USER'S MANUAL

Omni8µ Alarm Annunciator

C1477B-x

SCOPE

This is a User Manual supplied with your product and provides information necessary to install, set-up and operate the product.

This manual covers the following product Model Numbers:

Model	Description
C1477B-1	Omni8µ with 10-15Vdc Power Supply
C1477B-2	Omni8µ with 20-60Vdc Power Supply
C1477B-3	Omni8µ with 85-264Vac/dc Power Supply

DATE	REVISION	COMMENTS
Sep 1999	1	Initial revision
Nov 1999	2	General Corrections during development.
Feb 2000	3	Released to Production
Apr 2016	4	Updated for B release
May 2016	5	Added humidity specifications and IP rating
May 2018	6	Updated mechanical drawing and photo due to new bracket

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Introduction

The Omni8µ (pronounced “omni eight micro”) is a compact 8 point Alarm Annunciator/Status Indicator which is fully field configurable (via two simple-to-set 8-way switch’s) to meet a wide range of alarm and status indication applications.

Although extremely compact in size, the Omni8µ is packed full of features normally found only in larger alarm annunciator systems.

Available in a range of power supply options, the rugged Omni8µ is designed to fit directly into local electrical panels without the need for external power conditioning or interfacing for the lowest cost system implementation.

With bright back-lit LED displays, the Omni8µ provides high visibility viewing of alarm and status information replacing the need for independent status indicators without consuming valuable panel space.

Integral control pushbuttons and an audible device minimise the installation time and cost.

THE OMNI8µ 8 point Alarm Annunciator/Status Indicator.

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1. GENERAL DESCRIPTION

1.1 Features

- Compact 48x96mm DIN panel mounted construction for minimum space utilisation.
- Bright Back-lit alarm/status display for easy viewing.
- Solid State LED display technology for high reliability and low power consumption -no lamps to replace.
- User-created Display legends on standard laser/inkjet printer using software templates supplied – no window engraving required.
- Integral Full-Function Alarm Annunciator for independent critical alarm point monitoring.
- Integral audible device and control pushbuttons for ease of installation and use.
- Relay output for common group alarm or external audible device control.
- Removable terminals for easy installation and maintenance.
- Wetting voltage supplied to the inputs to allow potential free input contacts to be directly connected.
- Integral power supply for direct connection to available power source.
- Switch selectable Normally Open or Normally Closed input contact selection.
- 22 Switch selectable configurations covering all popular alarm sequences and configurations.

1.2 Front View showing Display Layout

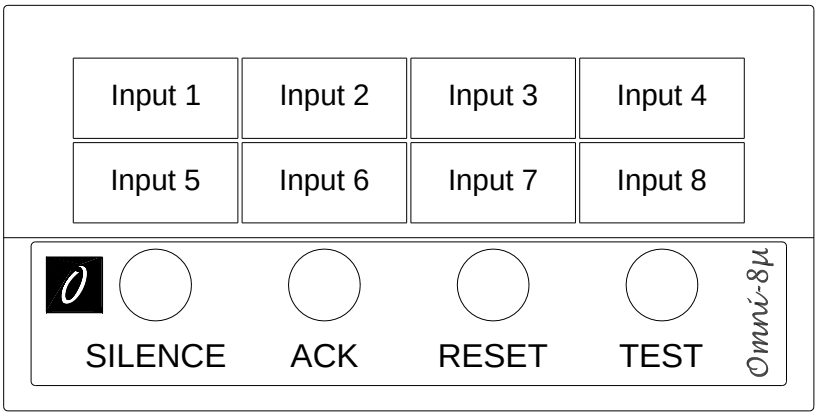

Figure 1-1 Front View

1.3 Rear View showing Terminal Layout

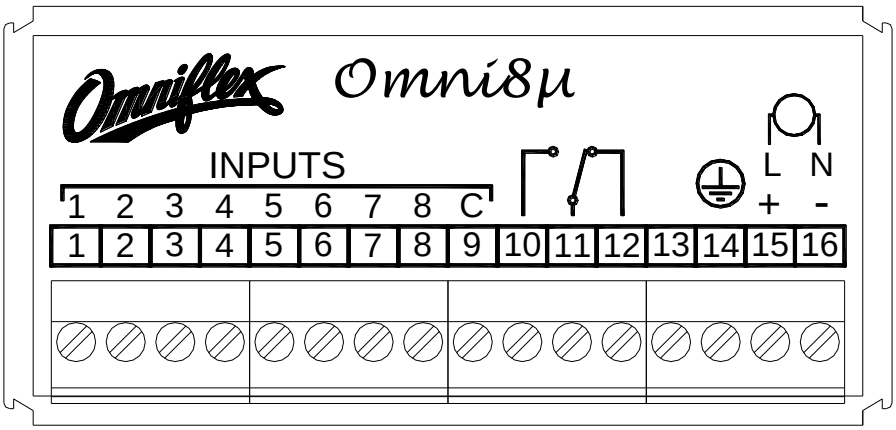

Figure 1-2 – Rear View

1.4 Left-Hand-Side View showing Switch Layout

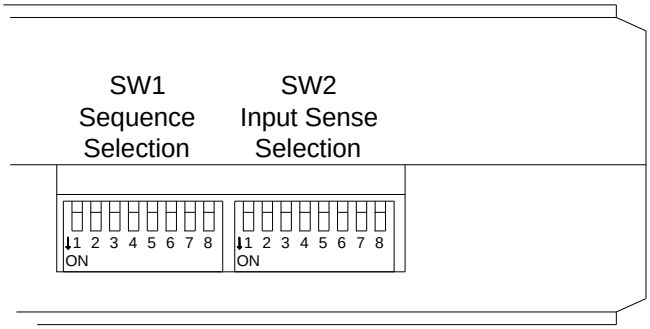

Figure 1-3 – Side View showing 8-way Set-up Switches

1.5 Installation and Set-up Procedure

The following steps should be implemented in the order shown to configure and install an Omni8-µ alarm annunciator:

1. Configure the set-up switches to the required settings. (See section 2)
2. Install the unit in the panel. (See section 3)
3. Wire the inputs, power supply and relay output. (See section 4)
4. Print and install the back-lit display legend. (See section 5)
5. Power up and check your installation. (See section 6)

2. SETTING THE CONFIGURATION SWITCHES

2.1 Introduction

The unit is configured for operation by setting the two 8-way set-up switches found on the left hand side of the Omni8µ. The layout of these switches can be seen in Figure 1-3 – Side View showing 8-way Set-up Switches.

SW1 is used to set the operational configuration of the Omni8µ.

SW2 is used to set the sense of the eight input contacts – normally open or normally closed.

Each set-up switch has 8 individual miniature switches, numbered from 1 to 8. Each of these miniature switches can be referred to separately: for example, the 8 miniature switches on SW1 are referred to as SW1-1 to SW1-8.

2.2 Selecting the input sense

Can either be set for normally open or normally closed.

The input sense for each of the 8 input contacts is selected by setting the corresponding switch of SW2. e.g. SW2-1 sets the contact sense for input 1 and SW2-8 sets the contact sense for input 8.

When the switch is OFF (up) then the input is set to NORMALLY OPEN. (i.e. the input will enter the alarm state when the input contact is closed.)

When the switch is ON (down) then the input is set to NORMALLY CLOSED. (i.e. the input will enter the alarm state when the input contact is opened.)

2.3 Selecting the alarm sequences

The 8 inputs of the Omni8µ operate as a single group of alarms all with the same alarm/display function, which can be any one of the available alarm/display sequences listed in Table 2-1 (detailed block diagrams of each alarm/display sequence are provided in section 8.)

Set switch SW1-1 to SW1-5 according to the selected sequence in Table 2-1.

The sequence switch settings can be changed at any time.

Any sequence switch changes made while the unit is running in the normal mode of operation will cause the OMNI8µ to revert to the power-up routine as described in section 6.1. Press the ACKNOWLEDGE button to return the unit to normal operation.

Table 2-1: The Sequence Switch Settings

	SEQUENCE SW1										
SEQ. NO.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**DESCRIPTION**	**Figure In Section**	**ISA DESIGNATION**	**T TIME DELAY**
0	0	0	0	0	0	□	□	□	SERVICE MODE (consult factory for service information)	-		
1	1	0	0	0	0				LAMP FOLLOWS INPUT	1	--	--
2	0	1	0	0	0				MOMENTARY (FLEETING) ALARM, MANUAL RESET	2	M-1	--
3	1	1	0	0	0				ALARM ONLY (NON-LATCHING INPUTS) AUTO RESET	4	A-1-4	--
4	0	0	1	0	0				MOMENTARY ALARM, MANUAL RESET WITH ALARM RINGBACK	6	R-1-10	--
5	1	0	1	0	0				FIRST OUT, MULTIPLE GROUPS, MANUAL RESET	8	F2M-1	--
6	0	1	1	0	0				FIRST OUT, MANUAL RESET, AUTO RESET ON SUBSEQUENT ALARMS	9	F3A-1-3	--
7	1	1	1	0	0				FIRST OUT, SINGLE GROUP, MANUAL RESET, FIRST OUT CONTINUOUS FLASH	10	--	--
8	0	0	0	1	0				FIRST OUT, MANUAL RESET, SUBSEQUENT ALARMS WITHOUT HORN	11	F1M-1	--
9	1	0	0	1	0				MOMENTARY ALARM, MANUAL RESET, AUTO SILENCE AFTER TIME DELAY.	12	--	60 seconds
10	0	1	0	1	0				MOMENTARY ALARM, MANUAL RESET, REALARM AFTER TIME IF STILL ABNORMAL.	13	--	60 seconds
11	1	1	0	1	0				MOMENTARY ALARM, MANUAL RESET, CONSTANT FLASH (FOR MOTOR ALARMS).	14	--	--
12	0	0	1	1	0				MOMENTARY ALARM, AUTO RESET, TIME DELAY ON RETURN TO NORMAL.	16	--	60 seconds
13	1	0	1	1	0				PULSE MONITORING ALARM; MANUAL RESET	17	--	--
17	1	1	1	1	0				INPUTS 1-4 SEQUENCE 1; INPUTS 5-8 SEQUENCE 27 (FOR MOTOR ALARMS)	1 & 25		--
18	0	1	0	0	1				MOMENTARY ALARM, AUTO RESET	18	--	--
21	1	0	1	0	1				FIRST OUT, MULTIPLE GROUPS, AUTO RESET	20	F2A-1	--
23	1	1	1	0	1				FIRST OUT, SINGLE GROUP, AUTO RESET, FIRST OUT CONTINUOUS FLASH	21	--	--
24	0	0	0	1	1				FIRST OUT, AUTO RESET, SUBSEQUENT ALARMS WITHOUT HORN	22	F1A-1	--
25	1	0	0	1	1				MOMENTARY ALARM, AUTO RESET, AUTO SILENCE AFTER TIME DELAY.	23	--	60 seconds
26	0	1	0	1	1				MOMENTARY ALARM, AUTO RESET, REALARM AFTER TIME IF STILL ABNORMAL.	24	--	60 seconds
27	1	1	0	1	1				MOMENTARY ALARM, AUTO RESET, CONSTANT FLASH (FOR MOTOR ALARMS)	25	--	--
29	1	0	1	1	1				PULSE MONITORING ALARM, AUTO RESET	27	--	--

FOLLOWS INPUT	0	0		RELAY OUTPUT (see Section 2.4 for details)
FOLLOWS ALARM STATE	1	0		
FOLLOWS HORN	0	1		
ACTS AS MRF (REFLASH)	1	1		
INPUT 8 AS NORMAL			0	WHEN THIS SWITCH IS ON, INPUT 8 MAY BE USED TO INHIBIT ALL OTHER ALARMS 1 TO 7.
INPUT 8 ACTS AS INHIBIT			1	IN THIS MODE LAMP 8 ON MEANS ANNUNCIATOR IS INHIBITED (see Section 2.5 for details).

NOTE:

In the above sequences, the switch sense is as follows:

"1" = switch in on position

"0" = switch in off position

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2.4 Selecting the Group Alarm (G.A.) Relay Output Function

The G.A. relay provided internally offers a changeover contact on the rear terminals.

SW1-6 and SW1-7 are used to set the mode of operation of this relay.

There are four modes to choose from:

1. ***Relay follows input***

   The relay is normally energised.

