

CP150B Vandal & Weather Resistant Keypad



Security Systems

EN

Installer Reference Guide
Security System

BOSCH

CP150B - VANDAL & WEATHER RESISTANT KEYPAD

The CP150B keypad provides alarm and or access control functionality when used on selected Solution security control panels. Constructed from satin chrome plated zinc die cast, the CP150B keypad provides a high level of vandal resistance and is also weather resistant to IP67 making it ideal for external installations.

The CP150B includes red and green indicators which are used to show area or door lock status and the 12 buttons with blue backlighting make it easy to operate in all lighting conditions.

The keypad connects to the control panel via the RS485 encrypted LAN

CP150B Keypad Compatibility		
Panels Supported	Version	Keypads Supported
Solution 16i	2.19	Up to 8
Solution 16X	2.00	Up to 8
Solution 144	2.00	Up to 16
Solution E	2.00	Up to 16

Table 1: CP150B Compatibility



Figure 1: CP150B Keypad

and occupies a standard keypad position in the panel configuration. Various keypad options can be configured via the Devices - Keypad & Readers menu in panel programming. User access events are stored in the panel log and can also be reported if required.

Keypad Addressing

Each keypad fitted to the system must be assigned a unique address on the LAN. The CP150B includes a rotary address switch for quick selection.

The following table shows the address setting for each keypad as well as the number of keypad devices each panels can support.

		Keypad Address Setting	
		Address No	Keypad No
Solution 16i Panel	Solution 16X Panel	1	1
		2	2
Solution 144 Panel	Solution E Panel	3	3
		4	4
		5	5
		6	6
		7	7
		8	8
		9	9
		10	10
		11	11
		12	12
		13	13
		14	14
		15	15
		16	16

Table 2: Keypad Address Table



Figure 2: Keypad Address Switch



Only 1 Keypad can be assigned to each address. All Keypads are supplied from the factory set to address 1. You must power cycle the panel or perform a LAN scan whenever you change the keypad address.

Box Contents

The CP150B box contains the following parts.

- Keypad Backing Plate
- Keypad Main Body
- Keypad Front Face Plate
- Plug On Connection Cable
- Cable Grommet
- Instruction Sheet
- Mounting Template
- 2 x (M3 x 6mm) Hex Screws
- 1 x 2mm Hex Key
- 6 x (M3 x 6mm) Phillips Head Screws

Installation

The keypad should be installed onto a solid surface using suitable mounting fixtures. Wiring should only be performed while the control panel is powered off.

- Step 1) Using the 1:1 scale mounting template supplied, mark out the location of the 4 mounting holes and the cable exit hole before drilling out all points as necessary.
- Step 2) If the keypad is to occupy an address on the LAN other than address 1, you will need set the required address before assembling and mounting the keypad. Note each keypad on the system must have a unique address. See Table 2: for more information.
- Step 3) Once the keypad address has been set, slide the supplied cable grommet onto the connection cable and terminate the required wires. Unused wires should be insulated to prevent short circuits.
- Step 4) Pass the connection cable through the keypad backing plate and fit the grommet in place by pressing the first flange into the hole and leaving the second flange on the outside of the keypad. Make sure that it sits neatly in all places to ensure a correct seal.
- Step 5) Attach the connection cable to the keypad by plugging in the connector. Note the connector is polarised and will only plug in when correctly aligned. **Do not use excessive force.**
- Step 6) Carefully assemble the keypad backing plate to the main body using the six Phillips head screws.
- Step 7) Mount the keypad to the wall and then fit the keypad face plate using the M3 x 6mm hex screw. Take care not to puncture or deform the cable grommet during installation.

CP150B Mounting Template

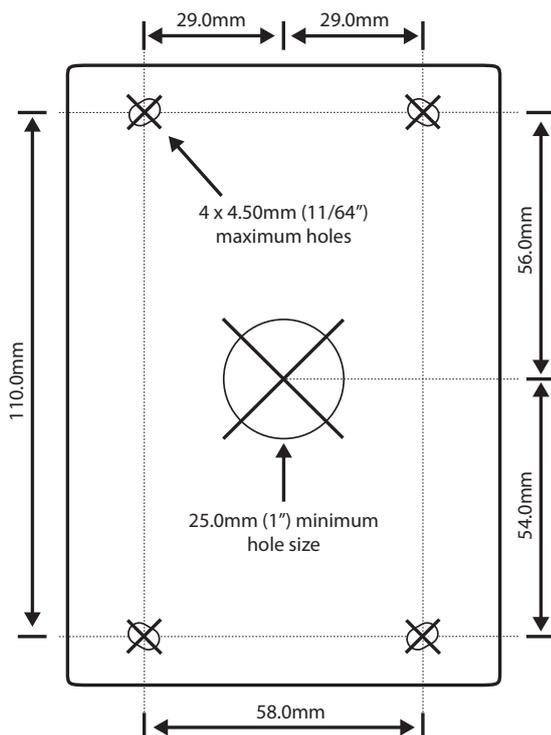


Figure 3: Mounting Template (Not to Scale)

