

# APPLICATION Note

## Paging Power

July 17, 2019

### TELECOM SOLUTIONS FOR THE 21ST CENTURY

## Viking Paging Amplifiers



**Multi-Line Loud Ringer/2 Watt Paging Amplifier** The PA-2A monitors up to 6 analog lines for ringing or can be activated by a phone system contact closure. A loud electronic warble, a chime, a gong or a door chime can be selected to announce incoming calls. To page, connect to a paging port or unused trunk input or FXO port on a phone system. The PA-2A includes one paging horn and power supply. See DOD# 485 for more info.



**General Purpose 15 Watt Telecom Paging Amplifier** The PA-15 allows paging from a Key, PABX or Centrex paging port, or connect to an unused trunk input or FXO port (36 volts of talk battery). The PA-15 can also answer a ringing analog PABX station, Centrex, C.O. line or FXS, to allow paging, then disconnect on CPC, busy, silence or 16 to 72 sec (on/off) default timer. Four electronic tones are available for loud ringing. Power supply included. See DOD# 486 for more info.

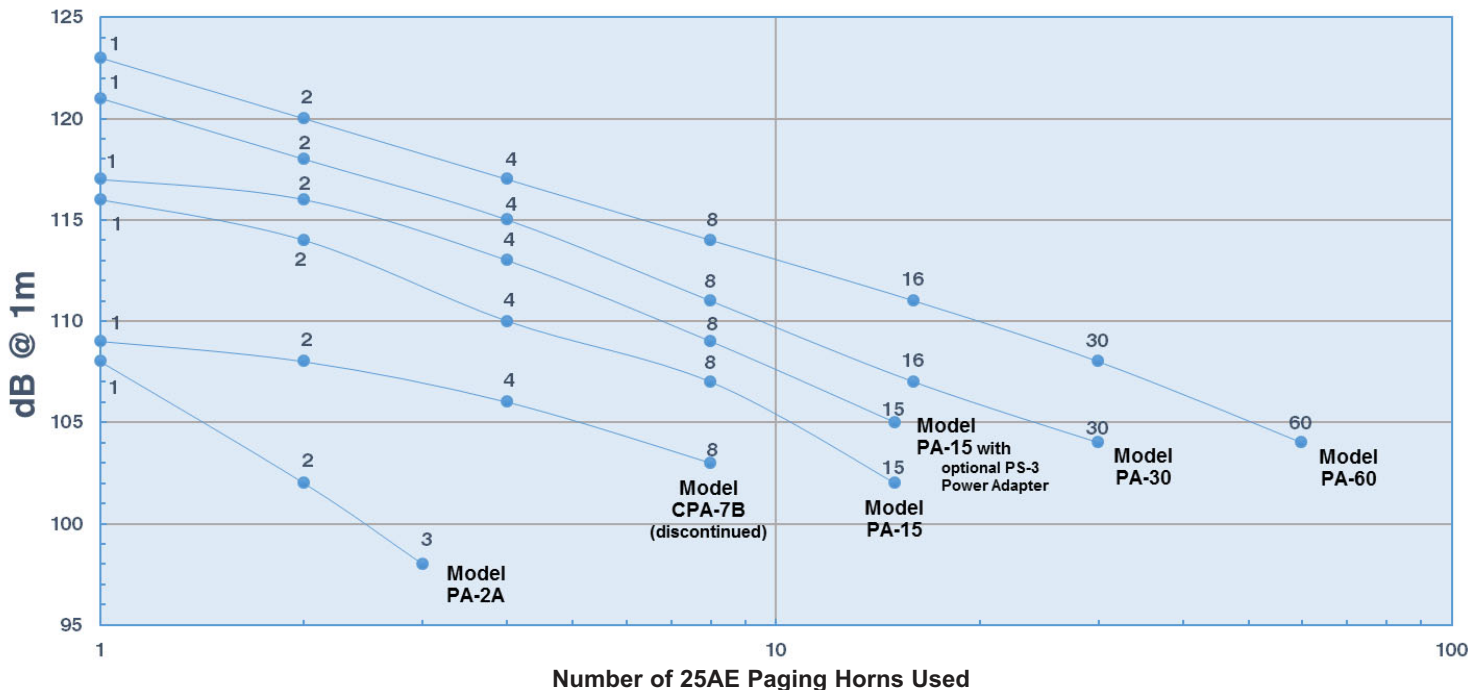


**30 Watt Professional Telecom Paging Amplifier** The PA-30 provides paging from the phone system paging port or connect to an unused trunk input or FXO port (provides 40 volts of talk battery). The PA-30 has separate inputs and volume controls for paging, auxiliary source, loud ringing and background music. A contact closure or ringing line can activate loud ringing. A warble, double gong, quadruple chime or door chime sound can be selected. Power supply included. See DOD# 489 for more info.



