4603-9101 LCD Annunciator Installation Instructions

Cautions and Warnings

DO NOT INSTALL ANY SIMPLEX PRODUCT THAT APPEARS DAMAGED. Upon unpacking your Simplex product, inspect the contents of the carton for shipping damage. If damage is apparent, immediately file a claim with the carrier and notify Simplex.

ELECTRICAL HAZARD - Disconnect electrical power when making any internal adjustments or repairs. Servicing should be performed by qualified Simplex Representatives.

STATIC HAZARD - Static electricity can damage components. Therefore, handle as follows:

1. Ground yourself before opening or installing components (use the 553-484 Static Control Kit).
2. Keep uninstalled component wrapped in anti-static material at all times.

Overview

There are several important notes to identify before installing the 4603-9101 LCD Annunciator.

IMPORTANT: All circuits are power-limited only if the operating power and communications are provided by a 4020 Control Unit or by a system with the 4100/4120-6050 power-limited option. If other systems are used, no circuits are power-limited.

Notes:

1. 4603-9101 LCD Annunciators can be either flush or surface-mounted.
   - To flush-mount in masonry walls, use a RACO 965 (3-1/2 in. deep) masonry box or its equivalent.
   - To flush-mount in plasterboard walls, use a RACO 590 (3-1/2 in. deep) gangable switch box with conduit entry or its equivalent.

IMPORTANT: Conduit entry must be centered 2-3/4 in. (minimum) from the front of the box.

   - To surface-mount, use a 2975-9206 Box.
2. The number of annunciators in a 4100+ Fire Alarm System cannot exceed 31.
3. The maximum operating current for a single 4603-9101 LCD Annunciator is 170 mA.
4. Do not use the 4603-9101 LCD Annunciator when the 4100+ Control Panel is configured for proprietary receiving service.

IMPORTANT: An Earth ground connection must be provided to the back box for transient suppression. This connection must be made with an approved dedicated Earth connection in accordance with NFPA 70, Article 250.

Installation Instructions

Follow Steps 1 through 5 and refer to Figures 1 through 3 to install a 4603-9101 LCD Annunciator.

1. Terminate the annunciator's COMM and power lines as shown in Figure 1. Reference Field Wiring Diagram 841-731 for additional details.

