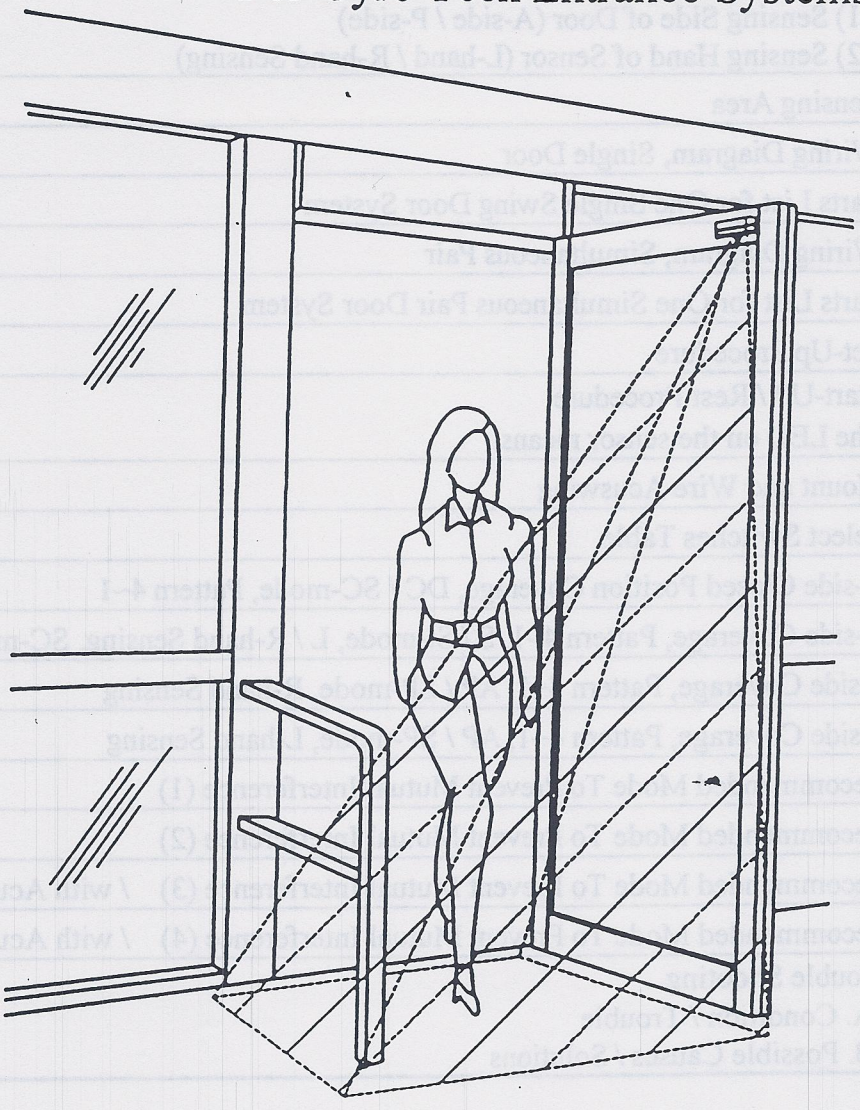
Draft for Limited Use Only
Not for Publication
**Revision Date : March 14, 1997**

# Acuswing Instruction Manual

## *For V42 Samples*

For Gyro Tech Entrance Systems



**GYRO TECH**
ENTRANCES
LANSON INDUSTRIES, INC

**Part #159505**

# Table of Contents

## To the Installer

The purpose of this manual is to familiarize you with the proper installation of this door control 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 is operating properly. In the USA, ANSI standards 156.10 and 156.19 usually cover the operation of the doors. If other standards/codes are applicable for your specific installation, use them to the degree required.

1. Overview

The Acuswing system is an active infrared type of sensor controlled by a microcomputer. The sensor is mounted near the top of the door near the leading edge. The computer inside the sensor will first memorize the detection area for the path of the swing door based upon reflected rays. As the door is used, the reflected rays are then continuously analyzed to determine change, which in turn will cause a signal to be sent to the door controller. 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 Acuswing sensors to be used in closer proximity for multiple door installations. (See the following pages for specifics.) Under normal circumstances, an approach sensor such as the Acusensor, mounted on the header will also be desirable. The Acuswing sensor system must be used only with Gyro Tech microprocessor and the designed Gyro Tech swing operator.

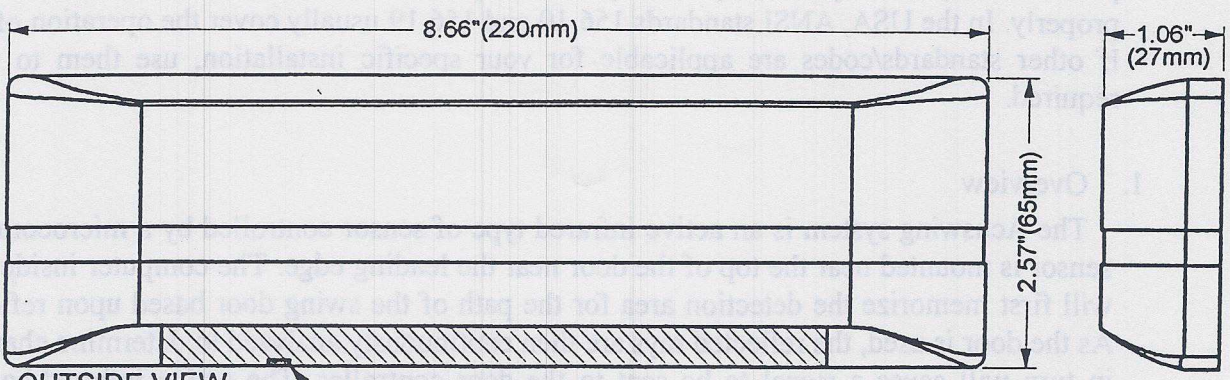
2. Specifications

| | | |
|---|---|---|
| 1 | Product Name | **ACUSWING** |
| 2 | Sensing System | Active Reflecting Infrared |
| 3 | Power Source | DC12V |
| 4 | Power Required | 125 m·Amp. (max.) |
| 5 | Recommended Temperature Range | -20℃ to 60℃, -4°F to 140°F |
| 6 | Mounting Height | 78" to 98", 2000mm to 2500mm |
| 7 | Output Relay Contact Rating | DC24V / 0.5A |
| 8 | Indicators | LED (Green / Red / Amber) |
| 9 | **Applicable Controller** | **GT-248901 Microprocessor Controller Only** |
| 10 | Color | Black |
| 11 | Weight | 195 g, 6.9 oz |
| 12 | Gyro Tech Part Number | 249282 |

3. Adjustment Options

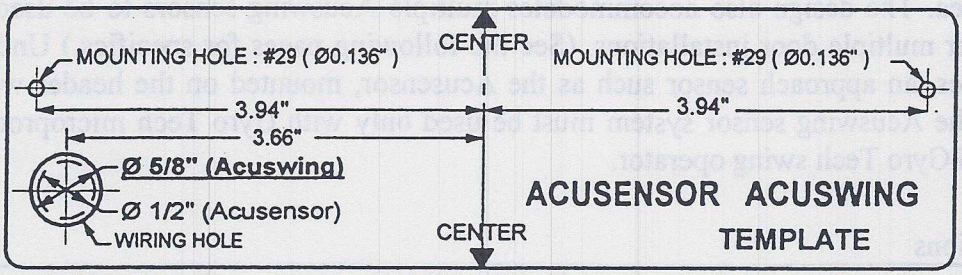
| | | |
|---|---|---|
| 1 | Sensing Side of Door | Activate / Presence Side |
| 2 | Sensing Hand of Sensor | Left / Right Hand |
| 3 | Door Condition | Single Door / Simultaneous Pair |
| 4 | Sensitivity | High / Low Sensitivity |
| 5 | Coverage Size | Pattern 4 , 3 , 2 , 1 |
| 6 | Presence Detection | Standstill New Memory Time / Forever |
| 7 | Standstill New Memory Time | 15, 30, 90, 300 seconds |
| 8 | P-side Pattern (opening cycle) | Active / Steady Pattern |
| 9 | A-side Coverage (closed position) | Deep / Standard Coverage |
| 10 | Mutual Interference Prevention | Mode A , B , C , D |

# Appearance and Dimensions

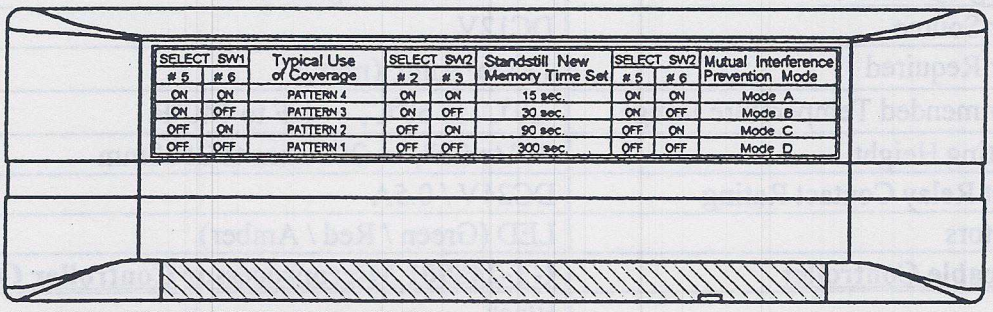



OUTSIDE VIEW

LED INDICATOR

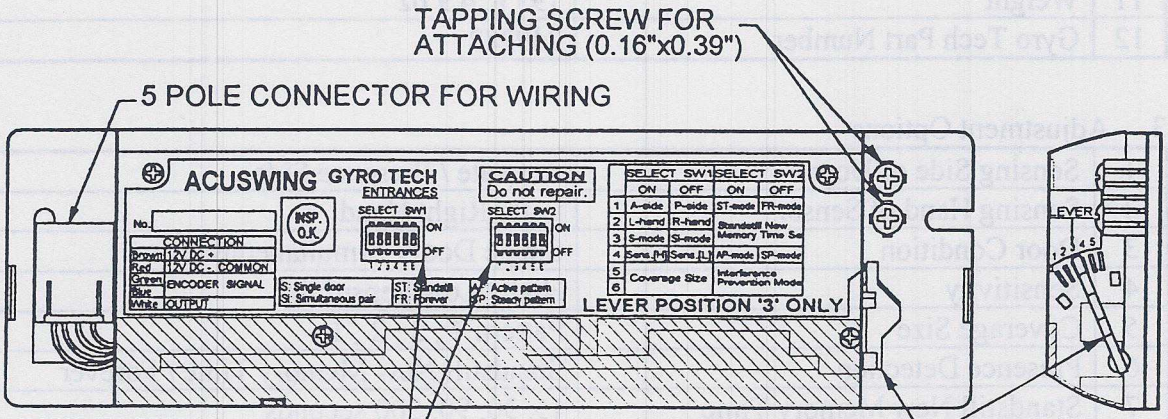



TEMPLATE



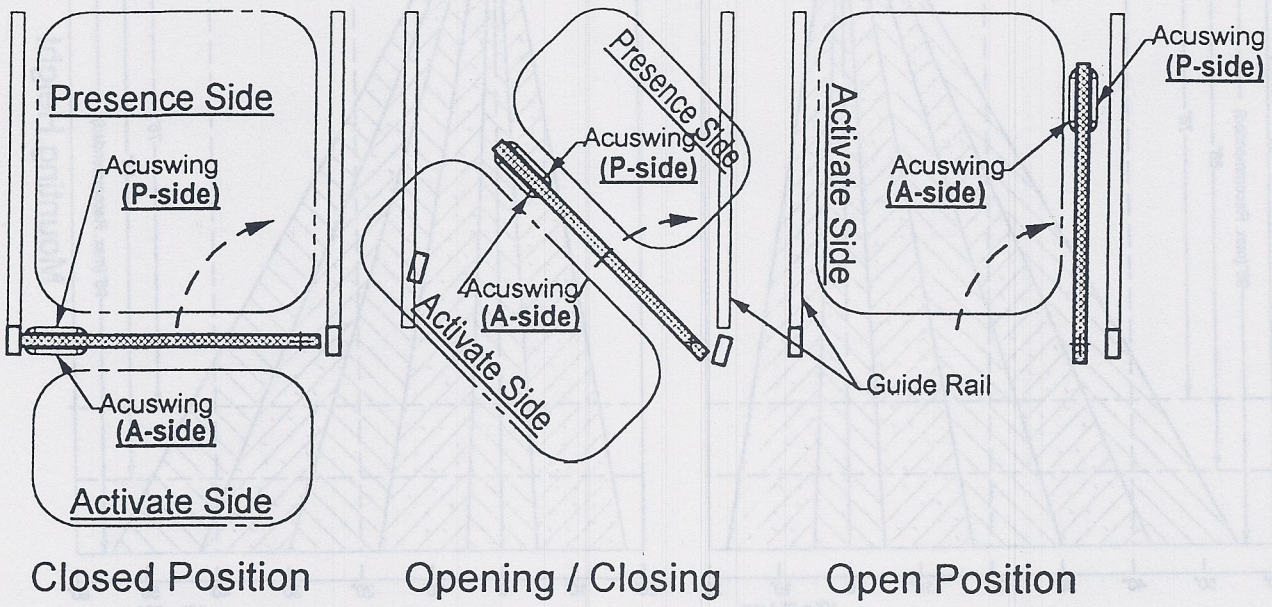
| SELECT SW1 # 5 | SELECT SW1 # 6 | Typical Use of Coverage | SELECT SW2 # 2 | SELECT SW2 # 3 | Standstill New Memory Time Set | SELECT SW2 # 5 | SELECT SW2 # 6 | Mutual Interference Prevention Mode |
|---|---|---|---|---|---|---|---|---|
| ON | ON | PATTERN 4 | ON | ON | 15 sec. | ON | ON | Mode A |
| ON | OFF | PATTERN 3 | ON | OFF | 30 sec. | ON | OFF | Mode B |
| OFF | ON | PATTERN 2 | OFF | ON | 90 sec. | OFF | ON | Mode C |
| OFF | OFF | PATTERN 1 | OFF | OFF | 300 sec. | OFF | OFF | Mode D |

