

Safety



Caution!

Remove all power (AC and battery) before making any connections. Failure to do so might result in personal injury and/or equipment damage.

Overview

The B228 8-Input, 2-Output Expansion Module is an 8 points/zones supervised expansion device with 2 additional switched outputs that connects to control panels through the SDI2 bus.

This module communicates back to the control panel all point status changes, and the outputs are switched on and off through a command from the control panel.

The inputs and outputs are accessed through on-board screw terminal connections.

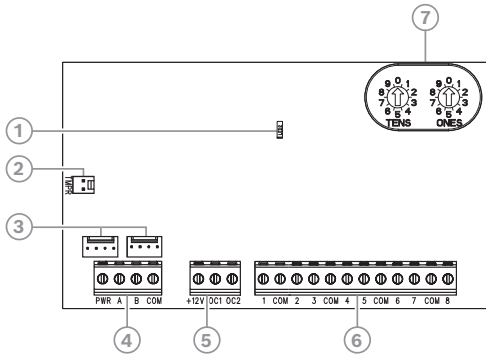


Fig. 1: Board overview

| | |
|---|------------------------------------------------------------------------------|
| 1 | Heartbeat LED (blue) |
| 2 | Tamper switch connector |
| 3 | SDI2 interconnect wiring connectors (to control panel or additional modules) |
| 4 | SDI2 terminal strip (to control panel or additional modules) |
| 5 | Terminal strip (outputs) |
| 6 | Terminal strip (point inputs) |
| 7 | Address switches |

Address settings

Two address switches determine the address for the B228 module. The control panel uses the address for communications. The address also determines the output numbers.

Use a slotted screwdriver to set the two address switches.

Notice!

The module reads the address switch setting only during power up.



If you change the switches after you apply power to the module, you must cycle the power to the module to enable the new setting.

Configure the address switches based on the control panel setup.

If multiple B228 modules are present in the same system, each B228 module must have a distinct address.

The address switches of the module indicate the tens and ones value of the module's address.

When using single-digit address numbers from 1 to 9, set the tens switch to 0 and the ones digit to the corresponding number.



Fig. 2: Single-digit address setting



Fig. 3: Dual-digit address setting

Address settings per control panel

Valid B228 addresses are dependent on the number of points allowed by a particular control panel.

| Control panel | Onboard point numbers | Valid B228 addresses | Corresponding point numbers |
|-------------------------------------------|--------------------------------|----------------------|--------------------------------|
| ICP-SOL3-P ICP-SOL3-APR ICP-SOL3-PE | 01 - 08 | 01 | 09 - 16 |
| ICP-SOL4-P ICP-SOL4-PE | 01 - 08 (3K3) 09 - 16 (6K8) | 01 | 09 - 16 17 - 24 25 - 32 |
| | | 02 | 17 - 24 25 - 32 |
| | | 03 | 17 - 24 (3K3) 25 - 32 (6K8) |

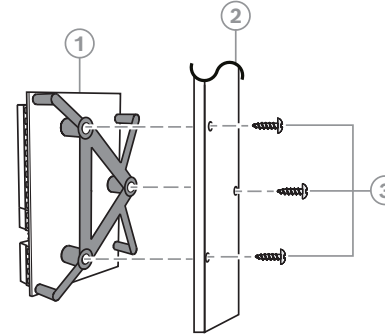
Installation

After you set the address switches for the proper address, install the module in the enclosure, and then wire it to the control panel.

Mount the module in the enclosure

Mount the module into the enclosure's 3-hole mounting pattern using the supplied mounting screws and mounting bracket.

Mounting the module in the enclosure



| | |
|---|----------------------------------------|
| 1 | Module with mounting bracket installed |
| 2 | Enclosure |
| 3 | Mounting screws (3) |

Mount and wire the tamper switch

You can connect an optional enclosure door tamper switch for one module in an enclosure.

Installing the optional tamper switch:

- Mount the ICP-EZTS Tamper Switch (P/N: F01U009269) into the enclosure's tamper switch mounting location. For complete instructions, refer to EZTS Cover and Wall Tamper Switch Installation Guide (P/N: F01U003734).
- Plug the tamper switch wire onto the module's tamper switch connector.

Wire to the control panel

Wire the module to a control panel using either of below methods, but do not use both.

- SDI2 interconnect wiring connectors, wire included
- SDI2 terminal strip, labeled with PWR, A, B, and COM

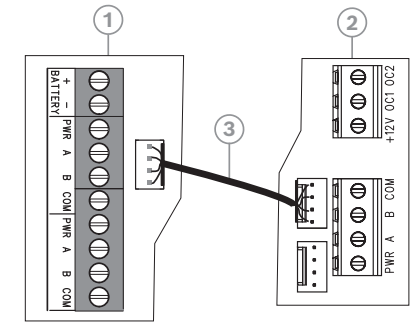
Interconnect wiring parallels the PWR, A, B, and COM terminals on the terminal strip.



Notice!