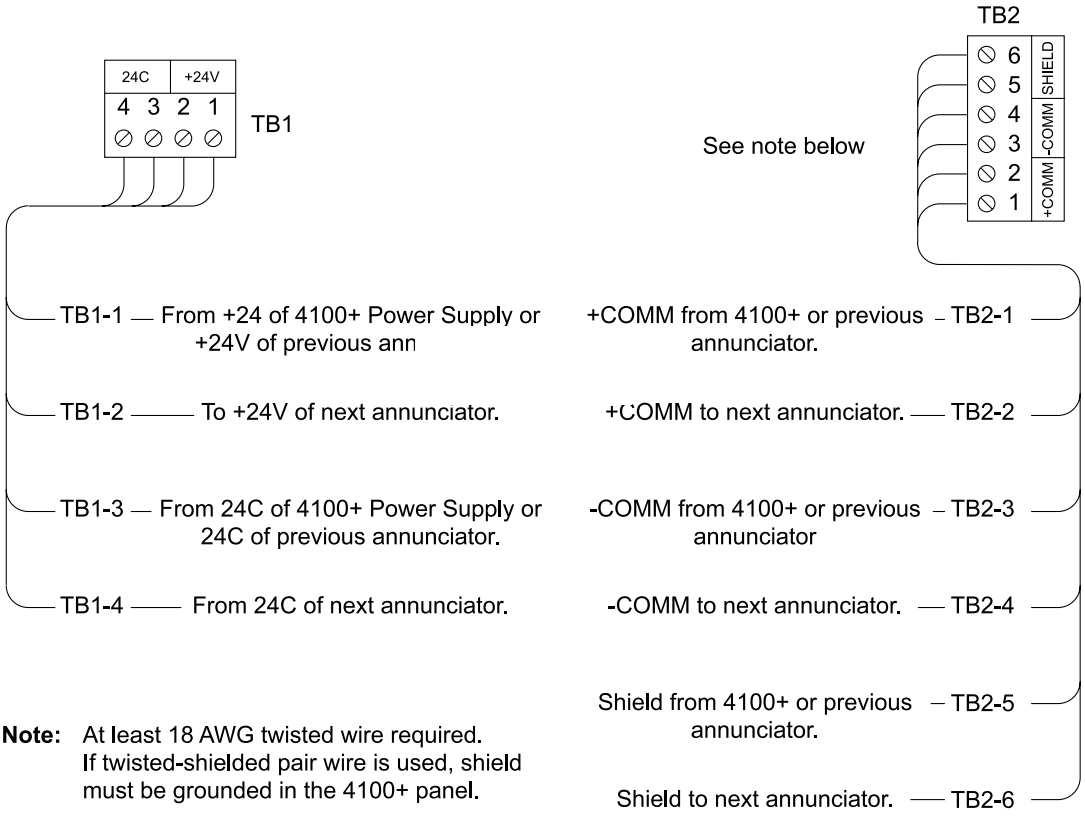

Figure 1. Terminating the COMM and Power Lines

2. Using Switch SW1 (see Figure 2), set the annunciator's address and baud rate in accordance with Chart 1.

Note: Switches SW1-2 through SW1-8 set the annunciator's address; switch SW1-1 sets the annunciator's baud rate.

SW1-1 OFF or OPEN = 1200 Baud
SW1-1 ON or CLOSED = 9600 Baud

3. Using the two pan-head screws provided, mount the annunciator in its back box in accordance with Figure 3.
4. Using the four flat-head screws provided, mount the trim plate to the back box in accordance with Figure 3.

Note: The trim plate covers a hole in the keyboard which provides access to the display's viewing angle potentiometer.

5. Call your local Simplex Branch Office (listed in the yellow pages) for checkout.

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Installation Instructions
(Continued)

Refer to Figure 2 for the terminal block locations on the LCD Annunciator. Refer to Figure 3 for a detailed picture of the annunciator.

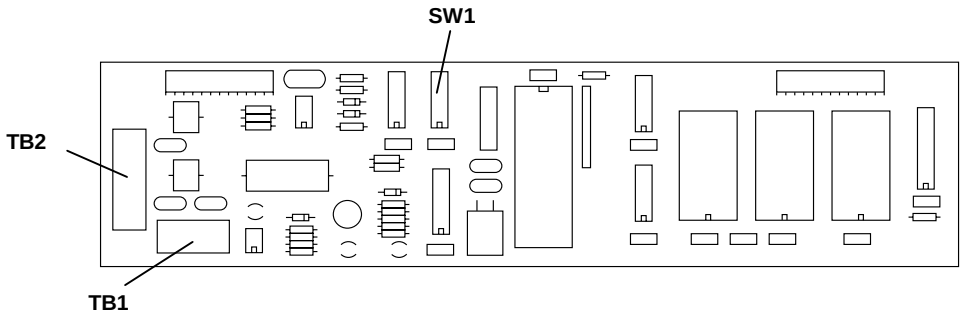
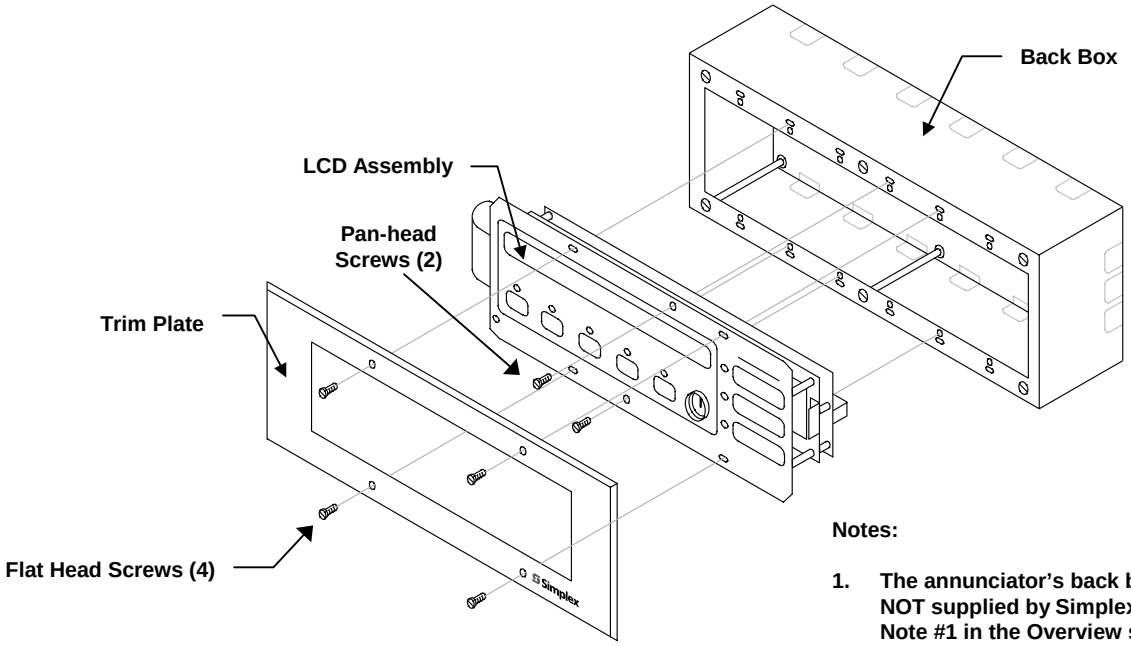


