SIEMENS

Installation Instructions
Model HCP-Z

Intelligent Control Point

INTRODUCTION

The Model HCP-Z Intelligent Control Point from Siemens Industry, Inc. provides remote, independent control of any of the following:

1. A notification appliance circuit (NAC)
2. A telephone zone (XLS only)
3. A speaker zone (25V or 70.7V RMS) (XLS only, FV2025/2050, FV922/924)

The HCP-Z communicates through the DLC device loop card of the FireFinder-XLS System, the FS-DLC device loop card of the FS-250 System, the FC922/FV922, FC2025/FV2025 periphery FCI2016 Board (250p) detector circuits, and the FC2050/FV2050, FC924/FV924 FCI2017 periphery board (500p) detector circuits. Each HCP-Z uses one device address on the device loop.

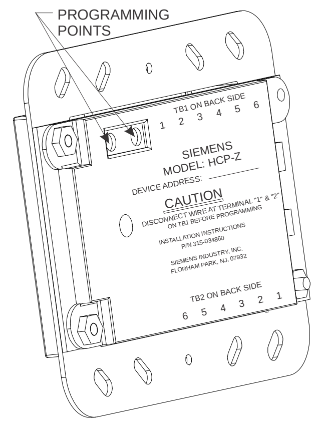


Figure 1
HCP-Z Intelligent Control Point

PROGRAMMING

Use the DPU Programmer/Tester to program and test the module.

NOTE

The HCP-Z may only be assigned addresses 1 to 60. It is recommended to program the HCP-Z devices first to ensure that enough addresses have been reserved for them. Other devices may then be assigned to addresses in this range that were not assigned to an HCP-Z.

CAUTION

Disconnect wire at terminal 1 and 2 on TB1 before programming.

To set the HCP-Z device address:

- Plug the programming cable of the DPU Programmer/Tester into the two-pin programming points on the HCP-Z. (See Figure 1 for location.)
- Set the device address for the HCP-Z by following the instructions in the *DPU Programmer/Tester Manual,* P/N 315-033260.

Each HCP-Z can be assigned a custom message using either the Zeus Programming Tool (XLS System), the FS-CT2 (FS-250 System), the FC2025/2050, FV2025/2050 FSX2002 Engineering Tool, or the FC922/924, FV922/924 FSX7212 Engineering Tool. Refer to the Zeus Quick Start Manual, P/N 315-033875, or the FS-250 Programming Manual, P/N 315-049403, as applicable.

Siemens Industry, Inc.
Building Technologies Division

COMPATIBILITY

The following minimum revisions are required for proper operation of the HCP-Z:

XLS SYSTEM:		**FS-250 SYSTEM:**		**FS20 SYSTEM**	
				DESIGO	
DLC	04.00.0000	FS-DLC	1.50	FC2025/2050	41.xx.xx
PMI	04.00.0000	NAC	2.18	FV2025/2050	60.xx.xx
PSC-12	07.00.0000	PANEL	5.0		
ZAC-40	02.08.0000				
	130.08.0000*				
ZEUS	04.00.0019			*CERBERUS PRO*	
				FC922/924	41.xx.xx
				FV922/924	60.xx.xx

*ZAC-40 Rev. 02.09.0000/130.09.0000, Rev. 02.21.0000 and Rev. 02.24.0000 are NOT compatible with the HCP-Z. Revert to Rev. 02.08.0000/130.08.0000 or Rev. 02.10.0000/130.10.0000.

WIRING

WARNING

Remove all system power before installation, first battery then AC. (To power up, connect the AC first, then the battery.)

Power down the 24 VDC power supply and the input source (ZAC, etc.) before installing the HCP-Z.

All wiring must comply with national and local codes. All wire must be 18 AWG minimum, 12 AWG maximum.

Device Loops

The HCP-Z communicates with the FireFinder-XLS/FS-250/Desigo FC2025/2050, FV2025/2050/Cerberus PRO FC922/924, FV922/924 Systems through its addressable device loops. These loops are connected to the DLC via terminal blocks on the CC-5 or CC-2 cardcage (XLS) or to the FS-DLC via TB3 on the FS-MB/FS-MB2 main board (FS-250). They may be wired Class A (Style 6) or Class B (Style 4). Figure 2 shows both wiring types and the connections to the DLC. See the DLC Installation Instructions, P/N 315-033090, for more information. Figure 3 shows both wiring types and connections to the FS-DLC. See the FS-250 Installation, Operation and Maintenance Manual, P/N 315-049353, for more information. Figure 4 shows both wiring types and connections to the Periphery boards. See the Desigo FC2025/2050 FV2025/2050 Configuration Manual, Document ID A6V10315023, for more information. Figure 5 shows both wiring types and connections to the Periphery boards. See the Cerberus PRO FC922/924 FV922/924 Configuration Manual, Document ID A6V10333423, for more information.

HCP-Z Power Supply

For FireFinder-XLS Systems, compatible power supplies for the HCP-Z are the PSC-12, PSX-12, and PAD-4. Wiring should be connected to TB3 on the PSC-12 and PSX-12, or the auxiliary power supply on the PAD-4.

For FS-250 Systems, the HCP-Z is powered by the NAC circuits and PAD-4. Wiring should be connected to the NAC circuits on the main board or the auxiliary power supply on the PAD-4.