   Any abnormal input will de-energise the relay. The relay will re-energise when all inputs return to their normal states, regardless of the state of the alarm lamps.

   This is useful for tracking the actual state of the inputs.

2. ***Relay follows alarm state***

   The relay is normally energised.

   Any alarm state will de-energise the relay. The relay will return to normal when all alarm states have returned to normal. (i.e. the entire display is off)

   This is useful for tracking the actions of a local operator in clearing the problem. If a 'fleeting' alarm sequence is chosen, the relay will remain de-energised until the operator clears the display.

3. ***Relay acts as horn***

   The relay is normally de-energised.

   The relay will energise whenever the internal audible device sounds. The relay will de-energise when the internal audible is silenced (normally by pressing the Silence or Acknowledge Pushbutton).

   This is useful in environments where the local internal audible will not be heard.

4. ***Relay acts in Multiple Reflash Mode***

   The relay is normally energised.

   The relay is de-energised by the first abnormal input state.

   Upon each subsequent abnormal input state, the relay will momentarily energise (for about 1 second), then return to the de-energised state.

   This is useful when the relay contact is used for example to trigger a dial up alarm, and if subsequent inputs going into alarm must also trigger the dial-up alarm.

   Referring to Table 2-1, select one of the 4 relay modes by setting switches SW1-6 and SW1-7 to the appropriate positions.

2.5 Selecting the Inhibit Input Mode

Input 8 may be used as a special "input inhibit" input. In this mode, when the Input 8 is in the normal state, the other 7 inputs perform normally. When the input 8 is in the alarm state, then all further input changes are ignored, preventing any further alarms to be displayed. In this mode, the lamp 8 will follow the state of the inhibit function. When the alarm system is inhibited, the lamp 8 will be on. When the alarm system is operating normally and not inhibited, then this lamp will be off.

2.6 Inhibit Input Sense

SW2-8 contact sense selection switch is used regardless of whether the input 8 is used as a normal alarm or as an input inhibit.

3. MECHANICAL INSTALLATION

The overall dimensions and panel cut-out size of a single unit are given in the following Figure:

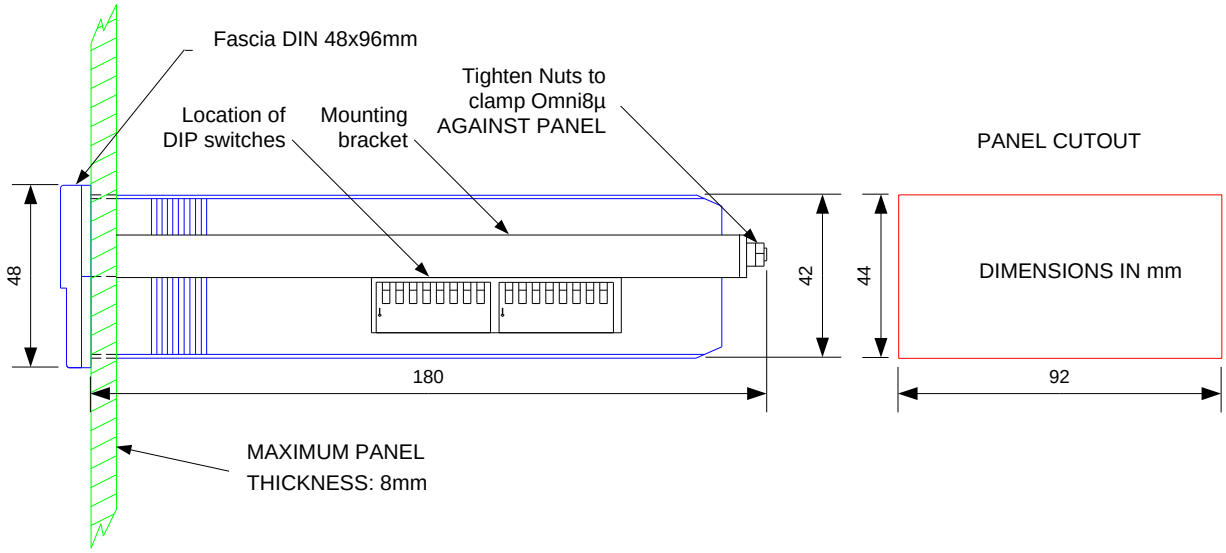

Figure 3-1: Mounting an Omni8µ

3.1 Installing the Omni8µ in a panel.

Remove the metal bracket from the unit by removing the two nuts holding the bracket to the unit and slide it off the rear of the unit.

Insert the Omni8µ into the panel from the front.

Replace the bracket by sliding it on from the rear and tightening the two nuts. Make it is horizontal and it is secure against the front plate.

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4. ELECTRICAL INSTALLATION

4.1 Introduction

All electrical connections to the Omni8µ are made on the rear of the unit on plug-in terminals provided (refer to Figure 1-2).

4.2 Connection Table

Terminal Number	Description	
1	Input 1	
2	Input 2	
3	Input 3	
4	Input 4	
5	Input 5	
6	Input 6	
7	Input 7	
8	Input 8	
9	Common Input Excitation Voltage (+12volts for contact wetting)	
10	Relay Change-over Contact – Normally Open Connection	
11	Relay Change-over Contact – Common Connection	
12	Relay Change-over Contact – Normally Closed Connection	
13	No Connection	
14	Earth	
15	+ dc Power Connection	Live ac Power Connection
16	- dc Power Connection	Neutral ac Power Connection

4.3 Connecting the alarm inputs

The Omni8µ is operated with potential free contacts connected to the input terminals. The common terminal provided (marked C) supplies a +12 volt wetting potential used to power these contacts.

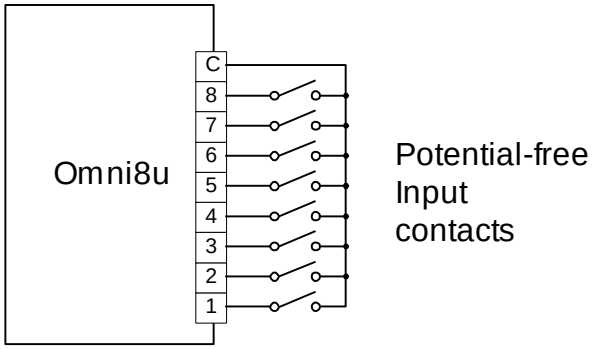


Figure 4-1 Inputs Connection Diagram

4.4 Connecting the Relay

The relay contact shown in the Figure 1-2 is shown with the relay coil in the de-energised state. i.e. with no power applied. The normally open contact refers to the relay convention of the contact in the de-energised state of the relay coil. In some of the modes of operation of this relay, the relay coil will be energised with no alarms present. The *normal* state of the *system* would therefore be for the contact across the C and NO terminals of the relay to be *closed.*

4.5 Connecting the power supply

Power supply connections are made to the plug-on terminals according to the following table:

Table 2-3: Power supply connections

Supply Voltage	Connector Terminals		
	14	15	16
dc	Earth	positive (+)	negative (-)
ac	Earth	Live	Neutral

5. PREPARING THE BACKLIT DISPLAY LEGEND

5.1 Overview

Legends are created for the Omni8µ on a laser or inkjet printer using the software templates provided with the product.

Templates for popular programs are supplied on a CD with your Omni8µ. These are for Microsoft Excel which is supported by all operating systems. There is also a README.TXT file on this disk. Run this first to see which version of program you must run to use the supplied templates.

5.2 Creating the Legend Film

To create the legend, open Excel and load the appropriate template supplied and then fill in your legend detail. Print it onto overhead transparency film (the type used for overhead presentations). A sheet is included with the product. Cut this along the cut marks which will print onto the film and then insert into the Omni8µ.

(We suggest that you test your printout on plain-paper first to ensure that all aspects of your Legend Film are to your liking before printing on to the actual film supplied.)

Please note that the supplied templates have been tested on a wide range of printers. Your particular printer may scale the image slightly differently. While the front grid markings should accommodate this tolerance, in exceptional circumstances you may have to alter the grid spacing on the template supplied. This needs to be done once only and will then be set for your printer.

5.3 Inserting the Legend into the Annunciator

Cut the film to size, unclip the Omni8µ front-plate by pulling on the upper edge, and insert the film into the recess behind the front-plate.

Replace the front-plate.

6. OPERATION

6.1 Power-up

When power is applied to the Omni8µ, the unit commences an automatic, built-in circuit test routine. This results in the unit sounding the audible for approximately half a second followed by the cyclic illumination of each lamp in turn from 1 to 8 and back to 1 again etc. in a “marching sequence”.

If no internal faults are detected in the unit, then this test mode display continues until the Acknowledge Pushbutton is pressed or until an input enters the alarm state.

If a fault was detected, then the unit will display a fault indication by continuously flashing one of the lamps. If this occurs, then the unit must be sent for service.

If a new alarm occurs while the Omni8µ is in this test routine, the unit will immediately revert to its normal mode of operation and will deal with the alarm state according to the pre-selected alarm sequence.

6.2 Normal Operation

During the normal operation, the Omni8µ will act upon any alarm states according to its pre-set alarm sequences. (The instructions for setting-up these sequences are given in SECTION 3.3).

Section 8 provides detailed block diagrams for the function of each alarm sequence.

When an alarm condition occurs and the horn sounds, the operator should depress the relevant pushbuttons, where necessary, according to the pre-selected alarm sequence.

When the Omni8µ is put into its test routine by depressing the TEST pushbutton, any existing alarm states are “remembered” and the alarm annunciator will revert to its previous state when it returns to its normal mode of operation.

If a new alarm state occurs while the Omni8µ is performing its test routine, the unit will immediately revert to its normal mode of operation and deal with the alarm state according to the pre-selected alarm sequence.

6.3 Test Functions

6.3.1 Overview of the Test Functions

The Test button operates as a combined lamp test and circuit test function.

No information is lost during the entire test routine, and each alarm display returns to the exact state it was in before the test.

6.3.2 Pressing the Test Button

When the Test button is pressed, the unit checks the results of its regular full circuit test, and if all checks performed pass, then a normal lamp test is performed by illuminating all of the lamps while the Lamp Test Pushbutton is held down.

If the circuit Test fails then the unit enters its “marching sequence” test routine described in Section 6.3.5 and the test failure code will be displayed by flashing one of the lamps continuously.

In this way, the display/annunciator Test button acts both as a Lamp Test and Circuit Function.

6.3.3 Fault Indication on Circuit Test

If a fault is found in one of the tests performed, then the unit enters its full “marching lamp sequence”, with, in addition, one or more of the lamps flashing continuously to indicate the fault located. This is described in detail in Section 6.3.5

6.3.4 Manually invoking the Circuit Test Function.

As a confidence measure, the unit may be placed in the full “marching sequence” Circuit Test Mode at any time by holding down the Silence button and then pressing the Test Button. See section 6.3.5

6.3.5 The “Marching Sequence” Circuit Test Display

This routine is entered upon the following conditions:

- Upon power up.
- If the Test button is pressed and a fault is detected in the unit.
- By holding down the Silence button and then pressing the Test button manually enters this function.
- Any time during normal operation, if the unit during its regular self-test routines detects a fault.

This test routine begins by activating the horn output circuit for approximately one second.

The operator should therefore check that the horn sounds for this short period.

Immediately after this half-second period, if the Omni8µ is functioning correctly, the following visual indication will occur:

The display will begin a “marching light” sequence, with each display window illuminating and then extinguishing, one at a time, starting with the display point 1 (top left-hand window) and ending with the display point 8 (bottom right-hand window). All display windows will then remain extinguished for a brief moment.

The “marching” sequence will then begin again, and this procedure of “marching” sequence followed by the brief “blank” display period will be repeated continuously until the ACKNOWLEDGE pushbutton is depressed, or until an input changes state.

This marching sequence indicates that the alarm annunciator has passed all its own internal tests and is functioning correctly. If the lamp display exhibits any other pattern then a fault has been detected, and the unit should be returned for repair.

To exit the test mode and begin normal operation, the ACKNOWLEDGE pushbutton should be pressed.

The pushbuttons may also be tested in this mode:

If the SILENCE button is depressed - lamp No. 1 flashes continuously.

If the ACK button is depressed - the annunciator reverts to normal operation.

If the RESET button is depressed - lamp No. 3 flashes continuously.

If the TEST button is depressed - lamp No. 4 flashes continuously.

