LION®
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GASTRAINER™ SYSTEM

[USER'S MANUAL

Original User Manual
04/19

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SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

1. WHAT IS THE GASTRAINER™?

The GasTrainer was developed to safely simulate situations in which the use of a four-gas meter would be required. The GasTrainer can simulate gas leaks/clouds without the hazards of using potentially lethal gases. Instead, electronic transmitters (GasSource emitters) are positioned and used to simulate a gas leak. By varying the position of the emitters and adjusting the settings, it is possible to simulate a variety of HazMat situations, ranging from small leaks to large vapor clouds.

The trainee's gas meter (Student Unit) measures the signal strength of the emitters that simulate one of four possible gases. An alarm sounds if the measured value exceeds the preset alarm value. Two separate alarm levels can be set by the instructor per gas; one minimum level and one maximum level. The instructor simultaneously receives the same alarm signal if one of the alarm values is exceeded on the Student Unit.

The GasSource emitters automatically simulate one gas at a time. The Instructor's Unit can be used to manually adjust and incorporate the other three gases into the simulation. The Student Unit and Instructor Unit communicate with each other using a wireless link. The Student Units will respond to the Instructor Unit's settings for both the default and manually adjusted gases.

The system is capable of simulating four different types of gas:

- Explosive gas (%LEL)
- Oxygen (%O_2)
- Carbon Monoxide (ppm CO)
- Hydrogen Sulfide (ppm H_2S)

The set consists of:

- 1 GasTrainer Instructor Unit
- 1 GasTrainer Student Unit
- 3 GasTrainer GasSource Emitters
- 1 Detachable Sampling Wand
- 1 AC/DC Power Supply
- 1 DC Power Splitter Cable
- 1 User Manual

2. PRECAUTIONS AND SAFETY INSTRUCTIONS

⚠ WARNING

The GasTrainer™ system is a simulation training system. The system CAN NOT be used as a real gas meter. The GasTrainer does not detect actual gas, it detects simulated gas readings in the form of ultrasonic signals.

DO NOT use the system in an environment in which you suspect that there may actually be a potentially explosive mix of gases!

- The system is not waterproof. Do not expose the system to moisture or to places where fire extinguishing materials are used. Contact with water may permanently damage the system and void the warranty.
- Do not use the system if the casing or cables have been damaged and you suspect a potential risk for the instructor or trainee. In that event, contact the manufacturer and have the system repaired.
- If not in use, unplug the battery charger from the power supply.
- When not in use, it is recommended that the set be stored in the supplied carrying case to ensure proper protection of the system.

3. GASTRAINER™ SPECIFICATIONS

GasTrainer – GasSource Emitter	
Casing Material	Aluminum
Transmission Point Materials	ABS, aluminum
Range (high setting)	26 ft (7.9 m) (10% LEL)
Range (low setting)	16 ft (4.9 m) (10% LEL)
Battery	7.2V / 700mAh NiMH
Usable Life	Approx. 20 hours (fully charged)*
Length of Wires	Approx. 1.5 ft (.05 m) (base – transmission point)
	Approx. 3 ft (.09 m) (transmission points)
Dimensions of Transmission Points	2" x 1.25" x 1" (5 x 3 x 3 cm)
Dimensions of Signal Unit	4.33" x 2.25" x 1.4" (11 x 6 x 4 cm)
Weight	13.75 oz (389.81 g)

*New NiMH batteries need to be charged and used two to three times before they reach full capacity. Therefore, it is possible that the usable life of the battery is significantly shorter during the first charge/use cycles.

GasTrainer™ – Student and Instructor Units	
Casing Material	ABS, PMMA
Material of Display Window	Polycarbonate
Display	Graphic 122 x 32 pixels, white/blue
ALARM	
Optical and Audible	Slow and fast alarm, user configurable
	Low battery power
Max. Distance from Instructor Unit	Approx. 115 ft. (35.1 m) in open space
Radio Frequency	914.5 MHz
Transmitting Power	1 mW
Battery	7.2V / 700mAh NiMH
Usable Life	Approx. 8 hours (fully charged)*
Dimensions	6.3" x 3.3" x 1.2" (16 x 8 x 3 cm)
Weight	9.5 oz (269.32 g)
MEASURING RANGE	
%LEL	0–100 in increments of 1
%O2	0–25.5 in increments of 0.1
ppm H_2S	0–200 in increments of 1
ppm CO	0–500 in increments of 1

GasTrainer Battery Charger	
Casing Material	ABS
Supply Voltage	100–240V AC 50/60Hz 0.5A max
Number of Channels	5 (using the splitter cable)
Charging Time 700mAh battery	Maximum 4 hours
Weight	4.25 oz (120.49 g)

*New NiMH batteries need to be charged and used two to three times before they reach full capacity. Therefore, it is possible that the usable life of the battery is significantly shorter during the first charge/use cycles.