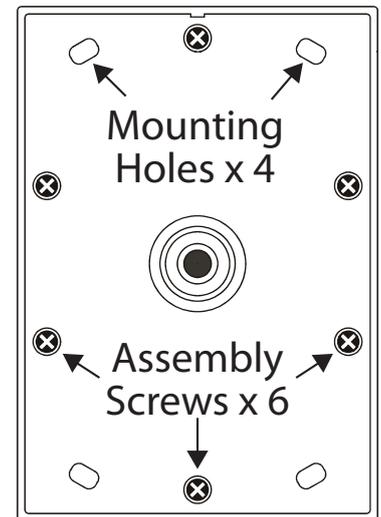


Figure 4: Backing Plate Rear View

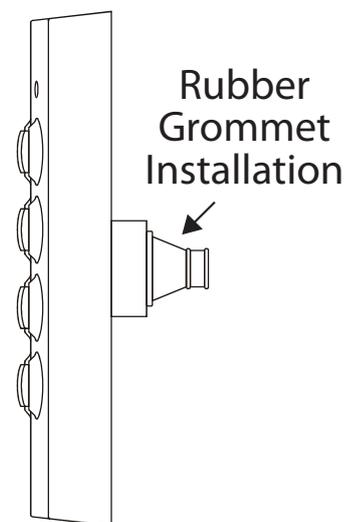


Figure 5: Side View Showing Grommet Installation

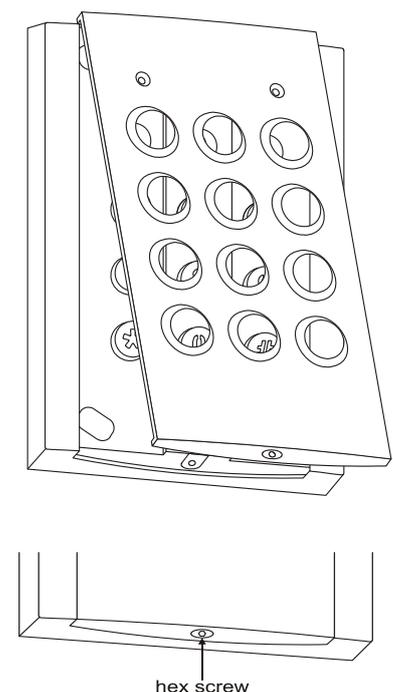


Figure 6: Installing the Face Plate

Keypad Operation

The CP150B keypad can be configured to provide system area control, door access control or both depending on the installation requirements.

As there is no LCD display on the keypad, feedback is provided via the red and green indicators and the keypad sounder.

The CP150B also includes an egress input and lock output which can be used to control door access if required.



Using the on board lock output is not recommended when the CP150B is being used on an external wall of the building. In this case it is recommended that you run the lock control wires directly to an output located on the main panel or output expander module located inside the building.

Keypad Button Functions

The CP150B keypad consists of 12 individual buttons which are used to enter codes and control the system. Some buttons have a secondary functions that are activated by holding the button down for two seconds.

The [#] and [*] buttons perform the same functions as the ON and OFF buttons on the standard display keypad.

Button = ON Button
*** Button = OFF Button**

Keypad Button Functions	
Button	Description
[0] to [9]	The numeric buttons allow you to enter PIN numbers and other functions when required.
[#]	To arm the system enter the user PIN followed by the [#] key. The [#] key performs the same function as the ON button on display enabled keypads.
[*]	To disarm the system enter the user PIN followed by the [*] key. The [*] key performs the same function as the OFF button on display enabled keypads.

Table 3: Button Functions

Hold Down Functions

The CP150B keypad supports the following hold down functions. These functions will only work if the keypad has been assigned to an area. When keypads are installed outside the premises and are being used for area control, it is recommended that you disable the emergency key functions to prevent nuisance alarms.

