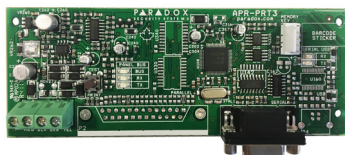# PARADOX™

BUS2SER

RS232 Interface Module

Installation Manual
V1.20 and higher

Introduction

The BUS2SER allows you to interface the EVO bus to external systems via a RS232 serial connection. It also provides the ability to automatically print live or stored events.

Home Automation Interface Capabilities

When used with an EVO Series control panel, the BUS2SER can also be used as an interface between a home automation system and your control panel. For information on this feature and its related programming sections, refer to the *ASCII Protocol Programming Instructions* and/or C-*Bus Programming Instructions* available on our website at paradox.com.

Technical Specifications

Serial Port:	1 start bit, 8 data bit, no parity and 1 stop bit (8N1)
Input Voltage:	9-16 Vdc
Current Consumption:	60mA maximum
Serial Port Baud Rates:	2400, 9600, 19200 or 57600 bps
Event Buffer:	2048 events
Compatibility:	EVO192 and EVOHD control panels

Printer Requirements

Dot matrix, inkjet or laser printers can be connected through one of your computer's COM ports to the BUS2SER module's serial port. Events can be displayed and printed using communication software like **Procomm™**, **Telix©** and **HyperTerminal®**.

It is recommended that only dot matrix printers that support a minimum of 80 columns be connected directly to the BUS2SER Module. Only dot matrix printers can print individual events in real time.

Sample Printout:				
2007/06/12	07:17	Partition 1	Arming with master	John Doe
2007/06/12	18:09	Partition 1	Disarming with master	John Doe

LED Feedback

Panel Bus

ERROR:	RX:	TX:	Condition:
ON	OFF	OFF	Combus shorted (GND or VCC / No clock / No data
ON	OFF	ON	Wrong data / Invalid combus address (too many modules)
ON	ON	OFF	Reserved for future use
ON	ON	ON	Combus lines are reversed (Clock in Green / Data in Yellow)
FLASH	OFF	OFF	Low power

Serial Bus

LED:	Condition:
RX	BUS2SER module is receiving information
TX	BUS2SER module is sending information

EVO Programming

1. Hold **[0]** key + **[INSTALLER CODE]**
2. Enter section **[4003]**
3. Enter module's 8-digit **[SERIAL NUMBER]**
4. Enter **[SECTION]** and enter the required **[DATA]**

Section	Description
[001]	**Partition Assignment** Options **[1]** to **[8]**
[002] to [013]	**Automatic Printing of Zone Status** Each section represents 8 zones i.e. [002] = zones 1~8, [013] = zones 89~96. The BUS2SER module must be assigned to the same partition as the zone.
[014]	**Automatic Printing of Event Groups** **[1]** Miscellaneous Events * **[2]** Arming/Disarming Events **[3]** Alarm and Alarm Restore Events **[4]** Tamper and Tamper Restore Events **[5]** Trouble and Trouble Restore Events **[6]** Special Events** **[7]** Access Events *** * Fire Reset, Contact Module Access, Remote Access, PC Fail To Com, User Code Entered, Bypass Programmed, Delay before Transmitting and Utility Key Pressed ** Cold Start, Warm Start, Test Reports, BabyWare Login/Logout, Installer In/Out *** Access Granted/Denied, Request For Exit, Door Left Open Alarm, Door Left Open Restore, Door Forced Alarm, Door Forced Restore
[016]	**Enable Serial Port** Option **[1]** The BUS2SER module can use the HyperTerminal® communication program that comes installed with Windows®. Using HyperTerminal®, the BUS2SER module will display events as they occur on your computer's monitor. 1. Click **Start** (from the Windows® taskbar) ⇨ **Programs** ⇨ **Accessories** ⇨ **Communications** ⇨ **HyperTerminal®**. The **Connection Description** window is displayed. 2. Enter a name in the **Name** text box and select an icon for your connection file. Click **OK**. The **Connect To** window is displayed. 3. From the **Connect Using** drop-down list select the **COM** port connected to the Printer Module. Click **OK**. The **COM Properties** window is displayed. 4. Click on the **Bits per second** drop-down list and select the baud rate that is set in the BUS2SER module (Section **[016]** Options **[2]** & **[3]**). By default, HyperTerminal® sets the **Data bits** at **8**, the **Parity** at **None** and the **Stop bits** at **1**. Click **OK**. 5. The HyperTerminal® display will appear already connected to the BUS2SER module. Click on the **Properties** icon (or select **Properties** from the **File** menu). The communication file's Properties window is displayed. Click the **Settings** tab. Under **Emulation**, verify that it is set as **Auto Detect**. If not, select **Auto Detect** from the drop-down list. Click **OK**.
[016]	**Baud Settings** Option **[2] [3]** Both the BUS2SER module and the computer's serial port should have the same baud rate. Refer to the printer's instruction manual for the correct baud rate.
[016]	**Serial Port Usage** Option **[4]** Set the BUS2SER module's serial port usage to either Event Reporting (off) or Home Automation (on). Note: For information on using the BUS2SER as an interface for a home automation system, refer to the *ASCII Protocol Programming Instructions* and/or C-*Bus Programming Instructions* available on our website at paradox.com.
[020] to [025]	**Automatic Printing of Zone Status** Each section represents 8 zones i.e. [020] = zones 97~104, [025] = zones 137~144. The BUS2SER must be assigned to the same partition as the zone.