4. USING YOUR GASTRAINER™

4.1. GASSOURCE EMITTERS

The emitters create the source of the simulated gas leak. In order to control the size of the cloud, all emitters are equipped with a field strength selector switch, allowing the range to be set.

4.1–1. POSITIONING

Position one or more emitters in the area in which the gas cloud is to be simulated.

The control unit can be hidden out of sight. Providing that the Student Unit is receiving information from emitters, the smaller transmission points can be positioned inconspicuously.

The best effects are achieved when all three emitters are positioned in such a way that they combine to form a circle around the gas cloud to be detected. Adjust the height, angle, and direction of the transmission points to create a variety of gas leak scenarios. Practice various configurations to determine which scenarios work best for your training applications. See *Figure 1* below.

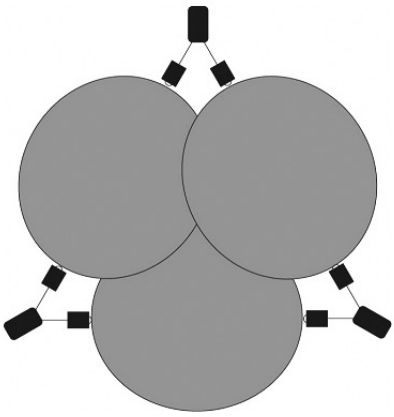

FIGURE 1: POSITION THE GASSOURCE EMITTERS IN A CIRCLE FOR THE BEST RESULTS

4.1–2. OPERATION

The controls and indicators on the emitter can be found on the rear of the unit. See *Figure 2* below:

1. **POWER INDICATOR (RED)**
2. **CHARGER INDICATOR (GREEN)**
3. **HIGH SETTING (LARGE GAS CLOUD)**
4. **LOW SETTING (SMALL GAS CLOUD)**
5. **CHARGING CONNECTOR**
6. **POWER SWITCH**

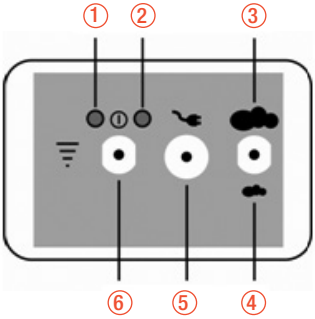

FIGURE 2: REAR OF THE EMITTER

1. Turn the emitter's power on by pressing the left side toggle switch upwards (6). The power indicator (1) will flash, and the signal will begin emitting. The power indicator light will continue to flash as long as the unit is in operation.
2. Select the field strength of the emitter by toggling the right side switch (3) up for the "High" setting or down (4) for the "Low" setting.
   a. The "High" setting (toggle switch [3] in the upward position toward the large cloud icon) has a range of approximately 26 ft. (7.9 m) (10% LEL) in an open space.
   b. The "Low" setting (toggle switch [4] in the downward position toward the small cloud icon) has a range of approximately 16 ft. (4.9 m) (10% LEL) in an open space.
   c. These ranges are greatly dependent on reflections in the area. It is therefore possible for the range to vary in the vicinity of obstacles or to vary between training locations with hard flooring surfaces (such as concrete) or soft flooring surfaces (such as carpet).

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3. When the training evolution is completed, push the left hand toggle switch (6) downward to turn off the emitter unit. The indicator (1) will stop flashing and the emitter unit will stop sending a signal.
4. The emitter is not equipped with a dedicated battery indicator. However, when the battery is empty, the power indicator (1) will stay continuously lit. The emitter will not operate consistently and the battery will need to be recharged in order for the unit to function properly.

