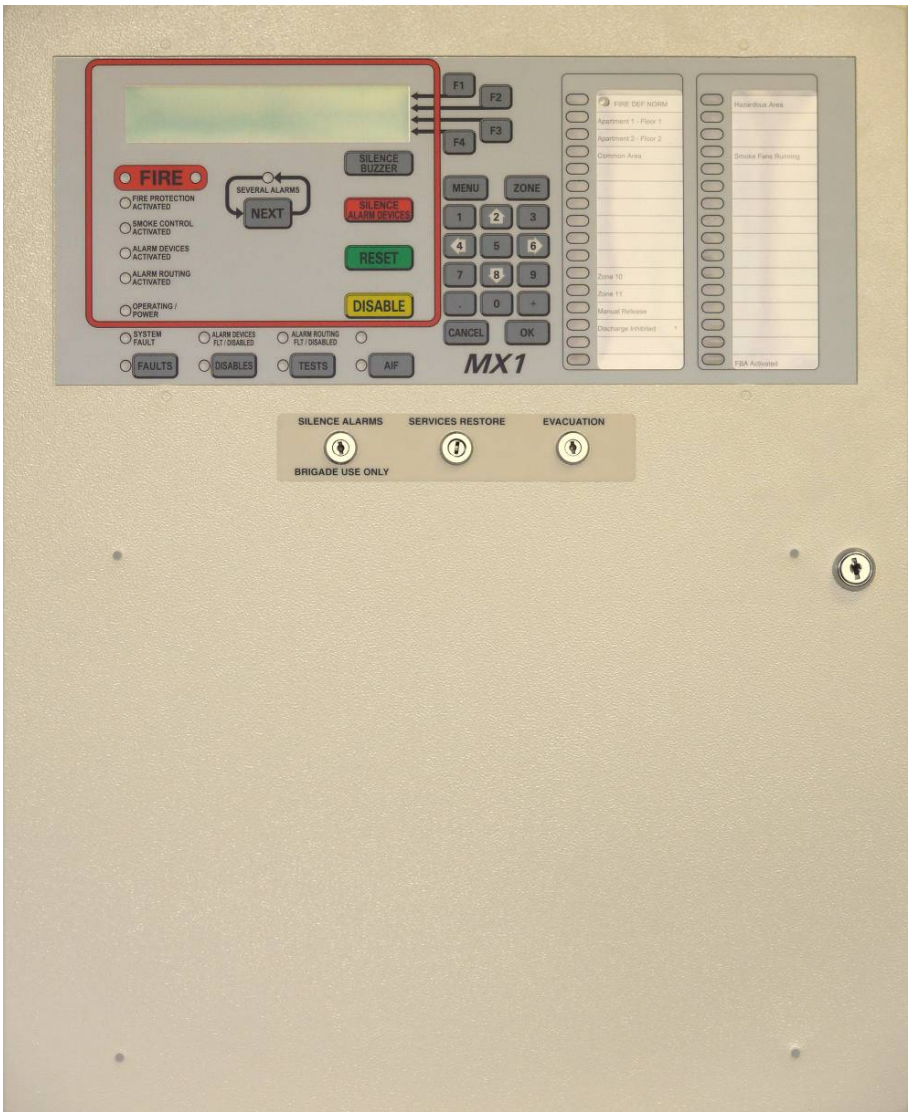
VIGILANT



MX1-NZ REMOTE BRIGADE PANEL INSTALLATION GUIDE

LT0545 **V1.10**

INTRODUCTION

The FP1009 *MX1*-NZ Remote FBP (Fire Bridge Panel) for the *MX1* fire alarm system allows remote display and control of the *MX1*-NZ panel by the fire brigade or a building manager/engineer, etc.

The Remote FBP is a cut-down version of the *MX1*'s integral AS 4482-3-style FBP user interface. It has the same 4-Line LCD and keyboard layout and Zone LED displays. The Remote FBP and the *MX1*'s integral FBP work independently, but use the same core data. For example, users can be displaying different things on the two units, but silencing the buzzer at one FBP will silence the buzzer at the other as well.

The Remote FBP is normally powered by the *MX1* panel. The Remote FBP contains an RS485 board that communicates to the *MX1* controller. Each *MX1* panel allows only one Remote FBP to be connected.

