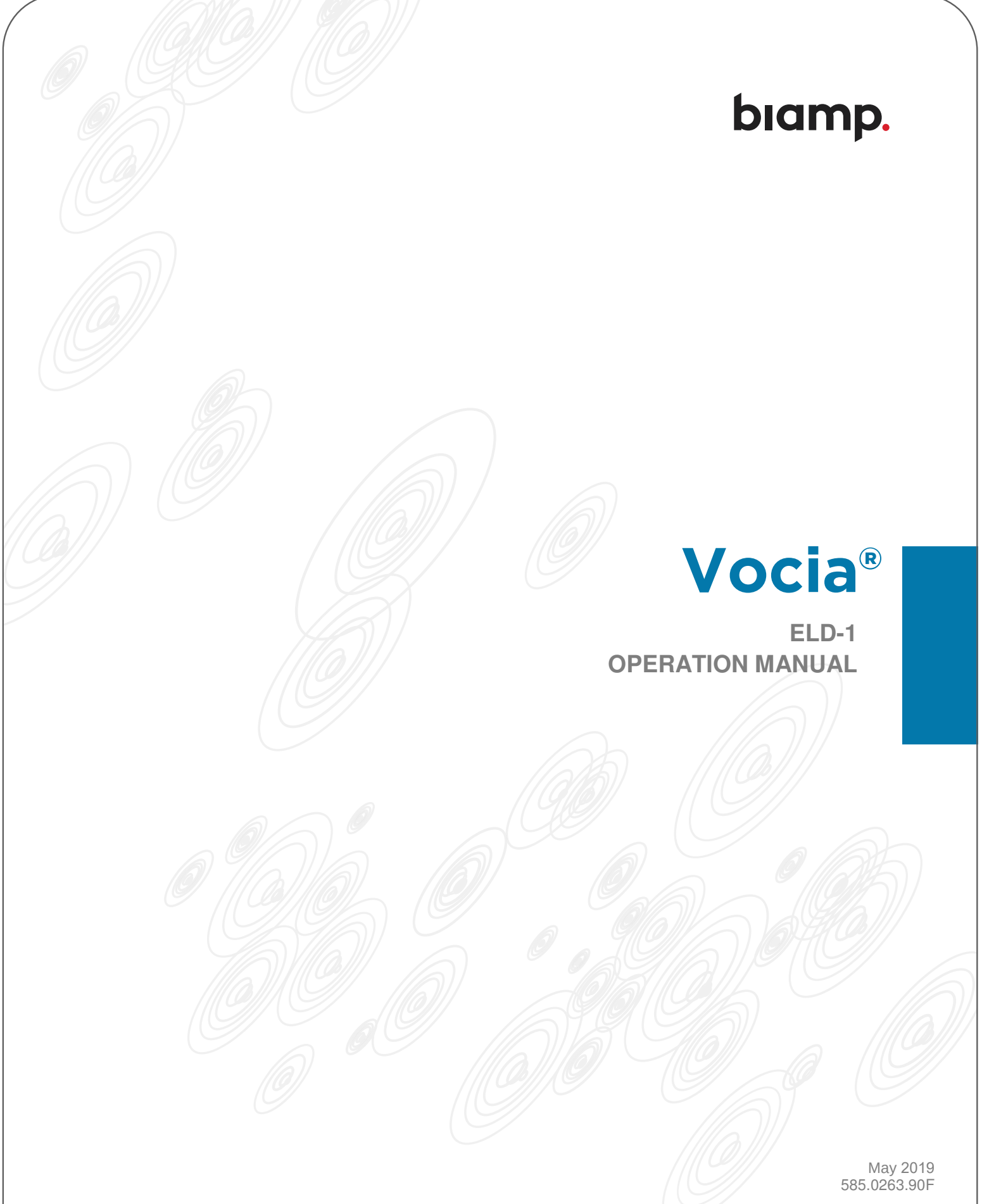




biamp.

Vocia[®]

**ELD-1
OPERATION MANUAL**

May 2019
585.0263.90F

ELD-1 Product Description

The ELD-1 is a networked safety device for use with the Vocia VA-8600, VA-8150CV, VA-4300CV, VA-2060(e), VA-4030(e) amplifiers and VO-4e Output device. It is an integral part of standards-compliant voice evacuation and paging notification systems.

Setup and Use

The Vocola software provides an intuitive interface for configuration of the ELD-1. The information supplied by this manual relates to physical connections and assignment. For more details on software setup, please consult the Vocola Help File.

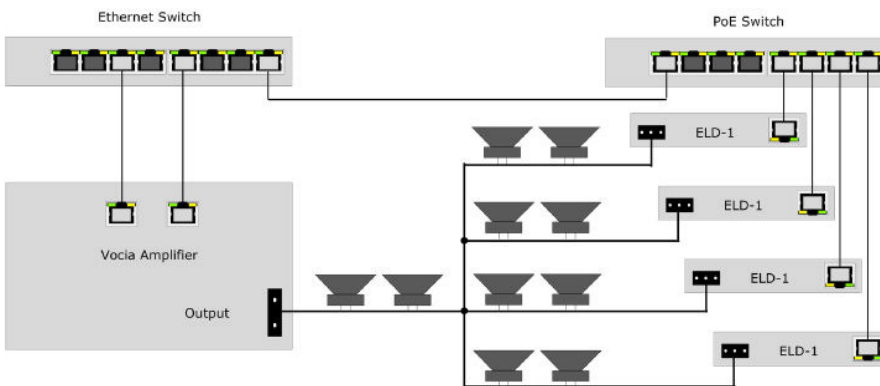
Installation

The ELD-1 may be mounted in a rack or on a wall using four screws at the end of the flanges or two screws in the keyholes on the rear.

