

**TECHNICAL NOTE**

**STANDPIPE-PAC™ - WIRING OF EXTERNAL AUDIBLE SIGNALING DEVICES**


**IMPORTANT**  
**REFER TO THIS DOCUMENT BEFORE WIRING SIGNAL HORNS**

The purpose of this document is to assist qualified electricians in the specifics for adding signal horns to a **STANDPIPE-PAC™**. **Proper installation can avoid service calls, saving time and expense for the customer.**

**Signal Horn:** The signal horn is the required audible indicator to announce a standpipe supervisory signal condition. The signal horn will sound when the pressure in the standpipe drops below approximately 7 PSIG or rises above 25 PSIG. This indicates an impairment of the standpipe and will require correction.

**Additional Signal Wiring:** Connect the required additional signal device, and any optional devices, to the notification appliance circuit serving the signal horn on the **STANDPIPE-PAC™** unit (**Figure A** and **Figure B**). See Step-by-Step Guide, page 2. Additional horns are available from UNITED Fire Systems – P/N 03-100006-201.

**Notification Appliance Circuit**

- Maximum wiring length is 375 feet.
- Minimum wire gage: 14 AWG (See page 4, 'Do's and Don'ts')
- Operating voltage nominal 13.8 VDC
- **Current for all external devices: 1.0 amp**
- **End-of-line resistor: 2.2K ohms, ½ watt (UFS P/N 03-100005-102)**


**IMPORTANT--Boston**  
**STANDPIPE-PAC™** has been designed to aid in compliance with the requirements in Boston directive FD TCM3-51725 Item 4.4. The law requires a signal horn on site. In addition, a horn with visual signal needs to be installed immediately outside the pressure equipment location and activated upon low pressure in the standpipe.