4.1–3. CHARGING

1. Connect the emitter's charging connector (5) to the battery charger and plug the wall adaptor in the wall outlet.
2. The emitter will then be switched off automatically, regardless of the position of the on-off switch. The green charging indicator will start blinking. When the battery is full, the charging indicator will stay continuously lit.
3. If the battery is completely empty before recharging, the device will start a trickle charge cycle to prevent battery damage. The green charging indicator will stay lit. Leave the charger connected. The charger will safely recover the battery. After approximately four to six hours, the battery will be fully charged.
4. A normal, full charging cycle will take approximately four hours. The charging circuit continuously monitors the battery status and switches to trickle charge once the battery is fully charged.
5. LION recommends charging all the emitters at the same time as the Instructor Unit and Student Unit in order to have a fully charged set. The range of an emitter can become significantly shorter when the batteries are low or empty and the emitter's battery will need to be charged before continuing with the training.

4.2. STUDENT UNIT

4.2–1. OPERATION

The Student Unit is operated by means of a single button, controlling all functions of the gas meter. It features visual and audible alarms and includes an optional sampling wand.

Connectors, controls and indicators of the Student Unit:

- (1) Measuring sensor
- (2) Sampling wand connector
- (3) Optical alarm & charger indicator (front)
- (4) Optical alarm (top)
- (5) LCD display
- (6) Power button
- (7) Charger connector

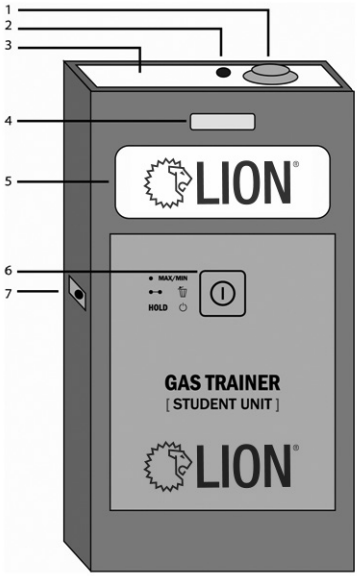

FIGURE 3: CONTROLS FOR THE STUDENT UNIT

1. Turn on the Student Unit by briefly pressing the Power button located on the front of the Unit.
   a. The device will switch itself on and display a brief visual signal and sound a short beep.
   b. The device will start up and after a brief interval, show the LION logo on the display *(Figure 3)*.
   c. The device will then automatically switch to measuring mode.
2. Four measurements are shown on the LCD display *(Figure 4):*
   a. Lower Explosion Limit (%LEL)
   b. Oxygen (%O_2)
   c. Hydrogen Sulfide (ppm H_2S)
   d. Carbon Monoxide (ppm CO)
3. The wireless communication channel and internal battery level icons are also displayed on the right.

FIGURE 4: MEASURING MODE DISPLAY

continues

4.2–2. MEASURING

1. The Student Unit can then be used to “search” for gases in the same manner as a normal gas meter.
2. The meter will display a reading if the user enters the area of range of an emitter or if the Instructor manually changes a value.
3. If one of the measurements exceeds the preset first alarm level (A1) the meter will give an alarm signal. The visual alarms will flash red and a sound will be emitted.
4. If one of the measurements exceeds the second preset alarm level (A2) the meter will give a fast alarm signal. The visual alarms will flash red rapidly and a fast audible alarm will be transmitted.
5. The textual icon of the gas that is triggering the alarm will blink to indicate the cause of the alarm. The alarm will continue as long as the measurement exceeds the preset alarm level.
6. The supplied sampling wand can be used to take spot measurements. The built-in default sensor/detector is automatically deactivated when the sampling wand is connected to the Student Unit’s connector (2). Measurements will then only be taken using the wand.

4.2–3. VIEWING MAXIMUM AND MINIMUM MEASURED VALUES ON THE STUDENT UNIT

1. Press and release the Power button briefly to view the maximum measured values on the display.
    a. The meter will show the maximum measured values on the display *(Figure 5)* and then automatically switch back to measuring mode after six seconds.
2. To delete the maximum values, press and hold the Power button for two seconds.
    a. The maximum measured values will be deleted. After six seconds, the Student Unit will automatically switch back to measuring mode.

