

## Field Wiring Guidelines

### Wire Type:

The speaker circuits of most voice evacuation systems will typically be classified as power limited wiring. As such, these speaker circuits can be run with other fire alarm wiring without ill effects.

No special cabling is required for the speaker circuits. Standard FPL or FPLP wire is sufficient. Twisted pair or shielding twisted pair wiring is not necessary.

There is one exception, however. Certain addressable systems may generate extraneous noise from their addressable loop, and cannot be run using shielded cable. In this case, shielding of the evacuation speaker circuit will help to eliminate noise picked up by and heard in speakers during standby operation, and possible interference with the addressable loop.

### Wire Gauge:

Generally, #18AWG will be adequate for speaker circuits. The only time that heavier wire is needed is when load is high, and wire runs are long. But remember, it never hurts to go with heavier wire. So if a #16 or #14 AWG pair is being pulled for strobes, it is often easier and less costly to pull the same wire for the evacuation speaker circuits.

The table below illustrates typical wire lengths for specific wire gauge and speaker load:\*

#### At 25VRMS Output:

Power	#18 AWG	#16AWG	#14 AWG	#12AWG
10W	1,900	3,050	4,850	7,700
15W	1,280	2,030	3,230	5,140
25W	760	1,220	1,930	3,080

#### At 70VRMS Output:

Power	#18 AWG	#16AWG	#14 AWG	#12AWG
10W	15,200	24,200	38,360	61,100
15W	10,130	16,130	25,570	40,730
25W	6,080	9,680	15,340	24,440

\* This table assumes that there is an even distribution of the speaker load on the speaker circuit, and that a 20% drop at the last device is allowable. If an even distribution of load is not the case, reduce all wire runs by 1/2.