1 | Overview

The B942/B942W is an SDI2 compatible device. The keypad has user adjustable options such as volume and screen brightness, and has a display that shows color graphics. The B942 keypad connects to the SDI2 bus on the control panel. You can connect more than one keypad to the control panel by wiring them in parallel.

You can program, diagnose, and troubleshoot the system from the keypad as well as remotely through Remote Programming Software (RPS). The keypad provides four inputs and one output.
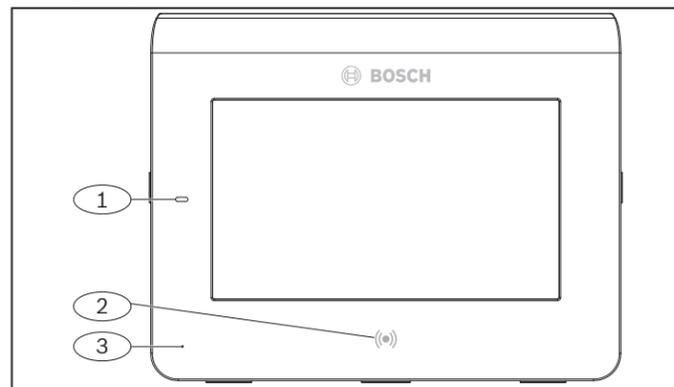

Figure 1.1: Touch screen keypad

Callout — Description
1 — Power indicator LED (shows even when screen dims)
2 — Integrated proximity reader (for use with RF ID tokens and access cards)
3 — Presence sensor

2 | Install the mounting plate

To install the keypad mounting plate, first remove the plate from the back of the keypad.

2.1 | Remove the mounting plate

Removing the mounting plate from the keypad:
1. Insert a slotted screwdriver under the retention clip to release the clip. Do not pry upwards or twist. Refer to *Figure 2.1*.
2. With your other hand, slide the mounting plate towards the bottom of the keypad to unhook the mounting plate from the keypad. Refer to *Figure 2.1*.
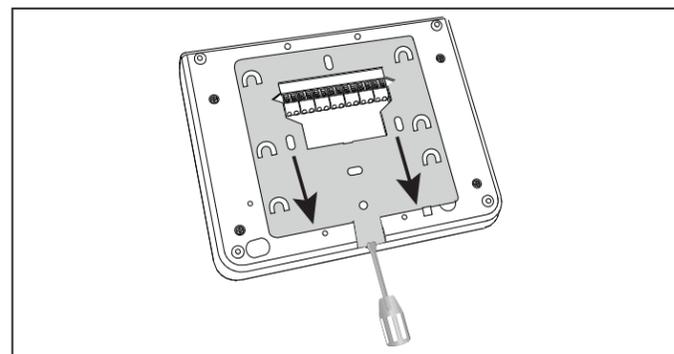

Figure 2.1: Removing the keypad from base

2.2 | Mount the mounting plate

Choose the flush mounting plate (*Figure 2.2 left side*) for flush mounting, or the surface mounting plate (*Figure 2.3 right side*) for surface mounting.

Mounting the plate on the wall:
1. The surface plate includes a bubble level. Use the plate as a template to mark the desired mounting surface with mounting locations. Refer to *Figure 2.2* for mounting hole locations.
2. Pull the wiring through the desired wire opening.
3. Use the appropriate mounting hardware (supplied) to attach the mounting plate to the mounting surface.
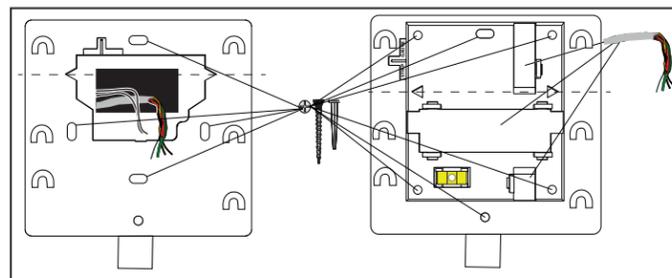

Figure 2.2: Mounting the plate

3 | Wire the keypad

Prior to placing the keypad on the mounting plate, wire the keypad to the control panel, and to any inputs and any output, as desired. The terminal block for wiring is clearly marked.

