

T-GEN2 GRADE 2 EMERGENCY WARNING SYSTEM (EWS)

The VIGILANT T-Gen2 Grade 2 Emergency Warning System is available as a complete 4 Zone Emergency Warning System (EWS) which can be expanded for larger systems.

The VIGILANT T-Gen2 Grade 2 Emergency Warning System (EWS) is a self-contained AS 4428.16 Alert and Evacuate tone generator, with integral power supply, digitised speech messages, and PA microphone. It has been designed to connect directly to a fire alarm panel, and can also be used as a stand-alone unit.

The EWS contains a 4 zone T-Gen2 Grade 2 User Interface with a speech microphone, T-Gen120, 14A PSE and 4 x 100V outputs from a Switching Module. It can be expanded up to 20 zones, and additional slave T-Gen2 modules can be added for extra output and functionality.

Non-emergency paging options, IP remote audio compatibility, and multiple audio inputs make the VIGILANT EWS a versatile base unit for a variety of applications meeting the multi zone requirements.

FEATURES AND BENEFITS

- Self-contained Emergency Warning System suits multiple applications
- Compliant with AS 4428.16 for Grade 2 applications
- Emergency PA microphone, Alert/Evacuate/Speech controls
- 4 zones of control/indication and expandable to 20 zones
- Auto/Manual operation
- Zone Paging options – up to 20 separately-selectable speaker areas
- Selectable priority for Paging/Remote/Background Audio inputs
- Alarm inputs and Fault output signals for fire panel connection
- Optional High Level Interface with Vigilant MX1, MX4428, F3200 or Simplex 4100ESi
- Programmable Alert to Evacuate delay (0-600sec or manual)
- Programmable Alert / Evacuate Cascading across all zones.
- Pre-recorded Alert and Evacuate messages, field re-recordable for flexibility
- Up to 2A Strobe output per T-Gen2
- Integral 14 Amp (peak) Power Supply with fault supervision
- Space for 2 x 40Ah batteries
- Space for 6 x 100V Switching/Splitter Modules for short-circuit isolated outputs
- Space for an additional T-Gen 60 or T-Gen 120 for higher loads
- Expandable up to 9 synchronized Slaves T-Gens and 9 PSUs
- 15U 19" rack cabinet: 750mm H x 550mm W x 210mm D (120W)

