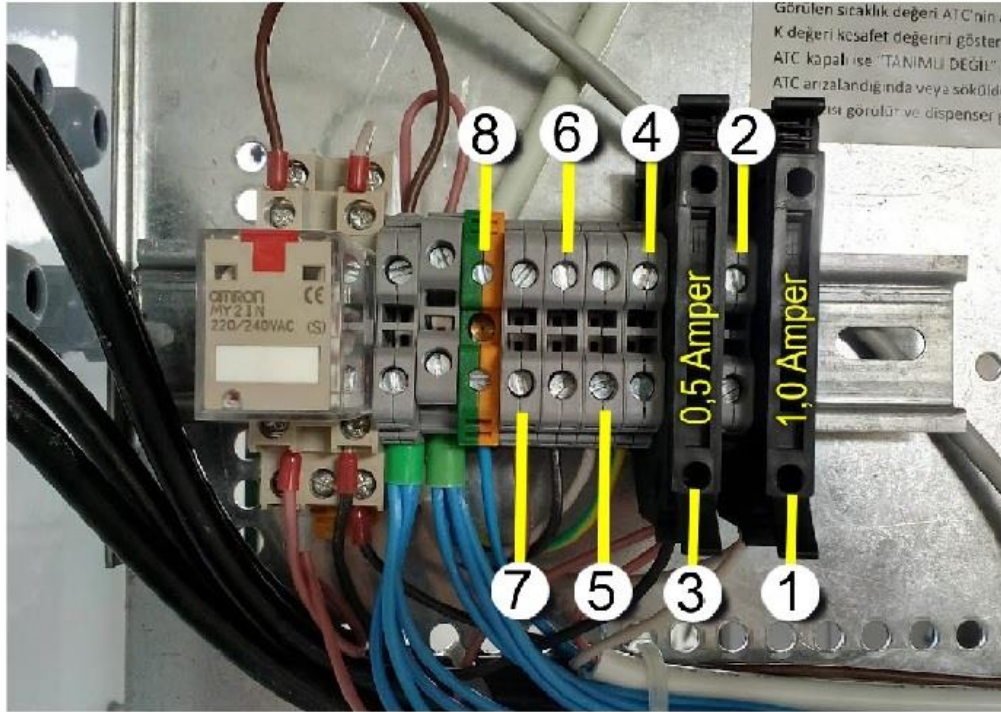


6.7 ATC PRODUCT SELECTION SETTINGS

<u>PRODUCT CODE</u>	<u>PRODUCT</u>
<u>00</u>	<u>0540 LPG</u>
<u>01</u>	<u>0545 LPG</u>
<u>02</u>	<u>0550 LPG</u>
<u>03</u>	<u>0555 LPG</u>
<u>04</u>	<u>0560 LPG</u>
<u>05</u>	<u>0565 LPG</u>
<u>06</u>	<u>0570 LPG</u>
<u>07</u>	<u>GASOLINE</u>
<u>08</u>	<u>EURO DIESEL</u>
<u>09</u>	<u>DIESEL</u>
<u>10</u>	<u>JET A1 + LIGHTING KEROSENE</u>
<u>11</u>	<u>AVIATION GASOLINE</u>
<u>12</u>	<u>HIGH SULPHUR FUEL OIL</u>
<u>13</u>	<u>LOW SULPHUR FUEL OIL</u>
<u>14</u>	<u>POWER KEROSENE + HEATING OIL + MINERAL TURPENTINE</u>
<u>15</u>	<u>TOLUENE</u>
<u>16</u>	<u>XYLENE</u>
<u>17</u>	<u>WHITE SPIRIT</u>
<u>18</u>	<u>SAE 10</u>
<u>19</u>	<u>SAE 20-30</u>
<u>20</u>	<u>SAE 40-50</u>



