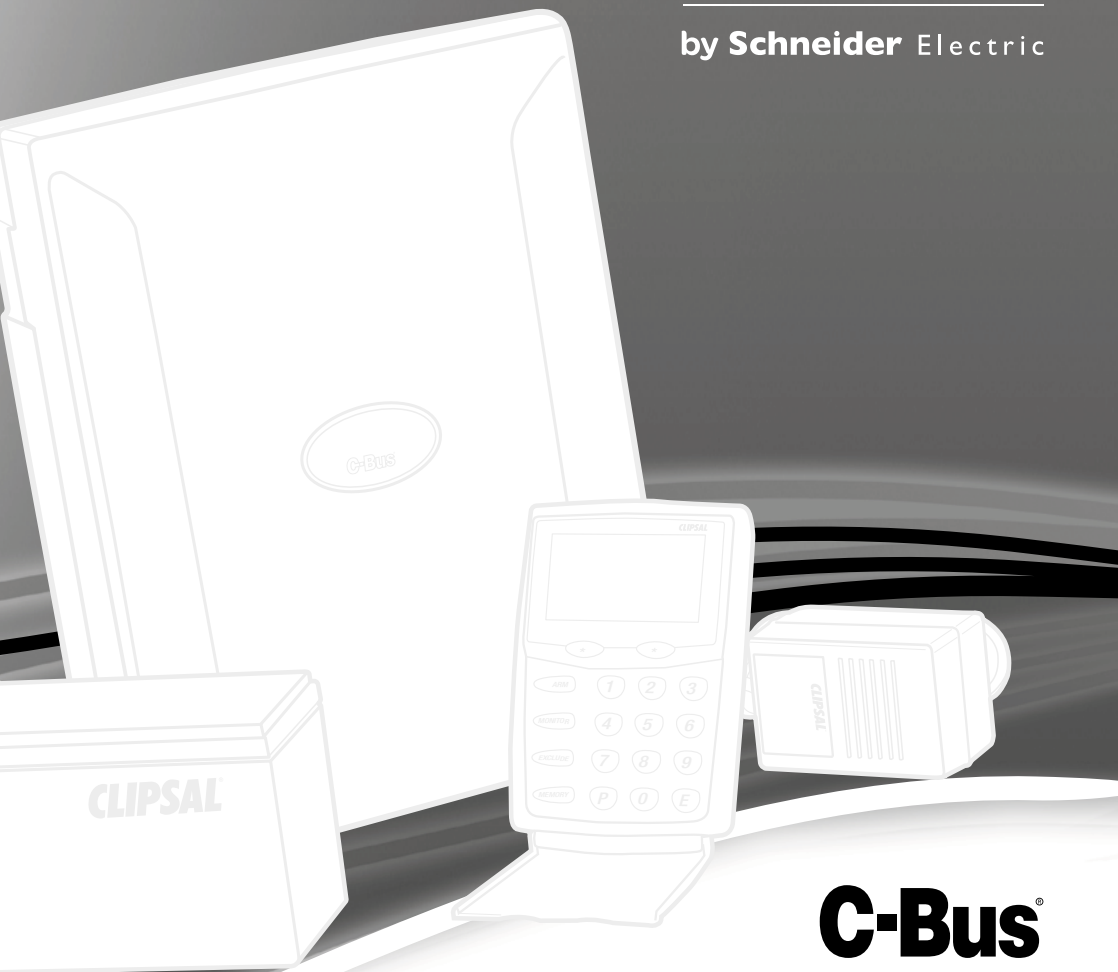


CLIPSAL[®]

by **Schneider** Electric



C-Bus[®]

HomeSafe Security Panel

5400/16CB



Programming Manual C-Bus Supplement

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1.0 Product Range

Clipsal 5400/16CB C-Bus enabled alarm control panel. This manual covers the C-Bus programming options of the 5400/16CB panel. For full programming information see the 5400 and 5400/16CB Installation and Programming Manual.

2.0 Features

- Clipsal 5400/16CB is a fully approved C-Bus product.
- Full compatibility with Clipsal C-Bus commands.
- Featuring 16 easily programmable C-Bus events.
- Multiple 5400/16CB events can operate C-Bus devices.
 - Unsealed zones.
 - End of exit delay.
 - Alarm condition.
 - Armed or disarmed state.
- Compatible C-Bus devices can arm/disarm the 5400/16CB.

