Ref: PBG0206

29 November 2017

BUILDING OCCUPANT WARNING SYSTEM (BOWS)

The VIGILANT T-Gen2 Emergency Warning System is available as two complete Building Occupant Warning Systems (BOWS) – 8U @ 60W and 18U @ 120W.

The VIGILANT T-Gen2 Building Occupant Warning System (BOWS) 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 BOWS units contain a T-Gen2 Grade 3 User Interface, speech microphone and PSU, with space for additional modules and batteries.

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

FEATURES AND BENEFITS

- Self-contained Occupant Warning System suits multiple applications
- Available in 60W (8U) and 120W (18U) versions
- Emergency PA microphone, Auto/Evacuate/Speech controls
- Zone Paging options – up to 4 separately-selectable speaker areas
- 4-zone remote paging microphone/console option
- Auto/Manual operation
- Compatible with VIGILANT IP remote audio solutions for larger sites
- Selectable priority for Paging/Remote/Background Audio inputs
- Alarm input and Fault output signals for fire panel connection
- Programmable Alert to Evacuate delay (0-600sec or manual)
- Pre-recorded Alert and Evacuate messages, field re-recordable for flexibility
- Up to 2A Strobe output
- Integral Power Supply with fault supervision
- Space for 2 x 17Ah batteries (8U) or 2 x 75Ah (18U)
- Space for 3 (8U), 8 (18U) x 100V Switching/Splitter Modules for short-circuit isolated outputs
- Space for an additional T-Gen 60 (8U) and T-Gen 120 (18U) for higher loads
- 8U 19" rack cabinet: 440mm H x 550mm W x 210mm D (60W)
- 18U 19" rack cabinet: 885mm H x 575mm W x 380mm D (120W)

8U

18U

GENERAL DESCRIPTION

VIGILANT BOWS Functional Block Diagram
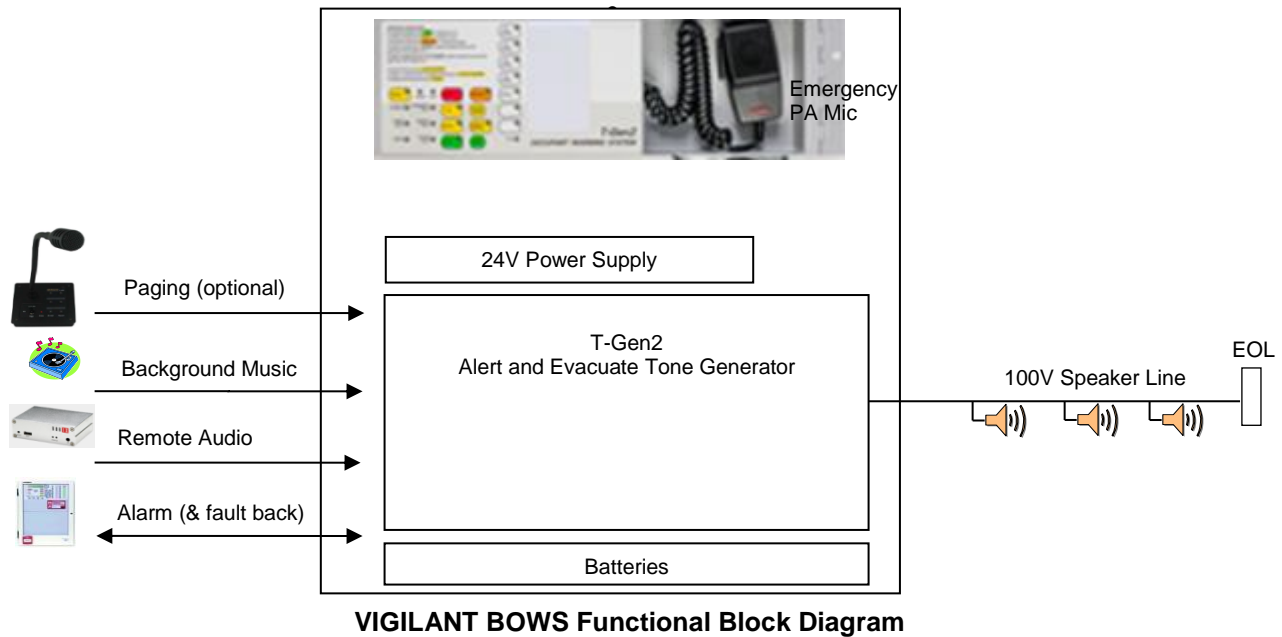
The VIGILANT BOWS has a microphone for emergency public address, fault and status indicators, and manual controls to control its operation. It has audio inputs for background music, remote audio (which can be used when streaming audio over IP networks), and non-emergency paging (zone-selective with an add-on option). Also included is a 5A/10A power supply,

EXPANSION OF BOWS UNITS

The FP1136 60W BOWS may be upgraded in the field by adding a second T-Gen 60 to provide a second 100V line output. It also has space for 3 x 100V Switching Modules (FP1117) for area paging outputs or 100V Splitter Modules (FP1118) to provide short-circuit isolated outputs.

