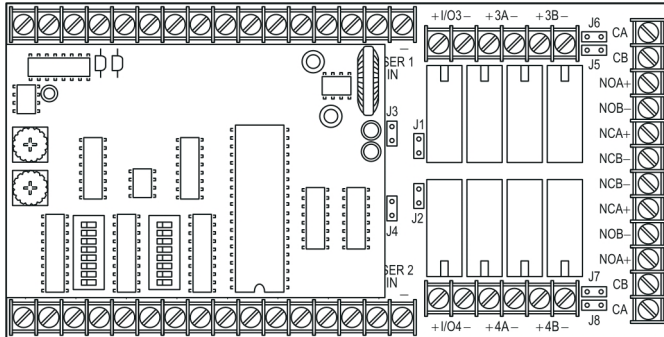


RZB(V/N)12-6/3

Addressable Remote Zone Interface

Product description



The RZB12(V/N)-6/3 Addressable Remote Zone Interface module provides connections for 12 Class B initiating device circuits, 4 Class B supervised output circuits, or a combination of both. It also has two programmable double-pole, double-throw (DPDT) unsupervised relay outputs.

All four input/output circuits (I/O1 to I/O4) support audible and visible notification appliances, firefighter telephones, and one-channel audio. I/O1 and I/O2 support two-channel audio. I/O3 and I/O4 support two-channel and three-channel audio.

The RZB12(V/N)-6/3 module consists of a motherboard, and a CPU card. The CPU card plugs into the motherboard.

The RZB12-6/3 module is available with or without alarm verification. See Table 1 below for model numbers and descriptions.

Table 1: RZB12-6/3 models

Model	Description
RZBV12-6/3/RZMP	Provides 30-second alarm verification. Includes mounting plate for cabinet installation.
RZBV12-6/3/MFC	Provides 30-second alarm verification. Includes MFC cabinet
RZBN12-6/3/RZMP	No alarm verification provided. Includes mounting plate for cabinet installation.
RZBN12-6/3/MFC	No alarm verification provided. Includes MFC cabinet

Specifications

Voltage	
Nominal circuit voltage:	24 VDC
Operating voltage:	19.4 VDC, min.
Wire sizes	
TB1, TB3, TB5	18 to 14 AWG (0.75 to 1.50 sq mm)
TB2, TB4	18 to 12 AWG (0.75 to 2.5 sq. mm).
Current	
Standby current	100 mA
Alarm current	100 mA
Supervisory current per zone	3 mA, max.
Current any terminal	4 A, max.
Current per active relay	20 mA
Short circuit current (zone)	100 mA, max.
Relay outputs	
Quantity	2
Type	Programmable
Style	Double pole, double throw (DPDT)
Rating	24 VDC at 3.5 A, 100 W audio, max.
Input circuit wiring resistance	100 Ω
Initiating device circuits	
Quantity	8 to 12
EOL resistor	3.9 k Ω
Zone voltage	24 VDC
Alarm current	≤ 100 mA
Alarm impedance range	IN1 to IN8: ≤ 1 k Ω I/O1 to I/O4: ≤ 6.5 k Ω
Smoke detector supervision current	IN1 to IN8: 3 mA I/O1 to I/O4: N/A
Trouble impedance range	IN1 to IN8: ≥ 7.5 k Ω I/O1 to I/O4: ≥ 26 k Ω
Trouble current range	IN1 to IN8: ≤ 3.5 mA I/O1 to I/O4: 0.9 mA
Alarm verification time	30 seconds
Supervised output circuits	
EOL resistor	15 k Ω
Quantity	0 to 4
Short circuit detection	≤ 6.5 k Ω
Open circuit detection	≥ 30 k Ω
Contact ratings	24 VDC at 3.5 A 25 VRMS at 100 W 70 VRMS at 100 W
Alarm current	
I/O1 and I/O2	20 mA
I/O3 and I/O4	Riser A: 20 mA Riser B: 40 mA Riser C: 60 mA
Operating environment	
Temperature	32 to 120° F (0 to 49° C)
Humidity	93% RH, noncondensing at 90° F (32° C)

Note: Alarm verification time applies only to RZBV12-6/3 modules, circuits IN1 to IN8.

Power and data wiring

Use a dedicated 24 VDC power riser to power the RZB(V/N)12-6/3 module. Use a separate riser to power notification appliances and auxiliary devices.

You can install more than one RZB(V/N)12-6/3 module on a power riser provided you do not exceed the output current specification of the power supply. See "Power calculations" on page 8.

For EST3 retrofit applications, install a 3-RZBCAP disk capacitor (ordered separately) across the DATA_IN terminals on each RZB(V/N)12-6/3 module. See Figure 4 on page 5.

Configuration

Figure 1 shows the location of the switches on the CPU card.