FP1129



GENERAL DESCRIPTION

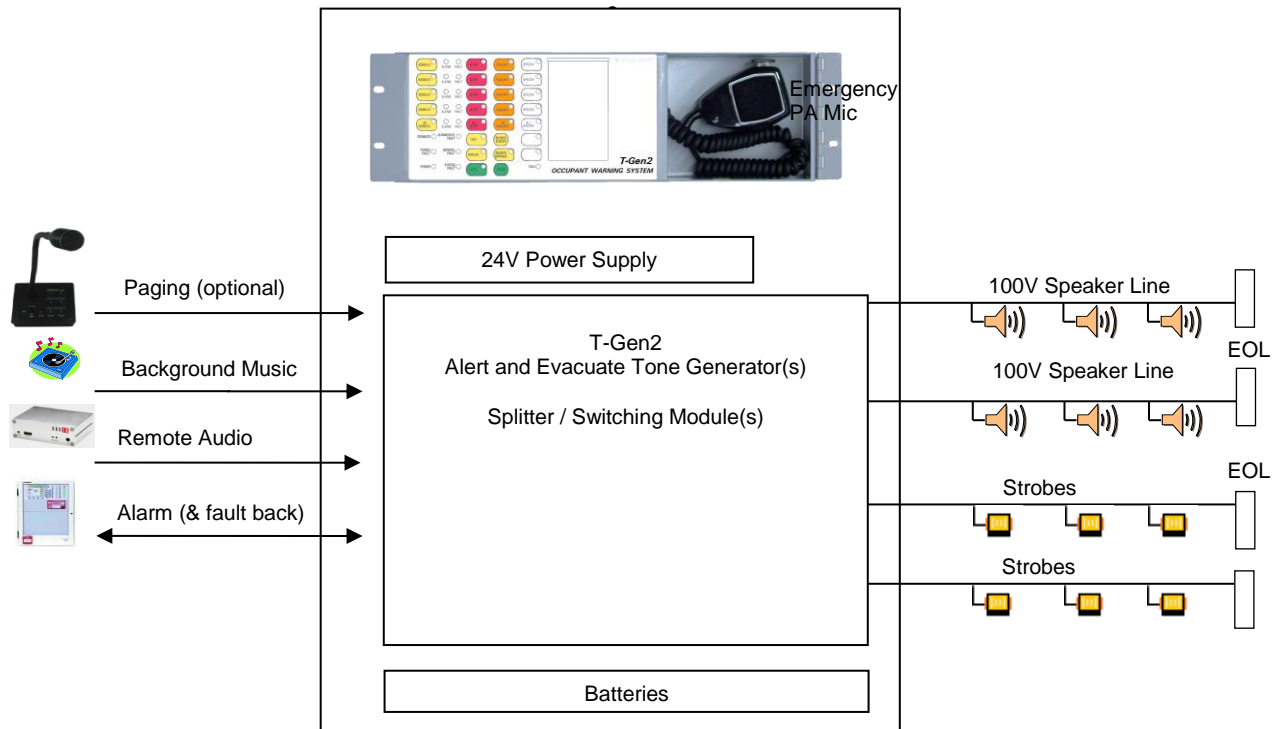


Figure 1. VIGILANT EWS Functional Block Diagram

The VIGILANT EWS has a microphone for emergency public address, fault and status indicators, and manual controls to control its operation. It has audio inputs for background music, remote non-emergency audio (which can be used when streaming audio over IP networks), or non-emergency paging (zone-selective with an add-on option). Also included is a 14A power supply.

The base panel (FP1129) and matching expansion cabinet (FP1130) are available as 15U cabinets.

EXPANSION OF EWS UNITS

The FP1129 15U cabinet is fitted with one T-Gen 120 and one 4-way 100V Switching Module to provide the four outputs. It can be expanded with an additional T-Gen 60 (FP1115) or T-Gen 120 (FP1116) to provide additional power output. It has space for up to 6 x 100V Switching Modules (FP1117) for zone outputs and short-circuit isolation or 100V Splitter Modules (FP1118) to provide short-circuit isolated outputs only.

With two T-Gen 120 the FP1129 14A PSU can support up to 240W load, with no strobe load on each T-Gen 120.

Further expansion can be achieved by using the FP1130 15U expansion cabinet, allowing additional T-Gen2 (60 or 120W) and switching/splitter modules to be housed adjacent to the EWS unit.

The T-Gen2 EWS can be expanded up to a total of

- 10 x T-Gen2 (1 master and 9 slaves)
- 9 x 14A PSE (monitored)
- One User Interface (20 zones max)
- 10 x 100V Switching Modules
- Multiple 100V Splitter Modules per T-Gen2 output.

The gearplate of the FP1129 15U EWS and the FP1130 Expansion Cabinet supports a number of combinations of T-Gen2 parts, including:

- Up to 3 x T-Gen 60 or T-Gen 120 units
- Up to 2 x 14A power supplies
- Up to 10 x 100V Switching/Splitter Modules
- One HLI module (this can alternatively be mounted on the cabinet RHS wall).

Figure 2 shows the various mounting positions on the gearplate – note some positions overlap so not everything can be fitted at the same time.

