



**Alarm Technology**

## **ESPAN-02 Series**

# **Annunciator System Single Unit - LED type**

## **User Manual (Rev. 1)**



**ESP TECHNOLOGIES LIMITED**

[www.esptechno.com](http://www.esptechno.com)



# Content

	Page
Introduction	2
General description	2
Overview - Annunciator system	3
Specifications	4
Functional sequences	5
Switch and jumper setting	6
Special “ Ring back ” function	7
Installation	8
How to connect the system	9
Annex. A – Logic diagram	10
Annex. B – Wiring diagram	11
Annex. C – Procedure for factory repairing and returning	12

## Introduction

The Annunciator system ESPAN-02 series incorporate the latest microprocessor and solid state designed technology to provide a versatile and flexible alarm system suitable for a wide range of applications.

A dimension of each window display unit is 40 x 50 mm. The inside lamps of each window display unit are ultra-bright LED illumination, which provided with the long life of use and very low power consumption. The colors of LED lamps can be preset by selectable jumper (J1) on the alarm module. Red color is for red alert and amber color is for amber alert.

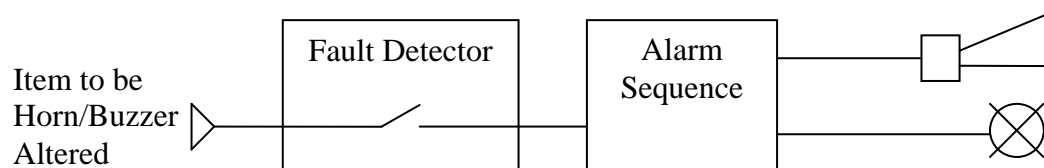
This innovative and rugged design gives exceptional flexibility, durability and reliability, this design has a proven track record in a wide range of application industries. All setting parameters can be easily done via selector or dip-switch on the control card.

Repeat relay outputs (one contact per each alarm) are included as standard to connect to external equipment for remote alarm or contact as given design.

## General description

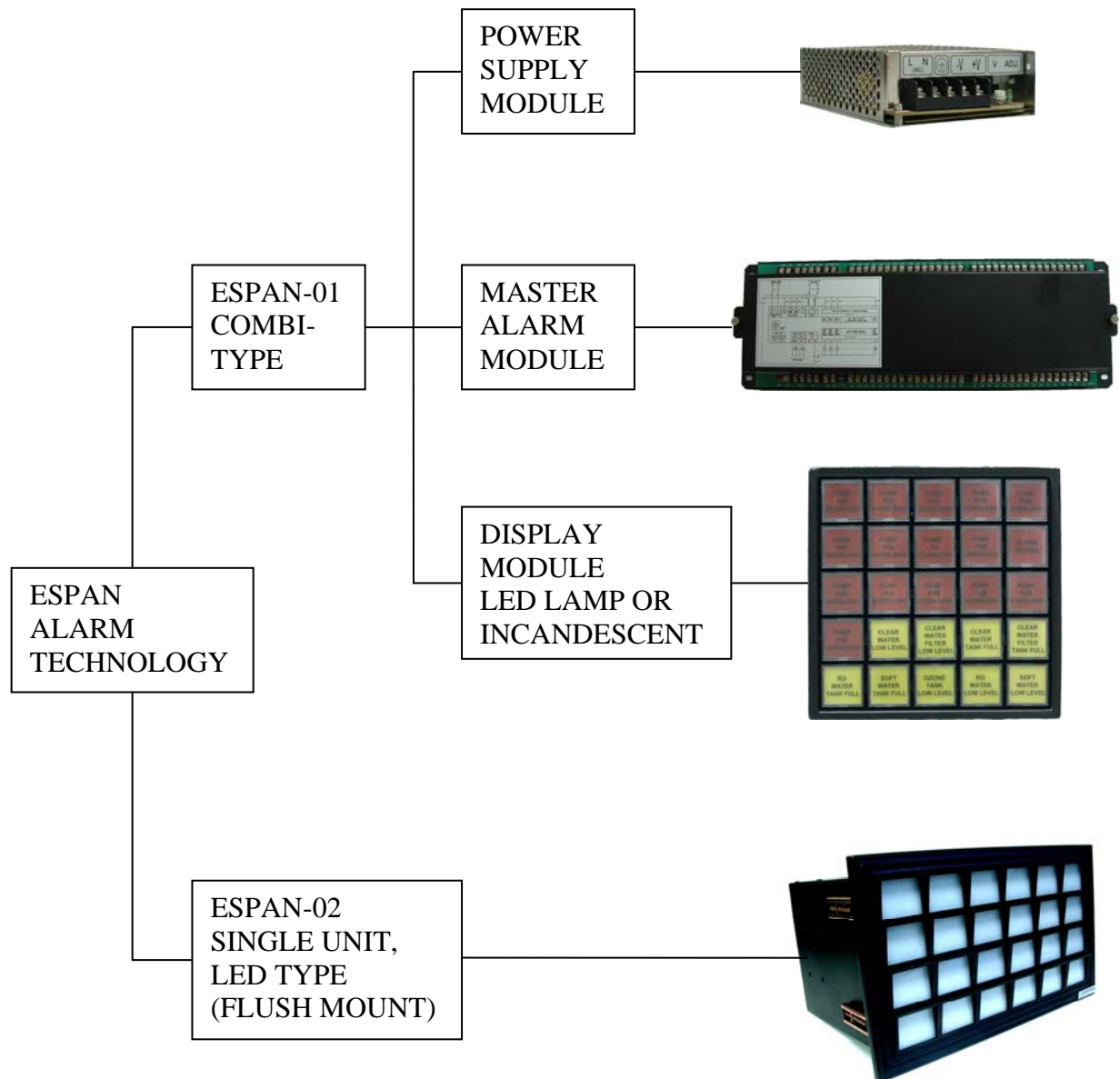
Optimizing an industrial installation requires automation of control and is usually accompanied by an alarm or supervisory system of certain parameters called “fault”.