With two T-Gen 60s fitted the FP1136 PSU can support 50W load on each with no strobe load, decreasing to a combined 20W load with a total of 4A strobe load.

The FP1137 is fitted with one T-Gen 120 and can be expanded with an additional T-Gen 60 (FP1115) or T-Gen 120 (FP1116) to provide additional power output. It also has space for 8 x 100V Switching Modules (FP1117) for area paging outputs or 100V Splitter Modules (FP1118) for separate short-circuit isolated outputs.

With two T-Gen 120s the FP1137 10A PSU can support 100W load on each with no strobe current, decreasing to a combined 120W load with a total strobe current of 4A.

CONNECTING TO FIRE ALARM PANEL
The BOWS has an Alarm input (ALM-) which is normally terminated with an EOL resistor and shorted by the fire alarm panel to activate the Alert / Evacuation tones.

The BOWS 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 alarm system to indicate a fault condition.
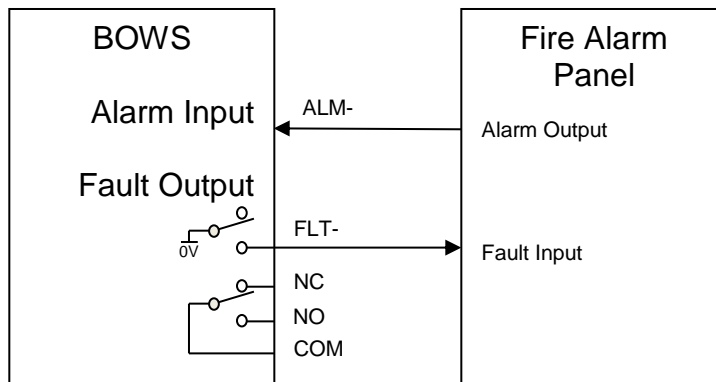
AUDIO INPUTS

The BOWS has two general purpose line-level (150mV) audio inputs. These can be configured for different operating modes: "Always On", "Paging" to be used with Paging Console, and "GP Active" 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 BOWS.

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.

ZONE-SELECTABLE PAGING (Two Options)

The BOWS can optionally be fitted with 100V Switching Modules (FP1117) which split the 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 cannot exceed the BOWS rating (or 120W per Switching Module).
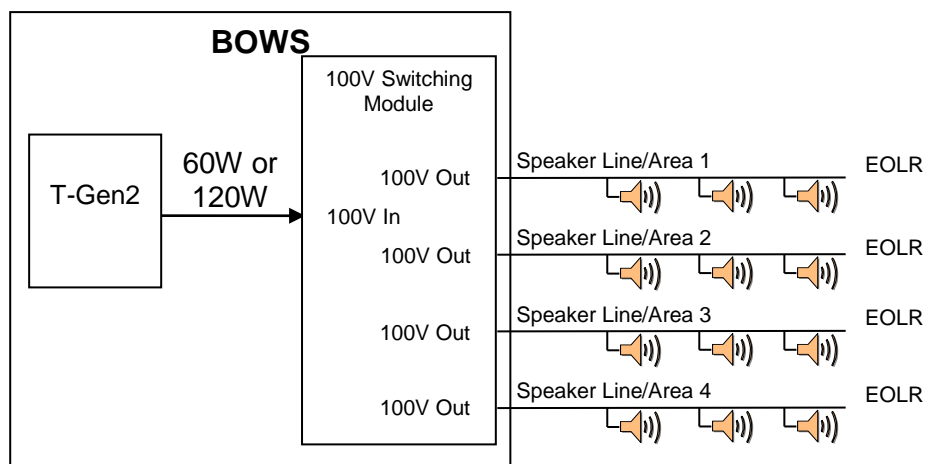
BOWS Fitted With a 4-way 100V Switching Module

The 100V Switching Modules allow the T-Gen2 to control which outputs receive the 100V signal from the T-Gen2 – making area-specific paging options possible. Two options for area paging are available (can be combined).

1 USING GRADE 3 USER INTERFACE

The Grade 3 User Interface has 4 Area PA/Paging pushbuttons that when pressed will direct the voice announcements from the front panel microphone to specific areas. Each output of the 100V Switching Modules can be configured to belong to a specific area, no area, or all areas. This allows various paging arrangements to be constructed.

2 USING AN EXTERNAL PAGING CONSOLE

Up to two external 4-zone paging consoles (SU0360) can be combined with an SU0361 Audio Switcher to create remote paging units for the T-Gen2 BOWS. The SU0361 Audio Switcher is mounted in the BOWS 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**

Both paging solutions offer a pre-announcement chime which will 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.

IP NETWORKING

The BOWS 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 BOWS to make paging announcements to multiple slave BOWS units connected together on a LAN. For this application, an Annuncicom 200 may be used in the master BOWS and either an Annuncicom 200 or Exstreamer 100 at each slave BOWS.

