



100V Splitter Module Installation Instructions (FP1118)

1. Checking the Kit

The FP1118 100V Splitter Module is designed for use with a T-Gen 60 or T-Gen 120.

It splits the T-Gen2's 100V speaker output into four 100V speaker circuits, each with its own supervision. If a short circuit fault is detected the 100V Splitter Module disconnects that output, allowing the others to continue working. No control of the outputs is otherwise possible.

These instructions cover the fitting and connection of a 100V Splitter Module in an *MX1* and Simplex 4100ESi fire alarm panel. The details of any necessary changes to the system configuration or other hardware are not covered here.

The FP1118 100V Splitter Module includes all the required hardware to mount the module on an *MX1* gear plate, and cabling to wire the module to a T-Gen 60 or T-Gen 120.

To mount a 100V Splitter Module in a Simplex 4100ESi fire panel equipment bay an FP1120 100V module mounting bracket will also be required. It contains installation instructions (LT0670) detailing how two 100V Splitter Modules mount on this bracket and how the bracket can be mounted in a Simplex 4100ESi equipment bay.

Before installing a 100V Splitter Module, check that all items in the kit are present and undamaged.

Qty	Description
1	100V Splitter Module mounted on bracket
1	KT0574 SET OF EOL RESISTORS, 100V WARNING LABEL, SLEEVING
1	LM0630 AUDIO LOOM 2.0m (for wiring to a T-Gen 60/120)
1	LM0663 150AUTO BLACK 1.0m (for wiring to a T-Gen 60/120)
1	LM0664 150AUTO RED 1.0m (for wiring to a T-Gen 60/120)
2	M4 X 10 SCREW (for mounting the module, contained in KT0574)
1	LT0671 INSTALLATION INSTRUCTIONS (these instructions)

2. General Description

The 100V Splitter Module is supplied on a metal bracket that allows it to be mounted on an *MX1* gear plate using two MX Loop Card M4 mounting holes.

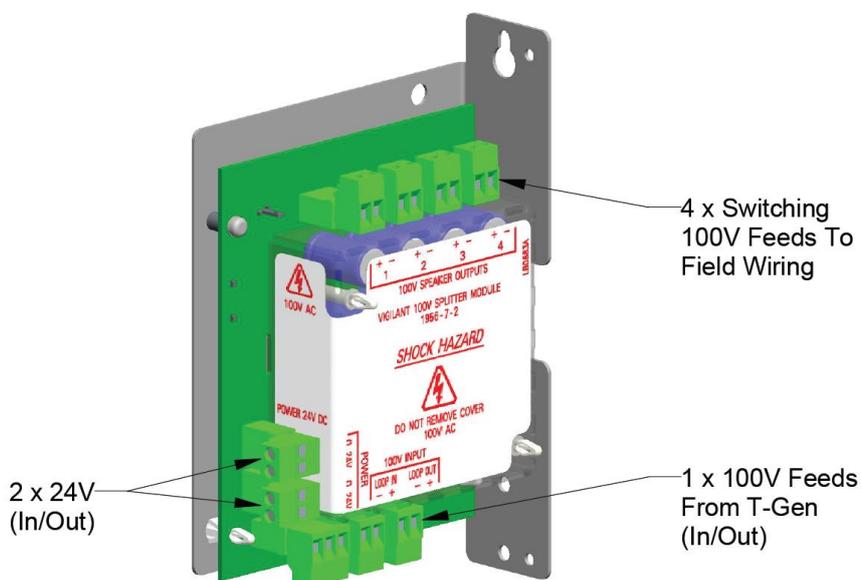


Figure 1 – 100V Splitter Module

3. Mounting the 100V Splitter Module

Mounting in an *MX1* Slimline Cabinet

This is the recommended method for mounting in an *MX1* Slimline cabinet. The 100V Splitter Module is directly mounted on the side wall, as shown in Figure 2. This position will not interfere with the zone LED display cards for a rear service system.

Remove the 100V Splitter Module from its ESD protection and fasten it on the front pair of studs using two M3 barrel nuts (FA2016) and washers (WA0005).

NOTE: The M3 barrel nuts and washers are not supplied with this kit.

WARNING: do not over-tighten the barrel nuts, otherwise the studs may snap.



Figure 2 – 100V Splitter Module in Slimline *MX1* Cabinet

Mounting in a 15U *MX1* Cabinet

The 100V Splitter Module can be mounted in 6 locations on the 15U *MX1* gear plate – see Figure 3 for gear plate locations.