Use of the Remote FBP requires *MX1* Controller firmware V1.40 or later and the Remote FBP must be enabled in the SmartConfig datafile. SmartConfig Version V2.3 or later is required to support this.

This manual covers installation and wiring of the MX1-NZ Remote FBP.

Table 1 – Parts Included with FP1009 Remote FBP

Part No.	Item	Qty	Use
PA0773	RS485 Comms Bd	1	Install in the *MX1* panel
FA2016	Hex Barrel Nut	4	For mounting PA0773 in *MX1* slimline cabinet
SC0172	Screw M3 x 6	4	For mounting PA0773 in *MX1* slimline cabinet
HW0303	PCB Post 3.0 x 6.35mm	4	For mounting PA0773 on 15U MX1 gearplate
LM0172	FRC 10W 250mm	1	*MX1* Serial Port to PA0773 in *MX1*
LM0459	DC Loom Fused	1	Power to PA0773 in *MX1*
FU0053	1 Amp Fuse	1	Spare fuse for LM0459 in *MX1*
HW0287	Plastic Bungs	4	F/S index mounting if not used
SC0142	Screw M3 x 10	4	F/S index mounting
LB0600	Zone Naming Label	2	For zone names
FA1988	Domex Label	1	For cabinet
FA2441	Wall Hanging Bracket	1	For wall mounting
LT0344	Manual	1	*MX1* NZ Operator Manual
LT0545	Manual	1	*MX1* Remote FBP Installation Instructions
LM0231	Earth loom	1	Earthing PA0773 in MX1 15U
SC0176	M4 x 10 Screw	1	Earth lead in MX1 15U
NT0009	M4 Nut	1	Earth lead in MX1 15U
WA0006	M4 Flat Washer	1	Earth lead in MX1 15U
WA0011	M4 SP Washer	1	Earth lead in MX1 15U
SU0151	FRC Clamp Adhesive	2	For holding FRC loom in MX1

MOUNTING INSTRUCTIONS

Location

The *MX1*-NZ Remote FBP Slimline cabinet is designed to be easily surface mounted on a wall or inset into a window frame or other cavity.

The cabinet location should:

- Be dry, with a moderate ambient temperature, 45°C absolute maximum.
- Not be subject to outdoor conditions without suitable protection.
- Allow the LCD to be at typical eye level (see Figure 1).
- Have clear access and viewing for brigade staff and operators.
- Allow for the door to open at least 120°.

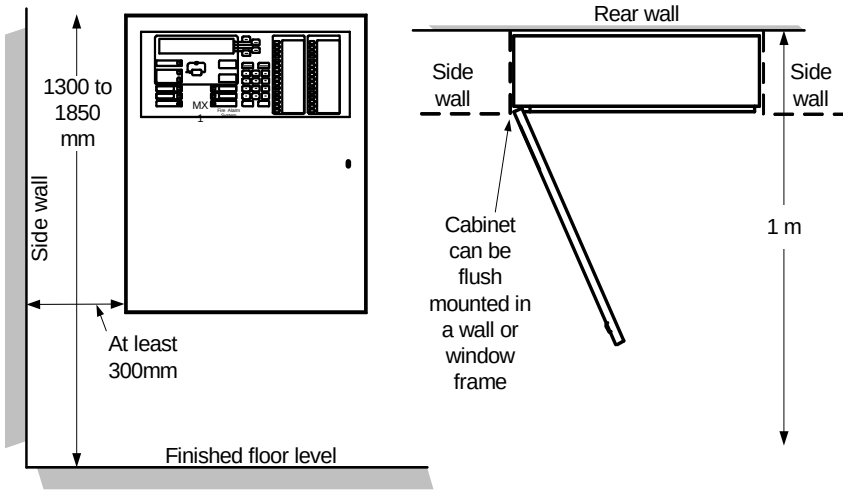


Figure 1 – Recommended Clearances – Slimline Cabinet

The Remote FBP must not be installed in hazardous areas as defined in AS/NZS 3000.

