# Acusensor Instruction Manual

**For GyroTech Entrance Systems**

GYRO TECH
ENTRANCES
LANSON INDUSTRIES INC.

Part #158911

2/96 - 500

# Acusensor Instruction Manual

**For Gyro Tech Entrance Systems**

## To The Installer

The purpose of this manual is to familiarize you with the proper installation of this door sensor system. It is essential this equipment be properly installed and operational before use by the public. It is your responsibility to inspect the operation of the door to be sure it complies with the applicable standards. In the USA, ANSI Standards 156.10 and 156.19 usually cover the operation of the doors. If other standards are applicable for your installation, use them wherever ANSI is referenced.

## 1. Overview

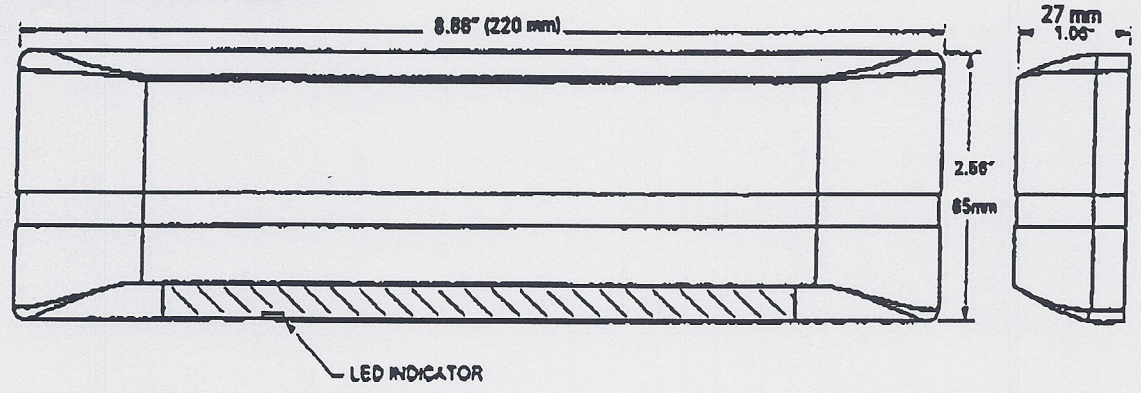
The Acusensor system is an active infrared type of sensor, controlled by a microcomputer. The computer will first memorize the detection area. Reflected rays within the detection area are continuously analyzed to determine change, which in turn will cause a signal to be sent to the door controller. This unit can be used as a motion sensor. The active infrared-based design allows for a very accurate detection area with minimal interference by objects outside the detection area. The design also accommodates multiple Acusensors to be used in closer proximity for multiple door installations. The Acusensor also can be used in combination with other Lanson sensors.

## 2. Specifications

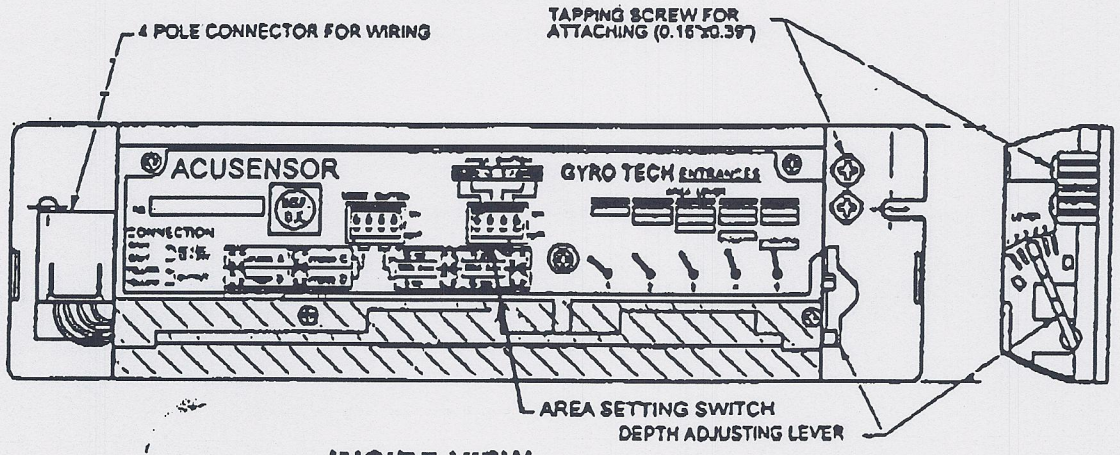
| | |
|---|---|
| Product Name | Acusensor |
| Sensing System | Active Reflecting Infrared |
| Power Source Options | AC12-24V (50 or 60 Hz), DC 12-24V |
| Power Required | 70 mAmp at 12V DC |
| Recommended Temperature Range | -20C- + 60C, -4F- + 140F |
| Output Relay Contact Rating | AC125V/0.5A, DC 24V/1A |
| Indicators | Green-Power is on. Acusensor is ready<br>Amber-Acusensor is analyzing images<br>Red-Acusensor is sending activation signal<br>Power Off - LED Off |
| Standstill New Memory Time | High Sensitivity - 30 or 300 seconds<br>Low Sensitivity - 15 or 90 seconds |
| Factory Setting for New Memory Time and Sensitivity | High Sensitivity and 300 seconds |
| Maximum Recommended Installation Height | 118 inches above detection area |
| Maximum Detection Area | 91 inches by 75 inches when mounted at 118 inches with depth adjusting lever in position #5. (See chart page 4 for other detection areas and settings). |

