



## MX1 Remote Fire Brigade Panel (FBP)

### Installation Instructions

#### General Description

The MX1 Remote FBP (Fire Bridge Panel) for the MX1 fire alarm system (Figure 1) allows remote display and control of the MX1 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, but without the 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.

Two versions of Remote FBP are available:

- FP0991 – Standalone Remote FBP
- FP0996 – 19" Rack Mounting Remote FBP module

The FP0991 is designed to be either surface mounted onto a wall using the integral surround, or flush mounted into the wall (with the surround not used).

The FP0996 is designed to be installed in a 19" Rack cabinet. It occupies 4U (177mm) of rack space.

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 V2.3.0 or later is required to support this.

The FP0991 Remote FBP is opened for installation and maintenance by undoing the single screw to the right of the 003 Key Switch.

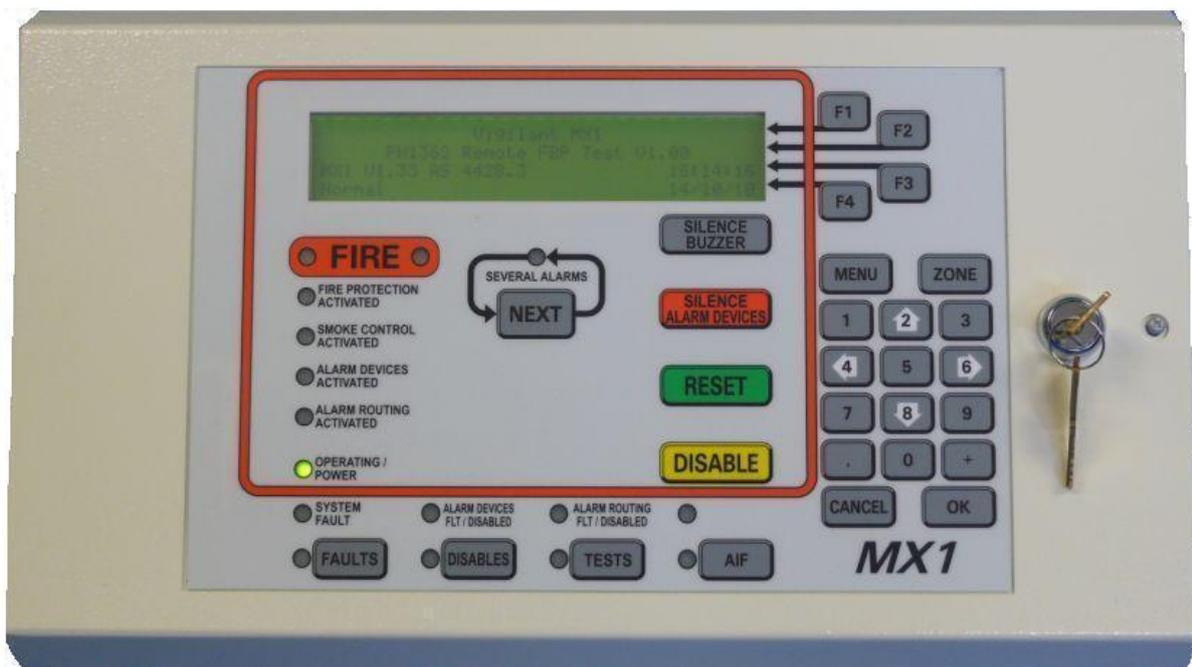


Figure 1 – MX1 Remote FBP (FP0991) Front Panel

**Table 1 – Parts Included with FP0991 Remote FBP**

Part Number	Item	Quantity	Use
PA0773	RS485 Comms Bd	1	Install in the <i>MX1</i> panel
FA2551	Surround	1	Surface mounting surround
FU0053	1 Amp Fuse	1	Spare fuse for LM0459 in <i>MX1</i>
HW0303	PCB Standoff	4	For mounting PA0773 in <i>MX1</i>
LM0459	DC Loom Fused	1	Power to PA0773 in <i>MX1</i>
LM0091	FRC 10W 500mm	1	<i>MX1</i> Serial Port to PA0773 in <i>MX1</i>
LM0231	G/Y Earth Wire	1	PA0773 Earth in <i>MX1</i>
HW0025	Plastic Grommet ¾ inch	2	Cable Hole Protection
LT0344	Manual	1	<i>MX1</i> NZ Operator Manual
LT0439	Manual	1	<i>MX1</i> Au Operator Manual
LT0532	Manual	1	<i>MX1</i> Remote FBP Installation Instructions
NT0009	M4 Nut	1	Earth wire for old <i>MX1</i> gearplate
SC0176	M4 x 10 Screw	1	Earth wire in new <i>MX1</i> gearplate
WA0006	M4 Flat Washer	1	Earth wire
WA0011	M4 Shakeproof Washer	1	Earth wire
SW0018	003 Key	2	Keypad access

**Table 2 – Parts Included with FP0996 Remote FBP**

Part Number	Item	Quantity	Use
PA0773	RS485 Comms Bd	2	One for Remote FBP Rack Cabinet, one for the <i>MX1</i> panel
FU0053	1 Amp Fuse	1	Spare fuse for LM0459 in <i>MX1</i>
LM0459	DC Loom Fused	1	Power to PA0773 in <i>MX1</i>
HW0303	PCB Standoff	8	For mounting PA0773 in <i>MX1</i> and Remote FBP cabinets