Appendix A – Cable Connection Diagram



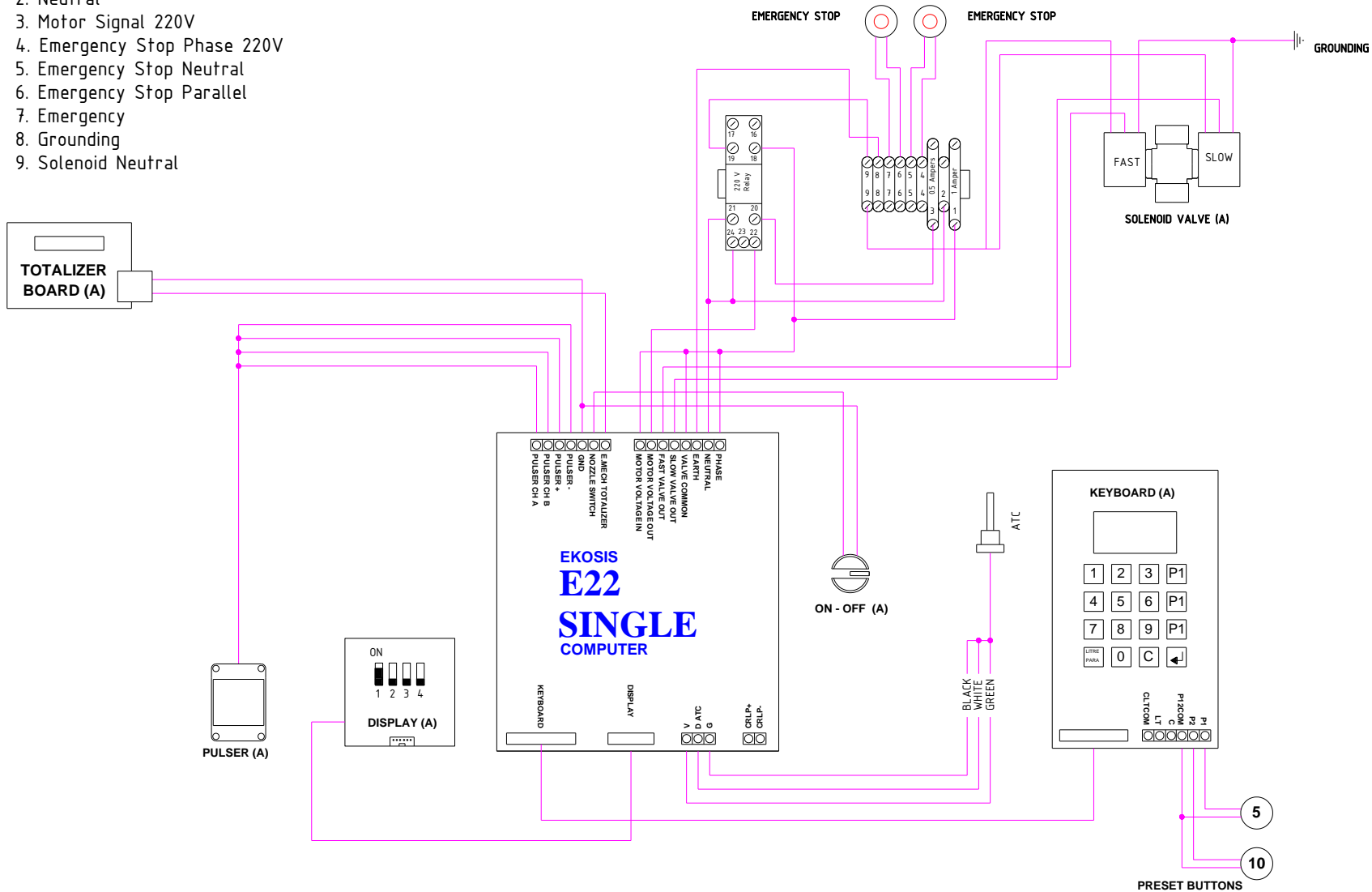
KLEMENS BAĞLANTI DETAYI <i>Terminal Connections</i>		
1	Faz 220 V	<i>Phase 220 V</i>
2	Nötr	<i>Neutr</i>
3	Motor Sinyal 220 V	<i>Motor Signal 220 V</i>
4	Acll Stop	<i>Emergency Stop</i>
5	Acll Stop	<i>Emergency Stop</i>
6	Acil Stop	<i>Emergency Stop</i>
7	Acll Stop	<i>Emergency Stop</i>
8	Topraklama	<i>Grounding</i>



