

Ditech Control Card Manual

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***DI-965 Switch Programmed  
Logic Card***

*File reference: DI-965*

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## 1. GENERAL

The DI-965 logic card accepts inputs from any of the Ditech detector cards and decodes them, by means of DIL switches, into an executive output line that becomes active when any two of the selected inputs are active. Thus the card may be used to differentiate between a spurious detector output and a real alarm condition where several detectors in the zone become active. Executive action, such as the sounding of an alarm or the release of extinguishant may then be taken.

All input and output connections are made to the card via a 64 way DIN41612 edge connector. This arrangement gives superior reliability over an arrangement of gold plated 'fingers'.

Input signals to the card are of the active low type and inputs must be pulled down to 0 V to signal a true condition. Outputs are of two types, either volt free relay contacts or active low outputs capable of sinking up to 500 mA.

## 2. CARD INPUTS AND OUTPUTS

| DI-965 SWITCH PROGRAMMED LOGIC CARD |                                                        |            |
|-------------------------------------|--------------------------------------------------------|------------|
| INPUTS                              | WHEN FILLED, THESE REPRESENT N/C SWITCHED CONNECTIONS. | OUTPUTS    |
| 8B 1                                |                                                        | ANY TWO    |
| 9B 2                                |                                                        | 1 16B      |
| 11B 3                               |                                                        | 2 17B      |
| 10B 4                               |                                                        | 3 18B      |
| 14B 5                               |                                                        | 4 19B      |
| 15B 6                               |                                                        | 5 20B      |
| 7B 7                                |                                                        | 6 21B      |
| 6B 8                                |                                                        | ANY 1 22B  |
| 1B 9                                |                                                        | INHIBIT 9A |
| 5B 10                               |                                                        | L. TEST 8A |
| 13B 11                              |                                                        | FAULT 32A  |
| 12B 12                              |                                                        | 32B        |
| 30B 13                              |                                                        | 24V 27A    |
|                                     | 25A                                                    |            |
|                                     | OV 28A                                                 |            |
|                                     | 29B                                                    |            |

### 2.1 PRIMARY INPUTS

#### Channel Inputs 1 to 13

These are the programmable inputs 1 to 13 respectively. Active low to initiate an input. Refer to the section on programming for details on how these inputs drive the outputs.

### 2.2 SECONDARY INPUTS

#### External Lamp Test

When this input is pulled low (0 V) it forces all front panel indicators on to allow the state of the LEDs to be confirmed.

#### External Inhibit

When this input is pulled low (0 V) all outputs and all channel indicators are forced into a non-alarm state. All channel inputs to the card are ignored.

### 2.3 PRIMARY OUTPUTS

#### Executive Outputs 1 to 6

These outputs 1 to 6 respectively are active low when any 2 (or more) of its programmed inputs are active low.

#### Executive Output 7

This output is active low when any one of the programmable inputs are active. Refer to the section on programming for further details.

## 2.4 SECONDARY OUTPUTS

### Fault Relay

The fault relay is normally energised and will de-energise on failure of card power input or onboard regulator. The fault output is most commonly used in conjunction with the system fault loop which gives a common indication of the operational state of the complete system.

## 2.5 FRONT PANEL INDICATORS

There are 8 indicators on the front panel. The large green LED indicates that the card power is within tolerance and that the power regulation components are functioning correctly.



The 7 smaller green LEDs reflect the state of the 7 executive outputs mentioned earlier. An illuminated LED indicates that a particular output is active.

## 2.6 FRONT PANEL CONTROLS

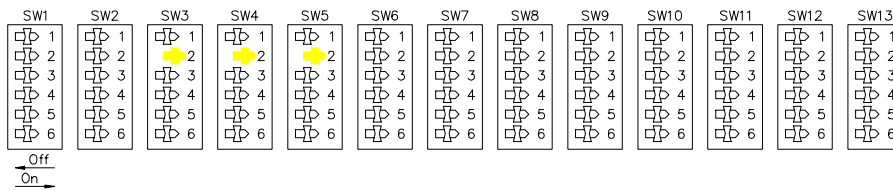
The only front panel control is the lamp test button which illuminates the output LEDs when depressed.

## 3. OPERATION

The card is programmed by means of DIL switches on the top edge of the card. The switches are numbered 1 to 13 and correspond to the 13 channels. Each DIL switch package has 6 switches representing the 6 executive outputs. To program the card, consult the diagram shown on the appropriate wiring diagram. An example is shown below.

| DI-965 SWITCH PROGRAMMED LOGIC CARD |                                                        |            |
|-------------------------------------|--------------------------------------------------------|------------|
| INPUTS                              | WHEN FILLED, THESE REPRESENT N/C SWITCHED CONNECTIONS. | OUTPUTS    |
| 8B 1                                |                                                        | ANY TWO    |
| 9B 2                                |                                                        | 1 16B      |
| 11B 3                               |                                                        | 2 17B      |
| 10B 4                               |                                                        | 3 18B      |
| 14B 5                               |                                                        | 4 19B      |
| 15B 6                               |                                                        | 5 20B      |
| 7B 7                                |                                                        | 6 21B      |
| 6B 8                                |                                                        | ANY 1 22B  |
| 1B 9                                |                                                        | INHIBIT 9A |
| 5B 10                               |                                                        | L. TEST 8A |
| 13B 11                              |                                                        | FAULT 32A  |
| 12B 12                              |                                                        | 32B        |
| 30B 13                              |                                                        | 24V 27A    |
|                                     | 25A                                                    |            |
|                                     | 28A                                                    |            |
|                                     | 0V 29B                                                 |            |