If any other lamp flashes continuously, then the unit has detected a fault and must be returned to the factory for repair.

If a new alarm occurs while the Omni8µ is in this test routine, the unit will immediately revert to its normal mode of operation and will deal with the alarm state according to the pre-selected alarm sequence.

6.4 Use of the inhibit input

When SW1-8 is off, then input 8 operates in the normal fashion. When SW1-8 is switched on, then input 8 is converted into an inhibit input as operates as follows:

If input 8 is in the abnormal condition all of the other alarm inputs will be disabled from causing a new alarm. All other functions of the unit will remain unaffected.

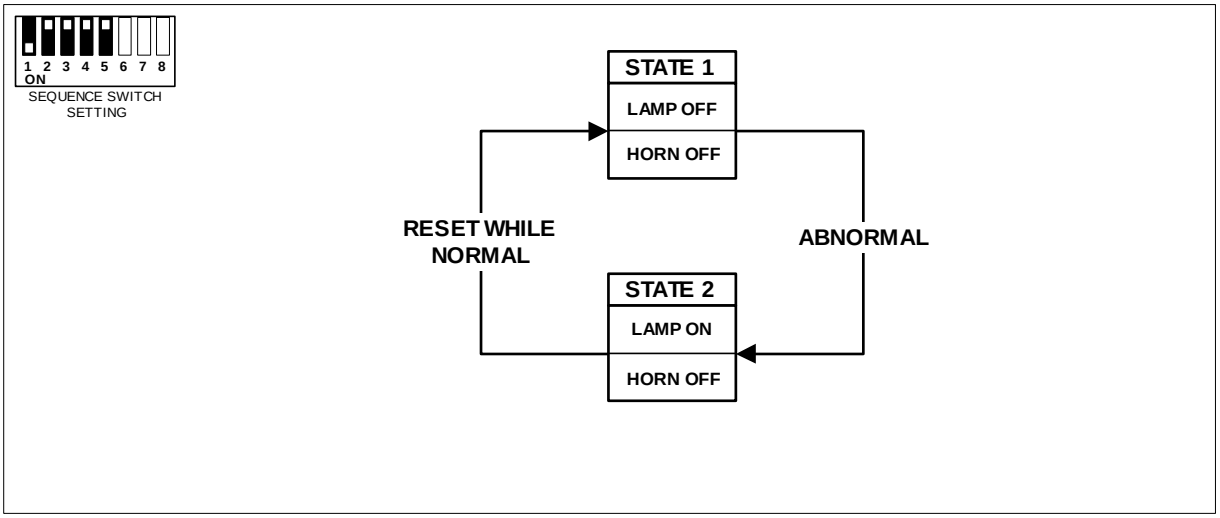
7. SPECIFICATIONS

TERMINALS			
Connection	: via 16 way plug-in terminal block		
Wire size	: 1.5 sq. mm (17 SWG/15.5 AWG) recommended		
	2.5 sq. mm (15 SWG/13 AWG) maximum		
POWER SUPPLY			
	Model C1477B-1	Model C1477B-2	Model C1477B-3
Voltage:	10-15Vdc	20-60Vdc	85-264Vac/dc
Maximum dc ripple	10% pk-to-pk	10% pk-to-pk	N/A
Current consumption:	300mA	250mA	7VA/5W
Isolation test voltage (power supply to Input terminals):	None	1500Vac rms	1500Vac rms
ALARM INPUTS			
Quantity and Type	8 potential free contacts		
Contact Sense	normally open (N.O.) or normally closed (N.C.), selectable by DIP switch.		
Max open cct voltage:	15V dc between Common (positive) and all input terminals.		
Max closed cct current:	2 mA per input		
Max loop resistance to detect closed circuit	200 ohms		
Min loop resistance to detect open circuit	100 kilo-ohms		
Input Scan Rate	4 ms		
PUSHBUTTONS			
Quantity and Type	4 Mounted on front panel Integral to Unit		
Functions	Silence, Acknowledge, Reset, Test		
RELAY CONTACT OUTPUT			
Quantity and Type	1 Potential-free changeover relay contact (FORM C)		
Contact rating	: 2 A, 30 V dc / 0.5 A, 250 V ac		
Isolation	1000Vac rms between contact and other circuits		
Relay operating modes:	4 types to choose from (selectable by DIP switch): i. Relay follows input states ii. Relay follows alarm states iii. Relay acts as horn output iv. Relay acts as "Multiple Re-Flash" alarm output		

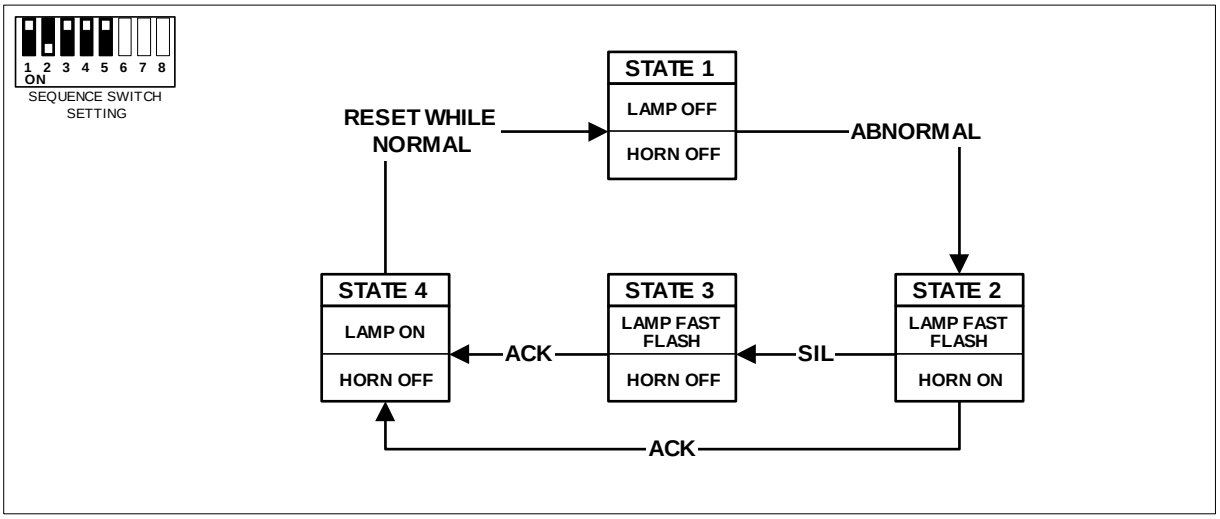
CONFIGURATION SWITCHES	
Quantity	2
Type	Each 8-way. One for Configuration; one for Input Sense
Location	on left-hand-side of unit (accessible only when slide clamp is removed)
SEQUENCES	
Quantity	22 (user selectable by DIP switches)
ISA types supported	M-1; A-1; A-1-4; R-1-10; F2M-1; F2A-1; F3A-1-3; F1M-1; F1A-1
DISPLAY WINDOWS	
Quantity and Type	8 Back-lit Red LED display
Window size	20 mm wide x 10 mm high (0.8” wide x 0,4” high)
Engraving details	Printed on transparent film using laser or inkjet printer. Recommended text size: 3 rows of 20 characters 2.5mm
Fast Flash Rate	140 flashes per minute
Slow Flash Rate	35 flashes per minute
TEMPERATURE RANGE	
Operating Relative Humidity	0 ºC to +60 ºC (+32 ºF to +140 ºF) Up to 90% RH, non condensing
Storage Relative Humidity	-10 ºC to +70 ºC (+14 ºF to +158ºF) Less than 40% RH
DIMENSIONS (SINGLE UNIT)	
Cut-out	: 44mm (1.73”) horizontal 92 mm (3.62”) vertical
Overall	: 48 mm (1.89”) height 96 mm (3.78”) width 180 mm (7,09”) maximum depth behind panel, (excluding front panel)
Panel thickness:	: 1,6 mm (0,062”) minimum
	: 8,0 mm (0,315”) maximum
WEIGHT	
Unpacked	: 300 g approximately
Packed	: 480g approximately
COMPLIANCE TO STANDARDS	
Ingress Protection (I.P.)	IP54 (front only)
Safety	EN 60950:1995
Emissions	EN 55011 and EN50081-2:1994 Group I, Class A
Immunity – ESD	IEC 61000-4-2:1995, level 3
Immunity – RF Fields	IEC 61000-4-3:1995, level 3

Immunity – Fast Transients	IEC 61000-4-4:1995 2 kV – DC power port 1 kV – input/output lines
Supply Variations	IEC 61000-4-7:1991, 24 V dc +15% -10%
RoHS Compliance	2011/65/EU (RoHS2)
ORDERING INFORMATION	
C1477B-1	Omni8µ with PSU 10-15Vdc
C1477B-2	Omni8µ with PSU 20-60Vdc
C1477B-3	Omni8µ with PSU 85-265Vac/dc

