



LT0314

4100MXP

INSTALLATION INSTRUCTIONS

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The 4100MXP is manufactured for:

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1**INTRODUCTION**

These Installation Instructions provide simplified details for the fitting and wiring of the 4100MXP in a 4100 or 4100U fire panel.

Full details for designing, installing, programming, and using the 4100MXP, and the MX detectors and modules it is compatible with, are contained in the 4100MXP Engineering/Technical Manual (LT0313).

The 4100MXP can be ordered in two configurations:

- 1) 4100-MXPK SX,A/MKT,1976-102,4100MXP ON BRACKET,PACKAGED
- 2) PA0982 PCB ASSY,SX,1976-77,4100MXP CARD, PACKAGED

Item 1 consists of the 4100MXP card mounted on a metal bracket with a 4100MXP Interface Board, and is used in 4100 panels or in the controller bay of 4100U panels. It can also be used as a spare part for both 4100 and 4100U.

Item 2 consists of the 4100MXP card itself and is used in expansion bays of 4100U panels. Note the 4100MXP card can be removed from item 1) and used in a 4100U expansion bay if required.

2**FITTING****2.1 4100**

The 4100MXP on its bracket should be fitted in an empty slot in a 4100 bay. It does not have or require a Motherboard, but instead requires an empty slot in the bay. When fitting the 4100MXP, it is best to fit it in the far right side of the bay, so that further cards with Motherboards can be fitted at a later date.

2.2 4100U

The 4100MXP card can be simply plugged into a slot of a 4100U expansion bay (remove from the bracket, if necessary), or the complete assembly (including bracket and interface board) can be fitted into the controller bay.

3**WIRING****3.1 4100**

Refer to Figure 1.

Using the supplied loom (LM0203), use the blue/black harness to connect the COMMS connector P2 on the 4100 MXP Interface board (pins 1-4 or 5-8) to an unused Comms connector on a 4100 Motherboard (pins 1-4 or 5-8), and use the white/black harness to connect the POWER connector P3 on the 4100 MXP Interface board (pins 1-4 or 5-8) to an unused Power connector on a 4100 Motherboard (pins 1-4 or 5-8).

Connect the loop of MX devices to the MX Loop terminals on the bottom of the bracket. Wiring details for the MX addressable devices are contained in LT0313, along with details of arranging the MX loop wiring in a loop or star configuration.

3.2 4100U

The 4100MXP card can be plugged into a vacant position of a 4100U expansion bay or fitted with the mounting bracket in the controller bay. When fitting into an expansion bay the bracket and 4100MXP interface board are not required. Also, no power or Comms wiring is required.

When fitting into the controller bay the bracket and 4100MXP Interface Board are required. The connection from the PSU to the motherboard (with the Simplex loom 733-966) should be unplugged at the motherboard end and this end plugged into the 4100MXP Interface board P4 instead. Then another 733-966 loom should be connected from the 4100MXP Interface board P5 to the motherboard. Do not use the 4 pin Molex connectors P2 and P3.