NOTES

1. Loop resistance 50 ohms Max with 252 devices on the loop. Refer to the DLC Installation Instructions, P/N 315-033090 if the number of devices is less than 252.
2. 12-18 AWG wire.
3. No EOL device required.
4. Supervised, power limited per NEC 760.
5. All wiring must conform to national and local electrical codes.

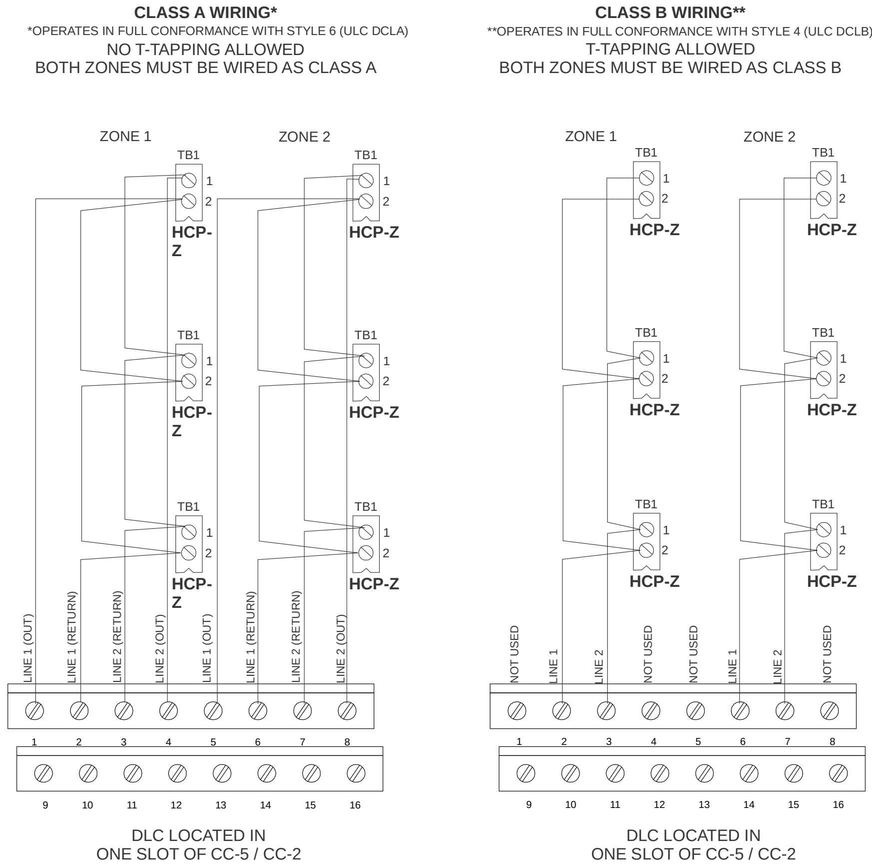
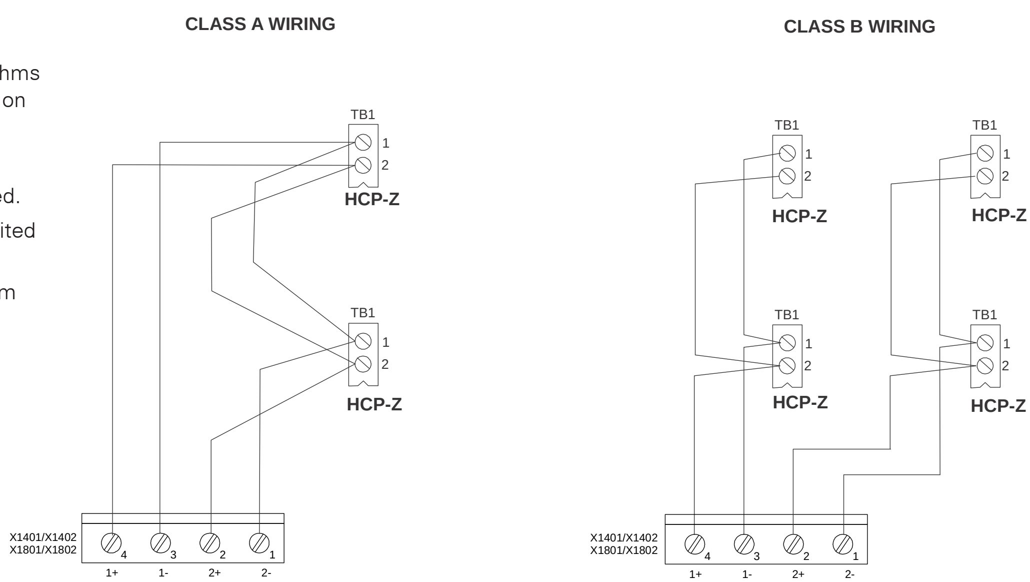


Figure 2
FireFinder-XLS Device Loop Connections

NOTES

1. Loop resistance 180 ohms max with 252 devices on loop.
2. 12-18 AWG wire.
3. No EOL device required.
4. Supervised, power limited per NEC 760.
5. All wiring must conform to national and local electrical codes.



Detector circuits on periphery board
for FC922/FV922, FC2025/FV2025

Figure 3
FS20 Device Loop Connections

NOTES

1. Loop resistance 50 ohms Max with 252 devices on the loop. Refer to the FS-250 Manual, P/N 315-049353 if the number of devices is less than 252.
2. 12-18 AWG wire.
3. No EOL device required.
4. Supervised, power limited per NEC 760.
5. All wiring must conform to national and local electrical codes.