Figure 2. Terminal Block Locations (Back of LCD Annunciator)



Notes:

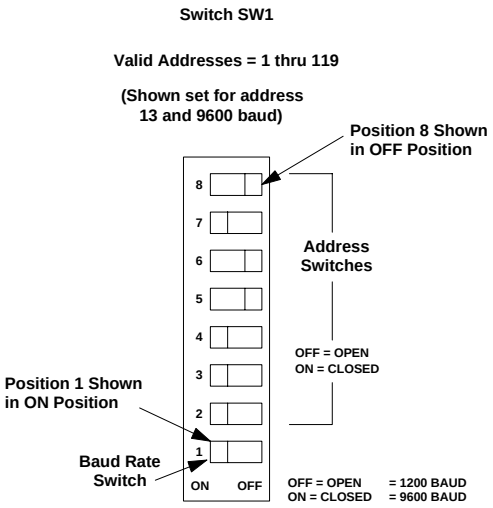
1. **The annunciator's back box is NOT supplied by Simplex. See Note #1 in the Overview section of this publication for a list of available back boxes.**

2. **Back box Earth ground connection is required.**

Figure 3. Expanded View of 4603-9101 LCD Annunciator

Address Chart

SW1-2	SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8		
ON	ON	ON	ON	ON	ON	OFF	=	ADDRESS 1
ON	ON	ON	ON	ON	OFF	ON	=	ADDRESS 2
ON	ON	ON	ON	ON	OFF	OFF	=	ADDRESS 3
ON	ON	ON	ON	OFF	ON	ON	=	ADDRESS 4
ON	ON	ON	ON	OFF	ON	OFF	=	ADDRESS 5
ON	ON	ON	ON	OFF	OFF	ON	=	ADDRESS 6
ON	ON	ON	ON	OFF	OFF	OFF	=	ADDRESS 7
ON	ON	ON	OFF	ON	ON	ON	=	ADDRESS 8
ON	ON	ON	OFF	ON	ON	OFF	=	ADDRESS 9
ON	ON	ON	OFF	ON	OFF	ON	=	ADDRESS 10
ON	ON	ON	OFF	ON	OFF	OFF	=	ADDRESS 11
ON	ON	ON	OFF	OFF	ON	ON	=	ADDRESS 12
ON	ON	ON	OFF	OFF	ON	OFF	=	ADDRESS 13
ON	ON	ON	OFF	OFF	OFF	ON	=	ADDRESS 14
ON	ON	ON	OFF	OFF	OFF	OFF	=	ADDRESS 15
ON	ON	OFF	ON	ON	ON	ON	=	ADDRESS 16
ON	ON	OFF	ON	ON	ON	OFF	=	ADDRESS 17
ON	ON	OFF	ON	ON	OFF	ON	=	ADDRESS 18
ON	ON	OFF	ON	ON	OFF	OFF	=	ADDRESS 19
ON	ON	OFF	ON	OFF	ON	ON	=	ADDRESS 20
ON	ON	OFF	ON	OFF	ON	OFF	=	ADDRESS 21
ON	ON	OFF	ON	OFF	OFF	ON	=	ADDRESS 22
ON	ON	OFF	ON	OFF	OFF	OFF	=	ADDRESS 23
ON	ON	OFF	OFF	ON	ON	ON	=	ADDRESS 24
ON	ON	OFF	OFF	ON	ON	OFF	=	ADDRESS 25
ON	ON	OFF	OFF	ON	OFF	ON	=	ADDRESS 26
ON	ON	OFF	OFF	ON	OFF	OFF	=	ADDRESS 27
ON	ON	OFF	OFF	OFF	ON	ON	=	ADDRESS 28
ON	ON	OFF	OFF	OFF	ON	OFF	=	ADDRESS 29
ON	ON	OFF	OFF	OFF	OFF	ON	=	ADDRESS 30
ON	ON	OFF	OFF	OFF	OFF	OFF	=	ADDRESS 31
ON	OFF	ON	ON	ON	ON	ON	=	ADDRESS 32
ON	OFF	ON	ON	ON	ON	OFF	=	ADDRESS 33
ON	OFF	ON	ON	ON	OFF	ON	=	ADDRESS 34