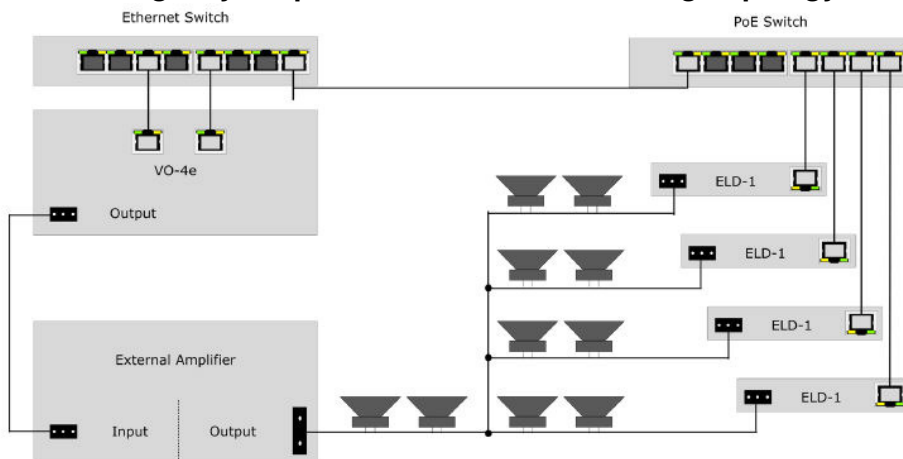
An ELD-1 should be connected at the end of every speaker line that is to be monitored. The diagram below shows the appropriate connection to the speaker wire and the network. In EN54-16 compliant systems the ELD-1 must be connected to a compliant Ethernet switch that is backed by an uninterruptible power supply (UPS).

Install the unit away from heat sources, such as vents and radiators, and in rooms with adequate ventilation. Ensure that air can circulate freely behind, beside, and above the unit. Do not exceed the maximum ambient operating temperature of 32° - 108° F (0° - 42°C). Be aware of conditions in an enclosed rack that may cause the temperature to exceed ambient room conditions.

Vocola Amplifier with ELD-1 Wiring Topology



VO-4e Emergency Output device with ELD-1 Wiring Topology

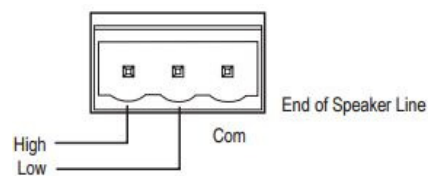


Speaker Line Connector

A plug-in barrier-strip connector on the ELD-1 connects the device to the end of the speaker line. The device needs to be connected to an appropriate monitoring point on the speaker cable—typically after the last speaker on the run. Connect the speaker line between the Com pin and the appropriate Low or High pin.

Speaker Circuit	Amplifier Power	
	Less than 100W	100W or greater
4Ω	Low	Low
6Ω	Low	Low
8Ω	Low	Low
25 Volt	Low	Low
70 Volt	Low	Low
100 Volt	Low	High

Note that for circuits connected to the Low terminal the ELD-1 presents a 0.5 Watt load to a 70V circuit and a 1 Watt load to a 100V circuit.



Output Fault Detection

The Amplifier monitors (supervises) for faults on speaker connections using a combination of multiple out-of-band (inaudible) high frequency tones.

For end-of-line detection, one or more (up to 15 maximum) ELD-1 units can be connected to the speaker line. To ensure correct operation of fault detection it is necessary to follow these guidelines:

- Recorded audio messages or audio content with continuous or swept tonal components (e.g. alert tones) and any content with significant high frequency harmonic content should be band limited (>24dB/octave) at 15 kHz during recording. Note that program content that is distorted due to poor recording techniques may contain excessive high frequency harmonics.
- Signal level adjustments within a Vocia system should be set so as to minimize clipping. Severely clipped signals may also affect the out-of-band fault detection tones.
- The use of speaker cables that inherently attenuate high frequencies is not supported (e.g. screened cables). Speaker cables must maintain frequency response to the end of line of less than -3dB @ 20kHz at with respect to 1kHz.
- Speaker cables longer than 500 feet may prevent correct operation of ELD and Ground Fault monitoring capabilities. An advantage of Vocia is that amplifiers may be easily distributed close to speakers, thereby minimizing long runs of expensive and potentially lossy speaker cable.
- Highly capacitive speaker lines or loads may prevent correct operation of the ELD detection system.
- Legacy monitored speaker circuits that use capacitors and resistors or similar methods must have all legacy monitoring circuitry removed for correct operation of the ELD detection system.
- For EN 54-16 compliance, one or more ELD units must be fitted. End of Line detection must be enabled in the Vocia software.

Fault Indication

When a fault is detected on the speaker line or amplifier channel, the lower left LED on the RJ-45 socket will illuminate Amber and remain on until the fault is resolved. Providing a valid PoE power source and Ethernet connectivity is available the ELD-1 the solid amber indicator can be used to physically identify the ELD-1 that is reporting an issue.

Amber LED	Green LED	Description
None	None	No power or data connectivity.
None	Flashing Green	Unit is receiving monitoring tones from the speaker line. Ethernet link has been established between the switch, PoE midspan or Injector device.
Amber	Flashing Green	Unit is not receiving monitoring tones from the speaker line. There is a speaker line fault.
Amber	None	Unit is powered via Midspan PoE injector and is not receiving monitoring Tones from speaker line. There is no Ethernet Link to its associated Switch Port.