Wall Mounting (front-service use) – see Figure 2

- Mark a horizontal line on the wall 27mm below the intended top of the cabinet.
- Mark a vertical line from the first line where the centre of the cabinet will be.
- Hold the mounting bracket against the wall with its top edge against the horizontal line and its central hole over the vertical line. Mark the location of the mounting screws.
- Fasten the mounting bracket to the wall but do not completely tighten the screws.
- Hang the cabinet on the mounting bracket and then tighten the screws.
- Drill a hole at the base of the cabinet and put a screw through it to lock the cabinet in position.

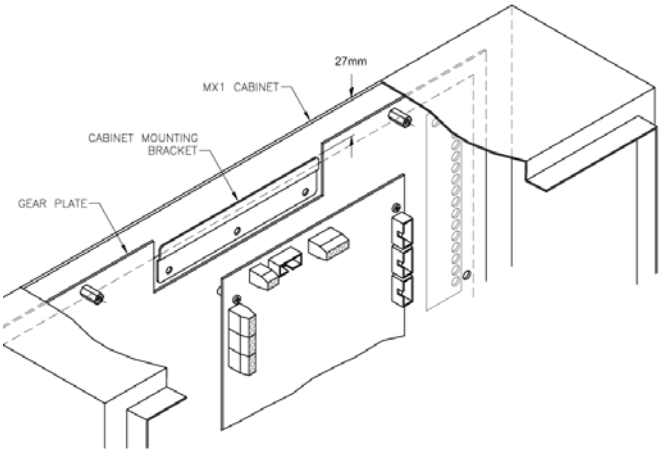


Figure 2
Marking for the Slimline Cabinet Mounting Bracket

NOTE: If any drilling or filing is required inside the cabinet, remove the gear plate
Clean out all swarf from the cabinet before replacing the gear plate.

Window Mounting (rear-service use)

The Remote FBP cabinet can be mounted in a window frame for rear-service use in New Zealand. To do this, mounting holes must be drilled where necessary in the side and top or bottom of the cabinet. The mounting bracket cannot be used.

Note that the cabinet door opens within the vertical profile of the cabinet body, so the cabinet can be mounted flush in a cavity if required.

EXTERNAL WIRING

Cable Entry

There are four 20mm knockouts provided in the top and five knockouts in the bottom of the cabinet. Refer Figure 3. Other entry holes can be drilled as required.

To prevent water entering the cabinet, seal unused knockouts and any top cable entries. Where possible, use bottom cable entry with cables going down 100 mm below the cabinet before rising.

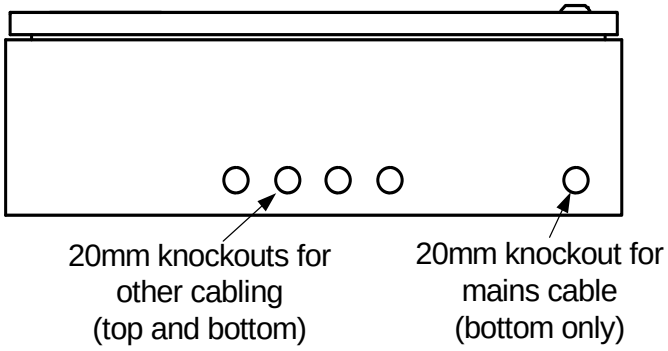


Figure 3 – Knockout positions on Slimline cabinet

ZONE DISPLAYS

Rear Service

The Remote FBP is supplied with one zone display board fitted on the gear plate in a rear service format, as shown in Figure 4.

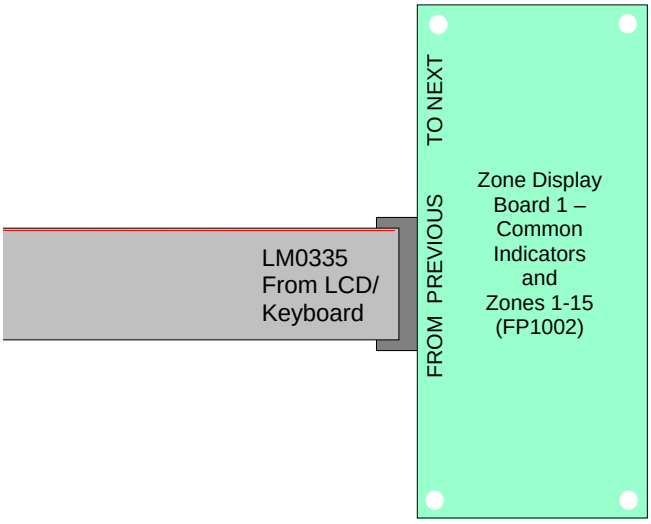


Figure 4 – Single Zone Display on gear plate (Rear Service format)

A second zone display (part number FP1002) can be fitted, as shown in Figure 5.