ON	OFF	ON	ON	ON	OFF	OFF	=	ADDRESS 35
ON	OFF	ON	ON	OFF	ON	ON	=	ADDRESS 36
ON	OFF	ON	ON	OFF	ON	OFF	=	ADDRESS 37
ON	OFF	ON	ON	OFF	OFF	ON	=	ADDRESS 38
ON	OFF	ON	ON	OFF	OFF	OFF	=	ADDRESS 39
ON	OFF	ON	OFF	ON	ON	ON	=	ADDRESS 40
ON	OFF	ON	OFF	ON	ON	OFF	=	ADDRESS 41
ON	OFF	ON	OFF	ON	OFF	ON	=	ADDRESS 42
ON	OFF	ON	OFF	ON	OFF	OFF	=	ADDRESS 43
ON	OFF	ON	OFF	OFF	ON	ON	=	ADDRESS 44
ON	OFF	ON	OFF	OFF	ON	OFF	=	ADDRESS 45
ON	OFF	ON	OFF	OFF	OFF	ON	=	ADDRESS 46
ON	OFF	ON	OFF	OFF	OFF	OFF	=	ADDRESS 47
ON	OFF	OFF	ON	ON	ON	ON	=	ADDRESS 48
ON	OFF	OFF	ON	ON	ON	OFF	=	ADDRESS 49
ON	OFF	OFF	ON	ON	OFF	ON	=	ADDRESS 50
ON	OFF	OFF	ON	ON	OFF	OFF	=	ADDRESS 51
ON	OFF	OFF	ON	OFF	ON	ON	=	ADDRESS 52
ON	OFF	OFF	ON	OFF	ON	OFF	=	ADDRESS 53
ON	OFF	OFF	ON	OFF	OFF	ON	=	ADDRESS 54
ON	OFF	OFF	ON	OFF	OFF	OFF	=	ADDRESS 55
ON	OFF	OFF	OFF	ON	ON	ON	=	ADDRESS 56
ON	OFF	OFF	OFF	ON	ON	OFF	=	ADDRESS 57
ON	OFF	OFF	OFF	ON	OFF	ON	=	ADDRESS 58
ON	OFF	OFF	OFF	ON	OFF	OFF	=	ADDRESS 59
ON	OFF	OFF	OFF	OFF	ON	ON	=	ADDRESS 60
ON	OFF	OFF	OFF	OFF	ON	OFF	=	ADDRESS 61
ON	OFF	OFF	OFF	OFF	OFF	ON	=	ADDRESS 62
ON	OFF	OFF	OFF	OFF	OFF	OFF	=	ADDRESS 63
OFF	ON	ON	ON	ON	ON	ON	=	ADDRESS 64
OFF	ON	ON	ON	ON	ON	OFF	=	ADDRESS 65
OFF	ON	ON	ON	ON	OFF	ON	=	ADDRESS 66
OFF	ON	ON	ON	ON	OFF	OFF	=	ADDRESS 67
OFF	ON	ON	ON	OFF	ON	ON	=	ADDRESS 68
OFF	ON	ON	ON	OFF	ON	OFF	=	ADDRESS 69
OFF	ON	ON	ON	OFF	OFF	ON	=	ADDRESS 70
OFF	ON	ON	ON	OFF	OFF	OFF	=	ADDRESS 71
OFF	ON	ON	OFF	ON	ON	ON	=	ADDRESS 72
OFF	ON	ON	OFF	ON	ON	OFF	=	ADDRESS 73
OFF	ON	ON	OFF	ON	OFF	ON	=	ADDRESS 74
OFF	ON	ON	OFF	ON	OFF	OFF	=	ADDRESS 75
OFF	ON	ON	OFF	OFF	ON	ON	=	ADDRESS 76
OFF	ON	ON	OFF	OFF	ON	OFF	=	ADDRESS 77
OFF	ON	ON	OFF	OFF	OFF	ON	=	ADDRESS 78
OFF	ON	ON	OFF	OFF	OFF	OFF	=	ADDRESS 79