| | |
|---|---|
| Adjustment Options | Installation Height - Will impact overall detection area<br>Detection Width - Four of seven zones can be turned off<br>Detection Length - Adjustment lever position 1 to 5.<br>Sensitivity - Low and High options<br>New Memory Time - 15 and 90 seconds on Low sensitivity and 30 and 300 seconds on High Sensitivity. |
| Color | Black |
| Weight | 6.5 oz, 185 grams |
| Lanson Industries Part Number | 148902 |

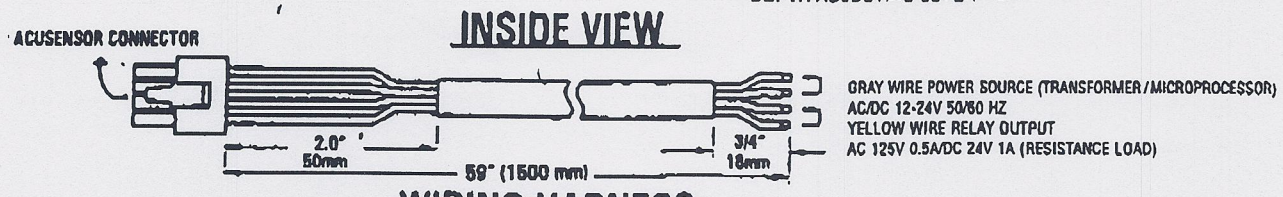
## 3. Appearance and Dimensions




OUTSIDE VIEW




INSIDE VIEW




WIRING HARNESS

## 4. Installation and Adjustments

### a. Installation

The Acusensor unit is installed on the header or other similar mounting surface with two screws as shown. A template is provided to assist in locating and drilling the mounting holes and the hole for the wiring. Be sure the unit is level and tight against the mounting surface. The Acusensor unit will detect the area parallel to the mounting surface. If the mounting surface is not vertical or if it is necessary to move the detection area in or out from the door, small shims can be used to make the necessary adjustments. The unit must be mounted such that it does not read the movement of the door.

Under normal circumstances the unit will be mounted in the center of the door opening on the entrance header and up to 118" above the detection area. The Acusensor may be mounted above the header. The dip switches have been pre-set at the factory for a normal installation. These settings are:

Depth Coverage - position 5 (maximum depth)

Width Coverage - All seven zones

Sensitivity Setting - High

New Memory Timer - 5 minutes (300 seconds)

These settings can be changed to meet special requirements by following the steps outlined below. **Note: If settings are changed to meet local condition, care must be taken to assure adequate sensing is achieved for satisfactory door use. It is recommended the power be turned off to make any changes. After any change the power must be reset. Wait three (3) minutes before checking the operation of the unit.**

The initial set up requires simply:

1. plug the wiring harness into the 4 pole connector on the Acusensor,
2. attach the gray power source wire to the transformer, microprocessor controller or other suitable power source,
3. attach the yellow wires to the activate input circuit of the control box,
4. turn on the power and wait three (3) minutes to calibrate. (Note: There can not be any motion within the sensing zones during this time.)

### b. Setting the Depth Coverage with the Depth Adjusting Lever

There are five options for the depth of coverage. The options are achieved by moving the position of the area lever on the side of the unit. Position 1 provides the least area of coverage and position 5 the greatest area of coverage. Normally, maximum coverage is preferred. Depending upon the use of the Acusensor other settings may be suitable.