Device address

The RZB(V/N)12-6/3 module uses 16 device addresses on the signaling line circuit. See Table 2 below.

Set the HIGH ADD and LOW ADD switches to the RZB(V/N)12-6/3 module's first address (N). Make sure that no other devices on the signaling line circuit have the same device addresses.

Possible values: 1 to 92

Table 2: RZB(V/N)12-6/3 device addresses

Address	Circuit	Address	Circuit
N	IN1	N+100	I/O1
N+1	IN2	N+101	I/O2
N+2	IN3	N+102	I/O3
N+3	IN4	N+103	I/O4
N+4	IN5	N+104	K5 and PWR SUPV
N+5	IN6	N+105	K6
N+6	IN7	N+106	I/O3 Riser Select
N+7	IN8	N+107	I/O4 Riser Select

Example: If the required first device address is 35, turn the HIGH ADD switch until the number 3 is at the top of the dial and the LOW ADD switch until the number 5 is at the top of the dial.

IN1 to IN8

IN1 to IN8 are used for connecting conventional two-wire smoke detectors. You can also use IN1 to IN8 for connecting alarm or nonalarm dry contact initiating devices. See Figure 5 on page 5 and Figure 6 on page 6.

Configure IN1 to IN8 according to Table 3 on page 3.

I/O1 to I/O4

I/O1 to I/O4 are used as inputs for connecting alarm or nonalarm dry contact initiating devices. You can also use I/O1 to I/O4 as outputs for connecting unsynchronized horns and strobes, speakers, and three-state firefighter telephones. See Figure 5, Figure 7, Figure 8, and Figure 9.

Configure I/O1 to I/O4 according to Table 3 on page 3.

Note: RZB(V/N)12-6/3 modules do not support four-state firefighter telephones.

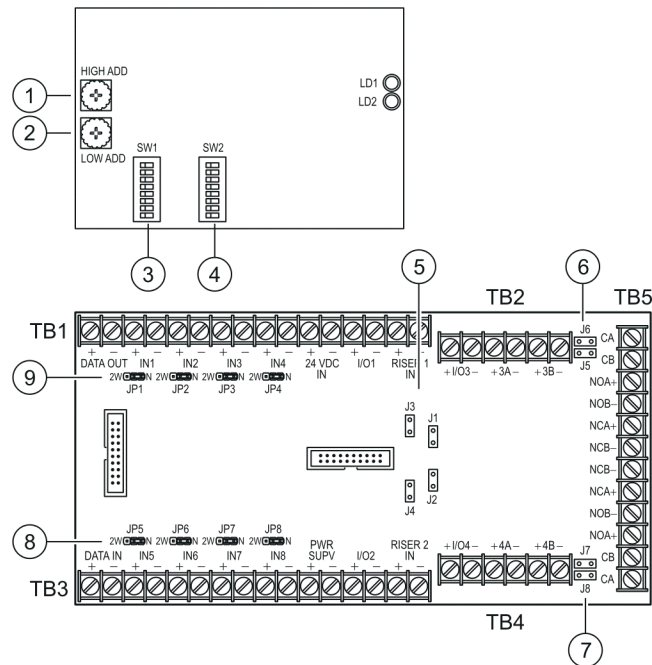
K5 and K6

K5 and K6 are unsupervised relay outputs for connecting ancillary equipment. You can also use K5 and K6 as unsupervised riser inputs for three-channel audio. See Figure 10 on page 8 and Figure 9 on page 7.

There are no hardware configuration settings for K5 and K6.

Note: K5 and the PWR SUPV circuit (TB3-11 and TB3-12 share the same address. Always configure K5 as a SUPERVISEDOUTPUT device type when the PWR SUPV circuit is used to monitor an external power supply. K5 is always an unsupervised output regardless of the device type setting.

Figure 1: Switch and jumper locations



1. HIGH ADD switch. Sets the tens digit of the first device address. Example: 1 is 10, 2 is 20, and so on.
2. LOW ADD switch. Sets the ones digit of the first device address. Example: 1 is 1, 2 is 2, and so on.
3. SW1. Configures IN1 to IN8.
4. SW2. Configures I/O1 to I/O4.
5. J1 to J4. Configures I/O1 to I/O4, respectively, as an input (IN) or as an output (OUT).
6. J5 and J6. Configures I/O3 as a three-channel riser selector (IN) or as a one- or two-channel riser selector (OUT).
7. J7 and J8. Configures I/O4 as a three-channel riser selector (IN) or as a one- or two-channel riser selector (OUT).
8. JP5 to JP8 from left to right. Configures IN5 to IN8, respectively, as a conventional smoke circuit (2W) or as a dry contact initiating device circuit (N).
9. JP1 to JP4 from left to right. Configures IN1 to IN4, respectively, as a conventional smoke circuit (2W) or as a dry contact initiating device circuit (N).