3. Press the Power button **twice** briefly to view the minimum measured oxygen value on the display.
   a. The meter will show the minimum measured oxygen value on the display *(Figure 6)*, and then automatically switch back to measuring mode after six seconds.
4. To delete the minimum oxygen value, press and hold the Power button for two seconds.
   a. The minimum measured Oxygen value will be deleted. After six seconds, the Student Unit will automatically switch back to measuring mode.

4.2–4. TURNING OFF THE STUDENT UNIT'S POWER

1. **While in measuring mode,** press and hold the Power button for four seconds and the LION logo will appear on the display. The device will give a brief signal, both audible and visual. After the button is released the device will turn off.
   a. Make sure the unit is NOT displaying MAX or MIN as seen in *Figures 5 & 6*. If so, pressing and holding the power button will only delete those values and not turn off the Student Unit.

FIGURE 5: MAXIMUM VALUES DISPLAY

FIGURE 6: MINIMUM VALUES DISPLAY

continues

4.2–5. BATTERY LEVEL INDICATOR

The battery level is shown in the bottom right corner of the display. *Figure 7* explains the meanings of the symbols. When the battery is empty, the device gives two short signals (visual and audible) every 30 seconds to indicate that the battery needs to be recharged. Finish the training exercise and recharge the unit. If the battery power becomes too low, the device will switch itself off automatically, in order to prevent damage to the battery.

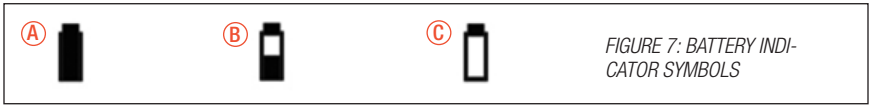

FIGURE 7: BATTERY INDICATOR SYMBOLS

A BATTERY FULLY CHARGED B BATTERY HALF CHARGED, RECHARGE NOT REQUIRED
C LOW BATTERY, RECHARGE TO AVOID DAMAGE

4.2–6. CHARGING

1. Connect the unit's charger connector (7) to the battery charger and plug the wall adaptor in the wall outlet.
2. If the device was powered on, it will be switched off automatically. The front green charging indicator (3) will start blinking. When the battery is full, the charging indicator will stay lit continuously.
3. When a battery is completely empty before recharging, the device will start a trickle charge cycle to prevent battery damage. The green charging indicator will stay lit. Leave the charger connected and the charger will safely recover the battery. After four to six hours the battery will be fully charged.
4. A normal full charging cycle for a non-depleted battery is approximately four hours.
5. The charging circuit continuously monitors the battery status and switches to trickle charge when the battery is fully charged.

4.3. INSTRUCTOR UNIT

4.3–1. OPERATION

The Instructor Unit is operated by means of four buttons. It features the same visual and audible alarms as the Student Unit. The Instructor Unit is used to monitor what the Student Unit is reading, and to adjust settings for the Student Unit, including alarm levels, type of gas being measured, and type of gas being manually adjusted. Most system settings are made via the Instructor Unit which sends them to the Student Unit via a wireless link.

Connector, controls and indicators of the Instructor Unit:

- (1) Visual alarm and charger indicator (top)
- (2) Optical alarm (front)
- (3) LCD display
- (4) Power button
- (5) Charger connector
- (6) Mode button
- (7) Up button
- (8) Down button

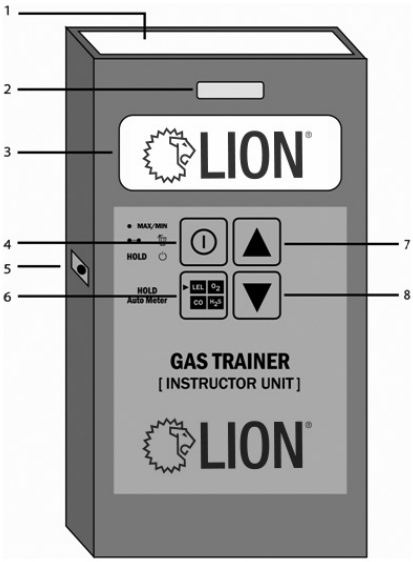

FIGURE 8: CONTROLS FOR THE INSTRUCTOR UNIT

1. To turn on the Instructor unit, press the Power button (4) briefly.
   a. The device will switch itself on and display a brief visual signal and a short beep. The device will then start up and briefly show the LION logo on the display *(Figure 8)*.
   b. The device will then automatically switch to measuring mode.
2. Four measurements are shown:
   a. Lower Explosion Limit (%LEL)
   b. Oxygen (%O_2)
   c. Hydrogen Sulfide (ppm H_2S)
   d. Carbon Monoxide (ppm CO)