2.1 Control Panel Features

- 16 alarm zones.
- Supports up to three remote LCD or LED keypads.
- 56 user codes can be programmed to operate by keypad PIN, radio key or access card.
- Optional Clipsal Radio Interface for fully integrated wireless security.
- Programmable two area partitioning can split the panel into two independent areas plus a common area.
- Monitor mode allows partial arming, (e.g. perimeter security overnight).
- Day mode feature allows daytime monitoring of fire doors, coolrooms, etc.
- Temporary day zone feature allows easy enabling/disabling of day mode.
- Keypad panic feature.
- Keypad duress feature.
- Two button arming feature.
- Fire alarm feature with different siren tones.
- Highly flexible zone to output mapping.
- Onboard vibration sensor analyser with programmable sensitivity. Use with compatible vibration sensors.
- Siren chirp and strobe flash on arming with radio key.
- Quiet chirps option on arm/disarm by radio key.
- True dynamic battery test actively tests the battery under load every hour.
- Four programmable auxiliary outputs.
- Serial data output via RS232.
- Automatic reset fuses.
- Programmable siren/reset lockout.
- 30 event memory from keypad.
- Standard defaults to suit most applications.

- Easy programming by keypad or 5400S/2 software.
- All programming data is permanently stored in a non-volatile memory.
- All inputs and outputs are heavily protected against lightning and high voltage supply transients.
- Optional output expander.

DIALLER

- Full remote upload/download by PC and modem using 5400S/2 software.
- View system status and arm/disarm using 5400S/2 software.
- Remote control of outputs via telephone.
- Contact ID format - two 14 digit phone numbers plus one "follow me" number.
- Audible format feature.
- Phone line monitoring (activates output).
- Dialler "listen in" option for installers.
- Auto test calls.
- Pulse or DTMF dialling.
- True dial tone detection.
- Hex programmable client codes.

3.0 Installation Considerations

It is recommended that the C-Bus connection and configuration is performed by an installer who has attended a C-Bus Training Course. It is possible to configure the panel to send C-Bus commands each time a zone is unsealed (triggered), even when the unit is disarmed.

Use this facility with caution (particularly with passive infrared detectors), since the normal operation of some security devices may flood the C-Bus network with excessive communication.

A security sensor will, on every time, detect a change within its field of view and trigger the security panel's zone that it is connected to. Depending on the panel's event, put out a command to the C-Bus network via the C-Bus interface.

Excessive C-Bus traffic will affect the performance of the C-Bus network. This does not completely negate this type of set up, however, it must be limited in its implementation. For example, a security sensor that resides in an entry foyer could be used if the event was limited to the panel being armed, such as when it pulses on a courteous light or triggering a "welcome home scene". This would not give any consideration to it being night or day without a logical device, i.e. Colour Touch or Pascal Logic Unit, residing on the network.

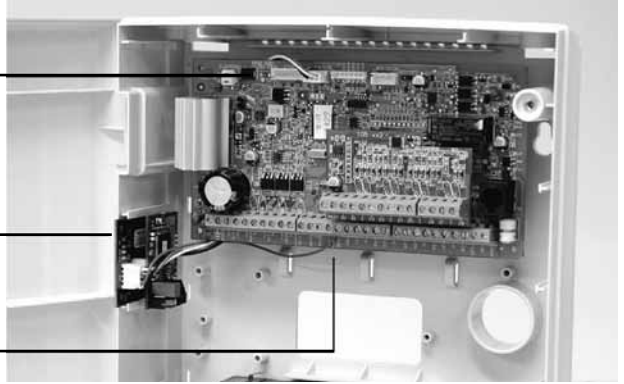
If a C-Bus PIR was used in this case to achieve the same result, its ambient level could be set to only work when the available natural light was insufficient.

4.0 C-Bus Interface Installation

Three pin plug from C-Bus Interface fits into the SERIAL socket on the 5400/16CB board.

C-Bus Interface fits in this left hand slide rail position in the 5400/16CB housing.

Red wire from the C-Bus Interface connects to any +12V terminal on the 5400/16CB board.