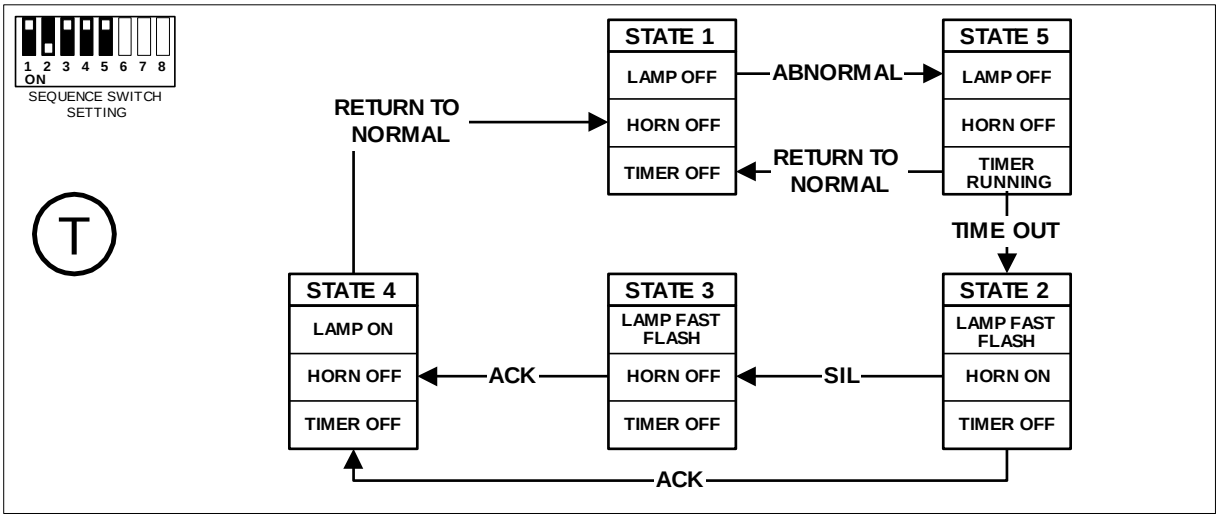
8. ALARM SEQUENCE DIAGRAMS



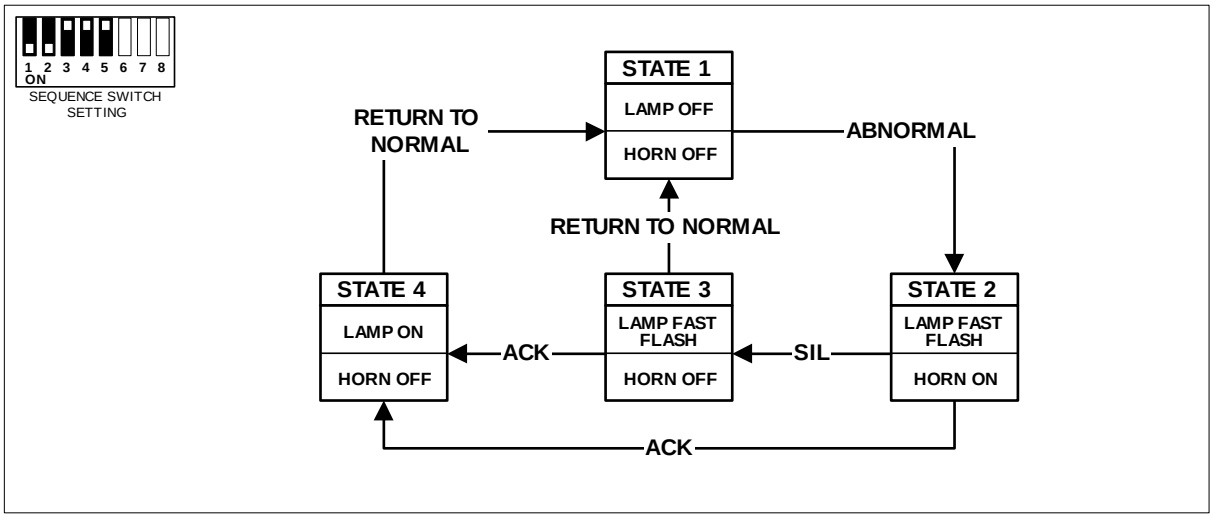
Sequence 1 - Lamp Follows Input



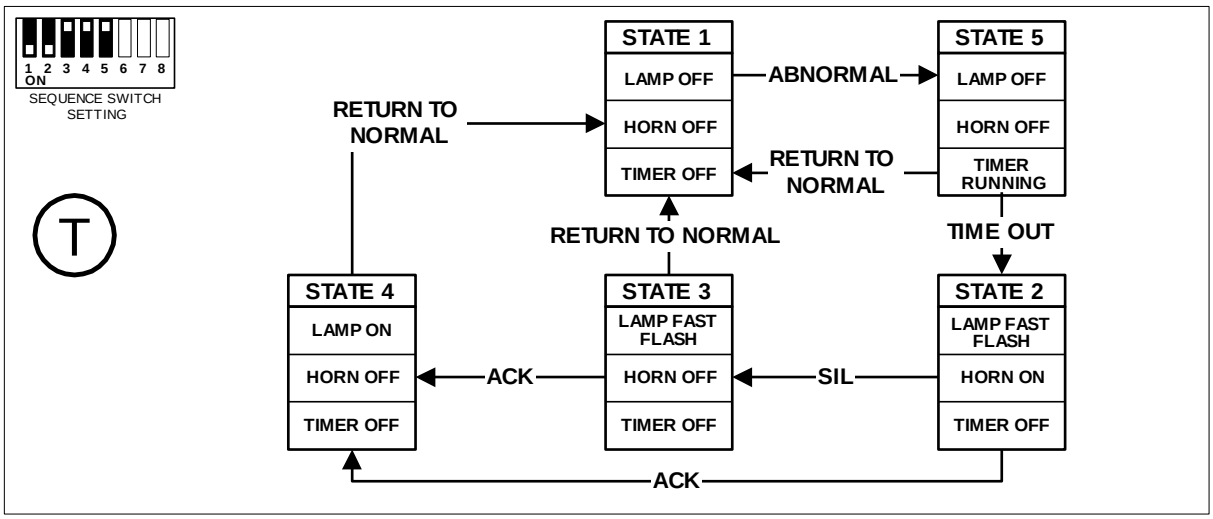
Sequence 2 - Momentary (Fleeting) Alarm, Manual Reset, Timer option off



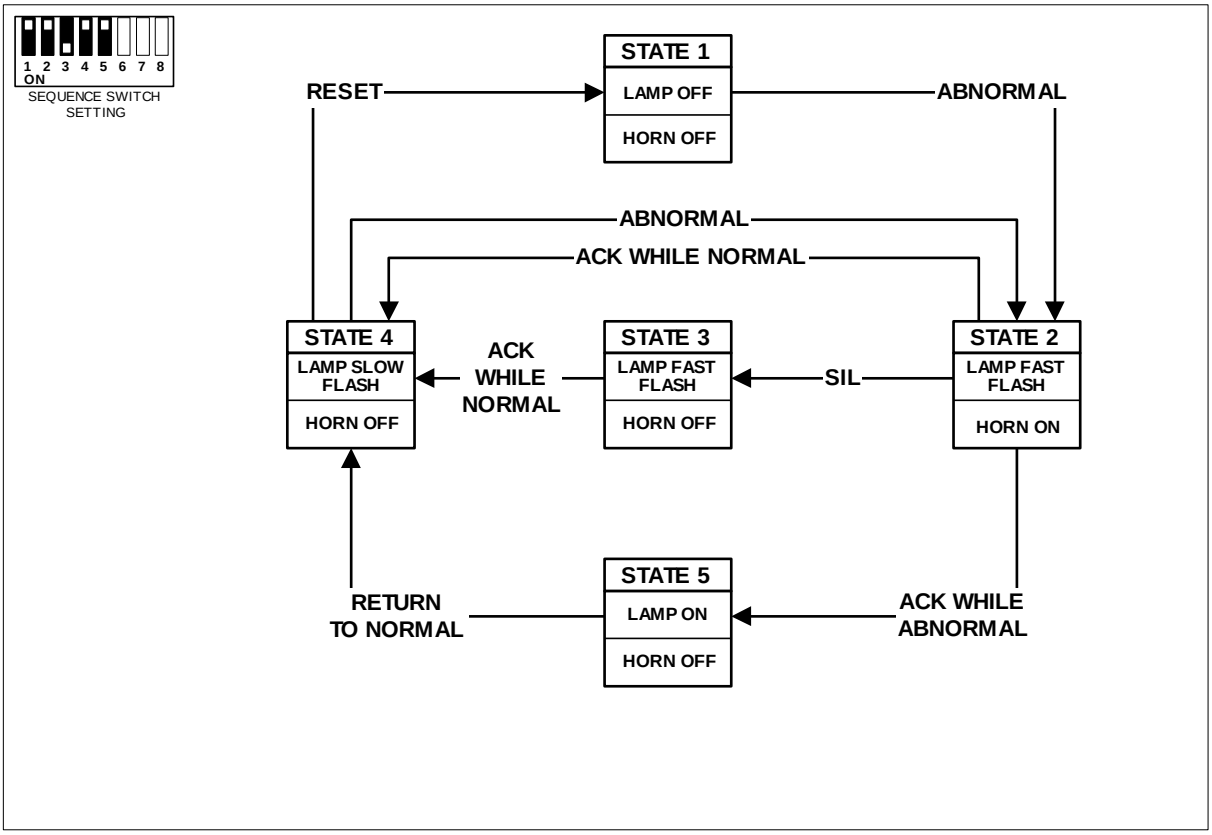
Sequence 2 - Momentary (Fleeting) Alarm Manual Reset with Time Delay on Inputs



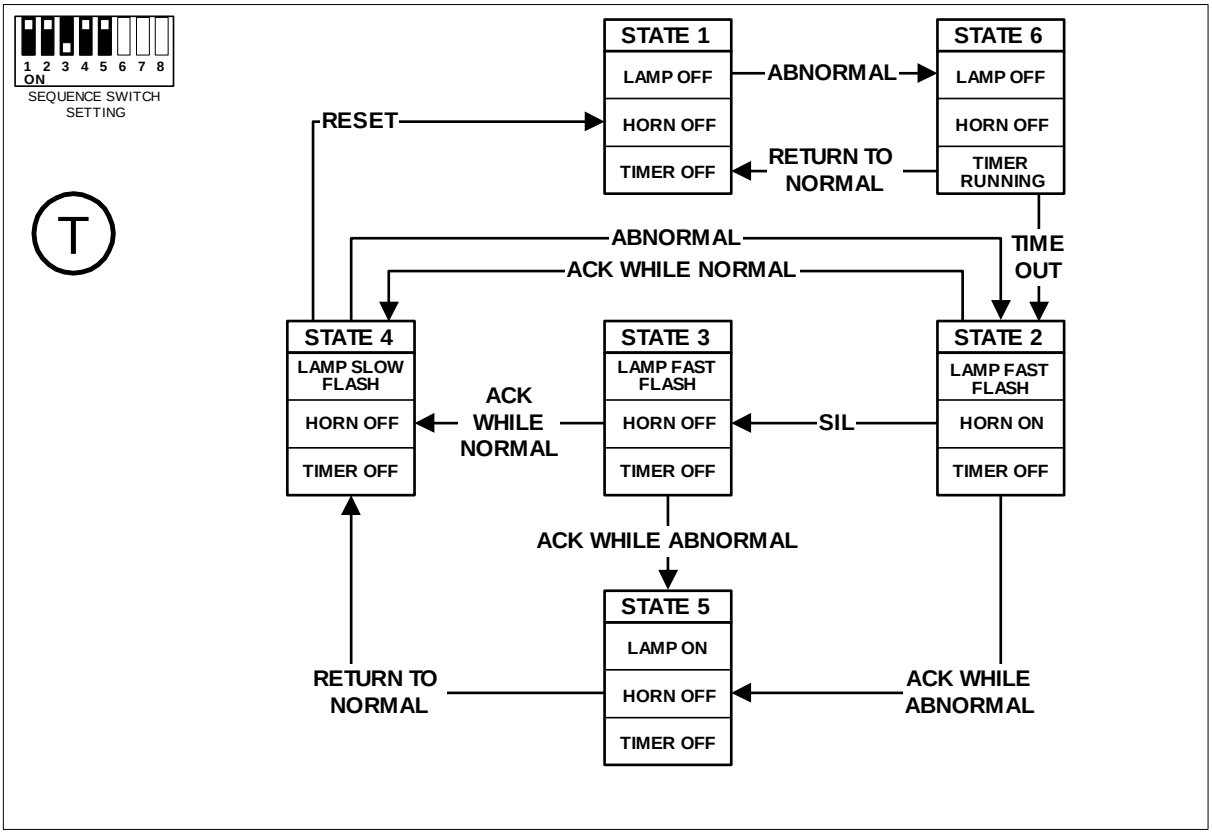
Sequence 3 - Alarm Only (No Lock-in), Auto Reset, (Timer option off)



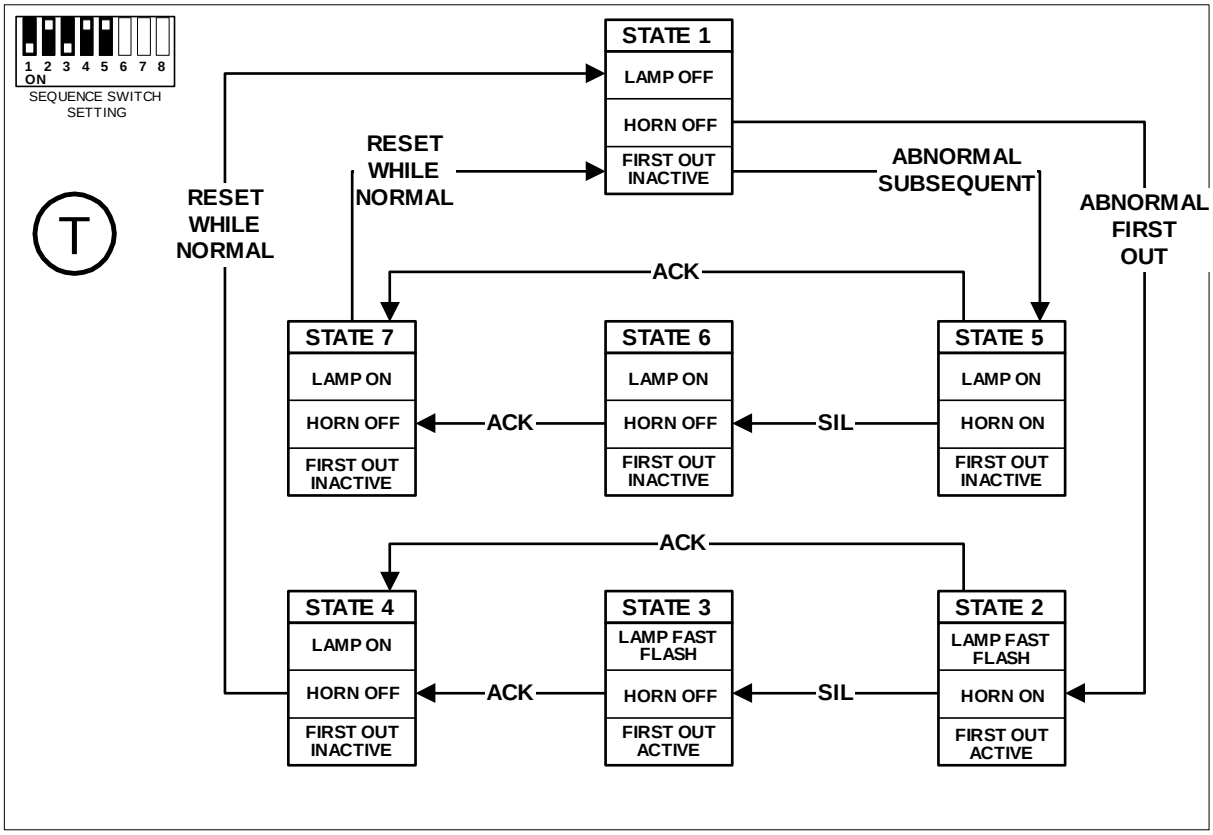
Sequence 3 - Alarm Only (No Lock-in) Auto Reset with Time Delay on Inputs