Table 3: Configuration settings

Circuit	Alarm Input (Smoke)	Alarm Input (Dry Contact)	Nonalarm Input (Dry Contact)	Output (One Riser)	Output (Two Risers)	Output (Three Risers)
IN1	JP1: 2W SW1-1: ON	JP1: N SW1-1: ON	JP1: N SW1-1: OFF			
IN2	JP2: 2W SW1-2: ON	JP2: N SW1-2: ON	JP2: N SW1-2: OFF			
IN3	JP3: 2W SW1-3: ON	JP3: N SW1-3: ON	JP3: N SW1-3: OFF			
IN4	JP4: 2W SW1-4: ON	JP4: N SW1-4: ON	JP4: N SW1-4: OFF			
IN5	JP5: 2W SW1-5: ON	JP5: N SW1-5: ON	JP5: N SW1-5: OFF			
IN6	JP6: 2W SW1-6: ON	JP6: N SW1-6: ON	JP6: N SW1-6: OFF			
IN7	JP7: 2W SW1-7: ON	JP7: N SW1-7: ON	JP7: N SW1-7: OFF			
IN8	JP8: 2W SW1-8: ON	JP8: N SW1-8: ON	JP8: N SW1 8: OFF			
I/O1		SW2-1: ON SW2-5: ON J1: IN	SW2-1: OFF SW2-5: ON J1: IN	SW2-1: N/A SW2-5: OFF J1: OUT		
I/O2		SW2-2: ON SW2-6: ON J2: IN	SW2-2: OFF SW2-6: ON J2: IN	SW2-2: N/A SW2-6: OFF J2: OUT		
I/O3		SW2-3: ON SW2-7: ON J3: IN	SW2-3: OFF SW2-7: ON J3: IN	SW2-3: N/A SW2-7: OFF J3: OUT J5: OUT J6: OUT	SW2-3: N/A SW2-7: OFF J3: OUT J5: OUT J6: OUT	SW2-3: N/A SW2-7: OFF J3: OUT J5: IN J6: IN
I/O4		SW2-4: ON SW2-8: ON J4: IN	SW2-4: OFF SW2-8: ON J4: IN	SW2-4: N/A SW2-8: OFF J4: OUT J7: OUT J8: OUT	SW2-4: N/A SW2-8: OFF J4: OUT J7: OUT J8: OUT	SW2-4: N/A SW2-4 OFF J4: OUT J7: IN J8: IN

Note: The device type settings in the site specific software must match the hardware configuration. Refer to the configuration utility's help topics for more information. Alarm verification is only supported on RZBV12-6/3 models.

Installation instructions

WARNING: Disconnect power to the cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Note: Temporary resistors have been installed at zones I/O3 and I/O4 to prevent trouble events during installation. Once the module has been installed, replace the temporary resistors with UL/ULC listed end-of-line resistors.

To install the RZB module:

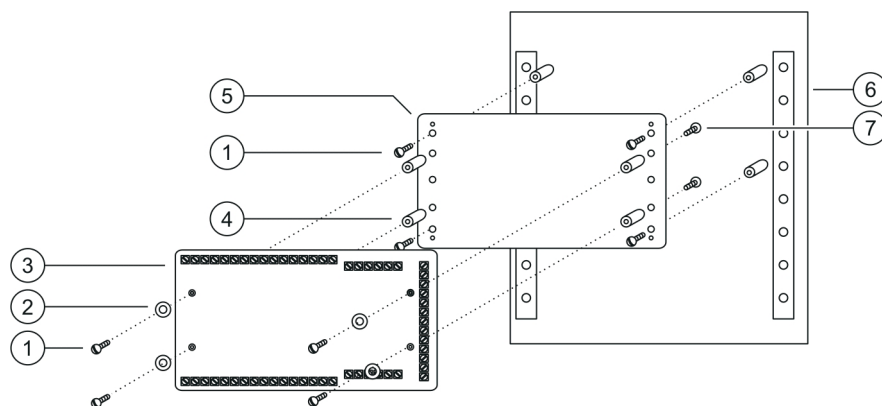
1. Plug the CPU card into the two 24-pin connectors on the motherboard.
2. If the mounting plate is required for your application, attach the module to the 3-RZMP mounting plate and attach the mounting plate to the cabinet backplate, as shown in Figure 2.

— or —

If the module is being mounted to an MFC-A backbox, use the screws and washers provided to attach the module to the cabinet backbox, as shown in Figure 3. Take care to connect to earth ground as close as possible to the MFC-A cabinet.

