

**NOTE #:** 06-22-1

**DATE:** 08 February 2006

## **APPLICATION NOTE**

### **SHARING INTELLIGENT SOLUTIONS**

**KEY WORDS:**

<b>Title:</b>	Avoiding A PIR Lock UP After Disabling
<b>Products Applicable:</b>	PIR Sensors

The default function of the C-Bus PIR sensors is set to turn a light on when detecting a movement and turn a light off after a period of time when detecting no movement.

A standard C-Bus wall switch can be used to remotely enable/disable the PIR sensor.

Sometimes you may experience that there is no expiry command (Off Key) sent out to turn the light off when the PIR sensor is disabled.

This is due to the time interval between the Debounce time and the Long Press time. This makes a small time delay on each Retrigger event when movement is detected. If the PIR is disabled during the "**delay**" time the "**lock up**" symptom may occur.

To avoid this behaviour, make sure that when the PIR sensor is disabled the light is also turned off.

The configuration of the C-Bus PIR sensor and the standard C-Bus wall switch is shown below.

## Configurations:

A C-Bus 360° indoor PIR sensor is used in this example and has been set up to operate the default PIR function. A standard C-Bus wall switch is used to enable/disable the PIR sensor remotely.

### 1. PIR sensor configuration.

The configuration is shown below. The Group Address "Enable PIR" is used to enable/disable the PIR sensor remotely and the Group Address "Dim 1" is used to represent the light.

**SENPIRSS - Unit on Network at Address 251**

**Day-time Movement (LI)**  
 Group: Dim 1 Function: PIR Day Move

**Night-time Movement (DA)**  
 Group: Dim 1 Function: PIR Night Move  
☒ Use same response settings as 'Day-time Movement'

**Sunset to Sunrise (SS)**  
 Group: <Unassigned> Function: PIR Sunset

**Security (SE)**  
 Group: <Unassigned> Function: PIR Security

**Sensor Enable/Disable**  
 Group: Enable PIR ☒ Enables ☐ Disables

**Unit Identification | Global | Functions | Blocks | Status**

	LI	DA	SS	SE
Short Press	Retrigger Timer	On Key	On Key	On Key
Short Release	Idle	Retrigger Timer	Off Key	Off Key
Long Press	Idle	Retrigger Timer	Retrigger Timer	Idle
Long Release	Idle	Idle	Off Key	Off Key

**Unit Identification | Global | Functions | Blocks | Status**

Block Assignments	Recall Levels	Timer	Features using Block	LED Assignment					
Group	Recall 1	Recall 2	Timer 1	Expiry	LI	DA	SS	SE	1
Block 1 <Unused>	100%	100%	0h0m8s	Off Key	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Block 2 Dim 1	100%	100%	0h0m10s	Off Key	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	State/Time
Block 3 <Unused>	100%	100%	0h0m0s	Idle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Block 4 <Unused>	100%	100%	0h0m0s	Idle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Simple << OK Cancel Apply

## 2. Standard C-Bus wall switch configuration:

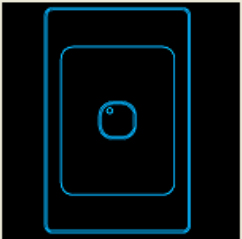
To avoid "lock up", the Group "Dim 1" should be programmed to the same key with the Group "Enable PIR" that used to enable/disable PIR sensor remotely.

- **One gang C-Bus wall switch**

Due to Groups "Enable PIR" and "Dim1" both being involved in this action, we apply the **Short Release** to disable PIR sensor and turn the light off, the **Long Press** to enable PIR and turn the light back on.

KEY1 - Unit in Database at Address 1 (Network not open)

Key 1 Group: <Multiple> Function: <Custom>



Unit Identification | Global | Power Fail | **Key Functions** | Blocks | C-Bus Status

	Key 1
Short Press	Idle
Short Release	Off Key
Long Press	On Key
Long Release	Idle

Short release to disable the PIR sensor and turn off the light

Long press to enable the PIR sensor and turn on the light

Unit Identification | Global | Power Fail | Key Functions | **Blocks** | C-Bus Status

Block Assignments		Recall Levels		Timer		Keys using Block				LED Assignment			
	Group	Recall 1	Recall 2	Timer 1	Expiry	1				1			
Block 1	Enable PIR	100%	100%	0h0m0s	Off Key	<input checked="" type="checkbox"/>				State/Time			
Block 2	Dim 1	100%	100%	0h0m0s	Off Key	<input checked="" type="checkbox"/>							
Block 3	<Unused>	100%	100%	0h0m0s	Off Key	<input type="checkbox"/>							
Block 4	<Unused>	100%	100%	0h0m0s	Off Key	<input type="checkbox"/>							

Simple << OK Cancel Apply

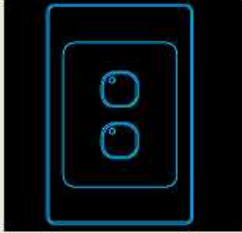
- **Two gang C-Bus wall switch**

The two gang switch has two keys available for enabling/disabling PIR sensor, hence key1 can be set to disable PIR sensor and turn off the light, key2 can be set to enable PIR sensor and turn on the light.

**KEY2 - Unit in Database at Address 3 (Network not open)**

Key 1 Group: <Multiple> Function: Off

Key 2 Group: <Multiple> Function: On



Unit Identification | Global | Power Fail | **Key Functions** | Blocks | C-Bus Status

	Key 1	Key 2
Short Press	Off Key	On Key
Short Release	Idle	Idle
Long Press	Idle	Idle
Long Release	Idle	Idle

Short press to enable the PIR sensor and turn on the light

Short press to disable the PIR sensor and turn off the light

Unit Identification | Global | Power Fail | **Blocks** | C-Bus Status

Block Assignments		Recall Levels		Timer		Keys using Block		LED Assignment	
	Group	Recall 1	Recall 2	Timer 1	Expiry	1	2	1	2
Block 1	Enable PIR	100%	100%	0h0m0s	Off Key	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	State/Time	State/Time
Block 2	Dim 1	100%	100%	0h0m0s	Off Key	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Block 3	<Unused>	100%	100%	0h0m0s	Off Key	<input type="checkbox"/>	<input type="checkbox"/>		
Block 4	<Unused>	100%	100%	0h0m0s	Off Key	<input type="checkbox"/>	<input type="checkbox"/>		

Simple << OK Cancel Apply

## **Technical Support and Troubleshooting**

For technical assistance call: 1300 722 247 (Australia)  
0800 888 219 (New Zealand)

CIS web site: <http://www.clipsal.com/cis/>

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