The aim is to attract the attention of the supervising personnel by an illuminated signal and alarm horn or buzzer, thus enabling proceeding to be taken. Rapid detection of any anomaly or excess of critical values will avoid unfortunate consequences, which could result from lack of interference.



Definition of fault is expressed by the opening or closing of a contact. This information represents any modification of a physical or mechanical parameter converted into an electrical signal by the intermediary of a detector.

## Overview - Annunciator system



## Specifications

### System Voltage

Display Lamps : Ultra-bright LED  
Field contact voltage : (options) 24, 48, 110, 125 and 220 Vdc  $\pm$  10% (via dry contact or opto-isolated and NO or NC can be selected via dip-switch)

### Temperature Range

Storage : -10 to 70 °C  
Operating : -10 to 55 °C  
Humidity : up to 95%

### Power Source

External power supplies : 24, 48, 110, 125 and 220 Vdc  $\pm$  5%

### Output

Audible alarm : Two channels output for audible alarm  
Repeat relay : 1 Output contact  
Contact rating : 10A., 28 Vdc or 10A., 120 Vac  
Response time : 20 ms. nominal

### Display dimension

Rectangle window : 40 x 50 mm. (white)  
Lamps for window display : 8 LED (4 Amber and 4 Red) per each window

## Functional sequences

### Sequence A : Manual Reset

Standard sequence : ANSI/ISA-S18.1-1981

STANDARD	SIGNAL	NORMAL	ALERT	RETURN TO NORMAL BEFORE ACKNOWLEDGEMENT	ACK	RESET	RETURN TO NORMAL
M-1-2-14	LAMP SOUND	OFF SILENCE	FLASH ALARM	FLASH ALARM	ON SILENCE	OFF SILENCE	OFF SILENCE

### Sequence B : Automatic Reset

Standard sequence : ANSI/ISA-S18.1-1981

STANDARD	SIGNAL	NORMAL	ALERT	RETURN TO NORMAL BEFORE ACKNOWLEDGEMENT	ACKNOWLEDGEMENT BEFORE RETURN TO NORMAL	RETURN TO NORMAL
A-1-2-14	LAMP SOUND	OFF SILENCE	FLASH ALARM	OFF SILENCE	ON SILENCE	OFF SILENCE