4.1 Clipsal C-Bus Interface



C-Bus Positive (blue + orange)

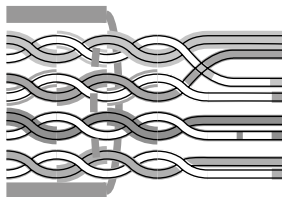
C-Bus Negative (blue & white + orange & white)

NETWORK BURDEN JUMPER

This jumper is supplied in the OFF position and can be enabled if the C-Bus network burden is required. (Further information is available from Clipsal.)

Four wire loom for connection to 5400/16CB board

4.2 C-Bus Wiring

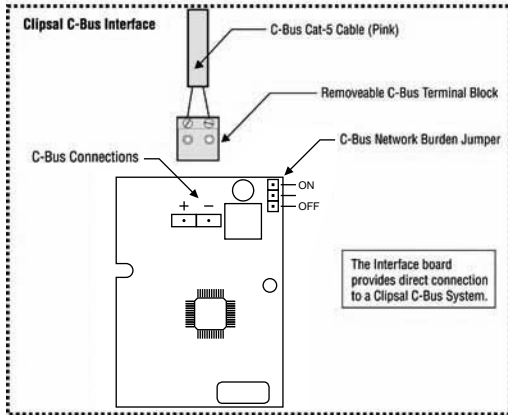


C-Bus Positive (blue + orange)

C-Bus Negative (blue & white + orange & white)

Remote on/off is not used by the Clipsal C-Bus Interface

4.3 C-Bus Wiring (continued)



Clipsal 5400/16CB C-Bus supplement

5.0 Installation and Programming

OPTION	DESCRIPTION	DEFAULT	YOUR SETTING
P123E 7E	TELEPHONE REMOTE CONTROL PULSE AUX3	255 (disabled)	
P124E 7E	TELEPHONE REMOTE CONTROL PULSE AUX4	255 (disabled)	

Options P123E 7E & P124E are also described in the 5400/16CB Installation & Programming Manual.

P123E 7E	TELEPHONE REMOTE CONTROL PULSE AUX3
-----------------	--

PROGRAM MODE LEVEL
Installer, remote by PC.

FACTORY DEFAULT
255 (disabled)

Setting this option ON and P90E 5E ON enables remote control of AUX3. After establishing remote control contact with the panel, the telephone **5 key** pulses the AUX3 ON for five seconds.

P124E 7E	TELEPHONE REMOTE CONTROL PULSE AUX4
-----------------	--

PROGRAM MODE LEVEL
Installer, remote by PC.

FACTORY DEFAULT
255 (disabled)

Setting this option ON and P90E 5E ON enables remote control of AUX4. After establishing remote control contact with the panel, the telephone **6 key** pulses the AUX4 ON for five seconds.

OPTION	DESCRIPTION	DEFAULT	YOUR SETTING
P150 1E	C-BUS ENABLE	OFF	
P75E 15E	C-BUS FAILURE DIALLER REPORT	OFF	
P167E	C-BUS ARM APPLICATION ADDRESS	56	
P168E	C-BUS ARM AREA 1 GROUP ADDRESS	255 (disabled)	
P169E	C-BUS ARM AREA 2 GROUP ADDRESS	255 (disabled)	
P170E	C-BUS ARM AREA 1 & AREA 2 GROUP ADDRESS	255 (disabled)	

P150E 1E**C-BUS ENABLE**

PROGRAM MODE LEVEL
Installer, remote by PC.

FACTORY DEFAULT
OFF (disabled)

NOTES:
C-Bus operates in normal operating mode only. C-Bus messages are disabled if the 5400/16CB is in user or installer program mode.

This option enables the 5400/16CB C-Bus option.

PROGRAMMING SEQUENCE:

Press P150E 1E to toggle the option ON or OFF.

OFF: C-Bus is **disabled**.

ON: C-Bus is **enabled**.

P75E 15E**C-BUS FAILURE DIALLER REPORT**

PROGRAM MODE LEVEL
Installer, remote by PC.