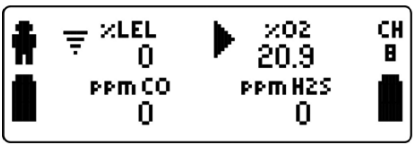

FIGURE 9: MEASURING MODE DISPLAY

continues

3. The emitter symbol, seen next to %LEL in *Figure 9,* shows which measurement is responding to the electronic GasSource emitters.
   a. The arrow symbol, shown at "%O_2" in *Figure 9*, shows which measurement is currently selected to be adjustable manually using the up (7) and down (8) buttons.
   b. The wireless communication channel and internal battery level are shown on the right.
   c. The Instructor Unit will continuously search for a Student Unit on the selected channel.
   d. If a Student Unit is present, the Student Unit indicator will show on the upper left side of the display *(Figure 9)*. The battery under the indicator gives information about the Student Unit's battery level. If no Student Unit is present, neither the Student Unit indicator nor the Student Unit battery symbol will show on the display.

4.3–2. MAXIMUM AND MINIMUM MEASURED VALUES – INSTRUCTOR UNIT

1. Press the Power button (4) briefly to show the maximum measured values preset on the linked Student Unit located on the display.
   a. The meter will show the maximum measured values on the display *(Figure 10)* and then automatically switch back to measuring mode after six seconds.
2. To delete the maximum measured Student Unit values, press and hold the Power button (4) for two seconds when the maximum measured values are shown.
   a. The maximum measured values will be deleted. After six seconds, the Student Unit will automatically switch back to measuring mode.
3. Press the Power button(4) **twice** briefly to show the minimum Student Unit measured oxygen value on the display.
   a. The meter will show the minimum measured oxygen value on the display *(Figure 11)*, and then automatically switch back to measuring mode after six seconds.
4. To <u>delete</u> the minimum measured Student Unit oxygen value, press and hold the Power button (4) for two seconds when the maximum measured values are shown.
   a. The minimum measured oxygen value will be deleted. After six seconds, the Student Unit will automatically switch back to measuring mode.

FIGURE 10: MAXIMUM VALUES DISPLAY

FIGURE 11: MINIMUM VALUES DISPLAY

continues >

4.3–3. ADJUSTING THE STUDENT UNIT VALUES MANUALLY

The Instructor may wish to enhance the realism of the training exercise by unexpectedly elevating gas measurements to test the trainee's skills.

1. Press the Mode button (6) briefly to switch the solid arrow between the three gases not being simulated by the emitters. The arrow is selecting oxygen in *Figure 9*.
   a. After each press, the arrow will move to the next gas. The gas being measured by the emitters can only be adjusted on the Instructor Unit.
2. Use the up (7) and down (8) buttons to adjust the level of the selected measurement to the desired level.
   a. The level will quickly increase/decrease in full increments of the last digit; e.g., 10→11 %LEL or 20.9→21 $\%O_2$. Holding the up or down button will increase/decrease the number.
3. The range of the four measurements:
   a. %LEL: 0–100 in increments of 1
   b. $\%O_2$: 0–25.5 in increments of 0.1
   c. ppm H_2S: 0–200 in increments of 1
   d. ppm CO: 0–500 in increments of 1

4.3–4. SETTING SIMULATED EMITTER GAS

1. Press and hold the mode button (6) for at least two seconds.
   a. The display will now show "Set ". See *Figure 12*. The emitter symbol in front of "%LEL" indicates that the Student Unit is detecting "%LEL" from the emitters.
2. Select the gas to be simulated by the emitters by briefly pressing the mode button (6).
   a. After each press, the emitter symbol will move to the next measurement.
3. Pressing the up or down arrow will change the measurement mode between the low (L) and high (H) measurement settings.
   a. The low setting caps the maximum display value at 1/3 of the normal range. This is useful when conducting low exposure training in a small closed environment.
   b. The high setting uses the entire display range of the student unit.
4. When the gas to be simulated has the "Set " to the right of it: briefly press the Power button (4) to set the gas and go back to measuring mode.

