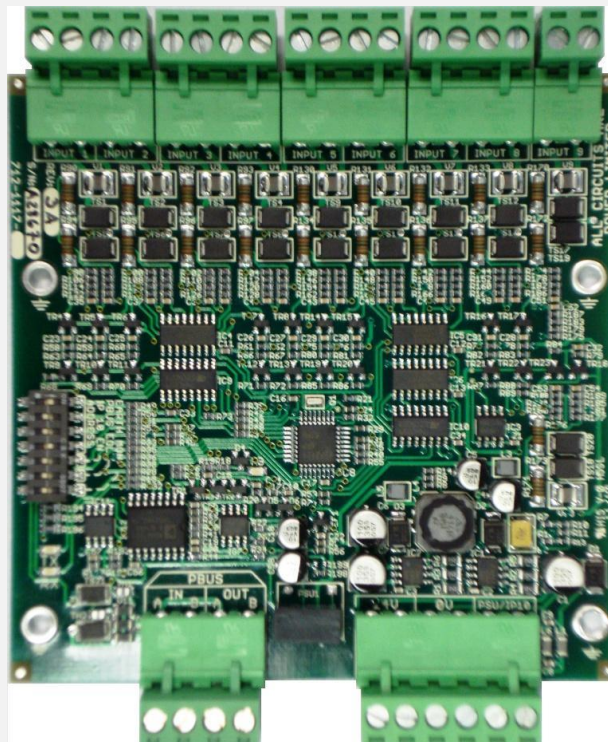


# Peripheral Input Card



- Individually Configurable Inputs
- Monitored / Unmonitored Operation Mode
- S.M.A.R.T. Power Management

The operation and functions described in this manual are available from Software Version Mx5000-050-04 onwards.

## Specifications:

### Models, Sales Order Parts:

Mxp-537 Peripheral Input Card

### Applications / Limitations:

Volt free Inputs.

Power Supply must be local to the card.

Earth Monitoring circuit must be disabled if operating on the same ground plane as the Fire Panel

### Compatibility:

Mx-5000 Range of Fire Panels

MxP-053 Latch-Stretch Input Module

ExP-005 Switch EOL Module

Requires PC Configuration Tool Version 6.10 Onwards

Requires Firmware Version 1.2 Onwards and Panel Version 50-08 Onwards for access to the following functionality:

- EN54-13 Fault state reporting

Item	Specification Details
Applicable Standards	BS EN54-18, BS EN54-13
Operating Temperature	-5°C to 40°C
Relative Humidity	95% Non Condensing (maximum)
PCB	20mm H x 105mm W x 125mm L, 105 grams
D.C. Supply	24V (17V to 28V) DC
Quiescent Current	25mA (10 I/Ps wired with 6K8 EOLs, Vs = 24V)
Max Current	30mA (10 I/Ps wired with 6K8 EOLs, Vs = 20V)
Input Circuits Available	10, Individually Configurable, Volt Free
Input (Imax)	30mA, Under Short Circuit
Input (V)	15V $\pm$ 5%
Input EOL	6K8
Input Active	470R
Max Line Resistance	50R

As our policy is one of constant product improvement the right is therefore reserved to modify product specifications without prior notice

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## 1 Introduction

The Mxp-537 Peripheral Input Card, on-board I/O module, is an internal peripheral for use with the Mx-5000 range of fire alarm control panels

Each card provides monitoring of up to 10, volt free, Switch inputs that can be individually configured to operate in monitored or unmonitored mode

