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 B428-M Ethernet module is a four-wire powered SDI2 bus device that provides two-way communication with compatible control panels over IPv4 or IPv6 Ethernet networks.

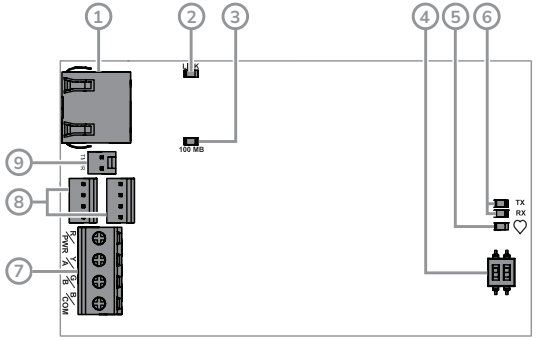


Fig. 1: Board overview

1	Ethernet RJ-45 port
2	Yellow LINK LED
3	Green 100 Mb LED
4	DIP switch
5	Heartbeat LED
6	TX and RX LEDs
7	Terminal strip (to control panel or additional modules)
8	Interconnect wiring connectors (to control panel or additional modules)
9	Tamper switch connector

Address settings

Use the DIP switch to assign an SDI2 bus address to the module. The control panel uses this address to identify and poll the communicator.

Notice!
Each SDI2 module requires a unique bus address. Two communication devices cannot share the same address.
The microcontroller samples switch positions only during initialization. If you change a switch position while the module is powered, you must disconnect and restore power for the new address to take effect.

DIP switch configuration

The module features a 2-position DIP switch:
- **DIP 1:** Sets the module SDI2 bus address (Address 1 or Address 2).
- **DIP 2:** Reserved for future use. Always leave set to **OFF**.

Position (DIP 1)	Position (DIP 2)	Assigned address	Panel Slot/Configuration Role
OFF	OFF	Address 1	**Module 1 (Primary):** Default communicator slot. Use this setting when the B428-M is the primary or sole communicator on the control panel.
ON	OFF	Address 2	**Module 2 (Secondary):** Secondary/backup communicator slot. Use this setting if another communicator (such as a B450-M cellular unit) is already addressed as Module 1.

Installation

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

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.

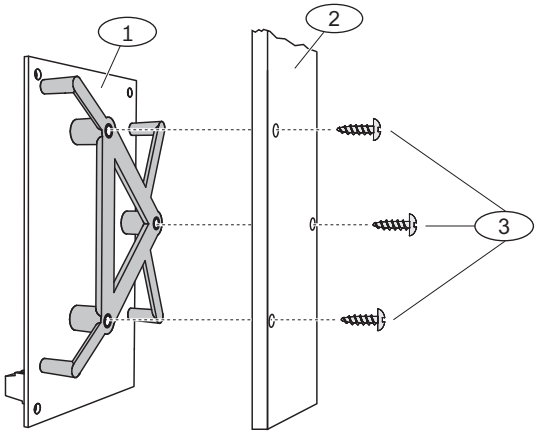


Fig. 2: Mounting the module in the enclosure

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

Mount and wire the tamper switch (optional)

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

1. Mount the ICP-EZTS tamper switch into the enclosure's tamper switch mounting location.
2. Plug the tamper switch wire onto the module's tamper switch connector.

For complete instructions, refer to the ICP-EZTS Installation Guide (P/N: F.01U.003.734).

Wire to the control panel

When you wire the module to the control panel, you can use either the module's terminal strip labeled R, Y, G, B (PWR, A, B, COM) or the module's interconnect wiring connectors (wire included).
The figure below indicates the location of both the terminal strip and the interconnect connectors on the module.

Notice!
Use either the terminal strip wiring **or** interconnect wiring to the control panel. Do not use both. When connecting multiple modules, you can combine terminal strip and interconnect wiring connectors in series.