See the Devices-Keypads & Readers-Emergency Keys menu option in panel programming to disable these features.

Hold Down Functions	
Function	Meaning
Panic Alarm	Press and hold both the [1] and [3] keys down for 2 seconds to initiate a panic alarm.
Fire Alarm	Press and hold both the [4] and [6] keys down for 2 seconds to initiate a fire alarm.
Medical Alarm	Press and hold both the [7] and [9] keys down for 2 seconds to initiate a medical alarm.
All ON	Enter a valid PIN and then press and hold down the [#] key, the system will turn On or Arm all areas that the user belongs to at the same time.
All OFF	Enter a valid PIN and then press and hold down the [*] key, the system will turn Off or Disarm all areas that the user belongs to at the same time.

Table 4: Hold Down Functions



The hold down 4 - Chime Mode and hold down 6 - Answer Incoming Call features can not currently be operated from the CP150B keypad.

Keypad LED Indicators

The CP150B keypad includes RED and GREEN indicator LEDs which provide visual feedback during system operation.

The indicators will show alarm area status or door status depending how the keypad has been configured.



The keypad cannot display alarm and door status at the same time. When being used to control the alarm as well as door access the area status display will always take precedence.

LED Operation For Area Control		
Led	Condition	Meaning
Red	On	Area All On
	Flashing	Area Alarm
Green	On	Area is OFF
	Flashing	Area not ready to turn on - zone(s) unsealed
Red & Green	Both On	Area armed in Part mode and all zones sealed.
Red & Green	Red On and Green Flashing	Area armed in Part mode with zones unsealed.
Red & Green	Alternate Flashing	Keypad initialising during power up or LAN scan.
Red & Green	Both Off	Home Area and Access Group not programmed or keypad not powered.

Table 5: Keypad LED's - Area Control

To have the keypad control an area on the alarm system you need to assign the keypad to a home area. See the Devices-Keypads-Home Area menu option in panel programming. If alarm system control is not required then you should set the home area option to No Area.

To have the keypad control a door on the system you will need to assign the keypad to an access group. See the Devices-Keypads & Readers-Access Group menu option in panel programming.

LED Function For Door Control		
Led	Condition	Meaning
Red	On	Door Locked
Red	Fast Flash	Door Unlocked
Red	Continuous Fast Flash	Door manually unlocked or overridden.
Red	2 Flashes	Door automatically unlocked by schedule or time zone
Red & Green	Alternate Flashing	Keypad initialising during power up or LAN scan.
Red & Green	Both Off	Home Area and Access Group not programmed or keypad not powered.

Table 6: Keypad LED's - Access Group Door Control

Once assigned to an access group, the on-board Lock output and Egress input will automatically be assigned to the same access group as the keypad.

If both alarm area and door control is required then you will need to assign a home area and an access group to the keypad. In this case the LED indicators will display for the area status only.



The CP150B LED indicators will only display the status of the programmed home area. You cannot move between areas from this keypad. If you require multiple area status visibility you should use a display keypad like the CP700B.

Keypad Alert Tones

The CP150B keypad emits several distinct tones to alert you to particular system events. The keypad volume level cannot be adjusted on the CP150B however it can be turned off via panel programming by setting the keypad volume to the lowest level. See Devices-Commands-Volume menu in panel programming.



Setting the keypad volume to off will also stop the key press beep during normal operation.

Keypad Alert Tones	
Event	Alert Tone Emitted
Fire Alarm	If the system registers a fire alarm, the reader will sound 3 short beeps followed by a 1.5 second pause. This will repeat until reset by the user or until the siren run time expires.
Burglary Alarm	If the system registers a burglary alarm, the keypad will sound a continuous siren tone until reset by a user or until the siren run time expires.
Trouble	If a system trouble condition occurs, the keypad will sound 4 x fast short beeps followed by a 5 second pause and will repeat this tone until the user acknowledges the trouble condition from a display keypad
Key Press	The keypad will sound one short beep every time a button is pressed.
Exit Delay	The exit delay warning will sound 1 short beep every second when the area the keypad has been assigned to is armed. During the last 10 seconds of exit time the warning tone will speed up indicating that the time has nearly expired.