Note that the FRC loom from the LCD/keyboard on the door must be moved from the first display board to the second display board, and the second display board connected to the first display board with the LM0291 FRC loom provided with the zone display kit (FP1002).

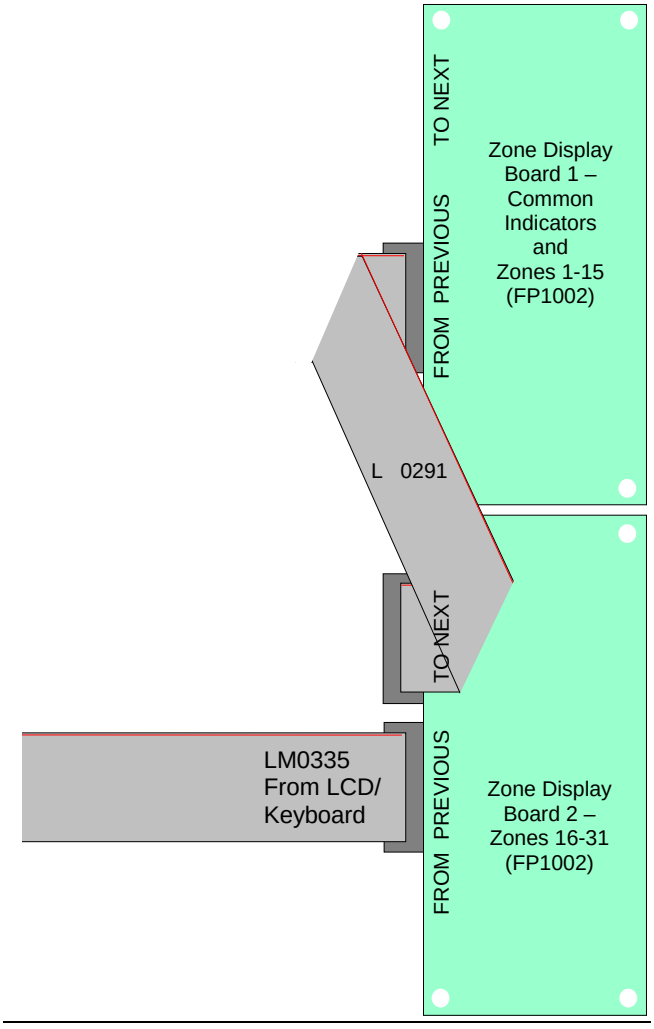


Figure 5 – Double Zone Displays on gear plate (Rear Service format)

Front Service

The cabinet can be converted to front service format by unclipping the display board(s) from the plastic standoffs on the gear plate and moving them to the metal standoff mounts on the front panel, as shown in Figures 6 and 7.

The excess length of the LM0335 loom can be folded and clipped in place on the front panel.

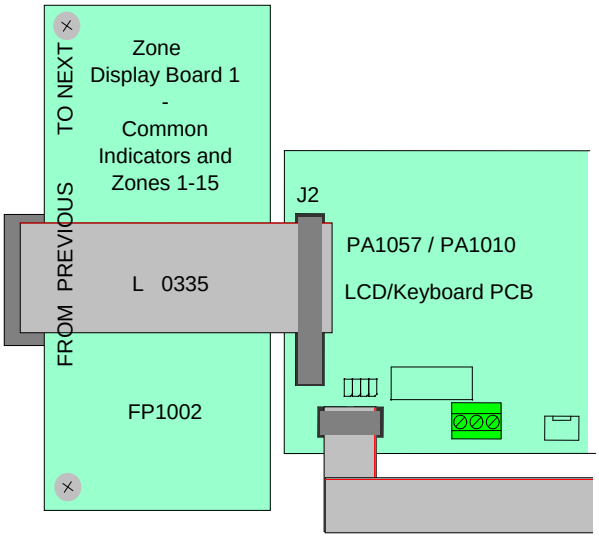


Figure 6 – Single Zone Display on front panel (Front Service format)

A second front service zone display board (part number FP1002) can be fitted, as shown in Figure 7.

