Important Note

The UC625 system described herein operates on a logic voltage of 24VDC and as standard 24VDC is used for the field contact supply voltage.

External power supplies using higher voltage AC/DC primary sources and optional high voltage field contact voltages may be present if this is the case please ensure the necessary precautions are taken

REV	DATED	DESCRIPTION	AUTHOR	APPROVED
5	16/06/03	Added powered I/P details. corrected remote PB details	P. Cartmell	T. McLeman
6	22/12/03	Cut-Out dimensions clarified	P. Cartmell	T. McLeman
7	12/03/04	Sleep mode added	P.Cartmell	T. McLeman
8	25/03/04	Trouble shooting guide added option M1 and M2 added	P.Cartmell	T. McLeman
9	06/08/04	Status sequence added, expansion unit added. Name change to RTK Instruments Ltd, OV-OP correction	P.Cartmell	T. McLeman
10	01-05-07	Option M4 added to provide Lamp / Audible Test	P.Cartmell	T. McLeman
11	22-05-07	Option M3 Response Time Spec	P.Cartmell	T. McLeman
12	29-10-07	Repeat Relay Ratings clarified	P.Cartmell	T. McLeman
13	02-11-07	Signal Supply Monitoring & Terminals with locking screws added	P.Cartmell	T. McLeman

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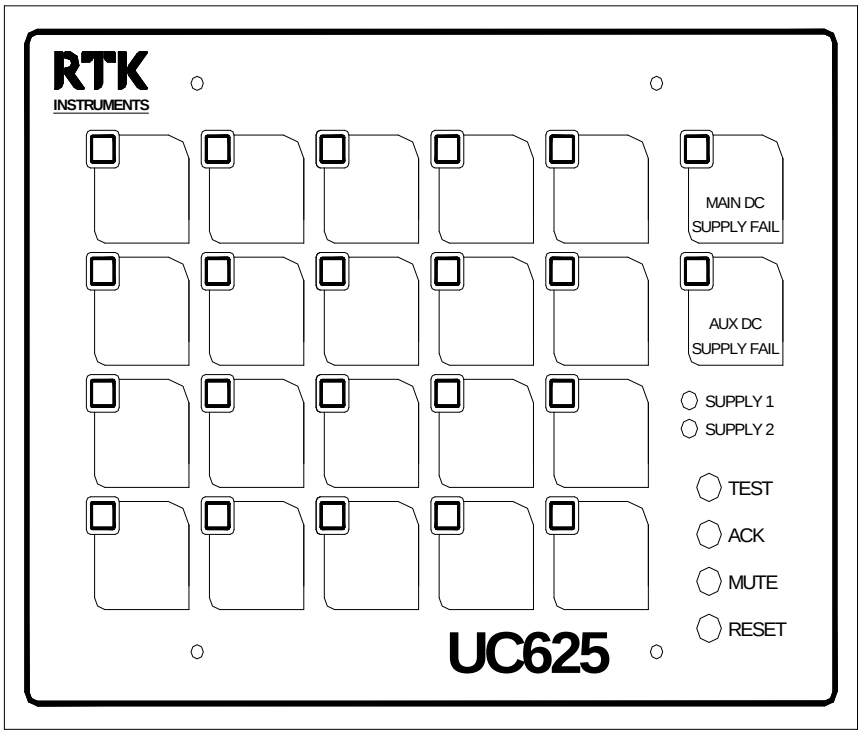
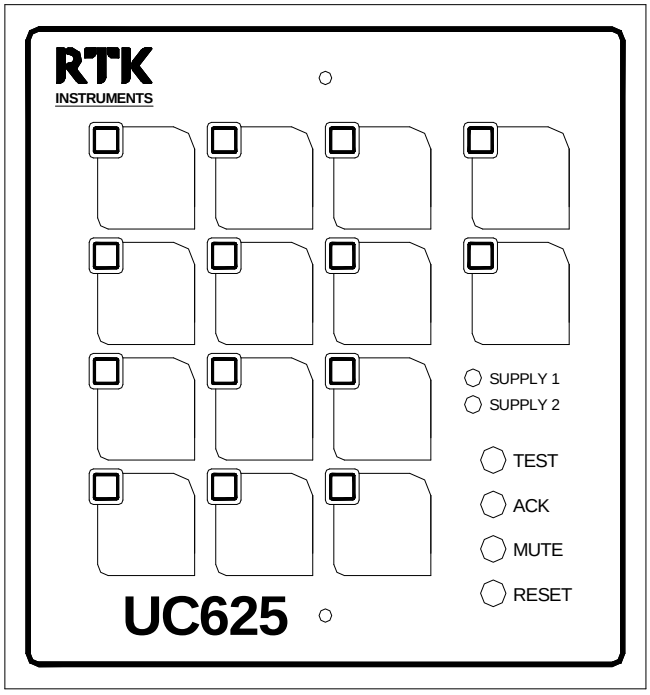
Table Of Contents

Figures

Tables





Examples of a 20 and 12 way UC625 Alarm Annunciator

Figure 1

Introduction

The RTK UC625 Series Alarm Annunciator system is designed to give LED indication of an alarm condition, where a high degree of reliability and flexibility is required.

Each system comprises a compact cabinet, removable legend plate, universal Alarm Cards and a Supply/Pushbutton/Relay (SPR) Card which gives maximum annunciator density whilst maintaining a practical legend area and neat front panel appearance.

DIL switches, situated on each of the Alarm Cards permit easy selection of annunciator sequences as listed in the ISA Publication “Alarm Sequences and Specifications S18.1 – 1979 (R1985)”.

As the system is fully field-programmable on a per pair of alarm basis, the operating specification, of both alarm sequence and function, can be changed during commissioning, or at a later date after the equipment is installed. This means that stocking requirements may be minimised, since all annunciator cards are interchangeable.

Reliability of operation is increased over conventional annunciators by the use of application specific integrated circuits (ASIC's), which are capable of complete system control. When the annunciator is initially switched on, control is arbitrarily allocated to any one of the ASIC's on any of the Alarm Cards, hence the annunciator requires no control or master module, failure of which could jeopardise the whole system.

If the Alarm Card is removed or an ASIC goes faulty then control is randomly allocated to another ASIC on another Alarm Card, hence the worst fault that could normally occur is the loss of one card. The use of ASIC's also results in a very low component count, again improving system reliability.

The UC625 features an integral, dual power supply capable of accepting a supply voltage from either 85-264VAC OR 88-360VDC which allows the user to connect the unit directly to a main and aux supply to provide redundant operation.

As an option, if specified at time of order, the second supply voltage can be manufactured to allow direct operation from an Aux.24VDC Supply Voltage in the range 19 to 31VDC.

As standard an internally generated 24VDC is used as a signal supply voltage, which is used for distribution to the associated field contacts. The 24VDC signal supply is designed to be present if either the primary or secondary supply is available to ensure 100% redundancy.

Note:- When using the direct powered input options the signal supply voltage is derived from outside the unit, by others, and redundancy is therefore dependent on the signal supply voltage being available at all times.

On systems supplied after January 1st 2008 the signal supply voltage is provided with a monitor relay.

Two alarm channels are dedicated to monitor the dual supply Inputs and alert the operator if there is a loss or failure of either.

Accessibility for servicing is excellent, being accomplished from the front of the panel with only a screwdriver required to access the alarm or Supply / Pushbutton / Relay card.

Model Number Description

UC625 = Model no prefix
** = Number of available alarm channels [Not including the 2 power failure alarms]
** = LED colour RD = Red (Standard)
H = Input supply 1 universal (88-360VDC or 88-265VAC)
** = Input supply 2 specify option H or L
024D = 24VDC signal supply voltage OR
Options for 48/110/250VAC/DC signal supply inputs
R = Individual channel signal duplicating relays fitted

MODEL	NO OF ALARMS	LED COLOUR	SUPPLY 1	** SUPPLY 2	SIGNAL SUPPLY	REPEAT RELAYS
UC625	12	RD = Red YL = Yellow AM = Amber GN = Green WH = White IN = Intermixed	H = Universal 88 to 265VAC or 88 to 360VDC	Optional L = 24VDC OR H = Universal 88 to 265 VAC or 88 to 360 VDC	Standard	R = Repeat Relay Option Fitted
	16				024D = 24VDC	
	20				Optional Externally Powered Inputs	
	24					
	28				048 = 48VAC/DC	
	32				110 = 110VAC/DC	
	36				250 = 250VAC/DC	
	40					

Typical Model No

UC625 40 RD H H 024D R – M*

M* Option code see below)

Please note:- If more than 40 ways are required as a single system expansion UC625 units can be connected via the expansion ribbon bus connector as detailed later in the manual on all units shipped after August 2004

Option Codes

These Codes are added as a suffix to the Model No and MUST be specified at the time of ordering.

M1 = Horn disabled on System Test

M2 = Modified Ringback sequence, disabled ring back audible and lamp test in place of system test.

M3 = ISA R12 Ringback sequence, disabled Ringback horn, lamp test in place of system test and response time changed to 5mS trip 5S pre-alarm.

M4 = ISA R12 Ringback sequence, disabled ring back audible, lamp test in place of system test, response time changed to 5mS trip and 5S pre-alarm and combined Lamp / Audible Test pushbutton function.

System Description and Features

General

The units can be manufactured in a range of sizes to suit individual applications. All units are designed to be 4 alarm ways high but the number of windows wide is variable. This allows RTK to provide systems suitable for 12, 16, 20, 24, 28, 32, 36 or 40 channels and all units are provided with two additional channels used for monitoring the two integral supplies, Supply 1 and Supply 2

The annunciators are built up using variable size top / bottom plates, universal side plates to give a basic panel mounting framework, a rear mounting motherboard and removable Legend Plate. The universal Alarm Cards are of the plug in type and are easily accessed once the front legend plate has been removed. The Alarm Cards simply plug into the motherboard, which also houses the terminals for external connection by the customer. A removable legend plate is fitted over the front of the alarm boards containing film legends, which identify the individual alarm channels.

Alarm Card

Each active Alarm Card controls four alarm points. The Alarm Card has an Application Specific Integrated Circuit (ASIC), which controls the alarm ways. System control is arbitrarily allocated to one of the ASIC's on any one of the Alarm Cards, obviating the need for a master control module. Each Alarm Card is fitted with DIL switches, which are used to select the required features for each pair of alarms.

Reliable Annunciation

The fact that all the cards are identical means that in the RTK Series UC625 alarm system there is no master or controlling card, failure of which could jeopardise the whole system. System control is arbitrarily allocated to any one of the alarm modules. Should this card be removed, damaged or fail for any reason, another card will take over system control. This method of operation results in a system with no single source of failure and multiple redundancies giving the most reliable form of annunciation possible.

Supply/Pushbutton/Relay Card (SPR)

This card is fitted in the right hand side of the annunciator and has 4 pushbuttons to cover all system functions and two “power on” LED’s. The four pushbuttons are:- System Test, Acknowledge, Mute and Reset. The two green LED’s are used to indicate "Power On" for Supply 1 (main) and Supply 2 (aux.).

Power Failure Monitoring

The SPR Card is fitted with two power failure alarms, which are used to monitor Supply 1 and Supply 2 and provide full alarm capability when either supply is not present on the unit.

The two supply inputs provide FULL redundancy of operation so that failure of a single supply input will have no affect on the overall operation of the unit.

The standard version which uses an internally generated 24VDC Signal Supply to provide a feed to the field contacts.

Powered input versions rely on the customer generated signal supply being available at all times.

The Power Failure alarm channels are fixed at alarm sequence ISA-M and are therefore controlled by System Test, Acknowledge and Reset Pushbutton inputs to allow full control over the alarms.

In sub station applications it is common for a number of annunciators to share a common set of controlling pushbuttons, the pushbutton inputs can therefore be connected between units as required.

In addition to the full alarm capability each power failure alarm channel is also equipped with a Signal Duplicating Relay to allow notification of power failure to 3rd party devices.