This is the recommended mounting method.

Fit one of the M4 screws from the kit in the top fastening point but do not tighten it. Remove the 100V Splitter Module from its ESD protection and hang it on this screw using the "keyhole" mounting hole in the rear of bracket. Fit the other M4 screw in the bottom fastening point and tighten both screws.



Figure 3 – 100V Splitter Modules on 15U *MX1* Gear Plate

Mounting in FP1136 8U BOWS or FP1137 18U BOWS

The 100V Splitter Module can be mounted on the gear plate of an 8U BOWS (3 positions) or 18U BOWS (8 positions). The mounting method is the same as the 15U *MX1* gear plate.

Mounting 100V Splitter Module on other *MX1* Gear Plates

The 100V Splitter Module can be mounted on other *MX1* gear plates where there are two M4 holes at 150mm vertical centres available. The mounting method is the same as the 15U *MX1* gear plate.

Mounting 100V Splitter Modules flat on *MX1* Gear Plates

The 100V Splitter Modules can be mounted flat on the various *MX1* gear plates where there are four Ø4.8 holes at 90mm square centres available. This is not the recommended method as it makes access to the module address switch difficult.

Fit four plastic PCB stand-offs (HW0052) in the Ø4.8 holes of the chosen position. Remove the 100V Splitter Module from its ESD protection. Undo the two screws and release the two plastic clips holding the 100V Splitter Board to the bracket.

Place the 100V Splitter Board carefully on the four standoffs on the gear plate and press it home.

Earth the 100V Splitter Board to the gear plate using a suitable loom from connector J16.

Mounting in a 8U *MX1* Cabinet

Although it is possible to mount three 100V Splitter Modules on an 8U *MX1* gear plate, while mounting a T-Gen 60 on a 3U Grade 3 User Interface Door (FP1121), this is not recommended because some of the LED indications on the Grade 3 User Interface Door will be obscured by the *MX1* Cabinet outer door.

Mounting in a 15U 4100ESi Panel and Expansion Cabinet

A 100V Splitter Module can be mounted on a 15U 4100ESi gear plate, at the bottom RH corner to the right of the LPS, where there are two M4 holes at 150mm vertical centres available. The mounting method is the same as the 15U *MX1* gear plate.

4. Wiring a 100V Switching Module Mounting in 15U 4100ESi

The 100V Splitter Module is connected to:

- T-Gen 60/120 100V Output (J5), from the 100V Splitter Module 2-way connector (J6), using the LM0630 audio loom provided.
- T-Gen 60/120 24V IN (J19), from the 100V Splitter Module 0V/24V connector (J1) using looms LM0633 and LM0634 provided.

DC power for additional 100V Splitter Modules is daisy-chained from one 100V Splitter Module to another using the red and black loom LM0633 and LM0634 provided. Trim the looms to a suitable length and connect them to the 2-way connector J2 on one module to J1 on the next.

100V audio for additional 100V Splitter Modules is daisy-chained from one 100V Splitter Module to another using the audio loom LM0630 provided. Trim the audio loom to a suitable length and connect it to the 2-way connector (J7) of the previous Splitter Module. The last 100V Splitter Module must have a 56K end of line resistor (sleeved with insulation) fitted across the 2-way connector (J7).

Refer to Drawing 1982-71 Sheet 135 in this document.

5. 100V Output Wiring

The 100V Splitter Module provides 4 separate 100V speaker outputs, each rated at 100W, up to a total of 120W (or the rating of the T-Gen2 that feeds the 100V Splitter Module if lower).



The 100V speaker wiring is defined as LV circuits and is subject to the Australian Standard AS/ACIF S009:2013.

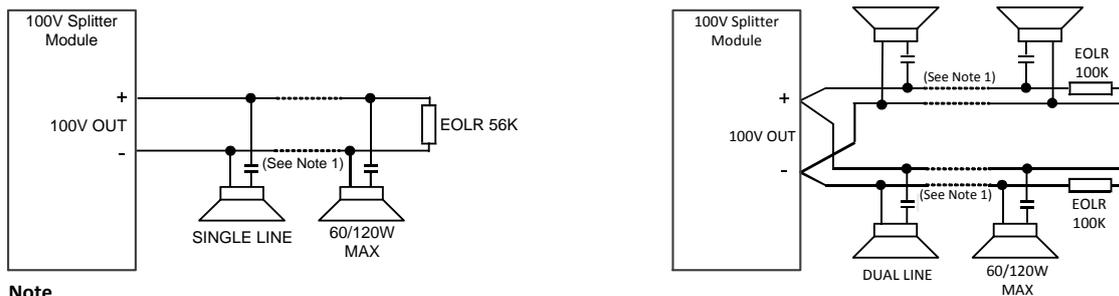
Ensure that 100V speaker cabling is appropriately separated and insulated from LV mains power wiring, ELV cabling and other customer cabling such as fire detection and control circuits. 100V speaker wiring is required to be double insulated.