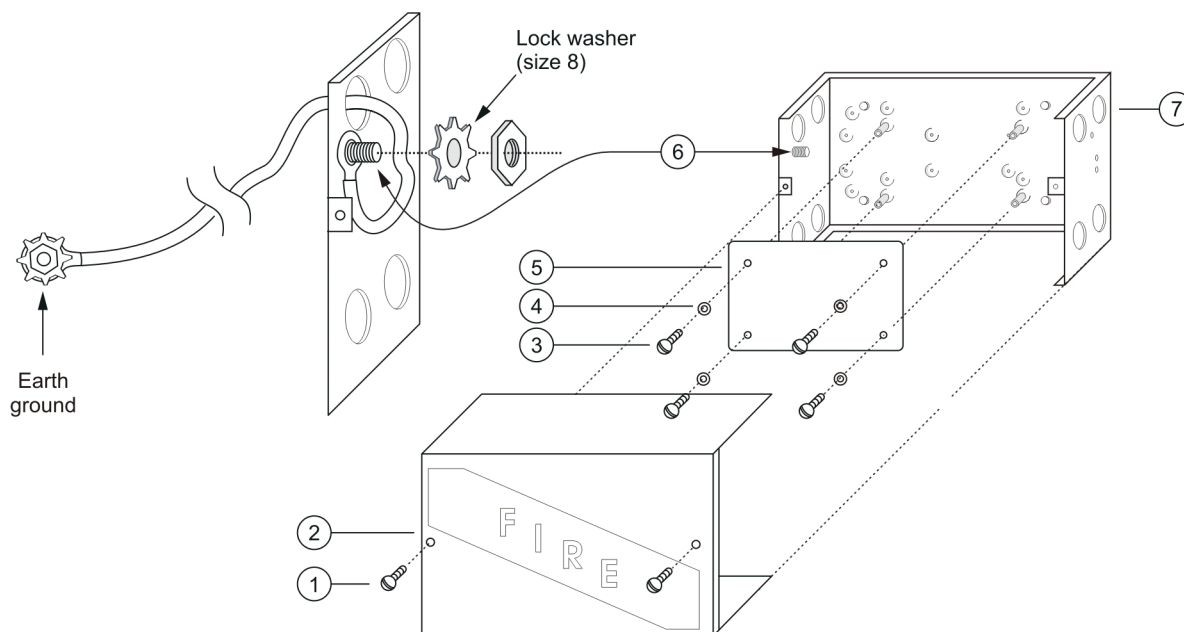
Mounting

Figure 2: RZB12-6/3 module mounted on an RZMP mounting plate .attached to a cabinet backplate



- | | |
|--|---|
| 1. Slotted pan head screw, 6-32 x 3/8 in (9.50 mm). | 5. RZMP mounting plate (P/N 240163). Extrusions face towards the cabinet backplate. |
| 2. Lock washer (size 6). | 6. Cabinet backplate. |
| 3. RZB12-6/3 motherboard. Install CPU card (not shown) after mounting the RZB12-6/3 motherboard. | 7. Slotted pan head screw 6-32 x 1/4 in (6.35 mm). |
| 4. Hex nylon standoff, 6-32 x 3/8 in (9.50 mm). | |

Figure 3: RZB(V/N)12-6/3 module installed in an MFC-A enclosure



- | | |
|--|--|
| 1. Cover screw. | 5. RZB12-6/3 motherboard. Install CPU card (not shown) after mounting the RZB12-6/3 motherboard. |
| 2. MFC-A cover. | 6. Earth ground stud. |
| 3. Slotted pan head screw, 6-32 x 3/8 in (9.5 mm). | 7. Conduit knockouts. |
| 4. Lock washer (size 6). | |