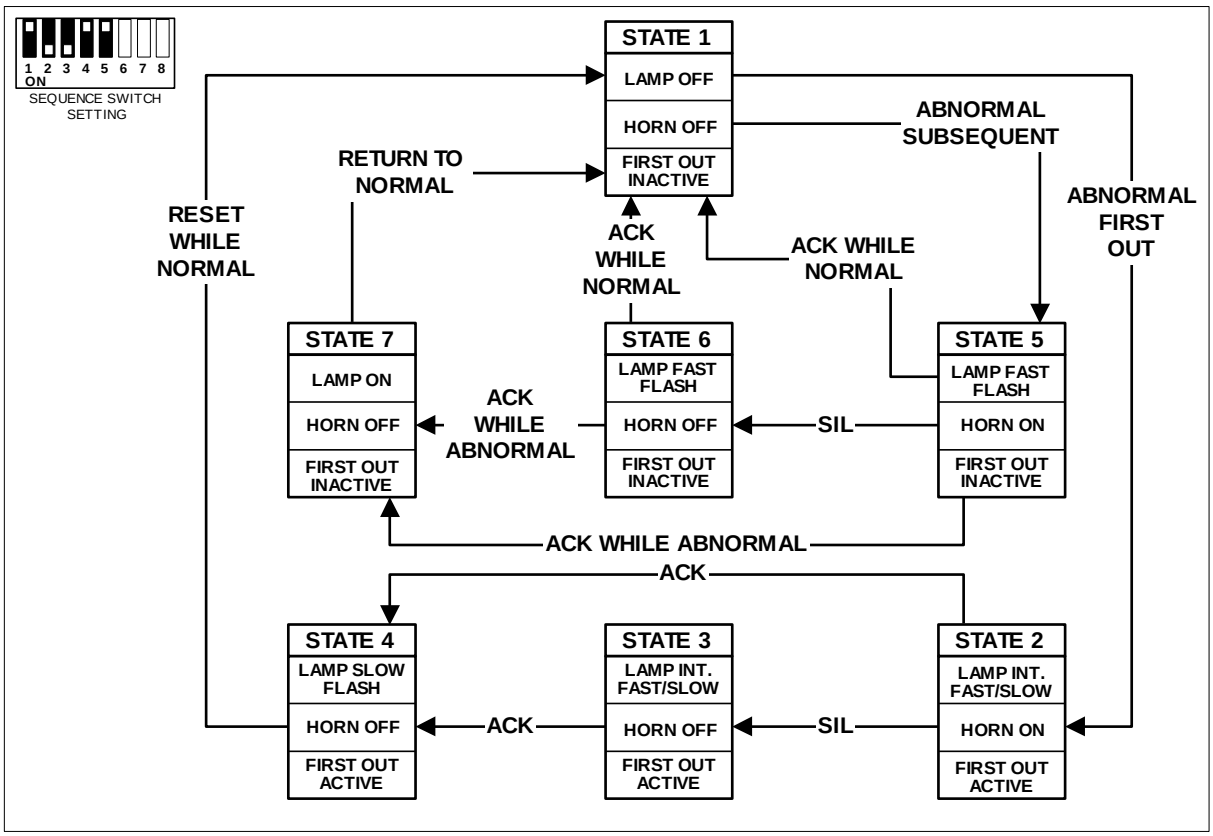
Sequence 4 - Momentary Alarm, Manual Reset, with Ringback, (Timer Option Off)



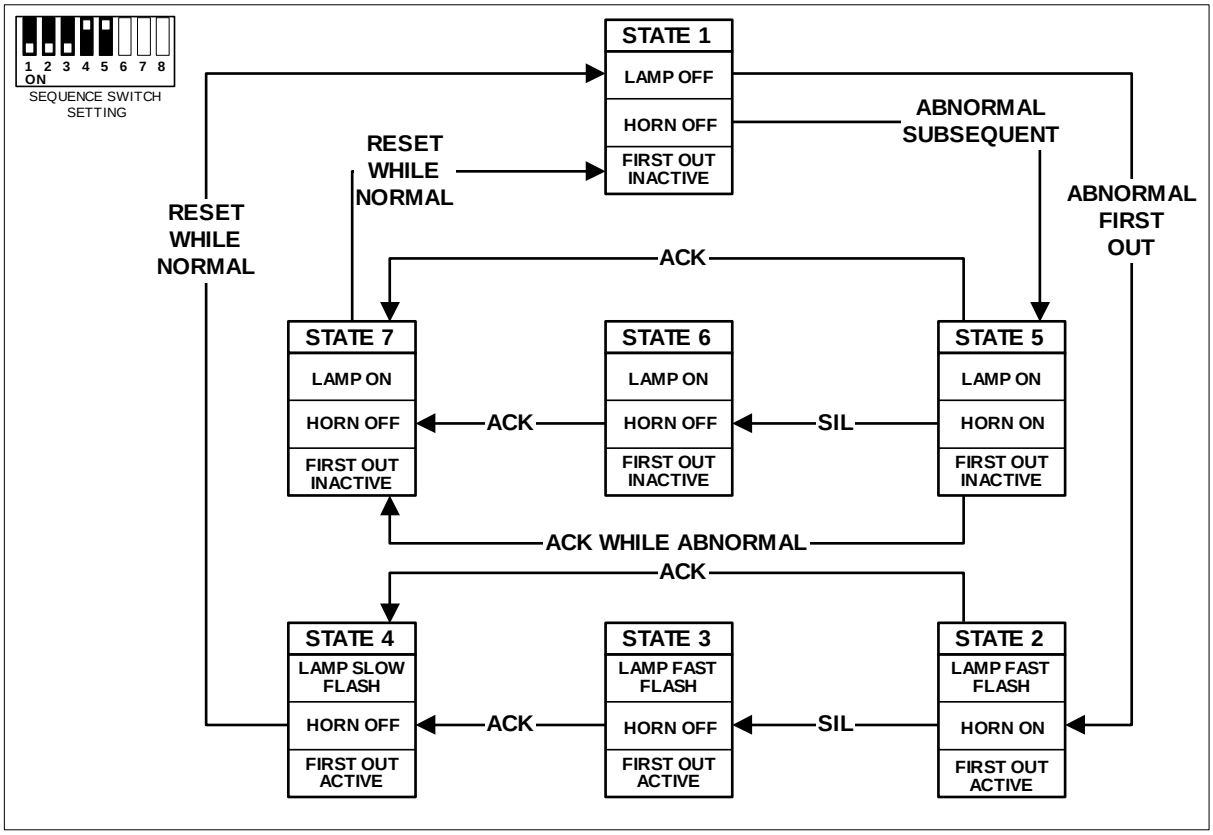
Sequence 4 - Momentary (Fleeting) Alarm, Manual Reset, with Ringback, Timer Delay on inputs.



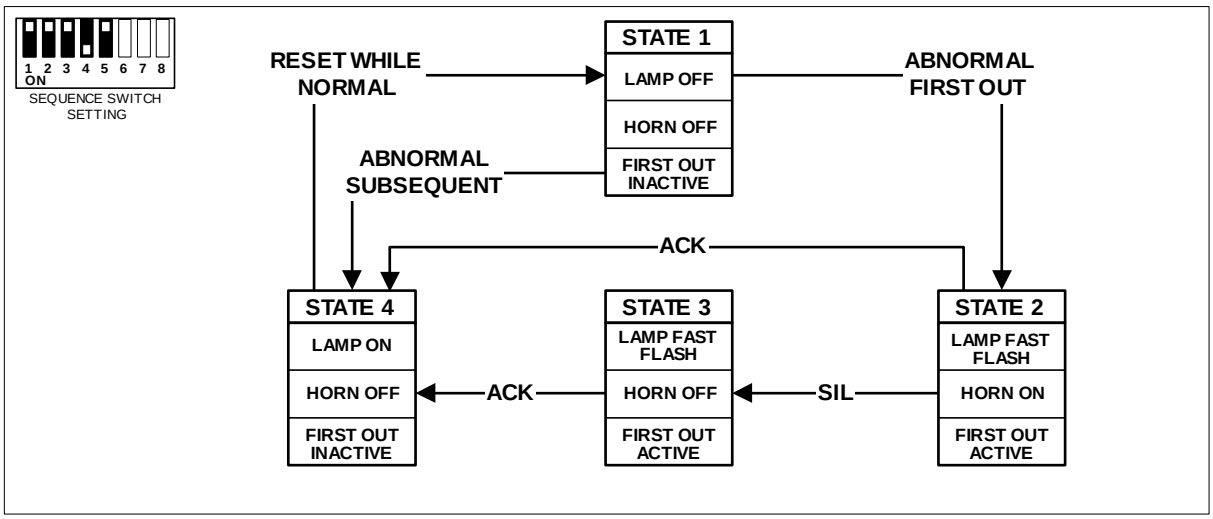
Sequence 5 - Momentary (Fleeting) Alarm, First Out Multiple Groups, Manual Reset, with Ringback.



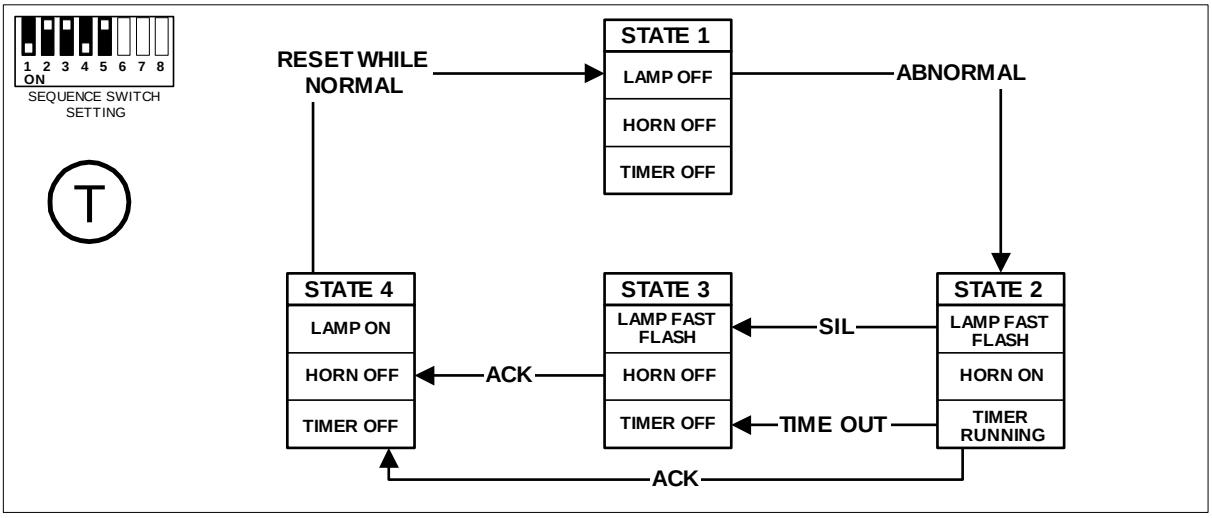
Sequence 5 - Momentary (Fleeting) Alarm, First Out Manual Reset, Auto Reset on subsequent Alarms