A volt-free contact is provided per supply input, which will change to abnormal on alarm and remain in the abnormal state until power is restored.

The output can be changed to normally open or normally closed as required.

Please note the Signal duplicating contacts are not affected by the System Test pushbutton and act as faithful slaves of the Signal Input.

Serviceability

All servicing is carried out from the front of the unit having first removed the legend plate.
The alarm boards are universal and thus fully interchangeable as required.

No Special Service Tools Required

A screwdriver is the only tool required to remove the legend plate to access the alarm and power board, in order to replace or remove the circuit board to make adjustments to the DIL switches.

Inputs & Outputs

Customer Connections

All connections to the alarm board inputs and outputs are made via quick disconnect, rising clamp, two part plug-able connectors.

Annunciator Inputs

The standard Series UC625 Annunciator operates from either a normally open or normally closed contact. Standard systems use an internally generated 24VDC as the signal supply voltage however options exist, if specified at the time of order, to allow the user to use direct powered inputs:-

NOMINAL VOLTAGE	MIN V	MAX V
24VAC/DC	13	100
48VAC/DC	24	120
110VAC/DC	56	220
250VAC/DC	120	400

Please note:- The above min & max voltages are typical values in reality the inputs are designed to withstand substantially higher voltages for prolonged periods under fault conditions.

As field contacts are often great distances from the annunciator it is advisable to run the contact cables separately from circuits carrying heavy currents and/or high voltages so as to minimise the effects of induced voltages. A transient filter is built into the input circuitry so that low voltage interference will be ignored. Contacts may be continuous or fleeting, the annunciator can be selected to lock-in fleeting alarms if required.

Optically Coupled Inputs

All inputs from alarm contacts and external pushbuttons are optically coupled. This method of operation improves the system's tolerance to noise interference and allows operation from voltage sources as standard.

Signal Duplicating Relays

Integrally mounted signal duplicating relays are provided per channel. The standard mode of operation for the duplicating repeat relays is to activate when an alarm condition occurs and return to normal when the plant fault has returned to normal. (Contact-Follower). Each pair of signal duplicating relays can be set to operate as either normally de-energised or normally energised relays and the associated contact can be selected as normally open or normally closed.

Selectable Response Time

Each channel within the annunciator can have a pre-defined min response time set to one of the following times:- 5ms, 25ms, 50ms and 100ms using DIL switches mounted on each alarm card. Unless otherwise requested at the time of order units are shipped with a factory setting of 25ms but can be easily changed as described later in the manual.

Common Alarm Group Relay [GP]

Alarm channels can be connected to an internal common alarm group relay (GP), which is normally used to indicate to remote equipment that an alarm has occurred in a local panel. The Relay output contact state is set using LK3 on the SPR card to be either normally open or normally closed. The contact will change state when an alarm occurs and remain in the alarm state until all faults have returned to normal.

Reflash Function

After acknowledge if a new alarm occurs the relay will momentarily drop out and re-activate to indicate that another alarm has occurred. The reflash function ensures that when monitoring the alarms from a remote location, users are fully aware of alarm activity on the unit.

Dual Audible Alarm Feature

UC625 systems are supplied as standard with two integral audible alarms designated critical audible and non critical audible. Each pair of alarms can be set to operate the associated audible.

Dual Horn Relays [HNA-HNB]

All units are supplied with dual integral horn relays one for critical alarms – HNA and one for non-critical alarms – HNB. Each pair of alarms within the unit can be set to operate either or both of the relays as required. When an alarm occurs the horn relay contact will change state and the contact will remain in the alarm state until the ack or mute pushbutton has been pressed or the automatic ack timer has activated. The Customer can disable the automatic timer circuit if required as described later in the manual.

Dual Power Monitoring Relays

Two integral power monitor relays are provided as standard, one monitors the primary supply and one monitors the secondary supply input. The power monitor relays are factory set to be normally energised and will de-energise if the primary or secondary supply fails. Each coil of the relay can be set to be normally energised if required and the relay contact can be set, using LK1 (Supply 1) and LK2 (Supply 2) on the SPR card, to normally open or normally closed.

Mechanical Details

Alarm Card

Each alarm card provides all common alarm sequences as listed in the ISA specification “Alarm Sequences and Specifications S18.1 1979 (R1985”). The universal alarm card plugs into the edge connectors mounted on the inside of the motherboard, the size of motherboard being determined by the total number of alarms required.

SPR Card – Supply / Pushbutton/Relay

This module is the same size, shape and fixing as an alarm card and is equipped with System Test, Acknowledge, Mute, & Reset pushbuttons necessary for all of the available operating sequences. This module is fitted in the extreme right hand edge connector within the annunciator and is polarised to ensure it cannot be placed into the wrong card slot.

System Assembly

Systems are supplied pre-assembled with motherboards used to match each system configuration (i.e. number of ways high is always 4 x number of cards wide, plus a Supply/Pushbutton/Relay (SPR) Card with 2 ways always used for power failure monitoring. The cards required (alarm ways divided by 4, plus “Alarm Sequences and Specifications S18.1 1979 (R1985)”. Are plugged into the motherboard and the appropriate legend plate is then fixed to the front of the unit.

UC625 Dimensions

NUMBER OF ALARM WAYS	OVERALL SIZE (H X W) MMS	CUT-OUT SIZE (H X W) MMS
12	154 x 152	141 x136
16	154 x 180	141 x 164
20	154 x 208	141 x192
24	154 x 236	141 x 220
28	154 x 264	141 x 248
32	154 x 292	141 x 276
36	154 x 320	141 x 304
40	154 x 348	141 x 332

Table 1

Please note:- Cut-Out Dimensions have a tolerance of plus or minus 0.5 mm.

Unit Depth

All UC625 Units are 130 mm Deep

Sequences

Summary

From the sequence tables shown later in the manual, it will be evident that an alarm occurring causes a flashing visual indication with audible.

Mute is used to silence the audible only.

Acknowledge stops the flashing and audible.

Please note:- If a new alarm occurs on an already acknowledged system, the horn will re-sound and the new alarm will flash in accordance with the selected sequence.

Reset will return the alarm to the normal off state only when the unit has been acknowledged and the associated alarm contact has returned to normal.

First-up Sequences

When a group of alarms is initiated, it is often important to know which of them was the first to occur. This is achieved by having the first-up alarm flashing in a different manner compared to the subsequent alarms. Three different first-up sequences are available F0, F1, F2 as detailed below and in the following sequence tables. First-up operation should be used with care with the auto-reset sequence and non-latch sequence as momentary alarms can cause ambiguity.

F0 The standard mode adopted by RTK Instruments, which indicates the first-up alarm by flashing at twice the rate of subsequent alarms.

F1 In this mode subsequent alarms appear in the acknowledged state, hence they do not flash. The audible device does not operate when subsequent alarms occur, unless still operating from the first alarm. The acknowledge pushbutton will reset the first-up indication.

F2 In this mode all subsequent alarms do not flash, they will however operate the audible device. The acknowledge pushbutton will reset the first-up indication.

Automatic Reset

In this mode, any signal contact which returns to normal after the acknowledge pushbutton has been pressed will automatically reset. If the alarm contact returns to normal prior to acknowledge the alarm will reset immediately after the acknowledge pushbutton has been operated.

Non-latch Sequence (No lock-in)

In this mode alarms will automatically reset as soon as the signal input returns to the normal state. It is therefore possible that a fleeting alarm will occur and return to the off state without operator intervention. Whilst the alarm is in the abnormal state the operator can silence or acknowledge the alarm in the normal way.

Reflash Feature

In the standard mode, when an alarm has occurred and the acknowledged pushbutton activated, any further changes of state to the alarm contact will not affect the alarm window display. With reflash enabled any alarm that returns to normal and re-occurs will re-initialise the window.

Ringback Sequence

This mode uses visual and audible signals to indicate that the alarm has returned to normal and the operator can reset the alarm. When an alarm contact returns to normal the ringback circuit will pulse the audible alarm and the associated LED will flash at approx half the speed of the normal alarm flash rate. Ringback operation may be used with all but non-latched and auto reset sequences and operates in the same way for all first-up sequences F0 to F2.

Two Pushbutton Operation

In certain circumstances using remote pushbuttons, it may be desirable to use only two pushbuttons: Reset and Lamp Test. The Reset pushbutton is used to Acknowledge an alarm if the contacts are in the alarm condition and to Reset it if the contacts are clear.

Status Only Operation

In applications where the user wishes to indicate the current status of plant machinery the channel can be set to status only. In this Mode the associated LED will be either on or off as the Input changes state. Example:- alarm normal = PUMP ON : alarm abnormal = PUMP OFF. Please note:- This feature is only selectable in pairs (Channel 1 & 2 or Channel 3 or 4).

Please refer to the last page of the manual for details of the switch settings required for each of the following sequences**.**

Option M4

When option M4 is specified in the Model No a combined Lamp / Audible Test is provided in place of Lamp Test

Sequence Configuration and Tables

Each pair of alarm channels can be configured to suit the operating sequence required, as listed in the ISA publication “Alarm Sequences and Specifications" S18.1 1979 (R1985)”. Systems can be configured with different features on each pair of alarms and there is no need to switch the power off. Different operating modes can be selected using the on board DIL switches. The following tables show the most commonly used examples.

Manual Reset ISA-Sequence M

PROCESS	PUSHBUTTON	VISUAL	AUDIBLE
Normal		OFF	OFF
Abnormal		Flashing	ON
Abnormal	Acknowledge	ON	OFF
Normal	Reset	OFF	OFF

Table 2

Sequence features

1. System test simulates an abnormal plant state on all alarms
2. Alarms must be set to lock-in of momentary
3. Manual reset of acknowledged alarms is only possible after process conditions return to normal

Automatic Reset ISA-Sequence A

PROCESS	PUSHBUTTON	VISUAL	AUDIBLE
Normal		OFF	OFF
Abnormal		Flashing	ON
Abnormal	Acknowledge	ON	OFF
Normal		OFF	OFF

Table 3

Sequence features

1. System test simulates an abnormal plant state on all alarms
2. Alarms must be set to lock-in of momentary

Non Lock-in Function ISA-A-4 Sequence

PROCESS	PUSHBUTTON	VISUAL	AUDIBLE
Normal		OFF	OFF
Abnormal		Flashing	ON
Normal	Before Ack	OFF	OFF
Abnormal	Acknowledge	ON	OFF
Normal		OFF	OFF

Table 4

Sequence features

1. System test simulates an abnormal plant state on all alarms
2. Alarms should be set to non-lock-in
3. Alarms will automatically return to the off state as soon as the input returns to the normal.

Ringback ISA-R Sequence

PROCESS	PUSHBUTTON	VISUAL	AUDIBLE
Normal		OFF	OFF
Abnormal		Flashing	ON
Abnormal	Acknowledge	ON	OFF
Normal		Slow Flash	PULSING
	Reset	OFF	OFF

Table 5

Sequence features

1. System test simulates an abnormal plant state on all alarms
2. Alarms should be set to lock-in
3. Only available in first-up modes F1, F2

Automatic Reset First-up ISA-F1A Sequence

PROCESS	PUSHBUTTON	VISUAL	AUDIBLE
Normal		OFF	OFF
1st Alarm Abnormal		Flashing	ON
Subsequent Abnormal		ON	
	Acknowledge		
1st Alarm Abnormal		ON	OFF
Subsequent Abnormal		ON	OFF
Normal		OFF	OFF

Table 6

Sequence features

1. System test simulates an abnormal plant state on all alarms
2. Subsequent alarms do not lock in
3. Once acknowledged the first up alarm is reset.