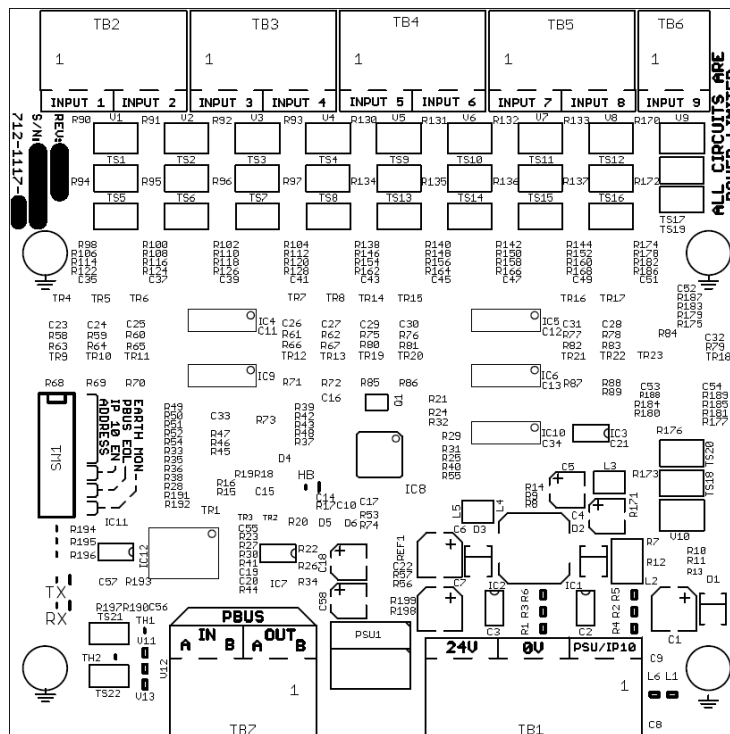
Cards are protocol Independent.

Up to 16 cards may be connected to a panel, allowing for up to 160 extra volt free inputs per panel.

Easily configured with the PC Configuration Tool

## 2 General Installation & Operation

### 2.1 Module Overview



The Mxp-537 Peripheral Input card offers 10 individually configurable, volt free, input monitoring circuits, as well as including an Earth Monitor circuit in the event that the card is mounted remotely to its parent Fire Panel.


With up to 16 supported cards, this allows an extra 160 monitored inputs to be operated from a single Fire Panel.

The Mxp-537 Peripheral Input card makes use of **Software Monitoring And Real Time Power Management** techniques. This allows the card to minimise energy requirements without compromising input monitoring capabilities.

Switch Input 10 has a dual operation mode. Its default behaviour is to act as a PSU fault monitor but this can be overridden at the hardware level (via the on board DIP switches) to allow it to be configured as a monitored/unmonitored input (configured via the PC Configuration Tool).

If monitoring of very fast input pulses is required (< 0.5s) the Mxp-537 can be coupled with the Mxp-053, Latch-Stretch Input Module, for a fast and reliable solution that can detect input pulses down to 200ms.

## 2.2 Basic Configuration



Address	b0	b1	b2	b3
0	0	0	0	0
1	1	0	0	0
2	0	1	0	0
3	1	1	0	0
4	0	0	1	0
5	1	0	1	0
6	0	1	1	0
7	1	1	1	0
8	0	0	0	1
9	1	0	0	1
10	0	1	0	1
11	1	1	0	1
12	0	0	1	1
13	1	0	1	1
14	0	1	1	1
15	1	1	1	1

Each card connected to the 485 Communication Line must have its own address. This address should be set so that it matches the corresponding card within the Advanced PC Config Tool design.

Move the “Earth Monitor” DIP switch to the ON position to enable local earth monitoring. Leave it in the OFF position if the card is local to the Fire panel or is grouped with another card (which is responsible for earth monitoring).

Only 1 card should ever be set to monitor the earth state.

Move the PBUS EOL DIP switch to the On position if the card is the last device in the communication line. No external resistors are required.

### 2.2.1 PSU Mon / Input 10

By default, input 10 is set to operate as a PSU monitor. Detectable conditions are:

Line State	Input Interpretation	Associated PSU Monitor State
EOL Present	Normal Operation	PSU Monitor Ok
EOL Missing	Open Circuit Fault	PSU Monitor Fault
Short	Active / PSU Fault	PSU Monitor Fault



When set to behave as a “PSU Monitor” the input becomes task specific. Monitored/Unmonitored settings assigned by the configuration tool are ignored. The input is always interpreted by the Fire Panel as a PSU Fault regardless of any other action (if any) that is assigned to it in the PC Configuration Tool design.

Setting the “Input 10 EN” DIP switch to the “On” position allows the input operation mode to be set by the PC Configuration Tool. This allows the input to operate in Monitored or Unmonitored mode, and it will no longer be interpreted by the Fire Panel as a PSU fault signal; freeing up the input to be used for other tasks.