FIGURE 12: SET TRANSMITTER

4.3–5. TURNING OFF THE INSTRUCTOR UNIT'S POWER

1. While in measuring mode, press and hold the Power button for four seconds and the LION logo will appear on the display. The device will give a brief signal, visual and auditory, and will shut off when the button is released.
   a. Make sure the unit is NOT displaying MAX, MIN, SET A1, SET A2, or SET . If so, pressing and holding the power button will only delete those values and will not turn off the Unit.

continues

4.3–6. BATTERY LEVEL INDICATOR

The battery level is shown in the bottom right corner of the display. *Figure 13* explains the meanings of the symbols. When the battery is empty, the device gives two short signals (visual and audible) every 30 seconds to indicate that the battery needs to be recharged. Complete the training exercise, and then recharge the unit. If the battery power becomes too low, the device will switch itself off automatically in order to prevent damage to the battery.

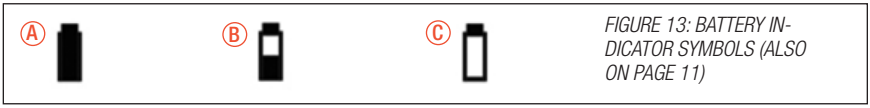

FIGURE 13: BATTERY INDICATOR SYMBOLS (ALSO ON PAGE 11)

A BATTERY FULLY CHARGED *B BATTERY HALF CHARGED, RECHARGE NOT REQUIRED*
C LOW BATTERY, RECHARGE TO AVOID DAMAGE

4.3–7. CHARGING

1. Connect unit's charger connector (5) to the battery charger and plug the wall adaptor in the wall outlet.
2. If the device was powered on, it will be switched off automatically. The front green charging indicator (1) will start blinking. When the battery is full, the charging indicator will stay lit continuously.
3. When a battery is completely empty before recharging, the device will start a trickle charge cycle to prevent battery damage. The green charging indicator will stay lit. Leave the charger connected and the charger will safely recover the batter. After four to six hours the battery will be fully charged.
4. A normal full charging cycle for a non-depleted battery is approximately four hours.
5. The charging circuit continuously monitors the battery status and switches to trickle charge when the battery is fully charged.

5. SETTING ALARMS, CHANNEL, AND LANGUAGE

The GasTrainer™ has two adjustable alarms that can be set for each gas: a low level alarm and a high level alarm. The low level alarm is comprised of an audible slow beeping and a slow flashing indicator light. The high level alarm will beep and flash faster than the low level alarm.

GasTrainer sets (Student Unit + Instructor Unit = One Set) have the capability of operating with eight channels per set. Users can adjust the sets to operate independently of each other on separate channels (e.g., Set 1 is set to operate on Channel 2 and Set 2 is set to operate on Channel 3) to allow for multiple concurrent training evolutions. Please note that these channels use the same radio frequency, therefore using more than one set in the same area may result in slower response times.

The GasTrainer set allows the user to set the language for indicating the explosive gas measurement. These options are available from the setup menu:

- %LEL – English
- %LIE – French
- %UEG – German

All settings are made on the Instructor Unit, and are then automatically transmitted to the Student Unit. All Student Units within reach of the wireless link will receive the settings, even if they are on a different channel. Upon detection of these settings, the Student Unit will ask the user to accept (press and hold the power button) or decline (briefly press the power button) these settings. Be sure to set up the settings correctly before accepting or declining them on the Student Unit.

A Student Unit will only ask for confirmation once. If a user accidentally makes the wrong selection (e.g., declining instead of accepting), leave the Instructor Unit in setup mode and switch the Student Unit off and on. The Student Unit will then resend the confirmation request.

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5.1. ENTERING SETUP MENU ON THE INSTRUCTOR UNIT

1. Be sure that the Instructor Unit is switched off.
2. Press and hold the Mode button (6).
3. With the mode button held, switch the device on using the Power Button (4).

5.2. SETTING LOW ALARM VALUES (A1)

1. The display will show “Set A1” and will also show the values that will trigger the preset low alarm levels. See *Figure 14*.
   a. When one of the measured values (or manually adjusted values in measuring mode) exceeds the preset values in this menu, both the Student Unit and the Instructor Unit will generate an alarm.