### Sequence C : Ring back

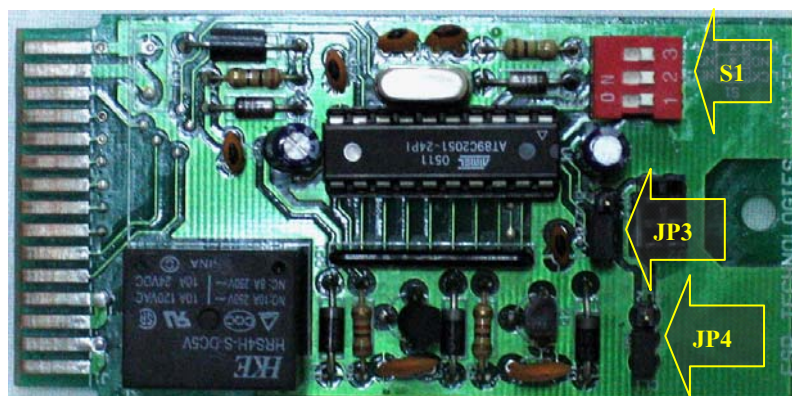
Standard sequence : ANSI/ISA-S18.1-1981

STANDARD	SIGNAL	NORMAL	ALERT	ACK	RETURN TO NORMAL	RESET
R-1-10	LAMP SOUND	OFF SILENCE	FLASH ALARM	ON SILENCE	SLOW FLASH SILENCE	OFF SILENCE

## Switch and jumper setting

Description	Sequential Check								
	Auto reset						Manual reset		
	1	2	3	1	2	3	1	2	3
Input alarm	■	■	■	■	■	■	■	■	■
Visible lamp	■	■	■	■	■	■	■	■	■
Buzzer	■	■	■	■	■	■	■	■	■
Acknowledge		■		■	■			■	■
Reset					■			■	■
Test			■						■

- S1-1 Selectable switch for resetting function between “ Auto ” and “ Manual ” (details are as shown in table)
- S1-2 Selectable switch to specify fault input signal between “ NC ” and “ NO ”.
- S1-3 Selectable functional switch between “ fault “ and “ indicator ”
- JP3 Jumper for output alarm selection between “ bell ” and “ buzzer ” (each card)
- JP4 Jumper for LED displaying color selection between “ amber ” and “ red ” (each card)



