

OPERATING INSTRUCTIONS FOR THE SERIES 6000SP SPRINKLER ALARM SYSTEM MONITORING PANEL



Complies with BS EN 61010-1:2010 And for use on BS EN 12845/LPC systems

ALARMTRONIC LTD Unit 14, Meridian Centre, Vulcan Way, Croydon , Surrey, CR0 9UG Tel : 01689 847626 , Fax : 01689 841138 Email : <u>sales@alarmtronic.co.uk</u> , Web : <u>www.alarmtronic.co.uk</u>

CONTENTS

INTRODUCTION	3
CONSTRUCTION	3
METHOD OF OPERATION	3
USER WARNING	3
PANEL OPERATION	3
NORMAL CONDITION	3
SUPPLY HEALTHY	
	3
ALARM CONDITION	5
ALARM RESET	
FAULT CONDITION	3
BUZZER MUTE	
FAULT RESET	4
	4
CHANNEL ALARM CHANNEL LINE FAULT	
ALARM ACCEPT	
AUXILIARY ISOLATED	
SUPPLY SOUNDER FAULT	4
	4
INTERNAL BUZZER MUTE	
AUXILIARY ISOLATE	
LAMP TEST	
	1/5
MAIN MOTHER BOARD	4/J
8 WAY CHANNEL INPUT MOTHERBOARD	
8 WAY CHANNEL OPTO OUTPUT CARD	
8 WAY CHANNEL RELAY OUTPUT CARD	
8 WAY CHANNEL DISPLAY MOTHERBOARD	
LEGEND LABEL REMOVAL	.5
TECHNICAL SPECIFICATION	6
ENGINEERS FACILITES	7
INTERNAL BUZZER ISOLATE HARD RESET SWITCH	
TYPICAL WIRING SCHEMATIC	.8

INTRODUCTION

The Series 6000SP has been designed for the monitoring the "state "of Alarm or Fault contacts required by BS EN 12845:2015 for Sprinkler systems incuding sprinkler pumps and other associated equipment. Available in either from 8 to 88 channel inputs in multiplies of 8. Each version has an internal power supply and standby Sealed Lead Battery.

The fascia is equipped with high intensity LED's, System control push switches. Concise user Operation Instructions are screen printed onto the fascia. Each control panel can be surface or flush (via bezel) wall mounted. The Signal inputs can be individual selected for either normally Open or normally Closed. Relay outputs are provided for Common Alarm, Common Valve Alarm, Common Fire Alarm and Common Plant Alarm together with Common Fault (failsafe). An Opto output is provided for each channel input as Standard. Door Legend labels are provided for each panel and are removale is modifications are required

CONSTRUCTION

The cabinet enclosure and front fascia are constructed from sheet steel and finished in Grey White (Standard). The main motherboards and the power supply are mounted at the rear of the enclosure. The front panel fascia display PCB's are connected to the main motherboards by pluggable IDT connection cables.

All external connections are by means of screw terminals fitted to the main motherboards capable of accepting Cables up to 2.5mm². Knockout cable entries are provided at the top of the panel.

METHOD OF OPERATION

USER WARNING

The equipment operates from 230v AC Mains. Only authorised and qualified personnel should have access to the internals of the panel.

PANEL OPERATION

NOTE – All panel push button controls are normally inoperative. Insert the key provided into the "Controls On" switch and turn clockwise (key is trapped in this position). All push button switches are now operative.

NORMAL CONDITION

The Control panel will normally be in its quiescent mode with the Green "Supply Healthy" LED illuminated. Any Sprinkler Valve Status Channel will also have the Green LED illuminated to show that the Valve('s) are in Their normal position

ALARM CONDITION

In the event of any channel Alarm operation the following functions will occur -

- a) The appropriate Channel LED will illuminate (for Valves the Green LED will extinguish also)
- b) The internal buzzer will sound continuously
- c) The monitored external alarm will operate
- c) The Common Alarm relay together with the appropriate Common Type relay will operate
- d) The appropriate Channel Opto output will operate

ALARM ACCEPT

The external Alarm & the internal alarm buzzer can be silenced by operating the "Alarm Accept" button momentary. The "Alarm Accepted" LED will illuminate.

Should a second channel go into Alarm condition whilst the panel is its silenced

mode the external Alarm & internal alarm buzzer will automatically resound.