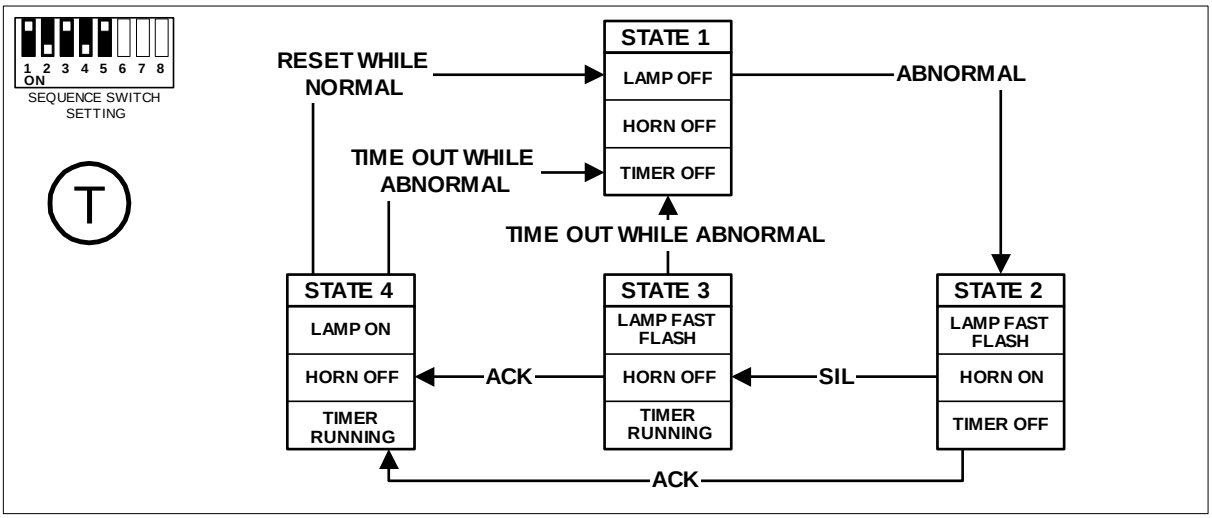
Sequence 7 - Momentary (Fleeting) Alarm, First Out Single Group, Manual Reset, First Out Continuous Flash



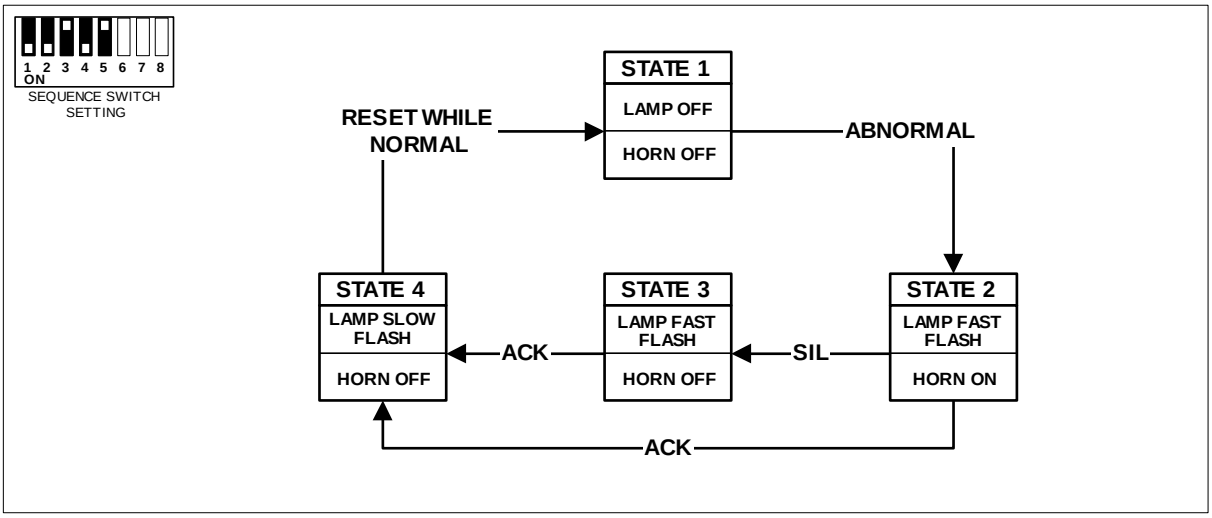
Sequence 8 - Momentary (Fleeting) Alarm; First Out Multiple Group; Manual Reset; No horn for subsequent alarms



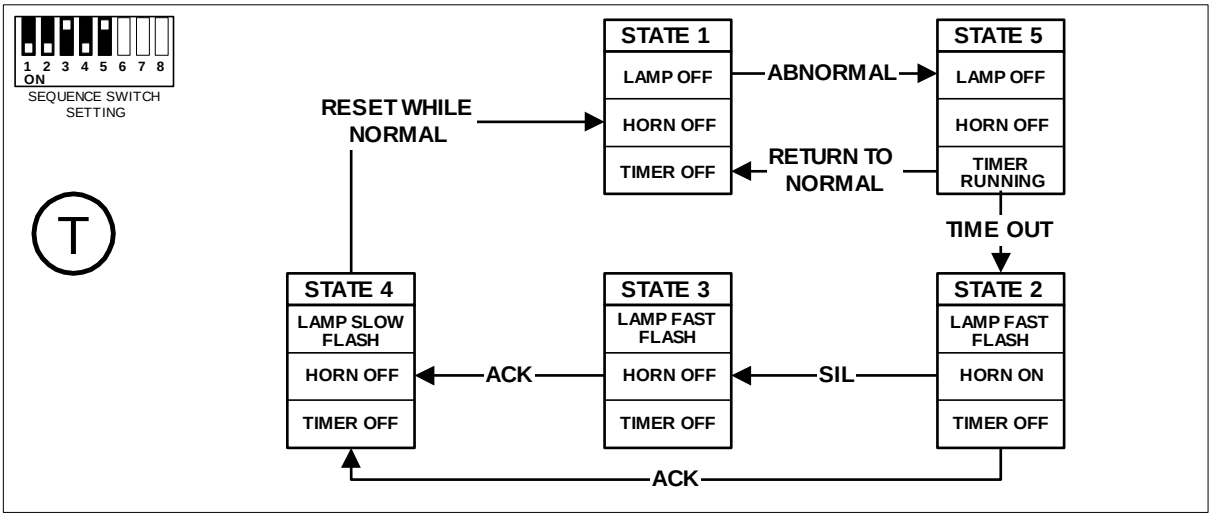
Sequence 9 - Momentary (Fleeting) Alarm; Manual Reset; Auto Silence after Time Delay.



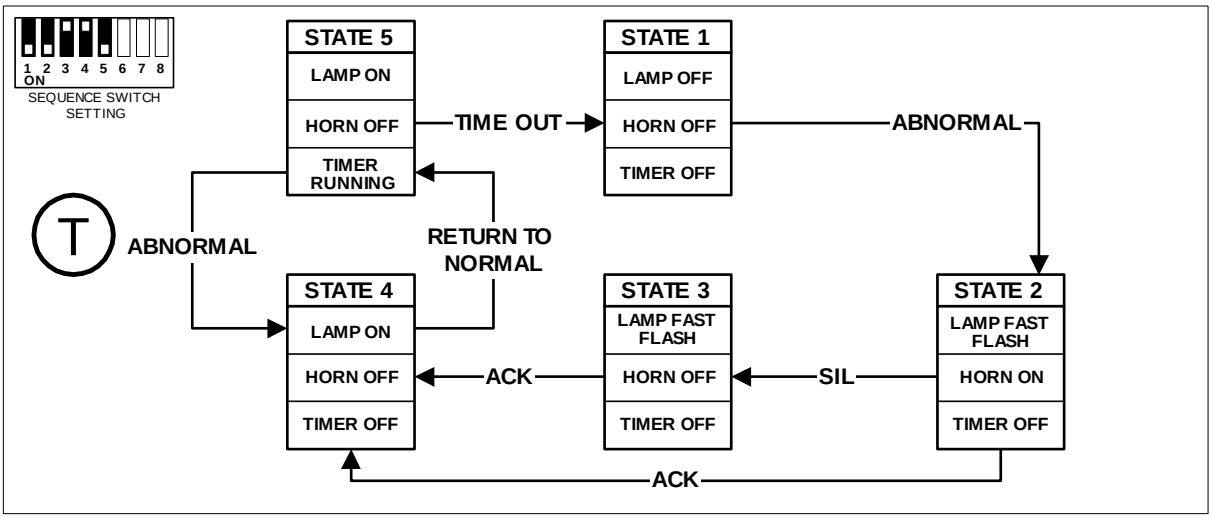
Sequence 10 - Momentary (Fleeting) Alarm; Manual Reset; Re-alarm after time-out if still abnormal.



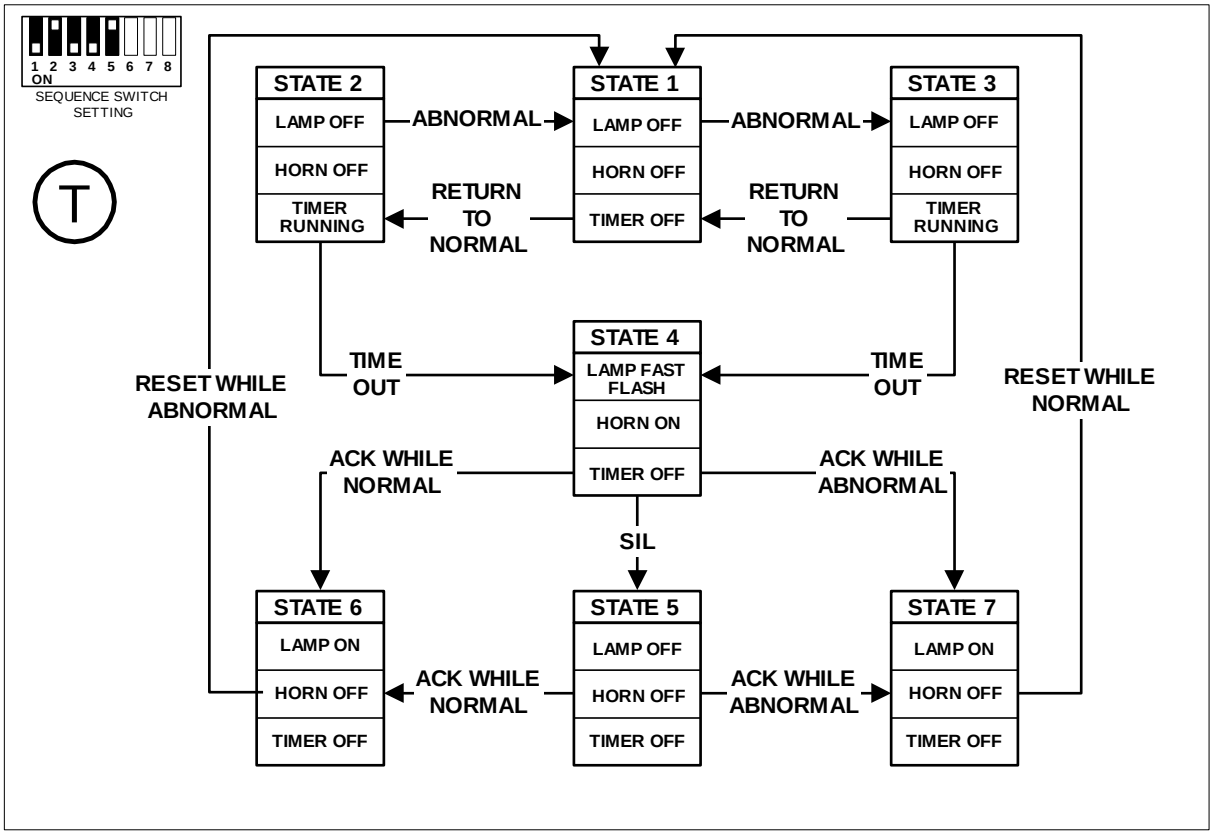
Sequence 11 - Momentary (Fleeting) Alarm, Manual Reset, for Motor Alarms (Timer option off)