SW1-2	SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8		
OFF	ON	OFF	ON	ON	ON	ON	=	ADDRESS 80
OFF	ON	OFF	ON	ON	ON	OFF	=	ADDRESS 81
OFF	ON	OFF	ON	ON	OFF	ON	=	ADDRESS 82
OFF	ON	OFF	ON	ON	OFF	OFF	=	ADDRESS 83
OFF	ON	OFF	ON	OFF	ON	ON	=	ADDRESS 84
OFF	ON	OFF	ON	OFF	ON	OFF	=	ADDRESS 85
OFF	ON	OFF	ON	OFF	OFF	ON	=	ADDRESS 86
OFF	ON	OFF	ON	OFF	OFF	OFF	=	ADDRESS 87
OFF	ON	OFF	OFF	ON	ON	ON	=	ADDRESS 88
OFF	ON	OFF	OFF	ON	ON	FF	=	ADDRESS 89
OFF	ON	OFF	OFF	ON	OFF	ON	=	ADDRESS 90
OFF	ON	OFF	OFF	ON	OFF	OFF	=	ADDRESS 91
OFF	ON	OFF	OFF	OFF	ON	ON	=	ADDRESS 92
OFF	ON	OFF	OFF	OFF	ON	OFF	=	ADDRESS 93
OFF	ON	OFF	OFF	OFF	OFF	ON	=	ADDRESS 94
OFF	ON	OFF	OFF	OFF	OFF	OFF	=	ADDRESS 95
OFF	OFF	ON	ON	ON	ON	ON	=	ADDRESS 96
OFF	OFF	ON	ON	ON	ON	OFF	=	ADDRESS 97
OFF	OFF	ON	ON	ON	OFF	ON	=	ADDRESS 98
OFF	OFF	ON	ON	ON	OFF	OFF	=	ADDRESS 99
OFF	OFF	ON	ON	OFF	ON	ON	=	ADDRESS 100
OFF	OFF	ON	ON	OFF	ON	OFF	=	ADDRESS 101
OFF	OFF	ON	ON	OFF	OFF	ON	=	ADDRESS 102
OFF	OFF	ON	ON	OFF	OFF	OFF	=	ADDRESS 103
OFF	OFF	ON	OFF	ON	ON	ON	=	ADDRESS 104
OFF	OFF	ON	OFF	ON	ON	OFF	=	ADDRESS 105
OFF	OFF	ON	OFF	ON	OFF	ON	=	ADDRESS 106
OFF	OFF	ON	OFF	ON	OFF	OFF	=	ADDRESS 107
OFF	OFF	ON	OFF	OFF	ON	ON	=	ADDRESS 108
OFF	OFF	ON	OFF	OFF	ON	OFF	=	ADDRESS 109
OFF	OFF	ON	OFF	OFF	OFF	ON	=	ADDRESS 110
OFF	OFF	ON	OFF	OFF	OFF	OFF	=	ADDRESS 111
OFF	OFF	OFF	ON	ON	ON	ON	=	ADDRESS 112
OFF	OFF	OFF	ON	ON	ON	OFF	=	ADDRESS 113
OFF	OFF	OFF	ON	ON	OFF	ON	=	ADDRESS 114
OFF	OFF	OFF	ON	ON	OFF	OFF	=	ADDRESS 115
OFF	OFF	OFF	ON	OFF	ON	ON	=	ADDRESS 116
OFF	OFF	OFF	ON	OFF	ON	OFF	=	ADDRESS 117
OFF	OFF	OFF	ON	OFF	OFF	ON	=	ADDRESS 118
OFF	OFF	OFF	ON	OFF	OFF	OFF	=	ADDRESS 119