Manual Reset First-up ISA-F2M-1 Sequence

PROCESS	PUSHBUTTON	VISUAL	AUDIBLE
Normal		OFF	OFF
1st Alarm Abnormal		Flashing	ON
Subsequent Abnormal		ON	ON
	Acknowledge		
1st Alarm Abnormal		ON	OFF
Subsequent Abnormal		ON	OFF
Normal	Reset	OFF	OFF

Table 7

Sequence features

1. System test simulates an abnormal plant state on all alarms
2. Subsequent alarms do not lock in alarms must be reset after inputs return to normal

Status Only ISA-A-4-5-6 Sequence

Process	Pushbutton	Visual	Audible
Normal		OFF	OFF
Abnormal		ON	OFF
Return To Normal		OFF	OFF

Table 8

Features

Input Configuration

Each pair of alarm inputs can be configured to operate from either a normally open or normally closed Input Contact.

FUNCTION	ALARM CARD CHANNEL	
	1 - 2	3 - 4
	SW3.S8	SW5.S8
Normally Open	OFF	OFF
Normally Closed	ON	ON

Table 9

Signal Duplicating Relays

The alarm and SPR cards are supplied with an integral repeat relay per channel, which can be configured to operate as:-

1. Normally de-energised or normally energised
2. Normally open or normally closed contact
3. Input follower or logic follower

De-Energised (Energise On Alarm) or Energised (De-Energised on Alarm)

FUNCTION	ALARM CARD CHANNEL		SPR CARD
	1 - 2	3 - 4	1 - 2
	SW2.S2	SW6.S2	SW5.S1
De Energised Relays	ON	ON	ON
Energised Relays	OFF	OFF	OFF

Table 10

Relay Contact Normally Open or Normally Closed (De-Energised Relay State)
Please Note:- LK1 to LK4 refer to the 3 pin headers and 2 way shorting links which are used to select contact state.

FUNCTION	ALARM CARD								SPR CARD			
	1		2		3		4		1		2	
	RLY1		RLY2		RLY3		RLY4		RLY1		RLY2	
Open	LK1	N/O	LK2	N/O	LK3	N/O	LK4	N/O	LK1	N/O	LK2	N/O
Closed	LK1	N/C	LK2	N/C	LK3	N/C	LK4	N/C	LK1	N/C	LK2	N/C

Table 11

Repeat Relay Mode Of Operation

The repeat relays can be configured to operate as: -

Input Follower

The relay will activate when an alarm occurs and automatically return to normal when the alarm returns to the normal state.

Logic Follower

The individual relay will activate when an alarm occurs and only return to normal when the alarm has returned to the normal state and the logic has been reset.

FUNCTION	ALARM CARD CHANNEL		SPR CARD
	1 - 2	3 - 4	1 - 2
Input Follower	SW4.S1 = ON	SW6.S1 = ON	Automatic
Logic Follower	SW4.S1 = OFF	SW6.S1 = OFF	

Table 12

Operation of Repeat Relays During Test

Repeat Relays configured to Logic Follower Mode can be set so that they will not operate when the System Test Pushbutton is pressed.

FUNCTION	ALARM CARD CHANNEL		SPR CARD
	1 - 2	3 - 4	1 - 2
Disable	SW4.S6 = ON	SW6.S6 = ON	SW5.S4 = ON
Enable	SW4.S6 = OFF	SW6.S6 = OFF	SW5.S4 = OFF

Table 13

System Test

System test simulates a full alarm condition on all channels therefore the associated LED's will flash and the audible alarm will sound. The appropriate pushbuttons, Ack, Mute & Reset will need to be pressed, depending on the selected alarm sequence, to return the alarms to their normal off state.

Disable Horn On System Test Option "DHT" (Model Suffix Code M1)

As an option it is possible to provide the UC625 Unit so that the horn outputs are disabled during system test if required. Option DHT must be specified at time of order placement if this feature is required.

LED Indication

The Series UC625 Alarm Annunciator is supplied with 8mm super bright LED's mounted in the left hand corner of the associated window. The LED is normally supplied in red but other colours are available on request.

Dual Audibles And Dual Horn Relays

Two audible alarms and two horn relays designated critical and non-critical are fitted to the SPR card as standard.

FUNCTION	CRITICAL HORN			NON CRITICAL HORN		
	Alarm Card Channel		SPR Card	Alarm Card Channel		SPR Card
	1 - 2	3 - 4	1 - 2	1 - 2	3 - 4	1 - 2
	SW4.S7	SW6.S7	SW5.S5	SW4.S8	SW6.S8	SW5.S6
Enable	ON		ON	ON		ON
Disable	OFF		OFF	OFF		OFF

Table 14

The Audible Alarm Relay Contact can be set to N/O or N/C as follows:-
Please note:- LK4 and LK5 refers to the 3 pin headers and 2 way shorting links located on the SPR card used to select the contact state.

FUNCTION	SET	CRITICAL HORN RELAY		NON CRITICAL HORN RELAY	
Normally Open	N/O	RL4	LK4	RL5	LK5
Normally Closed	N/C				

Table 15

Integral Horn Disable

The two integral horns designated critical and non-critical fitted to the SPR card can be enabled or disabled using the following configurations:-

CARD	CRITICAL HORN		NON CRITICAL HORN	
SPR	SW6.S4		SW6.S3	
	Enable	Disable	Enable	Disable
	ON	OFF	ON	OFF

Table 16

Auto-Acknowledge Feature

The critical and non-critical horns / horn relays can be automatically acknowledged after a pre-set time period using the following configurations..

CARD	SWITCH	DELAY TIME BEFORE AUTOMATIC ACKNOWLEDGE			
SPR		Disabled	15 seconds	50 seconds	170 seconds
	SW6.1	OFF	ON	OFF	ON
	SW6.2		OFF	ON	

Table 17

Common Alarm Relay

Each unit is equipped with a common alarm relay RL3 to allow a summary alarm contact to be wired to 3rd party devices.

FUNCTION	ALARM CARD CHANNEL		SPR CARD
	1 and 2	3 and 4	1 and 2
Enable	SW4.S3 = ON	SW6.S3 = ON	SW5.S2 = ON
Disable	SW4.S3 = OFF	SW6.S3 = OFF	SW5.S2 = OFF

Table 18

The Common Alarm Relay Contact can be set to N/O or N/C as follows:-

CONTACT STATE	RELAY	LINK	SETTING
Normally Open	RL3	LK3	N/O
Normally Closed	RL3	LK3	N/C

Table 19

Please Note:- LK3 refers to the 3 pin header and 2 way shorting link located on the SPR card used to select the contact state.

Reflash Option

If a standing alarm is present on the unit and another alarm occurs this option allows the common alarm relay to change state for 500mS and re-activate hence the term reflash.

FUNCTION	ALARM CARD CHANNEL		SPR CARD
	1 - 2	3 - 4	1 - 2
Reflash	SW4.S5	SW6.S5	SW5.S3
Enable	ON	ON	ON
Disable	OFF	OFF	OFF

Table 20

Common Alarm Relay Mode of Operation

Input Follower.

The common alarm relay will active when an alarm occurs and automatically return to normal when all alarms have returned to the normal state.

Logic Follower.

The common alarm relay will active when an alarm occurs and only return to normal when all alarms have returned to the normal state and the logic has been reset.

FUNCTION	ALARM CARD CHANNEL	
	1 - 2	3 - 4
Input Follower	SW4.S4 = ON	SW6.S4 = ON
Logic Follower	SW4.S4 = OFF	SW6.S4 = OFF

Table 21

Sleep Mode

(Available on All units supplied after April 5th 2004)
Sleep mode is typically used in sub station applications where the visual and audible outputs are disabled during unmanned periods to reduce the drain on the associated station batteries. Whilst in sleep mode the logic of the annunciator will continue to react in the normal way including the operation of common alarm relays and individual channel signal duplicating relays only the drive signals to the LED's and audibles are disabled. An externally mounted two-pole switch is required to activate sleep mode with 1 pole connected to the mute pushbutton input and the other pole connected to the reset pushbutton input on the rear of the unit. The common return for both poles is OV-OP.

Specification

Optically Coupled Inputs

Input Types	Volt-Free Contacts		Normally Open	Normally Closed
Field Contact Voltage	Standard 24VAC/DC		Options	48VAC/DC
			110VAC/DC	250VAC/DC
Contact Resistance N/C	Series Resistance of contact cables 5k ohm maximum			
Contact Resistance N/O	Parallel Resistance of contact cables 150k ohm minimum			
Response Time Std Version	5mS	25mS	50mS	100mS
Response Time M3 Version	5mS	25mS	200mS	5S
Surge Withstand Transient To IEC 255.4 1.2/50mS	Common Mode: 1kV		Series Mode: 2kV	
Input Protection	PSU Reverse Polarity Protection.		Inputs protected against accidental connection to 240VAC, 50Hz or 1000V Megger testers	
First-up Discrimination	10ms ±5ms			

Outputs

Visual	8mm Super Bright Led	
Audible	Dual Integral Audibles	
Horn Relays	Dual Integral Horn Relays Contact Rating (resistive) • 240VAC, 220VDC max • 24VDC @ 2A • 125VDC @ 0.5A	
Common Alarm Relay	Contact Rating (resistive) • 240VAC, 220VDC max • 24VDC @ 2A • 125VDC @ 0.5A	
Individual Channel Repeat Relays	Contact rating: (resistive) • 240VAC, 125VDC max • 24VDC @ 2A • 125VDC @ 100mA	Relay outputs may be normally energised or de-energised on fault as required.

Signal Supply Monitor Relays	On systems supplied after 1st January 2008 a signal supply monitor relay is provided to indicate loss of the supply

Pushbuttons

Pushbuttons	System Test	Mute
	Acknowledge	Reset

General

Supply Voltage	Supply 1 - 85-264VAC or 88-360VDC	
	Supply 2 - 85-264VAC or 88-360VDC	Option Supply 2 - 24VDC (19-31VAC/DC)
Supply Current	Alarm Card 2mA Each Quiescent	
	Alarm Card 140mA Each Full Load	
	Pushbutton Module Each 100mA	
Fuses	Signal Supply Fuse 125mA – Mounted on Cabinet Rear	
	24VDC Aux Supply Fuse 1A – Mounted on SPR Card	
Terminals	Rising clamp type terminals. Maximum cable size 2.5mm^2	
EMC Compliance	Immunity to BS EN50082-2:1995	
	Emissions to BS EN50081-2:1994	
LVD Compliance	BS EN 61010:1:1993	
Operating Temp	-10^{O}C to 60^{O}C	
Storage Temp	-20^{O}C to 80^{O}C	
Humidity	0-95% RH, non condensing	
Protection	IP51	

Typical Burden on 125VDC Power Input

No of Ways	***Current in mA***
8	60
12	72
16	85
20	96
24	108
28	120
32	140
36	146
40	160

Installation

Cut-out Dimensions

Only one cut-out is required to mount the alarm annunciator. The size of this cut-out is dependent on the number of alarms fitted as shown in the table below

ALARM WAYS	OVERALL SIZE (H X W) MMS	CUT-OUT SIZE (H X W) MMS
12	154 x 152	141 x136
16	154 x 180	141 x 164
20	154 x 208	141 x192
24	154 x 236	141 x 220
28	154 x 264	141 x 248
32	154 x 292	141 x 276
36	154 x 320	141 x 304
40	154 x 348	141 x 332

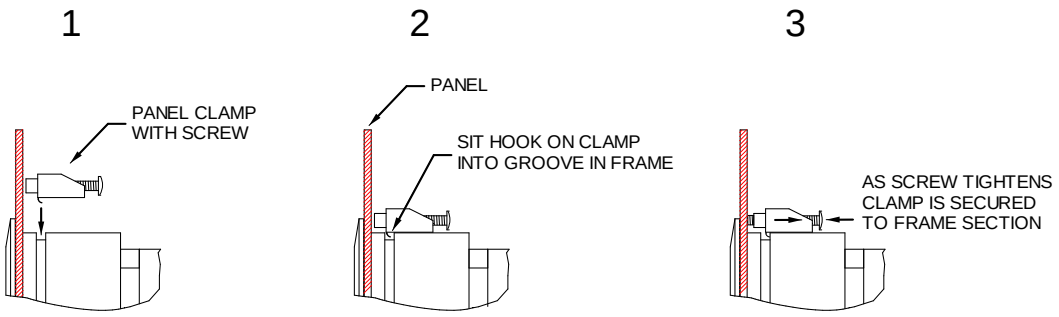
Please note:- Cut-Out dimensions have a tolerance of plus or minus 0.5 mm.