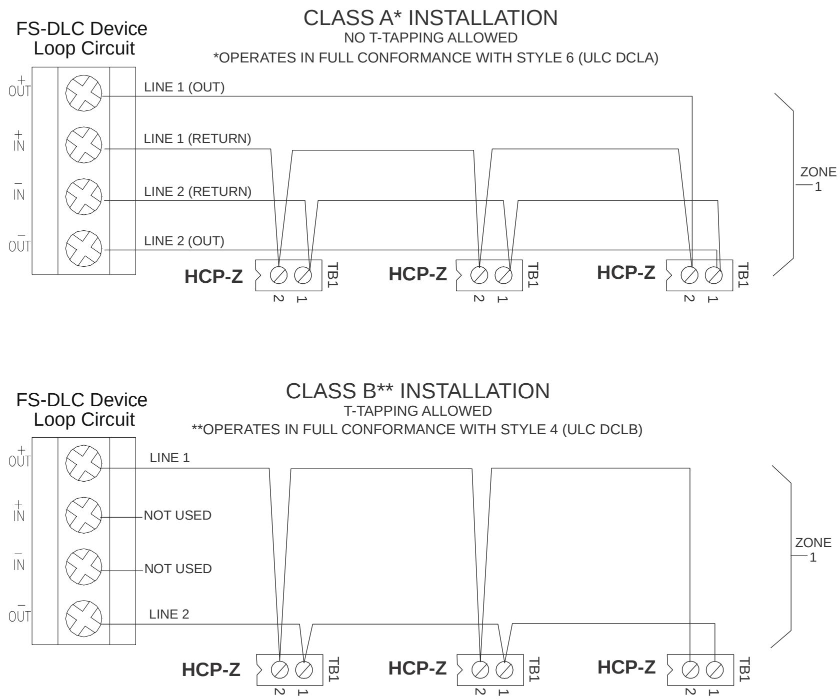


Figure 4
FS-250 Device Loop Connections

DPU Loop Test

When performing a loop test with the DPU be sure to apply power to the HCP-Z. Without power applied to the HCP-Z a blinking “C” will appear on the DPU, indicating that the HCP-Z is in trouble.

HCP-Z As NAC Module

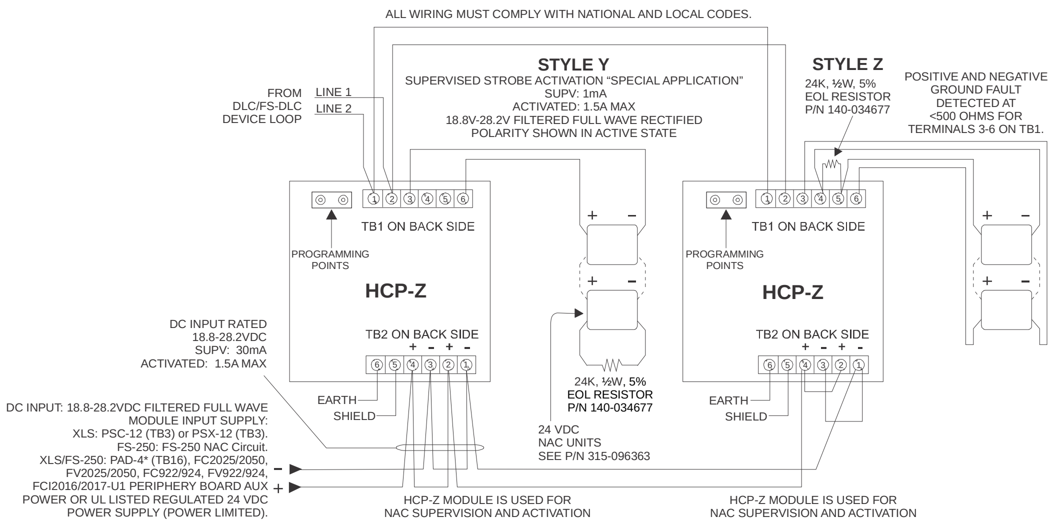
This application uses the principle of polarity reversal to activate notification appliances. Wiring is shown in Figure 4. Connect the HCP-Z output zone wiring to the (+) and (-) terminals of each notification appliance as shown in Figure 4. For a list of compatible devices, refer to P/N 315-096363.

When used as a NAC module, the 24VDC provides power for the supervision circuitry and to the notification appliances when they are activated. The power source must be power limited. See the HCP-Z Power Supply section (above) for compatible power sources. The maximum output load that may be connected to an HCP-Z is 1.5A at 24 VDC. If the 24 VDC is lost or the NAC line is broken or shorted while the HCP-Z is in supervisory mode, a trouble condition displays at the FireFinder-XLS, FS-250 System control panel, the Desigo FC2025/2050, FV2025/2050 Operating Unit, and the Cerberus PRO FC922/924, FV922/924 Operating Unit. For FS-250 Systems, the NAC circuit must be set to “always on” in the panel or FS-CT2 configuration tool. See the Line Resistance table below for the allowable line resistance for each HCP-Z output circuit.

