

# QE20

## Emergency Warning System



### Features

- Clear, easy to use intuitive operation
- Modular, easy to wire system
- High cabinet density
- 25W, 60W, 120W and 240W D class amplifiers
- High level alarm inputs from compatible fire alarm panels
- Fibre Networked systems for site-wide interconnection
- Touchscreen LCD for time saving service operations
- Up to 120 minutes of digital audio storage, with flexible playback options
- On-site programmable for configuration
- Approved to AS 4428.16:2020 and AS 4428.4:2016

The VIGILANT QE20 Emergency Warning System (EWS) is the latest addition to our class-leading range of emergency warning products, designed to facilitate the orderly evacuation of occupants in a building in the event of an emergency.

The QE20 is a Grade 1 EWS with a wide range of functions and optional modules. It provides a cost-effective evacuation solution for medium to large buildings and multi-building infrastructure such as commercial buildings, office blocks, hospitals, shopping centers, airports and educational campuses. The QE20 allows fire wardens or emergency services personnel to easily control and coordinate an orderly building evacuation. The QE20 complies with equipment standards AS 4428.16:2020 and AS 4428.4:2016, and can be installed to AS 1670.4 and NZS 4512.

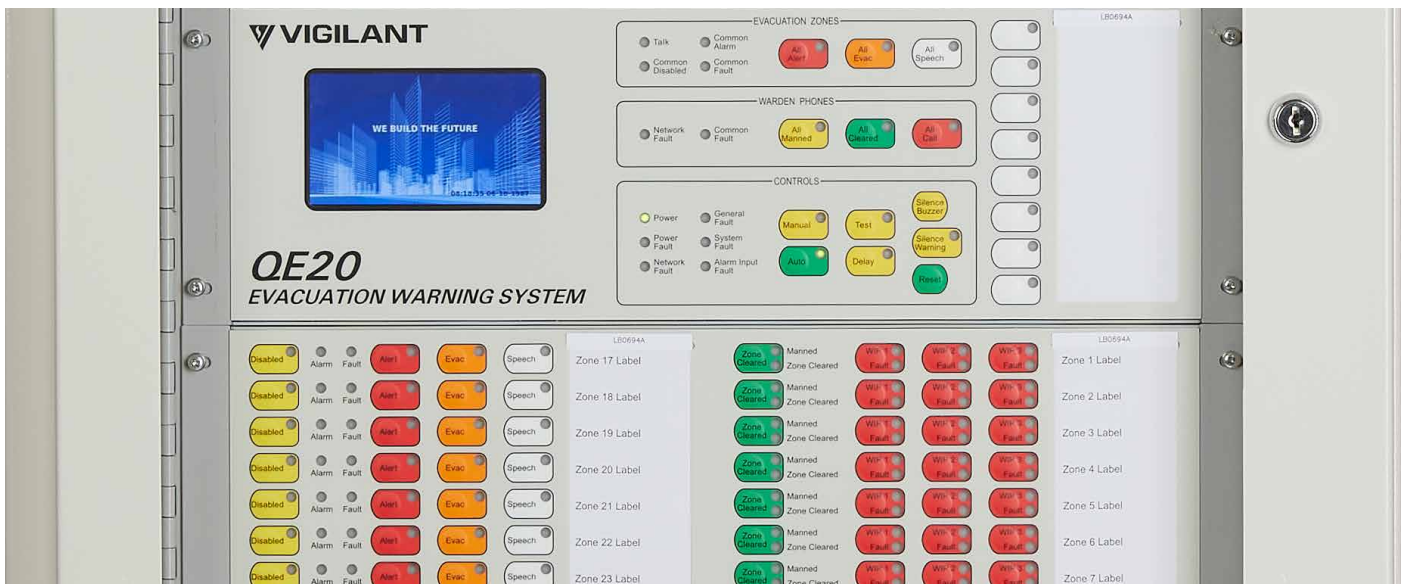
### Emergency Warning CIE

The QE20 as an EWCIE generates and controls audible warning signals via dedicated amplifiers and loudspeakers covering each level or zone of a building.

Supplementary Visual Alarm Devices (VAD) – flashing beacons can be located in areas where the background noise level may be high or hearing impaired people are often present.

The QE20 is usually connected to the fire alarm system, so that when a fire is detected it can be automatically triggered and the building evacuated. Manual Call Points (MCP), QE20 inputs or user keys may be used to trigger non-fire emergencies (e.g., gas leaks, extreme weather events, active shooter) so that different emergency tones and messages may be given to the occupants. For high-rise and other special types of buildings, the QE20 offers automatic evacuation phasing. This ensures the areas in immediate danger are evacuated first, followed by other areas at predetermined time intervals, until the whole building is evacuated in an orderly manner.

Authorised fire wardens or fire-fighting personnel may take manual control of the system. An emergency public address microphone allows the broadcast of verbal instructions to building occupants in all, or selected areas. Under non-emergency conditions the QE20 can also be used to distribute background music (BGM) and/or routine public address announcements.



## Emergency Intercommunication CIE

The QE20 as an EICIE can provide dedicated emergency telephone communications between the main phone and fire Warden Intercommunication Points (WIPs) in each zone.