Note: A 100V warning label is provided which should be placed near to the 100V Out terminals.

The 100V Splitter Module has 100V line supervision, and therefore requires a DC-decoupling capacitor in series with each speaker transformer. The capacitors must be bipolar, always placed in series with the transformer primary, and have a value of about 1 - 5 μ F per Watt of the speaker's load (see below). For a single line of loudspeakers a 56k end of line EOL resistor is required to be placed at the end of the line. If wiring in two branches, then two 100k resistors are used, one on each branch. See Figure 4 for wiring details.

Speaker Load	0.33W - 0.5W	1W - 5W	10W - 20W	40W
Capacitor	1 μ F	10 μ F	47 μ F	100 μ F

It is possible to use a higher value capacitor on each speaker, however if there are a large number of speakers on the line then the 100V Splitter Module may indicate a fault on power up. This will clear after a few minutes, once the supervision voltage on the line has stabilised. The capacitor's voltage rating must be at least 10V.



Note
1. Capacitor 10V bipolar. Value 1-5 μ F per watt of speaker load.

Figure 4 100V Speaker Line Wiring

Any unused 100V outputs on the 100V Splitter Module will require a 56K resistor to be fitted to the screw terminals. Sleeve the resistor so the leads cannot be touched, before fitting it to the screw terminals.

6. 100V Splitter Module Configuration

There is no configuration required for the 100V Splitter Module.

7. Power On and Testing

The T-Gen2 should be powered up with its required configuration (BOWS or specially programmed). Check the POWER/LINK LED on each 100V Splitter Module is blinking and no faults are present on the T-Gen2. Fix any faults that are present. Check the 100V Splitter Module 100V outputs work correctly.

8. Status LEDs

The 100V Splitter Module has 2 status LEDs for fault diagnostics:

LED Name	Colour	Description
POWER/LINK	Green	<p>OFF – no power applied</p> <p>Flashing – should not occur other than on start-up. If present indicates restarting or factory test mode.</p> <p>ON – 100V Splitter Module is operating.</p>
FAULT	Yellow	<p>OFF – no fault present.</p> <p>Flashing – fault present</p> <p>When a Fault is present the FAULT LED shows a sequence of 13 flashes followed by a pause, with each flash short (250msec) if that fault is not present and long (750msec) if that fault is present.</p> <p>The system faults are indicated in this order:</p> <ol style="list-style-type: none"> 1. OUT1 100V output has a short circuit fault – the output is isolated from the T-Gen2. 2. OUT2 100V output has a short circuit fault – the output is isolated from the T-Gen2. 3. OUT3 100V output has a short circuit fault – the output is isolated from the T-Gen2. 4. OUT4 100V output has a short circuit fault – the output is isolated from the T-Gen2. 5. OUT1 100V output has an open circuit or undefined fault – the output is still connected to the T-Gen2. 6. OUT2 100V output has an open circuit or undefined fault – the output is still connected to the T-Gen2. 7. OUT3 100V output has an open circuit or undefined fault – the output is still connected to the T-Gen2. 8. OUT4 100V output has an open circuit or undefined fault – the output is still connected to the T-Gen2. 9. Always no fault. 10. Always no fault. 11. Firmware CRC Incorrect. Replace the 100V Splitter Module. 12. Software Fault. Will not occur. 13. Unexpected restart occurred. Something happened to cause the 100V Splitter Module microprocessor to restart. Clears once status sent to T-Gen2. If does not clear, even after power down/up, replace the 100V Splitter Module.