MAXIMUM ALLOWABLE HCP-Z OUTPUT CIRCUIT LINE RESISTANCE FOR SPECIFIED DC RISER CURRENT AND LINE RESISTANCE

MAXIMUM DC RISER CURRENT (in Amps)	DC RISER RESISTANCE (in Ohms)					
	0.1 Ohm	0.25 Ohm	0.5 Ohm	0.75 Ohm	1 Ohm	1.5 Ohms
4	2.73	2.33	1.67	1.00	.33	—
3	2.80	2.50	2.00	1.50	1.00	—
2	2.86	2.67	2.33	2.00	1.67	1.00
1	2.93	2.83	2.67	2.50	2.33	2.00
.5	2.96	2.92	2.83	2.75	2.67	2.50
	MAXIMUM LOOP RESISTANCE FOR EACH HCP-Z ON RISER					

NOTES:
1. Resistances specified are for both wires.
2. If the total current requirement exceeds 4A, local auxiliary 24 VDC supplies that are UL listed for fire protection signaling use, such as Siemens PAD-4, may be used.



*REFER TO PAD-4 INSTALLATION INSTRUCTIONS, P/N 315-050217, FOR PROPER SETTING OF SWITCH 4. THE AUXILIARY POWER OUTPUT MUST BE CONFIGURED TO "ALWAYS ON".

Figure 5
HCP-Z Used As A NAC Module

NOTE **The input power and NAC power inputs on TB2 (1-4) must be connected to the same source.**

NOTE **All HCP-Zs connected to a given DLC/FS-DLC circuit must reside within a single notification zone.**

HCP-Z As Telephone Zone

When the HCP-Z is used as a telephone zone module (FireFinder-XLS System only) as shown in Figure 5, the 24 VDC provides power to the supervision and call-in detection circuitry. If the 24 VDC is lost, a trouble condition displays on the PMI/PMI-2 of the FireFinder-XLS.

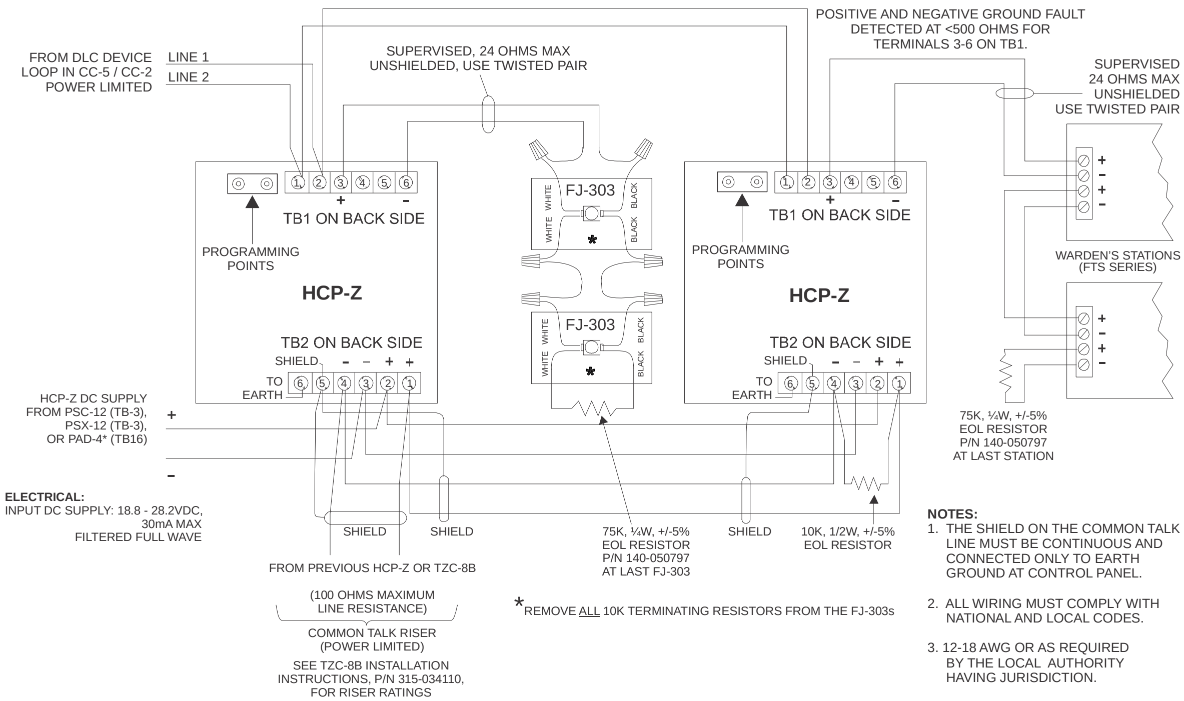
The HCP-Z provides a dial tone when a Fireman's Master telephone (FMT) is taken off hook or when a Portable FireFighter's telephone (PFT) is jacked in.

NOTE **Each HCP-Z can support a maximum of 5 phones off hook. Throughout the system, no more than 10 phones may be off hook at any one time.**

The supervised telephone common talk riser starts at the TZC-8B module in the CAB backbox. The common talk riser connects continuously to each HCP-Z with a 10K end of line device at the last HCP-Z. Tie the shield of these riser wires together using terminal 5 of TB2 and isolate them from the system circuits and the earth ground.

