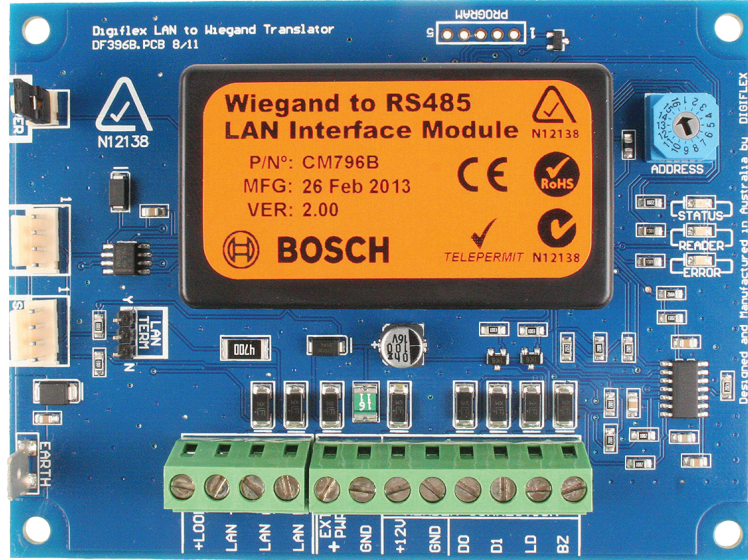# CM796B Wiegand to RS485 LAN Interface Module

Security Systems

EN | Installer Reference Guide
Security System

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CM796B - Wiegand To RS485 LAN Interface Module

The CM796B Wiegand to RS485 LAN Interface Module has been developed to allow the PR100 reader and other 3rd party wiegand proximity readers to be interfaced to the Solution 144 and other compatible Bosch control panels. The module supports wiegand formats from 26bit to 40bit and includes support for LED and buzzer control.

Module Compatibility		
Panels Supported	Version	Modules Supported
Solution 144	2.08	Up to 15

Table 1: CM796B Compatibility

The CM796B is ideally suited to applications where the site already has existing wiegand hardware and user credentials. The module connects to the control panel via the RS485 encrypted LAN and occupies one module space in the enclosure. Indicators are provided to show module status at all times.

The module is installed as a keypad/reader device in the system and programming options are configured for the wiegand reader via the Devices - Keypads & Readers menu. User access events are stored in the panel log and can also be reported if required.

Module Addressing

The CM796B module is wired, addressed and programmed as if it was a normal LAN reader. This means that each CM796B module installed on the system will consume one keypad / reader address up to a maximum of 15 on the Solution 144 panel. Because of the likely credential differences, we do not recommend using our proprietary LAN readers or proximity keypads on the same system as wiegand interface modules. Other keypads and fingerprint reader can be used as normal.

Each module fitted to the system must be assigned a unique address on the LAN. The CM796B includes a rotary address switch for quick selection. The following table shows the address setting for each module reader as well as the number of keypad / reader devices each panel can support.

Module Address Setting		
	Address No	Keypad No
Solution 144 Panel / Solution GRAPHIC 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

Figure 2: Address Switch

Note *Only one CM796B can be assigned to each address. All modules are supplied from the factory set to address 1. You must power cycle the panel or perform a LAN scan whenever you change the module's address.*

Box Contents

The CM796B contains the following parts.
- Module PCB and Mounting Spacer Pack
- Installer Reference Guide
- 2 x Shunts / Jumpers

Tamper Input

The CM796B includes a tamper input which can be used when mounting the module in a metal enclosure.
The tamper input is disabled by default and can be enabled under the Devices > Keypads & Readers > General Options.

The tamper input is normally closed and goes open to trigger an alarm and the pins can be manually shunted if required.

Module LED Indicators

The interface modules includes three LED indicators that provide feedback and trouble shooting information.
Additional information is also provided at the system keypad via the device status menu.

Module LED Indicators		
LED	**Status**	**Description**
STATUS	Off	Module has no power. Check wiring.
	Slow Flash	Power is connected and module is initialising. It can take up to 2 minutes for all modules on the LAN to initialise.
	On	Indicates module initialised and ready.
	Pulse Flash	Indicates the module is communicating with the panel.
READER	Off	Normal condition when not reading tokens.
	Flashing	Indicates that valid token as been read by the reader.
ERROR	Off	Normal - no error conditions.
	Flashing	Error condition. See device information on display keypad for fault information.

Table 3: Reader LED's

Wiegand Reader Operation

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 LED indicators and the reader sounder.

Reader LED Indicators

The module includes an output which can be used the power the LED indicator on the reader. The output will be low or 0 volts when the readers home area is disarmed and will go open circuit when the readers home area is armed. For most 3rd party wiegand readers with a dual LED indicator this would mean the reader LED will be green when the area is disarmed and red when the area is armed.

Reader LED Indicators		
Alarm Condition	**Output State**	**LED Indicators**
Reader's home area is turned Off.	**0 volts**	**Green**
Reader's home area is turned On.	**Open Circuit**	**Red**
Reader's home area is turned On in Part mode.	**0 volts**	**Green**
Keypad extinguish mode is active.	**Open Circuit**	**Red**

Table 4: Reader LED's

Note *The table above is only relevant when the CM796B is controlling the reader LED. To prevent confusion it is recommended that you do not set extinguish mode, and that you disable part mode for wiegand readers.*

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 disable the reader area control option located under Devices > Keypads & Readers > General Options in panel programming.

Note *The LED indicators will only display the status of the readers 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 output (door) on the system you must assign the reader to a door. See the Devices > Keypads & Readers > Door Assignment menu option in panel programming.

Alert Tones

The CM796B is capable of controlling the buzzer or sounder on the wiegand reader when the BZ terminal is connected.

The volume level on the wiegand reader cannot be adjusted 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.

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

Wiegand Reader Alert Tones	
Event	**Alert Tone Emitted**
Fire Alarm	The module does not support fire alarm tones and therefore no alerts will be heard when the area has a fire alarm in effect.
Burglary Alarm	The module does not support burglary alarm siren tones and therefore no alerts will be heard when the area has a burglary alarm in effect.

Trouble	If the panel has a trouble condition, the reader will sound a trouble alert. The user must acknowledge the trouble from a display keypad to silence the sounder. The trouble tone is represented by 4 x short beeps every 5 seconds.
Exit Delay	The exit delay warning will sound once 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 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	The reader will sound a single long tone when an invalid token has been presented.
Chime Alert	If chime mode is active, 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: Wiegand Reader Alert Tones

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.*

Powering The Module / Reader

The CM796B module includes a separately fused power input terminal which is used to provide power to the wiegand reader. You should connected these terminals to a suitable power supply like the CM720B or similar. This power supply could also be used to power the door lock if suitable.

If there sufficient, surplus current capacity is available in the LAN+ circuit to power the module then it is possible to connect a wire from the +LOOP terminal to the EXT PWR terminal so they are powered from the system LAN.

Note *Powering the module/reader from the LAN+ terminal is not the recommended method and alternatives should be considered carefully before proceeding.*

Connection Diagram

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

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

Tamper Connection. Fit shunt if not required.

LAN Connection Can be used to connect system LAN.

Connection point for installer service keypad.

LAN Termination Shunt. Only fit the shunt if this module is one of the two modules furthest from the Control Panel.

Expander earthing point. Connect to communications earth for maximum lightning protection. See the LAN Wiring and System Earthing sections of the Installer Reference Guide for more information

Digiflex LAN to Wiegand Translator
DF396B.PCB 8/11

PROGRAM
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Wiegand to RS485 LAN Interface Module

P/Nº: CM796B
MFG: 26 Feb 2013
VER: 2.00

CE   RoHS   TELEPERMIT   N12138

BOSCH

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ADDRESS

STATUS
READER
ERROR

Designed and Manufactured in Australia by DIGIFLEX

TAMPER   LAN   SERVICE   LAN TERM Y N   EARTH

READER CONNECTION
+LOOP   LAN –   LAN A   LAN B   EXT + PWR   GND   +12V   GND   D0   D1   LD   BZ

RD   BK   BL   GN   RD   BK   RD   BK   YL   GN   WH   BL

LAN CONNECTION Wiring Legend
RD = + 12VDC
BK = GND
BL = LAN A
GN = LAN B

The +Loop terminal is for wire termination. There is no voltage present on this Pin.

TO CONTROL PANEL

TO EXTERNAL POWER SUPPLY

READER CONNECTION Wiring Legend
RD = + 12VDC
BL = GND
YL = DATA 0
GN = DATA 1
WH = LED
BL = BUZZER

TO WIEGAND READER - PR100 WIRING SHOWN

The module includes a separately fused power input terminal which is used to provide power to the wiegand reader. You should connected these terminals to a suitable power supply like the CM720B or similar. This power supply could also be used to power the door lock if suitable.

If there sufficient, surplus current capacity is available in the LAN+ circuit to power the module then it is possible to connect a wire from the +LOOP terminal to the EXT PWR terminal so they are powered from the system LAN. This connection method is not recommended and should be considered carefully before proceeding.
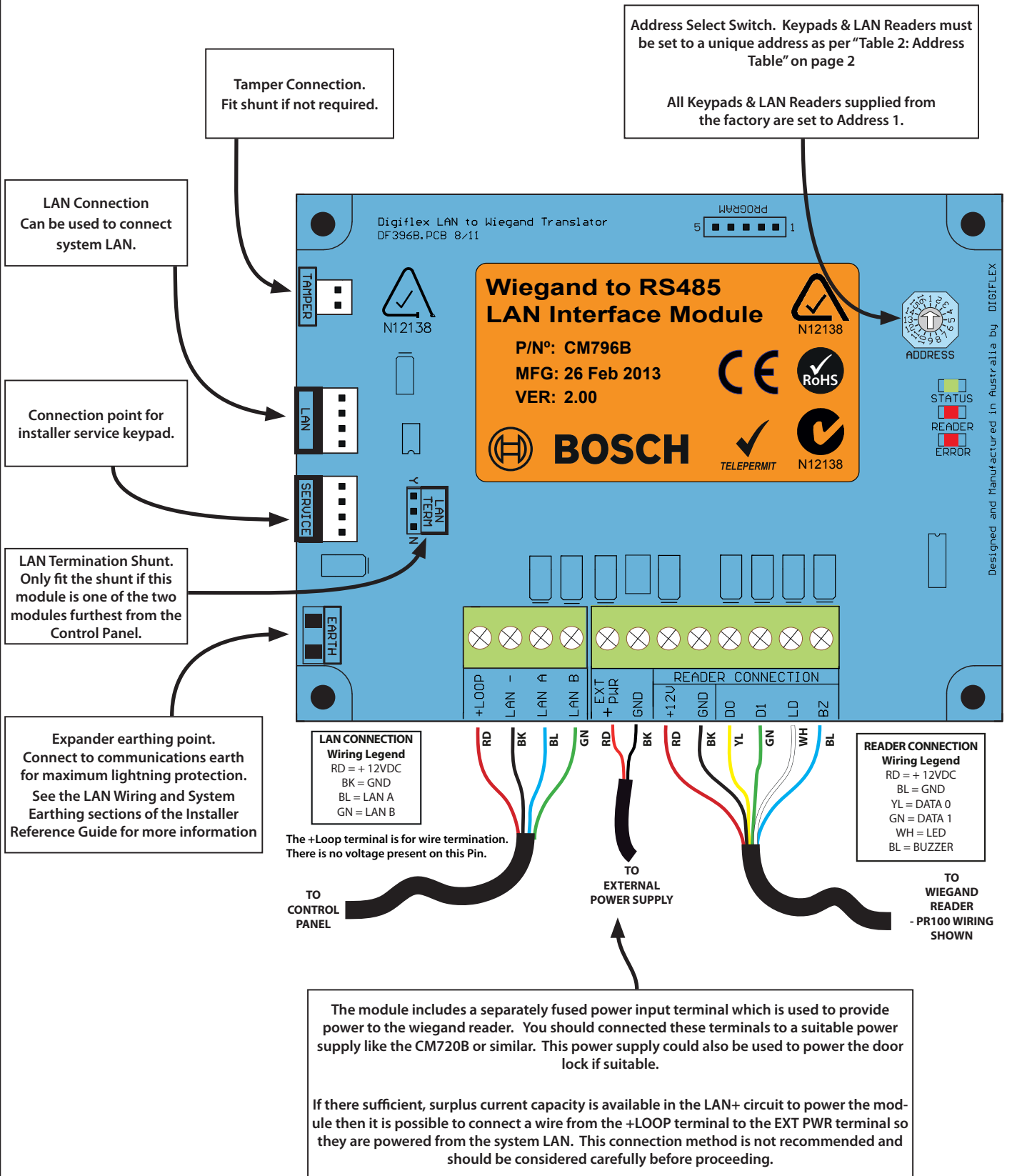
Figure 4: CM796B Connection Diagram

Note *You must power cycle the panel or perform a LAN scan after connecting the CM796B for the system to initialise the reader interface module.*

Configuration Examples

Alarm control function only.

1) Install the CM796B 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 CM796B and reader as per instructions.

2) Set the door assignment for the reader (keypad).

3) Set reader (keypad) options as required.

4) Set output event type as door to operate door.

5) Set output event assignment.

6) Assign users to the door assignment.

Both Alarm and Access control functions.

1) Install the CM796B and reader as per instructions.

2) Set the home area for the reader (keypad).

3) Set the door assignment for the reader (keypad).

4) Set reader (keypad) options as required

5) Set output event type as door to operate door.

6) Set the output event assignment.

7) Assign users to the area.

8) Assign users to the door assignment.

The above examples show how to configure the CM796B and compatible wiegand readers to control an area and or a door on a Solution 144 panel. Consult the installation manual for programming information if you are using a different panel.

Compatible Cards and Tokens

The following user credentials are compatible with the CM796B using the PR100B reader in wiegand mode. You must make sure the credentials used are compatible with the particular reader being installed.

P/N - PR250B
ISO Prox Card

P/N - PR260B
Clam Shell Prox Card

P/N - PR201B
Prox Token with Keyring

P/N - PR200B
Prox Token

> **Note** *The credentials shown above are only compatible with the PR100B reader which can be connected in wiegand mode if required. Other 3rd party readers will have their own credentials which are not likely to be compatible with the PR100 reader.*

CM796B Specifications

Part Number:	CM796B - Wiegand to RS485 LAN Interface Module
Format:	Wiegand format - 26bit - 40bit (PR100B or other suitable 3rd party readers)
Operating Voltage:	10.0V D.C - 14.5V D.C. @ 50mA Max.
Module Connection: (RS485 LAN)	Max total LAN length using multi strand security cable = 300m , Max total LAN length using 2 pair twisted shielded data cable (Belden 8723) = 1200m. See full control panel manual for complete wiring instructions.
Operating Environment:	0˚ to 55˚C RH 5 to 85% at 30˚C non-condensing.
Fixing Method:	The CM796B can be mounted in the MW700, MW710, MW720 or MW730 enclosures using clip in PCB mounts supplied.
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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