Wiring

Figure 4: Power and data wiring

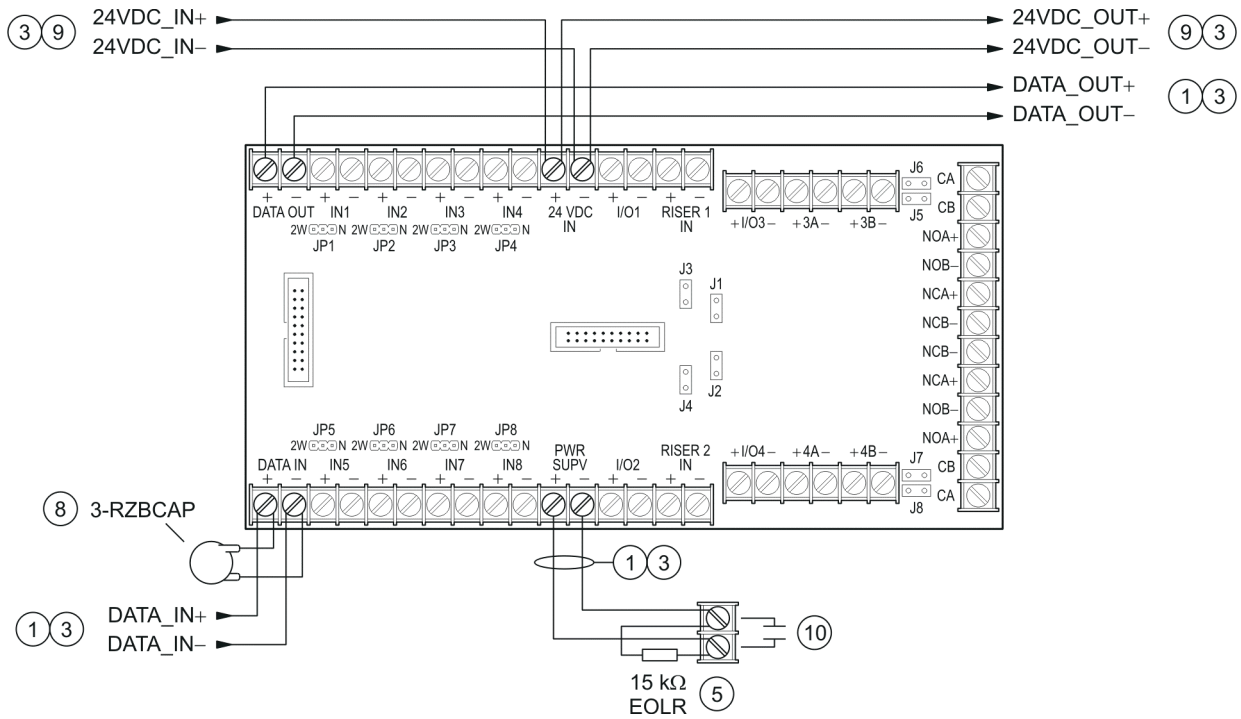


Figure 5: Smoke detector circuit wiring

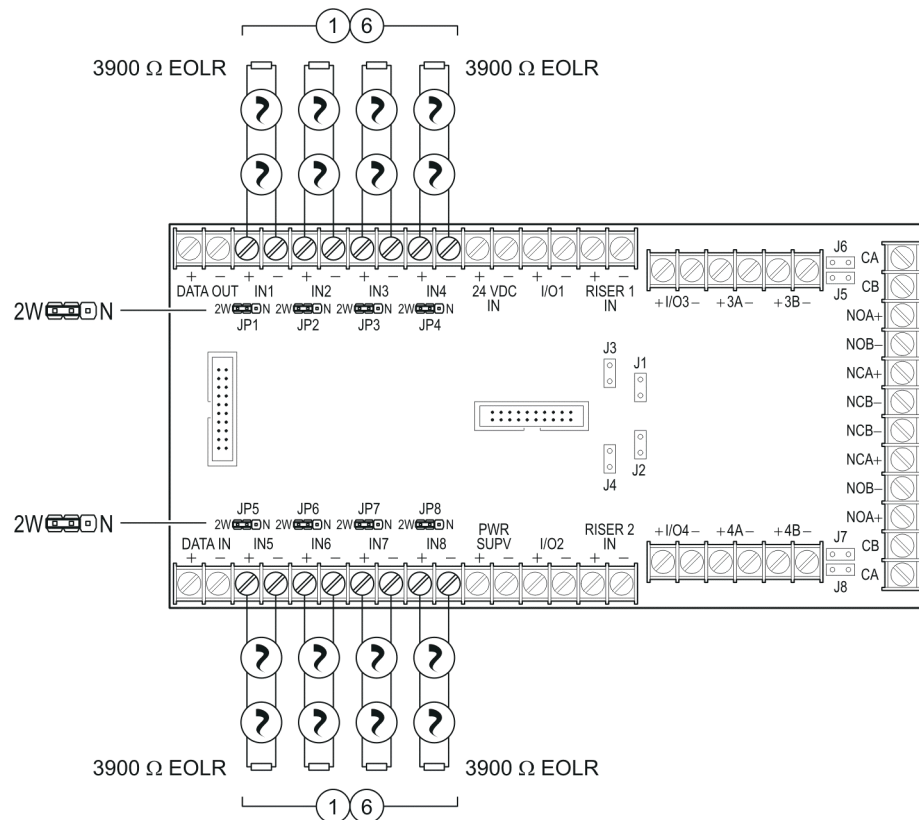


Figure 6: Dry contact initiating device circuit wiring

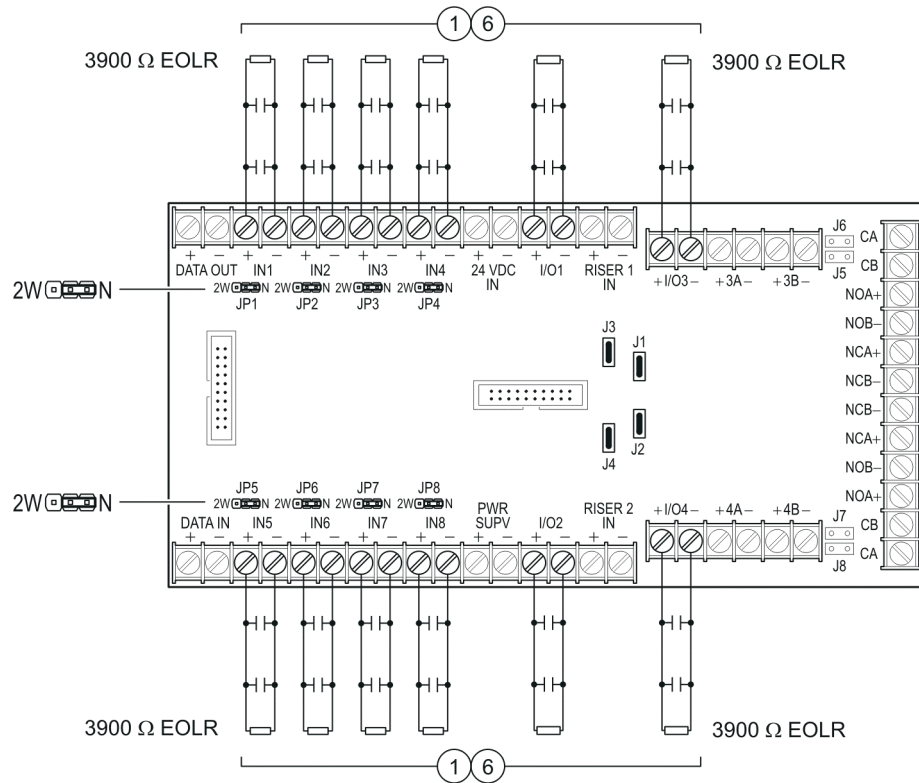


Figure 7: Single-channel application wiring

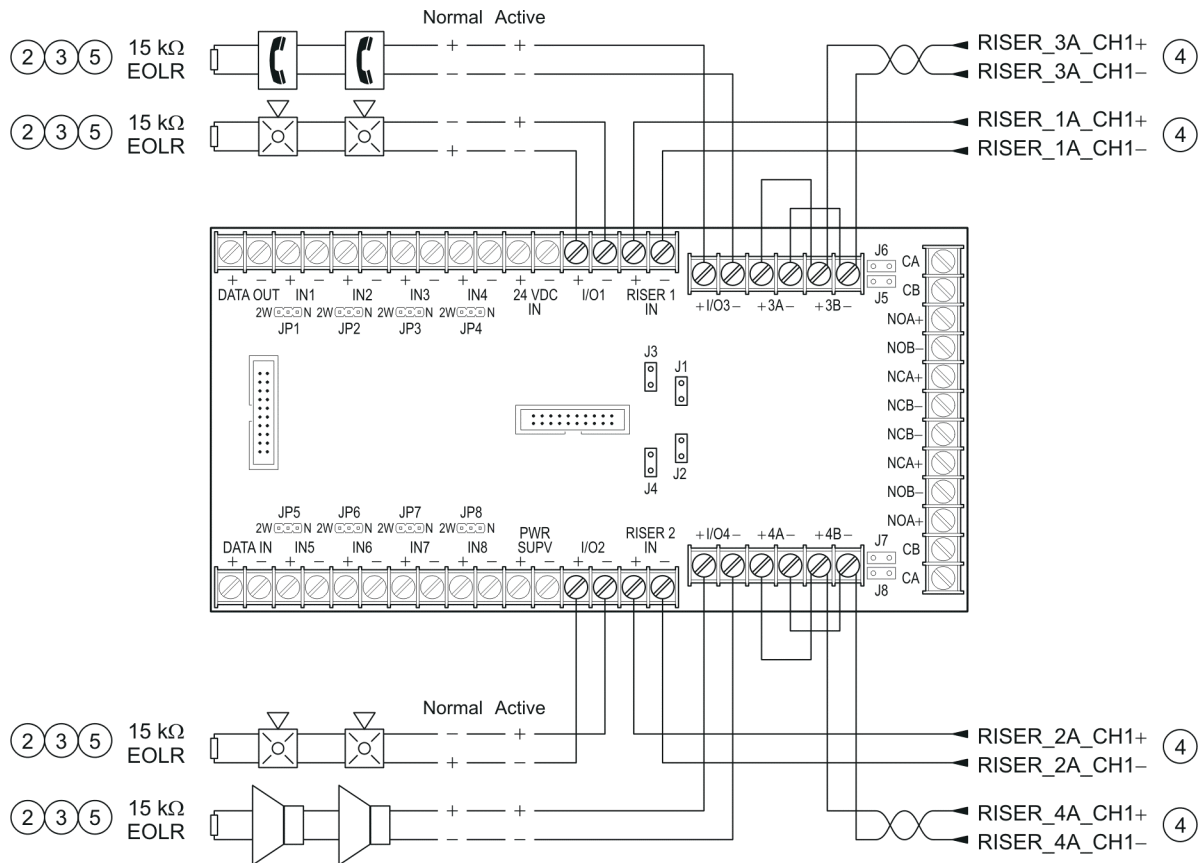


Figure 8: Two-channel audio wiring

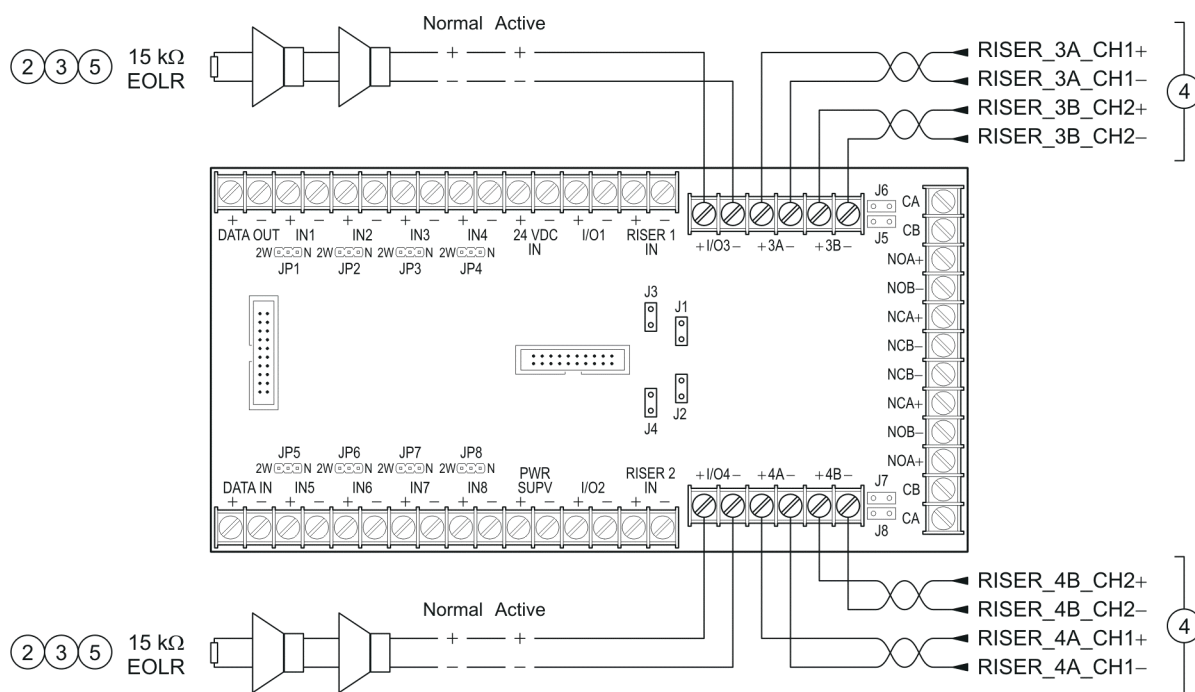


Figure 9: Three-channel audio wiring

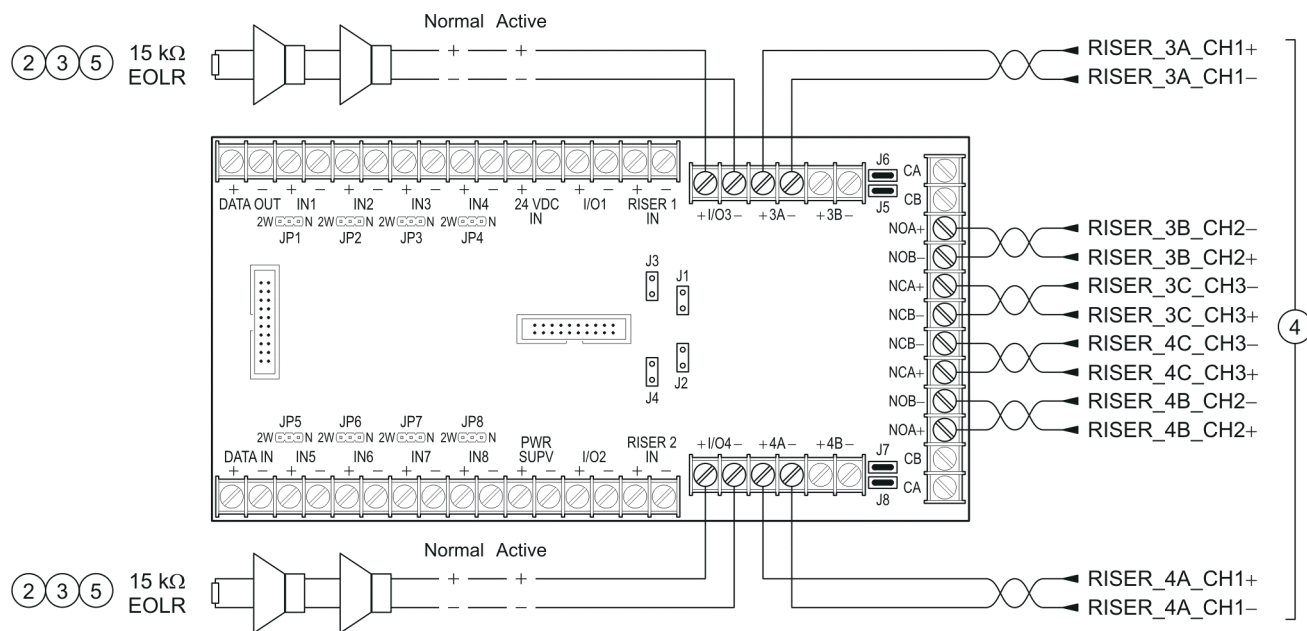
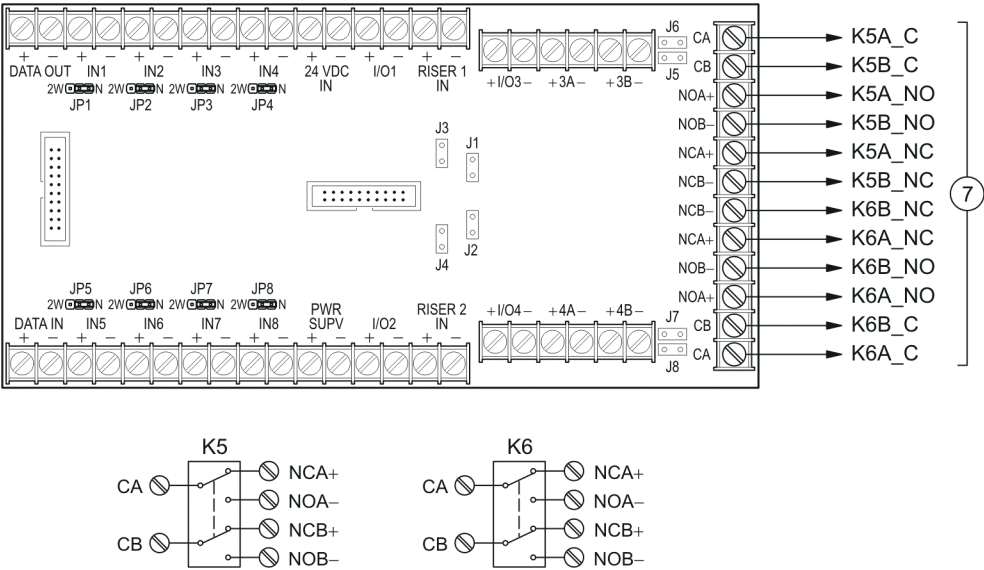


Figure 10: Relay output wiring



Wiring notes