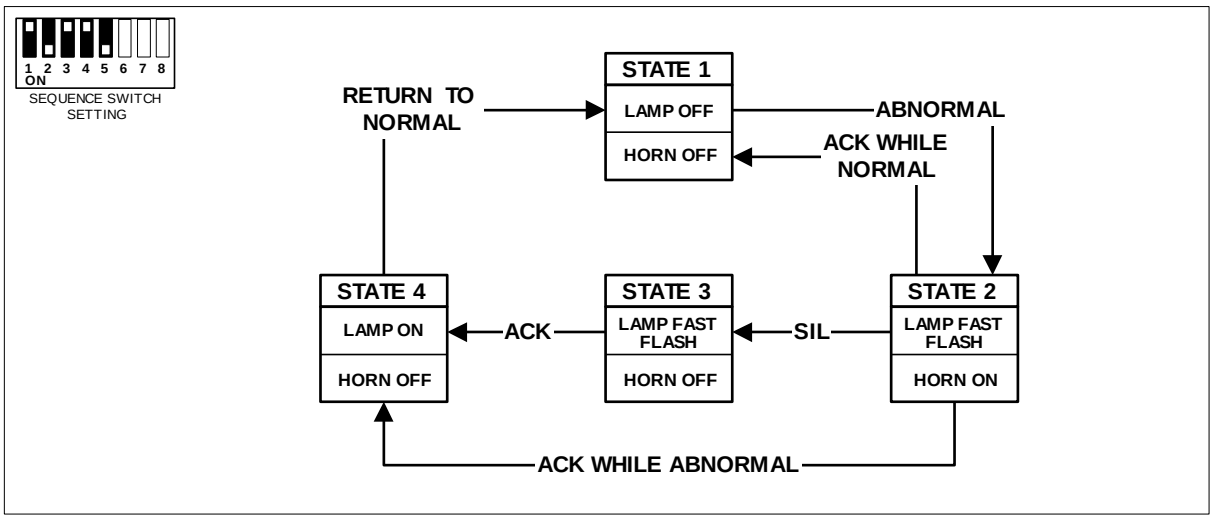
Sequence 11 - Momentary (Fleeting) Alarm; Manual Reset; for Motor Alarms; with Time Delay on Inputs



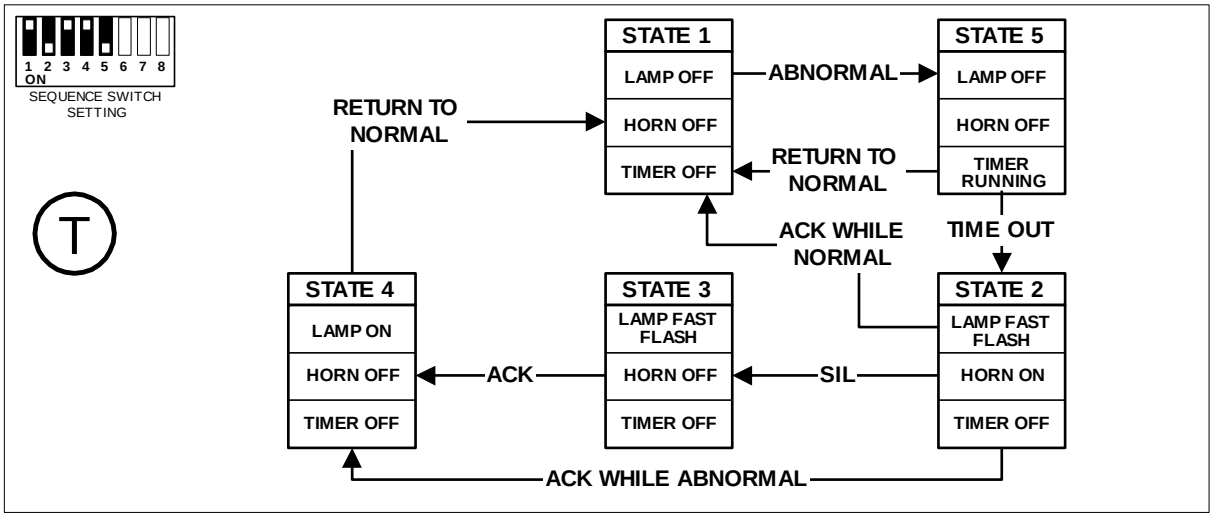
Sequence 12 - Momentary (Fleeting) Alarm; Auto Reset; with Time Delay on Return to Normal.



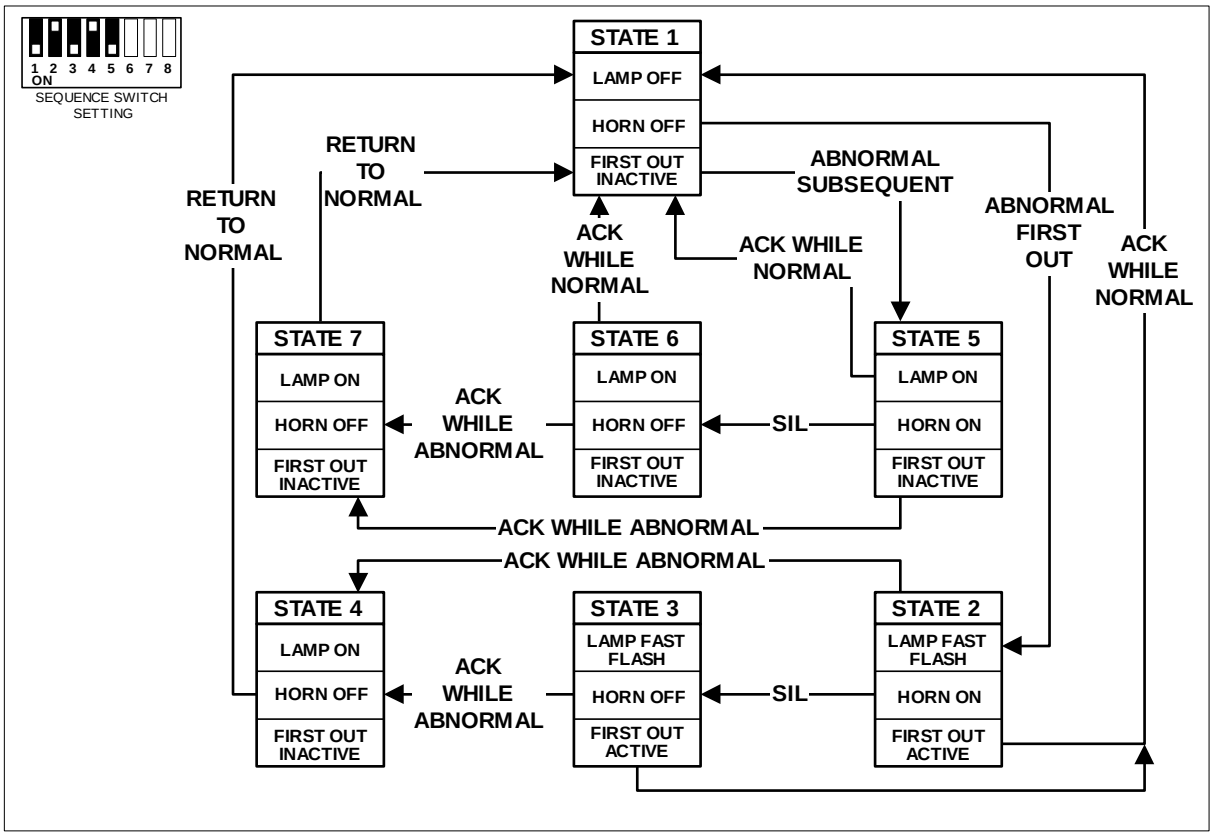
Sequence 13 - Pulse Monitoring Alarm, Manual Reset



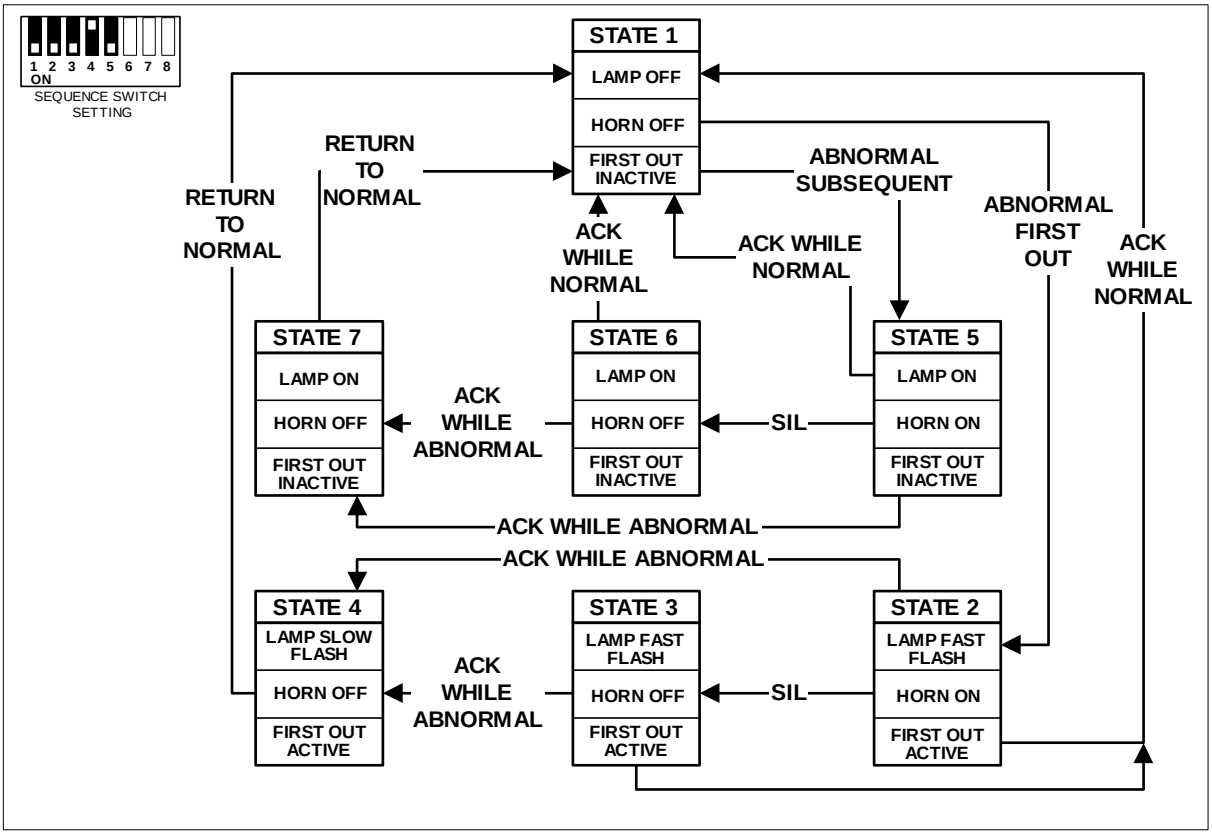
Sequence 18 - Momentary (Fleeting) Alarm, Auto Reset, (Timer option off)



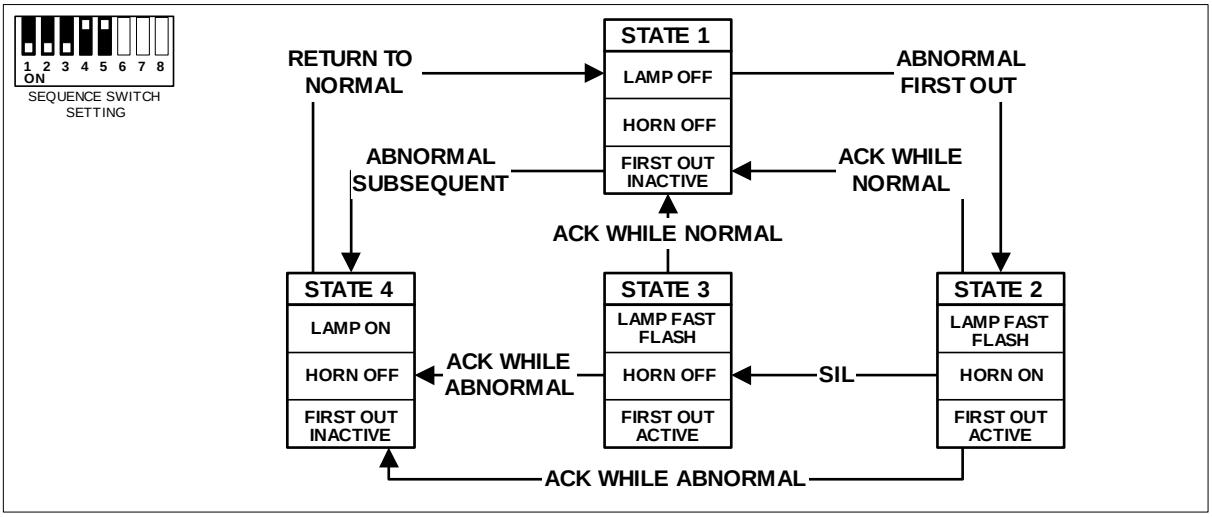
Sequence 18 - Momentary (Fleeting) Alarm; Auto Reset; with Time Delay on Inputs