LABEL ON INSIDE OF COVER

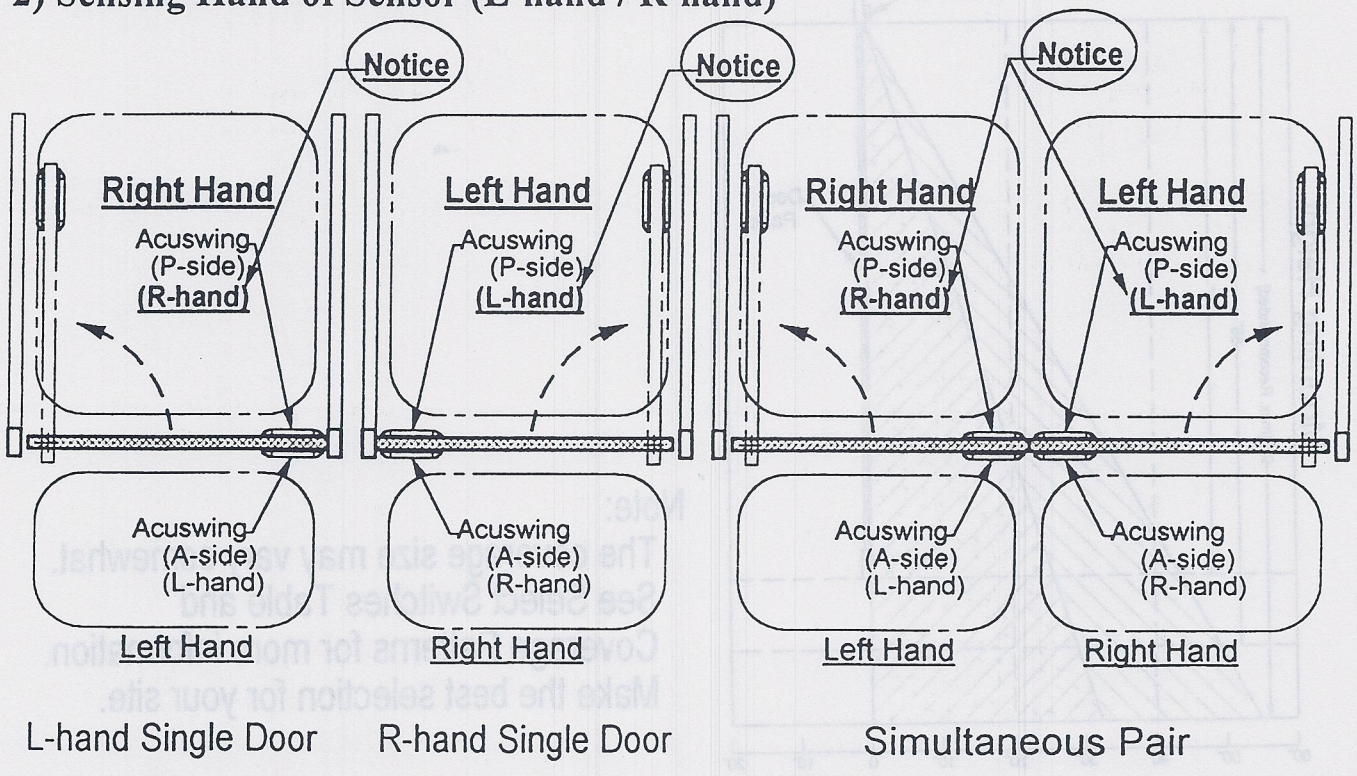


# Definition of Sensing Side of Door and Sensing Hand of Sensor

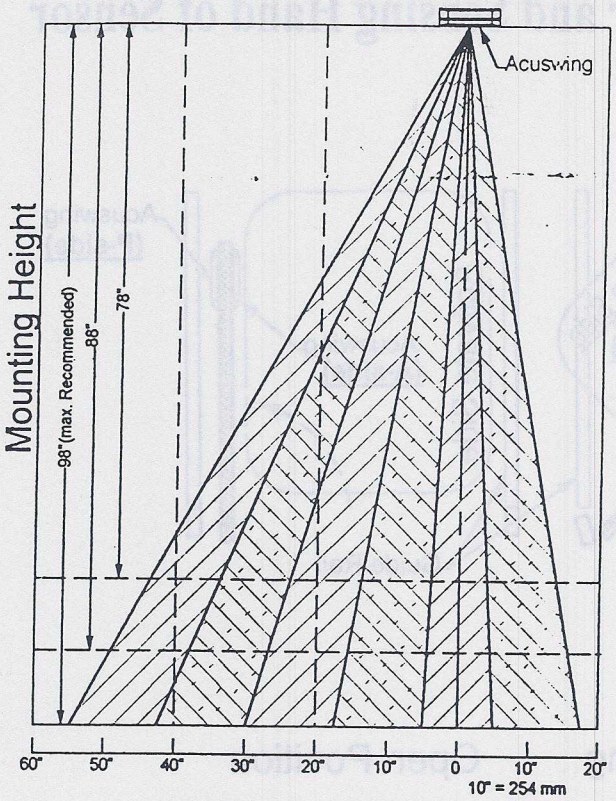
## 1) Sensing Side of Door (A-side / P-side)



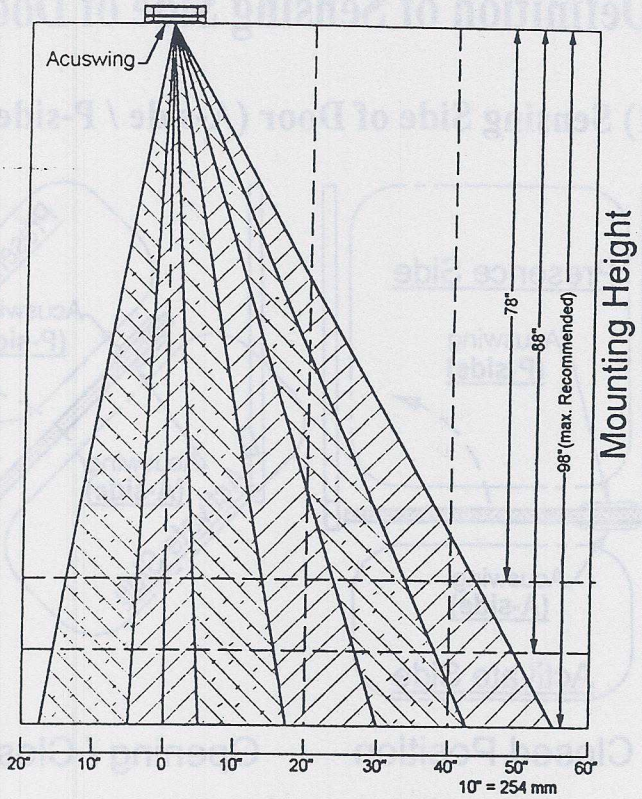

## 2) Sensing Hand of Sensor (L-hand / R-hand)



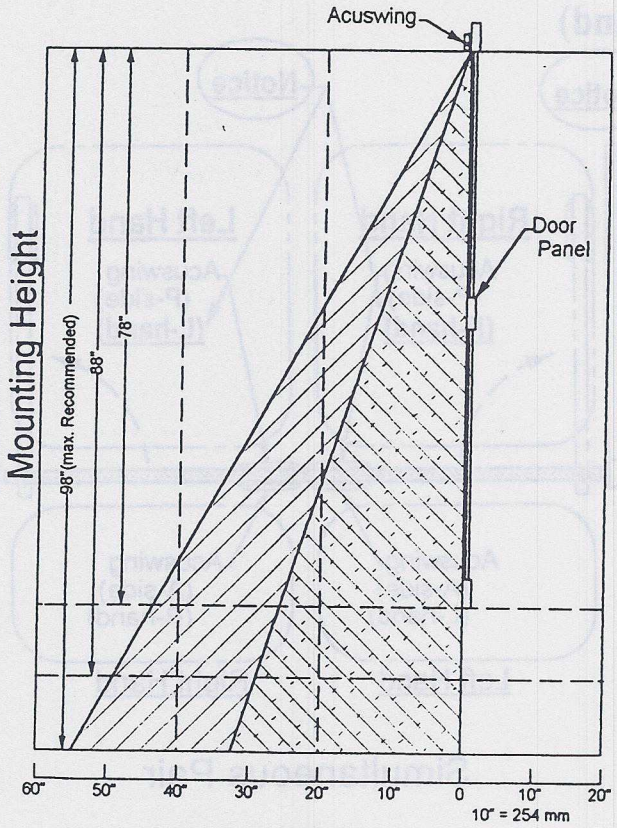
# Sensing Area




L-hand : Front View

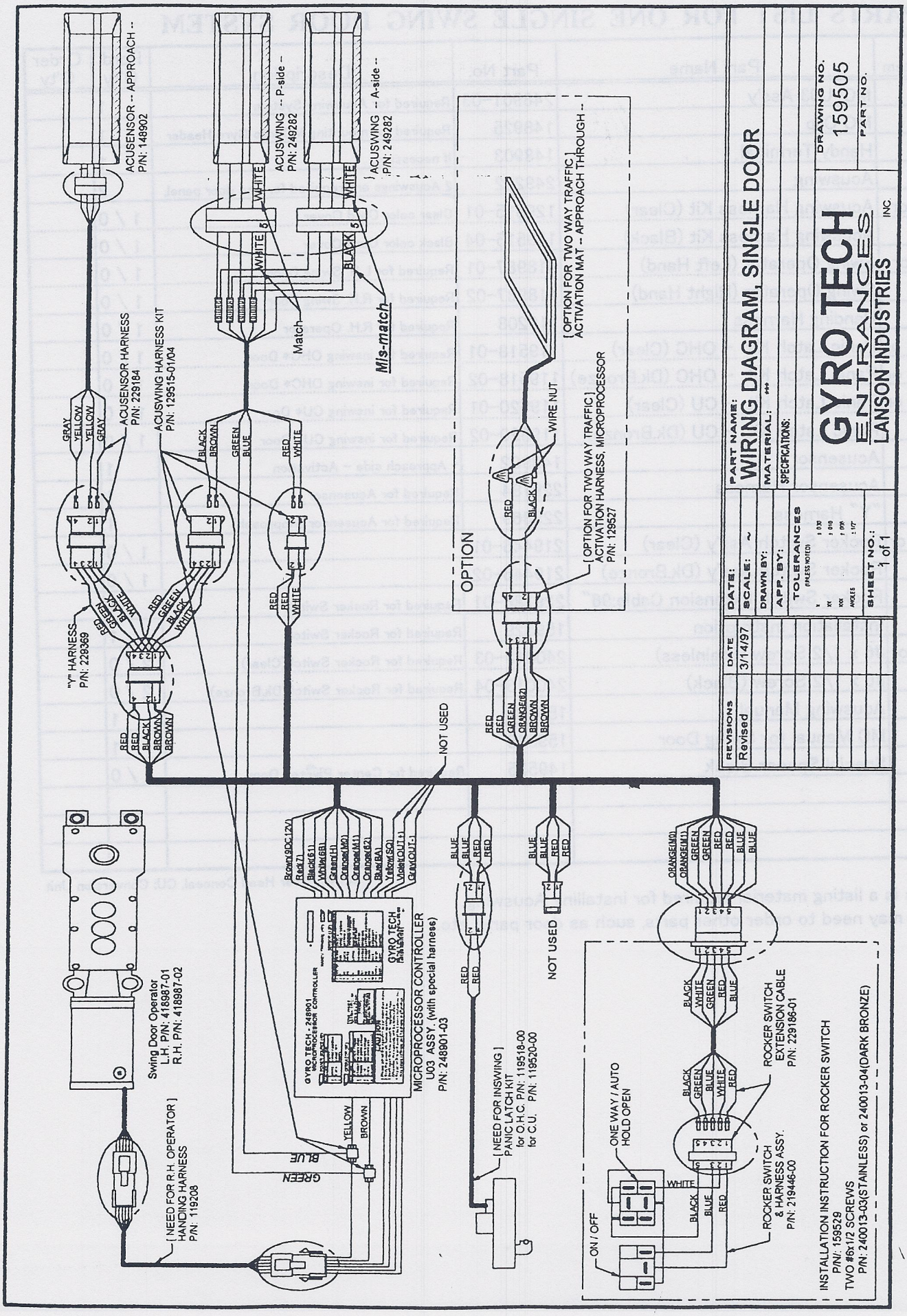



R-hand : Front View




Side View

Note:
The coverage size may vary somewhat. See Select Switches Table and Coverage Patterns for more information. Make the best selection for your site.