EKOSIS E22 SINGLE DISPENSER ELECTRICAL SCHEME

TERMINALS

- 1. Phase 220V
- 2. Neutral
- 3. Motor Signal 220V
- 4. Emergency Stop Phase 220V
- 5. Emergency Stop Neutral
- 6. Emergency Stop Parallel
- 7. Emergency
- 8. Grounding
- 9. Solenoid Neutral

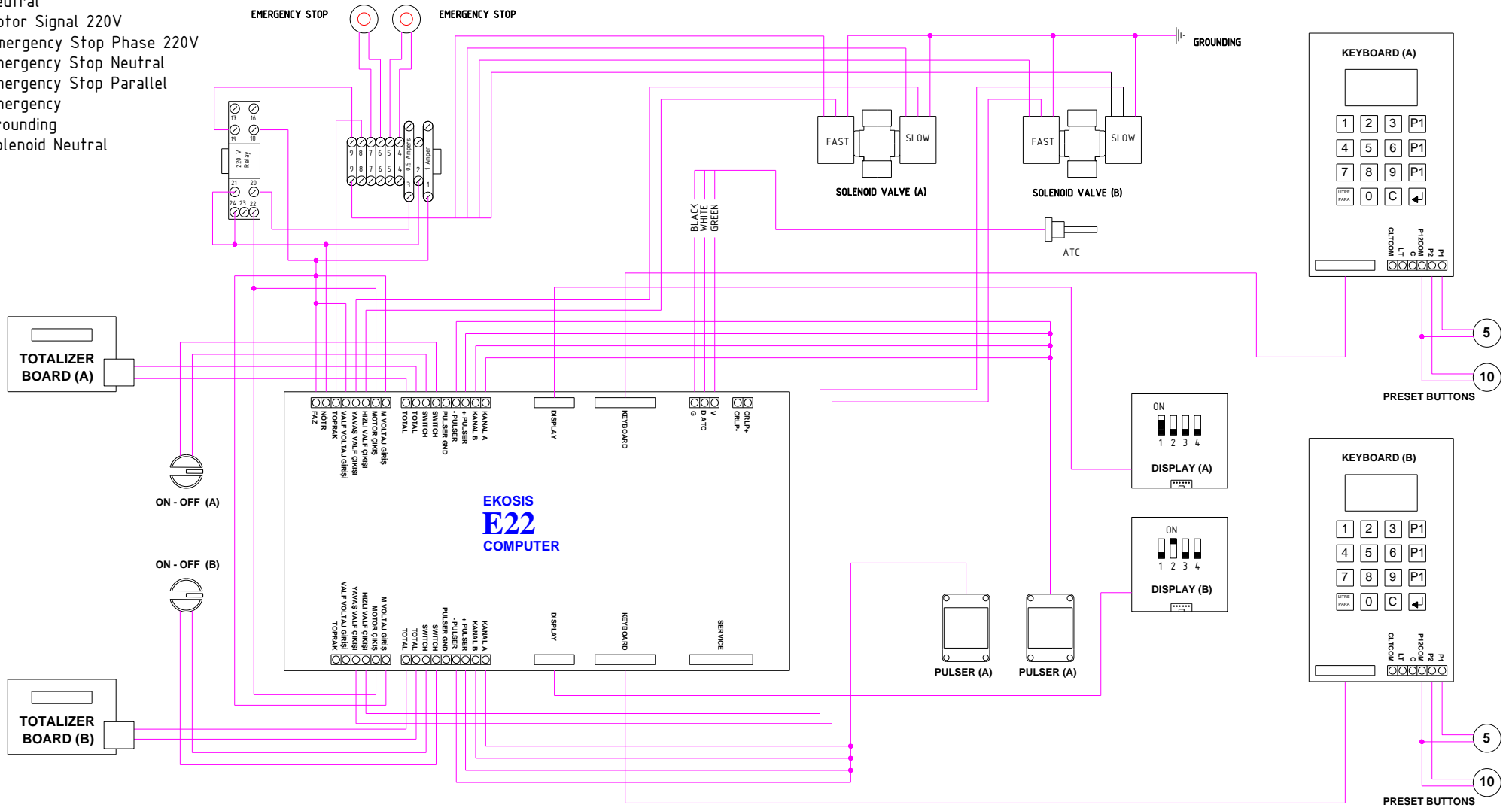




TERMINALS

1. Phase 220V
2. Neutral
3. Motor Signal 220V
4. Emergency Stop Phase 220V
5. Emergency Stop Neutral
6. Emergency Stop Parallel
7. Emergency
8. Grounding
9. Solenoid Neutral

EKOSIS E22 DOUBLE DISPENSER ELECTRICAL SCHEME





Appendix B – Failure Guide

TROUBLESHOOTING			
PROBLEM	POSSIBLE CAUSES?	WHAT TO CHECK?	HOW TO FIX THE PROBLEM IF DETERMINED?
Dispenser is not activated even though it is switched "on".	a) Fuse in the CPU is blown.	a) Check the fuse in the CPU.	a) Replace the fuse.
	b) Power section of CPU card that powers solenoids may be broken.	b) Check the CPU card.	b) Replace the CPU card.
	c) Solenoid coil may be burnt.	c) Check if solenoid inducts or not.	c) Solenoid should be replaced if broken.
	d) Pneumatic valves may be closed.	d) Check if the valves are open.	d) Open valves if closed, replace nitrogen tube if necessary.
	e) Engine may not generate pressure.	e) Check the engine.	e) Engine should be replaced if not generating pressure.
	f) No signal from the relay.	f) Check if a signal is received from the relay.	f) Make sure that signal is received from relay.
	g) On-off switch is broken.	g) Check the button.	g) Replace the button if broken.
	h) Thermic on the table may be blown.	h) Check the thermic.	h) Thermic should be corrected if blown.
Nozzle dispenses gas but nothing is displayed.	a) Pulser may be broken.	a) Check the pulser.	a) Pulser should be replaced.
	b) Display may be broken.	b) Replace display and check if the problem is fixed.	b) Display should be replaced if broken.
	c) Display card may be broken.	c) Replace new display card and check if the problem is fixed.	c) Display card should be replaced if broken.
	d) Meter distribution valve pin may be removed..	d) Check the pin. (If motion transferring shaft can be moved to both sides when checked with hand, it is removed.)	d) Pin should be plugged back.



