Tech Bulletin #141114 Connecting a ELK-110v5 Voice Driver with a DSC NEO Series Security Control

To connect a ELK-110v5 Voice Driver to a DSC NEO control and have the Fire voice message activate via pulse detect, one of the programmable PGM outputs on the control board must be used. The alarm bell output on the NEO cannot be used. This is because DSC has instituted a non-industry standard pulse patter that is not compatible with the ELK-110v5. The ELK-110 continues to work fine with all alarm controls that conform to the industry standard temporal pulsed pattern for fire. See Q & A section below.

Program the PGM1 Output on the NEO series control as a Burg & Fire Follower (Program location 009, type 101), then connect the wires from the ELK-110v5 to the NEO control board as follows:

Red wire - To AUX + or Bell + terminal. (The ELK-110v5 will draw its operating power from this terminal.)

Black wire - To any negative terminal EXCEPT the BELL – (minus) terminal. The NEO BELL – (minus) produces a non-standard and non-compatible pulsing pattern. Do not use this terminal. Use another negative terminal on the control.

Brown wire - To the PGM1 output terminal. When programmed as a Burg & Fire Follower this output will produce a consistent pulse pattern that the ELK-110 will be able to decode and then play the Fire voice message.

Q: What is different about the alarm bell output on the NEO Control vs. alarm bell outputs of other controls?

A: The alarm bell output on the NEO Control producesa non-standard pulsed pattern of 1 sec. Hi and 1 sec. Lo. **The industry standard for a temporal pulsed alarm output is 500mS Hi and 500mS Lo.** Besides this timing difference, the NEO produces 9mS short spikes every 60mS during the 1 sec. Lo time. Elk does not know the reason or purpose for these 9mS spikes.

The ELK110 has been tested and found to work with the NEO PGM1 output after it is programmed as a Burg & Fire Follower. The NEO PGM1 output does not seem to produce the 9mS short spikes every 60mS like the alarm bell output, even though it does pulse at the longer 1 sec. Hi and 1 sec. Lo rate. The ELK-110v5 was designed to be adaptive to the slightly longer pulse rates, but it cannot tolerate or adapt to the 9mS spikes every 60mS.

Figure 1 on the reverse side is an oscilloscope screen capture showing the DSC NEO alarm bell output with the non-standard pulse pattern and the injected 9mS every 60ms pulses. Figure 2 is an oscilloscope screen capture showing another alarm panel bell output with the industry standard “Temporal” pattern, This is the pattern that all temporal compatible alarm controls have historically produced including the DSC controls prior to the new NEO control.

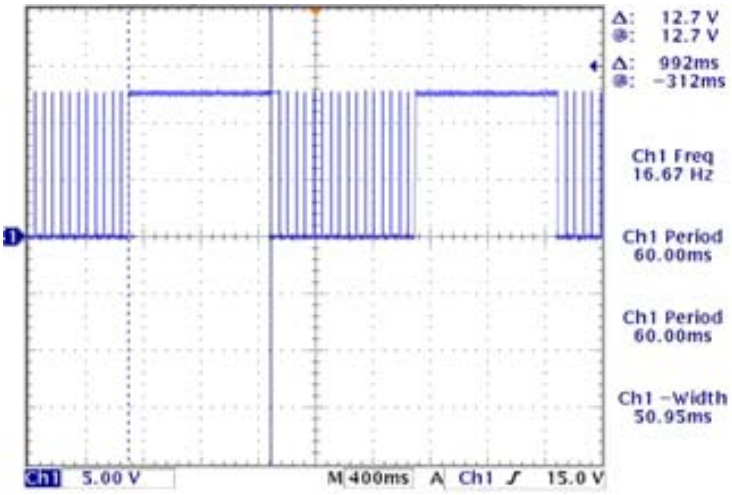

Figure 1. Non-industry standard pulses of the NEO control.

Each pulse is High for 1 sec. and Low for 1 sec. During the Low 1 sec. there is a 9mS Intermediate pulse occurring every 60mS. During the Low 1 sec. time it should be completely off.

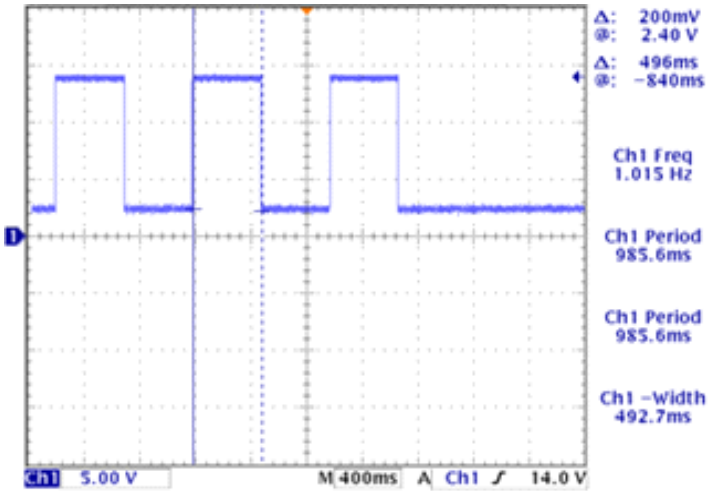

Figure 2. Industry standard “Temporal” Fire pulse

Each pulse is High for 500mS and Low for 500mS. This pattern is repeated 3 cycles followed by an off or quiet time of 1.5 sec.