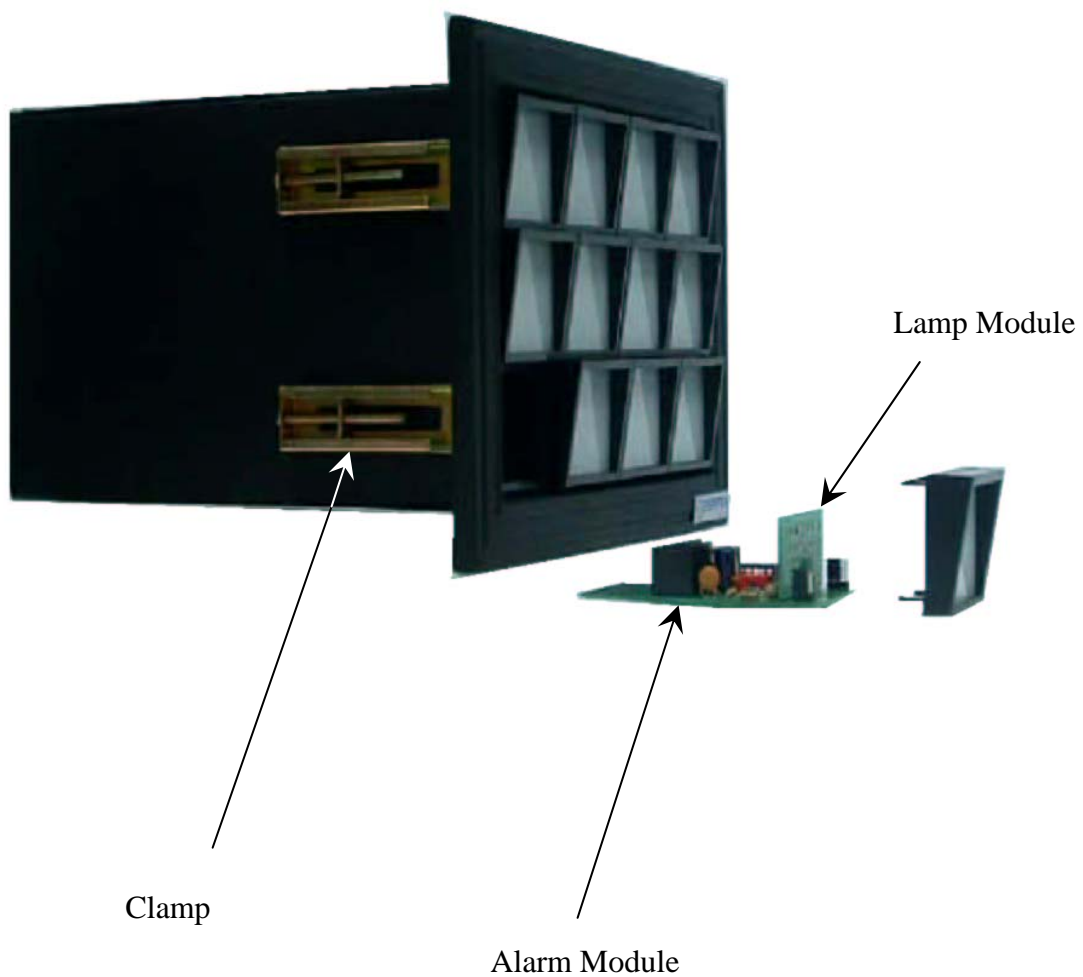
# Special “ Ring back ” function

	Sequential Check																							
	Ring Back																							
Description	1				2												3							
Input alarm	■				■	■	■	■	■	■	■	■	■	■	■	■								
Visible lamp	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Buzzer	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Acknowledge				■																				
Reset					■																			
Test																								

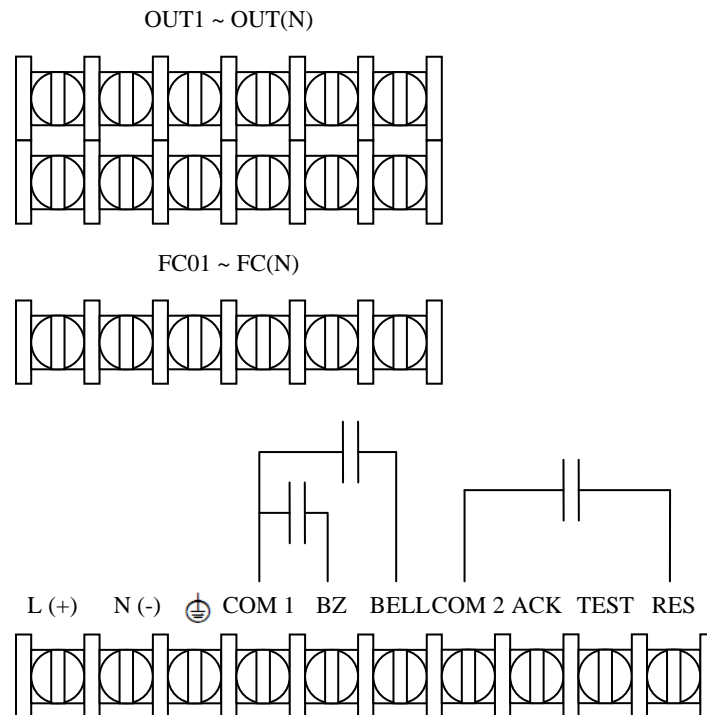


## Installation

- 1) Install the ESPAN-02 from the front the panel.
- 2) Positioning the cabinet in the cutout area so that the cabinet can sit on the front extrude trim.
- 3) Make sure that the front rim is firmly against the panel by both top and bottom.
- 4) From the rear view of the panel, insert the clamp in the groove of the front trim.
- 5) Tighten screws to secure the cabinet into mounting panel.