Appendix B – Failure Guide

TROUBLESHOOTING			
PROBLEM	POSSIBLE CAUSES?	WHAT TO CHECK?	HOW TO FIX THE PROBLEM IF DETERMINED?
Dispenser delivers too much or too little	a) Distribution valve, Charcoal, Felt may be damaged.	a) Check distribution valve, charcoal and felt.	a) Replace broken part.
	b) Adjustment roller may need readjustment.	b) Check the adjustment roller.	b) Readjust the adjustment roller.
	c) Pulser may be broken.	c) Check the pulser.	c) Replace the pulser.
	d) Pulser shaft may have torsion.	d) Check the pulser shaft.	d) Fix the torsion.
	e) Piston arms may be twisted.	e) Check the piston arms.	e) Replace the piston arms.
	f) Piston cups may be torn or worn	f) Check the piston cups.	f) Replace the piston cups.
Dispenser flow rate is less than expected.	a) Filter may be clogged.	a) Check the filter.	a) Change the filter.
	b) Solenoids may be clogged or solenoid core may leak.	b) Check the solenoids.	b) Clean solenoid, replace the core, replace solenoid if necessary.
	c) Diver may not generate sufficient pressure.	c) Check the manometer on the diver.	c) Replace the diver pump.
	d) Direction of the diver pump may be wrong.	d) Check the diver pump revolution direction.	d) Change the position of two phase cables of the diver pump on the control panel.
	e) Differential rubbers may be torn.	e) Check the differential valve.	e) Replace the differential rubbers.
	f) Break-away coupling may be clogged, broken or misplaced.	f) Check the break-away coupling.	f) Clean the break-away coupling, replace it if broken.
	g) Nozzle may be damaged.	g) Check the nozzle.	g) Replace the nozzle.
	h) Vehicle tank may be full.	h) Check the lever on the tank.	h) Stop filling the vehicle with full tank.
	l) Pulser shaft may be jammed.	l) Check the pulser shaft.	l) Loosen and tighten adjustment bolts.



Appendix B – Failure Guide

TROUBLESHOOTING			
PROBLEM	POSSIBLE CAUSES?	WHAT TO CHECK?	HOW TO FIX THE PROBLEM IF DETERMINED?
Price counter does not stop.	a) Preset or its connections may be short circuited.	a) Check the connections.	a) Correct the connections and change preset if situation persists.
Unit price window blinks.	a) Pr-In keys on the CPU may be jammed.	a) Check the keys on the CPU.	a) Fix the problem by pressing keys.
	b) CPU cap may be broken.	b) Check the CPU cap.	b) Replace the CPU cap.
Display shows incorrect price.	a) Parameters are entered incorrectly into CPU card.	a) Check the parameters entered into CPU card.	a) Re-enter parameters accurately.
	b) Solenoids may leak.	b) Check the solenoids.	b) Replace solenoids.
Nothing on display.	a) Display temperature may be more than 40°. (display is erased in this case)	a) Check the display temperature.	a) Problem shall be fixed when display temperature is normal.
	b) Display card may be broken.	b) Check the display card.	b) Replace the display card..
	c) There may be problem on display connections.	c) Check the display connections.	c) Connect cables correctly.
Nozzle does not deliver gas even though it is switched “on” and diver is activated.	a) Break-away coupling on the hose may be closed.	a) Check if break-away coupling is placed correctly.	a) Firmly place or replace break-away coupling.
	b) Solenoid valves may not open.	b) Check if solenoid valves are opening.	b) Replace solenoid valves.
	c) Pneumatic valves may be closed.	c) Check if nitrogen tube is full or not.	c) Replace nitrogen tube.
	d) Check valve in the nozzle may be broken.	d) Check the in-nozzle check valve.	d) Replace in-nozzle check valve if broken.



Appendix B – Failure Guide

TROUBLESHOOTING			
PROBLEM	POSSIBLE CAUSES?	WHAT TO CHECK?	HOW TO FIX THE PROBLEM IF DETERMINED?
Dispenser does not deliver gas.	a) Break-away coupling may have come away.	a) Check the break-away coupling on the hose.	a) Place the break-away coupling into position.
	b) Nitrogen tube may be empty.	b) Check the nitrogen tube.	b) Replace the nitrogen tube.
	c) CPU fuse may be blown.	c) Check the fuse.	c) Replace the CPU fuse.
	d) Nozzle may be broken.	d) Check the nozzle.	d) Replace the nozzle.
	e) Solenoids may be broken.	e) Check the solenoids.	e) Replace the solenoids.
Display flashes at any parameter.	a) PR button on the CPU card may be stuck.	a) Observe dispenser display.	a) Press PR key until EP is displayed.
Gas alarm sounds.	a) There may be gas leakage.	a) Check for leakages on all systems.	a) Press gas alarm reset key for 3 seconds.
	b) Gas detector may be broken.	b) Check the gas detector.	b) Replace the gas detector.
Thermic relay on the panel blows continuously.	a) Thermic relay may be out of adjustment.	a) Check the current drawn from the network by the pump.	a) Replace the diver pump.
	b) Thermic relay may be out of adjustment.	b) Check the thermic relay.	b) Adjust thermic relay.
Nozzle leaks gas.	a) Washer located on the tip of the nozzle may be worn.	a) Check the nozzle washer.	a) Remove washer and reverse it. Replace the washer if problem persists.
	b) Threads of the nozzle may be broken.	b) Check the nozzle.	b) Replace the nozzle.
Totalizer does not work.	a) Totalizer's coils may be broken.	a) Check the totalizers.	a) Replace the totalizers.
	b) Dispenser control unit may not be sending signals to totalizers.	b) Check the CPU card.	b) Replace the CPU card.
	c) Graphics card may be broken.	c) Check the graphics card.	c) Replace the graphics card.