### 2.2.2 Disabling PSU Mon / Input 10

Should an installation not require the use of input 10 at all, it can be easily disabled without the need for extra wiring/resistors. To bypass the input:

- On the card, Set DIP switch “Input 10 EN” to the “On” position
- In the PC Configuration Tool design, Set Input to “No Action”

### 2.3.1 Supply Wiring

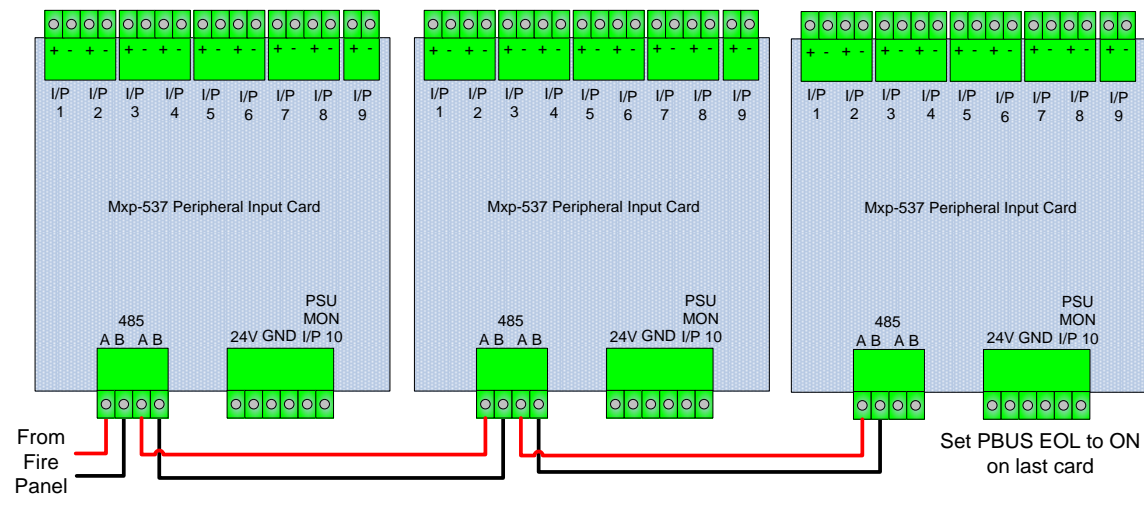
Diagram illustrating the connection of three Mxp-537 Peripheral Input Cards to a common 24V GND and a common PSU MON line.

Each Mxp-537 Peripheral Input Card has the following terminals:

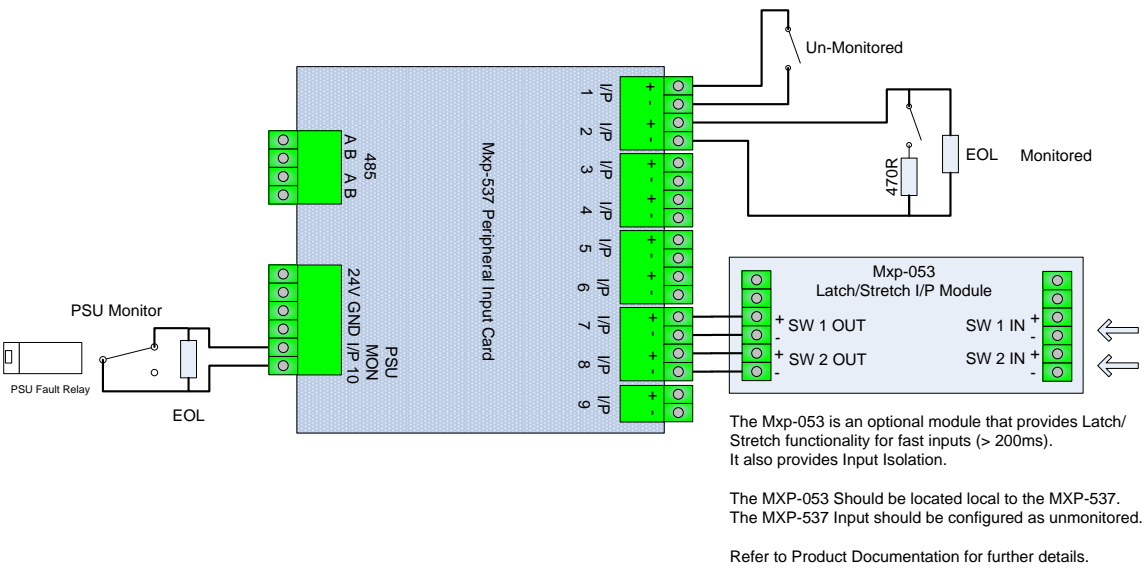
- 485 (A, B)
- 24V GND (I/P 1, I/P 2, I/P 3, I/P 4, I/P 5, I/P 6, I/P 7, I/P 8, I/P 9)
- PSU MON (I/P 1, I/P 2, I/P 3, I/P 4, I/P 5, I/P 6, I/P 7, I/P 8, I/P 9)