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

NOTICE!
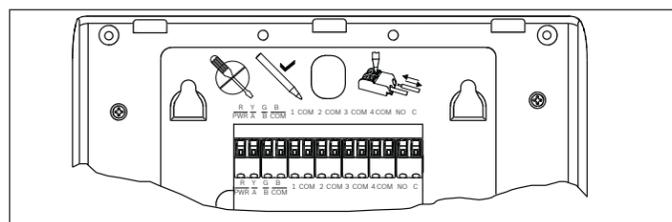Do not use a screwdriver on the terminals. Use a ballpoint pen instead to avoid permanent damage to the terminals.

Figure 3.1: Keypad back (with mounting plate removed)

NOTICE!
Use the strip gauge on the mounting plate to strip the wires to 7 mm. Only one (1) wire per terminal.

Place the keypad on a smooth surface when wiring.
To insert wires into the terminals, use a ballpoint pen to press the button on the terminal release, and with the other hand, push the wire into the terminal. (Refer to *Figure 3.2*.) When you remove the pen, the terminal release locks in the wire. To remove wires, press the terminal release, push the wire gently, and then pull the wire out.
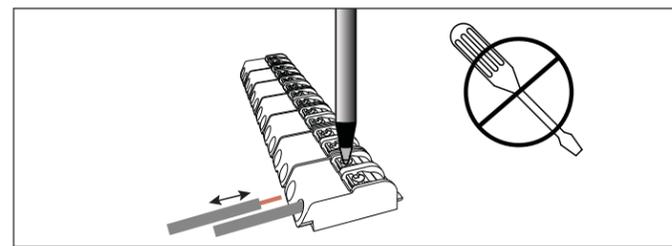

Figure 3.2: Inserting wire into the terminals

3.1 | Wire to the control panel

When you wire the keypad to a control panel, use the control panel terminals labeled R, Y, G, B (PWR, A, B, COM). Connect them to the keypad terminals labeled R, Y, G, B (PWR, A, B, COM).
Refer to *Figure 3.3*.
You can connect keypads to the SDI2 data bus by parallel wire run from the control panel to each keypad, wire from keypad to keypad, or a combination of the two techniques. Refer to *Figure 3.4*.
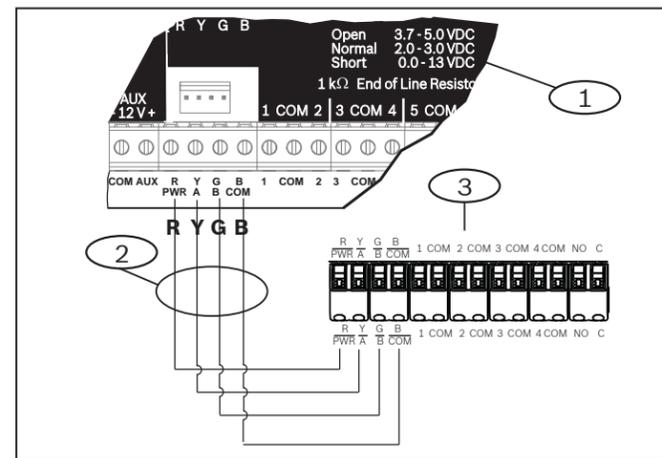

Figure 3.3: Wiring the keypad to the SDI2 bus connection (B5512 shown)