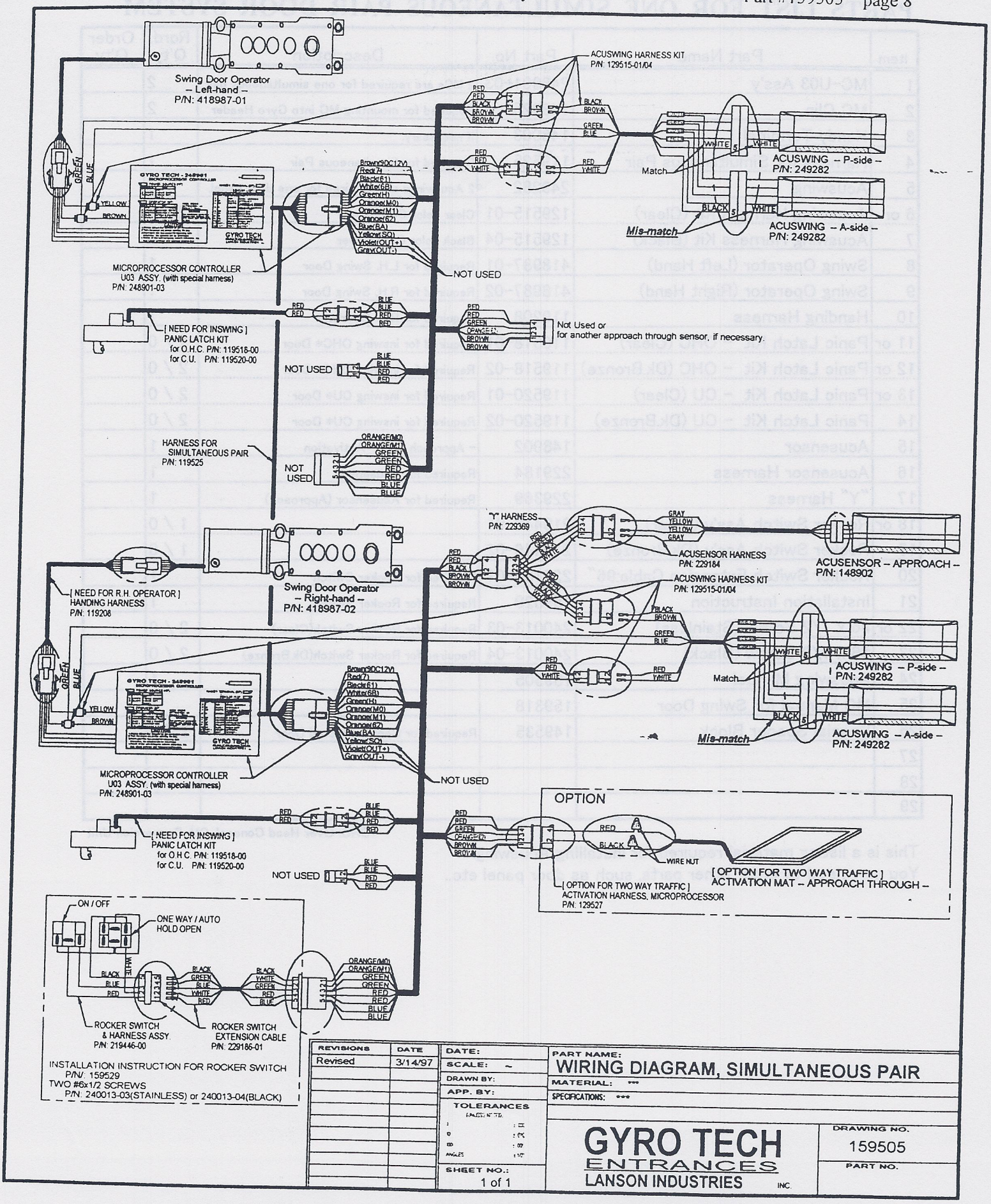

ACUSENSOR -- APPROACH --
P/N: 148902
ACUSWING -- P-side --
P/N: 249282
ACUSWING -- A-side --
P/N: 249282
WHITE
BLACK
Match
Mis-match
ACUSENSOR HARNESS
P/N: 229184
ACUSWING HARNESS KIT
P/N: 129515-01/04
GRAY
YELLOW
BLACK
BROWN
GREEN
BLUE
RED
WHITE
"Y" HARNESS
P/N: 229369
[OPTION FOR TWO WAY TRAFFIC]
ACTIVATION MAT -- APPROACH THROUGH --
WIRE NUT
OPTION
[OPTION FOR TWO WAY TRAFFIC]
ACTIVATION HARNESS, MICROPROCESSOR
P/N: 129527
ORANGE(62)
NOT USED
Swing Door Operator
L.H. P/N: 418987-01
R.H. P/N: 418987-02
[NEED FOR R.H. OPERATOR]
HANDING HARNESS
P/N: 119208
YELLOW
BROWN
BLUE
GREEN
GYRO TECH - 248901
MICROPROCESSOR CONTROLLER
MICROPROCESSOR CONTROLLER
U03 ASSY. (with special harness)
P/N: 248901-03
[NEED FOR INSWING]
PANIC LATCH KIT
for O.H.C. P/N: 119518-00
for C.U. P/N: 119520-00
ORANGE(M0)
ORANGE(M1)
ROCKER SWITCH
EXTENSION CABLE
P/N: 229186-01
ROCKER SWITCH
& HARNESS ASSY.
P/N: 219446-00
ONE WAY / AUTO
HOLD OPEN
ON / OFF
INSTALLATION INSTRUCTION FOR ROCKER SWITCH
P/N: 159529
TWO #6x1/2 SCREWS
P/N: 240013-03(STAINLESS) or 240013-04(DARK BRONZE)
REVISIONS
Revised
DATE
3/14/97
DATE:
SCALE: ~
DRAWN BY:
APP. BY:
TOLERANCES
(UNLESS NOTED)
PART NAME:
WIRING DIAGRAM, SINGLE DOOR
MATERIAL: ***
SPECIFICATIONS:
GYRO TECH
ENTRANCES
LANSON INDUSTRIES INC.
DRAWING NO.
159505
PART NO.
SHEET NO.:
1 of 1

# PARTS LIST FOR ONE SINGLE SWING DOOR SYSTEM

| Item | Part Name | Part No. | Description | Rqrd. Q'ty | Order Q'ty |
|---|---|---|---|---|---|
| 1 | MC-U03 Ass'y | 248901-03 | Required for Acuswing System | 1 | |
| 2 | MC Clip | 148925 | Required for mounting MC into Gyro Header | 1 | |
| 3 | Handy Terminal | 148903 | If necessary. | 1 | |
| 4 | Acuswing | 249282 | 2 Acuswings are required for one door panel. | 2 | |
| 5 or | Acuswing Harness Kit (Clear) | 129515-01 | Clear color Cord Cover | 1 / 0 | |
| 6 | Acuswing Harness Kit (Black) | 129515-04 | Black color Cord Cover | 1 / 0 | |
| 7 or | Swing Operator (Left Hand) | 418987-01 | Required for L.H. Swing Door | 1 / 0 | |
| 8 | Swing Operator (Right Hand) | 418987-02 | Required for R.H. Swing Door | 1 / 0 | |
| 9 | Handing Harness | 119208 | Required for R.H. Operator | 1 / 0 | |
| 10 or | Panic Latch Kit - OHC (Clear) | 119518-01 | Required for inswing OHC* Door | 1 / 0 | |
| 11 or | Panic Latch Kit - OHC (Dk.Bronze) | 119518-02 | Required for inswing OHC* Door | 1 / 0 | |
| 12 or | Panic Latch Kit - CU (Clear) | 119520-01 | Required for inswing CU* Door | 1 / 0 | |
| 13 | Panic Latch Kit - CU (Dk.Bronze) | 119520-02 | Required for inswing CU* Door | 1 / 0 | |
| 14 | Acusensor | 148902 | - Approach side - Activation | 1 | |
| 15 | Acusensor Harness | 229184 | Required for Acusensor | 1 | |
| 16 | "Y" Harness | 229369 | Required for Acusensor (Approach) | 1 | |
| 17 or | Rocker Switch Ass'y (Clear) | 219446-01 | | 1 / 0 | |
| 18 | Rocker Switch Ass'y (Dk.Bronze) | 219446-02 | | 1 / 0 | |
| 19 | Rocker Switch Extension Cable:96" | 229186-01 | Required for Rocker Switch | 1 | |
| 20 | Installation Instruction | 159529 | Required for Rocker Switch | 1 | |
| 21 or | #6 x 1/2 Screw (Stainless) | 240013-03 | Required for Rocker Switch(Clear) | 2 / 0 | |
| 22 | #6 x 1/2 Screw (Black) | 240013-04 | Required for Rocker Switch(Dk.Bronze) | 2 / 0 | |
| 23 | Acuswing Manual | 159505 | | 1 | |
| 24 | MC Manual for Swing Door | 159318 | | 1 | |
| 25 | Special Spacer Block | 149535 | Required for Center Pivoted Door | 1 / 0 | |
| 26 | | | | | |
| 27 | | | | | |
| 28 | | | | | |

*OHC: Over Head Conceal, CU: Conversion Unit

This is a listing material required for installing Acuswing.
You may need to order other parts, such as door panel etc..


Swing Door Operator
– Left-hand –
P/N: 418987-01
ACUSWING HARNESS KIT
P/N: 129515-01/04
ACUSWING – P-side –
P/N: 249282
ACUSWING – A-side –
P/N: 249282
Match
Mis-match
MICROPROCESSOR CONTROLLER
U03 ASSY. (with special harness)
P/N: 248901-03
NOT USED
[ NEED FOR INSWING ]
PANIC LATCH KIT
for O.H.C. P/N: 119518-00
for C.U. P/N: 119520-00
Not Used or
for another approach through sensor, if necessary.
HARNESS FOR
SIMULTANEOUS PAIR
P/N: 119525
"Y" HARNESS
P/N: 229369
ACUSENSOR HARNESS
P/N: 229184
ACUSENSOR – APPROACH –
P/N: 148902
[ NEED FOR R.H. OPERATOR ]
HANDING HARNESS
P/N: 119208
Swing Door Operator
– Right-hand –
P/N: 418987-02
OPTION
[ OPTION FOR TWO WAY TRAFFIC ]
ACTIVATION MAT – APPROACH THROUGH –
[ OPTION FOR TWO WAY TRAFFIC ]
ACTIVATION HARNESS, MICROPROCESSOR
P/N: 129527
WIRE NUT
ON / OFF
ONE WAY / AUTO
HOLD OPEN
ROCKER SWITCH
& HARNESS ASSY.
P/N: 219446-00
ROCKER SWITCH
EXTENSION CABLE
P/N: 229186-01
INSTALLATION INSTRUCTION FOR ROCKER SWITCH
P/N: 159529
TWO #6x1/2 SCREWS
P/N: 240013-03(STAINLESS) or 240013-04(BLACK)
REVISIONS
DATE
Revised
3/14/97
DATE:
SCALE: ~
DRAWN BY:
APP. BY:
TOLERANCES
SHEET NO.:
1 of 1
PART NAME:
WIRING DIAGRAM, SIMULTANEOUS PAIR
MATERIAL: ***
SPECIFICATIONS: ***
GYRO TECH
ENTRANCES
LANSON INDUSTRIES INC.
DRAWING NO.
159505
PART NO.