**As an Activating Sensor**

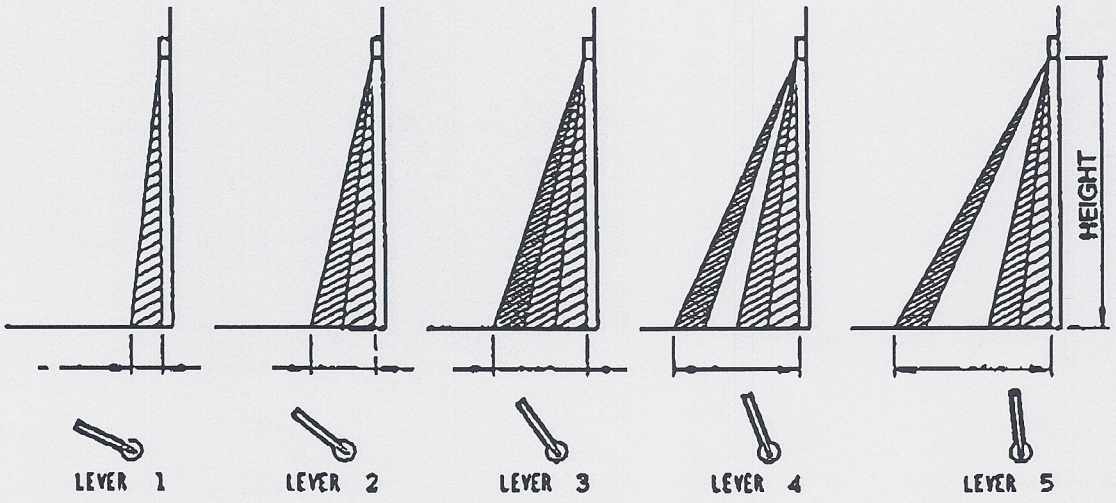
When the Acusensor unit is intended to be used as a door-activating and threshold-sensing device, the depth of coverage should comply with ANSI requirements. Under normal conditions, the depth lever should be set to position #5, the sensitivity on high and the new memory timer for 300 seconds. This

will provide the maximum coverage with the greatest sensitivity and adequate time to sense slow moving or still people or objects.

**Use as a Presence/Threshold Sensor Only**

When other sensors are being used for the activation function, it may be desirable (but not necessarily required) to reduce the sensing coverage area of the Acusensor unit. Adequate threshold coverage might be achieved by setting the area lever to positions #1 or #2. Coverage should be checked to be sure it is adequate. For maximum sensing of slow moving or still people or objects, the sensitivity option should be on high and the time set for 300 seconds.

Turn off the power while making changes.




| | Typical Depth of Coverage (in/mm) Lever Position | | | | |
|---|---|---|---|---|---|
| **Mounting Height** | **1** | **2** | **3** | **4** | **5** |
| 32" (813mm) | 7 (178) | 13.5 (343) | 20.5 (521) | 27 (686) | 34 (864) |
| 84" (2134mm) | 11.5 (292) | 23.5 (597) | 28.5 (724) | 47 (1194) | 59 (1499) |
| 118" (3000mm) | 15 (381) | 30 (762) | 45 (1143) | 60 (1524) | 75 (1905) |