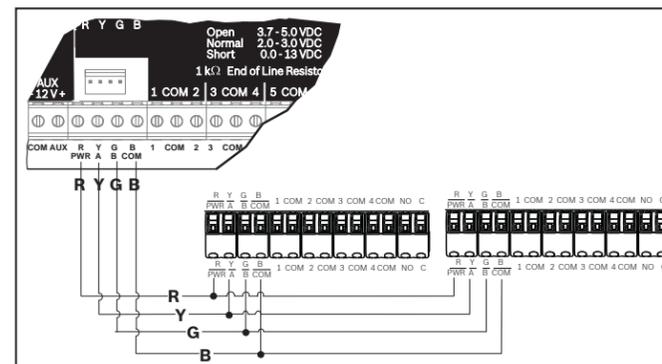| Callout — Description |
| --- |
| 1 — Control panel |
| 2 — Terminal wiring |
| 3 — Keypad's wiring terminal block |

Figure 3.4: Installing multiple keypads using the SDI2 terminals (B5512 shown)

3.2 | Wire the inputs

Wire resistance on each sensor input must be less than 100 Ω with the detection devices connected. The terminal block supports 18 to 22 AWG (1.02 to 0.65 mm) wires.
The keypad detects open, short, normal, and ground fault circuit conditions on its sensor loops and transmits the conditions to the control panel. Each sensor loop is assigned a point number and transmits to the control panel individually. Run wires away from the premises telephone and AC wiring.
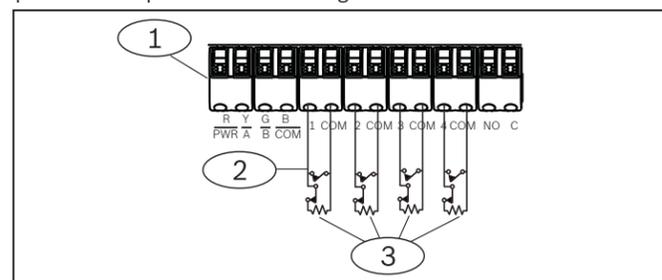

Figure 3.5: Installing sensor loop wiring

Callout — Description
1 — Keypad terminal strip
2 — Keypad sensor loops
3 — 1 kΩ EOL resistor (ICP-1K22AWG-10)

3.3 | Wire the output

The keypad provides one NO (normally open) output. (It includes NO and C (COMMON) terminals.) When the output is in an active (energized) state, the NO has continuity with the C terminal.

NOTICE!
Do not exceed relay contact ratings of 1.0 A, 24 VDC, resistive load.

3.4 | Mount the keypad

After wiring the keypad, mount the keypad onto the mounting plate by seating the mounting hook openings over the mounting hooks and then sliding the keypad down.

4 | Set the address

Use the steps below to set the address for the keypad. If multiple SDI2 keypads reside on the same system, each SDI2 keypad must have a unique address. For single-digit addresses 1 through 9, set the tens switch to 0.
Figure 4.1 shows the address switch setting for address 1.

NOTICE!
Only use your finger or a stylus intended for touch screens to operate the keypad.

Setting the keypad address:
1. When you apply power to the keypad, the start up screen shows. You can also show the startup screen by pressing and holding the Time/ Date in the ribbon bar for 5 seconds, or by pressing and holding anywhere on the Call for Service screen. Press screen hold the countdown icon for 5 seconds. The keypad addressing page shows.
2. To set the address, use the up and down arrows on the right of the switches image to change the ones digit, and the arrows on the left to change the tens digit.
3. Press the ⤴ (Escape) icon to save the setting and return to the power up screen.
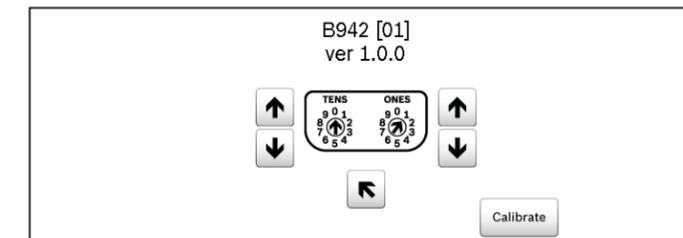

Figure 4.1: Keypad addressing page

5 | Status indicators

You can diagnose and troubleshoot the system using the keypad's status indicators. Refer to *Table 5.1*.