NOTE **Individual phones may not be connected to a riser that is wired to HCP-Zs. The TZC-8B zone must be configured for Riser usage in Zeus.**

Connect the supervised telephone zone wiring to the HCP-Z with twisted pair cable. Terminate at the last station with a 75K ohm end of line resistor. As with the common talk line described in the paragraph above, be sure that the shield is continuous and isolated from both system circuits and earth ground and that the shields are connected together using terminal 5 of TB-2.



*REFER TO PAD-4 INSTALLATION INSTRUCTIONS, P/N 315-050217, FOR PROPER SETTING OF SWITCH 4. THE AUXILIARY POWER OUTPUT MUST BE CONFIGURED TO “ALWAYS ON”.

Figure 6
HCP-Z Used As A Telephone Zone

HCP-Z As (70.7V/25V) Speaker Zone in an XLSV System

When the HCP-Z is used as a speaker zone (FireFinder-XLS System only), the 24 VDC provides power to the supervision circuitry. If the 24 volts is lost or there is an open or shorted speaker output line, a trouble condition displays on the PMI/PMI-2 of the FireFinder-XLS.

The 70.7V/25V RMS audio input to the HCP-Z must be power limited, such as from the ZAC-40. The ZAC-40 supervises the audio connection path to the HCP-Z and provides up to 40 watts of power. The ZAC-40 can be wired Style Y (Class B) only. Refer to the ZAC-40 Installation Instructions, P/N 315-035400 for further information. In order to function properly during degrade mode, the DLC to which the HCP-Z is connected must be located in the same enclosure as the DAC-NET and ZAC-40 that supply audio to the HCP-Z.

When the HCP-Z is used as a speaker zone, the output speaker lines are only supervised when the zone is not active. The audio output must not be allowed to exceed 25 watts. The approximate decibel loss for the total speaker zone wire length for various wire gauge sizes is shown in Figure 7 for the 70.7V option and in Figure 8 for the 25V option. Connect the speaker output as Style Y (Class B) as shown in Figure 9.

The 70.7V/25V RMS audio input to the HCP-Z must be power limited, such as from the VCI2001-U1 Amplifier Card. The VCI2001-U1 supervises the audio connection path to the HCP-Z and provides up to 50 watts of power. The VCI2001-U1 can be wired Style Y (Class B) or Style Z (Class A). Refer to the VCI2001-U1 Installation Instructions, Document ID A6V10370410, for further information. In order to function properly during degrade mode, the periphery FCI2016/2017-U1 to which the HCP-Z is connected must be located in the same enclosure as the FDNET and VCI2001-U1 that supply audio to the HCP-Z.

When the HCP-Z is used as a speaker zone, the output speaker lines are only supervised when the zone is not active. The audio output must not be allowed to exceed 25 watts. The approximate decibel loss for the total speaker zone wire length for various wire gauge sizes is shown in Figure 7 for the 70.7V option and in Figure 8 for the 25V option. Connect the speaker output as Style Z (Class A) or Style Y (Class B) as shown in Figures 10 and 11.

