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Vocia®

CI-1
OPERATION MANUAL

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BIAMP SYSTEMS 9300 SW GEMINI DRIVE, BEAVERTON, OREGON 97008 U.S.A. 503.641.7287 BIAMP.COM

CI-1 Product Description

The CI-1 Control Interface is a companion product to the Vocia LSI-16 Life Safety Interface. It facilitates necessary connections to the LSI-16/LSI-16e to meet EN 54-16 standards.

Setup and Use

The CI-1 interfaces directly to LSI-16(e) devices and external equipment.

NOTE: To operate correctly, the CI-1 requires an accompanying LSI-16(e) plus connections to external components and devices as described in this manual.

The CI-1 should be mounted in close proximity to the accompanying LSI-16(e).

For EN 54-16 compliance, refer to the Vocia VACIE Reference Guide which details mandatory installation requirements.

Incorrect configuration, removal, or non-installation of some system elements may result in the LSI-16(e) or CI-1 reporting a fault or alarm condition. This is normal operation. For correct, fault-free operation, inputs and outputs must be connected to the LSI-16(e) and CI-1 or external equipment as detailed in this manual.

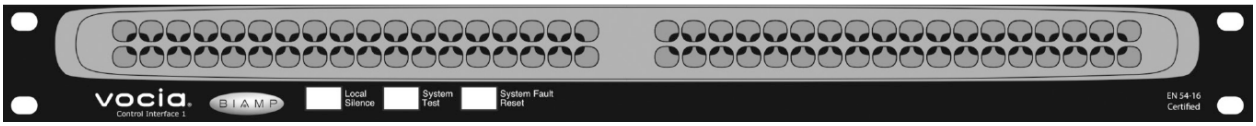
Installation

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.

The unit requires one 1.75 inch (44.45 mm) high and 19-inch-wide rack space with 10 inch (254 mm) depth. Mounting the unit using four screws with washers will prevent marring of the front panel. PVC or nylon washers are appropriate.

Front Panel Information

The CI-1 has three switches on the front panel and an internal (local) sounder, audible through the panel.



Local Sounder

The local sounder commence whenever any alarm input receives an external signal from the fire detection equipment, control and indicating equipment (CIE) or equivalent.

It will also commence when any fault is detected. The sounder will continue until the alarm or fault is reset.

Local Sounder Silence Switch

If the local sounder is operating, this switch may be used to silence it. The alarm or fault condition that caused the sounder to operate is unaffected by operating this switch. If a new alarm or fault is detected, the sounder will restart. Press and hold the switch for two seconds to operate.

System Test Switch

This switch will initiate a test sequence on the LSI-16(e). All indicators in use on the LSI-16(e) will light briefly and the sounder in the CI-1 will sound briefly, thus confirming that essential annunciators are functional. Press and hold the switch for two seconds to initiate the test sequence.

System Fault Reset Switch

A System Fault denotes that the LSI-16(e) cannot guarantee correct operation of the Vocia system in an emergency mode. It is indicated on the LSI-16(e) and by the sounder in the CI-1. A system fault can only be cleared by operating the System Fault Reset switch.

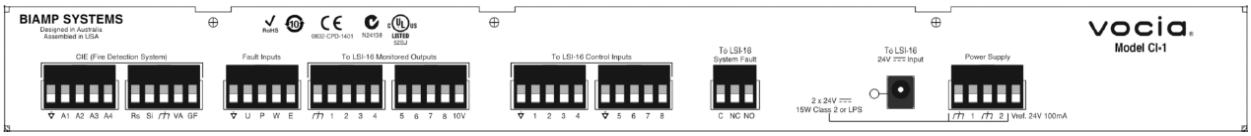
Note: when the LSI-16(e) is powered up, the System Fault will be operational until the System Fault Reset switch is pressed. Press and hold the switch for two seconds to reset a System Fault.

Connections

There are four main interconnection paths to the rear panel:

- Conections to the fire detection system (CIE)
- Connections from external devices for fault indications
- Connections to the LSI-16(e)
- Power supply connections

Each of these connection paths has several circuits as detailed below.



CIE (Fire Detection System) Connections

Isolated Ground provides a circuit return that is not directly connected to the CI-1 and LSI-16(e) Ground.

Alarm inputs 1 through 4 are signals form the fire detection system. These signals place the Vocia system into an emergency mode according to the configuration determined for the input in Vocia software. The Alarm Reset Input cancels all active alarms in the system while the Alarm Silence Input maintains all active alarms but causes emergency messages to be silenced. The CI-1 provides the necessary terminating resistors for each input. Inputs are asserted by a positive transition to 12-24V with respect to the ‘Isolated Ground’ connection. This transition should preferably be derived from a dry contact closure to a remote 12V-24V source, or to the CI-1 24V Reference Out.