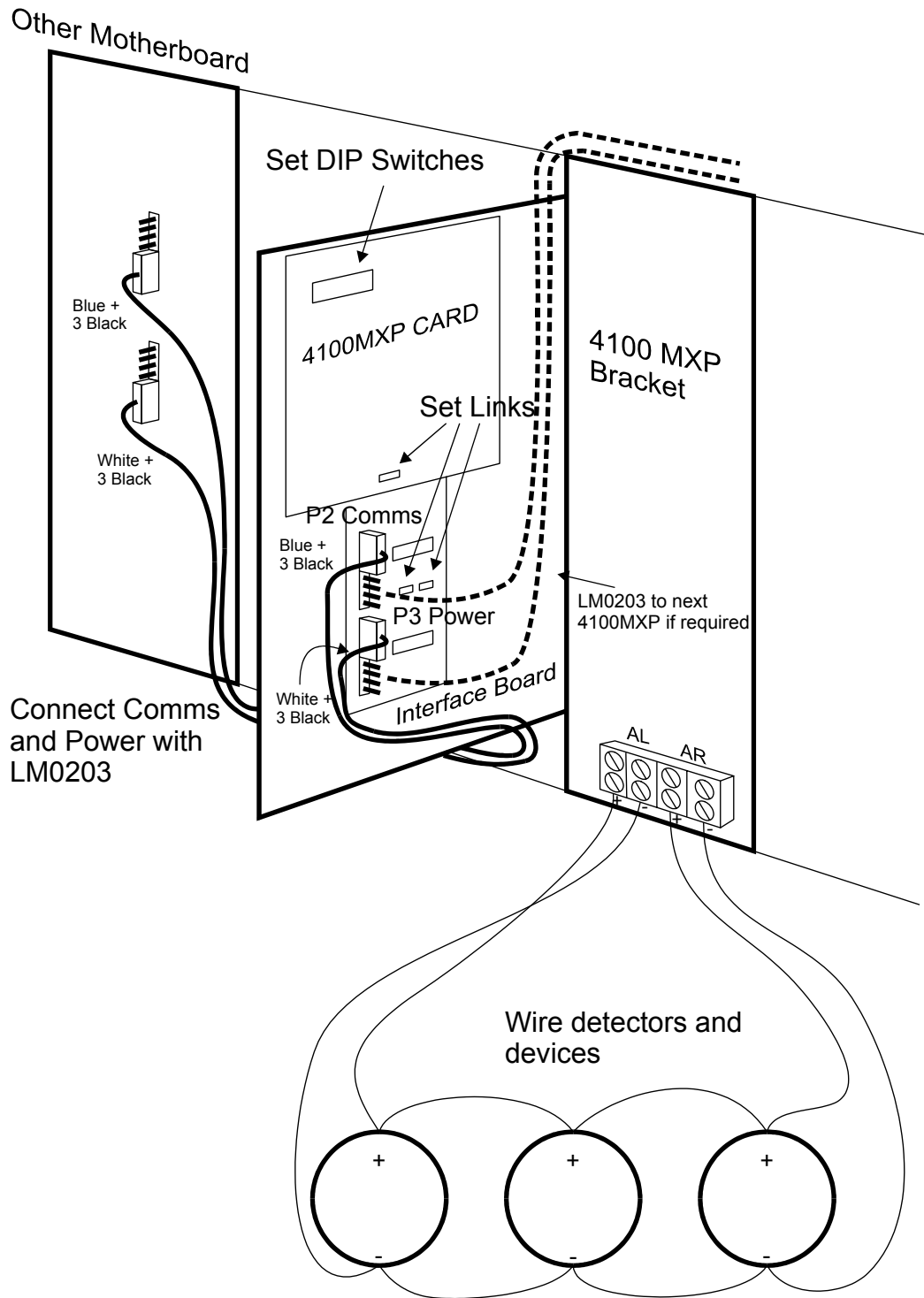


Figure 1 4100MXP Fitting / Wiring in 4100 (Not Applicable to 4100U)

4.1 DIP SWITCHES

Switch 1 should be ON for 9600 baud (i.e. normal operation), and OFF for "OFFLINE" (i.e. to temporarily disconnect the board from the system for diagnostic purposes).

Each 4100MXP must have a unique address assigned to it so that it can be identified by the 4100 or 4100U Controller. The address is defined by the program for the particular job.

Set the address by turning address **Switches 2 - 8** OFF to add the weighting. For example address 19 should have the switches labelled 16, 2, and 1 turned OFF (towards the 1 2 4 8 ... notation on the PCB), with the remaining switches in the range 2 - 8 turned ON.

Switch 9 should be ON for MAPNET mode, OFF for IDNet mode. In a 4100 panel, the 4100MXP must be set to MAPNET mode. In a 4100U panel, the 4100MXP is normally set to IDNet mode. (It may be possible to use MAPNET mode in a 4100U panel, but there is no advantage in doing so, and it has not been tested or approved in this configuration.)

When MAPNET is used, **Switch 10** should be OFF for the card to respond to 1 MAPNET address, and ON for it to respond to two MAPNET addresses. Normally you would use 1 MAPNET address if there are 127 or fewer devices on the MX loop and all are addressed in the range 1 - 127. Otherwise use two MAPNET addresses.

If the 4100MXP is using **two** MAPNET addresses, two successive addresses will be used, with the lower of the two set on the switches.

When IDNet mode is used, switch 10 has no function.

4.2 LINKS ON 4100MXP CARD

LK1 REMOVE TO INHIBIT FLASH WRITE

This link controls whether the Flash memory of the microprocessor can be written, i.e. new firmware programmed. Insert this link if you want to enable remote executive download in a 4100U system.

Remove the link to positively inhibit Flash writing. However note that this is not normally necessary, as there are several safeguards to prevent inadvertent writing of the Flash.

LK2 FIT TO BOOT

Insert this link only when reprogramming the onboard Flash.

