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IRT Eurocard

Type CPS-3371

Alarm & Control Panel
for AMS-3370, AMS-4370 & AMS-4370HD Switchers

Designed and manufactured in Australia

IRT can be found on the Internet at:
http://www.irtelectronics.com

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Instruction Book

Table of Contents

This instruction book applies to units later than S/N 0305001.

General Description

The CPS-3371 provides a compact monitoring facility for alarm outputs from redundant signal paths and provides a means of selecting either manual or automatic path selection based on the input alarm states.

It is designed primarily to be used in conjunction with either the AMS-3370, AMS-4370 or AMS-4370HD relay changeover switchers providing a redundant path changeover for video, SDI, ASI or HD circuits.

The CPS-3371 provides all indications and switches to control three separate AMS-3370's, AMS-4370's or AMS-4370HD's.

A display inhibit switch is provided to kill any display from alarm circuits that are not in use.

Fail safe operation is ensured by automatic selection of the Main path in the event of power failure, but with the manual override selection of the Alternate path still being operative.

Standard features:

- Controls for three redundant path switches.
- Manual or automatic path selection.
- Fail safe operation.
- Display inhibit.

Equipment provided:

Standard: CPS-3371 Alarm & Control Panel for AMS-3370, AMS-4370 or AMS-4370HD Switchers.

Related equipment:-

804747 Eurocard module mounting frame	Mounts up to 14 CPS-3371's side by side in 134 mm of standard rack space (3 Rack Units).
AMS-3370 ASI/SDI/G.703 changeover switcher (AMS-3370 superseded by AMS-4370)	The AMS-3370 is a relay changeover switch designed for use in path protection circuits. One high frequency changeover is available for use with ASI, SDI, G.703, 70 MHz IF, AES/EBU unbalanced audio or analogue video signals. Magnetic latch relays ensure signal path is maintained on loss of power.
AMS-4370 HD/ASI/SDI/G.703 changeover switcher	The AMS-4370 is a relay changeover switch designed for use in path protection circuits. Primarily designed for use with HD digital signals, SDI, ASI, G.703, 70 MHz IF, AES/EBU unbalanced audio or analogue video signals. Magnetic latch relays ensure signal path is maintained on loss of power.
AMS-4370HD HD/ASI/SDI/G.703 changeover switcher (AMS-4370HD superseded by AMS-4370)	The AMS-4370HD is a relay changeover switch designed for use in path protection circuits. Primarily designed for use with HD digital signals, one high frequency changeover is also available for use with ASI, SDI, G.703, 70 MHz IF, AES/EBU unbalanced audio or analogue video signals. Magnetic latch relays ensure signal path is maintained on loss of power.
Instruction Book.	

Technical Specifications
IRT Eurocard module
Type CPS-3371

Alarm/Indicator Inputs:

Type	Positive current sinking to ground.
Maximum current	<10 mA
Open circuit input voltage	+12 Vdc

Control Outputs:

Type	Closed switch contact to ground.
Max. output current per switch	50 mA.
Max pulldown voltage per switch	+48 Vdc.

Connectors:

Phoenix plug in screw terminal blocks.

Power Requirements:

+12 Vdc supplied from connection to AMS-3370/AMS-4370HD switcher with J2/F5 fitted, or AMS-4370 with link LK4 set to position 1-2.

Power consumption <30 mA per circuit.

Other:

Temperature range		0 - 50° C ambient.
Mechanical		Suitable for mounting in IRT 19" rack chassis with input, output and power connections on the rear panel.
Finish:	Front panel	Grey background, silk-screened black lettering & red IRT logo.
Dimensions		6 HP x 3 U x 60 mm IRT Eurocard.

Technical description

The CPS-3371 comprises three independent alarm/control circuits housed on a single Eurocard. As the three control circuits are identical, only one circuit will be described in detail. Refer to the circuit diagram 804671 in the back of the manual.

Power supply
+12 Vdc power is supplied to the unit via the unit that this switch panel controls, either an AMS-3370, AMS-4370 or AMS-4370HD.