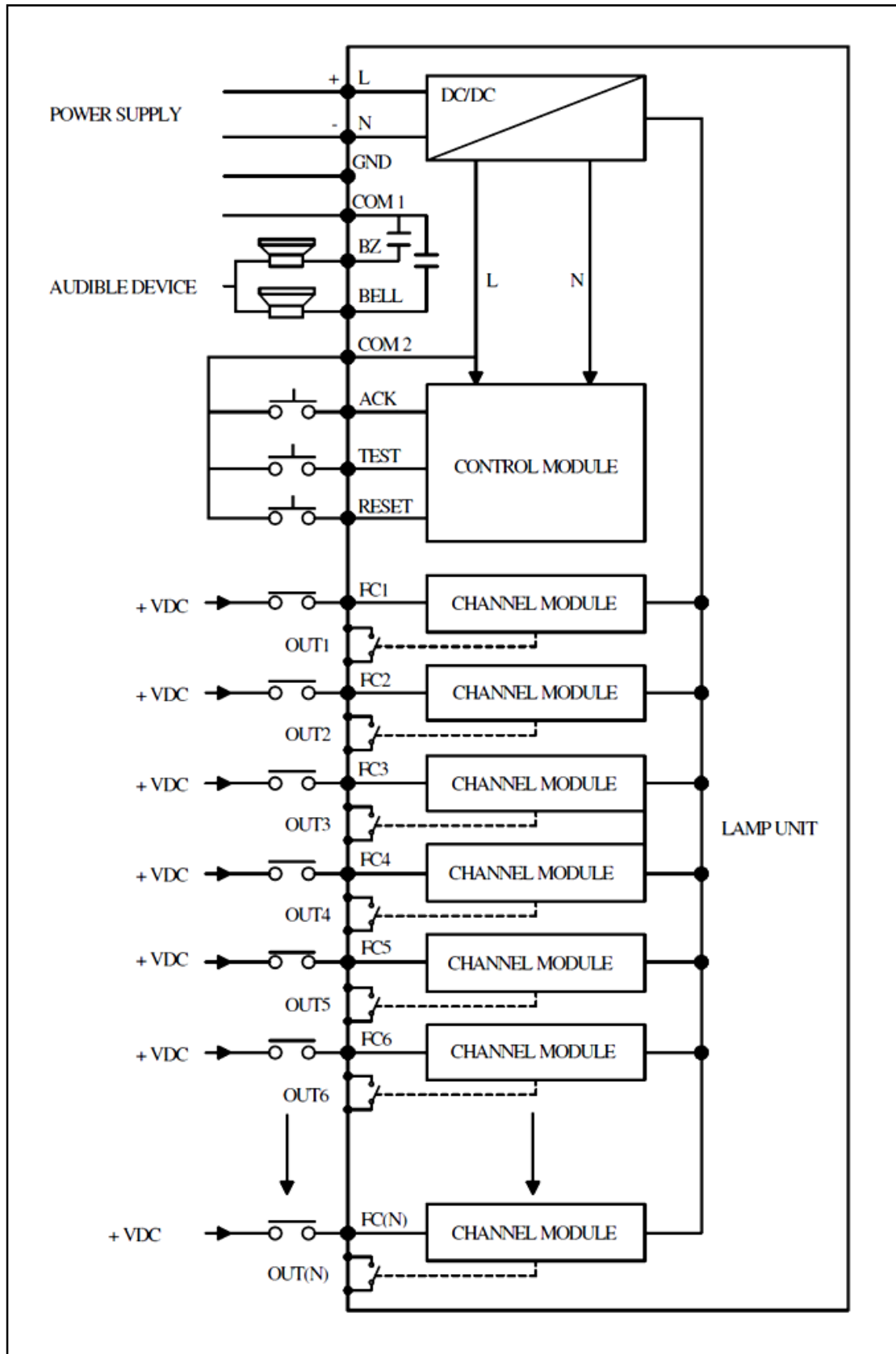
## How to connect the system



1. +, - 125V : Input voltage must be DC 125 V. (in case of power source is 125 Vdc)  
: Positive connects to +125 V and Negative connect to -125 V.
2. RES : must be connected to the reset push button switch (RES) which is N.O. contact and the opposite side of the push button switch must connect to COM.
- ACK : must be connected to the acknowledged (ACK) push button switch and do the same way as RES, the purpose is to do horn stop.
- TEST : must be connected to the lamp test (LT) push button switch and do the same way as RES, the purpose is for checking the condition of lamp.
3. FC01~FC12 : Series connect to fault input signal or filed contact.
4. BUZZER/BELL : can be selected and connect to Buzzer or Bell outside via primary power source.
5. OUT01~ OUT12 : The auxiliary contact outputs or repeat relays, normally used for remote alarm or remote control as given design