The following notes apply to Figure 4 through Figure 10:

- 1. Supervised and power-limited.
- 2. Supervised and power-limited only when connected to a power-limited source.
- 3. Maintain 1/4 inch (6.35 mm) spacing between power-limited and nonpower-limited circuits, or use FPL, FPLR, or FPLP or an equivalent in accordance with the National Electrical Code (NEC). For nonpower-limited applications, eliminate power-limited markings.
- 4. Unsupervised and power-limited only when connected to a power-limited source. Riser B is automatically selected in standalone mode.
- 5. Use P/N EOL-15.
- 6. Use P/N EOL-3.9.

- 7. Unsupervised and power-limited only when connected to a power-limited source. K5 is automatically activated in standalone mode.
- 8. Install a 3-RZBCAP if connected to a 3-AADC1 card.
- 9. Unsupervised and power limited. Use a monitor module and end-of-line relay to provide riser supervision. Typically, the 24VDC power riser originates from an APS8B power supply. You can also use an EST3 power supply.
- 10. Normally open trouble relay on the APS8B power supply used to provide the 24VDC power riser. Terminate with a 15 kΩ EOLR if an EST3 power supply is used or if another RZB12(V/N)-6/3 module on the same power riser is monitoring the APS8B power supply.

Power calculations

Use Table 4 below to determine the RZB12(V/N)-6/3 module's total standby and alarm current.

Table 4: RZB(V/N)12-6/3 power consumption worksheet

Device/circuit	Standby current	Alarm current	Circuit	Total standby current	Total alarm current
RZB(V/N)12-6/3	100 mA	100 mA		100 mA	100 mA
IN1-IN8 quiescent	3 mA/CKT				
IN1-IN8 activated		75 mA/CKT			
I/O1, I/O2 activated		20mA/CKT			
I/O3, I/O4 activated		40 mA/CKT			
Relay K5 or K6 activated, or 3-channel operation		20 mA/Relay			
Total					