LK3 A and LK4 B

These links are not used for anything at present. However for compatibility with future software versions, do not insert them.

LK5 4100 / 4100U

Fit the link from pin 1 to pin 2 if the 4100MXP is being installed in a 4100U panel. Fit the link from pin 2 to pin 3 if the panel is a 4100.

LK6 MX LOOP SHIELD

Fit the link from pin 1 to pin 2 to connect the MXLOOP shield connector to 0VS. Fit the link from pin 2 to pin 3 to connect the MXLOOP shield connector to the chassis. Normally there is no shield fitted or required on the MXLOOP so this setting is irrelevant.

4.3 LINKS ON 4100MXP INTERFACE BOARD

LK1 and LK2 FIT FOR 4100

Fit LK1 and LK2 if the 4100MXP is being installed in a 4100 panel. Remove them if installing in a 4100U panel. These links connect together the Signal and Card Power Supplies (which are normally separate on a 4100U).

| | |
|-----------------------------------|---|
| Ambient temperature and humidity: | -5°C to +50°C, 10% to 93% RH non condensing. |
| Voltage requirement: | 18.0V to 33.0V DC |
| Current consumption: | 50mA to 2.8A, depending on the number and type of connected devices. Refer to the 4100MXP Engineering / Technical Manual (LT0313) |

LD1 Yellow 4100 Trouble LED.

On steady if no communication messages have been addressed to this card in the last 20 seconds. If two MAPNET addresses are configured the LED will be ON if either of them has not been addressed in the last 20 seconds.

LD2 Yellow MX Loop Trouble LED.

Single Flash = MX Loop shorted.

Double Flash = MX Loop Open.

Steady = One or more programmed devices are not responding, but the loop is otherwise OK.

Off = normal, all programmed devices are responding.

LD3 Red Status LED

Single Flashes when powered up and the software is running correctly. On steady with diagnostic command from 4100.

1. Device LEDs will blink when polled (normally every 5 seconds) if programmed to do so with the 801AP MX Service Tool. 812 series detectors will blink with a green LED and all other detectors will blink with a red LED.
2. Any device in alarm will generally have its red LED turned on by the 4100 Controller. Additionally, red device LEDs can be turned on by diagnostic commands at the 4100 panel.
3. If no device red LEDs are turned on as described in (2) above, then any devices in fault, incorrect device types, and any unexpected (not programmed in the configuration) devices will have their red LED turned on steady.
4. The number of LEDs turned on at any one time due to (2) or (3) above is limited to 20.

The 4100 and 4100U programmer software and the 4100 and 4100U FIPs have not been specifically designed to support MX detectors and devices, therefore each MX device must be programmed as a similar Simplex device. The following tables detail what must be selected in the 4100 Programmer or 4100U Programmer software for each MX device type.

With MAPNET, to select a combined detector (a detector with more than one type of sensor, i.e., 8xxPH and 8xxCH), you must program a PHOTO (or XPHOTO) detector at one address and a HEAT detector at the next sequential address. If you don't want to use a combined detector but want two individual detectors, do not use sequential addresses for the PHOTO (or XPHOTO) and HEAT detectors. For example, program another type of device in between, leave the next address unused, or program all the heat detectors on the loop with the lowest addresses.