# PARTS LIST FOR ONE SIMULTANEOUS PAIR DOOR SYSTEM

| Item | Part Name | Part No. | Description | Rqrd. Q'ty | Order Q'ty |
|---|---|---|---|---|---|
| 1 | MC-U03 Ass'y | 248901-03 | 2 MCs are required for one simultaneous pair. | 2 | |
| 2 | MC Clip | 148925 | Required for mounting MC into Gyro Header | 2 | |
| 3 | Handy Terminal | 148903 | If necessary. | 1 | |
| 4 | Harness for Simultaneous Pair | 119525 | Required for Simultaneous Pair | 1 | |
| 5 | Acuswing | 249282 | 2 Acuswings are required for one door panel. | 4 | |
| 6 or | Acuswing Harness Kit (Clear) | 129515-01 | Clear color Cord Cover | 2 / 0 | |
| 7 | Acuswing Harness Kit (Black) | 129515-04 | Black color Cord Cover | 2 / 0 | |
| 8 | Swing Operator (Left Hand) | 418987-01 | Required for L.H. Swing Door | 1 | |
| 9 | Swing Operator (Right Hand) | 418987-02 | Required for R.H. Swing Door | 1 | |
| 10 | Handing Harness | 119208 | Required for R.H. Operator | 1 | |
| 11 or | Panic Latch Kit - OHC (Clear) | 119518-01 | Required for inswing OHC* Door | 2 / 0 | |
| 12 or | Panic Latch Kit - OHC (Dk.Bronze) | 119518-02 | Required for inswing OHC* Door | 2 / 0 | |
| 13 or | Panic Latch Kit - CU (Clear) | 119520-01 | Required for inswing CU* Door | 2 / 0 | |
| 14 | Panic Latch Kit - CU (Dk.Bronze) | 119520-02 | Required for inswing CU* Door | 2 / 0 | |
| 15 | Acusensor | 148902 | - Approach side - Activation | 1 | |
| 16 | Acusensor Harness | 229184 | Required for Acusensor | 1 | |
| 17 | "Y" Harness | 229369 | Required for Acusensor (Approach) | 1 | |
| 18 or | Rocker Switch Ass'y (Clear) | 219446-01 | | 1 / 0 | |
| 19 | Rocker Switch Ass'y (Dk.Bronze) | 219446-02 | | 1 / 0 | |
| 20 | Rocker Switch Extension Cable:96" | 229186-01 | Required for Rocker Switch | 1 | |
| 21 | Installation Instruction | 159529 | Required for Rocker Switch | 1 | |
| 22 or | #6 x 1/2 Screw (Stainless) | 240013-03 | Required for Rocker Switch(Clear) | 2 / 0 | |
| 23 | #6 x 1/2 Screw (Black) | 240013-04 | Required for Rocker Switch(Dk.Bronze) | 2 / 0 | |
| 24 | Acuswing Manual | 159505 | | 1 | |
| 25 | MC Manual for Swing Door | 159318 | | 1 | |
| 26 | Special Spacer Block | 149535 | Required for Center Pivoted Door | 2 / 0 | |
| 27 | | | | | |
| 28 | | | | | |
| 29 | | | | | |

*OHC: Over Head Conceal, CU: Conversion Unit

This is a listing material required for installing Acuswing.
You may need to order other parts, such as door panel etc..

# SET-UP Procedure

1. **Mount operator(s) and microprocessor controller(s)**

2. **Set-up the controller(s) using handy terminal.**
   1). See the "Instruction Manual for Microprocessor Controller and Handy Terminal for Gyro Tech Swinger", #159538, in detail.
   2). Try a couple of test operations using handy terminal to make sure it is functioning properly.

3. **Mount activation sensor(s) on the header.** (Desirable)

4. **Set-up the activation sensor(s).**
   Try a couple of test operations using the activation sensor(s) on the header to make sure it is functioning properly.

5. **Mount Acuswings.**
   1). **See the applicable "wiring diagram" carefully before attempting installation.** The wiring is one of the most critical steps.
   2). See the "drawing(s) to mount and wire Acuswings" for more information.
   3). Mount and wire the harness.

6. **Set-up the Acuswings.**
   1). **Please understand the features and characteristics of Acuswing Sensor before setting-up.**
   2). Set-up the select switches. See the "select switches table" and the attached drawings in detail.
   3). Make sure **the lever position are set at " 3 ".**
   4). Connect the connectors for Acuswings. Before turning on the power, **see the "Start-up / Reset Procedure"**.
   5). Start-up the system.
   6). Activate the door and let it open and close several times(minutes) to stabilize the sensitivity / coverage of Acuswing sensors.
   7). Check the function / coverage after it is stabilized, and assure that it is operating correctly.
   8). Place the warning label near the door or the power / reset switch.

# START-UP / RESET Procedure (Initialization)

1. Make sure the swing path is clear of people and obstructions, before turning on the power for the sensors(controller/s). **Keep people clear of the door swing path during start-up / reset.**

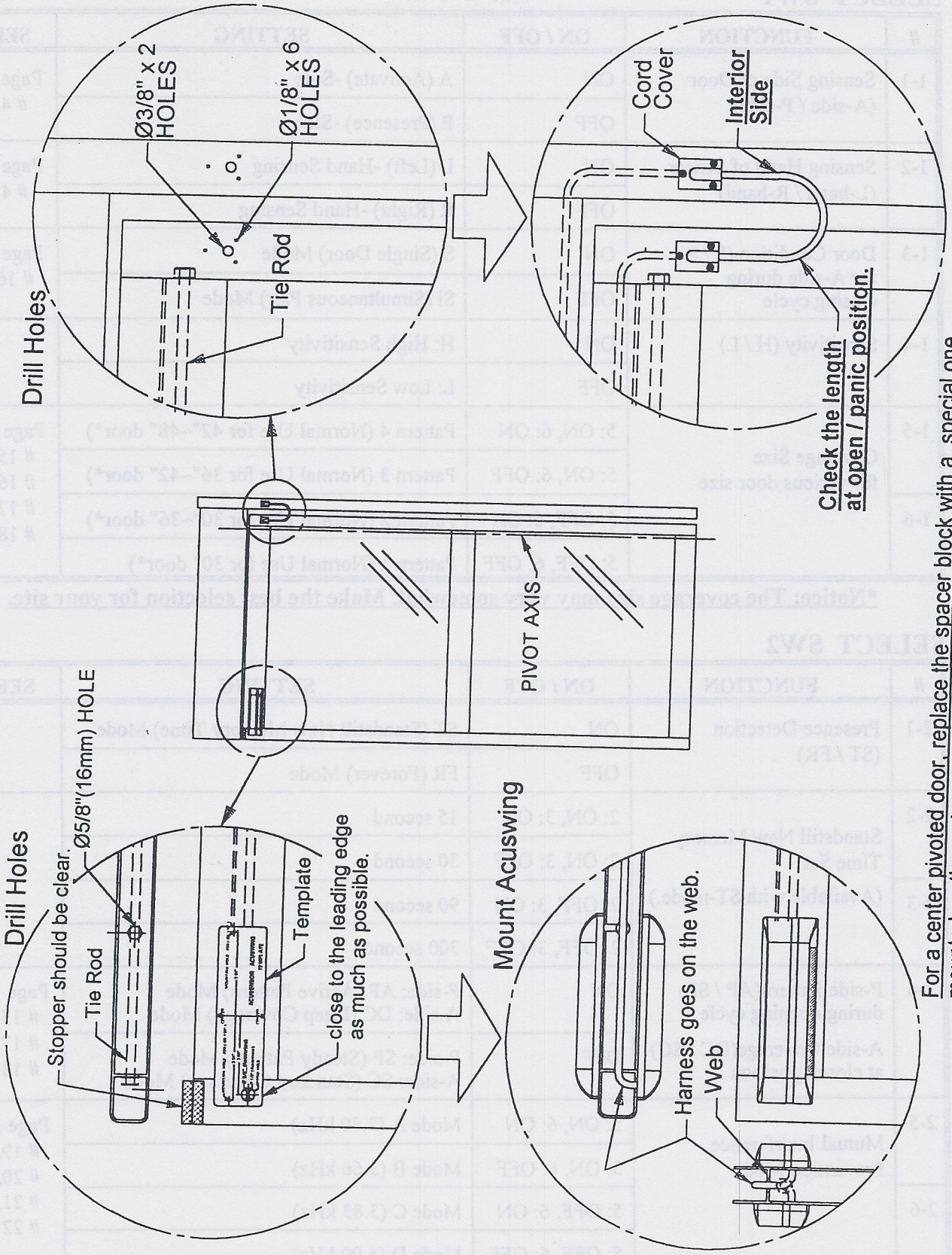
2. Turn on the power (to start-up / reset).
   1) The LED on the sensor illuminates in red when it is on.
   2) After several seconds, the door opens and closes once to memorize / initialize the background information. **Keep people clear of the door swing path.**
   3) Several seconds after the door reaches the closed position, the LED on the sensor turns from red to green.
   4) Make sure all LEDs on the A-side and P-side are green.
   5) The sensors are ready for operation.
   6) Acuswing sensors still need several operations(minutes) to stabilize the sensitivity / coverage.
   7) Check the function / coverage after it is stabilized, and ensure that it is operating correctly.

## The LED on the sensor means,

| # | LED COLOR | Means | Signal to Controller |
|---|---|---|---|
| 1 | OFF | No power for the sensor | ON |
| 2 | GREEN | Ready for operation | OFF |
| 3 | RED | Detecting person/object | ON |
| | | During Start-up | ON / OFF |
| 4 | AMBER | Relearning the back ground | OFF |
| 5 | FLASHING GREEN | Encoder Warning | ON |
| 6 | FLASHING RED | Emitter Warning | ON |
| 7 | FLASHING AMBER | Floor Condition Warning | ON |

* See the trouble shooting section for more information about the warnings.

# Mount and Wire Acuswing




For a center pivoted door, replace the spacer block with a special one mounted on the web to make room for the Acuswing harness.

# Select Switches Table

## SELECT SW1

| # | FUNCTION | ON / OFF | SETTING | SEE |
|---|---|---|---|---|
| 1-1 | Sensing Side of Door (A-side / P-side) | ON | A (Activate) -Side | Page # 4 |
| | | OFF | P (Presence) -Side | |
| 1-2 | Sensing Hand of Sensor (L-hand / R-hand) | ON | L (Left) -Hand Sensing | Page # 4 |
| | | OFF | R (Right) -Hand Sensing | |
| 1-3 | Door Condition (S / Si) for A-side during closing cycle | ON | S (Single Door) Mode | Page # 16 |
| | | OFF | Si (Simultaneous Pair) Mode | |
| 1-4 | Sensitivity (H / L) | ON | H: High Sensitivity | |
| | | OFF | L: Low Sensitivity | |
| 1-5 | Coverage Size for various door size | 5: ON, 6: ON | Pattern 4 (Normal Use for 42"~48" door*) | Page # 15, # 16, # 17, # 18 |
| | | 5: ON, 6: OFF | Pattern 3 (Normal Use for 36"~42" door*) | |
| 1-6 | | 5: OFF, 6: ON | Pattern 2 (Normal Use for 30"~36" door*) | |
| | | 5: OFF, 6: OFF | Pattern 1 (Normal Use for 30" door*) | |

***Notice: The coverage size may vary somewhat. Make the best selection for your site.**

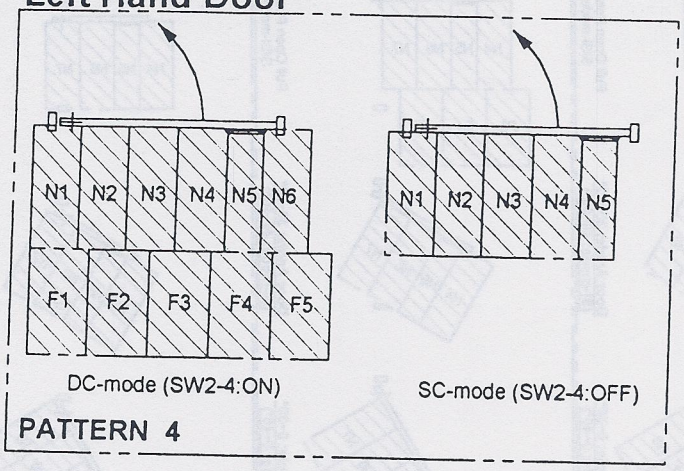
## SELECT SW2

| # | FUNCTION | ON / OFF | SETTING | SEE |
|---|---|---|---|---|
| 2-1 | Presence Detection (ST / FR) | ON | ST (Standstill New Memory Time) Mode | |
| | | OFF | FR (Forever) Mode | |
| 2-2 | Standstill New Memory Time Set (Available with ST-mode.) | 2: ON, 3: ON | 15 second | |
| | | 2: ON, 3: OFF | 30 second | |
| 2-3 | | 2: OFF, 3: ON | 90 second | |
| | | 2: OFF, 3: OFF | 300 second | |
| 2-4 | P-side Pattern(AP / SP) during opening cycle<br>A-side Coverage(DC / SC) at closed position | ON | P-side: AP (Active Pattern) Mode<br>A-side: DC (Deep Coverage) Mode | Page # 15, # 17, # 18 |
| | | OFF | P-side: SP (Steady Pattern) Mode<br>A-side: SC (Standard Coverage) Mode | |
| 2-5 | Mutual Interference Prevention Mode | 5: ON, 6: ON | Mode A (3.50 kHz) | Page # 19, # 20, # 21, # 22 |
| | | 5: ON, 6: OFF | Mode B (3.66 kHz) | |
| 2-6 | | 5: OFF, 6: ON | Mode C (3.83 kHz) | |
| | | 5: OFF, 6: OFF | Mode D (4.00 kHz) | |

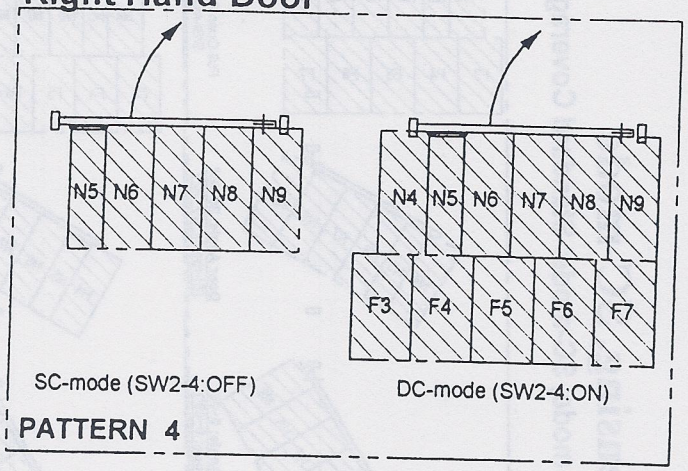
# A-side Closed Position Coverage, DC / SC mode, Pattern 4~1