FIGURE 14: SET ALARM VALUES A1

2. Select the gas you would like to set the alarm for by briefly pressing the Mode button (6). After each press the arrow will move to the next gas.
3. Use the up (7) and down (8) buttons to adjust the alarm trigger for the selected gas to the desired level.
4. The range of the alarm levels is the same as for adjusting values manually.
5. Briefly press the Power button (4) to go back to measuring mode **OR**:

5.3. SETTING HIGH ALARM VALUES (A2)

1. Press and hold the Mode button (6) again for at least 2 seconds.
   a. The display will now show “Set A2” and the values shown are the triggers for the preset high alarm levels. When one of the measured values (or manually adjusted values in measuring mode) exceeds the preset values in this menu, both the Student Unit and the Instructor Unit will generate a rapid alarm. See *Figure 15*.
2. Select the gas you would like to set the alarm for by briefly pressing the Mode button (6). After each press the arrow will move to the next gas.
3. Use the up (7) and down (8) buttons to adjust the alarm trigger for the selected gas to the desired level.

FIGURE 15: SET ALARM VALUES A2

4. The range of the alarm levels is the same as for adjusting values manually.
5. Briefly press the Power button (4) to go back to measuring mode **OR**:

5.4. SETTING THE LANGUAGE AND CHANNEL

1. Press and hold the Mode button (6) again for at least 2 seconds. The screen will show an image as found in *Figure 16*.
2. Briefly pressing the Mode Button (6) will switch between language and channel.

FIGURE 16: SETUP MENU ON INSTRUCTOR UNIT

3. Use the up (7) and down (8) buttons to change the channels or language.
4. Leave the Instructor Unit in setup mode until you have confirmed the settings on the Student Unit.
5. After the settings have been accepted or declined on the Student Unit (see next page), the user can exit the setup menu and go back to measurement mode.

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6. Exit the setup menu on the Instructor Unit by pressing and holding the power button.
7. The device will briefly show the LION logo and then return to measurement mode.

5.5. ACCEPTING OR DECLINING SETTINGS ON THE STUDENT UNIT

Whenever a Student Unit receives setup information from a linked Instructor Unit, the Student Unit will ask for confirmation by showing a settings menu on the display *(Figure 17)*.

FIGURE 17: SETUP MENU ON STUDENT UNIT

Since all Student Units in the area will receive this information, the user can either accept or decline these settings.

1. The user can accept the settings by **pressing and holding** the Power button on the Student Unit.
   a. Be sure that the Student Unit is switched on and that you see the settings display.
   b. Press and hold the power button until the Student Unit goes into measurement mode.
   c. The Student Unit will now store the received settings.
2. The user can decline the settings by **briefly** pressing the power button on the Student Unit:
   a. Be sure that the Student Unit is switched on and that you see the settings display
   b. Press the power button shortly until the Student Unit goes into measurement mode
   c. The Student Unit will not store the received settings and will continue with the current settings.

6. INSPECTION AND MAINTENANCE

In order to ensure consistent training sessions, LION recommends that you regularly carry out the following inspection and maintenance checks, preferably prior to every training session:

- Inspect the system for damage to the casing or cables. Do not use the system if the cables are damaged or if the casing is damaged to such an extent that one might expect the system to possibly malfunction or pose a potential safety risk to the student or instructor. In the event of suspected extensive damage, contact the manufacturer and have the system repaired.
- Check the proper function of the system. Switch on one emitter and use the Student Unit to ensure that it is working properly. At the same time, check whether the measured value is sent to the Instructor Unit. Perform the same system checks for the other emitters.
- Make sure that the system is adequately charged when starting a training exercise. Low battery power can interrupt training scenarios.
- If necessary, clean the equipment with a damp cloth using a mild all-purpose household cleaning agent if necessary. The casing is NOT resistant to harsh chemicals such as alcohol, thinner or acetone.
- The usable lifetime of the batteries is limited. An average battery will last approximately one to two years depending on usage and care. If the length of time that one can work with the unit on a fully charged battery diminishes noticeably; we recommend that you have the batteries replaced. In order to obtain the maximum benefit from the system, we recommend that all the batteries be replaced at the same time. The batteries will hold their charge longer if you use the system regularly or at minimum, regularly recharge the batteries.