## Control panel facilities

Auto and Manual buttons on the front of each QE20 allow the operating mode to be set. In Auto the QE20 will automatically evacuate the building on an alarm being registered. In Manual, touch buttons allow zone alert and evacuation signals to be manually controlled.

The controls for the evacuation and WIP system can be configured in multiple ways to match a building layout. They may be grouped per floor, or evacuation and WIP controls separated out.

The QE20's increased control density provides up to 128 audio zones per 40U cabinet.

LED indicators show current system status at a glance together with easy to use robust push button controls. Eight 'user' buttons and LEDs can be configured for site-specific functions such as:

- Background music control
- Automated test message generation
- Lockdown activation



These, and each zone and WIP control, can be named using printed labels that slide into pockets in the front panel.

## LCD touchscreen

A 4.3in. colour touchscreen display provides additional functions for operation, viewing history logs, component status, service, performing diagnostics, volume adjustments and recalling software revisions.

## Amplifiers

These are available in different power ratings to suit individual zone speaker loads:

- 4 x 25W RMS
- 4 x 60W RMS
- 2 x 120W RMS
- 1 x 240W RMS

Multiple amplifiers may be allocated to individual zones to provide separate speaker feeds (e.g. common escape paths separate to apartments / rooms) or handle larger speaker loads.

Additional amplifiers can be allocated as standby amplifiers in the case of an individual amplifier failure.

Each amplifier can be independently fed audio from:

- Four common audio inputs on the controller module, local PA microphone, or PA from another networked panel
- Any of the local audio inputs on the amplifier module itself
- Stored digitised audio files from within the amplifier module



Each amplifier provides four general purpose programmable outputs, providing switched 24VDC, which are pre-programmed for controlling fail-safe volume attenuators wired into the speaker cables. The touchscreen LCD provides functions for viewing detailed amplifier status, activating a 1kHz test tone and adjusting the amplifier output voltage (volume) which is stored in non-volatile memory.

### **WIP / relay modules**

Modules such as Warden Phone / Input Module and Relay Output Module have been designed for multiple applications, which increases flexibility and keeps costs down as a single module card can be used for various tasks.

The WIP / Input Module can be used to interface field WIP phones and Manual Call Points on the same two wire circuit, or accommodate Fire Panel alarm inputs and input signals for other applications. The Relay Output Module provides supervised 24VDC outputs for Visual Alarm Devices or voltage-free contacts for other output applications.

### **Non-emergency audio**

Background music (BGM), local and non-emergency paging may be directed to selected areas. Up to 16 optional 30-zone paging consoles or Windows PC-based paging consoles may be added for remote paging as required. The areas covered by non-emergency paging do not need to correspond to evacuation zones.

### **Phased sequencing**

The QE20 can deliver a phased sequence of messages to the protected areas, to enable safe evacuation floor by floor or area by area well before any risk of fire. The sequences can be mapped out onto a spreadsheet that can be uploaded directly into the QE20 configurator and run through a simulator prior to installing on site.

### **Additional tones and messaging**

Additional tones and complex speech messages (e.g., in different languages) can be added to provide better guidance to building occupants in the event of an emergency. Messages can be played to multiple zones at the same time and be used for applications such as site lockdowns, bomb threats, testing or fire drills. Messages can be activated automatically or manually via eight user programmable keys or other inputs to the QE20.

Messages can be specified as synchronised, so that all amplifiers in the QE20, or in fact over the whole network, play them in phase.

### **Mechanicals**

Modular construction allows cards to be placed in almost any position on the module mounting frame for easier site expansion or upgrades. The mounting frames can be removed to provide easier cabinet mounting and field wiring, if desired.

The outer door hinging has been designed to be easily reversed on site, allowing adjoining cabinets to have left- or right-opening doors, providing easier access to controls. Improved cable entry options on the cabinet top and back, provides greater cabling flexibility on site. When multiple battery sets are required, a battery tray is used to separate each set, making service and maintenance of batteries easier.

Field wiring connects to modules via demountable connectors for easy termination and module testing or swap out. Inbuilt hardware assists with field wiring routing and support in the cabinet.

### **Networking**

Networking of multiple QE20 panels may be achieved using paired copper cable or Multimode or Single Mode fibre cables. Networking may be used to distribute amplifiers, WIPs or other inputs / outputs over floors or buildings for large high-rise or spread out applications. Multiple control points can also be added for redundancy. These can be full cabinet QE20s with amplifiers and WIPs or shallow cabinet QE20s that contain controls only. Each networked panel or equipment rack can be configured to retain local control of its own facilities and can continue to operate if the network communications is lost.

### **Programming**

The QE20 uses Windows based programming tools with familiar layouts and operating styles, making them easy to use.

The configurator allows editing of multiple QE20 site configurations at a time, creation of a PDF file for records keeping, printing of the button labels for the front panel, and simulation of most of the QE20's operation prior to installation.

The QE20's site configuration is downloadable and uploadable. Several options are available for programming the site configuration, such as factory or onsite.