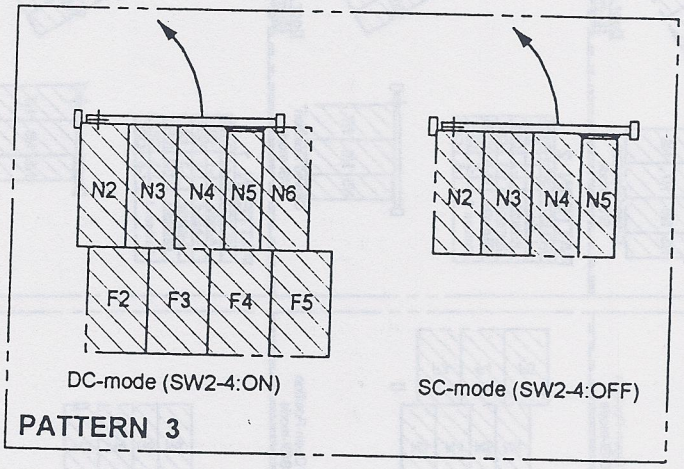
## DC: Deep Coverage, SC: Standard Coverage

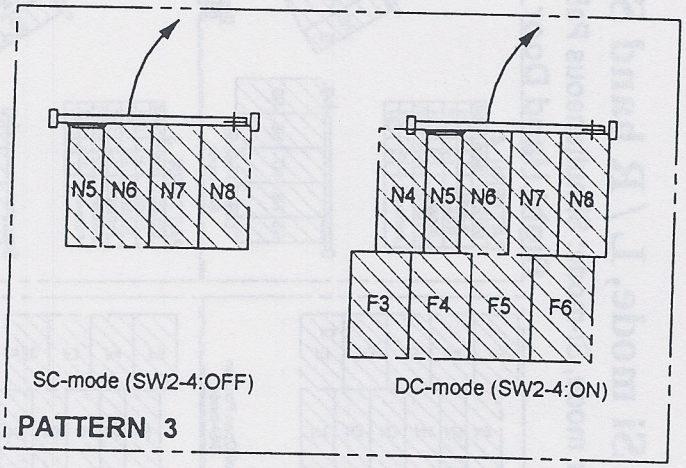
### Left Hand Door

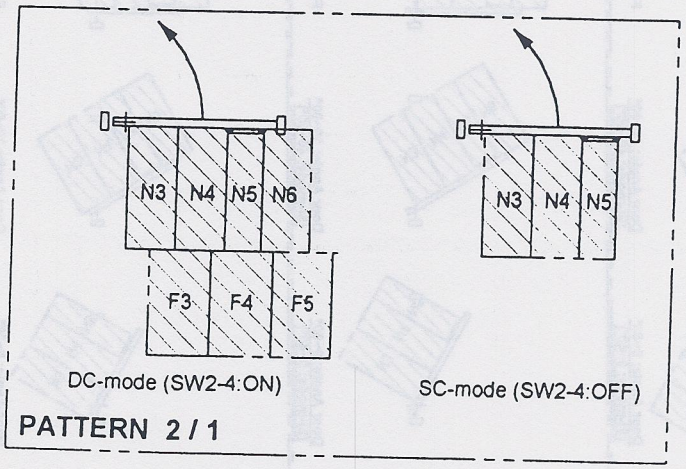


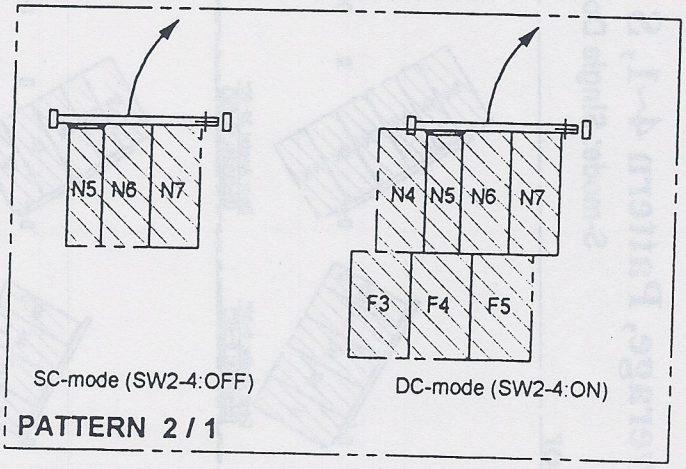

### Right Hand Door




* An approach sensor such as Acusensor, mounted on the header, will be desirable.

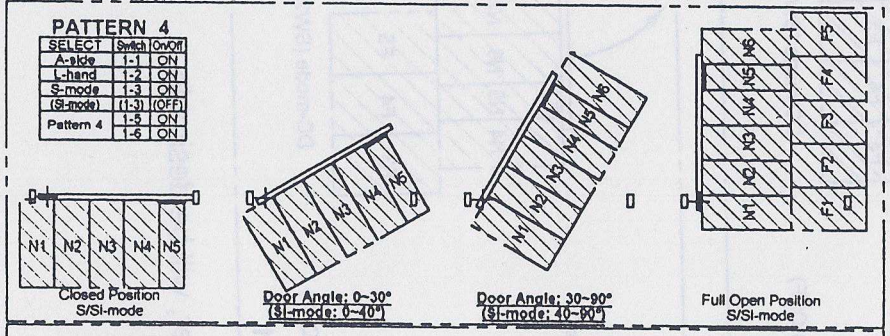
# A-side Coverage, Pattern 4~1, S / Si mode, L / R hand Sensing, SC-mode

S-mode: Single Door mode, Si-mode: Simultaneous Pair mode, SC-mode: Standard Coverage mode

## Left Hand Door

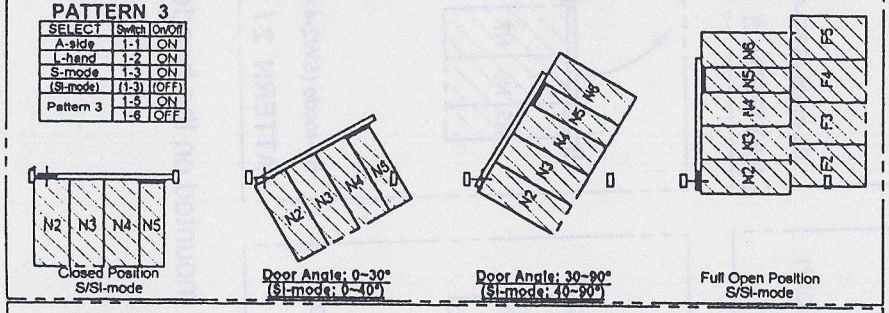
### PATTERN 4

| SELECT | Switch | On/Off |
|---|---|---|
| A-side | 1-1 | ON |
| L-hand | 1-2 | ON |
| S-mode | 1-3 | ON |
| (Si-mode) | (1-3) | (OFF) |
| Pattern 4 | 1-5 | ON |
| | 1-6 | ON |



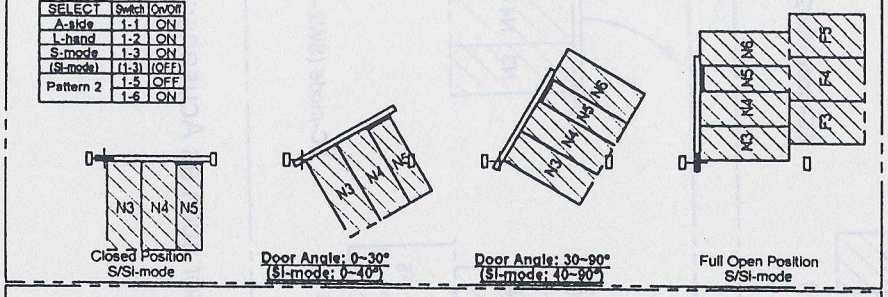

### PATTERN 3

| SELECT | Switch | On/Off |
|---|---|---|
| A-side | 1-1 | ON |
| L-hand | 1-2 | ON |
| S-mode | 1-3 | ON |
| (Si-mode) | (1-3) | (OFF) |
| Pattern 3 | 1-5 | ON |
| | 1-6 | OFF |



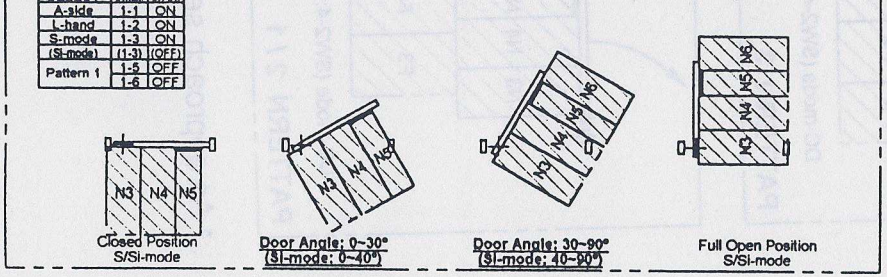

### PATTERN 2

| SELECT | Switch | On/Off |
|---|---|---|
| A-side | 1-1 | ON |
| L-hand | 1-2 | ON |
| S-mode | 1-3 | ON |
| (Si-mode) | (1-3) | (OFF) |
| Pattern 2 | 1-5 | OFF |
| | 1-6 | ON |




### PATTERN 1

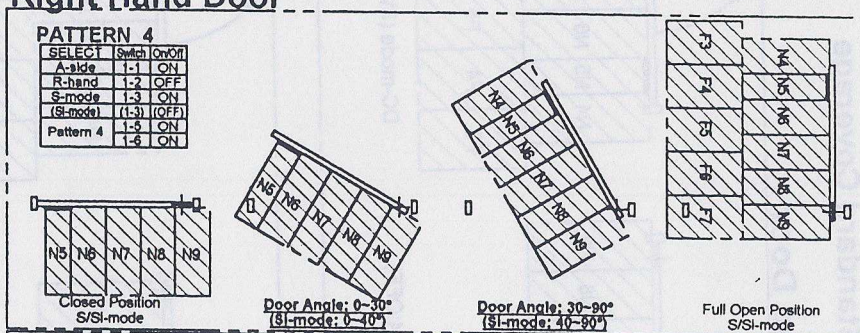
| SELECT | Switch | On/Off |
|---|---|---|
| A-side | 1-1 | ON |
| L-hand | 1-2 | ON |
| S-mode | 1-3 | ON |
| (Si-mode) | (1-3) | (OFF) |
| Pattern 1 | 1-5 | OFF |
| | 1-6 | OFF |




## Right Hand Door

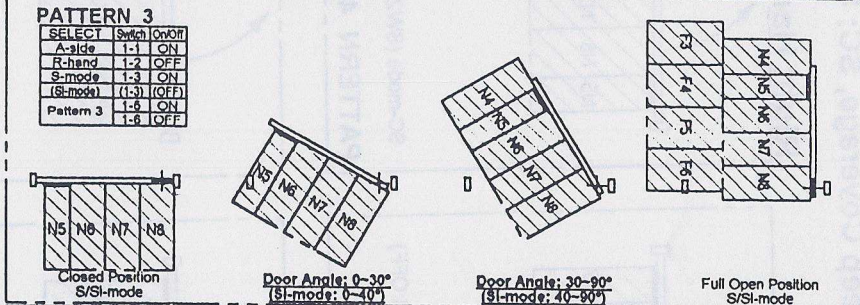
### PATTERN 4

| SELECT | Switch | On/Off |
|---|---|---|
| A-side | 1-1 | ON |
| R-hand | 1-2 | OFF |
| S-mode | 1-3 | ON |
| (Si-mode) | (1-3) | (OFF) |
| Pattern 4 | 1-5 | ON |
| | 1-6 | ON |



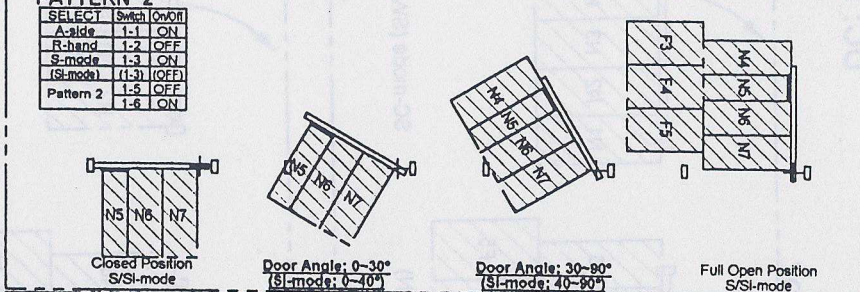

### PATTERN 3

| SELECT | Switch | On/Off |
|---|---|---|
| A-side | 1-1 | ON |
| R-hand | 1-2 | OFF |
| S-mode | 1-3 | ON |
| (Si-mode) | (1-3) | (OFF) |
| Pattern 3 | 1-6 | ON |
| | 1-6 | OFF |