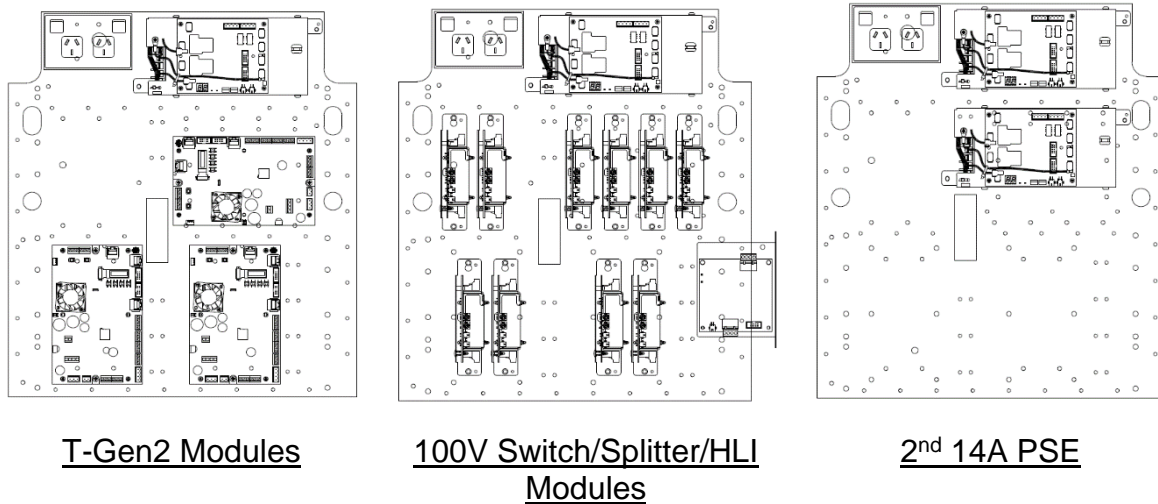


Figure 2 – 15U Gearplate Module Mounting Positions

Expanding the User Interface

The 4 zones of User Interface can be expanded to 12 zones by adding the FP1126 3U 16 zone door (refer to the LT0683 instructions for removing the 3U blank and fitting the FP1126 module). This door has only 8 zones fitted as standard.

An additional 8 zones of User Interface can be added (to make 20 zones in total) by fitting the FP1128 8 Zone Extender kit to the unfilled area on the FP1126 door. Refer to the LT0684 instructions for fitting.

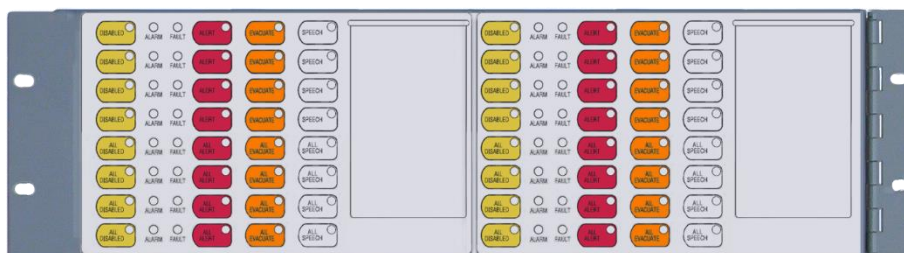


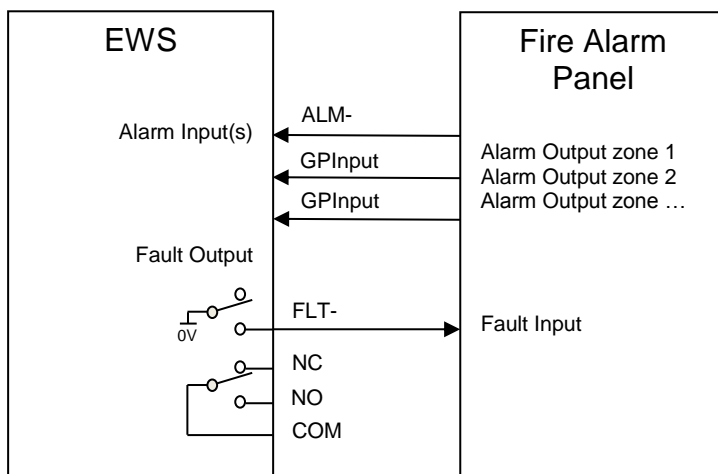
Figure 3 – FP1126 3U Door Expansion 16 zones (8 fitted)

CONNECTING TO FIRE ALARM PANEL

Basic wiring method:

The EWS has multiple inputs that are normally terminated with an EOL resistor and shorted by the fire alarm panel(s) to activate the Alert / Evacuation tones for each individual zone.

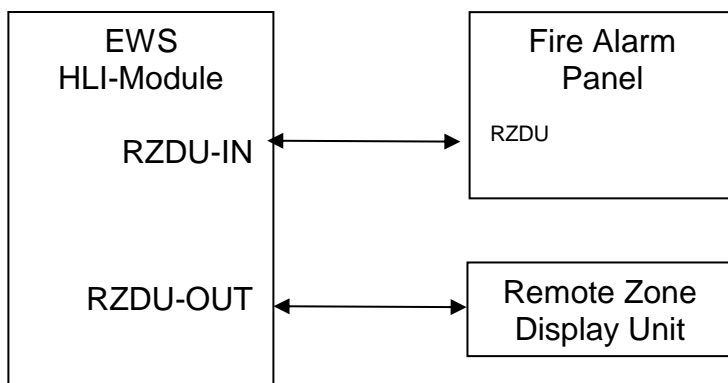
The EWS has a common Fault output (DEF-) which is normally open-circuit and pulled to 0V on fault. Voltage-free fault relay contacts (NO, NC, COM) are also provided. One of these is usually wired to the fire alarm system(s) to indicate a fault condition.