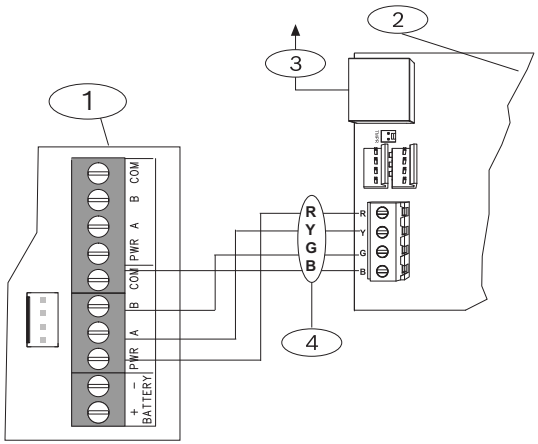


Fig. 3: Using SDI2 terminal strip wiring

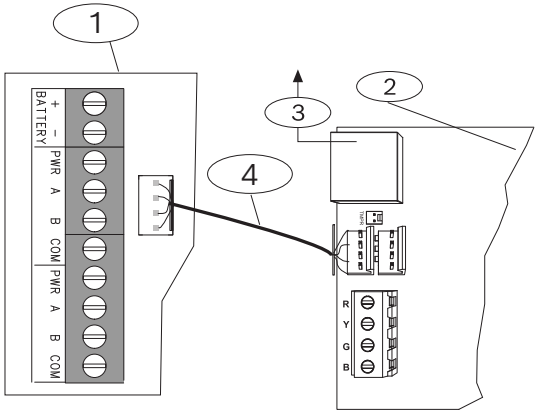


Fig. 4: Using interconnect cable wiring

1	Compatible control panel
2	Module
3	To Ethernet network
4	Terminal strip wiring / Interconnect cable (P/N: F.01U.079.745) (included)

1. Connect the terminal wiring or the interconnect wiring to the module.
2. Connect the Ethernet cable to the Ethernet port on the module.

Configuration

Configure the module using one of the methods described in this section.

Plug and Play (PnP) configuration

With PnP, the module automatically imports the control panel settings for the module and applies them to the module.

1. Set the address switch to the correct address for the control panel.
2. Connect the module to the control panel bus and apply power.
3. Program the control panel communication settings using A-Link Plus or the keypad.

Notice!
By default, when you connect a field replacement module to an existing SDI2 bus control panel, the control panel overrides the module settings.
To keep custom module settings when you connect a module to a configured control panel, you must disable the feature for PnP configuration, by using A-Link Plus to set the Panel Programming Enable parameter to **Disable** before installing.

B428-M Interface configuration

For installations requiring non-default configuration, use the **B428-M Interface** for webpage configuration.
To use the webpage configuration, you need the module IP address or hostname.
- The default hostname for the module is the letter B followed by the last six alpha-numeric digits of its MAC address (for example, B3F603F).
- With the IUI-SOL-TEXT keypad, you can check the IP address via the Installer Menu [1][2][4].
- Locate the IP address in the table on the DHCP server (networked modules).
- To use Auto IP, directly connect from your PC to the module. Within 60 seconds, the module temporarily assumes address 169.254.1.1 for configuration.

For more information on using webpage configuration, refer to the online Installation manual for the module.

Notice!
Before proceeding, ensure that the web browser is not configured to use a proxy server. Refer to the browser's online help for instructions on disabling proxy service.

Logging into web-based configuration page:

1. Open an internet browser and enter the module IP address, for example, https://192.168.1.xxx (accept any browser security dialog if applicable).
   - or enter the address https://solution-setup.local
2. When the **B428-M Interface** login page is displayed, enter the unique password that printed on the product label and click **LOGIN**. The SOLUTION PANEL connection page opens.
   - With the installer code, you can access all webpages to do configuration for the control panel, check control panel status, and upgrade the firmware for the control panel or B428-M module.
   - With the master code, you have limited webpages to access and do operations.
3. Enter your installer code, and click **CONNECT TO PANEL**, the **Dashboard** page opens.

4. Go to the desired settings page, configure the parameters, and click **Save changes** to apply changes to the control panel.

Notice!
Before browsing to a new settings page, you must click **Save changes** to save edited values.
You should change your module password from the default to secure module configuration. Change the password using the **Network & Cloud** page -> **WEB ACCESS -> PASSWORD**.

Maintenance and troubleshooting LEDs

The module has the following on-board LEDs to assist with troubleshooting:
- Heartbeat (system status).
- RX (receive).
- TX (transmit).