Appendix B – Failure Guide

TROUBLESHOOTING			
PROBLEM	POSSIBLE CAUSES?	WHAT TO CHECK?	HOW TO FIX THE PROBLEM IF DETERMINED?
Display continues to count even though the nozzle is disconnected.	a) Safety valve may leak.	a) Check the safety valve.	a) Clean any dirt if exists.
	b) Parameter values may be interfered..	b) Check the parameter values.	b) Adjust parameter settings.
	c) CPU card may be broken.	c) Check the CPU card.	c) Replace the CPU card.
	d) Pulser may be broken.	d) Check the pulser.	d) Replace the pulser.
Delivery stops while dispensing gas..	a) Pump pressure may be drooped.	a) Check the pump pressure.	a) Replace the pump if broken.
	b) Electrical interruption.	b) Check the voltage.	b) Restore electrical connection.
	c) Pressure sensor may be broken.	c) Check the pressure sensor.	c) Replace the pressure sensor.
	d) Analog adjustment may be incorrect.	d) Check the analog values.	d) Adjust the analog values.
	e) Gas sensor may be interrupting gas flow due to a leakage.	e) Perform leakage test on al systems.	e) Fix found leaks.
Dispenser Fluorescent is off.	a) Fluorescent may be died out.	a) Check the Fluorescent.	a) Replace Fluorescent.
	b) Fluorescent fuse may be blown.		b) Replace the fuse.
	c) Fluorescent may be loosened.		c) Place fluorescent correctly.
Dispenser Manometer is not working.	a) Manometer may be broken.	a) Check the manometer.	a) Replace the manometer.



Appendix D

DO FOLLOWING

DO...

- Consult with station director or administrator about the project and procedures before servicing a dispenser.
- Review dangerous zones on the work site and determine necessary safety precautions relying on your safety training and experience.
- Locate extinguishers on the work site before commissioning any process involving LPG.
- Be informed of steam and other dangerous conditions.
- Disconnect and lock power supply before opening the dispenser for maintenance. Make sure that valves under the dispenser are closed BEFORE commencing maintenance.
- Be informed of relevant dangerous zone classifications.
- Utilize equipments like safety cones, barricades and barrier bands in order to isolate work site and protect technician.
- Wear safety clothing like phosphorescent vest, goggles and gloves.
- Check the perimeter of the work site.
- Place nozzle into the dispenser carefully.
- Get totalizer results and record them in co-ordination with station director or administrator.



DO NOT FOLLOWING

DON'T...

- Do not allow unauthorized persons to stay close to the dispenser or work site during demounting or gas discharge of the dispensers.
- Do not left the dispenser caps open after completing maintenance.
- Do not allow smoking, igniting or fire devices within the perimeter of the work site.
- Do not work outside of the barricaded area.
- Do not remove safety cones, barrier band or service vehicle until the work is completed.
- Do not leave station without having report signed by station director or administrator.



Notes :



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