Baud Rate Settings

[2]	[3]	
OFF	OFF	— 2400 Baud
ON	OFF	— 9600 Baud
OFF	ON	— 19200 Baud
ON	ON	— 57600 Baud

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Manual Event Group Printing

The event groups are represented by the following sections:

[027] to [058]

	Event Group	Feature Group	Start #	End #
Miscellaneous Events	**[027]**	**[028]**	**[029]**	**[030]**
Arming/Disarming Events	**[031]**	**[032]**	**[033]**	**[034]**
Alarm/Alarm Restore Events	**[035]**	**[036]**	**[037]**	**[038]**
Tamper/Tamper Restore Events	**[039]**	**[040]**	**[041]**	**[042]**
Trouble/Trouble Restore Events	**[043]**	**[044]**	**[045]**	**[046]**
Special Events	**[047]**	**[048]**	**[049]**	**[050]**
Access Events	**[051]**	**[052]**	**[053]**	**[054]**

Each group of sections from **[027]** to **[058]** represents event groups that can be printed when a specified action from the PGM Programming Table occurs (see the control panel's programming guide*).*

⚠️ Event Groups 000 to 055 can be used to program the BUS2SER module's Manual Printing feature. Event groups 062 and 063 can only be used when using an EVO control panel.

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[060] to [065] **Automatic Printing of Zone Status**

Each section represents 8 zones i.e. [060] = zones 145~152, [065] = zones 185~192. The BUS2SER must be assigned to the same partition as the zone

[080] and [090] **Paradox Memory Key** (NOT TO BE USED WITH UL LISTED SYSTEMS)

The Paradox Memory Key can copy the programmed contents of one BUS2SER into as many others as needed. For more information, see the control panel's programming guide.

[090] = Copy to Memory Key
[080] = Paste to BUS2SER

When the BUS2SER emits a confirmation beep, wait for a second confirmation beep and then remove the Memory Key.

Connections
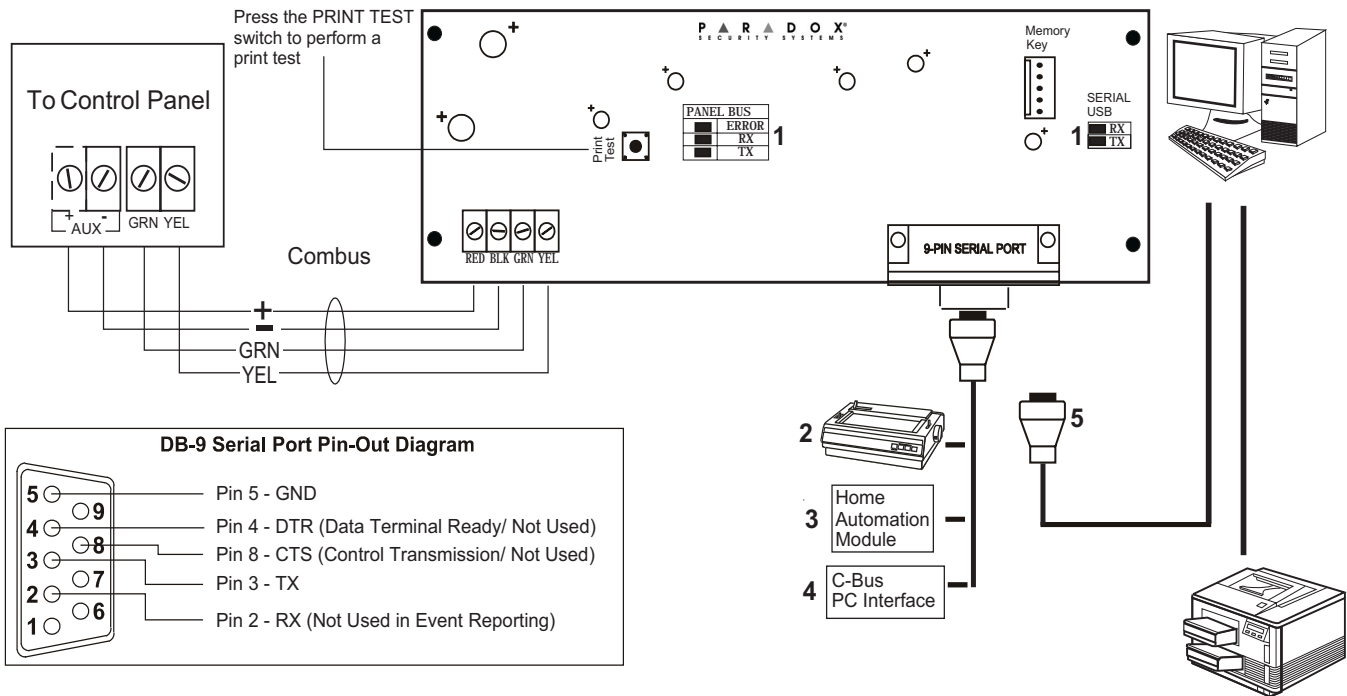
1. See "LED Feedback" on page 1
2. 9-Pin Serial Port: Connect the BUS2SER module's 9-Pin serial port to a dot matrix printer.
   Note: The dot matrix printer must support a minimum of 80 columns.
3. 9-pin Serial Port: Connect the BUS2SER module's 9-pin serial port to a home automation module.
4. 9-pin Serial Port: Connect C-Bus to the BUS2SER module using a *null modem cable*.
5. 9-pin Serial Port: Connect the BUS2SER module's 9-pin serial port to a computer's COM port to view the control panel's events on the computer's monitor. The events display on the monitor can then be printed through the printer connected to the computer.

⚠️ Remove AC power and battery before adding a module to the system. Please refer to the control panel's Reference & Installation Manual for the maximum allowable installation distance.

Note: Printer cable length must not exceed 25ft.