PR113B and PR114B Smart Card LAN Reader

BOSCH

Smart Card LAN Readers
PR113B - Black and PR114B - White

The PR113B and PR114B smart card LAN readers feature a high security, encrypted two way authentication transmission format and can be used to provide alarm and/or access control functionality on selected Solution security control panels.

Constructed from UV stabilised ASA plastic, the external readers provide a high level of vandal resistance and are weather resistant to IP66 making them ideal for outdoor installations.

Reader Compatibility		
Panels Supported	Version	Keypads Supported
Solution 16i	2.19	Up to 8
Solution 144	2.00	Up to 16
Solution 6000	2.12	Up to 16

Table 1: LAN Reader Compatibility

The PR113B and PR114B readers include red, green and blue indicators which are used to show area and or door lock status at all times.

The reader connects to the control panel via the RS485 encrypted LAN and occupies a standard keypad position in the panel configuration. Various 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.

Figure 1: PR114B LAN Reader

Reader Addressing

Each reader fitted to the system must be assigned a unique address on the LAN via the readers rotary address switch. The following table shows the address setting for each reader as well as the number of keypad, reader devices each panel can support.
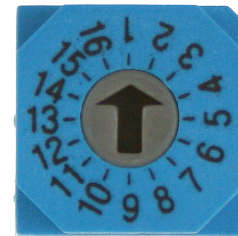
Figure 2: Address Switch

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

Box Contents

The PR113B and PR114B contains the following parts.
- Reader Base Unit
- Reader Cover
- Mounting Template
- Instruction Sheet
- 2 x (M3 x 6mm) Hex Screws
- 1 x 2mm Hex Key

Reader Address Setting		
	Address No	Keypad No
Solution 16i Panel / Solution 144 Panel / Solution 6000 Panel	1	1
	2	2
	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: Address Table

Installation

The reader 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 mounting template supplied, mark out the location of the 2 mounting holes and the cable exit hole before drilling out all points as necessary.

PR113B & PR114B Mounting Template

6 x 4.0mm (1/8") holes

Tamper Switch Do Not Create A Hole In This Location

92.0mm
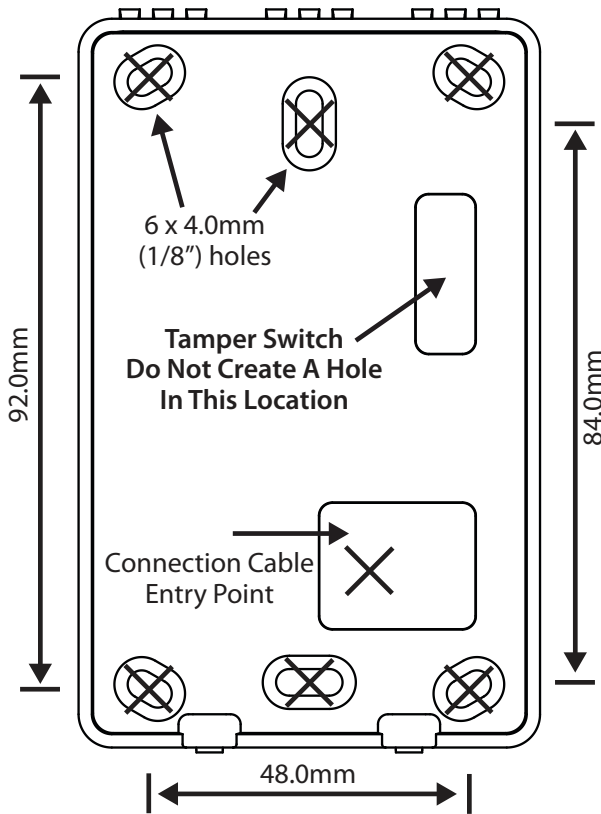
84.0mm

Connection Cable Entry Point

48.0mm

Figure 3: Mounting Template (Not to Scale)

Step 2) If the reader is to occupy an address on the LAN other than address 1, you will need set the required address before mounting. Note each reader on the system must have a unique address. See Table 2: for more information.

Step 3) Once the address has been set, terminate the required wires referring to the "Connection Diagram" on page 6. Unused wires should be insulated to prevent short circuits.

Step 4) If using the on board lock output to open the door, you must make sure to use a relay and protection diode as shown.

Step 5) Once the wiring is complete, mount the reader to the wall and fit the cover plate using the M3 x 6mm hex screws.

Reader Operation

LAN Readers 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 readers, feedback is provided via the red, green and blue indicators and the reader sounder.

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

> ℹ️ **Note** *Using the on board lock output is not recommended when the reader 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.*

LED Indicators

The Red and Green indicators on the reader show area status while the Blue indicator shows door status. The addition of the Blue indicator allows the system to display both area and door status at the same time if required.

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 3: Reader LED's - Area Control

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

To have the reader control an area on the alarm system you must assign the reader to a home area. See the Devices-Keypads & Readers-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.

ℹ **Note** *When the reader has been configured to do alarm area control only, the blue indicator will remain off at all times.*

To have the reader control an output (door) on the system you must assign the reader to an access group. See the Devices-Keypads & Readers-Access Group menu option in panel programming.

Once assigned, the on-board Lock output and Egress input are automatically assigned to the same access group as the reader.

LED Operation For Door Control		
Led	**Condition**	**Meaning**
Blue	On	Door Locked
Blue	Fast Flash	Door Unlocked
Blue	Continuous Fast Flash	Door manually unlocked or overridden.
Blue	2 Flashes	Door automatically unlocked by schedule or time zone.
Red & Green	Alternate Flashing	Reader initialising during power up or LAN scan.
Blue	Off	Access Group not programmed or reader not powered.

Table 4: Reader LED's - Access Group Door Control

If both alarm area and door control is required, you must assign a home area and an access group to the reader.

ℹ **Note** *When the reader has been configured to do door control only, the green and red indicators will remain off at all times.*

Alert Tones

The reader emits several distinct tones to alert you to particular system events. The volume level cannot be adjusted on the external LAN readers however it can be turned off via panel programming by setting the reader volume to the lowest level. See the Devices-Keypads & Readers-Commands menu in panel programming.

ℹ **Note** *Setting the reader volume to off will stop all audible warning signals at the reader.*

Reader 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 reader 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 reader 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
Exit Delay	The exit delay warning will sound 1 short beep every second when the area the reader 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 reader has been assigned to is triggered. If the system is not disarmed before the entry time expires then an alarm will occur.
Error	If an invalid token is presented to the reader the keypad will sound a 2 second warning tone indicating that the token was rejected for some reason. See the panel log for more details.
Chime Alert	If chime mode is active then the reader 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 5: Reader Tones

ℹ **Note** *When readers 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 LAN reader includes an egress input and a lock output which can be used to simplify the wiring when the LAN reader 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.

> **Note** *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 4: for more details.

The Egress input on the LAN reader allows you to simplify the wiring required to implement an egress button on the inside of the door. The egress input triggers the lock output on the LAN reader 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 reader ground. When the button is pressed the lock output on the reader 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.

> **Note** *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 LAN reader.*

Configuration Examples

Alarm control function only.
1) Install the reader as per instructions.
2) Set the home area for the reader (keypad).
3) Set reader (keypad) options as required.
4) Assign users to the area.

Access control function only.
1) Install the reader (keypad) as per instructions.
2) Set the access group for the reader (keypad).
3) Set reader (keypad) options as required.
If using the on board lock output, jump to step 6 or.
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 reader (keypad) as per instructions.
2) Set the home area for the reader (keypad).
3) Set the access group for the reader (keypad).
4) Set reader (keypad) options as required
If using the on board lock output, jump to step 7 or.
5) Set output event type to access group.
6) Set the output event assignment.
7) Assign users to the area.
8) Assign users to the access group.

The above examples show how to configure the PR113B and PR114B readers to control an area and or a door on a Solution 16i panel. Consult the installation manual for programming information if you are using a different panel.
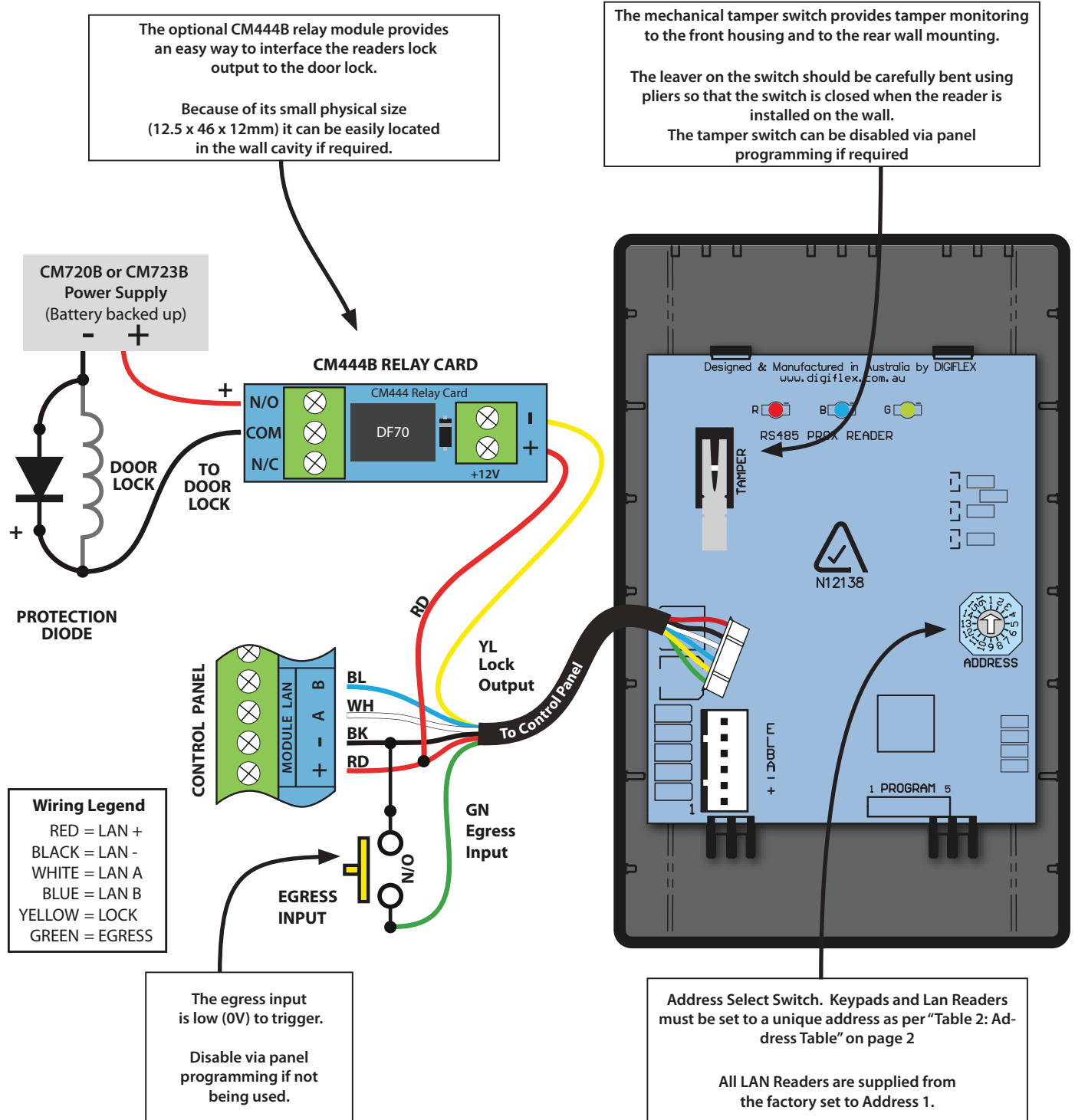
Connection Diagram

The optional CM444B relay module provides an easy way to interface the readers 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.

The mechanical tamper switch provides tamper monitoring to the front housing and to the rear wall mounting.

The leaver on the switch should be carefully bent using pliers so that the switch is closed when the reader is installed on the wall.
The tamper switch can be disabled via panel programming if required

CM720B or CM723B Power Supply
(Battery backed up)

CM444B RELAY CARD

CM444 Relay Card
DF70
N/O
COM
N/C
+12V

Designed & Manufactured in Australia by DIGIFLEX
www.digiflex.com.au

R   B   G
RS485 PROX READER
TAMPER
N12138
ADDRESS

DOOR LOCK
TO DOOR LOCK

PROTECTION DIODE

RD
YL Lock Output

CONTROL PANEL
MODULE LAN – A B
+ –

BL
WH
BK
RD

To Control Panel

E L B A – +
1
1 PROGRAM 5

GN Egress Input

EGRESS INPUT
N/O

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

The egress input is low (0V) to trigger.

Disable via panel programming if not being used.

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

All LAN Readers are supplied from the factory set to Address 1.

Figure 4: PR113B and PR114B Connection Diagram

Note *You must power cycle the panel or perform a LAN scan after connecting the PR113B or PR114B for the system to initialise the reader.*

Compatible Cards, Tokens and Prox Enabled Keypads

The PR113B and PR114B readers require the use of our new smart card credentials. Currently the range includes a PR301B keyring token, PR350B ISO card token and the PR365B adhesive token which can be attached to the back of a phone or other device.

A new range of smart card enabled keypads is a also available including the CP732B Solution Graphic Keypad With Smart Card Reader - Black Case / Blue Backlight and the CP733B Solution Graphic Keypad With Smart Card Reader - Black Case / Blue Backlight + Tamper.

You must ensure that all readers, prox keypads and credentials on the system are the same format. Smart card credentials have a unique coded number printed on them which starts with the letters SC for easy identification.

P/N - PR350B
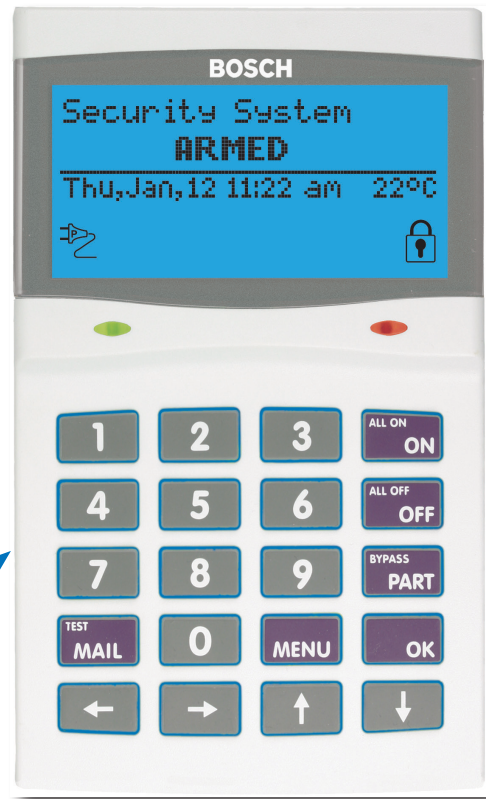**ISO Smart Card**

P/N - PR365B
Adhesive Sticker Smart Card

P/N - PR301B
Smart Card Token with Keyring

P/N - CP732B
Smart Card Prox Keypad

Figure 5: Compatible Credentials and Prox Keypads

PR113B - PR114B Specifications

Part Number:	PR113B - Black - Smart Card Reader (IP66). PR114B - White - Smart Card Reader (IP66).
Format:	Smart Card (MiFare) 40bit Proprietary, 10.3Mhz
Operating Voltage:	10.0VDC - 14.5VDC @ 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:	44mm(W), 21mm(D), 114mm(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 PR113B and PR114B 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).

N12138   N12138   TELEPERMIT   CE   RoHS

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

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