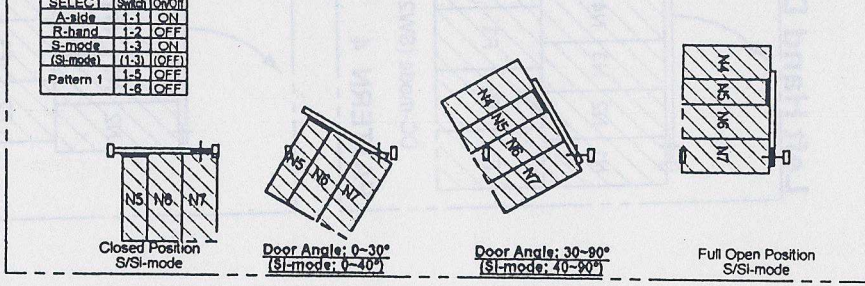

### PATTERN 2

| SELECT | Switch | On/Off |
|---|---|---|
| A-side | 1-1 | ON |
| R-hand | 1-2 | OFF |
| S-mode | 1-3 | ON |
| (Si-mode) | (1-3) | (OFF) |
| Pattern 2 | 1-5 | OFF |
| | 1-6 | ON |




### PATTERN 1

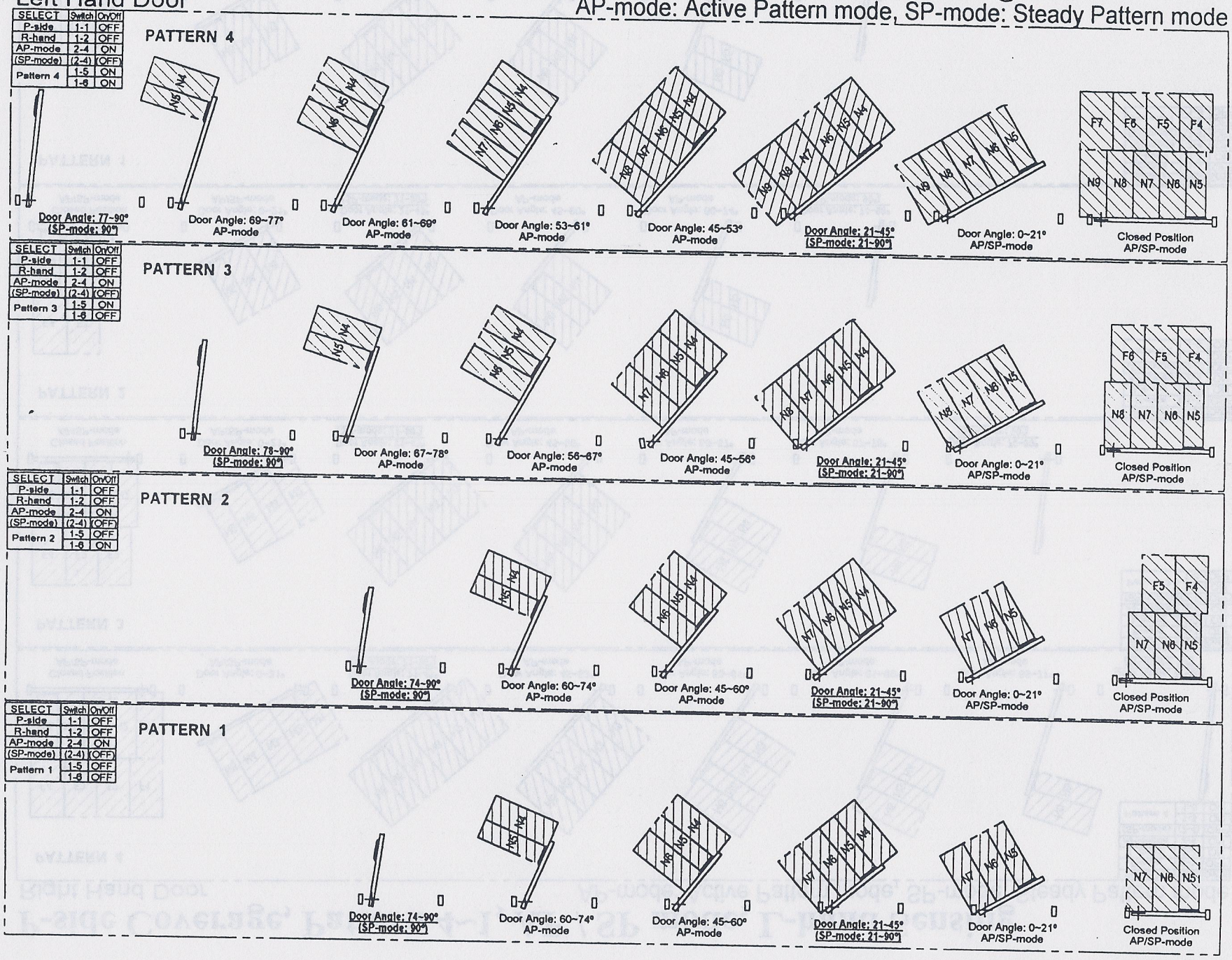
| SELECT | Switch | On/Off |
|---|---|---|
| A-side | 1-1 | ON |
| R-hand | 1-2 | OFF |
| S-mode | 1-3 | ON |
| (Si-mode) | (1-3) | (OFF) |
| Pattern 1 | 1-5 | OFF |
| | 1-6 | OFF |



# P-side Coverage, Pattern 4~1, AP / SP mode, R-hand Sensing

Left Hand Door

AP-mode: Active Pattern mode, SP-mode: Steady Pattern mode



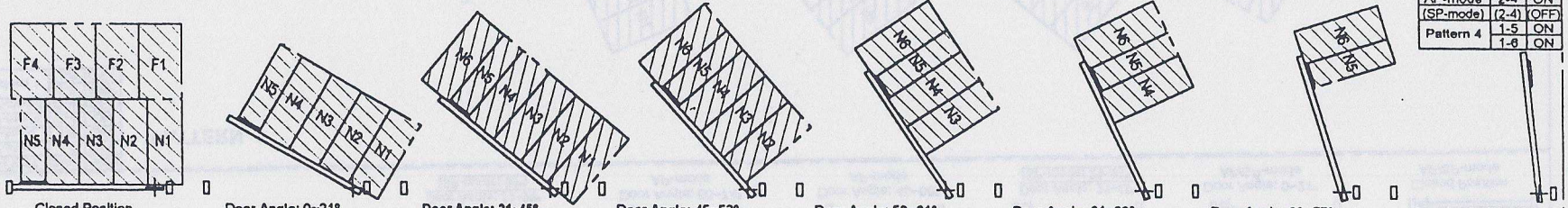
# P-side Coverage, Pattern 4~1, AP / SP mode, L-hand Sensing

Right Hand Door

AP-mode: Active Pattern mode, SP-mode: Steady Pattern mode

## PATTERN 4

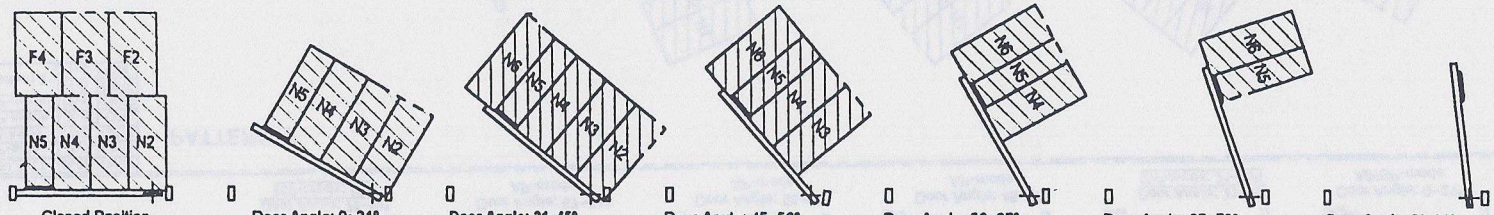
| SELECT | Switch | On/Off |
|---|---|---|
| P-side | 1-1 | OFF |
| L-hand | 1-2 | ON |
| AP-mode | 2-4 | ON |
| (SP-mode) | (2-4) | (OFF) |
| Pattern 4 | 1-5 | ON |
| | 1-6 | ON |




Closed Position AP/SP-mode | Door Angle: 0~21° AP/SP-mode | Door Angle: 21~45° (SP-mode: 21~90°) | Door Angle: 45~53° AP-mode | Door Angle: 53~61° AP-mode | Door Angle: 61~69° AP-mode | Door Angle: 69~77° AP-mode | Door Angle: 77~90° (SP-mode: 90°)

## PATTERN 3

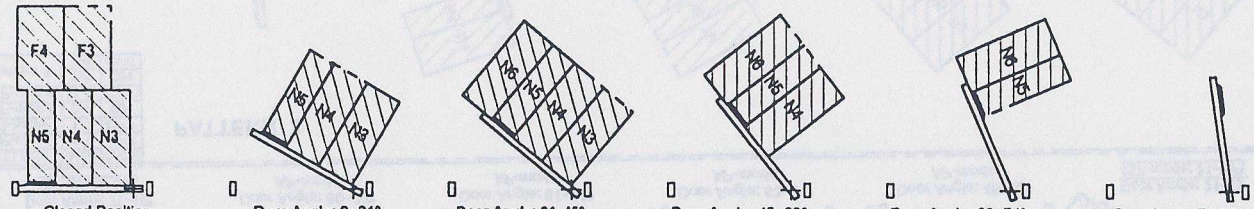
| SELECT | Switch | On/Off |
|---|---|---|
| P-side | 1-1 | OFF |
| L-hand | 1-2 | ON |
| AP-mode | 2-4 | ON |
| (SP-mode) | (2-4) | (OFF) |
| Pattern 3 | 1-5 | ON |
| | 1-6 | OFF |




Closed Position AP/SP-mode | Door Angle: 0~21° AP/SP-mode | Door Angle: 21~45° (SP-mode: 21~90°) | Door Angle: 45~56° AP-mode | Door Angle: 56~67° AP-mode | Door Angle: 67~78° AP-mode | Door Angle: 78~90° (SP-mode: 90°)

## PATTERN 2

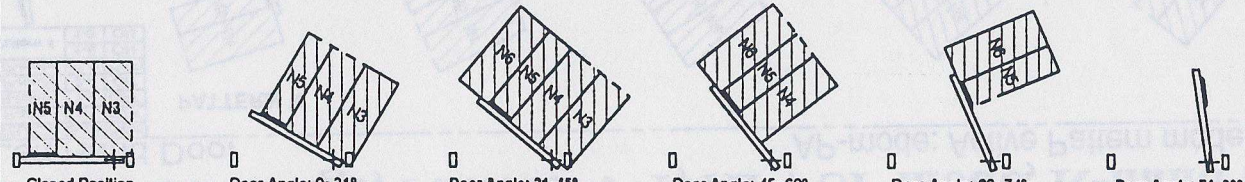
| SELECT | Switch | On/Off |
|---|---|---|
| P-side | 1-1 | OFF |
| L-hand | 1-2 | ON |
| AP-mode | 2-4 | ON |
| (SP-mode) | (2-4) | (OFF) |
| Pattern 2 | 1-5 | OFF |
| | 1-6 | ON |




Closed Position AP/SP-mode | Door Angle: 0~21° AP/SP-mode | Door Angle: 21~45° (SP-mode: 21~90°) | Door Angle: 45~60° AP-mode | Door Angle: 60~74° AP-mode | Door Angle: 74~90° (SP-mode: 90°)

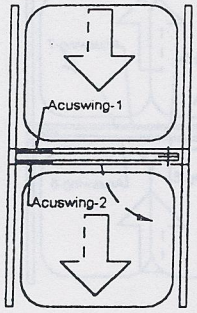
## PATTERN 1

| SELECT | Switch | On/Off |
|---|---|---|
| P-side | 1-1 | OFF |
| L-hand | 1-2 | ON |
| AP-mode | 2-4 | ON |
| (SP-mode) | (2-4) | (OFF) |
| Pattern 1 | 1-5 | OFF |
| | 1-6 | OFF |



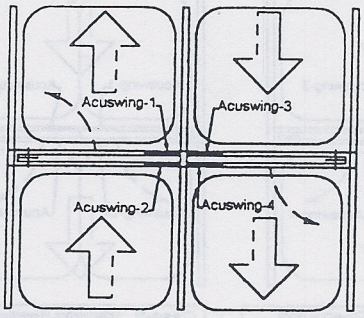

Closed Position AP/SP-mode | Door Angle: 0~21° AP/SP-mode | Door Angle: 21~45° (SP-mode: 21~90°) | Door Angle: 45~60° AP-mode | Door Angle: 60~74° AP-mode | Door Angle: 74~90° (SP-mode: 90°)