9. 100V Splitter Module Specifications

Power requirements	19.2V – 28.8Vdc, 15mA typ @ 24V, 40mA all 4 outputs short circuit fault
Operating Temperature Range	-5°C to +45°C
Humidity Range	10% to 93% RH non-condensing
100V Outputs	Each output 100W max, all 4 < 120W Each output 56k EOL (1 branch) or 2 x 100k (2 branches)
100V Input	Superimposed Fault 25k resistor

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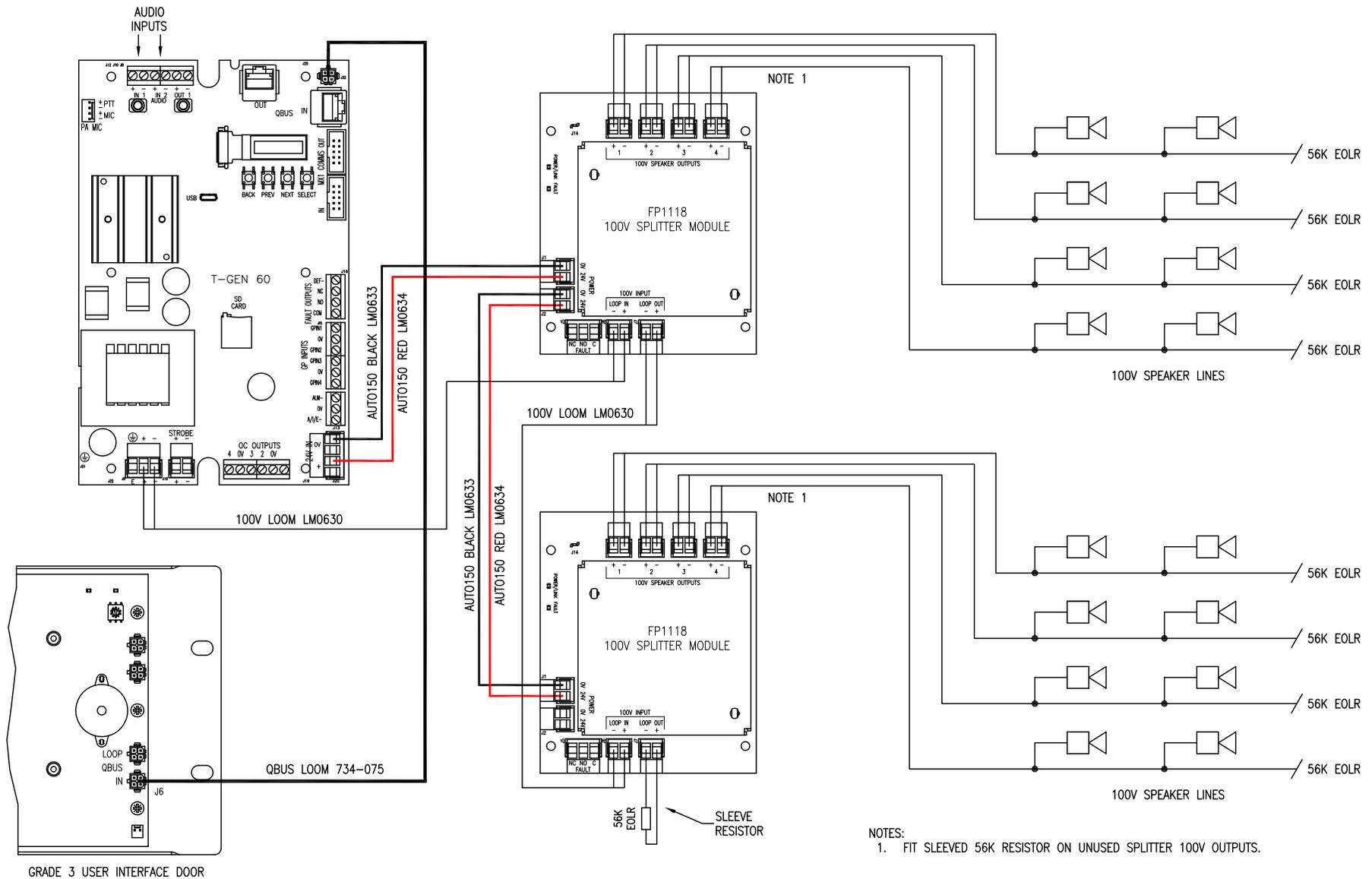
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NOTES:
 1. FIT SLEEVED 56K RESISTOR ON UNUSED SPLITTER 100V OUTPUTS.

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3rd ANGLE PROJECTION

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T-GEN2
100V SPLITTER MODULE / UI
WIRING DIAGRAM

DRAWING No: 1982-71 SHEET 135 of N

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