<u>RESET</u>

Once the cause of the alarm has been identified and the condition removed, the panel can be restored to its normal mode by operating the "Reset "button momentary. *The Alarm must have been accepted (Alarm accepted LED illuminated) before the panel can be Reset*

FAULT CONDITION

In the event of a fault occurring within the Sprinkler monitoring system the following functions will occur -

- a) The appropriate Front Display Fault Yellow LED will illuminate (or flash depending upon fault)
- b) The Internal Buzzer will pulse Sound
- c) An internal LED may illuminate/ flash depending upon the typeof fault
- d) The Common Fault Volt free contact will change state

FAULT BUZZER MUTE

The internal fault can be muted by operating the "fault Buzzer Mute" button momentary. Should a Second fault occur the buzzer will resound

RESET

The Fault condition will automatically reset when the fault has been cleared.

FRONT FASCIA INDICATIONS

The following front fascia indicators are provided to give the following functions:

CHANNEL ALARM (STATUS)

This indicates which Channel is in Alarm by either a Red or Yellow LED's For Valve status Inputs the Green LED will extinguish and the Yellow LED will illuminate When the Valve has been moved to its incorrect position.

CHANNEL LINE FAULT

This indicates a Channel input has a Line fault or isolated by a Yellow LED

Open Circuit Fault: Constant

Short Circuit Fault : Fast Pulse

Channel Isolated : Slow Pulse

(Each individual channel input is monitored by an "End of Line "resistor)

ALARM ACCEPTED

Under normal conditions this indicator is normally illuminated (Green)

AUXILIARY ISOLATED

When illuminated (Yellow LED) this indicates that the Auxiliary relays or Channel Opto outputs Have been isolated and will NOT operate on Alarm conditions.

SUPPLY/ SOUNDER FAULT

Supply Fault: In the event of the following supply faults – Mains failure/Charger/ Battery or Auxiliary 24v DC output faults the Yellow LED will be constantly illuminated

Sounder Fault: In the event of an external Sounder output fault the Yellow LED will pulse

FRONT PANEL CONTROLS

The following front fascia controls are provided to give the following functions:

ALARM ACCEPT

Operating this push button will silence the external Sounder & internal Alarm buzzer The "Alarm Accepted" LED will illuminate

INTERNAL BUZZER MUTE

Operating this push button will silence the internal buzzer

AUXILIARY ISOLATE

Momentary operating this push switch will isolate all auxiliary outputs. Auxiliary isolated LED will illuminated. Depressing the Auxiliary isolate push switch will return the Auxiliary outputs to there Normal operation. The Auxiliary Isolated LED will extinguish

LAMP TEST

To test all LED's and the internal buzzer, depress the Lamp Test button. All Fascia and all internal Fault LED's will illuminate and the buzzer will sound. Release the button – the panel will return to its normal mode. *NOTE : The relay outputs & PSU fault LED's will not illuminated*

<u>RESET</u>

Operating this push button will reset the control panel to normal. NOTE : The alarm must have been "Accepted " before Reset

MAIN MOTHERBOARD INTERNAL LED INDICATONS/ DIP SWITCH & JUMPERS

There are a number of LED's fitted to the internal PCB's to give the more details of the status of the system See Typical Wiring schematic diagram for LED/ DIL switch & Jumper locations

SUPPLY FAULT

A Yellow Supply Fault LED is located on the Main Motherboard For a Power Supply fault the Yellow LED will illuminate

For an Auxiliary 24v DC output fault Yellow LED will flash

SOUNDER FAULT

A Yellow Sounder Fault LED is located on the Main Motherboard For an Open Circuit Sounder Fault the Yellow LED will illuminate

For an Short Circuit Sounder Fault the Yellow LED will flash

FAULT RELAY

Under normal conditions the Green Fault LED located on the main motherboard will be illuminated To show that he failsafe Fault relay is operated. On any fault condition The Green LED will extinguish And the fault relay de-energise

AUXILIARY RELAY OPERATION

Each auxiliary relay located on the Main motherboard has an appropriate Yellow LED which will Illuminate when the relay has operated

POWER SUPPLY FAULT

Located on the power supply are Yellow LED's to show either a Charger or Battery fault

2 WAY DIP SWITCH

An internal 2 way switch located on the Main motherboard provides the following functions

Switch position 1 – Hard Reset ON/OFF – Normal condition OFF

Switch position 2 – Buzzer ON/OFF – Normal condition ON

INTERNAL JUMPERS

- Auxiliary outputs Jumpers are provided to give either N/O or N/C outputs depending upon the jumper position
- 2) Common Alarm Auxiliary Under normal Jumper settings any Common Valve /Fire/Plant auxiliary operation will also operate the Common Alarm Relay. This can be changed by removing the appropriate Jumper

8 WAY CHANNEL INPUT MOTHERBOARD DIP SWITCHES & JUMPER SETUP

Each 8 way Channel input motherboard has a number of DIP switches and jumpers for the panel to be configured to suit the system requirements. See Typical wiring schematic for DIL switch & jumper locations

NORMALLY CLOSED INPUT

Each of the channel inputs can be changed from normally open input to a normally closed input by moving the appropriate N/C DIP switch position to be ON

INPUT ISOLATE

Each of the channel inputs can be isolated. To isolate any input move the appropriate ISOL DIP switch Position to ON. In this position the Front panel Line fault LED will slow pulse. Moving the switch position Back to its normally position will make the input active again and the LED will stop pulsing.