FACTORY DEFAULT
OFF (disabled)

This option enables the reporting by dialler of a "C-Bus Failure" message. If messages between the 5400/16CB and the C-Bus have stopped for any reason, the 5400/16CB will attempt to reconnect and then report a "C-Bus Failure" message if reconnection fails.

Press P75E 15E to toggle the option ON or OFF.

OFF: C-Bus failure dialler report is **disabled**.

ON: C-Bus failure dialler report is **enabled**.

ARMING WITH C-BUS LIGHTING-LIKE APPLICATION "ON" COMMAND

Options P167E-P170E allow any combination of 5400/16CB area 1 or area 2 to be armed using a lighting application ON command. The program options set the C-Bus application address and the group address of the lighting application. When an ON command is received from these addresses, the different area combinations will arm.

P167E

C-BUS ARM APPLICATION ADDRESS

PROGRAM MODE LEVEL

Installer, remote by PC.

This sets the application address for the C-Bus ON commands that can ARM the panel. The Application Address has the range of 48 to 95 (\$30 to \$5F).

FACTORY DEFAULT

56 (default lighting application)

Enter a two digit number within this range to program the option.

NOTES:

See P168E to P170E to set the group address needed to arm areas.

PROGRAMMING SEQUENCE:

Press P167E xxE (xx = 48 to 95)

P168E

C-BUS ARM AREA 1 GROUP ADDRESS

PROGRAM MODE LEVEL

Installer, remote by PC.

This sets the Group address for the C-Bus ON command that can ARM Area 1 of the panel. Enter a 3 digit number between 0 to 255 to set the address. An address of 255 will turn OFF the option.

FACTORY DEFAULT

255 (no address)

The P167E application address may also have to be set if the default application is not being used.

NOTES:

- Area 1 will only arm if zones have been assigned to it. See option P45E in the 5400/16CB Installation & Programming manual.
- The shortcut area 1 arming option P62E 5E must be ON.

PROGRAMMING SEQUENCE:

Press P168E xxxE (xxx = 000 to 255)

P169E

C-BUS ARM AREA 2 GROUP ADDRESS

PROGRAM MODE LEVEL

Installer, remote by PC.

This sets the group address for the C-Bus ON command that can ARM Area 2 of the panel. Enter a three digit number between 0 to 255 to set the address. An address of 255 will turn OFF the option.

FACTORY DEFAULT

255 (no address)

The P167E application address may also have to be set if the default application is not being used.

NOTES:

- Area 2 will only arm if zones have been assigned to it. See option P46E in the 5400/16CB Installation & Programming manual.
- The shortcut area 2 arming option P62E 6E must be ON.

PROGRAMMING SEQUENCE:

Press P169E xxxE (xxx = 000 to 255)

P170E**C-BUS ARM AREA 1 AND AREA 2 GROUP ADDRESS****PROGRAM MODE LEVEL**

Installer, remote by PC.

FACTORY DEFAULT

255 (no address)

NOTES:

1. Area 1 and area 2 will only arm if zones have been assigned to it. See option P45E and P46E in the 5400/16CB Installation & Programming manual.
2. The shortcut area 1 and area 2 arming option P62E 5E and 6E must be ON.
3. This arms using the C-Bus user code (user 56), which must be set up to allow area 1 and/or area 2 arming.

This sets the Group Address for the C-Bus ON command that can ARM area 1 and/or area 2 of the panel. Enter a three digit number between 0 to 255 to set the address. An address of 255 will turn OFF the option.

The P167E application address may also have to be set if the default application is not being used.

PROGRAMMING SEQUENCE:

Press P170E xxxE (xxx = 000 to 255)

← To program user code 56 for area 1 and area 2 arming. In installer program mode, press P256E EXCLUDE E 1E 2E

P170E**C-BUS MONITOR ARM GROUP ADDRESS****PROGRAM MODE LEVEL**

Installer, remote by PC.

FACTORY DEFAULT

255 (no address)

NOTES:

1. Area 1 will only arm if zones have been assigned to it. See option P45E in the 5400/16CB Installation & Programming manual.
2. The shortcut area 1 arming option P62E 5E must be ON.

This sets the group address for the C-Bus ON commands that can ARM MONITOR mode. Enter a three digit number between 0 to 255 to set the address. An address of 255 will turn OFF the option.