# (1) Recommended Mode To Prevent Mutual Interference



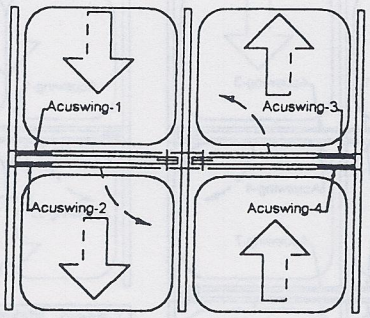

| Case-1 | Interference Prevention Mode |
|---|---|
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |

Typical Single-Door



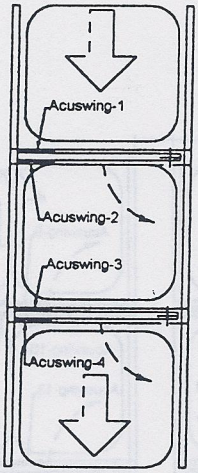

| Case-2 | Interference Prevention Mode |
|---|---|
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - D |

Typical Dual Single-Doors



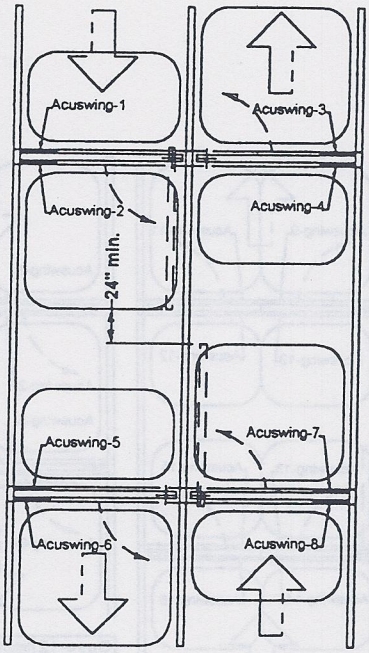

| Case-3 | Interference Prevention Mode |
|---|---|
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - D |

Typical Dual Single-Doors



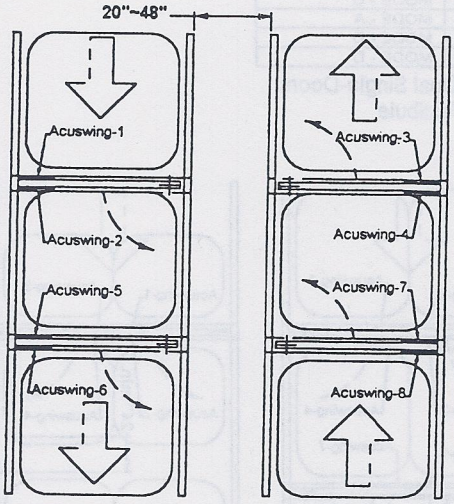

| Case-4 | Interference Prevention Mode |
|---|---|
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - A |

Typical Single-Doors with Vestibule




| Case-5 | Interference Prevention Mode |
|---|---|
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - B |
| Acuswing-5 | MODE - C |
| Acuswing-6 | MODE - A |
| Acuswing-7 | MODE - D |
| Acuswing-8 | MODE - D |

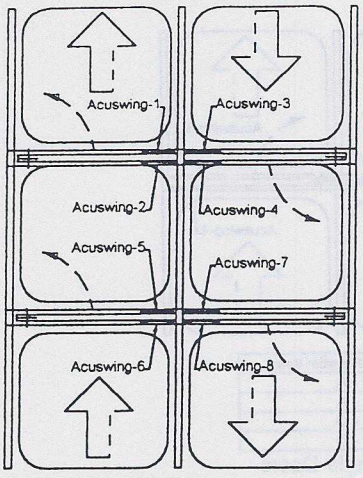
Typical Dual Single-Doors with Vestibule




| Case-6 | Interference Prevention Mode |
|---|---|
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - B |
| Acuswing-5 | MODE - C |
| Acuswing-6 | MODE - A |
| Acuswing-7 | MODE - D |
| Acuswing-8 | MODE - D |

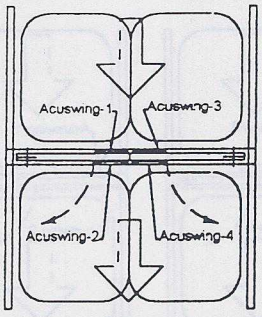
Typical Dual Single-Doors with Vestibule

# (2) Recommended Mode To Prevent Mutual Interference



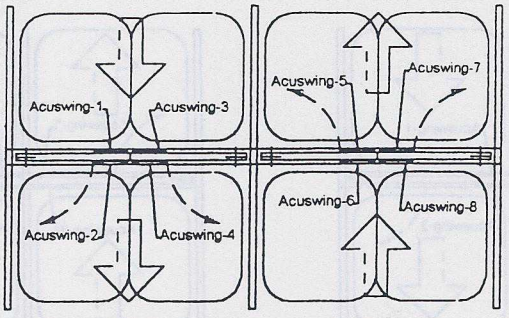

| Case-7 | Interference Prevention Mode |
|---|---|
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - B |
| Acuswing-5 | MODE - C |
| Acuswing-6 | MODE - A |
| Acuswing-7 | MODE - D |
| Acuswing-8 | MODE - D |

Typical Dual Single-Doors with Vestibule



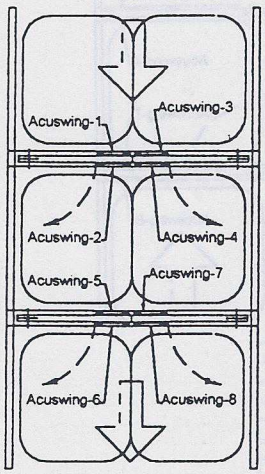

| Case-8 | Interference Prevention Mode |
|---|---|
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - D |

Typical Simultaneous-Pair



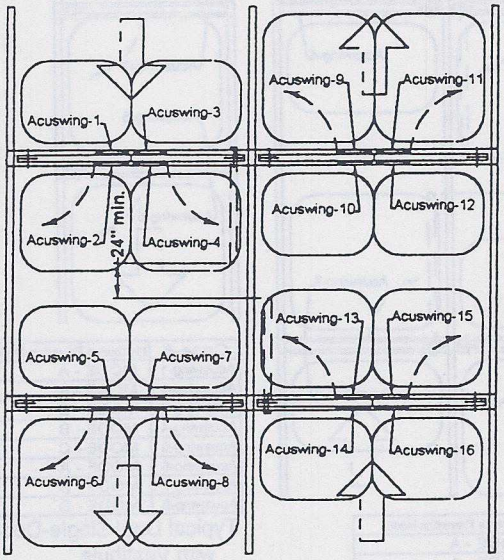

| Case-9 | Interference Prevention Mode |
|---|---|
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - D |
| Acuswing-5 | MODE - A |
| Acuswing-6 | MODE - A |
| Acuswing-7 | MODE - D |
| Acuswing-8 | MODE - D |

Typical Dual Simultaneous-Pairs



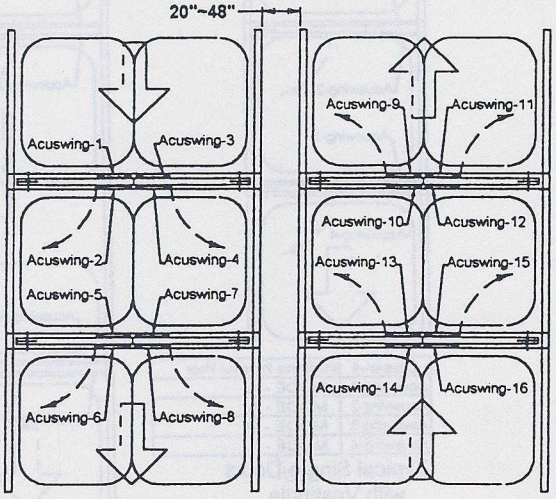

| Case-10 | Interference Prevention Mode |
|---|---|
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - B |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - C |
| Acuswing-5 | MODE - D |
| Acuswing-6 | MODE - D |
| Acuswing-7 | MODE - A |
| Acuswing-8 | MODE - A |

Typical Simultaneous-Pairs with Vestibule




| Case-11 | Interference Prevention Mode | | |
|---|---|---|---|
| Acuswing-1 | MODE - A | Acuswing-9 | MODE - A |
| Acuswing-2 | MODE - B | Acuswing-10 | MODE - B |
| Acuswing-3 | MODE - D | Acuswing-11 | MODE - D |
| Acuswing-4 | MODE - A | Acuswing-12 | MODE - A |
| Acuswing-5 | MODE - D | Acuswing-13 | MODE - D |
| Acuswing-6 | MODE - A | Acuswing-14 | MODE - A |
| Acuswing-7 | MODE - C | Acuswing-15 | MODE - C |
| Acuswing-8 | MODE - D | Acuswing-16 | MODE - D |

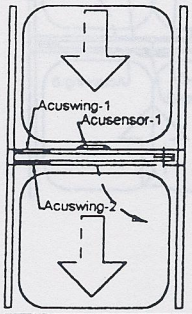
Typical Dual Simultaneous-Pairs with Vestibule




| Case-12 | Interference Prevention Mode | | |
|---|---|---|---|
| Acuswing-1 | MODE - A | Acuswing-9 | MODE - A |
| Acuswing-2 | MODE - B | Acuswing-10 | MODE - B |
| Acuswing-3 | MODE - D | Acuswing-11 | MODE - D |
| Acuswing-4 | MODE - A | Acuswing-12 | MODE - A |
| Acuswing-5 | MODE - D | Acuswing-13 | MODE - D |
| Acuswing-6 | MODE - A | Acuswing-14 | MODE - A |
| Acuswing-7 | MODE - C | Acuswing-15 | MODE - C |
| Acuswing-8 | MODE - D | Acuswing-16 | MODE - D |

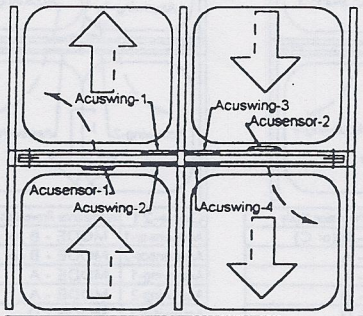
Typical Dual Simultaneous-Pairs with Vestibule

# (3) Recommended Mode To Prevent Mutual Interference with Acusensors



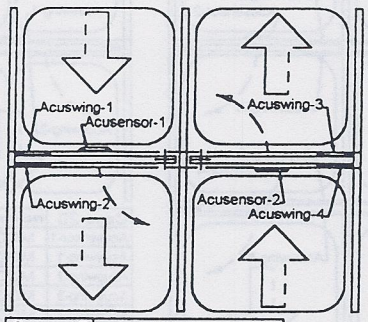

| Case-13 | Interference Prevention Mode |
|---|---|
| Acusensor-1 | MODE - D (or C or B) |
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |

Typical Single-Door



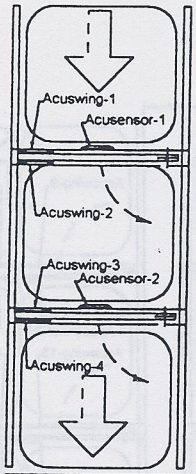

| Case-14 | Interference Prevention Mode |
|---|---|
| Acusensor-1 | MODE - C (or B) |
| Acusensor-2 | MODE - B (or C) |
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - D |

Typical Dual Single-Doors



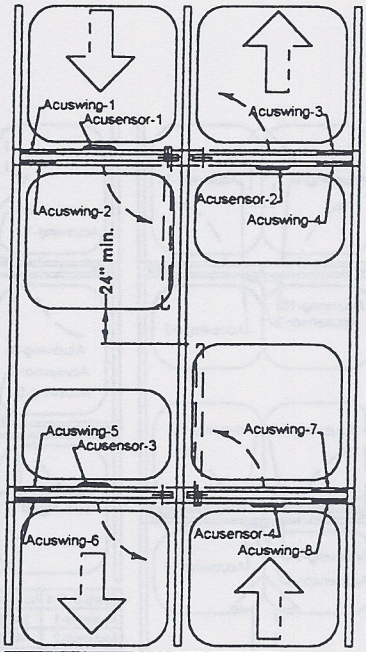

| Case-15 | Interference Prevention Mode |
|---|---|
| Acusensor-1 | MODE - C (or B) |
| Acusensor-2 | MODE - B (or C) |
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - D |

Typical Dual Single-Doors



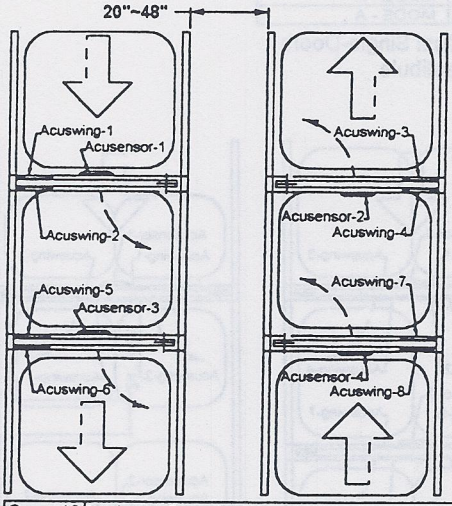

| Case-16 | Interference Prevention Mode |
|---|---|
| Acusensor-1 | MODE - D (or C or B) |
| Acusensor-2 | MODE - B (or C) |
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - A |