Table 22

For standard units depth = 130mm

Cabinet Fixing

The annunciator system as received will be ready to install into the panel cut-out.
Firstly remove the frame clamps, the unit is then passed through the panel cut-out as far as the 'picture frame' trim and is secured from behind with the frame clamps and screws which are located into the frame extrusion as shown in the drawing below.. To ensure the screw cannot shake loose a locking nut is provided. Maximum panel thickness 6mm

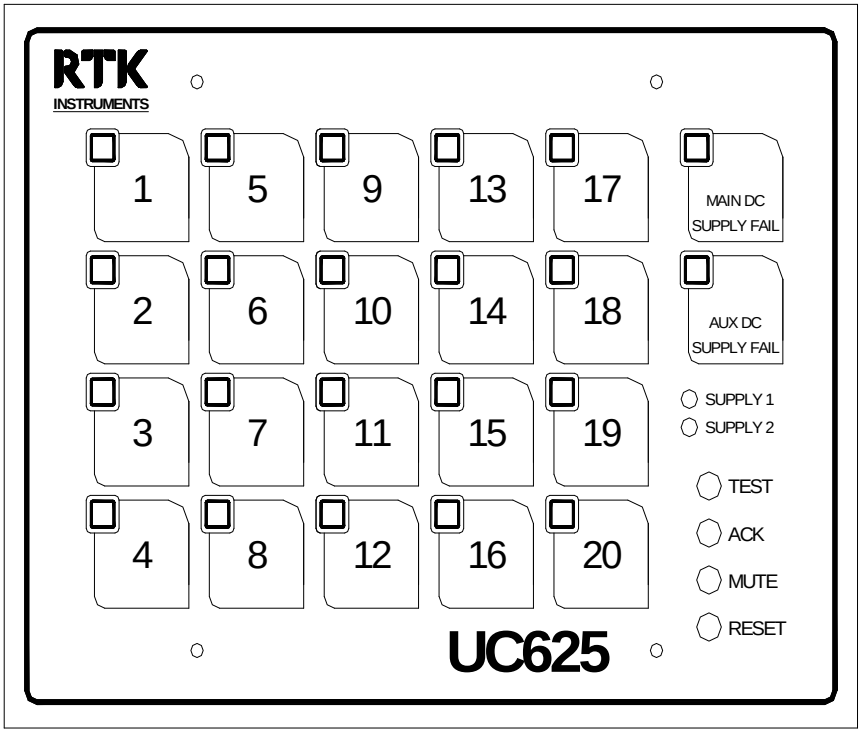


Panel Fixing Arrangement

Figure 2

Channel Numbering

For ease of wiring and configuring of the required sequences and legends, the following numbering method should be used. Any wiring diagram supplied or list of film legends should refer to this numbering scheme.



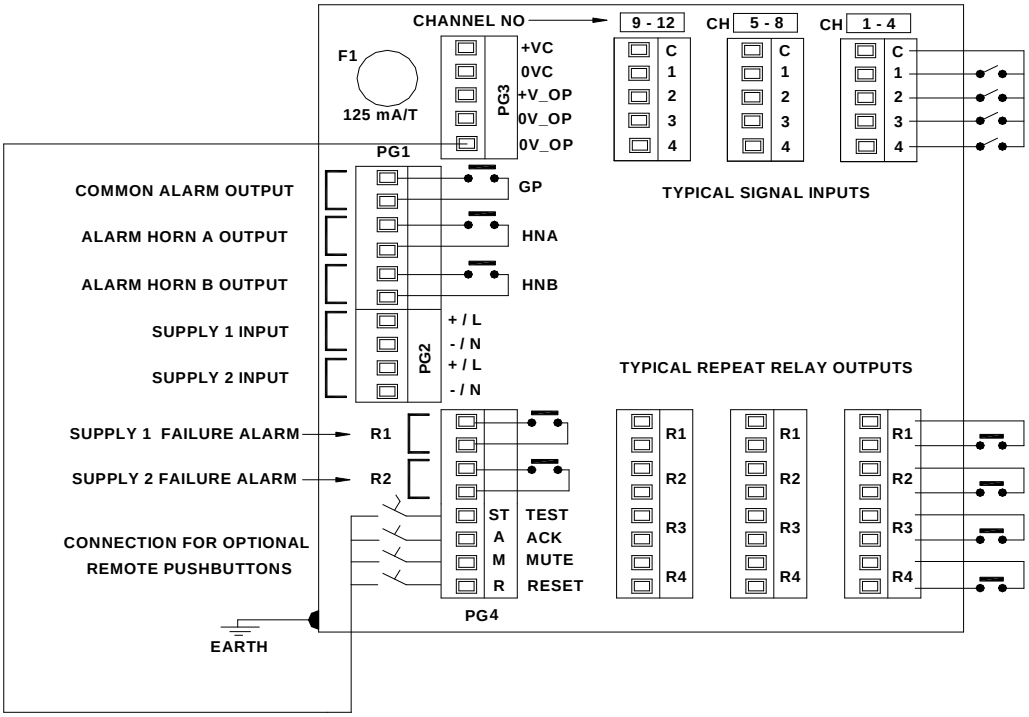
Channel Numbering

Figure 3

Connection Details

All Customer connections are available on the rear of the Motherboard mounted on the back of the annunciator as shown on the figure below. Each system will consist of a single SPR Card (supply, pushbuttons and relays) and multiple four-channel alarm cards. The SPR card is always situated on the far left, when viewed from the rear, and provides all the common connections for both inputs and outputs. The number of four channel alarm cards fitted will depend on the system size but these all have exactly the same connections for the four alarm contact inputs and four volt-free relay outputs. At the top of each alarm card there is a label referring to the channel numbers for that card, these channels refer to the numbering scheme for all the inputs as shown above.

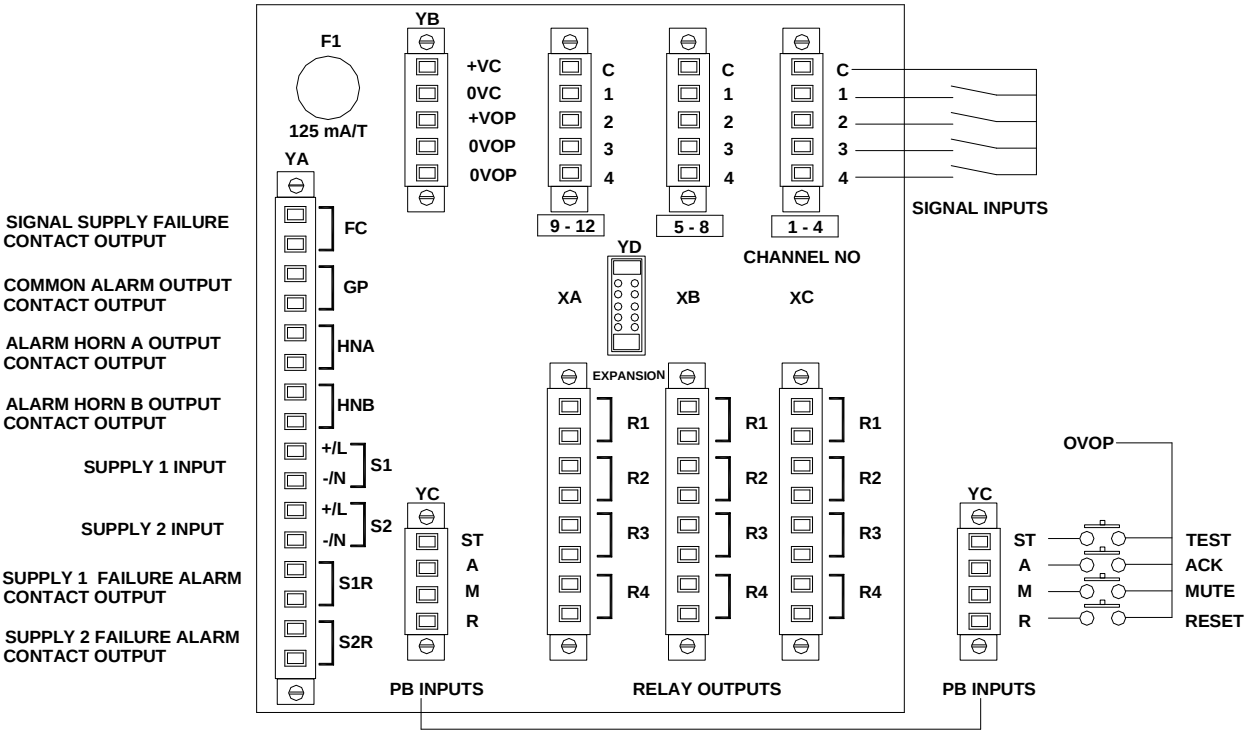
All terminals are of the rising clamp type and are suitable for cable of up to 2.5mm^2



Typical Connection Details

Figure 4

Please Note:- Systems supplied after January 1st 2008 are fitted with quick disconnect terminals complete with **locking screws** suitable for a max of 2.5mm sq cables per the revised layout shown below



Power Connections

RTK series UC625 annunciators are supplied as standard with two integrally mounted universal Input power supplies (supply 1 and 2) capable of accepting either

SUPPLY	VOLTAGE	TERMINAL BLOCK	TERMINALS
1	85-264VAC or 88-360VDC	PG2 Supply 1	+/L and -/N
2	85-264VAC or 88-360VDC	PG2 Supply 2	+/L and -/N

Table 23

These two supplies are fully isolated from each other so no additional transformers or external components are required

Aux Supply Option

The second power supply input (Supply 2) can be suitable for connection to a nominal 24VDC (19-31VDC) supply as an option.

SUPPLY	VOLTAGE	TERMINAL BLOCK	TERMINALS
1	85-264VAC or 88-360VDC	PG2 - Supply 1 I/P	+/L and -/N
2	24VDC or (19-31VDC)	PG2 - Supply 2 I/P	+/L and -/N

Table 24

Signal Supply

The standard UC625 generates an internal redundant 24VDC for use as the signal supply voltage. The signal supply voltage is protected by fuse F1 located in the top left hand corner on the rear of the enclosure and internally linked to all of the “C” terminals on the rear of the UC625 for distribution to the associated signal input contact.

Signal Supply Monitor Relay

On systems supplied after January 1st 2008 a field contact supply monitor relay has been added to provide remote indication of loss of the field contact voltage which is protected by a fuse mounted on the rear of the UC625. The monitor relay output contact is available on the rear of the unit in terminal row YA terminals FC.

Signal Supply Options

As an option, which must be specified at the time of order, the UC625 can be supplied suitable for use with direct powered inputs using 24VAC/DC, 48VAC/DC, 125VAC/DC or 250VAC/DC. Please note:- 48VAC/DC, 125VAC/DC and 250VAC/DC signal supply versions use external voltages derived by others from outside the annunciator. Full redundancy of operation is therefore dependent on the signal supply voltage being available if either primary or secondary supply inputs are present.

Earthing

All series UC625 alarm annunciators are fitted with a separate earth stud, which is located on the left hand side of the enclosure when viewed from the rear. Warning:- To ensure the final installation meets all relevant safety standards and EMC directives this earth must be connected

Remote Pushbutton Connections

Standard units are supplied with customer terminals which allow connection of remote pushbuttons which can be set via on board DIL switches to operate in one of two ways as described below.

Option 1

In sub-station applications it is common for a number of annunciators to be wired to one common set of Test, Acknowledge and Reset pushbuttons which only control the power failure alarms fitted within individual annunciators.

