# QE20
# Vigilant Early 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.

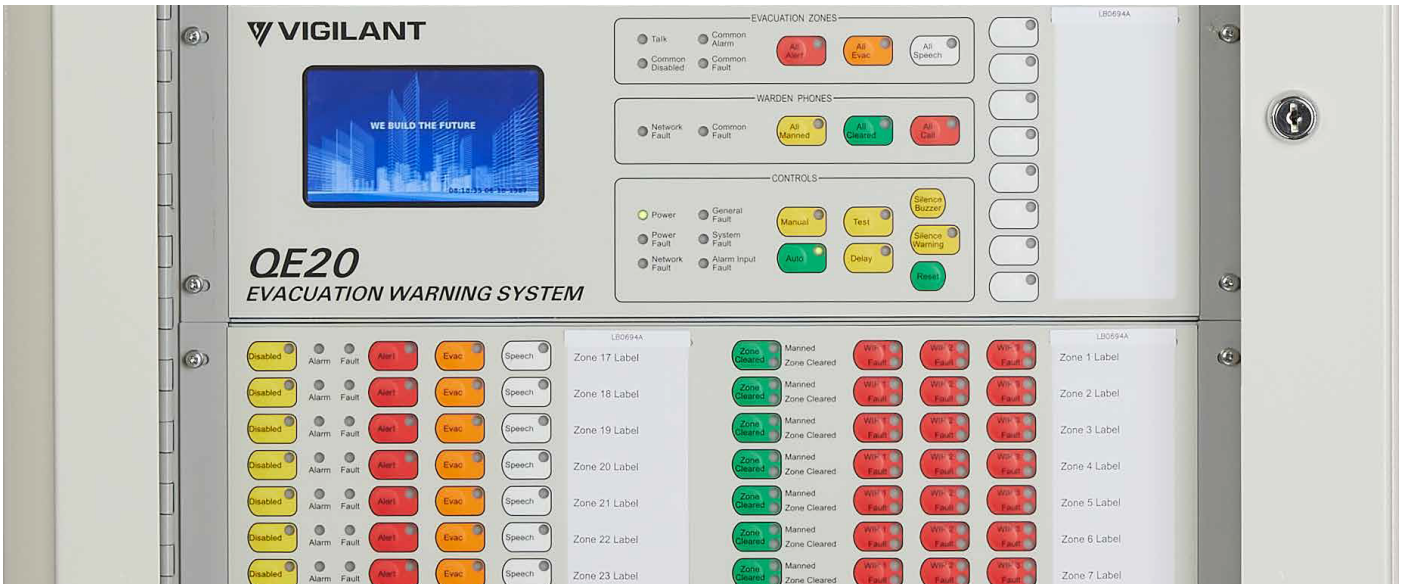
## EMERGENCY WARNING CIE

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 & 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 | | | | |
|---|---|---|---|---|
| **Cabinet Size:** | **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 |
| | | | | |
| **Maximum Number of Zones with:** | | | | |
| 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 |
| | | | | |
| **Number of Zones** | 224 displayed on front panel – up to 600 internally | | | |
| | | | | |
| **Number of Network Nodes** | 64 | | | |
| | | | | |
| **Operating Temperature** | -5°C – 45°C 10% - 95% RH non-condensing | | | |
| | | | | |
| Cabinets | 28U, 40U 19in. rack mounting, body 1.6mm mild steel | | | |
| Depth | 388mm deep, 213mm SECP cabinet | | | |
| Colour, Finish | Dulux Titania Ripple, 288 1235Z | | | |
| | | | | |
| **Power Supply** | | | | |
| 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 | | | |
| | | | | |
| Audio Inputs | 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 | | | |
| | | | | |
| Emergency Speech Mic | Noise-cancelling, front panel mounted | | | |
| Automatic Level Control | 30dB dynamic range | | | |
| | | | | |
| Amplifiers | 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% | | | |

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

QE20