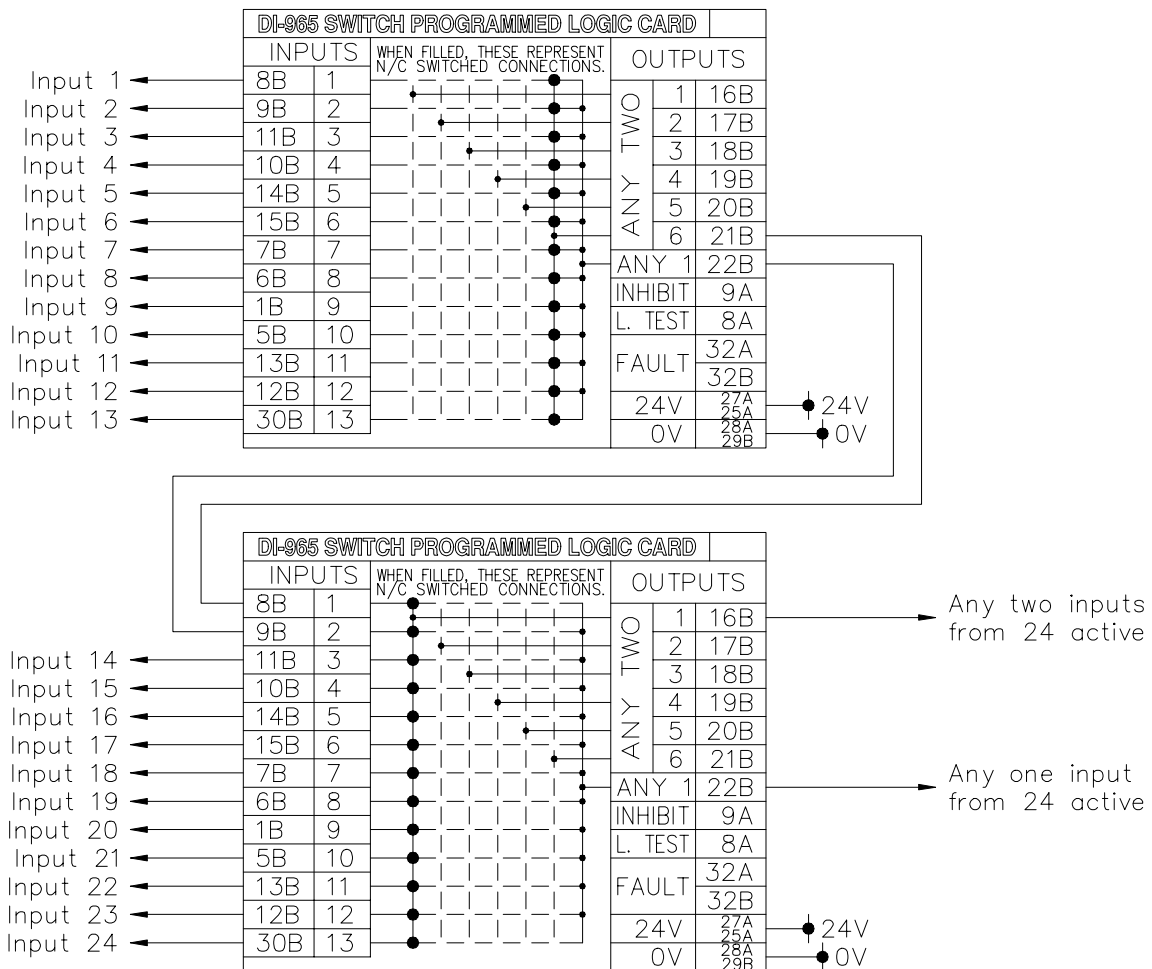
The above shows "mode" switch conditions by means of a black dot. The row that the dot is on represents the switch block number, 1 to 13. The column that the dot is on represents the switch number for that switch block. In the example, switch number 2 for switch blocks 3, 4 and 5 must be moved to the "on" position. This will make output 2 go active when any two of inputs 3, 4 or 5 go active.



**NOTE: Before programming starts all the switches must be turned off to avoid unexpected operation.**

All 6 of the executive outputs may be programmed in a similar way. It must be noted, however, that once an input or number of inputs have been associated with an output then they cannot also be associated with any other output. In other words the function of output 1 triggered by any two from inputs 1, 2 or 3, for example, means that inputs 1, 2 or 3 cannot be used as a condition for any other output.

Output number 7 is a special case. It is not programmable and goes low when any one of the 13 inputs is activated. This output is used when it is required to vote between more than 13 inputs, as shown below:



## 4. SPECIFICATION

### ***Mechanical***

|        |                |
|--------|----------------|
| Width  | 25.4 mm (5 HP) |
| Height | 128 mm         |
| Depth  | 247 mm         |

### ***Connections***

DIN41612 64 way A/B male connector

### ***Electrical***

|               |                                                                                                                          |
|---------------|--------------------------------------------------------------------------------------------------------------------------|
| Logic outputs | 500 mA sink to 0 V when active<br>12 V dc when inactive                                                                  |
| Fault Relay   | Single pole normally open (closed under healthy conditions)<br>Normally energised, de-energising on fault, non-inductive |
| Power         | 18-35 V dc<br>132 mA maximum operation<br>102 mA during lamp test<br>41 mA minimum                                       |