COMMON RELAY OPERATION

Each input can be set to operate any one of the three Common relay outputs located on the Main Motherboard. The three outputs are Common Valve, Common Fire & Common Plant.

The jumpers have been factory set but can be changed if required. These jumpers are located under the OPTO output card. For each input there are 3 jumper settings : V = Valve, F = Fire & P = PlantMove the appropriate Jumper to the output operation required.

OPTO OUTPUTS - NOT AUX ISOLATED

Under normal operating conditions the OPTO outputs will NOT operate when the Auxiliary Isolate switch Has been operated and the Auxiliary Isolated LED is illuminated. This can be changed so that the OPTO Outputs are active under Auxiliary Isolated mode. This is achieved by fitting a Jumper on J17

8 WAY CHANNEL OPTO OUTPUT CARD

Each 8 way channel input motherboard has an 8 way OPTO output card fitted above the Input motherboard via 4 plastic spacers and a Ribbon connection. Two terminals A & B are provied together a Jumper for each output and depending upon the Jumper setting will provide various switched outputs

ISOLATED OUTPUT

With no Jumper connected the output will be a "Isolated Opto Output".

"A" terminal being +ve and the "B" Terminal -ve

SWITCH +VE OUTPUT

With the Jumper connected across the "+ve "pins.

This will connect the 24v DC +ve to the "A" terminal and the "B" terminal being switched +ve on Alarm **SWITCH 0v OUTPUT**

With the Jumper connected across the "-ve "pins.

This will connect the 0v DC to the "B" terminal and the "B" terminal being switched 0v on Alarm

8 WAY CHANNEL RELAY OUTPUT CARD

As an option an 8 Channel relay output card may be fitted instead of the OPTO output card. This is fitted above the Input motherboard via 4 plastic spacers and a Ribbon connection. Two terminals are provided for each output. The output can be either N/O or N/C depending upon the jumper setting for each output. LED's are provided for each output to show relay operation.

8 WAY CHANNEL DISPLAY MOTHERBOARD

Each 8 channel Display Motherboard is configured during manufacturer, however this can be changed if required.

STATUS LED COLOUR

Both Status LED's (Not the Line Fault) for each input can be changed. These LED's are on Pluggable Connections. To change the Status LED colour the panel needs to be "powered down", the front connector to the Front Display removed. The four corner plastic Rivet fixings removed. The Display motherboard can then be removed. Un-plug the appropriate LED's to be changed and replace with the new colour LED's. Re assemble the Display motherboard and reconnect the front connector.

VALVE or FIRE/PLANT LED JUMPERS

The Jumper settings for the Status LED's are configured during manufacture. However this can be Changed if required. With the Jumper connected across the "V" pins the Green LED with be normally Illuminated and On alarm will extinguish and the Alarm Status LED will illuminate With the Jumper connected across the "A" pins both Status LED's will illuminate on Alarm

LEGEND LABEL REMOVABLE

The Legend label is removable after first opening the Control panel door. The label is affixed to the front door via 2 x M3 nuts. Once removed the Legend label can be replaced and re fixed.