Option 2

In other applications both alarms and power failure alarms are to be linked to a common set of Test, Acknowledge and Reset pushbuttons.

FUNCTION	CARD	CHANNELS	SWITCH	SETTING
Enable Option 1	SPR	ALL	SW5.S7	OFF
Enable Option 2	SPR	ALL	SW5.S7	ON

Table 25

In either case remote pushbuttons should be momentary type with normally open contact. Switches of almost any type can be used and should be wired as shown in the following diagram.

Optional Remote Pushbutton Connections

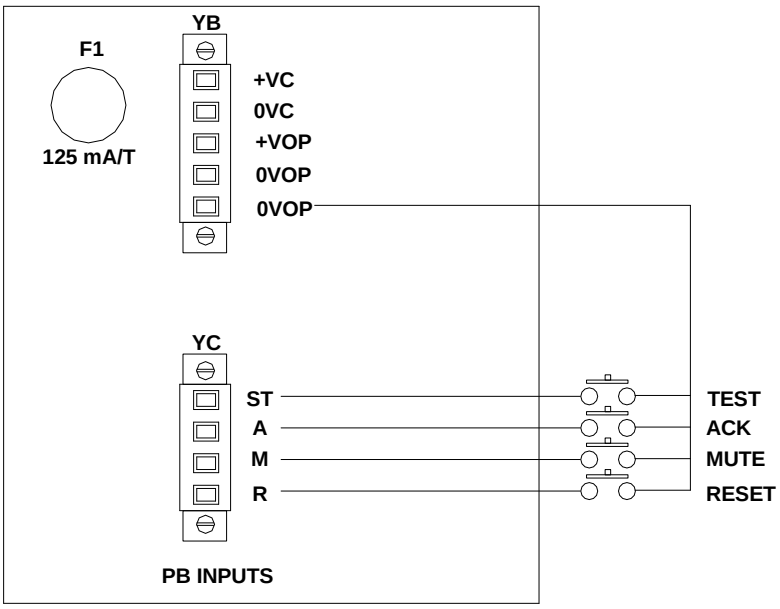
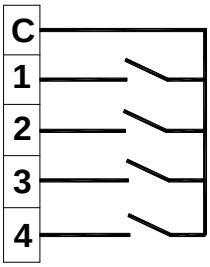


Figure 5

Standard Inputs Connections

In standard Units a 24VDC signal common is internally distributed to all of the C terminals within the annunciator. The 24VDC supply is available if either the primary or secondary power input is present; this provides true 100% redundancy.

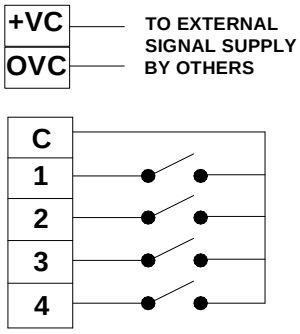


Standard Signal Input Connections

Figure 6

Powered Inputs @ 24VDC

If required, the standard unit can be configured to accept 24VDC direct voltage inputs; this is achieved by connecting an external 24vdc to terminals OVC and +VC as shown below. It is essential that the supply for the alarm contacts is properly fused and must have a common 0V with the 24VDC annunciator supply.

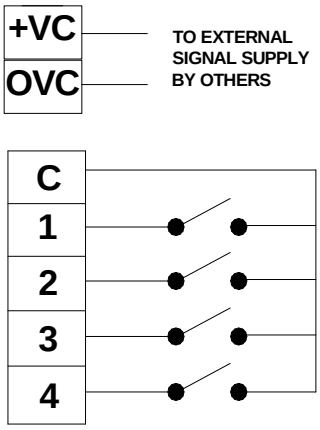


24VDC Powered Signal Input Connections
Figure 7

Important note:- When using powered inputs full redundant operation can only be achieved if the signal supply, provided by others, is available when either the primary or secondary supply input is present.

Higher Voltage Powered Inputs

If specified at the time of ordering the signal input circuit can be manufactured to accept higher voltage direct voltage Inputs there are 3 versions available 48VAC/DC or 125VAC/DC or 250VAC/DC. These higher AC/DC voltages are connected as shown below.

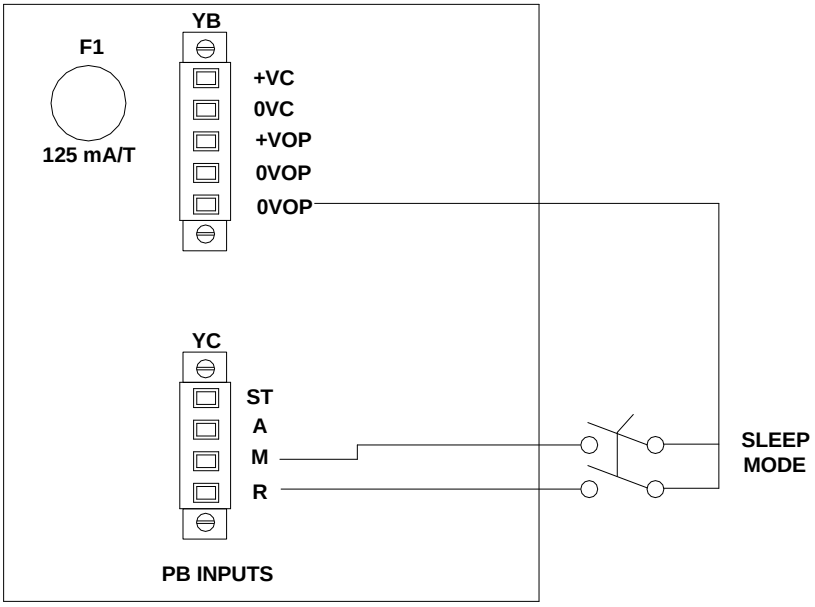


48/110/250 VAC/DC Powered Signal Input Connections
Figure 8

Important note:- When using powered inputs full redundant operation can only be achieved if the signal supply, provided by others, is available when either the primary or secondary supply input is present.

Sleep Mode

Sleep mode is typically used in sub station applications where the visual and audible outputs are disabled during unmanned periods to reduce the drain on the associated station batteries. Whilst in sleep mode the logic of the annunciator will continue to react in the normal way including the operation of common alarm relays and individual channel signal duplicating relays only the drive signals to the LED's and audibles are disabled. An externally mounted two- pole switch is required for sleep mode connected as shown below. Sleep mode is active when the switch is in the closed position.

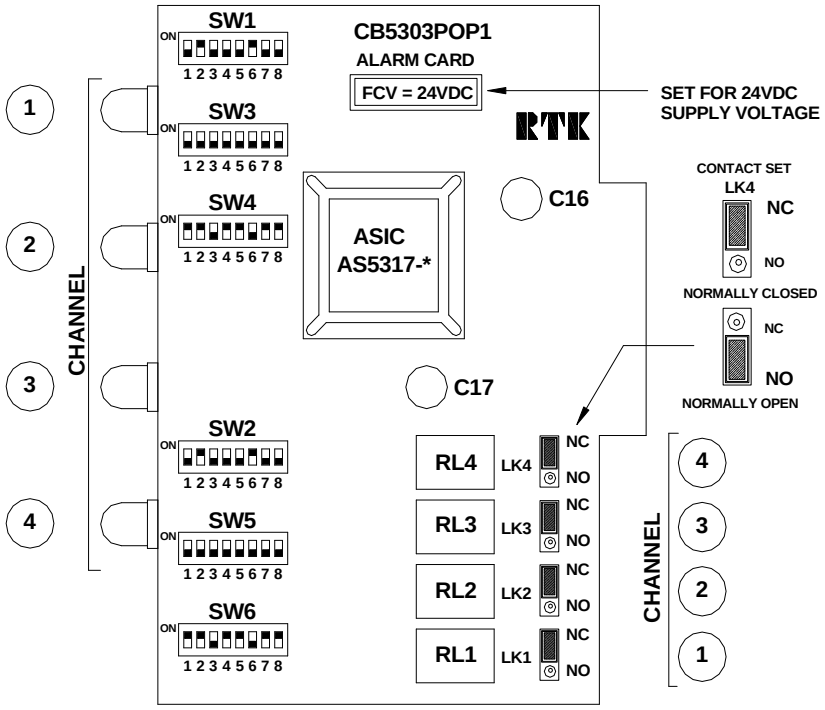


Connection for Sleep Mode

Figure 9

System DIL Switch Location and Functions

Remove the front legend plate assembly by removing the associated screws to access the plug-in alarm cards. Each card is equipped with a number of DIL switches which are used to select the various options on a per pair of channels as shown below. For further details on the operation of the alarm sequences refer to the section headed sequences.



Alarm Card DIL Switch Location
Figure 10

DIL Switch Functions On Alarm Cards

Channels can be configured to suit individual requirements for the particular application. Three DIL switches are provided for each pair of channels, as follows:-

FUNCTION	CARD	CHANNELS	SWITCH
Input Response	Alarm Alarm	1 and 2 3 and 4	SW1 Refer To Table 27 SW2 Refer To Table 27
Channel Features	Alarm Alarm	1 and 2 3 and 4	SW3 and SW4 Refer To Fig 10 SW5 and SW6 Refer To Fig 11

Table 26

Alarm Card Input Response Settings (Set Per Channel) STANDARD VERSIONS

CHANNEL	5mS		25mS		50mS		100mS	
1	SW1.S1	ON	SW1.S1	OFF	SW1.S1	OFF	SW1.S1	OFF
	SW1.S2	OFF	SW1.S2	ON	SW1.S2	OFF	SW1.S2	OFF
	SW1.S3	OFF	SW1.S3	OFF	SW1.S3	ON	SW1.S3	OFF
2	SW1.S5	ON	SW1.S5	OFF	SW1.S5	OFF	SW1.S5	OFF
	SW1.S6	OFF	SW1.S6	ON	SW1.S6	OFF	SW1.S6	OFF
	SW1.S7	OFF	SW1.S7	OFF	SW1.S7	ON	SW1.S7	OFF
3	SW2.S1	ON	SW2.S1	OFF	SW2.S1	OFF	SW2.S1	OFF
	SW2.S2	OFF	SW2.S2	ON	SW2.S2	OFF	SW2.S2	OFF
	SW2.S3	OFF	SW2.S3	OFF	SW2.S3	ON	SW2.S3	OFF
4	SW2.S5	ON	SW2.S5	OFF	SW2.S5	OFF	SW2.S5	OFF
	SW2.S6	OFF	SW2.S6	ON	SW2.S6	OFF	SW2-S6	OFF
	SW2.S7	OFF	SW2.S7	OFF	SW2.S7	ON	SW2-S7	OFF

Table 27

Alarm Card Input Response Settings (Set Per Channel) M3 OPTION VERSIONS

CHANNEL	5mS		25mS		200mS		5S	
1	SW1.S1	ON	SW1.S1	OFF	SW1.S1	OFF	SW1.S1	OFF
	SW1.S2	OFF	SW1.S2	ON	SW1.S2	OFF	SW1.S2	OFF
	SW1.S3	OFF	SW1.S3	OFF	SW1.S3	ON	SW1.S3	OFF
2	SW1.S5	ON	SW1.S5	OFF	SW1.S5	OFF	SW1.S5	OFF
	SW1.S6	OFF	SW1.S6	ON	SW1.S6	OFF	SW1.S6	OFF
	SW1.S7	OFF	SW1.S7	OFF	SW1.S7	ON	SW1.S7	OFF
3	SW2.S1	ON	SW2.S1	OFF	SW2.S1	OFF	SW2.S1	OFF
	SW2.S2	OFF	SW2.S2	ON	SW2.S2	OFF	SW2.S2	OFF
	SW2.S3	OFF	SW2.S3	OFF	SW2.S3	ON	SW2.S3	OFF
4	SW2.S5	ON	SW2.S5	OFF	SW2.S5	OFF	SW2.S5	OFF
	SW2.S6	OFF	SW2.S6	ON	SW2.S6	OFF	SW2-S6	OFF
	SW2.S7	OFF	SW2.S7	OFF	SW2.S7	ON	SW2-S7	OFF