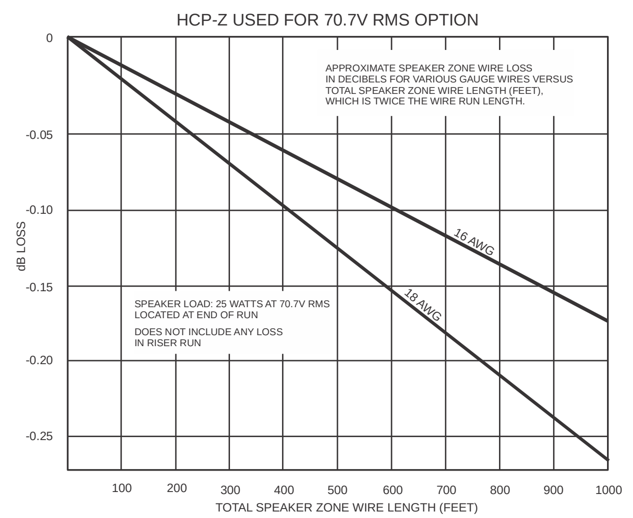


Figure 7
Approximate Speaker Zone Wire Loss — 70.7V Option

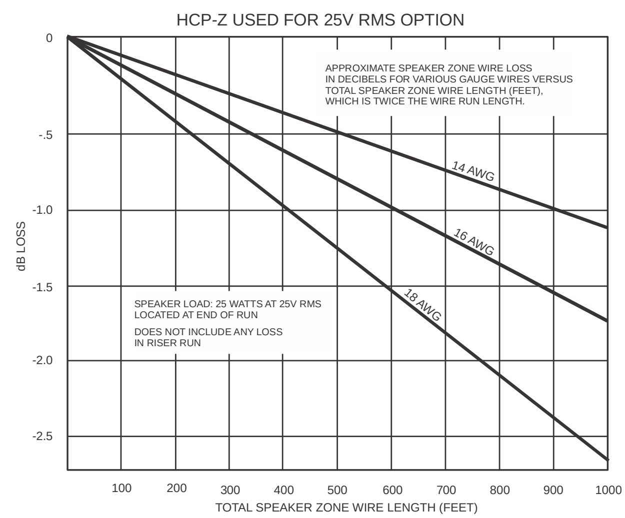


Figure 8
Approximate Speaker Zone Wire Loss — 25V Option

