Ref: PBG0205

22 November 2017

FP1118 100V SPLITTER MODULE

The FP1118 100V Splitter Module takes a 100V signal and splits it into 4 outputs, each with its own open/short circuit fault detection and isolation relay to disconnect the output on a short circuit.

Under AS 1670.1:2015, Clause 2.6(c) requires that a single fault (open or short circuit) not directly affect more than one area of occupant warning covering not more than one level and not more than 2000m^2.

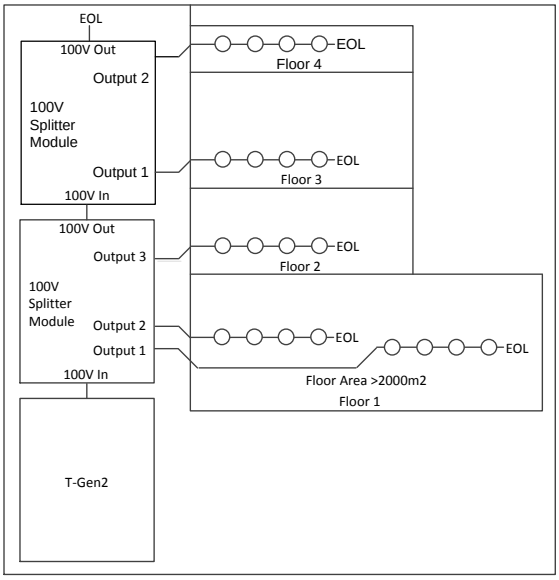
This means that short (and open) circuit fault protection must be provided for each level (floor) or area >2000m^2, even though a single-zone (all-out) emergency warning system is being used.

The FP1118 100V Splitter Module provides this separation and short circuit fault protection for 4 x 100V outputs feeds from a common 100V source such as T-Gen 50, T-Gen2, QE90, etc.

It splits the 100V source signal into 4 outputs, each of which has its own open/short circuit fault detection and an isolation relay so that the output is disconnected if a short circuit fault is present. This allows the other outputs to continue working even with the short circuit on an output.

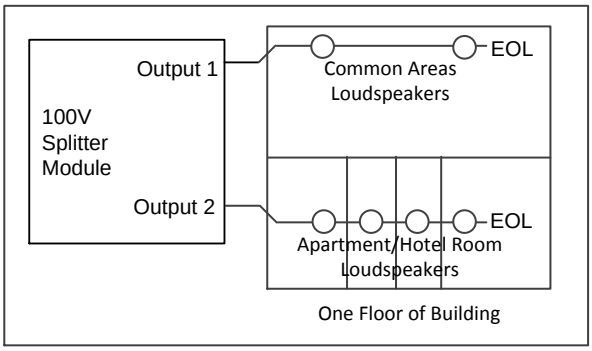
By daisy-chaining multiple 100V Splitter Modules together, more than 4 separate outputs can be provided.

Each output could be fed to the different floors or areas >2000m^2, or even to different parts of the same floor where resilience under short circuit fault is required.



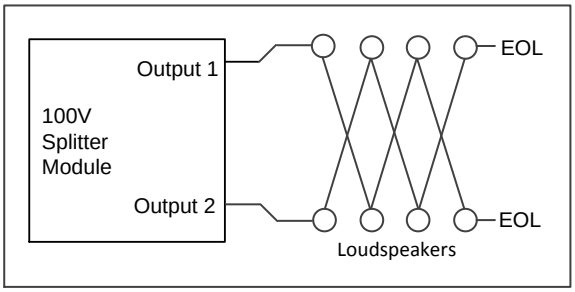
100V Splitter Modules Provide Separate 100V Feeds

For example, one output could feed the 100V loudspeakers in a number of apartments, hotel rooms, etc., and another output could feed the loudspeakers in the common areas like hallways, exit routes, etc. This means a short circuit in one apartment/room would not stop the speakers in the common areas from working.



Split Feeds for Common Areas v Apartments

Another example is to wire every second speaker in an area onto an alternative output, so that if a short circuit is applied, only half the speakers are disconnected and the other half continue working. This could well provide enough sound level to get everyone to evacuate the area, even though a short is present on one feed.



Dual Feeds to One Area

Usually the FP1118 100V Splitter Modules are located along with the 100V Source generator and powered with 24Vdc. They cannot be located remotely as they are fed with the source 100V signal and require 24Vdc for operation.

Also, all speaker outputs must be fed via 100V Splitter Module outputs as the “unprotected” source cannot be directly fed out as external wiring.

However, if the 100V source signal and all the Splitter outputs belong to the same floor of the building or area <2000m^2 (and no others), then the Splitter can be located remotely.

FP1118 100V Splitter Module

The FP1118 100V Splitter Module is a self-contained module that mounts in *MX1*, 4100ESi 28U/40U (extra bracket required) fire panels and T-Gen2 BOWS cabinets.

It needs to be provided with 24Vdc and the source 100V signal, which can be daisy-chained on to multiple modules using the loop-in/loop-out terminals.

Each 100V output can support up to 100W of load (120W for all 4 outputs combined), with single or dual branch wiring of the speaker lines. A 56k EOL resistor is fitted at the end of a single branch, or a 100k EOL resistor is fitted at the end of each of the dual branches. Unused outputs must be terminated with an EOL.

If the 100V Splitter Module detects a fault on an output it signals fault back to the source generator by superimposing a 25K resistance on the line. This causes a fault on the T-Gen 50, T-Gen2, or QE90 output, without causing it to shut down or be overloaded.

A separate fault change-over relay is also available, along with a fault LED that indicates which output has a fault condition and the type of fault present.

All wiring is terminated on demountable screw terminals and a plastic cover protects the user from all circuitry that has 100V present.

Specifications

Operating Voltage	19.2V to 28.8Vdc
Quiescent Current	15mA @ 24V
Fault State Current[1]	40mA @ 24V
100V EOL Resistor	56k Ohm (1 branch)
	100k Ohm (2 branches)
100V Load/Output	100W
100V Load (all 4 outputs)	120W
Fault Relay Contact Rating	2A @ 24Vdc
Fault on 100V in	25k Ohm
Ambient Temperature	-5°C to +45°C
Relative Humidity	10% to 95% (non cond.)

Indoor Applications Only	
Dimensions (HWD)	142 x 104 x 40mm
Wire Size (maximum)	2.5sq mm
Part Number:	
FP1118	100V Splitter Module
[1] All 4 outputs in short circuit fault	

Ordering

The 100V Splitter Module is ordered as:

FP1118 FP,100V SPLITTER MODULE,C/W LIT,LOOMS & MTG BRKT

and is supplied with mounting screws, power wires, 100V cable, EOL resistors and sleeving to put over the resistors in the cabinet (to protect against electric shock).

For mounting in 4100ESi cabinets using PDI expansion bays an FP1120 legacy-style bracket is needed to mount up to two modules alongside the T-Gen2.

FP1120 FP,4100ESi,2 X 100V SWT MODULE BRKT,C/W LIT & MTG

Refer to PBS0071 for further information.