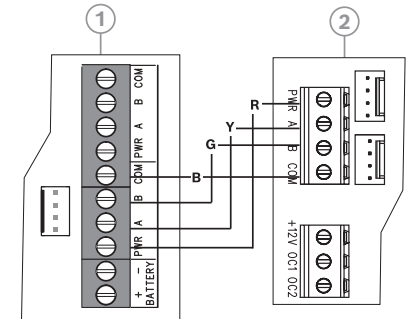
When connecting multiple modules, combine terminal strip and interconnect wiring connectors in series.

Using SDI2 interconnect wiring connectors



| | |
|---|-------------------------------------------------|
| 1 | Control panel |
| 2 | B228 module |
| 3 | Interconnect cable (P/N: F01U079745) (included) |

Using terminal strip



| | |
|---|---------------|
| 1 | Control panel |
| 2 | B228 module |

Output loop wiring

There are 3 terminals for the outputs.

The two outputs OC1 and OC2 shares one common terminal labeled +12V. These two outputs are independently switched outputs, and their output types and functions are supported by the control panel.

When using detectors, the switched outputs provides SDI2 voltage over than 100 mA of power.

Sensor loop wiring

The resistance of the wires on each sensor loop, when connected to the detection devices, should be below 100Ω.

The B228 module detects open, short, normal, and ground fault circuit conditions on its sensor loops and transmits these conditions to the control panel.

Each sensor loop is assigned a unique point/zone number and transmits individually to the control panel.

Ensure that the wiring is routed away from telephone and AC wiring within the premises.

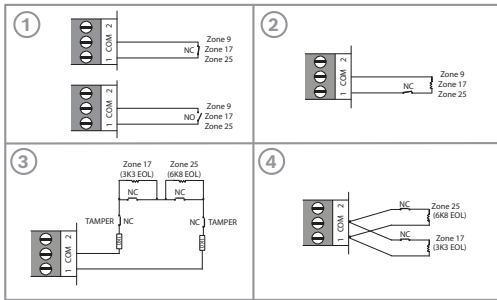


Fig. 4: Sensor loops

| | |
|---|--------------------------|
| 1 | Zone without resistor |
| 2 | Single zone input |
| 3 | Double zones with tamper |
| 4 | Double zones inputs |

LED descriptions

The module includes one blue heartbeat LED to indicate that the module has power and to indicate the module's current state.

| Flash pattern | Function |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flashes once every 1 sec | Normal state: Indicates normal operation state. |
| 3 quick flashes every 1 sec | Communication error state: Indicates (the module is in a "no communication state") resulting in an SDI2 communication error. |
| ON Steady | LED trouble state: <ul style="list-style-type: none"> module is not powered (for OFF Steady only) the address setting is 0 at tens and ones (for ON Steady only) some other trouble condition prohibits the module from controlling the heartbeat LED |
| OFF Steady | |

Firmware version

To show the firmware version using an LED flash pattern:

- If the optional tamper switch is installed:
 - With the enclosure door open, activate the tamper switch (push and release the switch).
- If the optional tamper switch is NOT installed:
 - Momentarily short the tamper pins.

When the tamper switch is activated, the heartbeat LED stays OFF for 3 seconds before indicating the firmware version. The LED pulses the major, minor, and micro digits of the firmware version, with a 1 second pause after each digit.

Example:

Version 1.4.3 shows as LED flashes:

[3 second pause] * _****_*** [3 second pause, then normal operation].

Technical data

Electrical

| | |
|--------------------------|--------|
| Current consumption (mA) | 30 mA |
| Nominal voltage (VDC) | 12 VDC |
| Output voltage (VDC) | 12 VDC |

Mechanical

| | |
|-----------------------------|-----------------------------|
| Dimensions (H x W x D) (mm) | 73.5 mm x 127 mm x 15.25 mm |
|-----------------------------|-----------------------------|

Environmental

| | |
|-------------------------------------------------|--------------|
| Operating temperature (°C) | 0 °C – 50 °C |
| Operating relative humidity, non-condensing (%) | 5% – 93% |

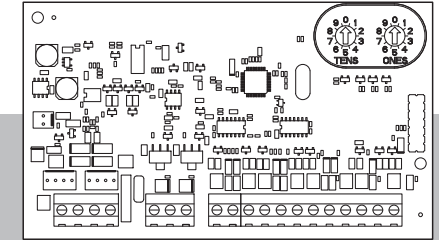
Connectivity

| | |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Loop inputs | Input contacts may be Normally Open (NO) or Normally Closed (NC). NOTICE! Normally Closed (NC) is not permitted in Fire installations. |
| Loop End-of-Line (EOL) resistance | 1 kΩ, 1.5 kΩ, 2.2 kΩ, 3.3 kΩ, 3.9 kΩ, 4.7 kΩ, 5.6 kΩ, 6.8 kΩ, 10 kΩ, 12 kΩ, 22 kΩ, No EOL Split EOL3k3 / 6k8 with tamper Split EOL3k3 / 6k8 |

| | |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Loop wiring resistance | 100 Ω maximum |
| Terminal wire size | 12 AWG to 22 AWG (2 mm to 0.65 mm) |
| SDI2 wiring | Maximum distance - Wire size (Unshielded wire only): 1000 ft (305 m) - 22 AWG (0.65 mm) 1000 ft (305 m) - 18 AWG (1.02 mm) |

SDI2 8-Input, 2-Output Expansion Module

B228



en Installation manual

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