**60 Watt Compact Two Zone Amplifier to Drive up to 60 Paging Speakers** The PA-60 can directly drive up to sixty (60) 8 ohm paging speakers or one hundred (100) 70 volt or 25 volt paging speakers. Both channels can be fed the same input so the PA-60 can be used as a single large amplifier, or each channel can be fed different inputs so the PA-60 can be used as a two zone amplifier. See DOD# 493 for more info.

### A. Paging Power Chart for Viking Paging Amplifiers



**Notes:** Maximum sound pressure output at each 8 Ohm paging horn. Disregarding any power loss through long wire runs. 25AE paging horn nominalized to 105dB @ 1W @ 1m.

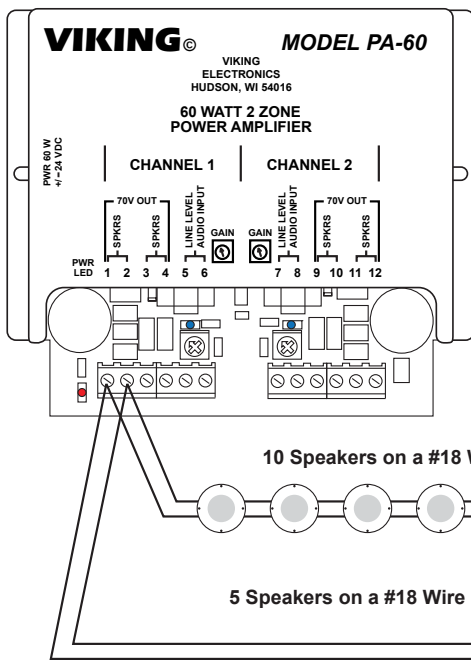
## B. Managing Power Losses

The chart below shows the maximum recommended length (in feet) for the number of 8 Ohm speakers on a wire pair to maintain a volume loss of less than 5dB. Once the length limit has been reached for the wire gauge used, if additional speakers are needed, start back at the amplifier with a second parallel wire run. If the length limit is reached again, start a third run, etc. See examples below.

|                 |     |        |        |      |      |      |      |      |      |      |      |
|-----------------|-----|--------|--------|------|------|------|------|------|------|------|------|
| Wire Gauge Size | #16 | 2,000' | 1,000' | 665' | 500' | 400' | 330' | 250' | 200' | 165' | 135' |
|                 | #18 | 1,250' | 625'   | 420' | 315' | 250' | 210' | 155' | 125' | 105' | 85'  |
|                 | #20 | 800'   | 400'   | 265' | 200' | 160' | 130' | 100' | 80'  | 65'  | 50'  |
|                 | #22 | 500'   | 250'   | 165' | 125' | 100' | 80'  | 60'  | 50'  | 40'  | 35'  |
|                 | #24 | 315'   | 155'   | 105' | 80'  | 60'  | 50'  | 40'  | 30'  | 25'  | 20'  |
|                 |     |        | 1      | 2    | 3    | 4    | 5    | 6    | 8    | 10   | 12   |

**Number of 8 Ohm Speakers on Each of the Two Wire Runs**

- Note 1:** Mount the amplifier close to where the speakers are installed to minimize the speaker wire run lengths.
- Note 2:** Using half the recommended distance or half as many speakers per run will keep the volume lost limited to 3db.
- Note 3:** Doubling up the wires will allow double the length, or reduce the amount of volume loss.
- Note 4:** Heavier gauge wire, fewer speakers per run, and shorter runs will all minimize volume loss.
- Note 5:** Use 70-Volt or 25-Volt speakers in applications that require wire run lengths greater then specified in the chart. As a general rule of thumb, 70V speakers will allow for wire run lengths up to 100 times longer, and 10 times longer wire lengths can be achived with 25V speakers.



### Example of using the Managing Power Losses Chart:

According to the chart, the first 10 speakers installed on a pair of #18 gauge wires maxed out at the 125 foot mark, so a second wire run was started to continue with the remaning 5 speakers needed for the installation. According to the chart, those 5 speakers installed on #18 gauge wires can be run out as far as 250 feet.

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