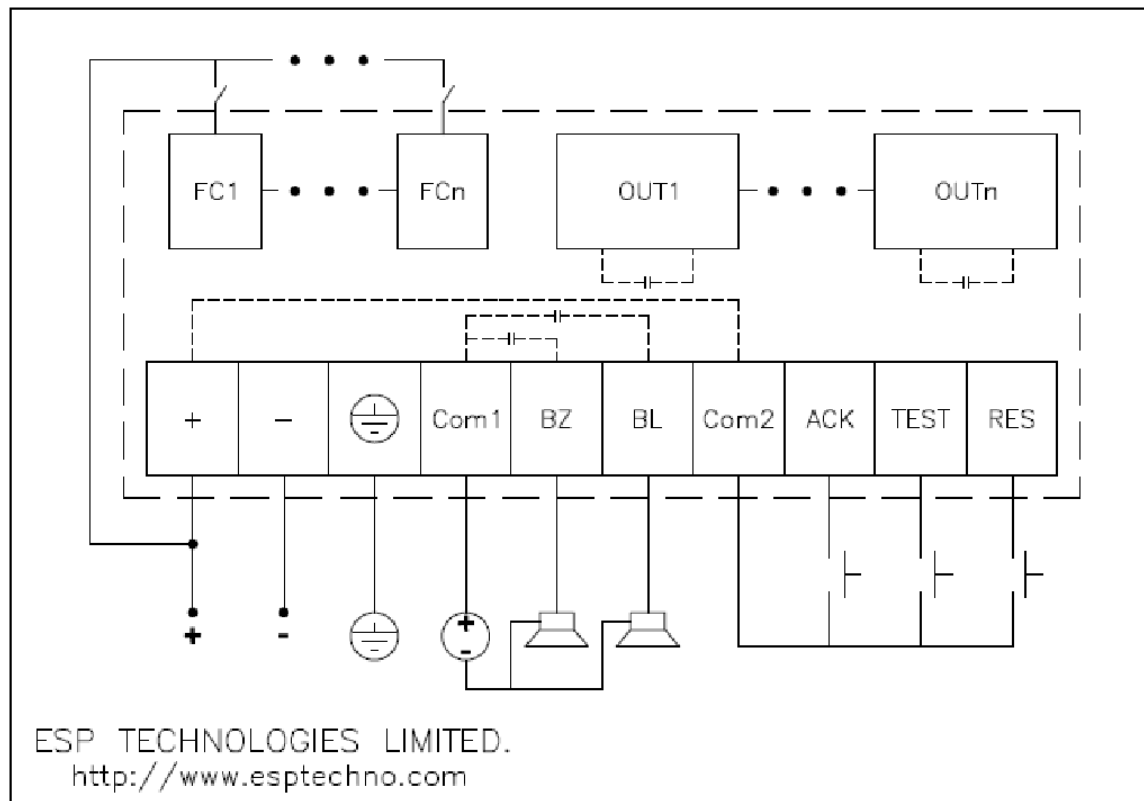
## Annex. A

### Logic diagram



## Annex. B

### Wiring diagram



## **Annex. C**

### **Procedure for factory repairing and returning**

- A. Prepare a Return Material Authorization Form (available from ESPAN or its local representative) with the following information:
- Model and Serial Number of the equipment.
  - Specify Failure Symptom
  - Operating Environment (indoor, outdoor, temperature, vibration, etc.)
  - Approximate date of installation or number of operating hours.
  - Name and telephone number of contact person if questions arise.

- B. Enclose the information with the equipment and pack in a commercially accepted shipping container with sufficient packing material to ensure that no shipping damage will occur.

Ship to the appropriate location as below

Attention:

Service Department

ESP Technologies Ltd.

688/74, M.7, Laksi-square Building,

Changwattana Road, Anusaowari-Bangkhen, Bangkhen,

Bangkok 10220, Thailand

Telephone: +66(0)25226245~7

Fax: +66(0)25226248

- C. Your equipments will be tested, repaired and inspected at the factory and return within ten days (exclude shipping back period).
- D. In case of urgent service needs or repairing status enquiry, please contact the appropriate Service Department or your local ESPAN representative.

### **WARRANTY:**

- **ESP Technologies Ltd. warrants equipment of its own manufacture to be free from defects in material and workmanship, under normal conditions of use and service.**
- **ESP Technologies Ltd. will replace any components found to be defective, upon its return, transportation charges prepaid, within one year of its original purchase.**
- **ESP Technologies Ltd. will extend the same warranty protection on accessories, which is extended or implied, beyond its obligation to replace any components involved. Such warranty is in lieu of all other warranties expressed or implied.**