Status indicator	Function
✓	Ready to turn on (arm)
🔒	Turned on (armed)
⚠	System trouble
GAS	Gas alarm
🔌	AC power present

Table 5.1: Keypad status indicators

6 | Audible tones

The keypad has a built-in speaker that produces several distinct warning tones. The keypad backlight illuminates when it emits an audible tone.

Tone	Description
Fire alarm	When an area is in fire alarm, the keypad emits a pulsed, high-pitched bell tone.
Gas alarm	When a gas point activates, the keypad emits a unique high pitched tone.
User alarm	When a user alarm (such as panic and medical alarms) occurs, the tone sounds for the programmed amount of time.
Burglary alarm	When an area is in alarm, the keypad emits a steady, high pitched bell tone.
Entry delay	The keypad emits an intermittent beep tone during entry delay periods to remind the user to disarm the area.
Exit delay	The keypad emits an intermittent beep tone during exit delay.
Invalid button buzz	When an invalid button, or sequence of buttons, is pressed, the keypad emits a flat buzz tone.
Keypress	The keypad emits a muted beep tone as each button is pressed to indicate that the entry was accepted.
Trouble	When a trouble event occurs, such as a service alert, the keypad emits a two-tone warble until you enter a programmed passcode with the appropriate authority.
Watch point fault	A single clean tweedle tone alerts the user anytime a watch point is faulted.

Table 6.1: Keypad audible tones

7 | Supervision

The control panel supervises all keypads on the SDI2 bus.
If a keypad fails to respond to the control panel, the control panel declares a Missing Keypad Trouble. When the control panel can again communicate with the keypad, it restores the Missing Keypad Trouble.
During a Missing Keypad Trouble, any connected keypad that maintained contact with the control panel shows the Missing Keypad Trouble as its idle text, and shows the missing keypad's address. The communicating keypads also sound a trouble tone. Users can silence the trouble tone. If no other troubles exist, the tone silences when the missing keypad restores.

8 | Proximity reader

The proximity reader allows users to use a token or card in place of a passcode to turn on or off the security system, if programmed using RPS or a keypad. The proximity reader supports EM4102 (125 kHz) credentials. The Bosch ACA-ATR13-RFID tag and Bosch ACD-ATR11ISO-RFID card are examples.

9 | Configure programmable keys functions

To enable the programmable keys functions use RPS to set the A,B,C Key Response parameters (KEYPADS/Global Keypad Settings) as follows:
- To enable the Fire key, set A Key Response to Manual fire alarm.
- To enable the Medical key, set B Key Response to Manual medical alarm (with or without alarm bell).
- To enable the Panic key, set C Key Response to Manual panic alarm (invisible or visible).

10 | Addresses, points, and output numbers

To determine the point numbers or output number for each keypad address, multiply the address number by 10 for the base number, and then use numbers 1 through 4 in the ones place for the point numbers. Use 1 in the ones place for the output number.

Examples
For keypad address **01** the point numbers for the input devices are 11 through 14:

Terminal number	1	2	3	4
Input number	11	12	13	14

For output devices connected to the NO and C terminals the output number is 11.

For keypad address **11** the point numbers for the input devices are 111 through 114:

Terminal number	1	2	3	4
Point number	111	112	113	114

For output devices connected to the NO and C terminals the output number is 111.