FA2016	Barrel Nut Hex M3 x 10mm	8	For mounting PA0773 in <i>MX1</i> and Remote FBP cabinets
SC0172	M3 Screws	4	For mounting PA0773 in Remote FBP cabinet
LM0183	FRC 10-Way 1.0m	1	Remote FBP PA1057 to PA0773
LM0091	FRC 10W 500mm	1	<i>MX1</i> Serial Port to PA0773 in <i>MX1</i>
WR0053	Black Wire	1	Remote FBP PA1057 to PA0773
WR0059	Red Wire	1	Remote FBP PA1057 to PA0773
LM0231	Earth Lead 280mm	2	PA0773 earth in <i>MX1</i> , PA0773 earth in Remote FBP
LM0108	Earth Lead 300mm	1	Remote FBP door earth
SC0176	M4 Screw	3	PA0773 earth, Remote FBP door earth on threaded insert or stud
WA0006	M4 Flat Washer	3	PA0773, Remote FBP door earth on threaded insert or stud
NT0009	M4 Hex Nut	3	PA0773 earth, Remote FBP door earth on threaded stud
WA0011	M4 Shakeproof Washer	3	PA0773, Remote FBP door earth on threaded stud
LT0344	Manual	1	<i>MX1</i> NZ Operator Manual
LT0439	Manual	1	<i>MX1</i> -Au Operator Manual
LT0532	Manual	1	<i>MX1</i> Remote FBP Install Instructions

## **FP0991 Mounting**

The FP0991 Remote FBP can be flush or surface mounted. Refer to the relevant fire alarm system design and installation standard (AS 1670.1 or NZS 4512) for the specific installation requirements for a Remote FBP.

### **Mounting Height**

The mounting height of the FP0991 Remote FBP must meet all relevant standards. The recommended mounting height for the top of the Remote FBP case is between 1.50m and 1.80m above floor level.

### **Surface Mounting**

There are four Ø2.0mm guide holes provided in the rear wall of the FP0991 Remote FBP case for surface mounting. It is recommended these holes are used in conjunction with Super Screws, GIB Fixing Screws, or similar self-tapping screws to mount the case to a wall. If these guide hole positions are not practical, alternative holes can be drilled in the case rear.

For aesthetic purposes a surround has been provided with the FP0991 Remote FBP for use when surface mounting. The surround mounts on the case's flush mounting flanges and can be removed by unscrewing two M3 screws.

### **Flush (inset) Mounting**

A wall recess must be cut to allow the FP0991 Remote FBP to be inset mounted. The recommended recess opening size for flush mounting is 338mm wide x 195mm high, with a minimum of 35mm depth.