(Figure A) UNITED Fire Systems STANDPIPE-PAC™

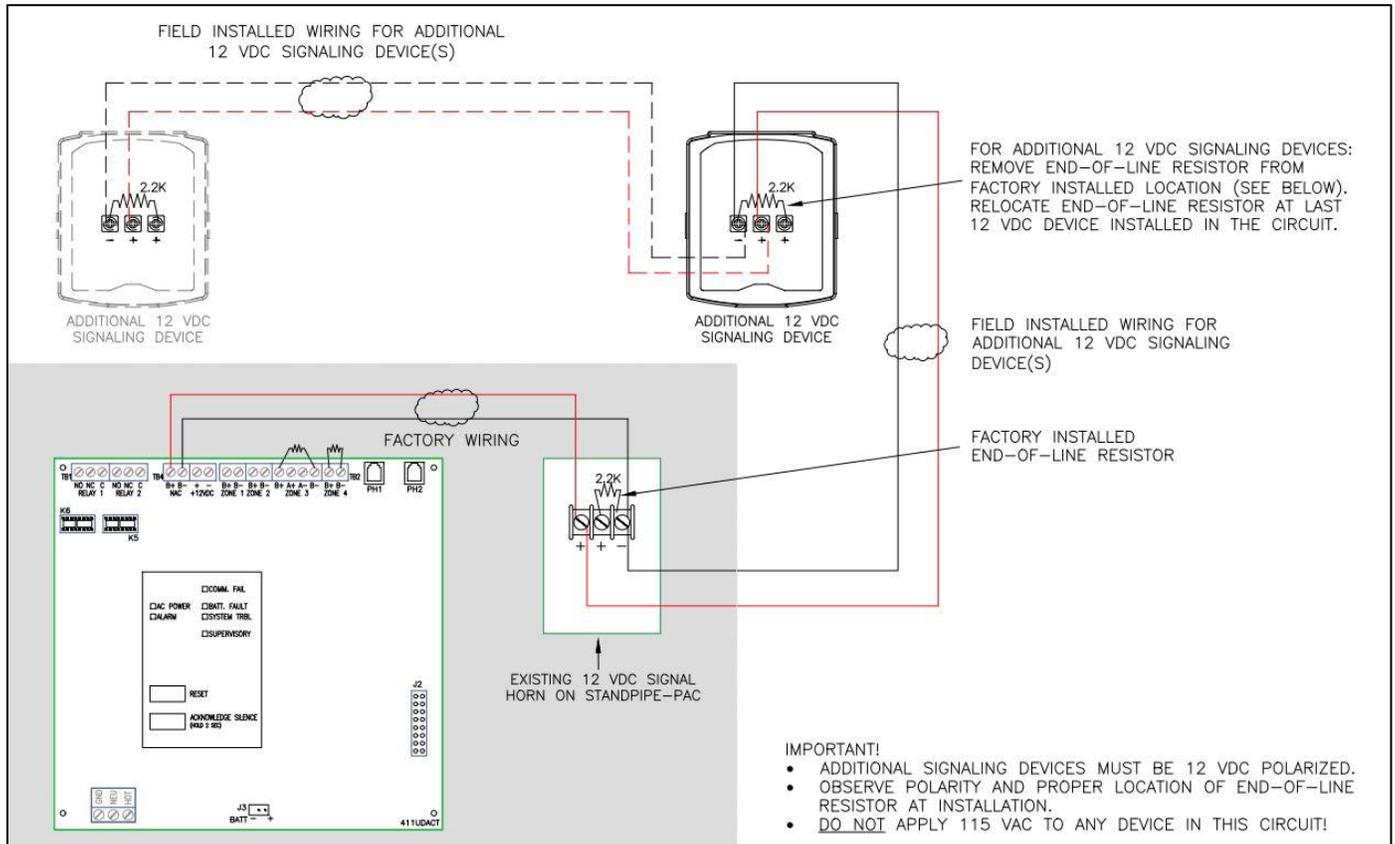
**UNITED FIRE SYSTEMS**

Division of United Fire Protection Corporation  
 1 MARK ROAD  
 KENILWORTH, NJ 07033 USA  
 PHONE: 908-688-0300 FAX: 908-688-0218  
 www.unitedfiresystems.net

This literature is provided for informational purposes only. United Fire Protection Corporation assumes no responsibility for the product's suitability for a particular application. The product must be properly applied to perform as intended.

## TECHNICAL NOTE

### STANDPIPE-PAC™ - WIRING OF EXTERNAL AUDIBLE SIGNALING DEVICES



(Figure B) Signaling Devices Wiring

### STEP-BY-STEP GUIDE TO INSTALLING ADDITIONAL SIGNAL HORNS TO STANDPIPE-PAC™

1. Ensure that the **STANDPIPE-PAC™** control unit has **NOT** been powered up, with AC power and batteries disconnected.
2. See **Figure 1** and **Figure 2**. Remove Signal Horn cover from factory installed Signal Horn assembly on **STANDPIPE-PAC™**.



Figure 1

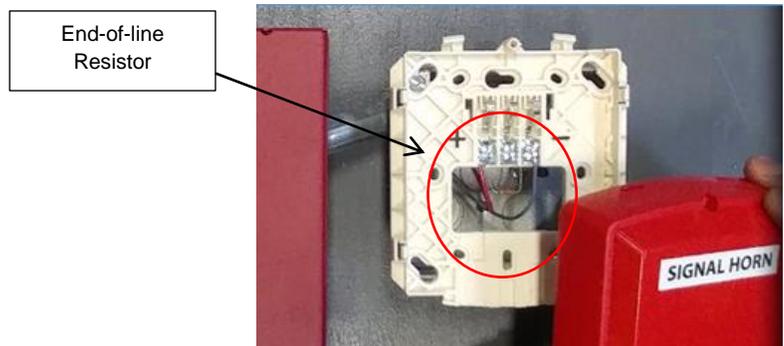


Figure 2

## TECHNICAL NOTE

### STANDPIPE-PAC™ - WIRING OF EXTERNAL AUDIBLE SIGNALING DEVICES

#### STEP-BY-STEP GUIDE, CONTINUED

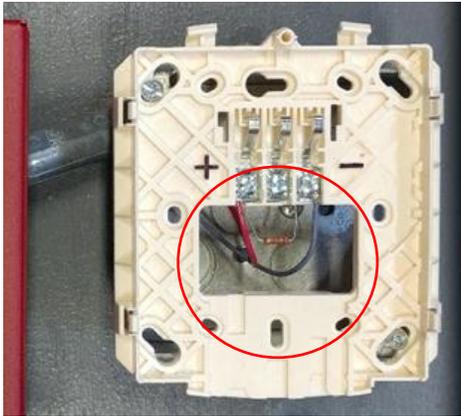


Figure 3

3. See **Figure 3**. Visually inspect Signal Horn base-plate connections. Locate positive and negative terminals on base-plate. **NOTE:** RED wire connects to positive terminal; GRAY wire connects to negative terminal.
4. See **Figure 3**. Locate **end-of-line resistor**; factory installed between positive and negative terminals on Signal Horn base-plate.