11 | Firmware updates

Firmware updates require a MicroSD card (2 GB to 32 GB).
Updating the keypad firmware:
1. Go to the Bosch website (us.boschsecurity.com) and download the firmware from the B942 product page.
2. Save the firmware to your MicroSD card.
3. Ensure the keypad is powered.
4. Slide the MicroSD card into the MicroSD card slot until it clicks into place. Refer to *Figure 11.1*.
5. The keypad power indicator LED flashes during the update. The keypad also shows *Please wait while programming flash*.
6. If the keypad shows the calibration screen, follow the on-screen instructions to calibrate.
7. When the update completes, the keypad shows *Firmware update successful. Remove SD card to continue*.
8. Remove the memory card from the device. To do so, press down on the card and quickly remove pressure. The card clicks out of place. Use your fingernail on the upper groove on the card to slide it out.
9. The keypad shows the power up screen with the updated revision number and then shows the Home screen.
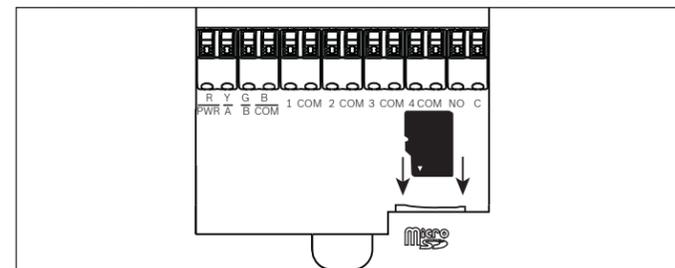

Figure 11.1: Inserting a MicroSD card

12 | Keypad cleaning

Use a soft cloth and non-abrasive cleaning solution to clean your keypad (for example, microfiber cloth and eyeglass cleaner). Spray the cleaner onto the cloth. Do not spray cleaners directly onto the keypad.

13 | Certifications

Region	Certification
US	UL 365 - Police Station Connected Burglar Alarm Units and Systems
	UL 609 - Local Burglar Alarm Units and Systems
	UL 636 - Holdup Alarm Units and Systems
	UL 985 - Household Fire Warning System Units
	UL 1023 - Household Burglar-Alarm System Units

Region	Certification
US	UL 1076 - Proprietary Burglar Alarm Units and Systems
	UL 1610 - Central Station Burglar Alarm Units
	CSFM - California Office of The State Fire Marshal
	FCC Part 15 Class B
	ANSI/SIA CP-01-2010 - Control Panel Standard - Features for False Alarm Reduction
CA	Canada CAN/ULC S303 - Local Burglar Alarm Units and Systems
	CAN/ULC S304 - Signal Receiving Centre and Premise Alarm Control Units
	CAN/ULC S545 - Residential Fire Warning System Control Units
	ULC-ORD C1023 - Household Burglar Alarm System Units
	ULC-ORD C1076 - Proprietary Burglar Alarm Units and Systems
	ICES-003 - Digital Apparatus

14 | Specifications

Dimensions	6.2 in x 4.7 in x 0.6 in (158 mm x 120 mm x 16 mm)
Voltage (input)	12 VDC nominal
Current with prox detection disabled	200 mA in standby mode 300 mA in alarm mode
Current with prox detection enabled	300 mA in standby mode 400 mA in alarm mode
Operating temperature	0°C to +50°C (+32°F to +122°F)
Relative humidity	5% to 93% at +32°C (+90°F) non-condensing
Terminal wire size	18 AWG to 22 AWG (1.02 mm to 0.65 mm)
SDI2 wiring with prox detector disabled	Maximum distance - wire size (unshielded wire only): 200 ft (61 m) - 22 AWG (0.65 mm) 520 ft (159 m) - 18 AWG (1.02 mm)
SDI2 wiring with prox detector enabled	Maximum distance - wire size (unshielded wire only): 150 ft (46 m) - 22 AWG (0.65 mm) 390 ft (119 m) - 18 AWG (1.02 mm)
Compatibility	B9512G/B9512G-E B8512G/B8512G-E B5512/B5512E firmware v2.03 and higher B4512/B4512E firmware v2.03 and higher B3512/B3512E firmware v2.03 and higher D9412GV4 firmware v2.03 and higher D7412GV4 firmware v2.03 and higher (Refer to the control panel installation document for number of supported devices.)

Touch Screen Keypad
B942/B942W

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