There are six Ø3.5mm holes provided in the FP0991 Remote FBP case top and bottom flanges for mounting. It is recommended these holes are used in conjunction with Super Screws, GIB Fixing Screws, or similar self-tapping screws to mount the case to the wall. Screws can be fitted at an angle to catch any internal wall framing. If these hole positions are not practical, alternative holes can be drilled in the case flanges or in the side walls of the case. The surround is not used when flush/inset mounting.

### **Cable Entry**

The FP0991 Remote FBP has three Ø20mm knock-outs in the case top and bottom, two in each side, and two in the case rear. Matching knock-outs have also been provided in the surface mounting surround so it can be used when running surface conduit along a wall. The surround will need to be removed to allow access to the cable knock-outs in the FBP case sides.

## FP0996 Mounting

The FP0996 19" Rack Mounting Remote FBP can be installed in most 19" rack cabinets (e.g., VIGILANT range). The recommended installation height for the top of the FP0996 is between 1.5m and 1.85m above floor level.

Two RS485 boards are supplied as loose parts. One of the RS485 boards needs to be installed in the rack cabinet with the Remote FBP. Three suggested ways of mounting this board are given, which may be adapted for other cabinets:

- On the 4 x right hand side M3 studs in the 8U or 15U cabinet. 4 Barrel Hex nuts (FA2016) and 4 screws (SC0172) are included for mounting the RS485 board.
- On various gearplates using the 4 x HW0303 PCB Standoffs included (Ø3.0mm holes are required).
- For mounting on DIN rail an FP1011 Din Rail Mounting Plate (not included with the FP0996) can be used. The RS485 board is mounted using barrel nuts and screws included with the FP1011.

## FP0996 Wiring

Connect the LM0441 10-Way FRC cable from the PA1057 J8 on the FP0996 door to the PA0773 RS485 board J1. Wire the PA1057 J7 +V to the PA0773 J1 +V using the included WR0056 red wire. Wire the PA1057 J7 0V to the PA0773 0V using the included WR0059 black wire.

Connect the LM0231 earth lead from the PA0773 J7 earth terminal to the closest earth position in the rack cabinet/gearplate if the RS485 board is mounted on plastic standoffs.

Connect the door earth tab to the closest earth position in the rack cabinet using the LM0108 earth lead.

## 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.

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 LM0091 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.

Run the earth lead from the PA0773 J3 Earth terminal to the earth position in the bottom right corner of the gearplate, securing with the M4 screw supplied for the new gearplate, or use the M4 nut and washer supplied for older gearplates.

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 3 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 3 – Power Cable Size Versus Distance**

Power Wire Size	Loop Resistance per Kilometre (nominal)	MX1 to Remote FBP Maximum Length (metres)
1.0mm <sup>2</sup>	35 ohms	700
1.5mm <sup>2</sup>	24.2 ohms	1,000
2.5mm <sup>2</sup>	14.82 ohms	1,700

The Remote FBP may be powered by a local AS 7240.4 compliant PSU for brigade use, or an AS 4428.5 compliant PSU for non-brigade use. 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.

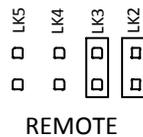
Use 0.4mm<sup>2</sup> or greater wire size for the RS485 communication bus. Twisted-pair or screened cable is recommended. Connect one cable pair to the A+ / A- terminals on one RS485 board and cross over to connect to the B+ / B- terminals on the other board as per Table 4. Repeat for the other cable and terminal pairs.

**Table 4 – 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 2 – Remote FBP Links**

For the PA0773 RS485 Comms board installed in the Remote FBP case, Lk6 and Lk7 must be fitted (Table 5).

**Table 5 – 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 6).

**Table 6 – MX1 RS485 Boards Links**

LK6	Not Fitted
LK7	Fit

**RS485 Board DIP switches**

Both PA0773 RS485 Comms boards must have their DIP switches set as per Table 7.