Chart 1. 4603-9101 LCD Annunciator Address Chart

General Wiring Precautions

There are several general wiring precautions that must be followed when wiring the LCD Annunciator.

1. All wiring **must** be done with copper conductors only.
2. Wire lengths in excess of the maximum lengths listed within Tables 1 through 4 are not permitted.
3. If shielding is used, you **must** observe the following:
   - Metallic continuity of the shield must be maintained throughout the entire length of cable.
   - The entire length of the cable must have a resistance greater than one megohm to Earth ground.
   - The shield must connect to a SHIELD terminal at each annunciator, and must be terminated only at the main panel.
4. Underground wiring must be free of water.
5. Wires must not be run through elevator shafts.
6. Wire runs in plenums must be in conduit unless rated for plenum use.
7. Splicing is permitted provided that: (a) all such connections are soldered (rosin-core solder), crimped in metal sleeves, or encapsulated with an epoxy resin; (b) when solder or crimped metal sleeves are used, the junction is insulated with a high-grade electrical tape as sound as the original insulating jacket; (c) the shield's continuity is maintained throughout the cable's length.
8. Only system wiring can share the same conduit.

IMPORTANT: An Earth ground connection must be provided to the back box for transient suppression. This connection must be made with an approved dedicated Earth connection in accordance with NFPA 20, Article 250.

Specific Wiring Precautions

When wiring the 4603-9101 LCD Annunciator there are a few specific wiring precautions that must be adhered to. A 4603-9101 LCD Annunciator cannot be used with wiring that goes outside the building (above or below ground) unless overvoltage suppression is provided at both ends. Communication and power wiring **must** meet the following conditions.

1. Use Simplex Model 2081-9044 Overvoltage Protectors (200 mA or less).
   - There are no restrictions on wire routing. However, the maximum wire length is 2500 feet.
2. Using Simplex Model 2081-9027 (200 mA maximum) or 2081-9028 (5-amp maximum) Isolated Loop Circuit Protector.
   - For underground wiring, select the appropriate isolated loop circuit protector. The circuit wiring **must** be run in a separate parallel wiring trough, separated from any commercial power distribution wiring.
   - For overhead wiring, select the appropriate isolated loop circuit protector. The wiring is limited to one contiguous property and the total wire length **must** not exceed 2500 feet. The circuit wiring must be run on separate poles, separated from any poles supporting commercial power distribution wiring. The circuit wiring must be run in parallel with direct relation to the commercial power distribution. The separation is a minimum distance (whichever is greater) of 100 feet, or the maximum span between any two adjacent poles of either the system's circuit or the commercial power distribution circuit.
3. For maximum wire lengths when using circuit protectors, see Tables 1 through 4.
4. Contact your local Simplex branch with any questions you may have on your specific type of cable.