Typical Single-Doors with Vestibule




| Case-17 | Interference Prevention Mode |
|---|---|
| Acusensor-1 | MODE - C (or B) |
| Acusensor-2 | MODE - C |
| Acusensor-3 | MODE - B |
| Acusensor-4 | MODE - B (or C) |
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - B |
| Acuswing-5 | MODE - C |
| Acuswing-6 | MODE - A |
| Acuswing-7 | MODE - D |
| Acuswing-8 | MODE - D |

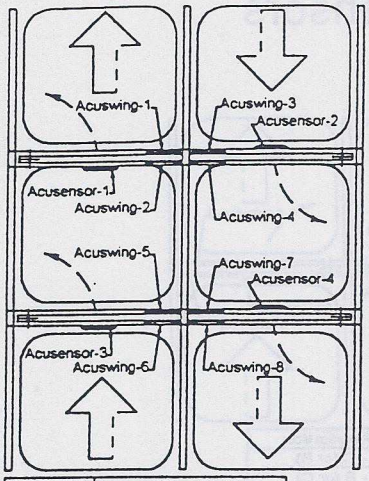
Typical Dual Single-Doors with Vestibule




| Case-18 | Interference Prevention Mode | | |
|---|---|---|---|
| Acusensor-1 | MODE - C (or B) | Acusensor-3 | MODE - B |
| Acusensor-2 | MODE - C | Acusensor-4 | MODE - B (or C) |
| Acuswing-1 | MODE - A | Acuswing-5 | MODE - C |
| Acuswing-2 | MODE - A | Acuswing-6 | MODE - A |
| Acuswing-3 | MODE - D | Acuswing-7 | MODE - D |
| Acuswing-4 | MODE - B | Acuswing-8 | MODE - D |

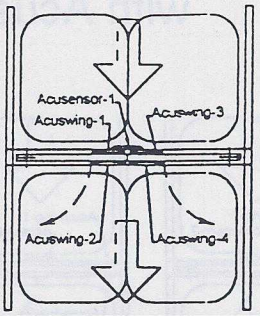
Typical Dual Single-Doors with Vestibule

# (4) Recommended Mode To Prevent Mutual Interference with Acusensors



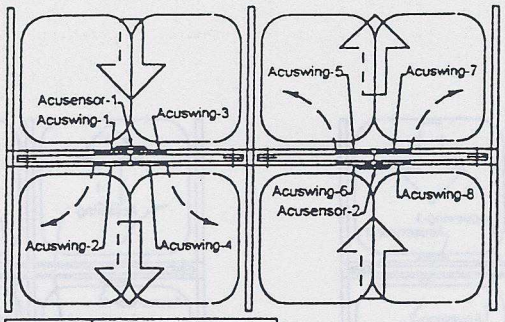

| Case-19 | Interference Prevention Mode |
|---|---|
| Acusensor-1 | MODE - C |
| Acusensor-2 | MODE - B (or C) |
| Acusensor-3 | MODE - B (or C) |
| Acusensor-4 | MODE - B |
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - D |
| Acuswing-5 | MODE - D |
| Acuswing-6 | MODE - D |
| Acuswing-7 | MODE - A |
| Acuswing-8 | MODE - A |

Typical Dual Single-Doors with Vestibule



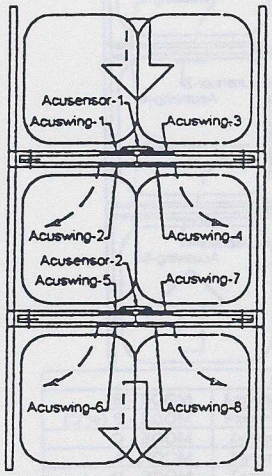

| Case-20 | Interference Prevention Mode |
|---|---|
| Acusensor-1 | MODE - B (or C) |
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - D |

Typical Simultaneous-Pair



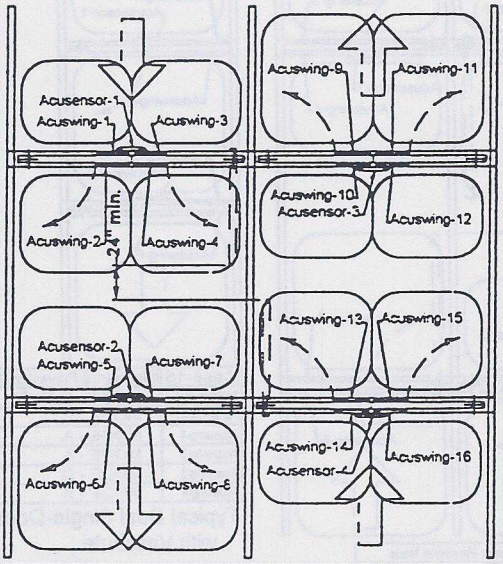

| Case-21 | Interference Prevention Mode |
|---|---|
| Acusensor-1 | MODE - B (or C) |
| Acusensor-2 | MODE - B (or C) |
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - A |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - D |
| Acuswing-5 | MODE - A |
| Acuswing-6 | MODE - A |
| Acuswing-7 | MODE - D |
| Acuswing-8 | MODE - D |

Typical Dual Simultaneous-Pairs



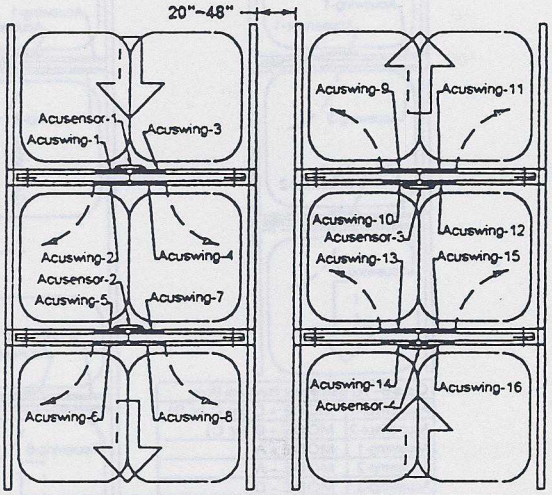

| Case-22 | Interference Prevention Mode |
|---|---|
| Acusensor-1 | MODE - B (or C) |
| Acusensor-2 | MODE - B |
| Acuswing-1 | MODE - A |
| Acuswing-2 | MODE - D |
| Acuswing-3 | MODE - D |
| Acuswing-4 | MODE - A |
| Acuswing-5 | MODE - A |
| Acuswing-6 | MODE - A |
| Acuswing-7 | MODE - C |
| Acuswing-8 | MODE - D |

Typical Simultaneous-Pairs with Vestibule




| Case-23 | Interference Prevention Mode | | |
|---|---|---|---|
| Acusensor-1 | MODE - B (or C) | Acusensor-3 | MODE - C |
| Acusensor-2 | MODE - B | Acusensor-4 | MODE - B (or C) |
| Acuswing-1 | MODE - A | Acuswing-9 | MODE - A |
| Acuswing-2 | MODE - D | Acuswing-10 | MODE - B |
| Acuswing-3 | MODE - D | Acuswing-11 | MODE - D |
| Acuswing-4 | MODE - A | Acuswing-12 | MODE - D |
| Acuswing-5 | MODE - A | Acuswing-13 | MODE - D |
| Acuswing-6 | MODE - A | Acuswing-14 | MODE - A |
| Acuswing-7 | MODE - C | Acuswing-15 | MODE - A |
| Acuswing-8 | MODE - D | Acuswing-16 | MODE - D |

Typical Dual Simultaneous-Pairs with Vestibule




| Case-24 | Interference Prevention Mode | | |
|---|---|---|---|
| Acusensor-1 | MODE - B (or C) | Acusensor-3 | MODE - C |
| Acusensor-2 | MODE - B | Acusensor-4 | MODE - B (or C) |
| Acuswing-1 | MODE - A | Acuswing-9 | MODE - A |
| Acuswing-2 | MODE - D | Acuswing-10 | MODE - B |
| Acuswing-3 | MODE - D | Acuswing-11 | MODE - D |
| Acuswing-4 | MODE - A | Acuswing-12 | MODE - D |
| Acuswing-5 | MODE - A | Acuswing-13 | MODE - D |
| Acuswing-6 | MODE - A | Acuswing-14 | MODE - A |
| Acuswing-7 | MODE - C | Acuswing-15 | MODE - A |
| Acuswing-8 | MODE - D | Acuswing-16 | MODE - D |

Typical Dual Simultaneous-Pairs with Vestibule

# Trouble Shooting "Before making a service call, try the following steps."

## A. Condition / Trouble

| # | Condition / Trouble | Possible Causes / Solutions (See "B".) |
|---|---|---|
| a | The sensor detects something with no person in/near the sensing area. | 1, 2, 3, 4, 5, 6, 7, 21, 22 |
| b | The LED on the sensor is flashing with RED. (Emitter warning) | 6, 8, 9 |
| c | The LED on the sensor is flashing with GREEN. (Encoder warning) | 6, 10, 11 |
| d | The LED on the sensor is flashing with AMBER. (Floor Condition warning) | 12, 13 |
| e | The coverage looks small / sensitivity looks low. | 3, 4, 5, 6, 14, 15, 16 |
| f | The sensor sometimes does not detect. | 3, 4, 5, 6, 15, 16, 17 |
| g | The LED on the sensor is off. | 8, 18 |
| h | The door stays closed or open, and does not move. | 1, 2, 3, 4, 5, 6, 7, 19 |
| I | Snow accumulated in / near the sensing area. | 20, 6 |
| j | It rained and floor turned to wet condition. | 6 |

## B. Possible Causes / Solutions

1. Remove any object which wind may move in/near the sensing area.
2. Make sure nothing is on the cover or window such as rain drops, frost or snow.
3. Check the interference prevention mode. (Mutual interference with other infrared sensors)
4. Make sure the select switch settings are correct.
5. Make sure the lever position is "3 ".
6. Reset the sensor and let the sensor reinitialize.
7. Try low sensitivity.
8. Switch the A-side sensor and the P-side sensor. (Select switches need to be reset.)
9. Replace it with a new sensor.
10. Make sure the connection of the encoder wiring is correct.
11. Try "test operation" by a handy terminal without any sensor signals.
12. The background condition may have been changed too much. Reset the sensor.
13. Try "Y" for "Signal Slow" from the function of the controller to let the door move.
14. Wait several minutes for sensors to stabilize the sensitivity before checking.
15. Try a bigger patten. The coverage size may vary and depend upon the condition.
16. Try high sensitivity.
17. Make sure the LED on the sensor is ON.
18. Make sure the connection of the power wiring is correct. (Power loss)
19. Try a shorter standstill new memory time set such as 30 or 15 second.
20. Remove snow and keep the floor clean.
21. Water condensation could be inside the window, keep sensors' environment dry.
22. Try SC-mode for A-side.

# Trouble Shooting "Before making a service call, try the following steps."

## A. Condition / Trouble

| # | Condition / Trouble | Possible Causes / Solutions (See "B".) |
|---|---|---|
| a | The sensor detects something with no person in/near the sensing area. | 1, 2, 3, 4, 5, 6, 7, 21, 22 |
| b | The LED on the sensor is flashing with RED. (Emitter warning) | 6, 8, 9 |
| c | The LED on the sensor is flashing with GREEN. (Encoder warning) | 6, 10, 11 |
| d | The LED on the sensor is flashing with AMBER. (Floor Condition warning) | 12, 13 |
| e | The coverage looks small / sensitivity looks low. | 3, 4, 5, 6, 14, 15, 16 |
| f | The sensor sometimes does not detect. | 3, 4, 5, 6, 15, 16, 17 |
| g | The LED on the sensor is off. | 8, 18 |
| h | The door stays closed or open, and does not move. | 1, 2, 3, 4, 5, 6, 7, 19 |
| i | Snow accumulated in / near the sensing area. | 20, 6 |
| j | It rained and floor turned to wet condition. | 6 |

## B. Possible Causes / Solutions

1. Remove any object which wind may move in/near the sensing area.
2. Make sure nothing is on the cover or window such as rain drops, frost or snow.
3. Check the interference prevention mode. (Mutual interference with other infrared sensors)
4. Make sure the select switch settings are correct.
5. Make sure the lever position is "3".
6. Reset the sensor and let the sensor reinitialize.
7. Try low sensitivity.
8. Switch the A-side sensor and the P-side sensor. (Select switches need to be reset.)
9. Replace it with a new sensor.
10. Make sure the connection of the encoder wiring is correct.
11. Try "test operation" by a handy terminal without any sensor signals.
12. The background condition may have been changed too much. Reset the sensor.
13. Try "Y" for "Signal Slow" from the function of the controller to let the door move.
14. Wait several minutes for sensors to stabilize the sensitivity before checking.
15. Try a bigger pattern. The coverage size may vary and depend upon the condition.
16. Try high sensitivity.
17. Make sure the LED on the sensor is ON.
18. Make sure the connection of the power wiring is correct. (Power loss)
19. Try a shorter standstill new memory time set such as 30 or 15 second.
20. Remove snow and keep the floor clean.
21. Water condensation could be inside the window, keep sensors' environment dry.
22. Try SC-mode for A-side