Alarm indication circuits
Each alarm input consists of a current limiting resistor and a red LED connected to the +12 Vdc supply. When an alarm input to ground is received at the relevant pin of TB2 for either the *Main* or *Standby* circuits, the associated LED will light up on the front panel.

Control circuit
With the Auto/Inhibit (manual) switch, SW2, set to Auto, the alarm directly drives the relevant AMS switcher via the connections made at TB1. With the Auto/Inhibit switch set to Inhibit, control of the AMS switcher is only possible with the Main/Protect (standby) switch, SW1. SW1 will still operate even if SW2 is set to Auto provided there is no alarm inputs on either the main or standby circuits.

Switcher status is indicated by LEDs on the front panel of the CPS-3371.

Installation

Operational Safety:

WARNING

Operation of electronic equipment involves the use of voltages and currents that may be dangerous to human life. Note that under certain conditions dangerous potentials may exist in some circuits when power controls are in the **OFF** position. Maintenance personnel should observe all safety regulations.

Do not make any adjustments inside equipment with power **ON** unless proper precautions are observed. All internal adjustments should only be made by suitably qualified personnel. All operational adjustments are available externally without the need for removing covers or use of extender cards.

Pre-installation:

Handling:

This equipment may contain or be connected to static sensitive devices and proper static free handling precautions should be observed.

Where individual circuit cards are stored, they should be placed in antistatic bags. Proper antistatic procedures should be followed when inserting or removing cards from these bags.

Power:

AC mains supply: Ensure that operating voltage of unit and local supply voltage match and that correct rating fuse is installed for local supply.

DC supply: Ensure that the correct polarity is observed and that DC supply voltage is maintained within the operating range specified.

Earthing:

The earth path is dependent on the type of frame selected. In every case particular care should be taken to ensure that the frame is connected to earth for safety reasons. See frame manual for details.

Signal earth: For safety reasons a connection is made between signal earth and chassis earth. No attempt should be made to break this connection.

Installation in frame or chassis:

See details in separate manual for selected frame type.

Connections:

The CPS-3371 comprises three independent alarm/control circuits housed on a single Eurocard. As the three control circuits are identical, only one circuit will be described in detail.

Alarm inputs:

Alarm inputs are via TB2, which is a three-pin phoenix style screw connector. A switch to ground via either a relay or transistor switch to the relevant pin will cause the relevant LED on the front panel to illuminate and, if the Auto/Inhibit switch is set to auto, will control the connected AMS switcher.

System wiring should have as few connections as possible and wire gauge should be matched to the required distance to keep the impedance low.

The alarm inputs must sink approximately 100 mA for reliable operation of the indicators and changeover.
Alarm input line impedance should be kept to less than 45 Ohms.

Where long distances are required, the cable used should be well shielded and run away from sources of interference. Where large amounts of AC hum may be induced, it may be necessary to attach capacitors between the alarm inputs and ground to avoid false triggering.

Alarm inputs to module section A:

Connector TB2A:

Pin	Function
1	Main (A) Fail
2	Standby (B) Fail
3	Gnd

Alarm inputs to module section B:

Connector TB2B:

Pin	Function
1	Main (B) Fail
2	Standby (B) Fail
3	Gnd

Alarm inputs to module section C:

Connector TB2C:

Pin	Function
1	Main (C) Fail
2	Standby (C) Fail
3	Gnd

Control outputs:

The control output from the CPS-3371 is designed to interface with the inputs(s) of either the AMS-3370, AMS-3270 or AMS-4370HD changeover relay switcher. A grounded output will cause the AMS switcher to change state to its relevant position.

The same precautions should be taken with these outputs as with the alarm inputs described above.