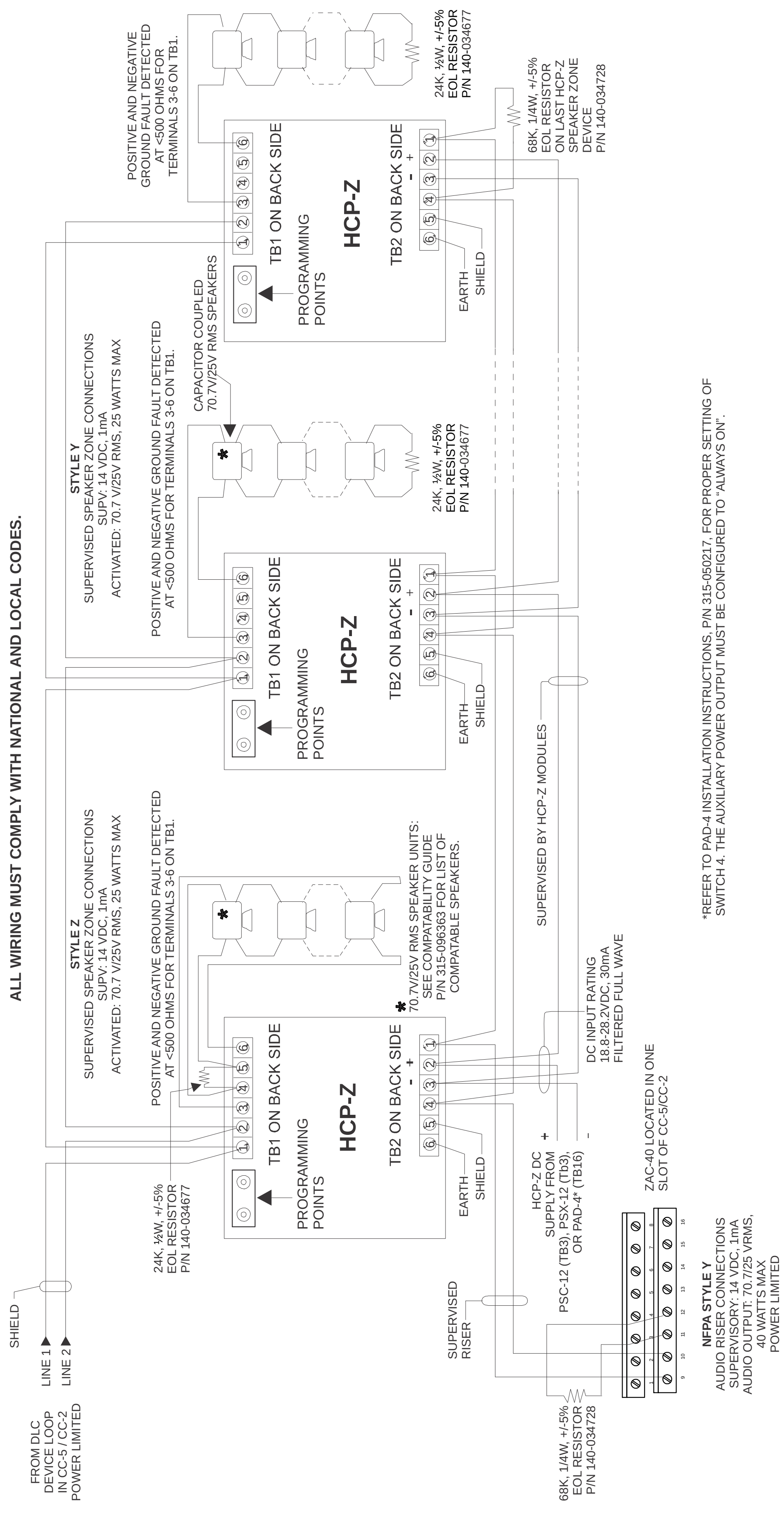


Figure 9
HCP-Z Used On An XLSV As A 70.7V/25V Speaker Zone

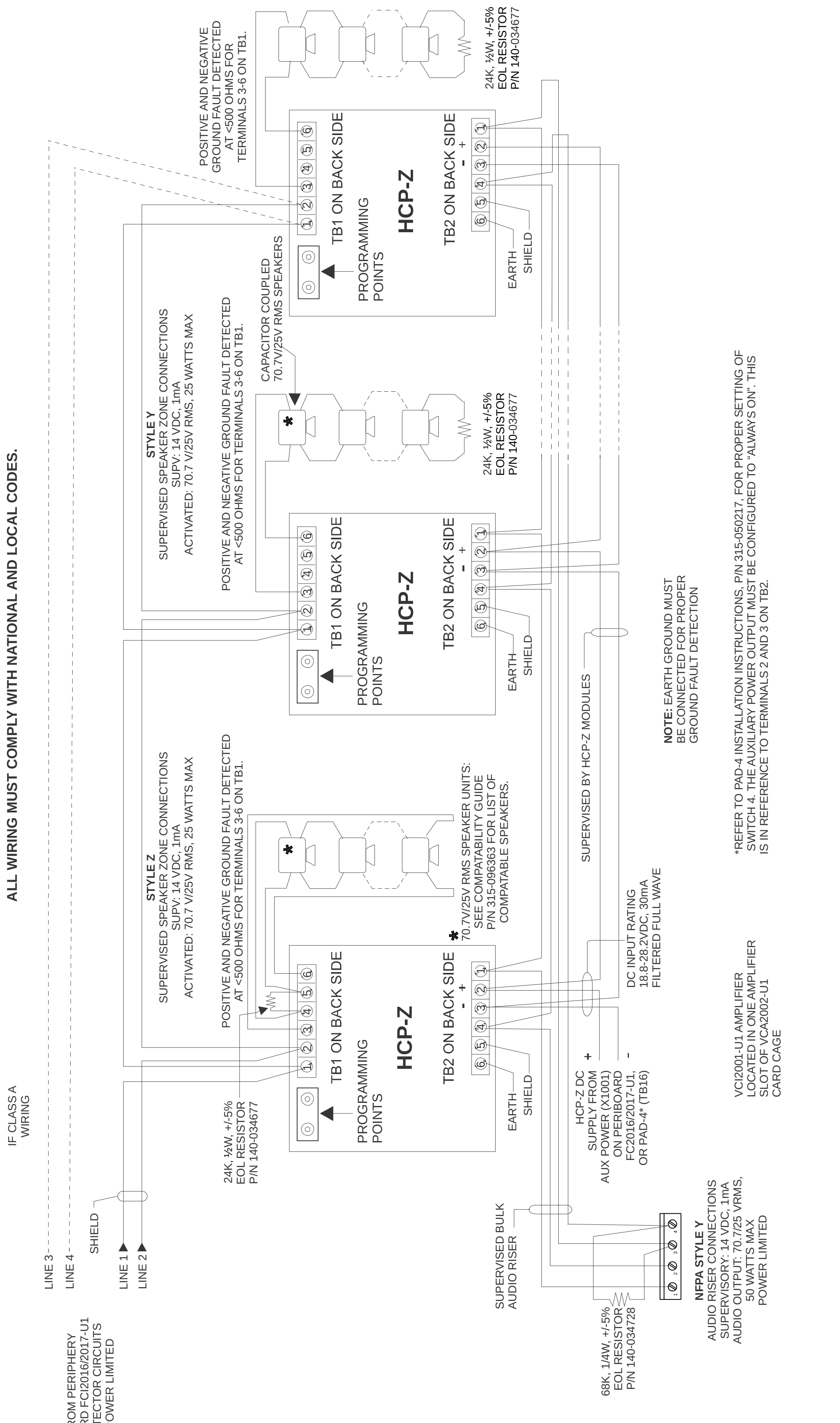


Figure 10
HCP-Z Used On An FV2025/2050 or FV922/924 As A 70.7V/25V Speaker Zone - Class A