Alarm Card Input And Sequence Settings (Set In Pairs)

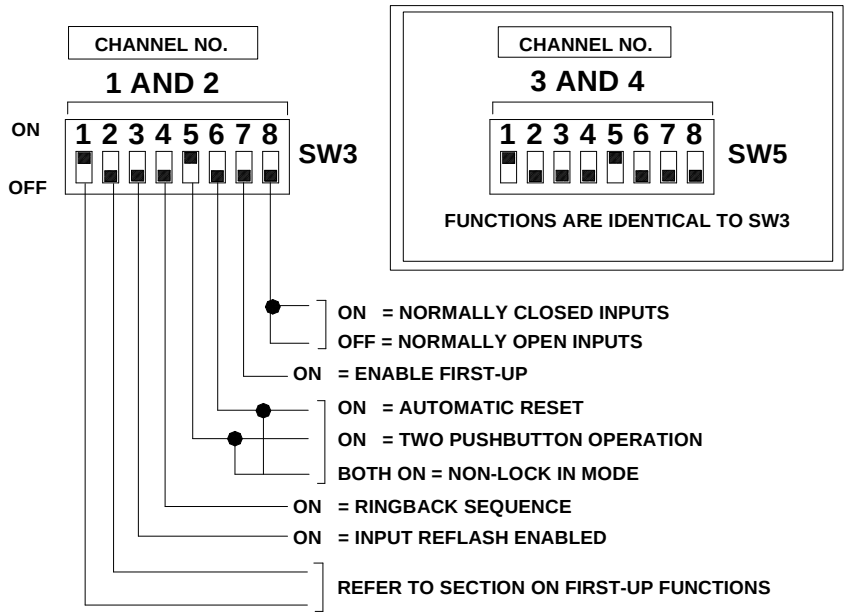


Figure 11. Alarm Card DIL Switch details (SW3 and SW5)

Alarm Card Relay And Horn Settings (Set In Pairs)

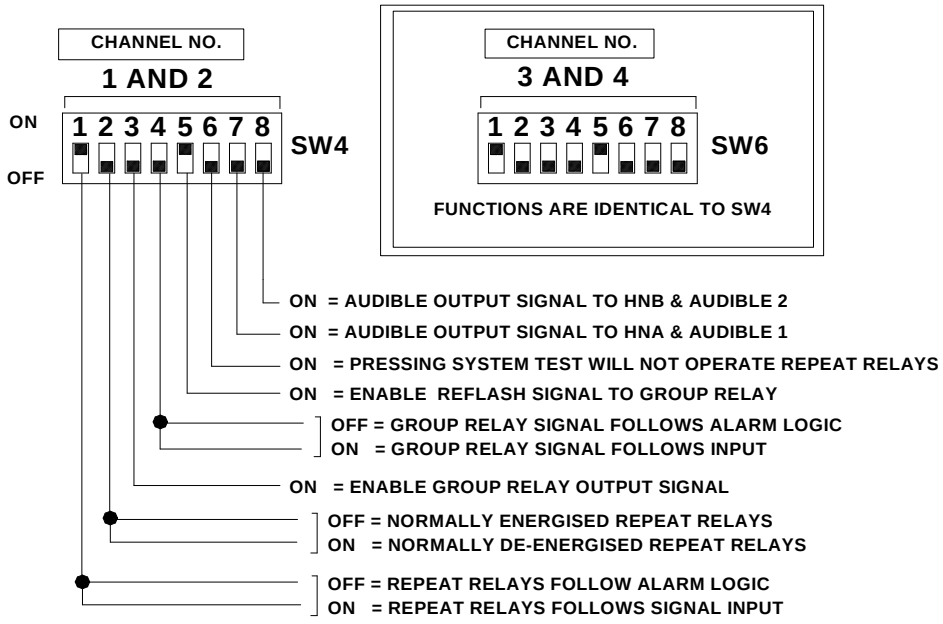
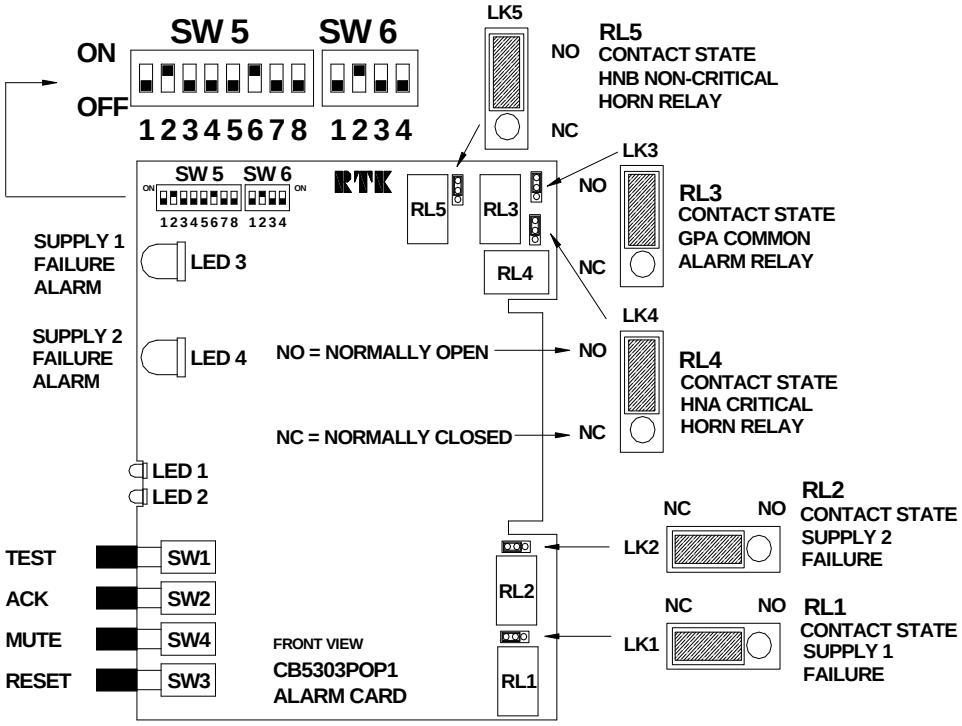


Figure 12. Alarm Card DIL Switch details (SW4 and SW6)

DIL Switch Settings SPR Card

Remove the front legend plate assembly by removing the associated screws to access the plug-in SPR card. This card is equipped with a number of DIL switches, which are used to select the various options as shown below.



SPR (Supply, P/B's and Relays) Card showing DIL switches

Figure 13

SPR Card Horn, Relay And Pushbutton Settings

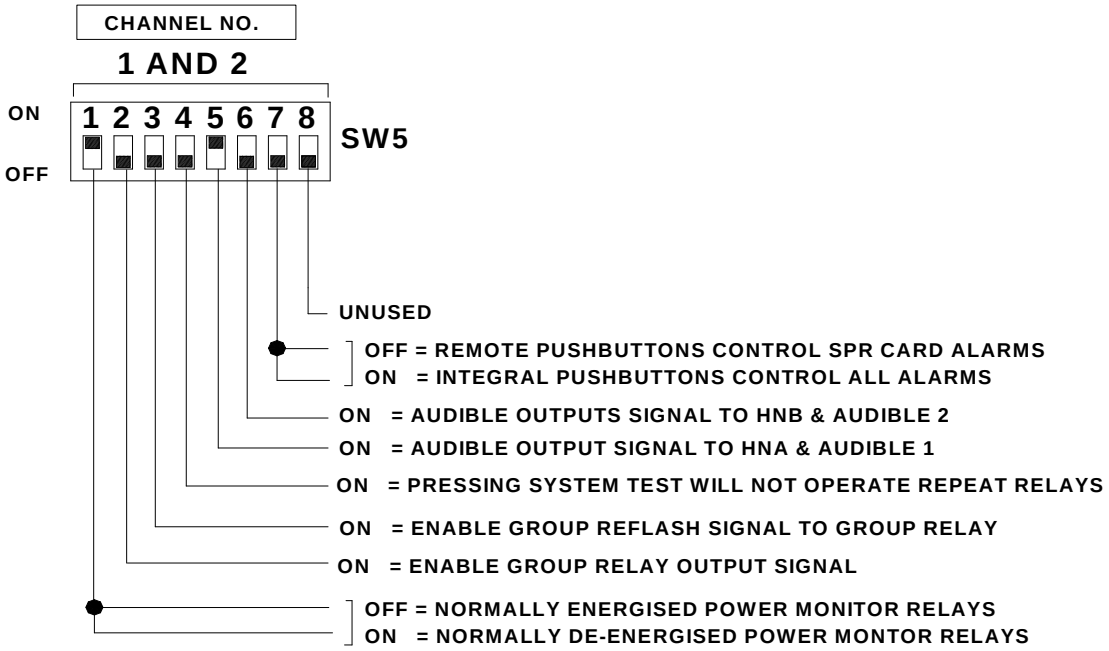


Figure 14 SPR Card DIL Switch details (SW5)

Automatic Acknowledge Timer (Located On SPR Card)

APPROX TIME	SPR CARD	
	SW6.S1	SW6.S2
15 Seconds	ON	OFF
50 Seconds	OFF	ON
170 Seconds	ON	ON
Disabled	OFF	OFF

Table 28

Internal Horns Disable (Located On SPR Card)

FUNCTION	Critical Horn	Non Critical Horn
	SW6.S3	SW6.S4
Enable	ON	ON
Disable	OFF	OFF

Table 29

Maintenance

No Special Tools Required

All maintenance is achieved from the front of the annunciator without the use of special tools. For Alarm Card or Supply/Pushbutton/Relay Card replacement or to change the mode of operation, only the front legend plate needs to be removed.

Legend Plate Removal

The legend plate is easily removed by undoing the associated fixing screws to reveal the plug in Alarm Cards and Supply/Pushbutton/Relay Card.

Film Legend Engraving

Film legends are accessed from the side of the legend plate and simply slide in place between the two layers used within the plate.

Alarm Card or SPR Card Removal

In the event of alarm card or SPR card failure or to change feature settings, the associated cards are easily removed for repair or configuration by simply pulling on the card edge to remove it from the associated edge connector. Replacement is the reverse of removal, note that care must be exercised when replacing the board to ensure that the card is properly located into the card guide runners before firmly pressing the module into the associated edge connector. Alarm Cards are designed to allow insertion and removal with power applied however due to the high voltages present on the primary supply of the SPR module it is recommended that the power is isolated before the SPR is removed or inserted.

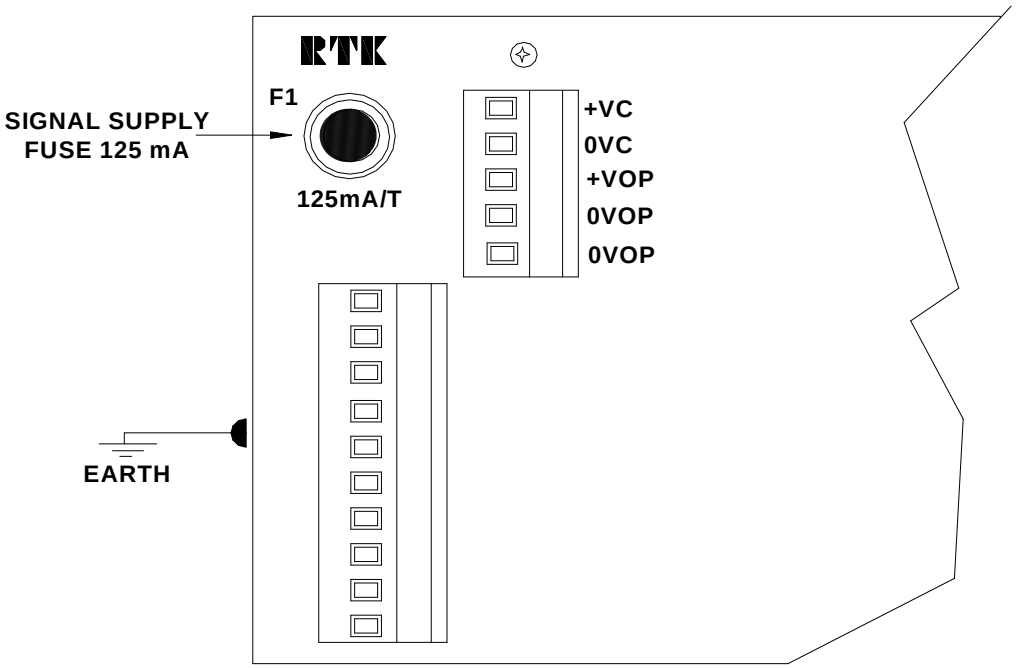
Super-Bright LED's

To obtain a virtually maintenance free alarm system the UC625 annunciator is fitted with super-bright LED's. These LED's can be supplied in different colours to suit alarm priorities if notified at time of order. Colours available are red, amber, yellow, white and green.