Note that the FRC loom from the LCD/keyboard must be moved from the first display board to the second display board, and the second display board connected to the first display board with the LM0291 FRC loom provided with the zone display kit (FP1002).

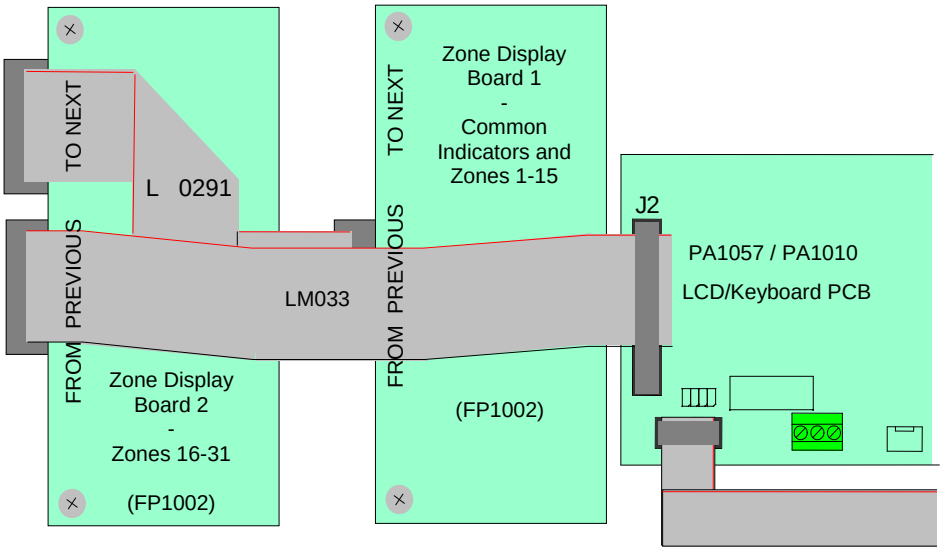


Figure 7 – Double Zone Displays on front panel (Front Service format)

Zone Display Labelling

Front Service

Zone displays mounted on the front panel can be labelled with strips of card slipped through the slot in the panel above each display. A pre-printed set of labels on grey card is available as LB0600 (5 strips per sheet). One sheet is supplied with each *MX1*-NZ Remote FBP.

Alternatively, a template file is available from Tyco (**www.tycosafetyproducts-anz.com**) as LT0369 (or ask your supplier). The required text is entered into this template document, which is then printed at 100% scaling onto suitable material (grey card).

The optional Slimline cabinet front service index (part number FA2417) is fastened to the door of the cabinet with four hex head screws, which are supplied with the Remote FBP. The engraving on the front service index needs to match the wording of the zone indicator labelling.

Plastic push-in plugs (HW0287) are supplied with the *MX1*-NZ Remote FBP. These are a press-fit into the front door index mounting holes when a front service index is not required. Refer Fig 8.

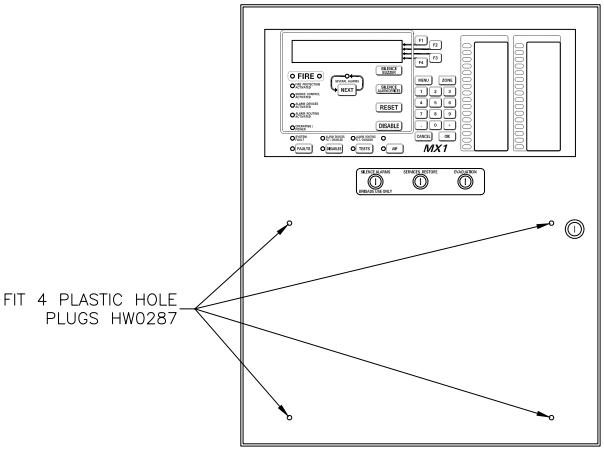


Figure 8 - Positions of Push-in Fasteners HW0287

Rear Service

Zone displays in a rear service format are labelled by engraving the rear service index. The rear service index, supplied with each *MX1*-NZ Remote FBP cabinet, can be removed by removing the internal gear plate. See page 3 for details of removing the gear plate.