Entry Delay	The hi/lo entry delay warning tone will sound once every second when an entry delay zone in the area the keypad has been assigned to is triggered. If the system is not disarmed before the entry time expires then an alarm will occur.
Error	If you press an invalid button during any data entry sequence, the keypad will sound a 2 second warning tone indicating that the command was not accepted.
Chime Alert	If chime mode is active then the keypad will sound fast short beeps to alert the user when a zone programmed for chime is opened. Chime mode is only applicable when the area is disarmed.

Table 7: Keypad Tones



When keypads are installed outside the premises, you may prefer that the alert tones are disabled. See the Devices-Keypads & Readers-Indicator Options menu in panel programming to disable these features.

Egress and Lock Control

The CP150B includes an egress input and a lock output which can be used to simplify the wiring when the keypad is being used for door or access control.

The lock output consists of a protected open collector transistor that can be used to operate a relay to control the door lock. The output will go from open to low for fixed 5 seconds whenever the associated access group or door assignment is triggered.



The on board lock output will operate for a fixed time period of 5 seconds when triggered. If a different time is required then you should use another output on the system to operate the door lock.

The lock output, and LAN+ power supply are not designed to operate and power the door lock directly. You should always fit a relay and protection diode to the lock output in combination with a separate power supply.

The optional CM444B Relay Module has been designed to suit this task. If you require the door to operate when the mains power has failed then you will also need to fit a battery backup to the external power supply. See the wiring diagram in Figure 7: for more details.

The Egress input on the CP150B keypad allows you to simplify the wiring required to implement an egress but-

ton on the inside of the door. The egress input triggers the lock output on the keypad by operating or firing the associated Access Group or Door Assignment.

The egress input should be connected via a momentary or push button switch to keypad ground. When the button is pressed the lock output on the keypad will trigger for a fixed 5 second period.

For greater security, if the egress input is not being used it should be disabled via panel programming. See Devices-Keypads & Readers-General Options in panel programming.



Any zone on the system can be configured to trigger an access group and can therefore also be used to operate the lock output on the CP150B.

Configuration Examples

Alarm control function only.

- 1) Install the keypad as per instructions.
- 2) Set the home area for the keypad.
- 3) Set keypad options as required remembering to disable keypad emergency alarms and or single button arming if the unit is being installed externally.
- 4) Assign users to the area.

Access control function only.

- 1) Install the keypad as per instructions.
- 2) Set the access group for the keypad.
- 3) Set keypad options as required.
- 4) Set output to access group to operate door.
- 5) Set output event assignment.
- 6) Assign users to the access group.

Both Alarm and Access control functions.

- 1) Install the keypad as per instructions.
- 2) Set the home area for the keypad.
- 3) Set the access group for the keypad.
- 4) Set keypad options as required remembering to disable keypad emergency alarms and or single button arming if the unit is being installed externally.
- 5) Set output to access group to operate door.
- 6) Set output event assignment.
- 7) Assign users to the area.
- 8) Assign users to the access group.

Examples show how to configure the CP150B to control a door on a Solution 16i panel. Consult the installation manual for programming information if you are using a different panel.



When doing both alarm and access control, the LED indicators on the keypad will only display and feedback alarm /area status information.

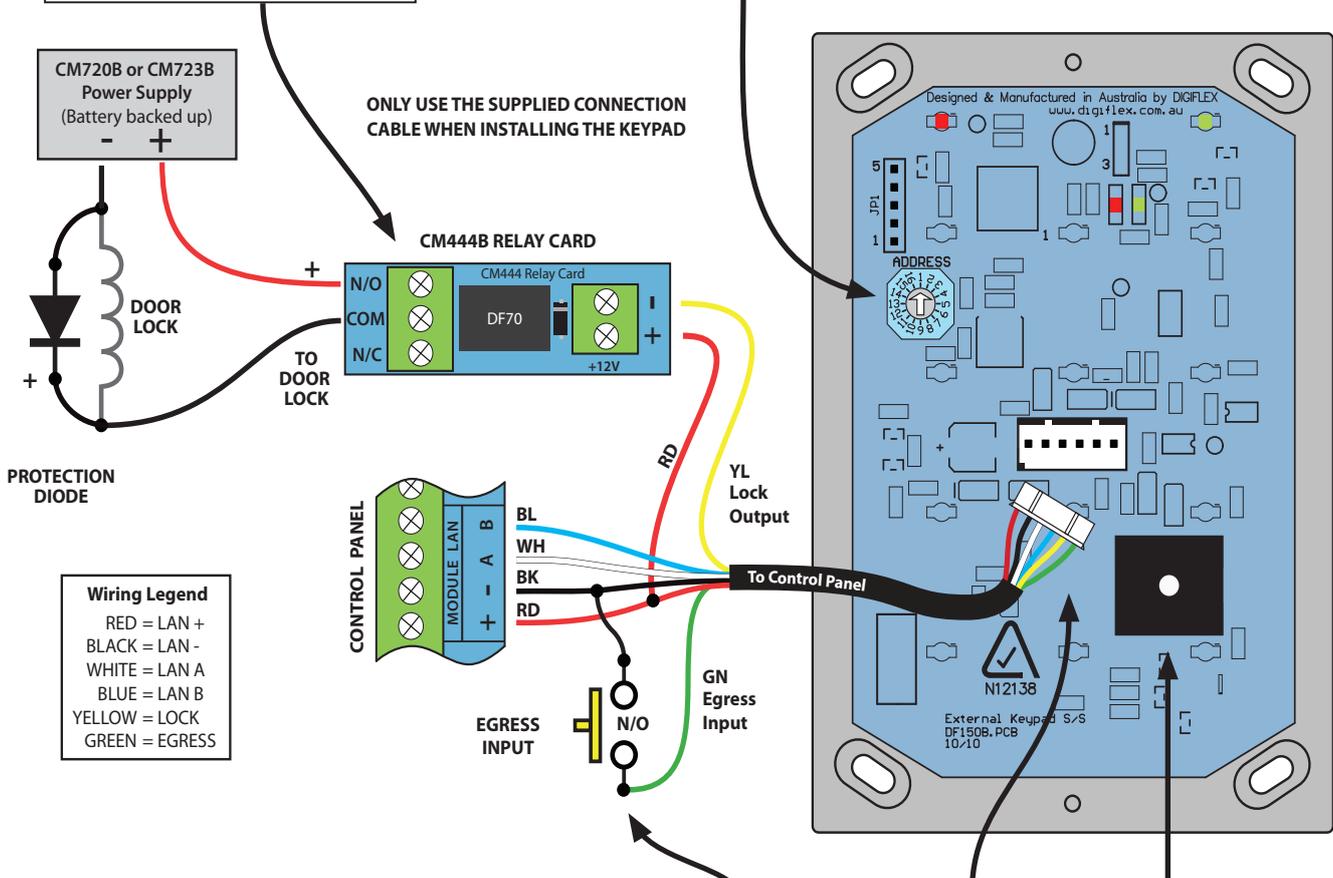
Connection Diagram

The optional CM444B relay module provides an easy way to interface the keypad's lock output to the door lock.

Because of its small physical size (12.5 x 46 x 12mm) it can be easily located in the wall cavity if required.

Address Select Switch. Keypads must be set to a unique address as per "Table 2: Keypad Address Table" on page 2

All CP150B keypads are supplied from the factory set to Address 1.



Wiring Legend
 RED = LAN +
 BLACK = LAN -
 WHITE = LAN A
 BLUE = LAN B
 YELLOW = LOCK
 GREEN = EGRESS

Note You must power cycle the panel or perform a LAN scan after connecting the CP150B for the system to initialise the keypad.

The egress input is low (0V) to trigger. Disable via panel programming if not being used.

Keypad connection point. Only use the supplied cable to connect to this keypad.

Make sure that the keypad buzzer opening is not blocked during installation or the volume will be greatly reduced.

Figure 7: CP150B Connection Diagram

CP150B Specifications

- Part Number:** CP150B - Vandal and Weather Resistant Keypad (IP67).
- Operating Voltage:** 10.0V D.C. - 14.5V D.C. @ 100mA Max.
- Module Connection:** (RS485 LAN)
 Max total LAN length using multi strand security cable = 500m ,
 Max total LAN length using 2 pair twisted shielded data cable (Belden 8723) = 1200m.
 See full control panel manual for complete wiring instructions.
- Lock Output:** Protected open collector transistor output 500mA.
- Egress Input:** Low to trigger. Can be disabled via software control.
- Dimensions:** 92mm(W), 20mm(D), 132mm(H). CM444B = 46mm(W), 12.5mm(D), 12mm H)
- Environment:** -30° to 55°C RH 5 to 85% at 30°C non-condensing.
- Fixing Method:** The CP150B should be mounted on a sturdy vertical wall using fixtures appropriate for the wall construction type.
- Warranty:** 3 years from date of manufacture (return to base).



In the interest of ongoing product development this document is subject to change without notice.

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