Alarm O/Ps from module section A:

Connector TB1A:

Pin	Function
1	+12 Vdc Input
2	I/P 1(A) Selected
3	I/P 2(A) Selected
4	Select I/P 1(A)
5	Select I/P 2(A)
6	Gnd

Alarm O/Ps from module section B:

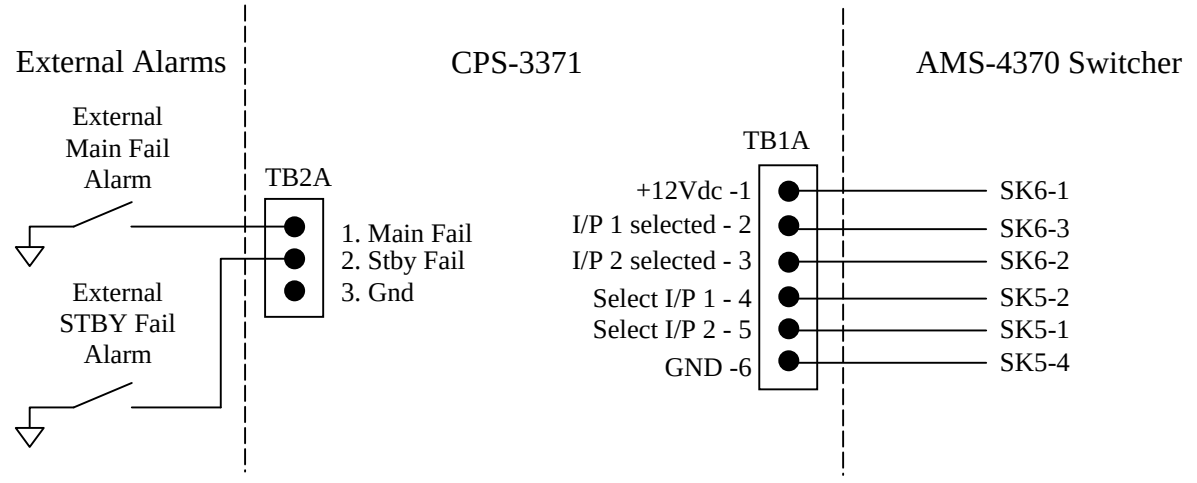
Connector TB1B:

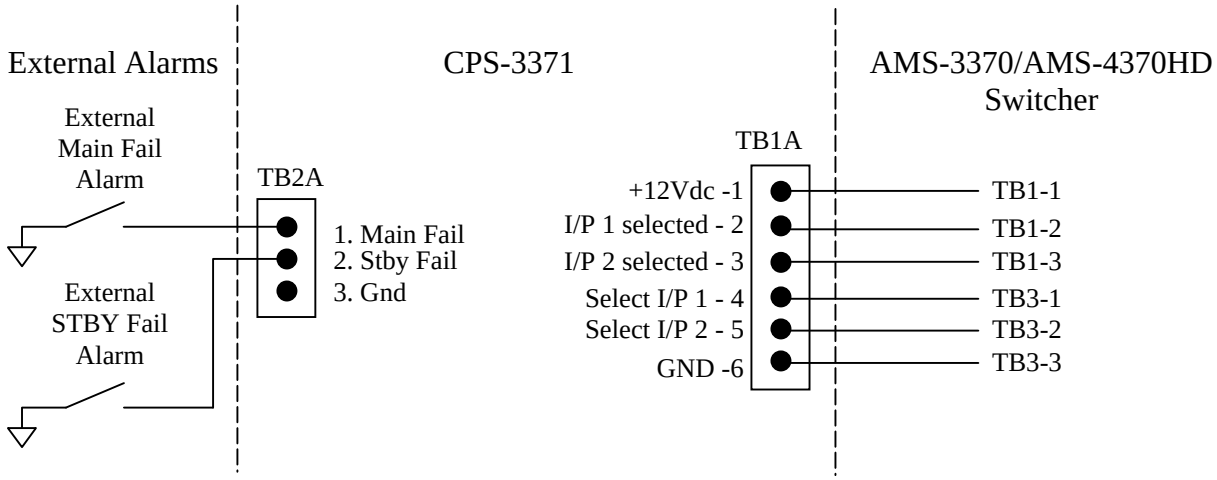
Pin	Function
1	+12 Vdc Input
2	I/P 1(B) Selected
3	I/P 2(B) Selected
4	Select I/P 1(B)
5	Select I/P 2(B)
6	Gnd

Alarm O/Ps from module section C:

Connector TB1C:

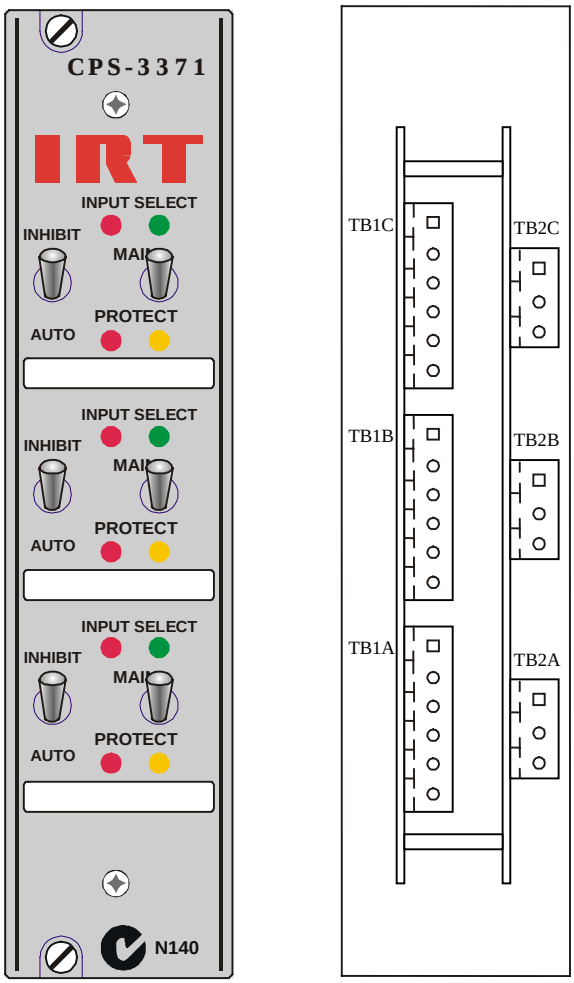
Pin	Function
1	+12 Vdc Input
2	I/P 1(C) Selected
3	I/P 2(C) Selected
4	Select I/P 1(C)
5	Select I/P 2(C)
6	Gnd





Front & rear panel connector diagrams

The following front panel and rear assembly drawings are not to scale and are intended to show relative positions of connectors, indicators and controls only.



Maintenance & storage

Maintenance:

No regular maintenance is required.

Care however should be taken to ensure that all connectors are kept clean and free from contamination of any kind. This is especially important in fibre optic equipment where cleanliness of optical connections is critical to performance.

Storage:

If the equipment is not to be used for an extended period, it is recommended the whole unit be placed in a sealed plastic bag to prevent dust contamination. In areas of high humidity a suitably sized bag of silica gel should be included to deter corrosion.

Where individual circuit cards are stored, they should be placed in antistatic bags. Proper antistatic procedures should be followed when inserting or removing cards from these bags.

Warranty & Service

Equipment is covered by a limited warranty period of three years from date of first delivery unless contrary conditions apply under a particular contract of supply. For situations when "**No Fault Found**" for repairs, a minimum charge of 1 hour's labour, at IRT's current labour charge rate, will apply, whether the equipment is within the warranty period or not.

Equipment warranty is limited to faults attributable to defects in original design or manufacture. Warranty on components shall be extended by IRT only to the extent obtainable from the component supplier.

Equipment return:

Before arranging service, ensure that the fault is in the unit to be serviced and not in associated equipment. If possible, confirm this by substitution.

Before returning equipment contact should be made with IRT or your local agent to determine whether the equipment can be serviced in the field or should be returned for repair.

The equipment should be properly packed for return observing antistatic procedures.

The following information should accompany the unit to be returned:

1. A fault report should be included indicating the nature of the fault
2. The operating conditions under which the fault initially occurred.
3. Any additional information, which may be of assistance in fault location and remedy.
4. A contact name and telephone and fax numbers.
5. Details of payment method for items not covered by warranty.
6. Full return address.
7. For situations when "**No Fault Found**" for repairs, a minimum charge of 1 hour's labour will apply, whether the equipment is within the warranty period or not. Contact IRT for current hourly rate.

Please note that all freight charges are the responsibility of the customer.