4100+/4020 to LCD Annunciator Wiring for Serial Communication

When wiring a 4100+/4020 FACP to an LCD Annunciator for Serial Communication make note of the following:

1. Annunciator terminal blocks will accommodate 12-18 AWG wire.
2. When used with audio riser wiring, telephone wiring, and/or 4120 Network wiring, the communication lines **must** be twisted-shielded pair.
3. Parallel configurations are acceptable where the total distance of all series and/or parallel runs do not exceed the maximum permitted distance. (See Tables 3 and 4).

4100+/4020 to LCD Annunciator Wiring for Operating Power

When wiring a 4100+/4020 FACP to an LCD Annunciator for operating power make note of the following:

1. Annunciator terminal blocks accommodates 12-18 AWG wire.
2. 12-18 AWG wires required (See Tables 1 and 2).
3. Each 4603-9101 LCD Annunciator uses 170 mA (0.170A).
4. Operating power **must** be provided by the system power supply.

Wire Length Tables

Tables 1 through 4 show the maximum permitted wire pair lengths (in feet) that can be used when wiring a 4603-9101 LCD Annunciator. Table 1 and 2 show the maximum wire lengths possible when Power Wire (two wires) are used. Table 3 and 4 show the maximum wire lengths when Communication Line (a twisted-shielded pair of wires) are used.

Notes:

- When using multiple annunciators and runs the total of all runs must not exceed 10,000 ft (including T-Taps).
- Four 2081-9044 Overvoltage Protectors and four 2081-9028 Isolated Loop Circuit Protectors are the maximum number permitted on any single communication loop.
- To convert feet to meters, multiply the number of feet by 0.3048.

Power Wire Tables

Table 1. With 2081-9044 Overvoltage Protectors

Total Current (Amps)	12 AWG (3.309 mm^2)	14 AWG (2.801 mm^2)	16 AWG (1.309 mm^2)	18 AWG (0.823 mm^2)
0.100	2,500 ft	2,500 ft	2,371 ft	1,409 ft
0.200	2,500 ft	1,782 ft	889 ft	705 ft

Continued on next page

Power Wire Tables *(Continued)*

Table 2. Without Transient Suppression (or with 2081-9028 Isolated Loop Circuit Protectors)

Total Current (AMPS)	12 AWG (3.309 mm^2)	14 AWG (2.081 mm^2)	16 AWG (1.309 mm^2)	18 AWG (0.823 mm^2)
0.100	2,500 ft	2,500 ft	2,500 ft	2,349 ft
0.200	2,500 ft	2,500 ft	1,482 ft	1,175 ft
0.300	2,500 ft	1,980 ft	988 ft	783 ft
0.400	2,361 ft	1,485 ft	741 ft	587 ft
0.500	1,889 ft	1,188 ft	593 ft	470 ft
0.600	1,574 ft	990 ft	494 ft	392 ft
0.700	1,349 ft	849 ft	423 ft	336 ft
0.800	1,181 ft	743 ft	371 ft	294 ft
0.900	1,049 ft	660 ft	329 ft	261 ft
1.000	944 ft	594 ft	296 ft	235 ft
1.100	859 ft	540 ft	269 ft	214 ft
1.200	787 ft	495 ft	247 ft	196 ft
With 2081-9027 Isolated Loop Circuit Protectors				
0.100	2,500 ft	2,500 ft	2,371 ft	1,409 ft
0.200	2,500 ft	1,782 ft	889 ft	705 ft

Communication Line Tables

Table 3. With 2081-9044 Overvoltage Protectors

12 AWG (3.309 mm^2)	14 AWG (2.081 mm^2)	16 AWG (1.309 mm^2)	18 AWG (0.823 mm^2)
2,500 ft	2,500 ft	2,450 ft	1,650 ft

Table 4. Without Transient Suppression (or with 2081-9028 Isolated Loop Circuit Protectors)

12 AWG (3.309 mm^2)	14 AWG (2.081 mm^2)	16 AWG (1.309 mm^2)	18 AWG (0.823 mm^2)
2,500 ft	2,500 ft	2,500 ft	2,500 ft
With 2081-9027 Isolated Loop Circuit Protectors			
2,500 ft	2,500 ft	2,450 ft	1,650 ft