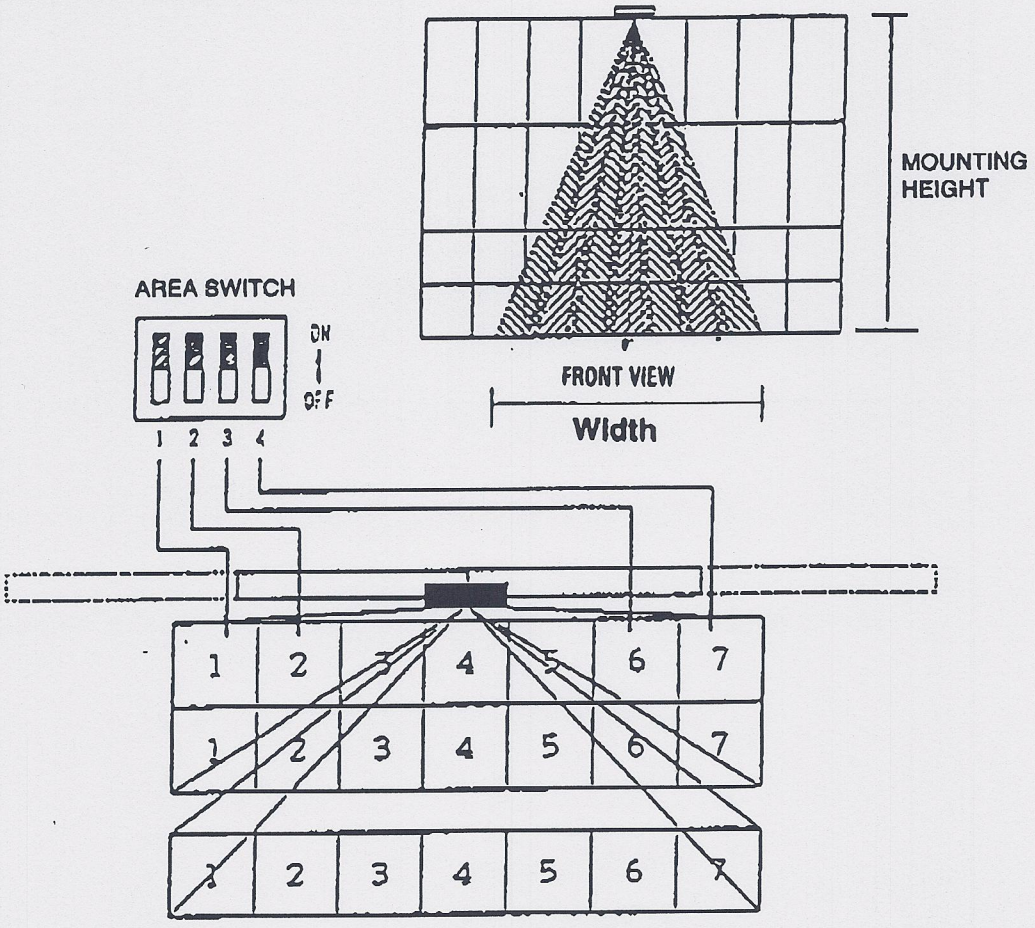
The width and depth of coverage of an actual installation may vary slightly from these charts. This is typically the result of:

1. actual mounting height may be different
2. normal manufacturing and component tolerances
3. field measurement procedures and conditions may be slightly different from the ANSI standards

### c. Setting the Width of Coverage

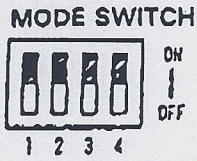
The coverage width is achieved in seven increments as shown. Up to four (4) increments of detection width can be turned off, resulting in a corresponding reduction in coverage for the entire depth. This may prove useful for narrower openings such as with single slide units. Detection areas 1, 2, 6 and 7 can be turned off. Under normal conditions, for maximum sensing all seven (7) areas should be used. If any detection area is turned off, it will be necessary to check the detection area to be sure ANSI standards are achieved.

Turn off the power while making any changes.




| Mounting Height | Typical Width of Coverage | |
|---|---|---|
| | All Sensors ( 1 - 7) | Coverage Deduction Per Area Switch |
| 32" (815mm) | 39" (990mm) | 5.6" (142mm) |
| 84" (2134mm) | 70" (1775mm) | 10" (254mm) |
| 118 (3000mm) | 91" (2320mm) | 13" (330mm) |

