

VM-3000

Hints on Speaker Line Surveillance

Speaker line surveillance can be realised by two methodologies, first is surveillance by impedance measurement and second is surveillance by end-of-line. This document shed the light on end-of-line surveillance.

The end-of-line (EOL) module (VM-300SV) is required to be installed at the end of each speaker line. The function of this module is detecting a 40 Hz pilot tone and activating an emergency control input (ECI) contact upon miss detecting the pilot tone. The number of ECI per each VM-3000VA and VM-3000E is six, as well as the speaker line outputs; however, five of those ECI can be programmed for EOL function, due to the fact that the sixth ECI is operating with voltage polarity.

In this document, a solution for combining two EOL modules to one ECI has been proposed to overcome the limitation number of five ECI, when surveillance by EOL is required for six speaker lines. Furthermore, explanation for combining the two surveillance methods (Impedance and EOL) has been clarified.

The document is arranged in the following order. Section 1, explanation for combining impedance and EOL methods. Section 2, Hardware modification for cascading two EOL modules.

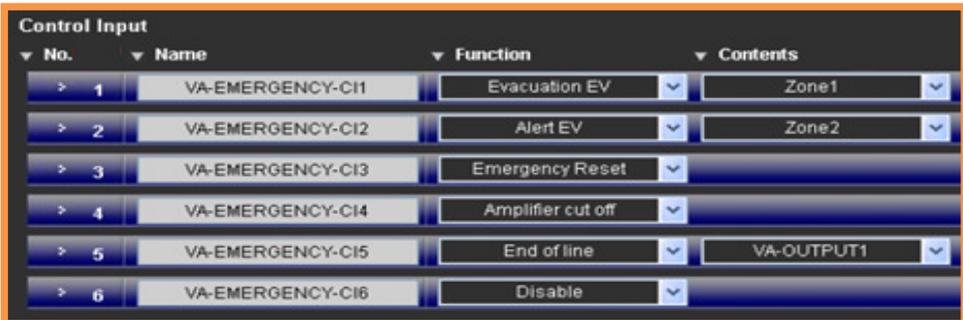
(Section 1)

Combination of Impedance and EOL Speaker Line Surveillance

EOL surveillance can be set for each output in the VM-3000 setting software, under the system menu. That does not mean that each output requires to be monitored with EOL as impedance monitoring is running simultaneously. EOL monitoring can be activated if an ECI is assigned to this function as in the following example.

Example

EOL surveillance for speaker line outputs can be selected or deselected in the VM-3000 setting software, under the menu event and sub menu emergency setting. If an ECI is programmed to the End of Line function as shown in Figure 1, control input No.5.



| No. | Name | Function | Contents |
|-----|------------------|-------------------|------------|
| 1 | VA-EMERGENCY-CI1 | Evacuation EV | Zone1 |
| 2 | VA-EMERGENCY-CI2 | Alert EV | Zone2 |
| 3 | VA-EMERGENCY-CI3 | Emergency Reset | |
| 4 | VA-EMERGENCY-CI4 | Amplifier cut off | |
| 5 | VA-EMERGENCY-CI5 | End of line | VA-OUTPUT1 |
| 6 | VA-EMERGENCY-CI6 | Disable | |

Figure 1: ECI number 5 is configured to monitor VA-Output1 by EOL Method.

The ECI number five is assigned to the function End of Line to monitor VA-Output1 with EOL method. Simultaneously impedance monitoring is running for all outputs including VA-Output1.

(Section 2)

Hardware Modification for Cascading two EOL Modules

A hardware modification is required for cascading two EOL modules to one ECI. A resistance of a value 3.3 KOhm is required to be soldered in parallel to R10 in each module as shown in Figure 2.

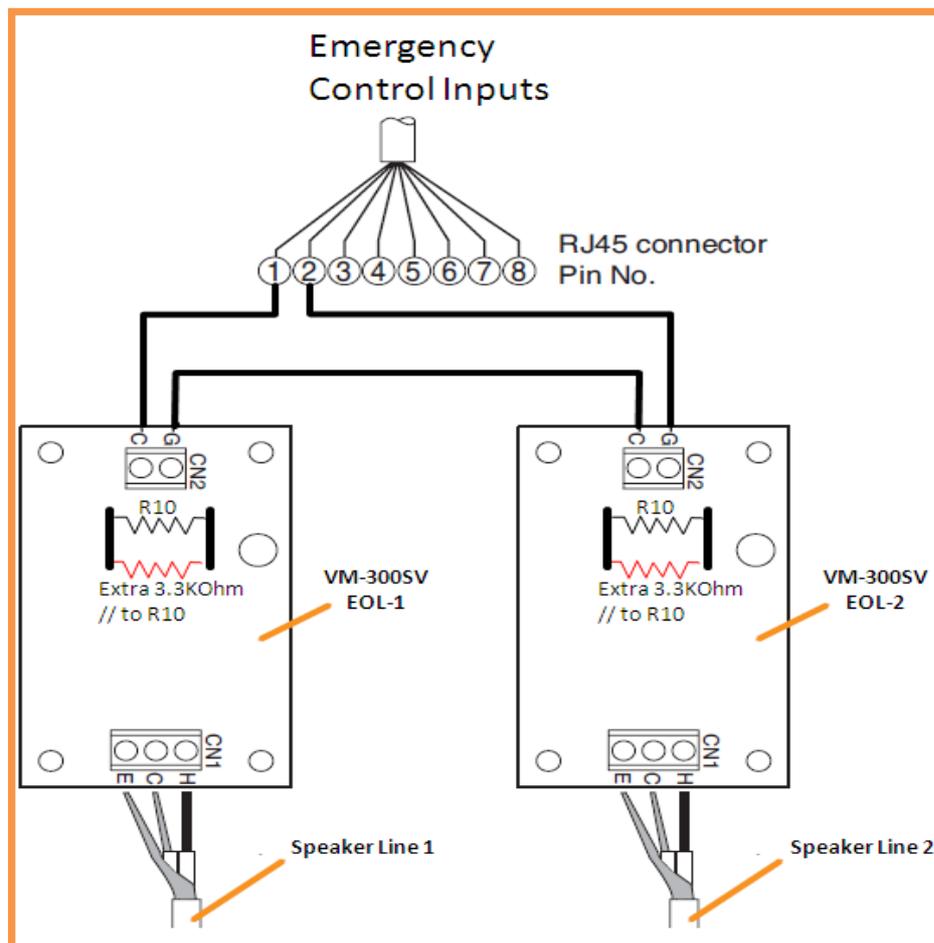


Figure 2: Cascading Two EOLs to One ECI.

The extra 3.3 kOhm resistor is shown in red per each module. The ECI is connected in series to CN2 in EOL-1 and EOL2. This ECI in the setting software should be programmed either for monitoring speaker line 1 or speaker line 2.