Note 1. P167E application address may also have to be set if the default application is not being used.

Note 2. Monitor will only arm if zones have been assigned to it (see 5400/16CB option P51E).

P151E - P166E

C-BUS OUTPUT EVENTS

PROGRAM MODE LEVEL

Installer, remote by PC.

FACTORY DEFAULT

No events

NOTES:

Allowed digits are 0 to 9.

The number of digits is either 8 or 11, depending on whether the value [aaa] is used - relevant to a particular control message.

The 5400/16CB can be programmed to send up to 16 C-Bus control messages when different 5400/16CB events occur.

These program options set the 5400/16CB event to the required C-Bus function output.

PROGRAMMING SEQUENCE: PxxxE eeAffiii[aaa] E

PROGRAMMING VARIABLES DESCRIPTION

PxxxE	The 5400/CB option number of the 16 available output events. (P151E to P166E).
ee	The 5400/16 EVENT which will trigger a C-Bus event.
A	The APPLICATION IDENTITY of the device being controlled. (i.e., lighting control, trigger control or enable control).
ff	FUNCTION (i.e., what the C-Bus devices will do).
iii	The C-Bus GROUP ADDRESS number for the devices being controlled.
aaa	VALUE. (Such as seconds, minutes or percent where relevant.)

P151E - P166E

C-BUS OUTPUT EVENTS continued

DIGITS	DESCRIPTION																																																																																												
xxx	PROGRAMMING OPTION P151e To P166e (Output Events 1 TO 16)																																																																																												
ee	5400/16CB EVENT.																																																																																												
01-16	Zone 1-16 unsealed, irrespective of panel armed or disarmed.																																																																																												
41-56	Zone 1-16 unsealed & panel armed AREA 1 or AREA 2.																																																																																												
71-86	Zone 1-16 unsealed & panel FULLY disarmed.																																																																																												
95	Panel armed in monitor mode.																																																																																												
96	End of exit delay.																																																																																												
97	Alarm.																																																																																												
98	Panel disarmed.																																																																																												
99	Panel armed.																																																																																												
A	APPLICATION IDENTITY																																																																																												
1	Lighting application.																																																																																												
2	Trigger control application.																																																																																												
3	Enable control application.																																																																																												
ff	FUNCTION (For more information, see the relevant application document from Clipsal)																																																																																												
	<table border="1"> <thead> <tr> <th></th> <th>A=1 (LIGHTING APPLICATION)</th> <th>A= 2 (TRIGGER CONTROL)</th> <th>A=3 (ENABLE CONTROL)</th> </tr> </thead> <tbody> <tr> <td>00</td> <td>OFF*</td> <td>TRIGGER MIN*</td> <td>N/A</td> </tr> <tr> <td>15</td> <td>ON*</td> <td>TRIGGER MAX*</td> <td>N/A</td> </tr> <tr> <td>16</td> <td>Pulse ON for aaa seconds</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>17</td> <td>Pulse OFF for aaa seconds</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>18</td> <td>Pulse ON for aaa minutes</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>19</td> <td>Pulse OFF for aaa minutes</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>20</td> <td>Ramp instantaneous to aaa%</td> <td>Triggers action aaa</td> <td>Sets network variable aaa</td> </tr> <tr> <td>21</td> <td>4 sec ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>22</td> <td>8 sec ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>23</td> <td>12 sec ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>24</td> <td>20 sec ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>25</td> <td>30 sec ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>26</td> <td>40 sec ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>27</td> <td>1 min ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>28</td> <td>1.5 min ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>29</td> <td>2 min ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>30</td> <td>3 min ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>31</td> <td>5 min ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>32</td> <td>7 min ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>33</td> <td>10 min ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>34</td> <td>15 min ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>35</td> <td>17 min ramps light to aaa%</td> <td>N/A</td> <td>N/A</td> </tr> </tbody> </table>		A=1 (LIGHTING APPLICATION)	A= 2 (TRIGGER CONTROL)	A=3 (ENABLE CONTROL)	00	OFF*	TRIGGER MIN*	N/A	15	ON*	TRIGGER MAX*	N/A	16	Pulse ON for aaa seconds	N/A	N/A	17	Pulse OFF for aaa seconds	N/A	N/A	18	Pulse ON for aaa minutes	N/A	N/A	19	Pulse OFF for aaa minutes	N/A	N/A	20	Ramp instantaneous to aaa%	Triggers action aaa	Sets network variable aaa	21	4 sec ramps light to aaa%	N/A	N/A	22	8 sec ramps light to aaa%	N/A	N/A	23	12 sec ramps light to aaa%	N/A	N/A	24	20 sec ramps light to aaa%	N/A	N/A	25	30 sec ramps light to aaa%	N/A	N/A	26	40 sec ramps light to aaa%	N/A	N/A	27	1 min ramps light to aaa%	N/A	N/A	28	1.5 min ramps light to aaa%	N/A	N/A	29	2 min ramps light to aaa%	N/A	N/A	30	3 min ramps light to aaa%	N/A	N/A	31	5 min ramps light to aaa%	N/A	N/A	32	7 min ramps light to aaa%	N/A	N/A	33	10 min ramps light to aaa%	N/A	N/A	34	15 min ramps light to aaa%	N/A	N/A	35	17 min ramps light to aaa%	N/A	N/A
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33	10 min ramps light to aaa%	N/A	N/A																																																																																										
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35	17 min ramps light to aaa%	N/A	N/A																																																																																										
iii	GROUP ADDRESS in decimal format (i.e. identity group address, identity trigger group, identity variable number). 000-255																																																																																												
aaa	VALUE or action selector depending on the setting of A. Seconds or minutes (000-255) or percent (000-100) where relevant. *Applications marked with an asterisk do not require a value.																																																																																												