The Voice Alarm Active output is provided to signal to the fire detection system that the Vocia system has been activated in emergency mode in response to an Alarm Input. A constant output denotes that an emergency message is playing. A pulsed output (1.25Hz) indicates that an alarm is active but emergency messages have been silenced.

The General Fault Output is provided to signal to the fire detection system that there is a fault in the Vocia system that could affect delivery of an emergency message.

The Voice Alarm Active and General Fault outputs pull low (to ground) when active. The outputs are monitored by the LSI-16(e) for open-circuit or short-circuit to ground or power supply and for over-voltage on the output pin (>35V DC). If incorrect conditions are detected a Fault is signaled. Output monitoring facilitates compliance with voice evacuation standards. For monitoring purposes, a load (maximum 22kΩ) must be connected between each output and a positive voltage source referenced to the LSI-16(e) Ground, at the far end of the connection to the CIE (i.e. at the CIE). An LED indicator connected through a resistor to a positive voltage at the CIE will suffice as a monitoring load.

Note that the LSI-16(e) provides a 10V source at the '10V Out' terminal on the LSI-16(e). Outputs may be pulled up at this source; however, the total current drawn from the source must not exceed 100mA. If an external voltage source is used for the outputs, it must not exceed 35V DC and in addition to the output loads, must also be connected to the LSI-16(e) ‘External Supply Overvoltage Monitor’ input (refer to LSI-16(e) User Manual) for monitoring purposes. Due to monitoring constraints, it is not possible to use both the LSI-16(e) internal 10V source and an external source.

Connections from External Devices for Fault Indications

These circuits are provided on a single five-position plug-in barrier strip connector. All Inputs are fully isolated from the CI-1 and LSI-16(e) internal circuits. The Isolated Ground provides a circuit return that is not directly connected to the CI-1 and LSI-16(e) Ground.

These inputs allow the signaling of faults from external devices to the Vocia system so it may indicate and log faults that could affect emergency operation. These fault signals are typically derived from contact closures on external devices. For multiple devices (e.g. Multiple UPS units), fault contacts from each device may be 'wired-OR' connected (in parallel) to the fault input. UPS fault inputs are typically derived from UPS units used in the system (e.g. for backup powering of Vocia Amplifier units). PSU fault inputs are typically derived from battery backed power supplies used to power parts of a Vocia system.

EWS PSU fault inputs are derived from optional emergency microphones (EWS-x) to indicate loss of power supply. Ethernet fault inputs are derived from fault contacts of industrial Ethernet switches used in critical parts of a Vocia system. All fault inputs are asserted by connecting the relevant pin to Isolated Ground. The UPS Fault, PSU Fault and EWS PSU Faults must be connected to 24V when non-asserted either by direct connection or through pull-up resistor (maximum 2.2kΩ). The 24V reference voltage output on the power supply connector may be used for this purpose. The Ethernet Fault input is pulled up internally and does not need an external pull up.

Connections to LSI-16(e)

These circuits are provided on:

- Four five position plug in barrier strip connections
- One three position plug in barrier strip connector
- One DC barrel jack.

Circuit connections may be made by directly connecting pin-for-pin to the vertically adjacent connector. Short interlinking cables are provided with the CI-1 for this purpose. Refer to the LSI-16(e) Operation Manual for the circuit functions of these connectors.

Note that the LSI-16(e) PSU Fault, Protection Fault and Path Fault outputs are connected to the CI-1 purely for the purpose of providing required monitoring resistors (these outputs are not otherwise used by the CI-1). If these outputs are required for remote fault indications, the relevant connections should be removed from the Monitored Outputs connector of the LSI-16(e). As described in the LSI-16(e) Operation Manual, and external monitoring resistor will be required if these circuits are used.

Power Supply Connections

These circuits are provided on a single five-position plug-in barrier strip. Inputs are provided for two 24V power supply circuits to drive the LSI-16(e). This facilitates standards compliance by providing a means of redundant connections.

Each power supply must be capable of 24V DC at 15Watts. The Ground 1 and Ground 2 connections are internally connected together and to system ground. The VRef connection may be used as a voltage source for pull-ups on required fault inputs. This output is current limited at 100mA.

Loss of power to either power supply input will result in the LSI-16(e) detecting a fault. If standards compliance is not required for an installation, a single power supply connection must be paralleled to the two power supply inputs to avoid generating a fault signal.