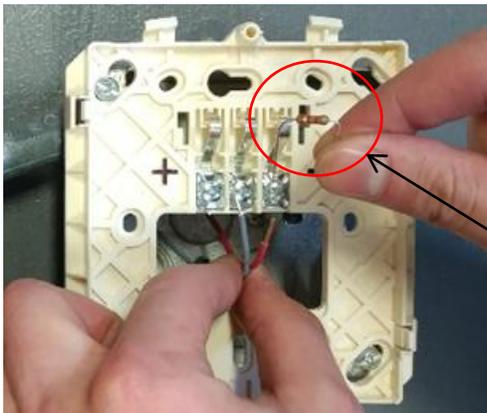


Figure 4

5. See **Figure 4**. Disconnect RED and GRAY wires and remove **end-of-line resistor** from base-plate. **IMPORTANT: DO NOT DISCARD END-OF-LINE RESISTOR.**

End-of-line  
Resistor

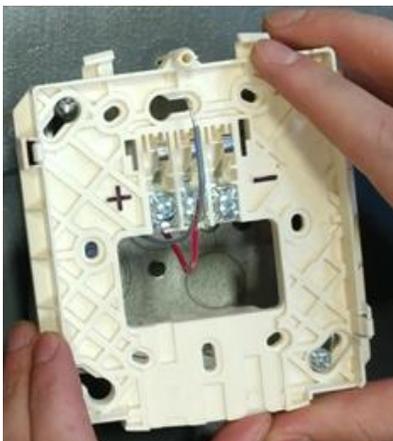


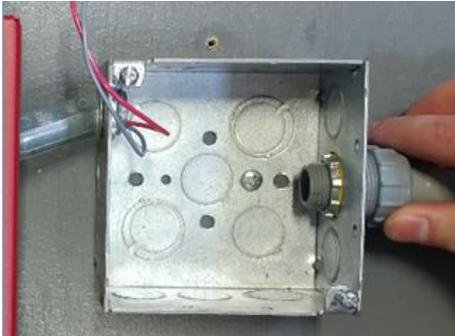
Figure 5

6. See **Figure 5**. Remove Signal Horn base-plate from back box.

**TECHNICAL NOTE**

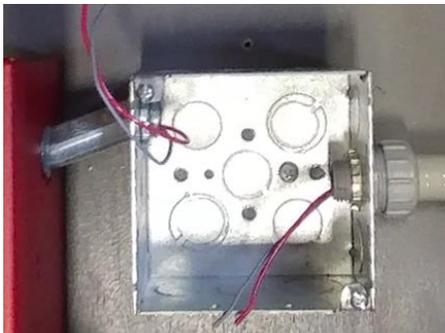
**STANDPIPE-PAC™ - WIRING OF EXTERNAL AUDIBLE SIGNALING DEVICES**

**STEP-BY-STEP GUIDE, CONTINUED**



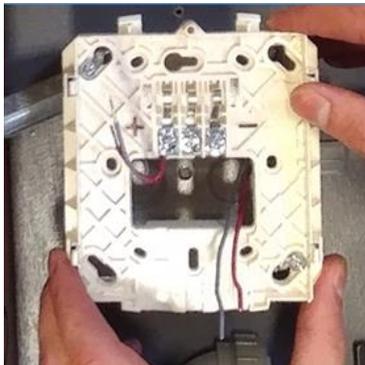
**Figure 6**

7. See **Figure 6**. Attach raceway to signal horn box at appropriate knockout. Install raceway from factory installed Signal Horn back box to additional Signal Horn. **NOTE:** See Table 1 for distance limitations.



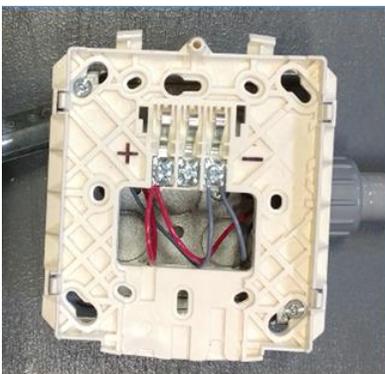
**Figure 7**

8. See **Figure 7**. Run **14 AWG Solid** wires from additional Signal Horn, through raceway and into factory installed Signal Horn back box. **NOTE:** UNITED Fire Systems recommends using **RED**, and **GRAY** or **BLACK** wires for consistency and polarity identification.



**Figure 8**

9. See **Figure 8**. Re-install Signal Horn base-plate to back box on **STANDPIPE-PAC™**.



**Figure 9**

10. See **Figure 8** and **Figure 9** and **Figure B: Wiring Diagram**. Strip ends of wire installed in Step 8. Attach wires removed in Step 5 and wires installed in Step 8 to Signal Horn base-plate terminals.