C-BUS OUTPUT EVENTS

EXAMPLE 1

For example, if you wanted to program Output Event 1 to turn on a light (i.e. Group 001) for 10 minutes when zone 1 is unsealed and the 5400/16CB is disarmed.

In installer program mode, press:

P151E 71 1 18 001 010 E

Press E to finish. 3 beeps will be heard.

010 is the VALUE. In this case 10 minutes.

001 is the GROUP ADDRESS in this example.

18 is the FUNCTION number to pulse ON a light for aaa minutes.

1 is the APPLICATION IDENTITY for a lighting application.

71 is the EVENT number for “zone 1 unsealed when the panel is disarmed.”

P151 is the PROGRAMMING OPTION for Output Event 1.

C-BUS OUTPUT EVENTS

EXAMPLE 2

For example, if you wanted to program Output Event 2 to do a 20 second ramp of a light to 90% when the 5400/16CB is disarmed.

In installer program mode, press:

P152E 98 1 24 001 090 E

Press E to finish. 3 beeps will be heard.

090 is the VALUE. In this case 90%.

001 is the GROUP ADDRESS in this example.

24 is the FUNCTION number to “20 sec ramp of light”.

1 is the APPLICATION IDENTITY for a lighting application.

98 is the EVENT number for “panel disarmed.”

P152 is the PROGRAMMING OPTION for Output Event 2.

INSTALLER'S PROGRAMMING RECORD								NOTES
Output Event No.	xxx Option No.	ee Event	A Identity	ff Function	iii Group Address	aaa Value		
1	P151E							
2	P152E							
3	P153E							
4	P154E							
5	P155E							
6	P156E							
7	P157E							
8	P158E							
9	P159E							
10	P160E							
11	P161E							
12	P162E							
13	P163E							
14	P164E							
15	P165E							
16	P166E							

6.0 Technical Support and Troubleshooting

For further assistance in using this product, consult your nearest Clipsal Integrated Systems (CIS) Sales representative or Technical Support Officer.

Technical Support contact numbers

Australia 1300 722 247 (CIS Technical Support Hotline)

New Zealand 0800 888 219 (CIS Technical Support Hotline)

South Africa (011) 314 5200 (C-Bus Technical Support)

Technical Support Email: cis.support@clipsal.com.au

Sales Support Email: sales.cis@clipsal.com.au

A list of worldwide contacts, additional product information and technical resources is provided at <http://www.clipsal.com/cis/>

Schneider Electric (Australia) Pty Ltd

Contact us: clipsal.com/feedback

National Customer Care Enquiries:

Tel 1300 2025 25

Fax 1300 2025 56

clipsal.com

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