NOTE

All batteries drain slowly during periods of non-use. To preserve battery life, charge the GasTrainer™ and components once a month during long periods of storage.

7. FREQUENTLY ASKED QUESTIONS

This section deals with the most common malfunctions and/or errors and possible solutions. If you have any concerns or these FAQs do not answer your questions, please feel free to contact your distributor or LION for assistance.

> PROBLEM
The Student Unit is not detecting a signal from the emitters.

POSSIBLE SOLUTION
Ensure that all emitters in use are switched on. Check that all the power LEDs on the emitters are flashing. If the LED is not flashing but the device is switched on, the emitter's battery power may be too low. Charge the emitter and try again. If the problem persists, contact the manufacturer.

> PROBLEM
The Instructor Unit cannot detect the Student Unit, although both devices are switched on.

POSSIBLE SOLUTION
Check whether both devices are set to the same channel.

> PROBLEM
The Instructor Unit is not showing the measured values on the Student Unit.

POSSIBLE SOLUTION
Ensure that the batteries on both the Instructor and the Student Unit are sufficiently charged, and check whether both devices are within range. For the purposes of this test, hold them less than six feet apart. Switch off both devices, switch on the Instructor Unit first, followed by the Student Unit. If the problem persists, contact the manufacturer.

> PROBLEM

Either the Instructor Unit or the Student Unit is not responding to user commands or one of the units is showing a fault on the display.

POSSIBLE SOLUTION

Connect the device to the battery charger for at least five minutes, then disconnect it and switch the device back on.

> PROBLEM

When switching on the Instructor or Student Unit, it displays the LION logo, but then immediately switches itself off.

POSSIBLE SOLUTION

The battery is almost completely empty and the device switches itself off in order to prevent battery damage. Recharge the unit completely using the battery charger and try again. If the problem persists, contact the manufacturer.

8. WARRANTY INFORMATION

All parts including emitters, electronics, and charging equipment are covered and LION will provide replacement parts free of charge during the warranty period. The warranty period shall begin on the ship date and continue for one full year. Labor related to warranty repair is covered free of charge during the warranty period. Repair work, however, requires the prior approval of an authorized company official. LION labor costs are based on a predetermined rate schedule and any repair work must be done through an authorized LION dealer. This warranty covers labor and parts related defects. This warranty does not cover neglect, accidents, misuse, or negligence on the operator's part.

CONDITIONS AND LIMITATIONS

LION warrants its products against manufacturing defects to the original purchaser only – i.e., the individual or legal entity (registered customer) whose name appears on the invoice for the GasTrainer™ system, provided that the purchase was made through LION or an authorized LION dealer and is subject to the following conditions and limitations:

This factory warranty is nontransferable and may not be extended whatsoever by any of our representatives.

Assembly and use must be undertaken in accordance with the instructions included with the product and all local and national fire codes.

This Limited Warranty does not cover any damage caused by misuse, lack of maintenance, exposure to hostile environments, accident, alterations, abuse or neglect, and parts installed by other manufacturers will nullify the warranty.

This warranty extends to the repair or replacement of warranted parts which are defective in material or workmanship in the first year only, provided that the product has been operated in accordance with the operation instructions and under normal conditions.

After the first year, LION will not be responsible for replacement part expense, installation, labor or any other costs or expenses related to the reinstallation of a replacement part, and such expenses are not covered by this warranty.

Notwithstanding any provisions contained in this Limited Warranty, LION's responsibility under this warranty is defined as above and it shall not in any event extend to any incidental, consequential or indirect damages.

This warranty defines the obligations and liability of LION with respect to the LION GasTrainer™ and any other warranties expressed or implied with respect to this product.

This limited warranty does not cover damages resulting from the use of components not supplied with this product.

Any damages to this product due to weather, long periods of dampness, condensation, damaging chemicals or cleaners will not be the responsibility of LION.

The bill of sale or copy will be required together with a serial number and a model number when making any warranty claims from LION or authorized dealer.

LION reserves the right to have its representative inspect any product or part thereof prior to honoring any warranty claim.

LION or its representatives shall not be liable for any transportation charges, labor charges or duties.

9. CONTACT INFORMATION

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NOTES

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