8.1.1 MAPNET Device Selection

| MX Device Type | Device Type Selected with Programmer | | | Notes |
|-----------------------------|--------------------------------------|---------------------------------|---------------------------------|---|
| | Normal | With Relay Base | With Sounder Base | |
| 814H Type A | OHEAT | ROHEAT | SOHEAT | Set ROR Threshold in Custom Control. |
| 814H Type B | HEAT | RHEAT | SHEAT | |
| 814H Type C | OHEAT | ROHEAT | SOHEAT | Set ROR Threshold in Custom Control. Set temperature threshold in Custom Control. |
| 814H Type D | HEAT | RHEAT | SHEAT | Set temperature threshold in Custom Control. |
| 814PH No Heat | PHOTO | RPHOTO | SPHOTO | Next address NOT heat detector |
| 814PH Type A heat | PHOTO + OHEAT at next address | RPHOTO + OHEAT at next address | SPHOTO + OHEAT at next address | Set ROR Threshold in Custom Control. |
| 814PH Type B heat | PHOTO + HEAT at next address | RPHOTO + HEAT at next address | SPHOTO + HEAT at next address | |
| 814PH FastLogic No Heat | CPHOTO | CRPHOTO | CSPHOTO | Next address NOT heat detector |
| 814PH FastLogic Type A Heat | CPHOTO + OHEAT at next address | CRPHOTO + OHEAT at next address | CSPHOTO + OHEAT at next address | Set ROR Threshold in Custom Control. |
| 814PH FastLogic Type B heat | CPHOTO + HEAT at next address | CRPHOTO + HEAT at next address | CSPHOTO + HEAT at next address | |
| 814CH No heat | XPHOTO | XRPHOTO | XSPHOTO | Next address NOT heat detector |
| 814CH Type A Heat | XPHOTO + OHEAT at next address | XRPHOTO + OHEAT at next address | XSPHOTO + OHEAT at next address | Set ROR Threshold in Custom Control. |
| 814CH Type B Heat | XPHOTO + HEAT at next address | XRPHOTO + HEAT at next address | XSPHOTO + HEAT at next address | |
| 814I | ION | RION | SION | |
| CP820 | ADRPUL | | | |
| MIM800 (no interrupt) | GENIAM | | | |
| MIM800 (interrupt) | ADRPUL | | | |
| CIM800 | GENIAM | | | |
| RIM800 | RZAM | | | |
| SNM800 or LPS800 | SAZAM (Loop) SBZAM (Spur) | | | |
| DIM800 | MAZAM (Loop) MBZAM (Spur) | | | |

801 and/or 812 series detectors may be used instead of the 814 series listed above.

If only one MAPNET address is used, up to 127 devices may be connected and these are addressed as 1 to 127.

NOTE: Combined detectors (8xxPH and 8xxCH) may count as two devices in MAPNET mode.

If two MAPNET address are used, up to 250 devices may be connected. Devices addressed as 1 to 125 appear as devices 1 to 125 on the first MAPNET card. Devices addressed as 126 to 250 appear as devices 1 to 125 on the second MAPNET card.

8.1.2 IDNET Device Selection

| MX Device Type | Device Type Selected with Programmer | | | Notes |
|---|--------------------------------------|--------------------------------|--------------------------------|---|
| | Normal | With Relay Base | With Sounder Base | |
| 814H Type A 812H with ROR | OHEAT | ROHEAT | SOHEAT | Set ROR Threshold in Custom Control. |
| 814H Type B 812H no ROR | HEAT | RHEAT | SHEAT | |
| 814H Type C 812H with ROR High temp threshold | OHEAT | ROHEAT | SOHEAT | Set ROR Threshold in Custom Control. Set temperature threshold in Custom Control. |
| 814H Type D 812H high temp threshold | HEAT | RHEAT | SHEAT | Set temperature threshold in Custom Control. |
| 814PH no heat 812PH no heat | PHOTO | RPHOTO | SPHOTO | |
| 814PH Type A heat 812PH with ROR | COMBO/ MPHOTO + MOHEAT | RCOMBO/ MPHOTO + MOHEAT | SCOMBO/ MPHOTO + MOHEAT | Set ROR Threshold in Custom Control. Use R result for FastLogic result if required |
| 814PH Type B heat 812PH no ROR | COMBO/ MPHOTO + MHEAT | RCOMBO/ MPHOTO + MHEAT | SCOMBO/ MPHOTO + MHEAT | Use R result for FastLogic result if required |
| 814CH No heat | XPHOTO | XRPHOTO | XSPHOTO | |
| 814CH Type A Heat | COMBO/ MXPHOTO + MOHEAT | RCOMBO/ MXPHOTO + MOHEAT | SCOMBO/ MXPHOTO + MOHEAT | Set ROR Threshold in Custom Control. |
| 814CH Type B Heat | COMBO/ MXPHOTO + MHEAT | RCOMBO/ MXPHOTO + MHEAT | SCOMBO/ MXPHOTO + MHEAT | |
| 814I | ION | RION | SION | |
| CP820 | KACPUL | | | |
| MIM800 (no interrupt) | IAM | | | |
| MIM800 (interrupt) | ADRPUL | | | |
| CIM800 | MLPTIO | | | Use 1st two input sub-points |
| RIM800 | RIAM | | | |
| SNM800 or LPS800 | FRIAM/ MRELAY + MFEEDBACK | | | MFEEDBACK Point Type typically set to "TROUBLE". |
| DIM800 | MAZAM (Loop) MBZAM (Spur) | | | |

Table 2 IDNET Device Selection Programming

Up to 250 devices may be connected.

801 series detectors may be used instead of the 814 and 812 series listed above.

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