

VA405 Emergency Microphone

The VA405 has been designed to offer a simple life safety microphone for AVAC voice alarm systems for global emergency voice announcements.

It comprises a close-talking noise-cancelling fist microphone, speak-bar, two status indicators (OK and Fault), all housed in a red steel wall mount enclosure with a clear window and lockable door.

To make an emergency announcement, the thumb switch on the fist microphone is pressed. The speak-bar will be lit solid green and speaking may commence.



TECHNICAL DESCRIPTION

Speech is picked up by the microphone and the signals are passed to a voltage controlled amplifier under control of a signal derived from rectifying the stage output signals, providing a 3:1 compression ratio.

The output of this stage is fed to an LED output level display and a three-band equalizer (100 Hz, 1 kHz and 10 kHz).

The audio line is monitored for faults by means of a 15 V phantom voltage that is injected from the AVAC.

The control lines are monitored using voltage divider techniques.

FAULT MONITORING

When the Mic. Monitor jumper link is in the 'Enable' position, the microphone capsule is monitored for impedance and current absorption. Any deviation outside this pre-set window is detected as a fault, which lights the Fault LED.

The audio lines are monitored by the phantom voltage detect circuit which notifies any loss of the 15 V phantom (due to an open circuit or short circuit line) to the monitor circuit. The monitor circuit causes an open circuit condition to be set on the PTT, signalling a fault to external control equipment.

CABLES

The VA405 should be connected to AVAC using two 1.5 mm² four-core fire-rated cables. Maximum distance is 500 metres.

Specification

Connection	2 x 4 core 1.5 mm ² fire-rated cables
Output	0 dB Line Level (775 mV)
EQ Filters	100 Hz, 1 kHz, 10 kHz \pm 12 dB
Master and Chime Levels	$-\infty$ to + 4 dB
Supply Voltage	20 – 32 VDC (from AVAC)
Current consumption	<100 mA
Noise gate threshold	-30 dB
Compression ratio	3:1

Internal adjustments

Microphone monitoring selector

This jumper link should be set to the "enable" position to switch on the microphone's fault monitoring circuitry.

Tone controls

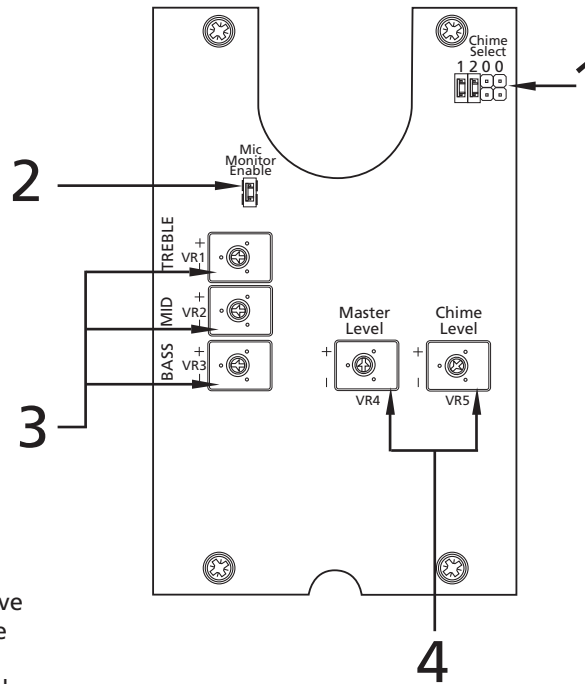
Three Equalization (Tone) controls are provided, each with ± 12 dB of adjustment. These are:-

- Bass (100 Hz)
- Mid (1 kHz)
- Treble (10 kHz)

These can be used to improve intelligibility and reduce the effects of feedback.

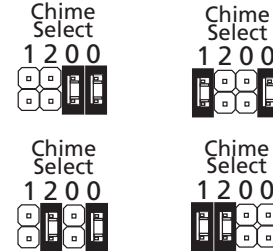
Start by setting the bass and treble to minimum (fully anti-clockwise) and the mid control at maximum.

Then adjust to get the best results.



Chime select

The microphone can be set up so that a 1, 2 or 3 note chime is transmitted when its PTT (push-to-talk) switch is operated. The number of chimes that will sound is dependant on the configuration of the microphone's Chime Select jumper links, as detailed below:-

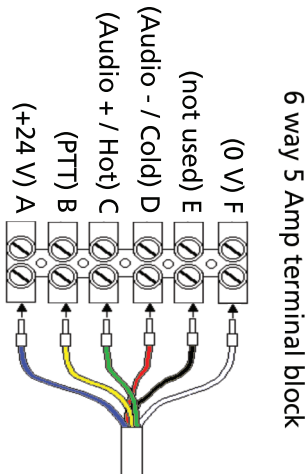


Master and Chime level controls

Adjust the Chime Level control to balance it against the speech level.
Adjust the Master Level control to set up the overall output level.

Internal connections

TO AVAC



Front panel LEDs

	NAME	FUNCTION/DESCRIPTION
1	OK	GREEN when power is applied
2	FAULT	AMBER when fault detected
3	SPEAK	GREEN when system ready for emergency announcement
4	VU METER	Constantly active. Lights in synchrony with audio peaks to indicate that the audio path to the input stage is intact.