Blank strips from LB0600 may be slipped into the unused front panel zone display positions to hide the holes and fasteners in the panel.

Field Wiring

Drawing 1982-71 sheet 130 (see the end of this document) shows the wiring of the Remote FBP to the *MX1* Controller.

Note it is necessary to install a number of items into the *MX1* panel to provide connection for the Remote FBP.

For the MX1 slimline cabinet, the PA0773 RS485 Comms Board should be mounted on the top right side of the cabinet using the 4 x FA2016 Barrel Nuts and SC0172 screws. Fit the PA0773 board with J3 to the bottom.

For the MX1 15U panel, the PA0773 RS485 Comms Board should be mounted on the right hand gearplate return fold using the 4 x HW0303 standoffs. Push the standoffs into the gearplate first, then fit the PA0773 board with J3 to the bottom.

Make sure Lk7 is fitted and Lk6 is fitted on one pin only on the PA0773. Run the LM0172 10-way FRC between J1 on the PA0773 and one of Serial Port 0, 2, 3 or 4 on the *MX1* Controller. The particular port chosen must match the port configured for the Remote FBP in the panel's site-specific configuration using SmartConfig.

Terminate the short end of LM0459 to J33 Loop Supply on the *MX1* Controller (red to +V, black to 0V). Run the long end to the PA0773 power connection J6, cut to length, and terminate red to +24V and black to 0V on J6.

The Remote FBP is usually powered by the *MX1* from the 24V terminals of the PA0773 RS485 Comms Board mounted in the *MX1* panel. The power wiring cable from the *MX1* to the Remote FBP needs to be adequately sized for the distance involved to ensure sufficient voltage at the Remote FBP. The maximum allowed loop resistance in the power wires (+24V and 0V) is 25 ohm. Table 2 gives the maximum cable length for various wire sizes. Caution: Do not remove the internal power feed wires that connect to the RS485 Board terminals when connecting the external 24V power wires.

Table 2 – Power Cable Size Versus Distance

Power Wire Size	Loop Resistance per Kilometre (nominal)	*MX1* to Remote FBP Maximum Length (metres)
1.0mm^2	35 ohms	600
1.5mm^2	24.2 ohms	900
2.5mm^2	14.82 ohms	1500

The Remote FBP may be powered by a local NZS 4512 compliant PSU (for example 1948 12V 0.5A and standby battery). Wire the general fault output (closure to 0V on fault) of the PSU to the FLT/DEF- input on J7 on the LCD/Keypad Board in the Remote FBP to create a fault condition on the *MX1* panel when there is a fault with the PSU (battery disconnect, etc.).

The "FBP External Fault Monitor" tick box will need to be selected on the System Page of the *MX1* panel's configuration in SmartConfig to enable supervision of this external fault input.

Use 0.4mm^2 or greater wire size for the RS485 communication bus. Twisted-pair or screened cable is recommended. Connect one cable pair to the A+ / A- terminals on one RS485 board and cross over to connect to the B+ / B- terminals on the other board as per Table 3. Repeat for the other cable and terminal pairs.

Table 3 – RS485 Cable Connection

PA0773 in MX1	PA0773 in Remote FBP
A+	B+
A-	B-
B+	A+
B-	A-

Link Settings

On the *MX1* LCD/Keypad Board in the Remote FBP Lk2 and Lk3 must be fitted vertically (REMOTE) for the Remote FBP application (Figure 2).

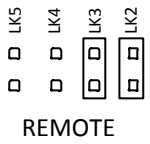


Figure 9 – Remote FBP Links

For the PA0773 RS485 Comms board installed in the Remote FBP case, Lk6 and Lk7 must be fitted (Table 4).

Table 4 – Remote FBP RS485 Board Links

LK6	Fit
LK7	Fit

For the PA0773 RS485 Comms board installed in the *MX1* cabinet, Lk6 must be not fitted (leave on one pin only) and Lk7 must be fitted (Table 5).