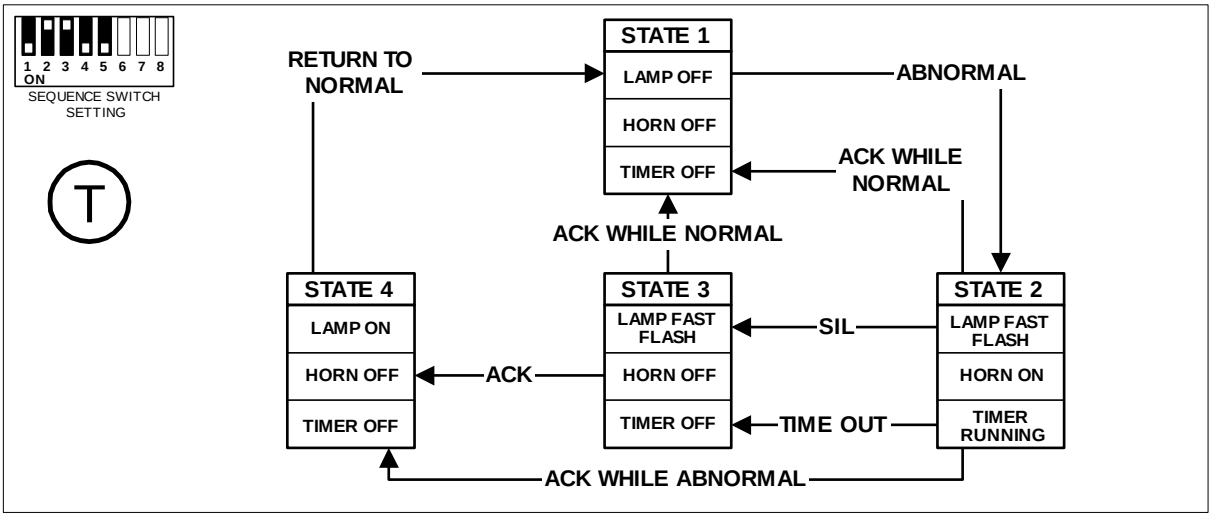
Sequence 21 - Momentary (Fleeting) Alarm, First Out Multiple Groups, Auto Reset.



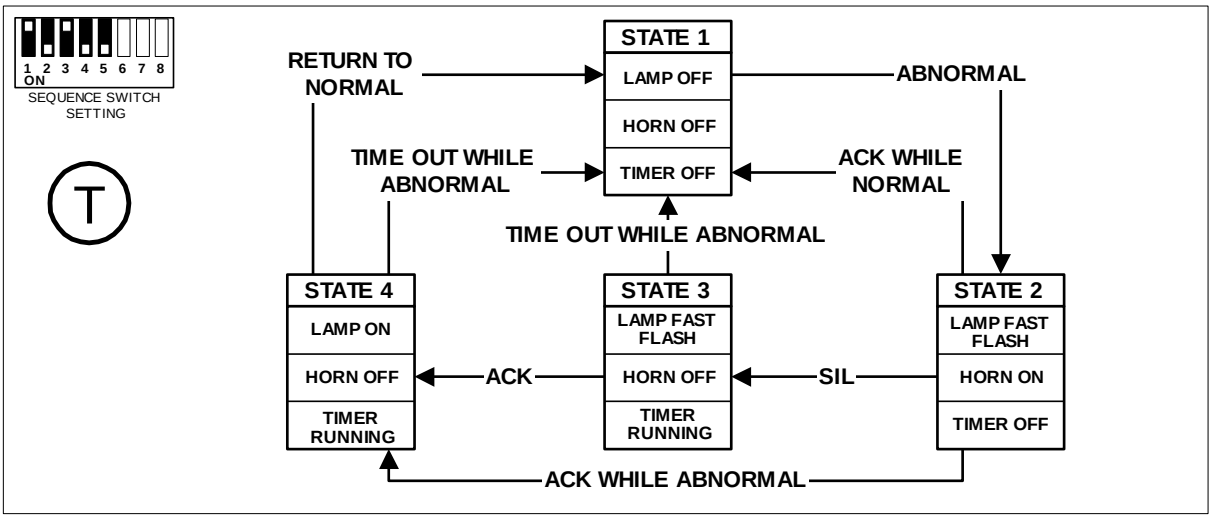
Sequence 23 - Momentary (Fleeting) Alarm, First Out Single Group, Auto Reset, First Out Continous Flash.



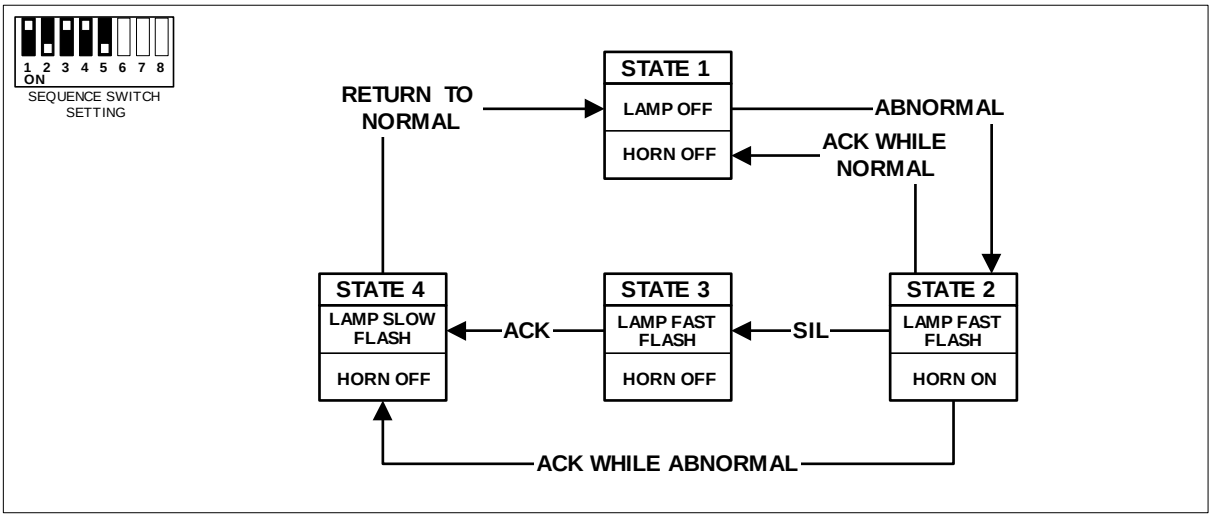
Sequence 24 - Momentary (Fleeting) Alarm; First Out Multiple Group; Auto Reset; No horn for subsequent alarms.



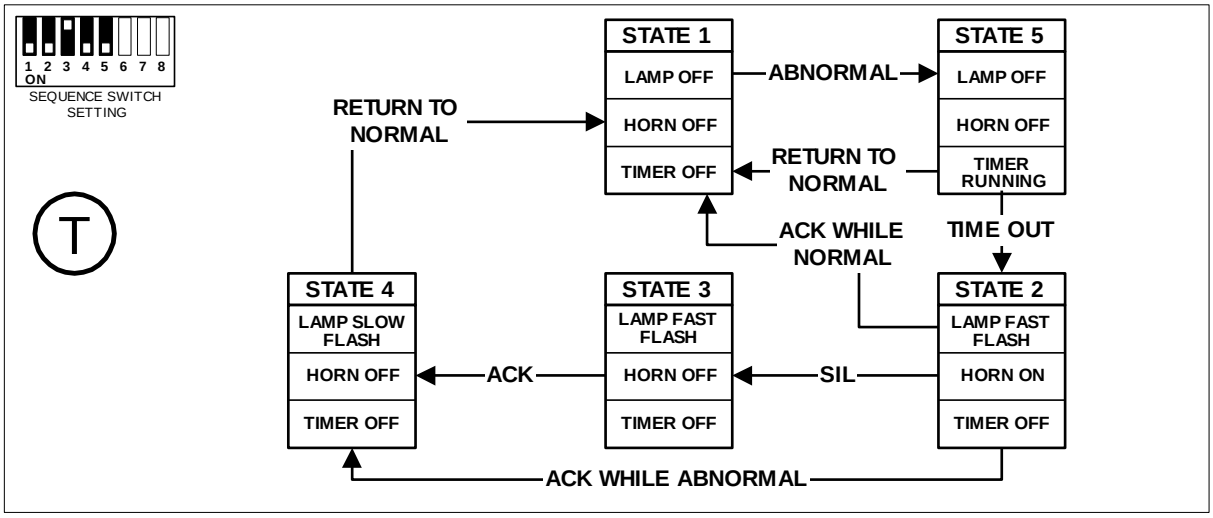
Sequence 25 - Momentary (Fleeting) Alarm; Auto Reset; Auto Silence after Time Delay.



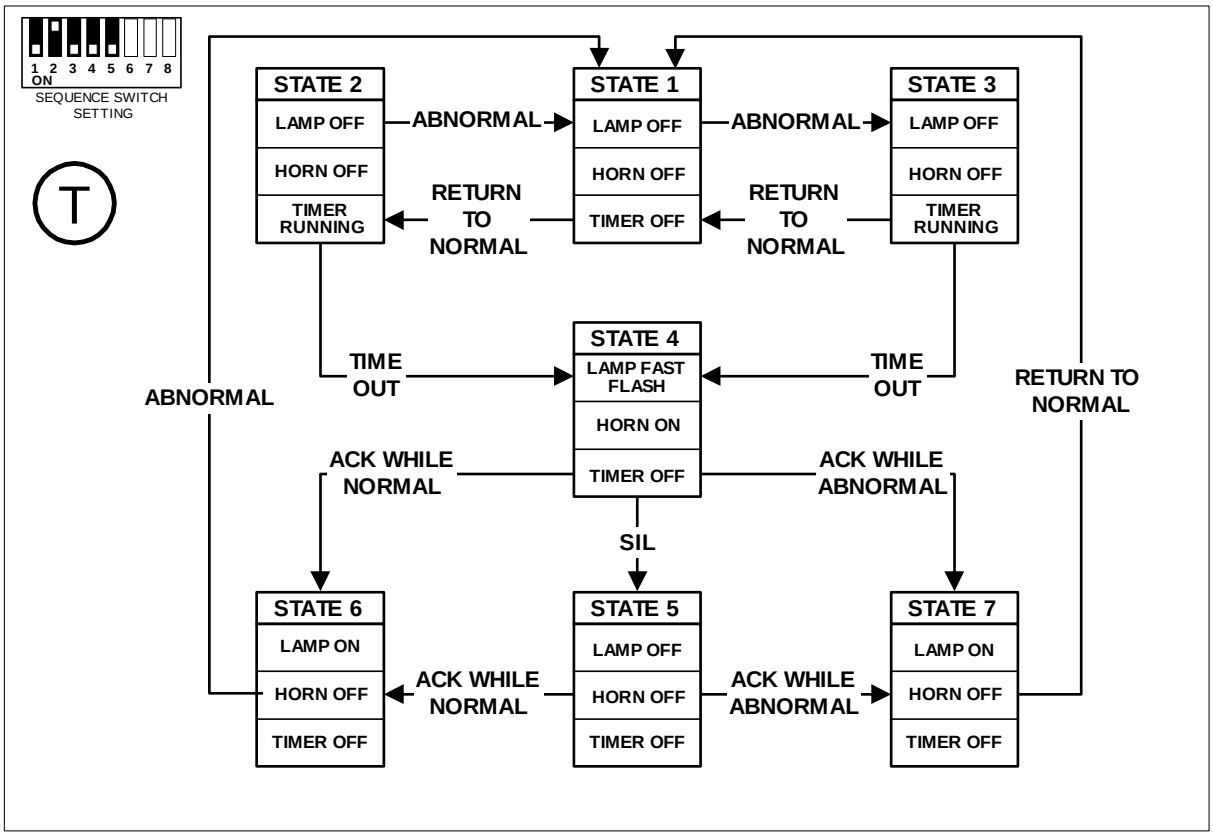
Sequence 26 - Momentary (Fleeting) Alarm; Auto Reset; Re-alarm after time-out if still abnormal.



Sequence 27 - Momentary (Fleeting) Alarm, Auto Reset, for Motor Alarms (Timer option off)



Sequence 27 - Momentary (Fleeting) Alarm; Auto Reset; for Motor Alarms; with Time Delay on Inputs



Sequence 29 - Pulse Monitoring Alarm - Auto Reset