Specifications				
<b>Cabinet Size:</b>	28U	40U	Double 28U	Double 40U
Height (mm)	1330	1863	1330	1863
Width (mm)	575	575	1150	1150
MECP Depth (mm)	388	388	388	388
SECP Depth (mm)	213	213	213	213
<b>Maximum Number of Zones with:</b>				
25W RMS Amps	28	40	56	80
60W RMS Amps	20	32	40	64
120W RMS Amps	10	16	20	32
240W RMS Amps	5	8	10	16
WIP Zones (Max)	56	56	120	120
<b>Number of Zones</b>	224 displayed on front panel – up to 600 internally			
<b>Number of Network Nodes</b>	64			
<b>Operating Temperature</b>	-5°C – 45°C 10% – 95% RH non-condensing			
<b>Cabinets</b>	28U, 40U 19in. rack mounting, body 1.6mm mild steel			
Depth	388mm deep, 213mm SECP cabinet			
Colour, Finish	Dulux Titania Ripple, 288 1235Z			
<b>Power Supply</b>				
Mains Supply	230-240V AC 50Hz; 4.2A per PSE			
DC Output per PSE	26V at 27A peak, non-continuous			
Charging Current	2.5A nominal per PSE			
Battery Capacity	Up to 150 AHR (at 24V) per 40U cabinet			
<b>Audio Inputs</b>	4 on controller, up to 4 per amplifier module			
Input Type	Balanced; transformer / capacitor isolated			
Input Level	315mV rms; 1.4V rms max.; 10K input impedance			
Common Mode Rejection	>33dB			
<b>Emergency Speech Mic</b>	Noise-cancelling, front panel mounted			
Automatic Level Control	30dB dynamic range			
<b>Amplifiers</b>	4 x 25W, 4 x 60W, 2 x 120W, 1 x 240W per module			
Output Voltage	100V rms at 1kHz sine wave			
Efficiency	>85%			
100V Line Supervision	56K / 100K EOL Single / Dual Spur			
Max Capacitive Load	200nF			
Frequency Response	215Hz – 8400Hz (+-3dB)			
Signal to Noise (SNR)	>75dB(A)			
Total Harmonic Distortion	<0.25%			

<b>Message Storage</b>	
Total Message Storage	200 messages, up to 120 minutes total
Play Capability	Any message to any zone output
<b>GP Inputs</b>	
Input Voltage Range	20 per WIP / Input; 4 x controller; 2 x RS485 / nET, 4 x MUI
Input EOL	0-30Vdc
Input States	10k
	4 state: Normal, Short, Open, Resistance
<b>Relay Outputs</b>	
Rating	2 x controller, 8/16 x Relay Output Module
	NO/NC relay contact; 2A at 30V DC resistive
<b>Amplifier GP Outputs</b>	
Output Voltage	4 x amplifier module, normally-energised
	24Vdc at 100mA; optional load supervision
<b>Visual Alarm Outputs</b>	
Rating	8 x Relay Output Module
	24V dual polarity 1A max; 2k7 EOL supervised
<b>WIPs</b>	
WIP Handset	320 WIPs (20 per WIP / Input Module; 16 Modules)
Ring Volume	Vigilant FP0938 compatible
Collocated Input	>80 dB(A)
Supervision	Parallel wired MCP or 'Zone manned' pushbutton
Wiring	10k EOL
	1km of screened cable
<b>FIP Inputs</b>	
High Level Links	RZDU, Panel-Link, Computer Port (4100ESi)
<b>Max Inputs</b>	
	320 WIP / Input; 528 RZDU; virtually unlimited Panel-Link; 600 Computer Port

#### About Johnson Controls:

At Johnson Controls (NYSE:JCI), we transform the environments where people live, work, learn and play. As the global leader in smart, healthy and sustainable buildings, our mission is to reimagine the performance of buildings to serve people, places and the planet. Building on a proud history of nearly 140 years of innovation, we deliver the blueprint of the future for industries such as healthcare, schools, data centers, airports, stadiums, manufacturing and beyond through OpenBlue, our comprehensive digital offering. Today, with a global team of 100,000 experts in more than 150 countries, Johnson Controls offers the world's largest portfolio of building technology and software as well as service solutions from some of the most trusted names in the industry.

Visit [www.johnsoncontrols.com](http://www.johnsoncontrols.com) for more information and follow [@JohnsonControls](https://twitter.com/JohnsonControls) on social platforms.

#### Australia

Level 3, 37 Dalmore Drive Scoresby, Vic, 3179  
Tel: 1300 725 688  
Email: [fdp.customerservice.anz@jci.com](mailto:fdp.customerservice.anz@jci.com)

#### New Zealand

17 Mary Muller Drive Hillsborough PO Box  
19-545 Woolston Christchurch 8241  
Tel: +64 9 635 0617  
Email: [fdp.customerservice.anz@jci.com](mailto:fdp.customerservice.anz@jci.com)

© 2023 Johnson Controls. All rights reserved. All specifications and other information shown were current as of document revision date and are subject to change without notice.

May 2023 | [www.vigilant-fire.com.au](http://www.vigilant-fire.com.au)