## TECHNICAL NOTE

### STANDPIPE-PAC™ - WIRING OF EXTERNAL AUDIBLE SIGNALING DEVICES

#### STEP-BY-STEP GUIDE, CONTINUED

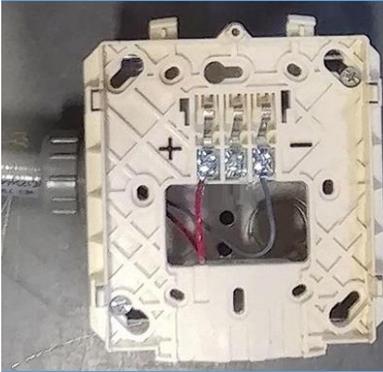


Figure 10

11. See **Figure 10**. Connect wires at additional Signal Horns. **IMPORTANT! Do not branch Signal Horn circuit. Run circuit from the first Signal Horn to the second Signal Horn, then the second Signal Horn to the third, and so on.**

12. Repeat steps 5 through 10 for each additional Signal Horn. **NOTE:** See Table 1 for distance limitations and maximum number of additional devices.

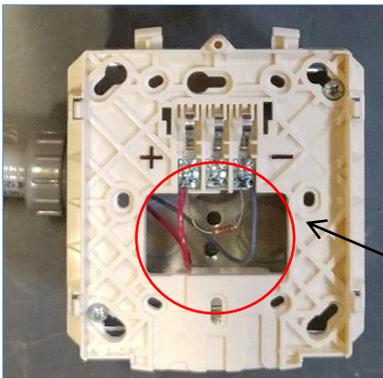


Figure 11

13. See **Figure 11**. Install **end-of-line resistor**, retained from Step 5, at last Signal Horn, between positive and negative terminals.

End-of-line Resistor  
on last device on Signal Horn circuit

14. See **Figure 12** and **Figure 13**. Replace Signal Horn cover(s). **IMPORTANT:** Cover(s) MUST be fastened correctly for proper wire contact. Trouble signal will occur if Signal Horn cover(s) is not fastened correctly.



Figure 12



Figure 13



**TECHNICAL NOTE**

**STANDPIPE-PAC™ - WIRING OF EXTERNAL AUDIBLE SIGNALING DEVICES**

<b>Distance Limitations:</b>	Total length of circuit, run from the <b>STANDPIPE-PAC™</b> to the last additional Signal Horn, cannot exceed <b>375</b> feet.
<b>Maximum number of Signal Horns:</b>	<b>10</b> Additional Signal Horns, not including the factory installed horn.
<b>Recommended Wire Gage:</b>	<b>14</b> AWG Solid
<b>Polarity Identification:</b>	<b>RED</b> for positive (+) <b>GRAY</b> or <b>BLACK</b> for negative (-)

TABLE 1

**Do's and Don'ts—How to avoid Service Calls**

✓ <b>Do</b> make sure the Signal Horn covers are clicked firmly into place onto the Signal Horn base plates once wiring is complete.	× <b>Don't</b> wire 115 VAC on this circuit.
✓ <b>Do</b> use a minimum of 14 AWG size wire.	× <b>Don't</b> mix up the polarity. Know the polarity at both ends of the wiring. Wire per polarity diagram.
✓ <b>Do</b> wire additional devices per Figure B. The end-of-line resistor must be moved to the last device in the circuit per Figure B.	× <b>Don't</b> exceed the current capacity of the circuit when adding additional horns to the <b>STANDPIPE-PAC™</b> . Each additional horn adjusted to FULL VOLUME draws 0.047 amps. As noted on page 1, the current for <u>all</u> external devices, including the factory-installed signal horn, is 1.0 amp.
✓ <b>Do</b> use <b>RED</b> and <b>GRAY</b> wire for (+) and (-) conductors so it is easy to maintain polarity.	× <b>Don't</b> branch the signaling circuit. Wire horns in parallel, from one horn to the next. See <b>Figure B: Wiring Diagram</b> .
✓ <b>Do</b> install the end-of-line resistor on the terminals indicated.	
✓ <b>Do</b> ensure additional device(s) are 12VDC.	

**UNITED FIRE SYSTEMS**

Division of United Fire Protection Corporation

1 MARK ROAD

KENILWORTH, NJ 07033 USA

PHONE: 908-688-0300 FAX: 908-688-0218

www.unitedfiresystems.net

This literature is provided for informational purposes only. United Fire Protection Corporation assumes no responsibility for the product's suitability for a particular application. The product must be properly applied to perform as intended.