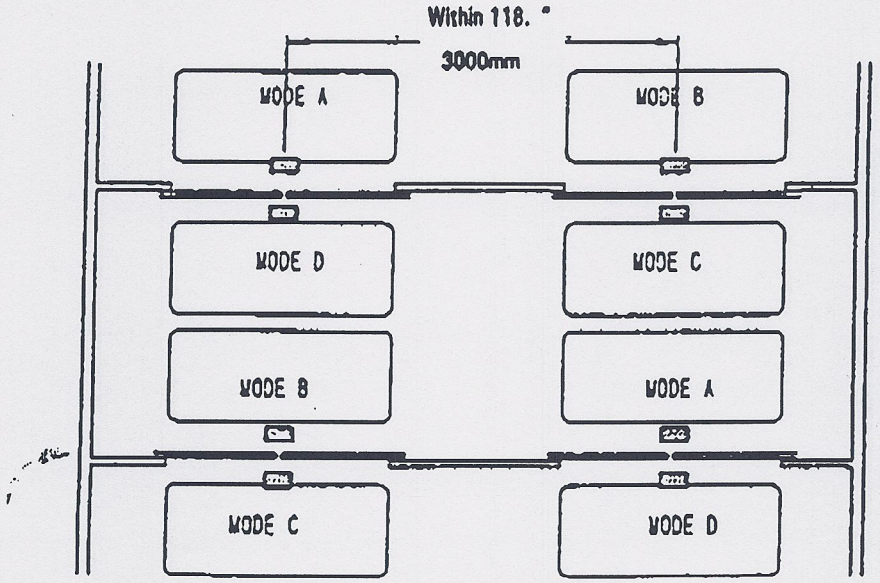
## d. Detection Mode Settings




| No | ITEM | SW | CONTENTS |
|---|---|---|---|
| 1 | MUTUAL INTERFERENCE PREVENTING MODE | 1—ON 2—ON | MODE A |
| | | 1—ON 2—OFF | MODE B |
| 2 | | 1—OFF 2—ON | MODE C |
| | | 1—OFF 2—OFF | MODE D |
| 3 | SENSITIVITY SET | ON | SENSITIVITY (HIGH) |
| | | OFF | SENSITIVITY (LOW) |
| 4 | STANDSTILL NEW MEMORY TIME SET | ON | SENSITIVITY (HIGH) : 30 SEC |
| | | | SENSITIVITY (LOW) : 15 SEC |
| | | OFF | SENSITIVITY (HIGH) : 5 MIN |
| | | | SENSITIVITY (LOW) : 90 SEC |

### d-1. Mutual Interference Prevention Mode

When multiple Acusensors are used in close proximity to each other (approximately 118" or less), such as in a vestibule, the use of different modes will help prevent mutual interference. Four modes are possible through a combination of positions on switches #1 and #2. The following is an example of one combination which might be used in a vestibule.



**d-2. Sensitivity Setting**

Under normal circumstances the high sensitivity mode should be used. If there are unusual snow, rain or other circumstances which cause unusual opening of the door, the low sensitivity mode will reduce this occurrence. Care must be taken to assure adequate sensing is maintained.

Turn off the power while making any changes.

**g. Standstill New Memory Timer**

The Acusensor's computer will establish a memory pattern of the total detection area when the power is turned on. Changes within this detection area from that first memorized, whether on the floor or at any plane above the floor, will generate the signal to open the door. The base memory pattern will change automatically after the selected time lapses when there is no movement within the detection area. The frequency at which this memory pattern changes can be adjusted within predetermined patterns as shown above by changing the dip switches #3 and #4 (time and sensitivity).

Turn off the power while making changes.

## Trouble Shooting

| Condition | Possible Causes/Solutions |
|---|---|
| **Door Recycles Open** | 1. The Acusensor is mounted on an angle on the header and is seeing the door.<br>***Solution:*** Change angle of sensor with a shim.<br>2. There are moving plants, curtains, mats or other moving items within the detection area.<br>***Solution:*** Remove the objects.<br>3. Fresh snow or hard rains.<br>***Solution:*** Clear away the snow or water puddles. Option to reduce the sensitivity. |
| **Space Close to the Door Not in the Detection Area** | 1. The Acusensor is mounted on an angle on the header. Remount the Acusensor and shim as required. |
| **Changes in the setting do not have an impact** | 1. Need to reset the power.<br>2. Need to wait three (3) minutes after any changes |
| **Rain or snow conditions cause recycling** | 1. The unit will normally self-adjust slightly after a few cycles. If the problem is objectionable and persists try:<br>a. low sensitivity<br>b. shorter new memory time |
| **In multiple installations the doors recycle** | 1. There may be mutual interference. Change the detection mode switches. |

| | |
|---|---|
| **Unit does not appear to sense the full detection area** | If the power had been turned off, the unit may not have calibrated properly. Allow three (3) minutes learning time without any moving object in the sensing area. |
| **Unit does not appear to sense the published detection area** | The typical "walk" test can introduce unmeasurable variables which may appear to result in a smaller pattern. Retest the unit and the activation area with an ANSI sized dummy (28" tall and approximately 6 1/4" diameter"), record the activation area based upon this device. If the results still do not comply with ANSI requirements and the chart contact Lanson Industries Customer Service Department. If the instructions are to return the unit, include the records of the activation area measurements plus the temperature and environmental conditions (rain, snow, sun etc.). |

It is your responsibility as the installer to be sure this equipment is operating properly before you leave the jobsite. The building owner/operator should be instructed on the essentials of the operation of the door and this device. Through this instruction he should know if the door or this sensor is not operating properly and to call you if there is any type of malfunction. When completed, this unit and the total door system should be operating in accordance with the applicable ANSI Standard.

If there are any problems in the operation of this unit call the Customer Service Department at 414-679-2520 for assistance.