TECHNICAL SPECIFICATION

The following information applies only to a standard control panel

POWER SUPPLY AC Supply input 230v AC 50/60 HZ 100VA Maximum Nominal supply voltage 24v DC Battery float voltage 27.50v DC Power supply type Constant Voltage with current limit back and thermal shutdown Auxiliary 24v DC output maximum 250 ma Thermal fuse and monitored PANEL POWER CONSUMPTION Quiescent condition 4 mA per way, 30 mA Common Functions Alarm condition (one Alarm) 15 mA per way (in Alarm), 60mA Common functions **CHANNEL INPUT CIRCUITS** Either N/O or N/C selected Selector switch Input Type End of line device 4K7 to 6K8 1/4 Resistor (4K7 supplied) 470R to 680R 1/4 Resistor (470R supplied) Alarm monitoring Resistor Both open & short circuit with Line fault per channel input Monitoring PANEL OUTPUTS Monitored External Alarm Maximum load 250 mA with thermal fuse Monitored for both O/C & S/C Common Alarm Relav 1 set either N/O or N/C rated at 1amp 50v DC Common Valve Alarm Relay 1 set either N/O or N/C rated at 1amp 50v DC Common Fire Alarm Relay 1 set either N/O or N/C rated at 1amp 50v DC Common Plant Alarm Relay 1 set either N/O or N/C rated at 1amp 50v DC Common Fault relay 1 set either N/O or N/C rated at 1amp 50v DC (Normally energised - failsafe) Channel OPTO output OPTO -Isolated type, rated at 25mA at 50v DC Either N/O or N/C @ 1 amps 50v DC Channel Relay output(optional) (Selected via internal Jumper link per way) **REMOTE CONTROL INPUTS** Alarm Accept Momentary switched +VE input System Reset Momentary switched +VE input CABINET ENCLOSURE

Back Box	 18 Gauge Sheet Steel, finished Grey White to RAL 9002
Front Fascia	 18 Gauge Sheet Steel hinged front door with Cam Lock
	(2 keys supplied) finished Grey White to RAL 9002
	Front Screen printing in Blue
Channel Label	 Pre-Printed Legend Label (removable)

FUSES AND RATINGS

The following fuses are fitted to the panel.

Mains Input	 Ceramic Type 20mm x 5mm - 1.00Amp HRC	
Battery output	 Glass Type 20mm x 5mm	
	1.25 Amp PS version - 2 Amp Anti Surge	
	3 Amp PS version – 3.16 Amp anti Surge	
Sounder Output	 Thermal fuse Type 0.25Amp	
24v DC Auxiliary	 2 x Thermal fuse type	

MAIN MOTHERBOARD CONNECTIONS (L to R)

Common Alarm Auxiliary	 N/O or N/C
Common Valve Auxiliary	 N/O or N/C
Common Fire Auxiliary	 N/O or N/C
Common Fault Auxiliary	 N/O or N/C (failsafe – normally energised)
Fault Repeat	 Switched +VE 24v DC on fault
Remote Alarm Accept	 Momentary Switched +VE input
Remote System Reset	 Momentary Swtched +VE input
Common +VE	 +VE 24v DC output for remote inputs
SNR Output	 Monitored sounder output – EOL 4k7
24v Aux	 Monitored 24v DC auxiliary output

8	WAY CHANNEL INPUT	MOTHERBOARD	CONNECTIONS (L to R)
1			Channel 1 input : +VE & 0v
2			Channel 2 input : +VE & 0v
3			Channel 3 input : +VE & 0v
4			Channel 4 input : +VE & 0v
5			Channel 5 input : +VE & 0v
6			Channel 6 input : +VE & 0v
7			Channel 7 input : +VE & 0v
8			Channel 8 input : +VE & 0v

NOTE : 0v common to all inputs

8 WAY CHANNEL OPTO BOARD CONNECTIONS (L to R)

1	 Channel 1 output: A & B terminals
2	 Channel 2 output: A & B terminals
3	 Channel 3 output: A & B terminals
4	 Channel 4 output: A & B terminals
5	 Channel 5 output: A & B terminals
6	 Channel 6 output: A & B terminals
7	 Channel 7 output: A & B terminals
8	 Channel 8 output: A & B terminals

Note - To change the type of output move the appropriate Jumper No Jumper – Isolated output : +ve Jumper -Switched +VE : -ve Jumper -Switched -ve

8 WAY CHANNEL RELAY BOARD CONNECTIONS (L to R)

1	 Channel 1 output: N/O or N/C
2	 Channel 2 output: N/O or N/C
3	 Channel 3 output: N/O or N/C
4	 Channel 4 output: N/O or N/C
5	 Channel 5 output: N/O or N/C
6	 Channel 6 output: N/O or N/C
7	 Channel 7 output: N/O or N/C
8	 Channel 8 output: N/O or N/C

Note - To change the type of output (N/O or N/C) move the appropriate Jumper For N/O Jumper position is "A", for N/C Jumper position is "B"

ENGINEER'S FACILITES

The following facilities should only be used by Commission and Service Engineer's

BUZZER ISOLATE SWITCH

The internal buzzer can be disconnected by moving the DIL switch position 2 to the OFF position. The switch is located on the main motherboard

HARD RESET SWITCH

The panel has a "HARD " reset switch. Move DIL switch 1 to the ON position. This switch must be returned to the OFF position for the panel to be operational. This switch is located on the Main Motherboard

NOTE – Location of selector switches/ Internal LED's & Jumpers are shown on the typical wiring schematic