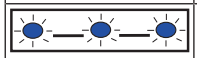
Flash pattern	Function
 Flashes once every 1 sec	Normal state. Indicates normal operation state.
 3 quick flashes every 1 sec	Communication error state. Indicates a bus communication error. The module is not receiving commands from the control panel.
 On Steady	Trouble state. Indicates a trouble condition exists.
 Off	LED trouble state. Module is not powered, or some other trouble condition prohibits the module from controlling the heartbeat LED.

Table 1: Heartbeat LED descriptions

Flash pattern	Function
 RX (Receive) Flashing	Occurs when the module receives a message over the network connection - UDP, TCP, or DNS.
 TX (Transmit) Flashing	Occurs when the module sends a message over the network connection - UDP, TCP, or DNS.

Table 2: RX and TX LEDs descriptions

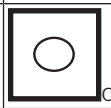
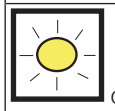
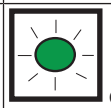
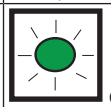
LINK (yellow) LED pattern	100 Mb (green) LED pattern	Function
 Off	 Off	No Ethernet link
 On Steady	 Off	10Base-T link
 Flashing	 Off	10Base-T activity
 On Steady	 On Steady	100Base-TX link
 Flashing	 On Steady	100Base-TX activity

Table 3: Ethernet Link LEDs descriptions

Trouble conditions indicated through LEDs

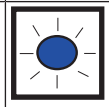
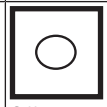
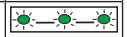
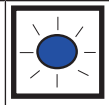
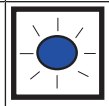
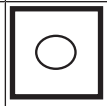
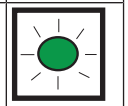
Condition	Heartbeat	Transmit (TX)	Receive (RX)
Network cable disconnected	 On Steady	 Off	 Flashes once every 1 sec
Obtaining an IP address	 On Steady	 Off	 2 quick flashes every 1 sec
Low bus voltage	 On Steady	 Off	 3 quick flashes every 1 sec
Internal failure	 On Steady	 Off	 On Steady

Table 4: Trouble conditions

Notice!
When the tamper switch is closed, all module LEDs are Off.

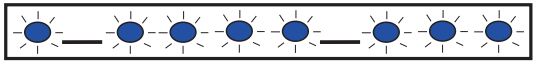
View the firmware version

To check the module firmware version, do one of the following:
- Check the module firmware current version from **Maintenance** page.
- Momentarily short the tamper pins on the module.
  - The LEDs can flash in a pattern to show the module firmware version.

Showing the module version with a LED flash pattern

The heartbeat LED stays Off for 3 seconds.

The LED pulses the major, minor, and micro digits of the firmware version, with a 1-second pause after each digit. For example, the version 1.4.3 shows as follows.
[3 second pause] *__****__*** [3 second pause, then normal operation].



Specifications

Environmental considerations

Relative humidity	Up to 93% non-condensing
Temperature (operating)	0° - +49°C (+32° - +120°F)

Properties

Board dimensions	63 mm x 108 mm x 16 mm

Power requirements

Current (maximum)	100 mA max
Current (standby)	80 mA
Voltage	12 VDC nominal

Connectors

LAN/WAN	RJ-45 modular port (Ethernet)

Cabling

Ethernet cable	Category 5 or better unshielded twisted pair
Ethernet cable length	100 m (328 ft) max length

Wiring

Data bus wire gauge	18 AWG or 22 AWG
Data bus wire length	Maximum distance – Wire size : 150 m (500 ft) - 0.65 mm (22 AWG) 300 m (1000 ft) - 1.02 mm (18 AWG)

Browser support

- Google Chrome
- Microsoft Edge
- Safari

Security compliance

Scan Me

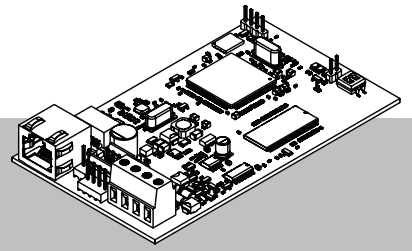
COMPLIANCE STATEMENT

This product meets the Security Standards for Smart Devices

BOSCH

Ethernet module, Cloud

B428-M



en Quick installation guide

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