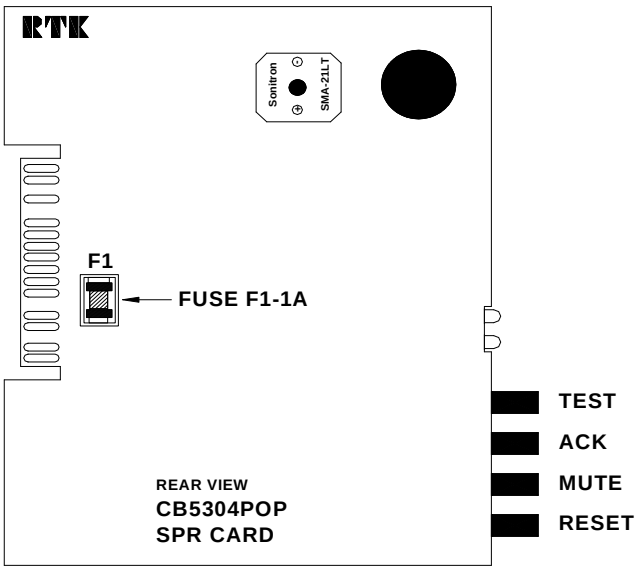
Fuse replacement

Each UC625 annunciator can contain a maximum of two fuses. One is used to protect the signal supply voltage feed to the external alarm contacts and is situated on the rear of the enclosure in the top right hand corner as detailed below.
The second fuse is located in a surface mount socket on the Supply/Pushbutton/Relay (SPR) Card and is used to protect the power input on Supply 2 when 24VDC is used as an aux supply. Replace fuse with a 1A/F surface mount fuse Type 451001

Rear Fuse F1- 125 mA/T Anti-surge



Signal Supply Fuse Location
Figure 15



Fuse Location For Systems Using AUX 24VDC Supply

Figure 16

Expansion Units

Master and Expansion UC625 Units

All UC625 units shipped after August 2004 are equipped with a 10 way ribbon connector that allows the user to connect either a single or multiple expansion UC625 units. Examples

If a user requires a 56-way alarm unit it is possible to Install
1 x 28 way UC625 master Unit and 1 x 28 way UC625 expansion unit

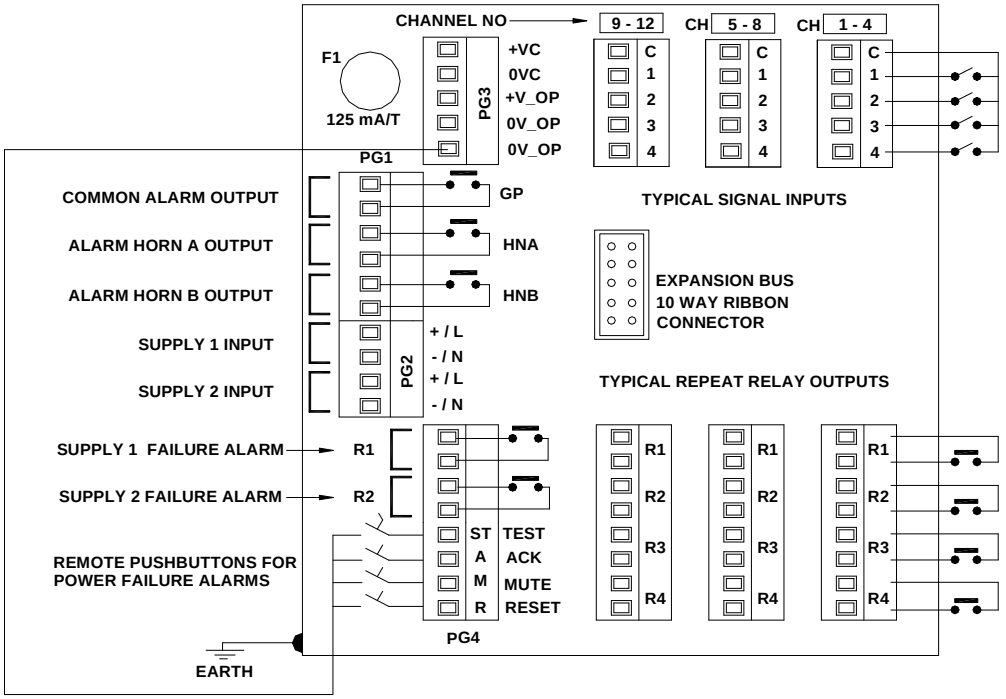
If a user requires a 84-way alarm unit it is possible to install
1 x 28 way UC625 aster Unit and 2 x 28 way UC625 expansion units

Note:-Integral pushbuttons, audible and common alarm relays are only fitted to the master unit and the control signals required between the master and expansion units are passed via the factory supplied 10 way ribbon cable. The following connections are made via the 10 way ribbon cable

PIN	REF	FUNCTION
1	OV	Common Reference
2	GP	Group Signal
3	GPR	Group Reflash Signal
4	HNA	Horn A Signal
5	HNB	Horn B Signal
6	RES	Reset Signal
7	ACK	Acknowledge Signal
8	ST	System Test Signal
9	First	First Reset Signal
10	Flash	Flash Synchronisation

UC625 Master & Expansion Rear Terminal Views

REAR VIEW Units shipped August 2004 to Dec 2007



REAR VIEW Units Supplied from Jan 1st 2008

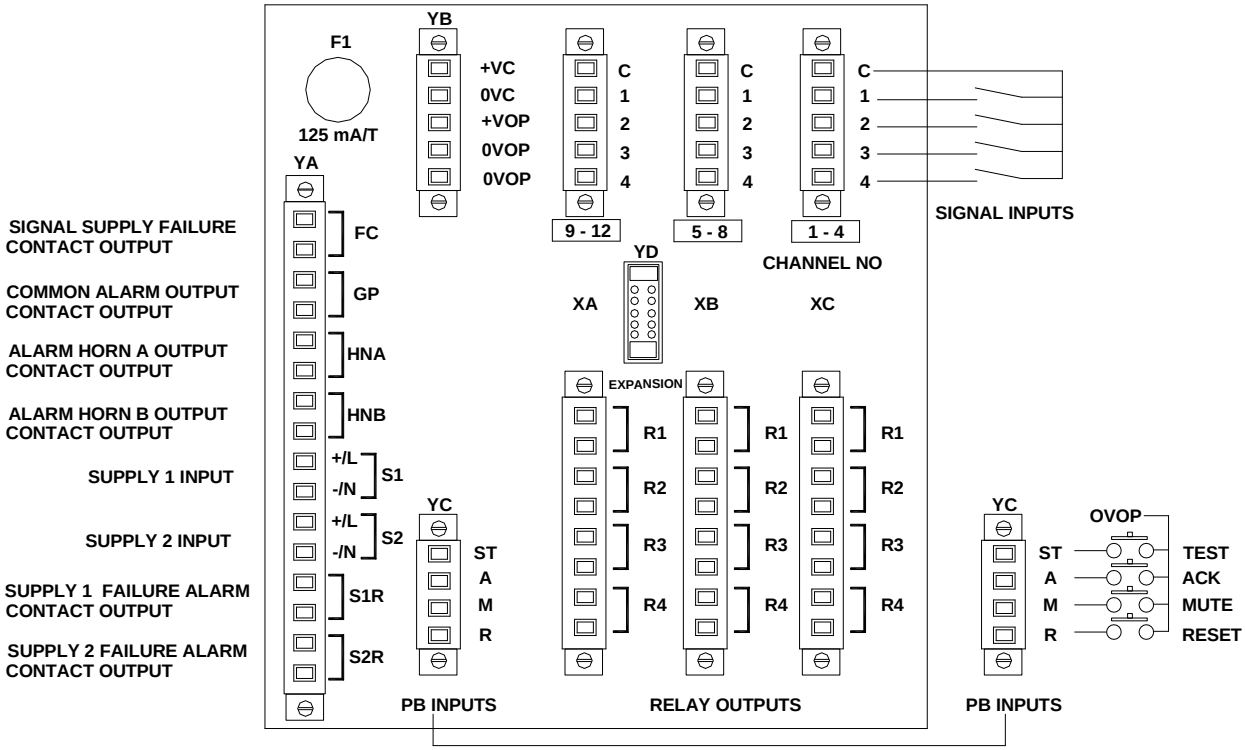


Figure 17. **UC625 Master Units with Ribbon Expansion Socket**

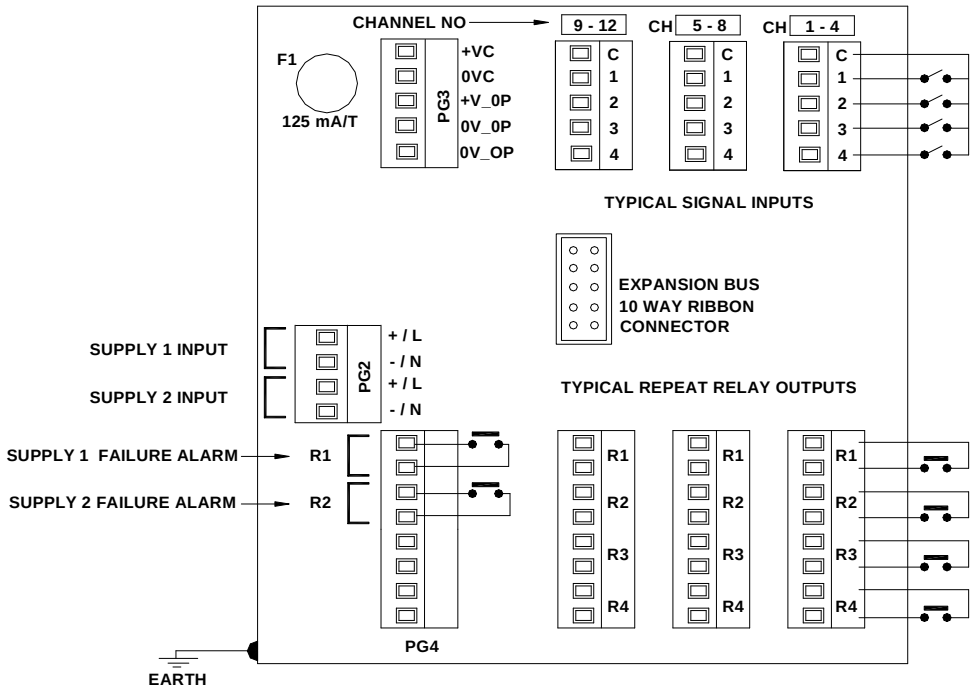


Figure 18. UC625 Expansion Units with Ribbon Expansion Socket

Options

Additional options have been developed since the launch of the UC625 Alarm Annunciator but please note these options must be specified at the time of ordering.