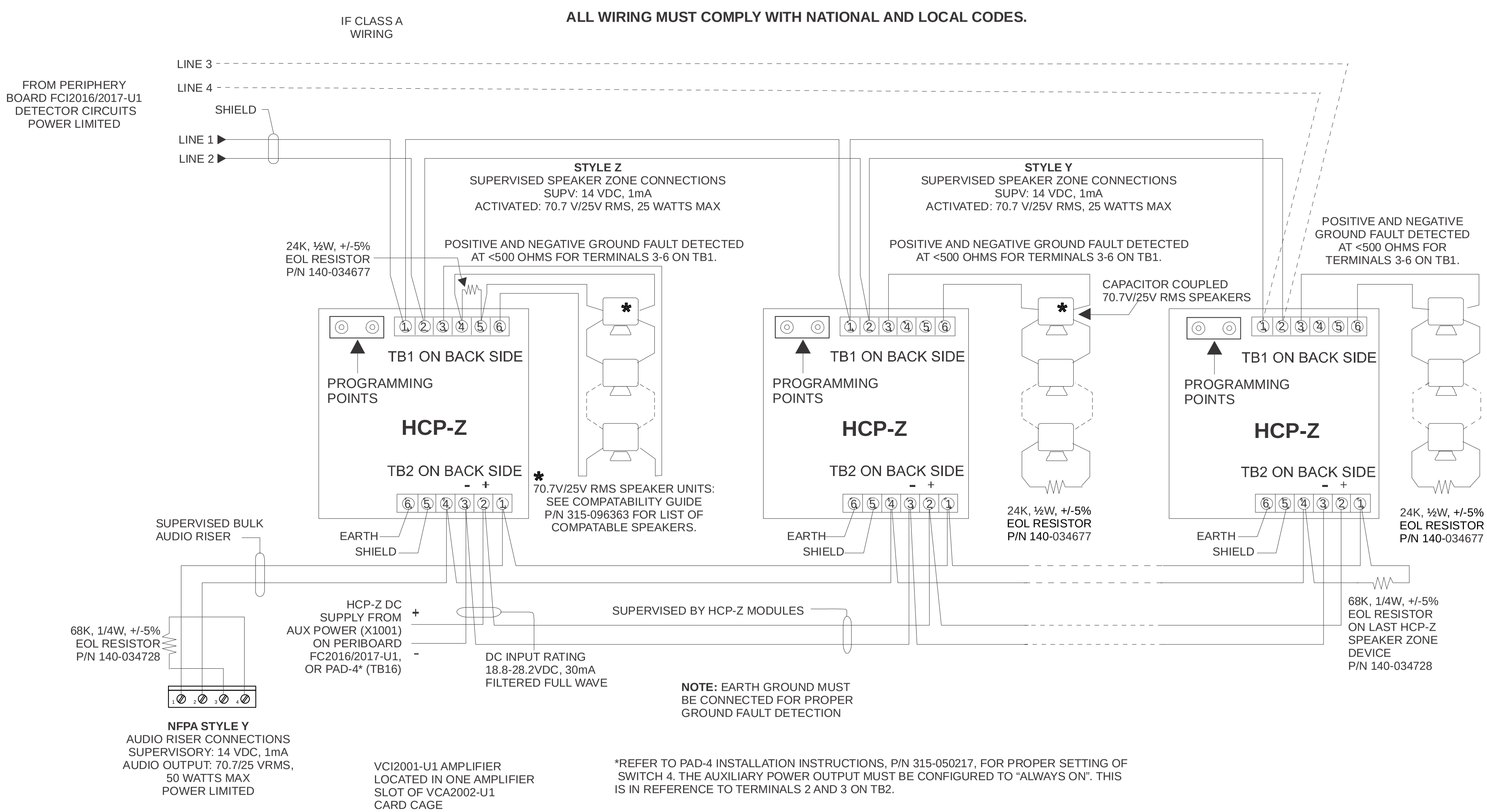


Figure 11
HCP-Z Used On An FV2025/2050 or FV922/924 As A 70.7V/25V Speaker Zone - Class B

Mounting

NOTE **Be sure to program the HCP-Z before mounting the unit to the switchbox. (Refer to PROGRAMMING on page 1.)**

NOTE **The HCP-Z should be installed in a UL listed electrical box. (See Figure 12.)**

1. Use a standard 3 1/2-inch deep, double gang electrical switchbox or a 4-inch square electrical box that is 2 1/8 inches deep with either a 1 1/2-inch deep extension or a 1 1/4 -inch deep plaster ring extension.
2. Connect the field wiring.
3. Insert the HCP-Z into the box and fasten the device plate to the box.
4. Cover the device front plate with the 5-inch switchplate (supplied) and fasten with two plate screws.

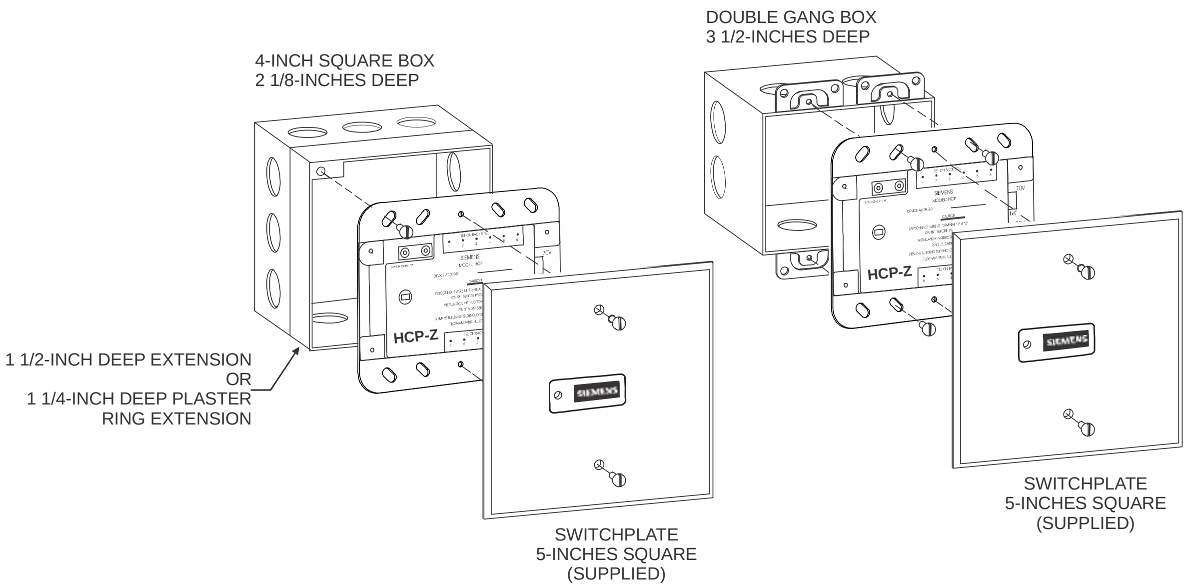


Figure 12
Mounting The HCP-Z

ELECTRICAL RATINGS

24VDC Power	
Voltage Range	18.8-28.2VDC
Max. Current	30mA
DLC / FS-DLC Loop	
Max. Current	1mA

Cyber security disclaimer

Siemens products and solutions provide security functions to ensure the secure operation of building comfort, fire safety, security management and physical security systems. The security functions on these products and solutions are important components of a comprehensive security concept.

It is, however, necessary to implement and maintain a comprehensive, state-of-the-art security concept that is customized to individual security needs. Such a security concept may result in additional site-specific preventive action to ensure that the building comfort, fire safety, security management or physical security system for your site are operated in a secure manner. These measures may include, but are not limited to, separating networks, physically protecting system components, user awareness programs, defense in depth, etc.

For additional information on building technology security and our offerings, contact your Siemens sales or project department. We strongly recommend customers to follow our security advisories, which provide information on the latest security threats, patches and other mitigation measures.

http://www.siemens.com/cert/en/cert-security-advisories.htm

Siemens Industry, Inc.
Building Technologies Division
Florham Park, NJ

Siemens Canada, Ltd.
1577 North Service Road East
Oakville, Ontario
L6H 0H6 Canada

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