High Level Link:

Two wiring options are available:

- 1) Direct connection MX1 to T-Gen2 using a 10-way ribbon cable:
This option can be used only when the T-Gen2 and MX1 are mounted in the same cabinet or in a dual cabinet installation, both adjacent to each other. Connection to external RZDU devices is not possible and Port 0 on the MX1 must not be used for any other function.
- 2) HLI board (Optional module FP1143):
The HLI board allows the T-Gen2 to communicate with the Vigilant MX1, MX4428 and F3200 fire panels using RZDU protocol.
The HLI board (module) includes a separate short-circuit isolated RZDU connection for wiring to remote RZDU devices – so that a short circuit in the field wiring does not affect the T-Gen2’s communication with the fire panel. Up to 32 Zone Alarm states and other triggers can be sent to the T-Gen2 to activate alarms and playing of messages, while the T-Gen2 can return its fault state.



The HLI module can also be used with Simplex 4100ESi panels. The T-Gen2 connects onto the internal 4100Comms bus and appears to the 4100ESi as a slave device having a number of programmable input and output devices.

When using an HLI board to connect the fire panel and EWS, both the fire panel and EWS must be located side by side.

The HLI board provides a mechanism to exchange 32 alarm signals generate by the Fire Panel, which can be Zone Alarms or Logical combinations. Each of the alarms can be assigned to a specific function within the T-Gen2 using SmartConfig. Eg. No function, Alarm Trigger, Play Signal, Paging Line 1, Paging Line 2, External Power Fault, External Mains Fault or External Audio Fault.

AREA MAPPING

The T-Gen2 in combination with one or more Switching Modules allows any source of audio to be mapped to any area. The routing of these audio signals is fully configurable via the PC application SmartConfig. FP1129 has a default configuration to address 4 individual areas. Multiple areas can be combined and PA addressed all at the same time.

AUDIO INPUTS

The EWS has two general purpose line-level (230mV) audio inputs. These can be configured for different operating modes: "Always On / Music", "Paging Line" to be used with a Paging Console, and "GP / HLL Input" to be enabled when a specific GP input is active.

These audio inputs could be used for:

Background Music



The audio input is usually configured as "Always On", and a music source connected. A volume control is provided to adjust the output level. Screw terminals and a 3.5mm audio socket are provided for connecting the background music source to the EWS.

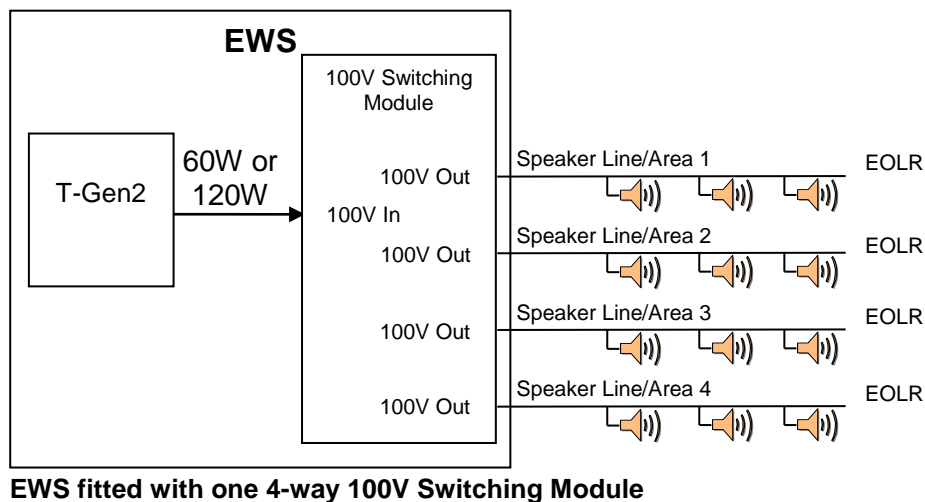
Remote Audio



This mode can be used for connecting to external tone/message generators, specialist paging systems (e.g., PABX), or voice-over-IP (VoIP) modules (illustrated). A separate digital input is used to enable the audio input. A volume control is provided to adjust the output level. The priority of the audio input (relative to the emergency PA microphone and the zone paging), and whether the remote audio is to override the Alert/Evacuation tones is configurable. (Note that this would be non-compliant to AS4428.16)

AREA-SELECTABLE PAGING (Two Options)

The EWS can optionally be fitted with up to 6 100V Switching Modules (FP1117), each splits a single 100V output into four separately selectable 100V line outputs. Each of the 4 outputs has separate line supervision (o/c & s/c) and the 100V Switching Module will isolate a shorted output allowing the other outputs to operate. Each output can handle up to 100W maximum load, but the total load per module cannot exceed the T-Gen2 rating (or maximum 120W per Switching Module in total).