Option 00 Horn Disable On System Test

When the system test pushbutton is pressed on standard UC625 units it simulates a full alarm state and verifies that the visual and audible circuits are operating correctly. When option 00 is specified the audible alarms are prevented from operating as a result of the system test pushbutton being pressed. Please note:- The audible alarms will operate in the normal manner as a result of an alarm input being abnormal.

Option 01 Lamp Test Instead of Functional Test

Pressing the test pushbuttons on standard UC625 units will simulate a full alarm condition requiring the operator to also press the mute, ack and reset pushbuttons to clear the alarms after the test has been activated. In certain applications lamp test is preferred over full functional test and option 01 is used to signify that pressing the test pushbutton will turn the lamps to steady on while the pushbutton is being pressed.

Option 02 Ringback Horn Disabled

The standard ISA ringback sequence employed by RTK provides a pulsing horn output to indicate to the operator that the alarm can be reset. In certain applications the ringback audible is not required and option 02 permanently disables the audible alarm on any channel returning to normal. Please note the audible will sound in the normal on alarm activation.

Option 03 ISA R12 Sequence

The standard UC625 provides ISA R sequence but in certain applications the user requires that the pushbutton functions are interlocked to ensure that the operator steps through the sequence in the correct order i.e. alarm, silence, acknowledge and reset. Option 03 provides the required pushbutton interlock, which prevents the pushbuttons operating unless they are pressed in the correct sequence.

Option 04 Response Times

The standard UC625 unit is equipped with DIL switches that allow the user to select each input to respond to an abnormal state if the contacts have remained in alarm for a minimum time period. Each alarm can be set to respond in 5, 25, 50 or 100ms on these units. In certain applications the user requires additional delay with regards to the response time and option 04 provides a minimum setting of 5ms and a maximum setting of 5 seconds.

Option 05 Lamp / Audible Test

In some applications Customers require the Lamp Test pushbutton to simulate the operation of the audible alarms whilst the pushbutton is being pressed. Option 05 adds horn test to the lamp test function.

Multiple Option Codes

To simply the ordering code on the UC625, units that require more than one of the above options use a suffix letter M and number to indicate which options are fitted.

M1 = Option 00 Fitted

M2 = Options 01 and 02 Fitted

M3 = Options 01,02,03 and 04 Fitted

M4 = Options 01, 02, 03, 04 and 05 Fitted

Trouble Shooting Guide

The following section is issued as a guide to aid fault finding on the UC625 alarm annunciator. Units are shipped from the factory with the default settings highlighted in each section within this manual unless otherwise advised at the time of order. As a number of features can be enabled or disabled by the user using the DIL switches located on the alarm and SPR modules it is recommended that a note is made of any switch settings prior to fault finding.

Symptom	Probable Cause
The green LED associated with supply 1 is not lit and the power failure alarm is active	Measure the voltage on the power input terminals marked supply 1 located on the rear of the unit and verify that the level matches the requirement and is connected in the polarity indicated.
The green LED associated with supply 2 is not lit and the power failure alarm is active	Measure the voltage on the power input terminals marked supply 2 located on the rear of the unit and verify that the level matches the requirement and is connected in the polarity indicated.
When the signal input contact closes or opens no alarm occurs on the annunciator	Check that the signal supply fuse F1 rated @ 125mA, located in the top right hand corner when viewed from the rear of the unit, is in working order and check that the corresponding signal supply voltage is present on the customer terminals on the rear of the unit which can be measured between terminals OVC and any of the terminals marked C (Common) located at the top of each row of signal input terminals. Caution:- Although 24VDC is the standard signal supply voltage options exist for 48VAC/DC, 120VAC/DC, 250VAC/DC.
Although the field contacts are known to be in the non alarm condition the alarms remain in the on state and cannot be reset	If alarms are set to operate from normally closed contacts and the signal supply fuse blows all alarms will operate as though an alarm has occurred and after the ack and reset pushbuttons have been pressed the alarms will remain in steady on state and cannot be reset until the supply is re-instated. Check that the signal supply fuse F1 (rated at 125mA) has not blown. Fuse F1 is located in the top right hand corner of the unit when viewed from the rear. Check that the Inputs have been correctly set to operate from either a normally open (N.O.) or normally closed (N.C.) and they have not been accidentally inverted. The following switch settings are used to set the input type ***Channel 1 & 2*** SW3 Position 8 OFF = N.O. SW3 Position 8 ON = N.C. ***Channel 3 & 4*** SW5 Position 8 OFF = N.O. SW5 Position 8 ON = N.C.

Symptom	Probable Cause
When an alarm occurs the LED's operate correctly but the audible alarms do not sound	Each channel can be selected to operate either of the two integral horns / horn relays as required. Internal horns and horn relays are enabled by placing the following switches to the ON position on the SPR Card HNA – SW5 - Position 5 HNB – SW5 - Position 6 Each pair of channels can be set to activate either of the audibles using the following switches located on each alarm module ***Channel 1 & 2*** HNA – SW4 Position 7 set to ON HNB – SW4 Position 8 set to ON ***Channel 3 & 4*** HNA – SW6 Position 7 set to ON HNB – SW6 Position 8 set to ON
Module inter changeability	Alarm cards are designed to be able to be removed and installed with power applied. All Alarm Cards are universal in application and designed to be able to plug into any vacant card slot, however it is recommend that switch positions are noted prior to changing the location of any of the modules within the cabinet.
Individual channel repeat relays operate during Test	All UC625 alarm annunciators are equipped with Individual channel repeat relays, which are used to initiate 3rd party devices. The user can select whether each pair of repeat relays activate when the test pushbutton is pressed or if they should be inhibited. The following switch positions are used on the Alarm Cards to control this function ***Channel 1 & 2*** Repeat Relays Operate On Test– SW4 Position 8 set to OFF Inhibit Repeat Relays Operating On Test–SW4 Position 8 set to ON ***Channel 3 & 4*** Repeat Relays Operate On Test– SW6 Position 8 set to OFF Inhibit Repeat Relays Operating On Test–SW6 Position 8 set to ON

Symptom	Probable Cause
Signal Inputs that alarm and quickly return to normal are not being picked up by the annunciator	All UC625 Annunciators are equipped with switches that allow the user to select the response time of each channel to suit specific applications. The response time of each channel can be set to 5mS, 25mS, 50mS or 100mS as required. Check that the response time has been set to suit the application. Please refer to section 10 Para 10.2 for full details
The Individual channel Repeat Relay contact is Normally Closed in the non alarm state but should be Normally Open	Each pair of repeat relays can be set to normally energised or normally de-energised using switches located on the Alarm Card and the contact state can also be selected as normally open or closed per the following details. ***Channel 1 & 2*** SW4 Position S2 – ON = Normally De-Energised SW4 Position S2 – OFF = Normally Energised Channel 3 & 4 SW6 Position S2 – ON = Normally De-Energised SW6 Position S2 – OFF = Normally Energised Each relay is equipped with a 3 pin header and 2 way shorting bar that allows the user to select either a normally open or normally closed contact as required. Jumpers LK1 to LK4 refer. Please refer to Section 10 Para 10.5 for full details
Individual repeat relays do not act as slaves of the signal input	The operation of the repeat relays is selectable by the user to either follow the signal contact or to remain in the alarm state until the input has returned to normal and the operator has cleared the alarm. Each pair of channels can be set using switches located on the Alarm Card ***Channel 1 & 2*** SW4 Position 1 ON = Follow Input OFF = Follow Logic ***Channel 3 & 4*** SW6 Position 1 ON = Follow Input OFF = Follow Logic

Symptom	Probable Cause
After a short period of time the alarms revert to the acknowledged state even though the acknowledge pushbutton has not been pressed.	All UC625 annunciators are equipped with an automatic acknowledge timer facility typically used during commissioning or in un-manned applications. The common SPR card is equipped with switches that allow the user to set a defined time period of 15 Sec, 50 Sec or 170 Sec. This timer circuit can be disabled if required Please refer to Section 10 Para 10.7 for full details
When an alarm occurs the common alarm relay does not operate	All UC625 units are equipped with a common alarm relay, which changes state when any alarm occurs on the unit. Each pair of channels can be set to operate the common alarm relay if required using switches mounted on the Alarm Card ***Channel 1 & 2*** SW4 Position 1 ON = Enable common alarm signal SW4 Position 1 OFF = Disable Common alarm signal ***Channel 3 & 4*** SW6 Position 1 ON = Enable common alarm signal SW6 Position 1 OFF = Disable Common alarm signal The Common alarm relay can also be set to follow the signal input or follow the alarm logic. Please refer to Section 10 Para 10.4 for full details
The common alarm relay activates when I get one alarm but if another alarm occurs the relay remains in the alarm state	All UC625 units are equipped with switches that allow the user to select if the common alarm relay should reflash every time a new alarm occurs causing the contacts to drop out and re-activate typically within 500mS. Switches are provided on the Alarm Card to control this feature ***Channel 1 & 2*** SW4 Position 5 ON = Enable Reflash SW4 Position 5 OFF = Disable Reflash ***Channel 3 & 4*** SW6 Position 5 ON = Enable Reflash SW6 Position 5 OFF = Disable Reflash

Other RTK Products

RTK Instruments Ltd produces a range of complementary products for many applications in the Industrial Control and Instrumentation field, for both safe and hazardous areas, as listed below. All standard products come complete with a **5 year warranty** from this ISO9001:2000 approved company.

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- **Signal Converters**
- **Frequency Converters**
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Due to our policy of continuous product development, we reserve the right to amend these specifications without notice.

Card Switch Settings Required To Set Alarm Sequences											
			Switch Suffix Number								
Sequence	Card	Channels	Switch	-S1	-S2	-S3	-S4	-S5	-S6	-S7	Page
ISA-M	Alarm	1 - 2	SW3	***	***	OFF	OFF	OFF	OFF	OFF	18
	Alarm	3 - 4	SW5	***	***	OFF	OFF	OFF	OFF	OFF	
	SPR	1 - 2	SPR Card is supplied in Sequence ISA-M ONLY								
ISA-A	Alarm	1 - 2	SW3	***	***	OFF	OFF	OFF	ON	OFF	
	Alarm	3 - 4	SW5	***	***	OFF	OFF	OFF	ON	OFF	
ISA-A-4	Alarm	1 - 2	SW3	***	***	OFF	OFF	ON	ON	OFF	19
	Alarm	3 - 4	SW5	***	***	OFF	OFF	ON	ON	OFF	
ISA-R	Alarm	1 - 2	SW3	ON	ON	OFF	ON	OFF	OFF	OFF	
	Alarm	3 - 4	SW5	ON	ON	OFF	ON	OFF	OFF	OFF	
ISA A-5-6 Status Only	Alarm	1 –2	SW3	ON	OFF	OFF	OFF	ON	ON	OFF	
	Alarm	3 - 4	SW5	ON	OFF	OFF	OFF	ON	ON	OFF	
	** The above Sequences can be set to be FAST or SLOW FLASH on Alarm using the following										
Flash Rate	Card	Channels	Switch	-S1	-S2						
Fast Flash	Alarm	1 - 2	SW3	ON	ON						
Slow Flash	Alarm	1 - 2	SW3	OFF	OFF						
Fast Flash	Alarm	3 - 4	SW5	ON	ON						
Slow Flash	Alarm	3 - 4	SW5	OFF	OFF						
	First-Up Alarm Sequences										
ISA-F1A	Alarm	1 - 2	SW3	ON	OFF	OFF	OFF	OFF	ON	ON	20
	Alarm	3 - 4	SW5	ON	OFF	OFF	OFF	OFF	ON	ON	
ISA-F2M-1	Alarm	1 - 2	SW3	OFF	ON	OFF	OFF	OFF	OFF	ON	
	Alarm	3 - 4	SW5	OFF	ON	OFF	OFF	OFF	OFF	ON	

Table 30 **Switch Settings Per Alarm Sequence**