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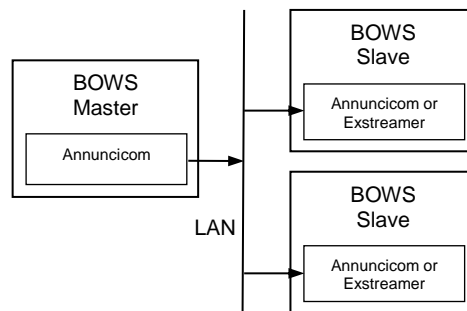
The Barix PS16 Paging Console may also be used to broadcast messages over a LAN to one or more BOWS. The console has 16 buttons which can be configured to select individual BOWS units for paging.
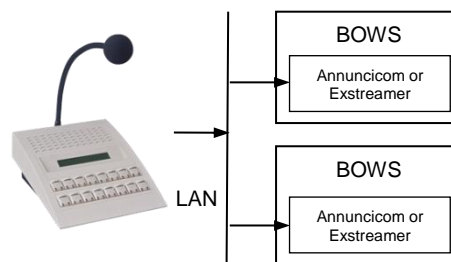
ORDERING CODES

FP1136 FP, 60W T-GEN2 BUILDING OWS, 8U TITANIA CAB

A complete Building Occupant Warning System (BOWS) including a T-Gen 60, 5A PSU, 3U 19" rack mounting door with Grade 3 User Interface and microphone mounted in a titania-coloured 8U cabinet. Space for an additional T-Gen 60, batteries, and 3 x 100V Switching or 100V Splitter modules is available.

FP1137 FP, 120W T-GEN2 BUILDING OWS, 18U CAB

A complete BOWS including a T-Gen 120, 10A PSU, 3U 19" rack mounting door with Grade 3 User Interface and microphone, all mounted in an 18U x 310 deep rack cabinet. Space for an additional T-Gen 120, batteries, and up to 8 x 100V Switching or 100V Splitter modules is available.

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 FP1136 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 FP1137 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 up to 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.

FP1118   FP,100V SPLITTER MODULE,C/W LIT,LOOMS & MTG BRKT
Provides 4 supervised, short-circuit isolated 100V outputs (each rated at up to 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.

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 BOWS cabinet.

Spare Parts
FP1122   FP,GRADE 3 EWS UI 3U DOOR,C/W LOOM & MIC,GREY
ME0476   MECH ASSY 1901-294 MX4428 24V 5A PSU BENTEL
ME0490   MECH ASSY 1955-44 T-GEN 50 DYNAMIC MIC

Literature Items (available electronically)
LT0667   T-GEN2 INSTALLATION GUIDE
LT0673   T-GEN2 USER INTERFACE OPERATOR MANUAL
LT0676   BOWS T-GEN2 INSTALLATION INSTRUCTIONS

SPECIFICATIONS

	FP1136	FP1137
Weight	**17kg**	42kg
Size	550 x 440 x 210mm	575 x 885 x 388mm
PSU Output Current	5A	10A
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		
Power Save Mode (Audio turned off)	45mA	45mA
Audio enabled but idle (no signal)	170mA	170mA
Active Current - 27Vdc (plus Strobe)	3.0A @ 60W	6.0A @ 120W
Line Voltage - AC (Tones)	100V rms	100V rms
- DC (Supervision)	2.5V (56k ELD 5.0V (O/C))	2.5V (56k ELD 5.0V (O/C))
Line Power - Tones	60W rms	120W rms
- Audio	60W rms	120W rms
Maximum line capacitance	200nF	200nF
Audio Frequency range		
+/- 1dB	260Hz – 3800Hz	260Hz – 3800Hz
+/- 3dB	215Hz – 8400Hz	215Hz – 8400Hz
100V Speaker Line Supervision		
ELD - 1 Branch	56k 0.4W	56k 0.4W
- 2 Branches	100k 0.4W	100k 0.4W
Strobe Output		
ELD - 1 to 3 branches	1x10k - 3 x 27k 0.4W	1x10k - 3 x 27k 0.4W
Current rating	Max 2.0A	Max 2.0A
Audio Inputs		
Audio 1 & Audio 2	150mVrms (min) into 5kΩ isolated for full power	150mVrms (min) into 5kΩ isolated for full power
Microphone - Input Level	3mVrms-100mVrms, PTT driven, supervised	3mVrms-100mVrms, PTT driven, supervised
Digital Inputs		
Alarm, AIE, GP1-4	10k EOL, <3.5V Active	10k EOL, <3.5V Active
Open Collector O/Ps		
OC1 & OC2	<1V @ 100mA, 30Vdc Optionally Load Supervised (fault <12V)	<1V @ 100mA, 30Vdc Optionally Load Supervised (fault <12V)
OC3 & OC4	<1V @ 100mA, 30Vdc	<1V @ 100mA, 30Vdc
Interfaces		
OLED, 4 button menu structured		

QBus compliant	Master / Slave operation, User Interface and 100V Switching Module	Master / Slave operation, User Interface and 100V Switching Module
Slave T-Gen2	RJ45 Cable-In Cabinet	RJ45 Cable-In Cabinet
On-board Storage	4Mbyte (configuration and audio files)	4Mbyte (configuration and audio files)
Micro-SD Card	32GB FAT32 support	32GB FAT32 support
Headphone Output (internal**)** - Load impedance	8Ω min 6mW	8Ω min 6mW