The 100V Switching Modules allow the T-Gen2 to control which outputs receive the 100V audio signal from the T-Gen2 – making area-specific paging and background music possible.

USING AN EXTERNAL PAGING CONSOLE

Up to two external 4-zone paging consoles (SU0360) can be combined with an SU0361 Audio Switcher to create a 4-area paging system for the T-Gen2 EWS. The SU0361 Audio Switcher is mounted in the EWS and wired to 4 GP Inputs to indicate when each area is active. The Paging Consoles are located where needed and connect to the Audio Switcher using RJ45 cable.



SU0360 Paging Microphone



SU0361 Audio Switcher

The paging consoles offer a pre-announcement chime which can play a chime signal when the microphone PTT is activated.

The priority of the paging function compared to the other audio inputs, user functions and emergency functions is configurable.

If more than 4 areas of paging are required then the Redback A 4585 16 zone Audio switcher with up to four A 4586 16 zone paging consoles can be used. The Audio Switcher may be mounted in the EWS rack cabinet if the depth allows, and is wired to the digital inputs on the T-Gen2 modules.

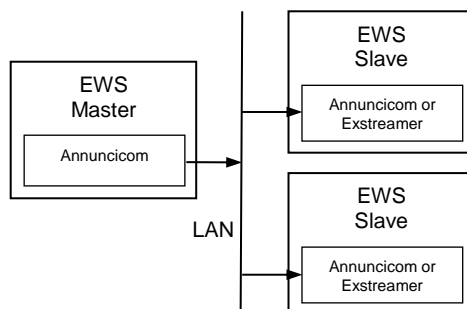
The paging consoles are mounted remotely and connect to the Audio Switcher using RJ45 cables.

IP NETWORKING

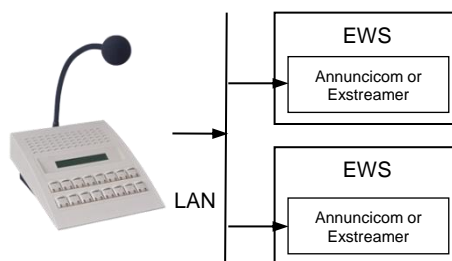
The EWS supports streaming audio over IP Networks using the BARIX range of Audio-over-IP modules. There are many possible configurations that can be used, depending on the application (see LT0561 for more details).

One typical application is to use the BARIX modules to allow a master EWS to make paging announcements to multiple slave EWS units connected together on a LAN. For this application, an Annunicom 200 may be used in the master EWS and either an Annunicom 200 or Exstreamer 100 at each slave EWS.

When the paging microphone is activated, this is signalled to each slave unit, which in turn receives streaming audio from the master and broadcasts it over the loudspeakers.



The Barix PS16 Paging Console may also be used to broadcast messages over a LAN to one or more EWS. The console has 16 buttons which can be configured to select individual EWS units for paging.



CONFIGURATION

The EWS units come pre-configured with the FP1129_Grade2 configuration. This enables basic operation on the Grade 2 User Interface, an alarm input, Audio 1 as Always ON and the 4 x 100V output operate as 4 zones and areas.

Any other configuration, e.g., changing the basic operation, adding Slave T-Gen2 or other modules, or assign speech, input functions or change the User Interface operation will require a configuration to be prepared and downloaded using the Windows SmartConfig application.

FURTHER INFORMATION

Details on the various T-Gen2 modules can be found in the latest issue of product bulletin PBG0203.