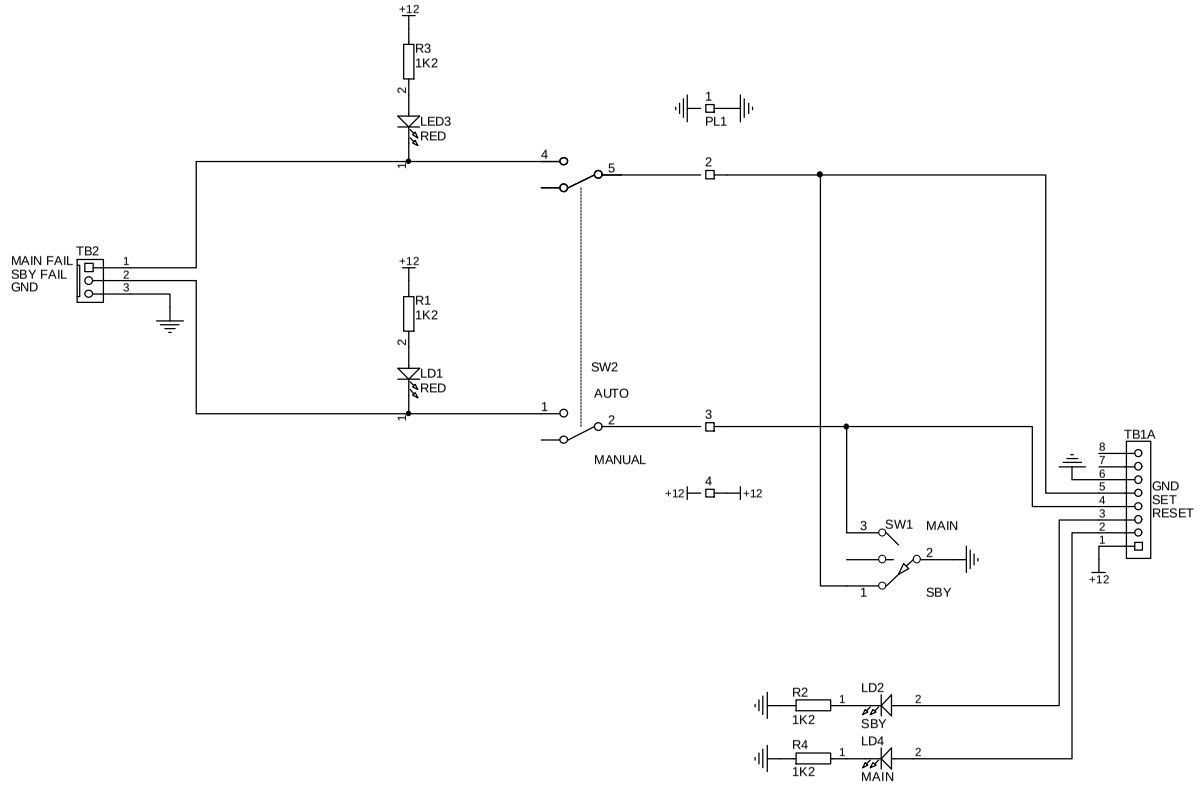
The equipment should be returned **to the agent who originally supplied the equipment** or, where this is not possible, to IRT direct as follows.

Equipment Service
IRT Electronics Pty Ltd
26 Hotham Parade
ARTARMON
N.S.W. 2064
AUSTRALIA

Phone: 61 2 9439 3744 Fax: 61 2 9439 7439
Email: service@irtelectronics.com

Drawing Index

Drawing #	Sheet #	Description
804671		CPS-3371 schematic diagram



REQUIRES A 10 OHM RESISTOR BE ADDED TO THE AMS-3370 BETWEEN +12v AND TB1 PIN 1

THERE ARE THREE OF THESE CIRCUITS ON EACH PANEL

AUTO ATE2D-5M3-10

MAIN/SBY ATE2G-5F3-10

PC804672

1 10-07-2002

DRAWN K.N.

CHECKED

ENG. APP.

Revision: 1

Date: 28-May-2003

IRT

SIZE A3

Title CPS-3371 REMOTE CONTROL PANEL

SCALE N.T.S.

Drawing No. 804671

Sheet 2 of 2

IRT Electronics Pty. Ltd.
ARTARMON NSW AUSTRALIA 2064