**Table 7 – MX1 and Remote FBP RS485 board DIP switch Settings**

A	ON
B	ON
C	OFF
D	OFF

## Configuration

The MX1 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. Refer to the "Disable FBP when panel is in alarm" setting for the Remote FBP in SmartConfig.

For the FP0996 Remote FBP Rack Mounting Module there is no 003 Key Switch for controlling the Access Level. The keypad is always enabled (access is restricted by the cabinet door lock). This requires changing the default Logic Substitution in SmartConfig as follows:

- 1) On the Menu bar Go to **Profile**, select **Logic Substitutions**.
- 2) Looking in the "**New Name**" column locate the row with \$RFBP\_KEY\_ON, currently row 125.
- 3) Go to the column **Lock** and "untick" the cell. When SmartConfig Question window appears click the button "**Yes, Unlock. I accept the consequences**".
- 4) In the column **Substituted Text** delete the existing entry (P246/19/0AI) and replace with the text **TRUE**.
- 5) Go to the **Comments** column and add the text "**Modified for FP0996 Operation**".
- 6) Go the column **Lock** and "tick" the cell. When the SmartConfig question window appears click the button "**Yes, I'm sure**".

## 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.

Error: Cannot communicate with main panel.

Error: Unable to receive config data, zone display & switch inputs not enabled

Check the wiring, looms, link settings, DIP switches, and configuration to diagnose and fix the communication problem.

## Operation

The FP0991 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 switched anticlockwise to position 2 or 3, the Remote FBP enters Access Level 2 – the user can perform all functions as described in the MX1 Operator Manual (LT0344 for NZ, LT0439 for Australia). 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.

The FP0996 Remote FBP has no 003 Key Switch. Access Level 2 is always enabled.

## Silence Buzzer

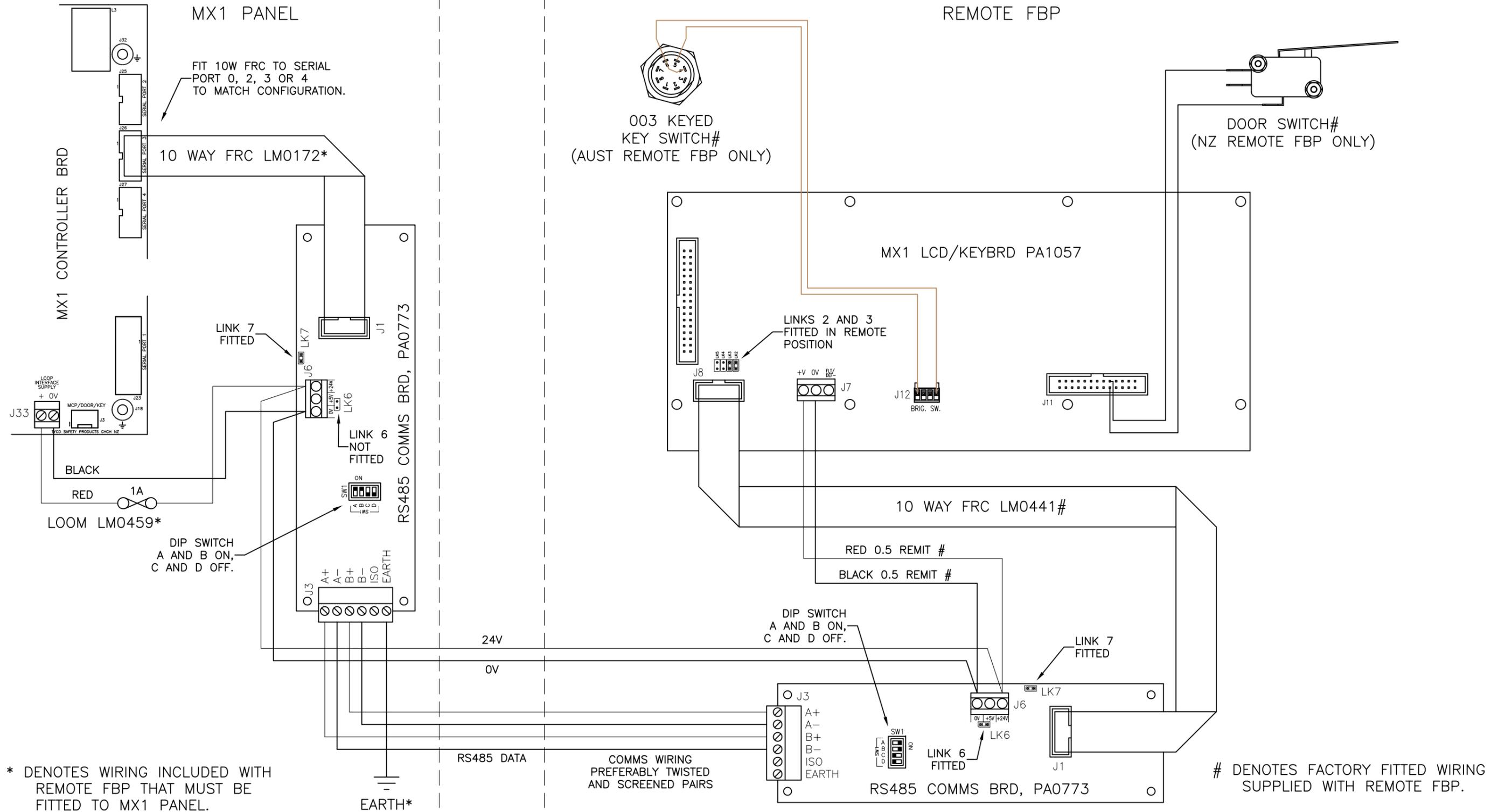
Pressing the SILENCE BUZZER key on the Remote FBP will silence both the Remote FBP and the MX1 panel buzzer.