SALES DRAWINGS

1992-34 FP1129, FP, T-GEN 2 EWS, GRADE 2 4Z, 15U
1992-37 FP1130, FP, T-GEN 2 EXP CAB, C/W 14A PSU, 15U, BLANK DR
1956-19 FP1116, FP, T-Gen 120, 24V, C/W INSTALL LIT & MTG
1956-21 FP1117, FP, 100V SWITCHING MODULE, C/W LIT, LOOMS & MTG BRK
1956-22 FP1118, FP, 100V SPLITTER MODULE, C/W LIT, LOOMS & MTG BRKT
1992-17 FP1124, FP, GRADE 2 EWS UI 3U DOOR, C/W LOOM & MIC, GREY
1992-29 FP1126, FP, T-GEN 2 GRADE 2, 16Z EWS EXTENDER, 3U DOOR
1956-17 FP1143, FP, T-GEN2 HLI BOARD

PART NUMBERS

FP1115, FP, T-Gen 60, 24V, C/W INSTALL LIT & MTG

T-Gen 60 model of T-Gen2 able to drive a speaker load up to 60W. Supports two non-emergency audio inputs (BGM, paging), a microphone audio input (Speech or Paging), 6 supervised inputs (Alarm, Fault, Paging), 4 open-collector outputs, normally-energised Fault relay, supervised single polarity strobe output, and 100V speaker output. Able to fit to FP1129 or FP1130 as a spare part or Slave T-Gen2.

FP1116, FP, T-Gen 120, 24V, C/W INSTALL LIT & MTG

T-Gen 120 model of T-Gen2 able to drive a speaker load up to 120W. Able to fit to FP1129/FP1130 as a spare part or Slave T-Gen2.

FP1117, FP, 100V SWITCHING MODULE, C/W LIT, LOOMS & MTG BRK

Provides 4 supervised, short-circuit isolated 100V outputs (each rated at 100W) from the T-Gen2's 100V output, along with control of each output by the T-Gen2 to provide area paging. A QBus slave module. Supplied on MX1-style mounting bracket with cables and EOLs. Mounts in the EWS cabinet. Can be used as a spare part or expansion module.

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

Provides 4 supervised, short-circuit isolated 100V outputs (each rated at 100W) from the T-Gen2's 100V output. No control of the outputs is available. Signals fault to the T-Gen2 by superimposing a fault on the T-Gen2's 100V input. Standalone operation (not a QBus slave). Supplied on MX1-style mounting bracket with cables and EOLs. Can be used as an expansion module.

FP1124 FP, GRADE 2 EWS UI 3U DOOR, C/W LOOM & MIC, GREY

The grey 3U 19" rack mounting door complete with the 4 Zone Grade 2 User Interface and PA microphone. A 1.5m power loom and microphone extension lead are included to allow connection to a T-Gen2 mounted in the back of the cabinet. Can be used as a spare part for the User Interface in FP1129, or for adding to a T-Gen2 in a rack cabinet.

FP1126 FP, GRADE 2 16Z EWS EXTENDER, 3U 19" DOOR, GREY

A grey 3U 19" rack mounting door complete with a 16 Zone Grade 2 User Interface – but only 8 zones fitted. Connects to FP1124 to expand the capacity from 4 zones to 12 zones. Add an FP1128 8 Zone Expansion Module to expand to the full T-Gen2 capacity of 20 zones.

FP1128 FP, GRADE 2 8Z EXPANSION BRD, C/W LOOM & MTG

An 8 Zone Expansion Module for providing 8 zones of evacuation control and indication. Fits onto FP1126 to expand to 20 zones, or can be used as a replacement for the 8 Zone Module already fitted.

FP1130, FP, T-GEN2 EXP CAB, C/W 14A PSU, 15U, BLANK DR

15U titania-coloured cabinet with a blank outer door and a 15U EWS gearplate mounted inside with a mains GPO and 14A PSE fitted. Suitable for add-on T-Gen2, 100V Switching Modules, 100V Splitter Modules and up to 40Ahr batteries.

FP1139, FP, PSE GEARPLATE MTG, 24V, 14A, SPARE

Replacement 14A PSE for the PSU in the EWS. This can also be used as an expansion PSU for larger systems.

FP1143, FP, T-GEN2 HLI BOARD

High Level Link Interface module allows an adjacent Vigilant MX1, MX4428 or F3200 fire panel using RZDU or Simplex 4100ESi fire panel using internal 4100Comms to be connected to the master T-Gen2 to transmit alarm information (up to 32 fire zones to trigger EWS) and monitor the EWS fault status.

ME0490 MECH ASSY, 1955-44, T-GEN50, DYNAMIC MICROPHONE

A noise-cancelling dynamic microphone suitable for plugging onto the T-Gen2 to provide emergency PA or for field recording of the digitised speech message(s). Includes a 1m extension lead. Suitable as a spare part for the microphone in the EWS.

SU0360 A 4488 4 ZONE PAGING CONSOLE

A 4 zone paging console with microphone and chime option that can be used with the SU0361 A 4489 Audio Switcher to achieve 4 area paging from remote locations. Up to two paging consoles can be connected to the SU0361 Audio Switch.

SU0361 A 4489 AUDIO SWITCHER

Used with the A 4428 4 zone paging console to provide relay outputs. Able to be mounted inside the EWS cabinet.

A 4585 16 ZONE AUDIO SWITCHER

A 16 zone audio switcher that can be used with up to four A 4586 paging consoles to provide up to 16 zones of paging. May be mounted in 15U cabinets if depth available.

A 4586 16 ZONE PAGING CONSOLE

Used with a A 4585 audio switcher to provide 16 zone of paging. Mounts externally and connects to the A 4585 using RJ45 cable.

LITERATURE ITEMS

- LT0667 T-GEN2 INSTALLATION GUIDE
- LT0668 100V SWITCHING MODULE INSTALL INSTRUCTIONS
- LT0681 T-GEN2 GRADE 2 UI INSTALL GUIDE
- LT0682 T-GEN2 GRADE 2 UI OPERATOR MANUAL
- LT0683 T-GEN2 GRADE 2 16Z EXTENDER DOOR INSTALL INSTRUCTIONS
- LT0684 T-GEN2 GRADE 2 8Z EXPANDER BOARD INSTALL INSTRUCTIONS
- LT0685 T-GEN2 14A PSE INSTALL INSTRUCTIONS
- LT0687 T-GEN2 15U EWS INSTALL INSTRUCTIONS
- LT0691 T-GEN2 HIGH LEVEL INTERFACE HLI INSTALL INSTRUCTIONS

SPECIFICATIONS

	FP1129 (15U)	FP1130 (15U)
Weight	26kg	21kg
Size (WxHxD)	550 x 750 x 210mm	550 x 750 x 210mm
PSU Output Current (Peak)	14A	14A
DC Supply Voltage	19.2Vmin - 28.8Vmax	19.2Vmin - 28.8Vmax
Operating Temperature Range	-5C to +45C	-5C to +45C
Relative Humidity	0 to 95% non-condensing	0 to 95% non-condensing
Storage Temperature Range	-20C to +70C	-20C to +70C
Quiescent Current		
Audio enabled but idle (no signal)	300mA	
Active Current - 27Vdc (excl. Strobe)	6.1A @ 120W	
100V Audio		
Line Voltage - AC (Tones)	100Vrms	
- DC (Supervision)	2.5V (56k ELD 5.0V (O/C))	
Line Power - Tones	120W	
- Audio	120W	
Maximum line capacitance	200nF	
Audio Frequency range		
+/- 1dB	260Hz – 3800Hz	
+/- 3dB	215Hz – 8400Hz	
SNR (Audio Input 1kHz)	> 75 dB(A)	
THD (Audio Input 1kHz)	< 0.25%	
100V Speaker Line Supervision		
ELD - 1 Branch	56k 0.4W	
- 2 Branches	100k 0.4W	
Strobe Output		
ELD - 1 to 3 branches	1x10k - 3 x 27k 0.4W	
Current rating	Max 2.0A	
Audio Inputs		
Audio 1 & Audio 2	230mVrms (min) into 5k Ω isolated for full power	
Microphone - Input Level	3mVrms-100mVrms, PTT driven, supervised	
Digital Inputs		
Alarm, AIE, GP1-4	2k7 EOL, <3.5V Active	
Open Collector O/Ps		
OC1 & OC2	<1V @ 100mA, 30Vdc Optionally Load Supervised (fault <12V)	
OC3 & OC4	<1V @ 100mA, 30Vdc	
Interfaces		
OLED, 4 button menu structured	For operation and configuration	
QBus compliant	Master / Slave operation, User Interface, 14A PSE and 100V Switching Module	
Slave T-Gen2	RJ45 Cable-In Cabinet	
On-board Storage	4Mbyte (configuration and audio files)	
Micro-SD Card - max size	32GB FAT32 support (card not provided)	
Headphone Output		
Load impedance	8 Ω min 6mW	
Audio Output	1.30Vrms	