The connection scheme shows the 24V GND and PSU MON lines connected to a common bus, which is then connected to the PSU and Fault Relay terminals. A note states: "Note: Do not connect multiple PSU monitor inputs in parallel".

### 2.3.2 Comms Wiring



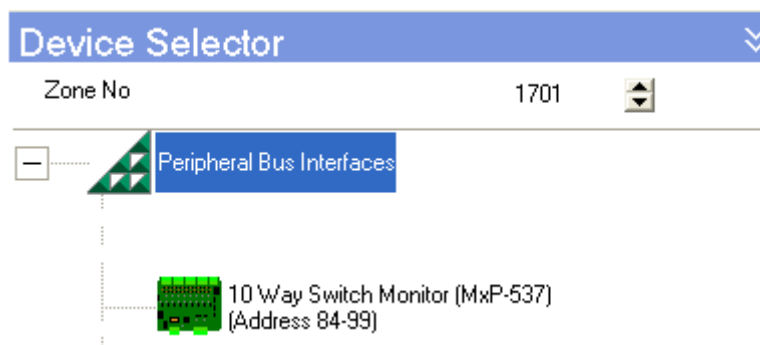
### 2.3.3 Input Wiring



## 3 Card Configuration Setup

### Adding a Card to the Design

Expand the Panel (in the “Site List”) and select the “Peripheral Bus” node; this will bring up a list of available cards that can be connected to the peripheral bus in the “Device Selector”.



Select the 10 Way Input Monitor and add it to the design.



The device must be added to the same DIP Switch address as the one set on the card.

### Configuring Inputs

Point Details	
10 Way Switch Monitor (MxP-537)	
Address	84.1
Type	Switch
Device Location Text	Input 01
Zone	1701
Input Action	No Action
Input Monitored	<input type="checkbox"/>
Incidence	Single
Investigation	<input checked="" type="checkbox"/>
Input Latched	<input type="checkbox"/>
Input Trigger	Active High
Disablement Group	0
SSM/Time Clock No	# Unused
<b>Sensitivity Adjust Mode</b>	
Delay (s)	0

Input configuration is performed along the same line as configuring any other input device.

Setting the “Input Action” to “No Action” has the following impact:

- Input is disabled at the hardware end (overall power consumption is reduced)
- End of Line resistors are not required for unused inputs.

By default all inputs are set to Un-Monitored; “Input Monitored” should be checked for any input that needs to detect Open circuit and Short circuit faults.



## 4 General Notes



The DC power to the Mxp-537 card must always be local to the card.



If a mixed peripheral bus is in use, where multiple peripherals of different families share the same remote power supply, earth monitoring should be performed by the Mxp-537 unless otherwise indicated.

Only 1 module, per local power supply, should be configured for earth monitoring.



This equipment is constructed with static sensitive components. Observe anti-static precautions at all times when handling printed circuit boards. Wear an anti-static earth strap connected to panel enclosure earth point.



The unit must be grounded; this is normally achieved via the screw terminals used to secure the card to the enclosure. Should this not be the case, a dedicated ground must be provided.

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**USER NOTES**

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