Table 5 – *MX1* RS485 Boards Links

LK6	Not Fit
LK7	Fit

RS485 Board DIP switches

Both PA0773 RS485 Comms boards must have their DIP switches set as per Table 6.

Table 6 – *MX1* and Remote FBP RS485 board DIP switch Settings

A	ON
B	ON
C	OFF

D	OFF

Configuration

The *MX1-NZ* Remote FBP is configured in the *MX1* via SmartConfig. The Remote FBP has a fixed equipment number of 246. Most of the sub-points of the Remote FBP are equivalent to the *MX1* panel's LCD/Keyboard sub-points (equipment 243). The Remote FBP itself does not require programming.

The Remote FBP has the same front panel layout and, in general, the same operation as the MX1's integral user interface. When used as a Remote FBP for fire brigade use the operation is the same as the *MX1* panel. However, when used for building managers/supervisors, etc., it is possible to configure the remote FBP Keyboard to be disabled during alarms, so a non-brigade user is prevented from carrying out actions (e.g. Reset, Disable) on fire alarms that could interfere with fire brigade use. Tick the **Disable FBP when panel is in alarm** setting if being used for non-fire brigade use. **Enable FBP NZ Brigade switches** must be selected when FP1009 is being used.

Power Up

Check all wiring and settings before power up. Switch on the *MX1* panel, the Remote FBP will beep, the OPERATING/POWER LED will light and the LCD will display the firmware version number of the LCD/keyboard briefly before changing to the *MX1* display.

If the Remote FBP fails to communicate properly with the *MX1* panel, the LCD will continually show one of the following messages. Check the wiring, looms, link settings, DIP switches, and configuration to diagnose and fix the communication problem.

Error: Cannot communicate with main panel.
Error: Unable to receive config data, zone display & switch inputs not enabled

Operation

The Remote FBP has a 003 Key Switch to control the access to the keyboard.

With the 003 key removed or in the clockwise position, the Remote FBP is in Access Level 1 - the user can view the alarms and faults displayed on the LCD, but the keyboard cannot be used.

With the 003 key inserted and turned anticlockwise, the Remote FBP enters Access Level 2 – the user can perform all functions as described in the LT0344 *MX1* Operator Manual. The Remote FBP will automatically switch to Access Level 1 when the system is in alarm and the Keyboard is configured to be disabled during alarms.

Silence Buzzer

Pressing the SILENCE BUZZER key on the Remote FBP will silence both the Remote FBP and the *MX1* panel buzzer.

Specifications

Power Supply	Input Voltage	10 - 28 VDC
	Current Consumption at 12.0V	Typical 85 mA (290mA if LCD back light on and all zones are faulty)
	Current Consumption at 24.0V	Typical 75 mA (290mA if LCD back light on and all zones are faulty)
	FLT/DEF- input	Closure to <0.7V for fault (local PSU if used)
Field Wiring	Power from *MX1*	Cable pair maximum loop resistance 25 ohm
	Comms	2 x pairs, preferable each twisted and screened. 0.4 mm^2 permissible.
	Cabling	All power screw terminals have the capacity for 4.0 mm^2 conductors. All comms screw terminals have the capacity for 2.5 mm^2 conductors.
Physical	Cabinet Dimensions	480mm W x 590mm H x 140mm D
	Weight	12kg
	IP Rating	IP41
	Material	Mild Steel 1.2mm
	Colour	Cream Wrinkle BFF998CW
	Environmental	-5˚C to 45˚C, 0 to 95% RH (non-condensing)
Standards Compliance	AS4428.3	Designed to comply. Being submitted to CSIRO.
	CISPR 22	Class A
	NZS 4512	Designed to comply.
Part Numbers	FP1009	*MX1*-NZ Remote FBP
	PA1057	*MX1* LCD/Keyboard Board Spare
	PA0773	RS485 Comms Board Spare
	FP0913	*MX1* LCD Module Spare

Insert A4 copy of drawing 1982-71 sheet 130 here.

THIS PAGE LEFT INTENTIONALLY BLANK

Manufactured by: Tyco Fire Protection Products
17 Mary Muller Drive, PO Box 19-545
Christchurch 8022, New Zealand
Tel +64-3-389 5096
Fax +64-3-389-5938