**RFBP Specifications**

Power Supply	Input Voltage	10 - 28 VDC
	Current Consumption at 12.0V	Typical 85 mA (240 mA if LCD back light on)
	Current Consumption at 24.0V	Typical 75 mA (140 mA if LCD back light on)
	FLT/DEF- input	Closure to <0.7V for fault (local PSU if used)
Field Wiring	Power from <i>MX1</i>	Cable pair maximum loop resistance 25 ohm
	Comms	2 x pairs, preferable each twisted and screened. 0.4 mm <sup>2</sup> permissible.
	Cabling	All power screw terminals have the capacity for 4.0 mm <sup>2</sup> conductors. All comms screw terminals have the capacity for 2.5 mm <sup>2</sup> conductors.
Physical (FP0991)	Cabinet Dimensions	380mm W X 220mm H X 21mm D (flush mount). 380mm W X 220mm H X 56mm D (surface mount).
	IP Rating	IP30
	Material	Powder-coated 1.2mm steel
	Weight	3.8kg
	Colour	Titania Ripple
	Environmental	-5°C to 45°C, 0 to 95% RH (non-condensing)
Standards Compliance	AS 4428.3 / AS 7240.2	Compliance imminent. Refer afp 2320.
	CISPR 22	Class A.
	NZS 4512	Designed to comply.
Ordering Codes	FP0991	<i>MX1</i> Remote FBP
	FP0996	<i>MX1</i> Remote FBP 19" Rack Module
	PA1057	<i>MX1</i> LCD/Keyboard Board Spare
	PA0773	RS485 Comms Board Spare
	FP0913	<i>MX1</i> LCD Module Spare

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3rd ANGLE PROJECTION

ISS/REV	AMENDMENTS	ECO	DRN	CHKD	AUTH	APVD	DATE
A	ORIGINAL	-	KJS	YZH	RC	DP	16-8-10
B	KEY SWITCH WIRING UPDATED.	4222	KJS	YZH	RC	DP	8-12-10
C	NZ DOOR SWITCH WIRING ADDED FOR FP1009.	4532	KJS	RC	RC	DP	19-7-11

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**MX1  
REMOTE FBP  
WIRING DIAGRAM**

DRAWING No: 1982-71 SHEET 130 of N

A3 | ISS/REV C | PART No: