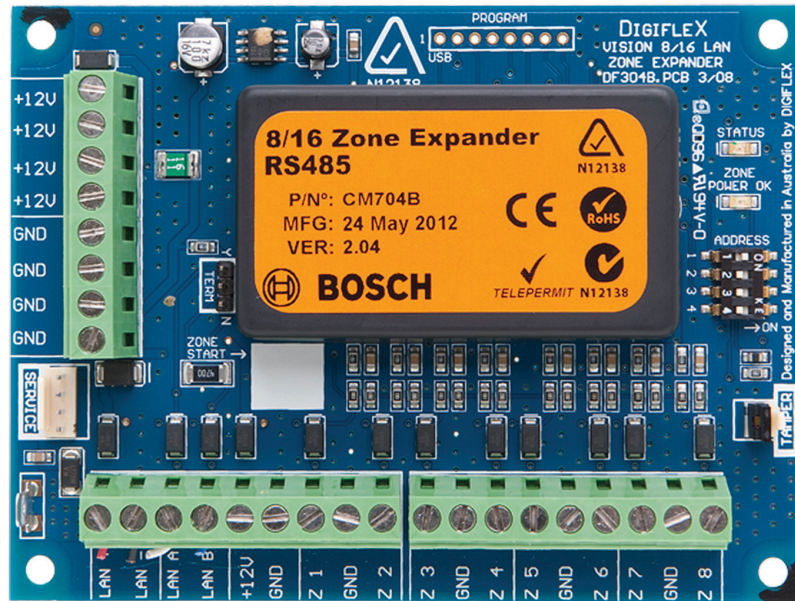# CM704B
8/16 Zone Expander Module

Security Systems

EN | Installer Reference Guide
Security System

BOSCH

CM704B - 8/16 Zone Expander Module

The CM704B allows you to expand the hard wired zone capacity of selected Vision control panels.

Table 1: lists the panels which are compatible with the CM704B and the maximum number of expanders that can be supported on each. Depending on the end of line (EOL) resistor option selected, each CM704B installed will add 8 or 16 zones to the system.

CM704B Zone Expander Compatibility	
Panel Supported	Modules Supported
Solution 16i	1
Solution 144	8
Solution E	16

Table 1: CM704B Compatibility

The CM704B is supplied as a PCB module and can be installed in the same cabinet as the main panel or remotely from the panel using the encrypted, 4 wire RS485 LAN connection. The module requires only one space in the enclosure and is supplied with all necessary EOL resistors and mounting hardware. Sensors connected to the expander can be powered from the Vision panel,[1] or from an external power supply like the CM720B or CM723B power supply modules.[2]

Power is connected to the module differently depending on the connection method required. Refer to Figure 2: and Figure 3: on page 5 for LAN / Power wiring diagrams.

A dedicated service keypad and tamper input are provided. If the tamper input is not required, you should fit the supplied shunt to the tamper input pins. To assist with installation, the module includes indicators to show Module and Zone Power status at all times.

A four way dip switch is used to select the zone expander modules address. The address setting determines the zone numbers for each expander as shown in Table 2: and Table 3: on page 4. You should consult these tables before you begin zone programming

Programming Considerations

1) The CM704B expander does not need to be enabled via panel programming. The panel will recognise it after power cycle or after performing a LAN scan function (MENU 6-0-2).

2) The EOL resistor value selected in the panel programming is global for all zones in the system including zones on expanders.

3) Some zones are defaulted as Not Used in panel programming. These must be programmed as valid zone types before they become active.
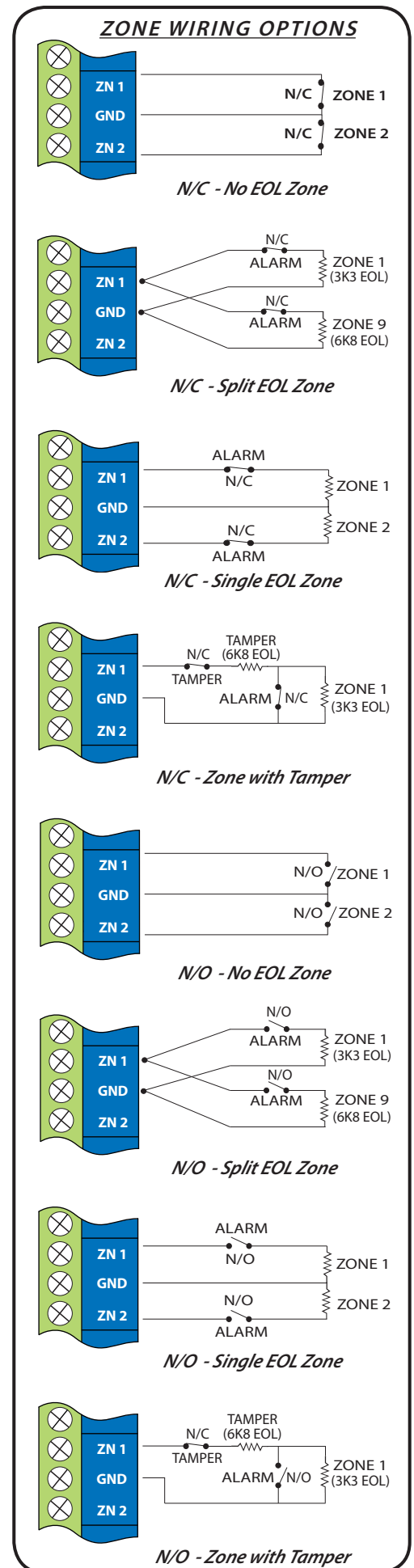
ZONE WIRING OPTIONS

N/C - No EOL Zone

N/C - Split EOL Zone

N/C - Single EOL Zone

N/C - Zone with Tamper

N/O - No EOL Zone

N/O - Split EOL Zone

N/O - Single EOL Zone

N/O - Zone with Tamper

Figure 1: Zone Wiring Options

Zone Configuration

On panels with a zone capacity greater than 16, (Solution 144, Solution E) each CM704B zone expander module installed on the system will occupy 16 zones regardless of the EOL resistor configuration selected. See "Table 3: CM704B Address Configuration On Solution E and Solution 144 Panels" on page 4 for more information.

Depending on the EOL resistor option selected, only one CM704B can be installed on panels with a maximum zone count of 16 zones. (Solution 16i). See "Table 2: CM704B Address Configuration On Solution 16i Panel" on page 4 for more information.

Single EOL Monitoring

If single EOL resistor configuration has been selected and one CM704B zone expander has been installed at address 1, the system provide zones 1 to 8 on the main panel and zones 17 to 24 on the expander module.

Split EOL Monitoring

If the Split EOL resistor configuration has been selected and one CM704B zone expander has been installed at address 1, the system provides zones 1 to 16 on the main panel and zones 17 to 32 on the expander module.

Alarm + Tamper Monitoring

If the Alarm + Tamper monitoring EOL resistor configuration has been selected and one CM704B zone expander has been installed at address 1, the system will provide zones 1 to 8 on the main panel and then zones 17 to 24 on the expander module. 2K2 + 6K8 and 10K + 10K EOL resistor values options can also be selected for Alarm and Tamper Monitoring.

RF Zones

If an RF receiver has been installed, then all zones up to the maximum number supported by the panel become available for use as RF zones.

An RF zone can be assigned or mapped to any spare zone input allowing zone parameters to be programmed. Assigning an RF zone to a physical zone will override or ignore the hard wired zones physical input terminals. For example if zone 7 is configured as an RF zone then any devices connected to the zone 7 terminals will be ignored.

> **Note** *The EOL resistor value setting is a global panel option. This means that all zones on the system must use the same EOL resistor values. EOL resistors are not required for RF Zones.*

Module Address Switches and Zone Numbering

Table 2: and Table 3: list the module address settings and corresponding zone numbers that apply when adding zone expanders to the listed panels. Each zone expander module added to the Solution 16i will provide a maximum of 8 additional zones. Zone expanders should not be fitted to this panels when the Split EOL resistor option has been selected.

> **Note** *Only one CM704B 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 address. The LAN must be in the unlocked state or the LAN scan will not find new modules.*
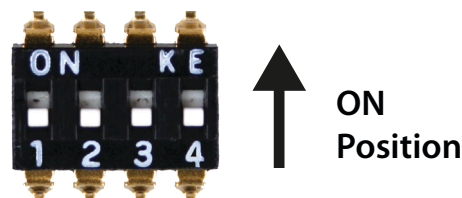

ON Position

Figure 2: Address Switch Activation

(1): Provided the maximum available LAN current is not exceeded. See Installer Reference Guide for more information.
(2): The CM720B is a LAN Monitored 1 amp Switch Mode Power Supply with Pulse Battery Charger and the CM723B is a LAN Monitored 5 amp Power Supply/Battery Charger.

Panel Zone Assignments

The following tables list the zone numbers which become available when adding zone expander modules to the system.

Solution 16i Panel						
Module Number	Address Setting				Zone Numbers (Single EOL)	Zone Numbers (Alarm+Tamper)	Zone Numbers (Split EOL)
	SW1	SW2	SW3	SW4			
Control Panel					1 to 8	1 to 8	1 to 16
1 =	OFF	OFF	OFF	OFF	9 to 16	9 to 16	N/A
1 x CM704B can be fitted to the Solution 16i panel.							

Table 2: CM704B Address Configuration On Solution 16i Panel

> **Note**
> *When single EOL or Alarm + Tamper EOL options have been configured the first 8 zones are available on the control panel zone terminals. If Split EOL monitoring is selected there is no need to install the zone expander as all 16 zones are available on the control panel zone terminals.*

Each zone expander module added to the Solution 144 and Solution E panels occupies 16 zones regardless of the EOL configuration selected. In Single or Alarm + Tamper EOL mode each expander only provides 8 hard wired zone inputs.

Solution E and Solution 144 Panels								
		Module Number	Address Setting				Zone Numbers (Single EOL)	Zone Numbers (Alarm+Tamper)	Zone Numbers (Split EOL)
			SW1	SW2	SW3	SW4			
		Control Panel					1 to 8	1 to 8	1 to 16
Solution 144 Panel	Solution E Panel	1 =	OFF	OFF	OFF	OFF	17 to 24	17 to 24	17 to 32
		2 =	ON	OFF	OFF	OFF	33 to 40	33 to 40	33 to 48
		3 =	OFF	ON	OFF	OFF	49 to 56	49 to 56	49 to 64
		4 =	ON	ON	OFF	OFF	65 to 72	65 to 72	65 to 80
		5 =	OFF	OFF	ON	OFF	81 to 88	81 to 88	81 to 96
		6 =	ON	OFF	ON	OFF	97 to 104	97 to 104	97 to 112
		7 =	OFF	ON	ON	OFF	113 to 120	113 to 120	113 to 128
		8 =	ON	ON	ON	OFF	129 to 136	129 to 136	129 to 144
		9 =	OFF	OFF	OFF	ON	145 to 152	145 to 152	145 to 160
		10 =	ON	OFF	OFF	ON	161 to 168	161 to 168	161 to 176
		11 =	OFF	ON	OFF	ON	177 to 184	177 to 184	177 to 192
		12 =	ON	ON	OFF	ON	193 to 200	193 to 200	193 to 208
		13 =	OFF	OFF	ON	ON	209 to 216	209 to 216	209 to 224
		14 =	ON	OFF	ON	ON	225 to 232	225 to 232	225 to 240
		15 =	OFF	ON	ON	ON	241 to 248	241 to 248	241 to 256
		16 =	ON	ON	ON	ON	257 to 264	257 to 264	257 to 272
Up to 16 x CM704B can be fitted to the Solution E panel. **Up to 8 x CM704B can be fitted to the Solution 144 panel.**								

Table 3: CM704B Address Configuration On Solution E and Solution 144 Panels

> **Note**
> *When Single EOL or Alarm + Tamper EOL options have been configured the first 8 zones are available on the control panel zone terminals. If Split EOL monitoring is selected the first 16 zones are available on the control panel zone terminals.*

Powering The CM704B From The LAN

To power the module and sensors from the panel LAN connect the wiring as shown. Care must be taken to ensure that the load does not exceed the maximum LAN+ current. When the module is located more than 100m from the panel the use of an external power supply (CM720B or CM723B) is recommended. See the Installer Reference Guide for more information on available current and wiring options.
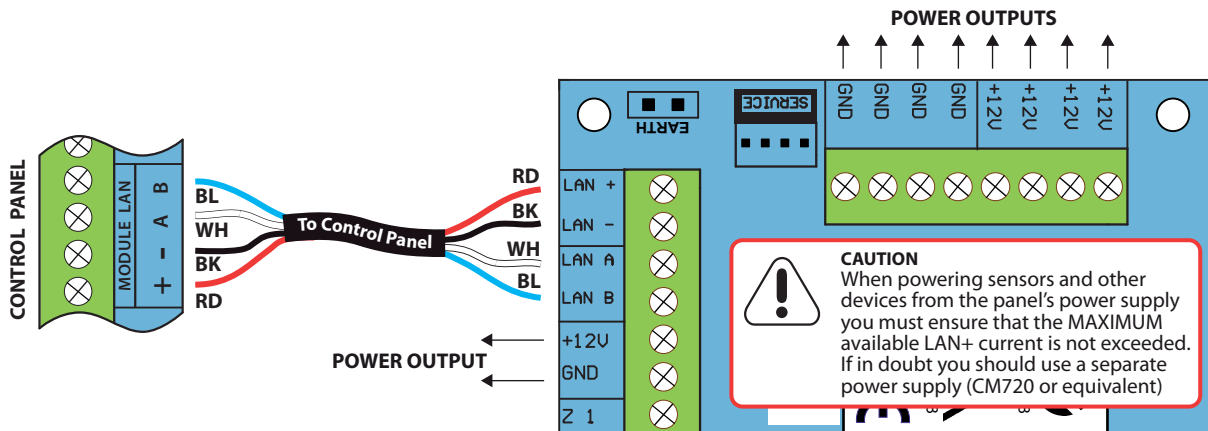

Figure 2: Connection Diagram With Power Supplied By System LAN+

Powering The CM704B From An External Power Supply

To power the module and sensors etc from an external power supply (CM720B or CM723B) connect the wiring as shown. In this situation, the LAN+ terminal of the module is connected to the external power supply (CM720B or similar) and must NOT be connected to the panel LAN+ terminal. See the Installer Reference Guide for more information on available current and wiring options.
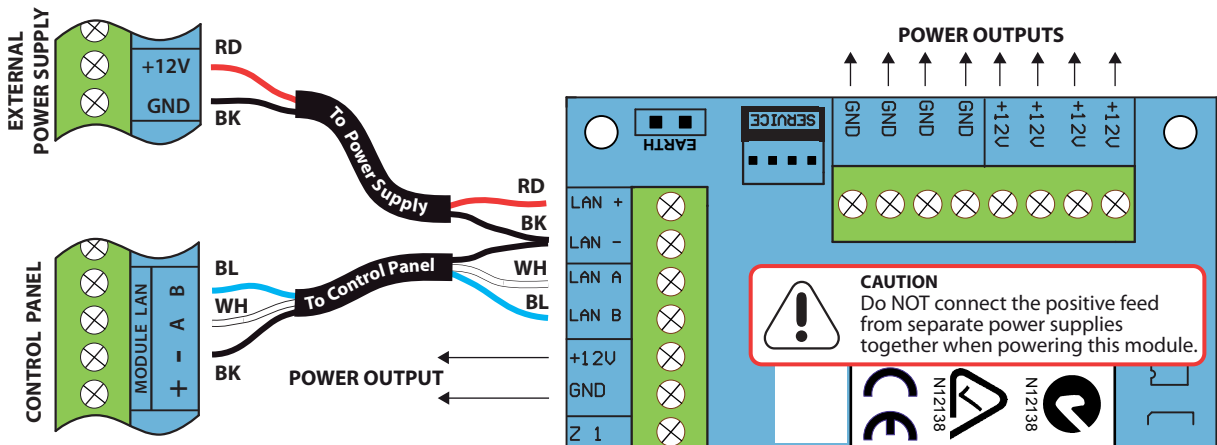

Figure 3: Connection Diagram With Power Supplied By External Supply

Note

The power source connected to the LAN+ terminal on the module is internally connected to the +12V power output terminals via a 1 amp resetting fuse. This means that devices powered from these terminals are effectively being supplied from the power supply connected to the LAN+ terminal.

When the Power OK LED is on the power output is OK. The fuse will open and the LED extinguish if the power output terminals are overloaded.

The maximum continuous current drawn from the (+12V) power output terminals should not exceed 500 mA when being powered from the LAN or 1 Amp when powered via an external power supply.

CM704B Connection Diagram - Rev B PCB

**Note:** The +12V outputs are fuse protected on board via a 1Amp resetting fuse.

The maximum continuous current drawn from the (+12V) power output terminals should not exceed 500mA when being powered from the LAN or 1Amp when powered via an external power supply.

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

Connection point for installer service keypad.

See Figure 2: and Figure 3: on page 5 for the LAN / Power wiring instructions.
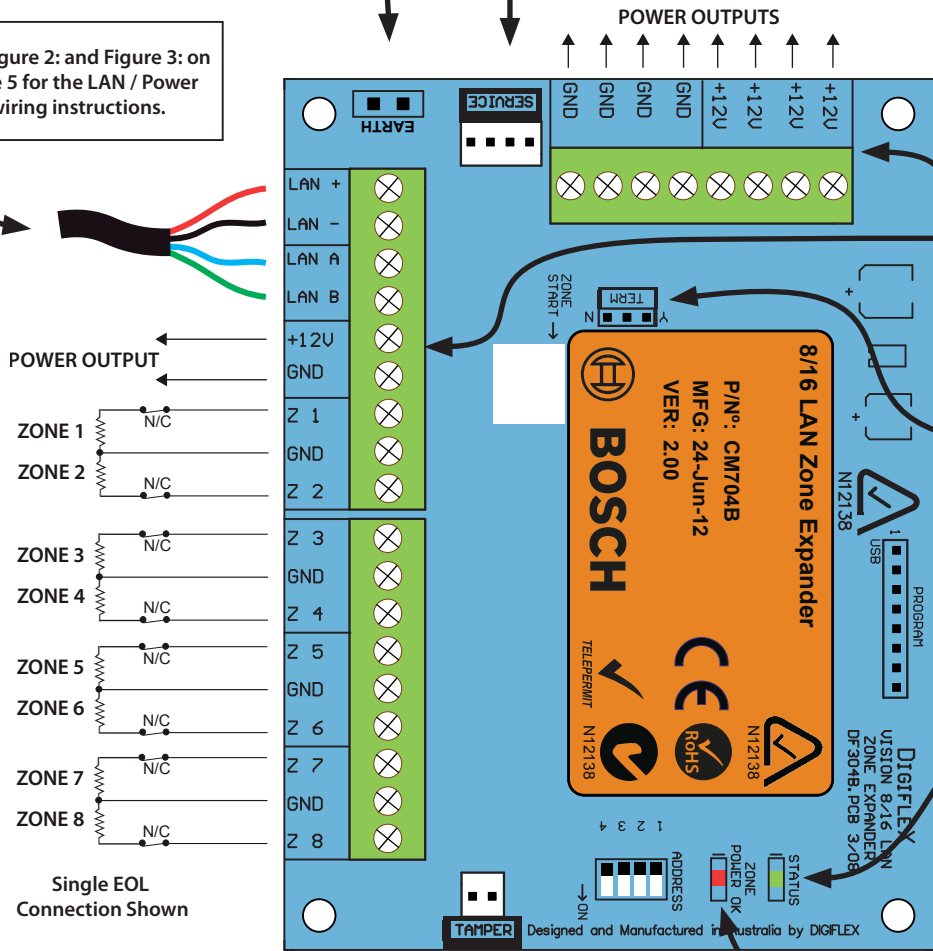
POWER OUTPUTS

Power Output Terminals. Used to power sensors etc.

Five individual output power terminals are provided on the CM704B Expander.

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

Expander Status LED pulses to indicate that the Expander is functioning correctly and communicating with the panel.
If the light is on steady it means that the module is not communicating with the panel.

Zone Power LED lights to show that Zone power is present on terminals and not overloaded.

POWER OUTPUT

ZONE 1
ZONE 2
ZONE 3
ZONE 4
ZONE 5
ZONE 6
ZONE 7
ZONE 8

Single EOL Connection Shown

BOSCH

8/16 LAN Zone Expander

P/N°: CM704B
MFG: 24-Jun-12
VER: 2.00

DIGIFLEX
VISION 8/16 LAN
ZONE EXPANDER
DF304B.PCB 3/08

Tamper Connection. Fit shunt if not required.

CM704B Expander Board Address Select Switch. Modules must be set to a unique address as shown in Table 2 and Table 3.

Note: You must power cycle the panel or perform a LAN scan after connecting the CM704B for the system to initialise the expander.

Figure 4: CM704B Connection Diagram (REV B PCB)

Zone Allocation When Using the CM705B Universal Expander

The Solution 144 and Solution E panels also support the CM705B Universal Expander Modules. The CM705B is like having 1 x CM704B zone expander, 1 x CM710B output expander and 1 x CM720B power supply module all in one and as such each universal expander added to the system will consume the address of the corresponding single function module.

For example if a universal expander is assigned to address 4, then you cannot assign a CM704B, CM710B or CM720B module to address 4 and the zones corresponding to module 4 will be provided on the universal expander as per the table below.

See the CM705B installation guide for more information.

Module Number	Address Setting				Zone Numbers (Single EOL)	Zone Numbers (Alarm+Tamper)	Zone Numbers (Split EOL)
	SW1	SW2	SW3	SW4			
Control Panel					1 to 8	1 to 8	1 to 16
4 =	ON	ON	OFF	OFF	65 to 72	65 to 72	65 to 80

Table 4: Zones Allocated To Module Address 4

CM704B Specifications

Part Number:	CM704B - 8/16 Zone Expander Module (RS485 LAN)
Operating Voltage:	10.0V DC. - 14.5V DC. @ 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 manual for complete wiring instructions.
Operating Environment:	0˚ to 55˚C RH 5 to 85% at 30˚C non-condensing.
Fixing Method:	The CM704B 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

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