PBI 64-192

Paradox to KNX-BUS Interface

Manual

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Contents

1   Device description

Pin-outs description:

1: Power led (Green). Power supply indicator.
2: Status leds (yellow, red) Device Status.
3: PRGM led (red). Programming mode idicator for knx-bus interface.
4: PRGM BTN. Button for programming mode knx-bus interface.
5: 12 VOLT DC (+ -).Main power supply.
6: RS-232. Communication port for paradox AP3-PRT3 / programming device port.
7: BUS (+ -). Connection port with KNX TP.

1.1   Unit interface connection Paradox to KNX for programming

1. Connect the unit's interface power supply   (12 VDC).
2. Connect the unit's RS-232 port interface with the Computer via a male-female RS-232 straight cable.
➢ The power of KNX BUS connection is not necessary during the device commissioning with group addresses.

1.2   Unit interface connection to KNX for operation with the Paradox alarm system

1. Connect the device to KNX BUS (20-33 VDC).
2. Connect the port RS-232 (program mode/alarm mode) of the unit interface with the PRT3 extension card of the alarm system via a female-female RS -232 DB9 to DB9 crossed wired cable.

3. Connect the power supply to the Pbi Interface   (12 VDC).

1.3 Communication elements

Zones: 1 bit elements. Each element is assigned to a group address. The device transmits value 1 if the respective zone changes from normal (closed state) to disturbed (open) and vice versa. Transmission of each zone's status upon power up can be controlled individually for each zone

Partition alarm status (All partitions are supported): 1 bit elements. Each element is assigned to a group address. The device transmits **1** if the respective partition generates an alarm and **0** when returning from alarm to not alarmed state. Transmission of each partition's status upon power up can be controlled individually for each partition

Partition arm status (All partitions are supported): 8 bit elements.
The element can be used either as 1 bit object or as 8 bits object
As 1 bit object: 0=Disarmed 1=Armed
As 8 bits object: 0=Disarmed 1=Armed , 3=Instant Armed 5=Stay Armed ,
                7= Force Armed.

Transmission of each partition's status upon power up can be controlled individually for each partition.

Alarm KNX device: 14 bytes element. Used to send commands to the central alarm unit via KNX. (See detailed description below)

Error: 1 bit element. Device is writing value **1** to the assigned group address to indicate that communication between the device and the alarm unit is broken and **0** when communication is restored.

2 Programming with the Serial Alarm application

Through Serial alarm application, the device is assigned with the various group addresses corresponding to the Paradox alarm system functions.

The application displays the following window:
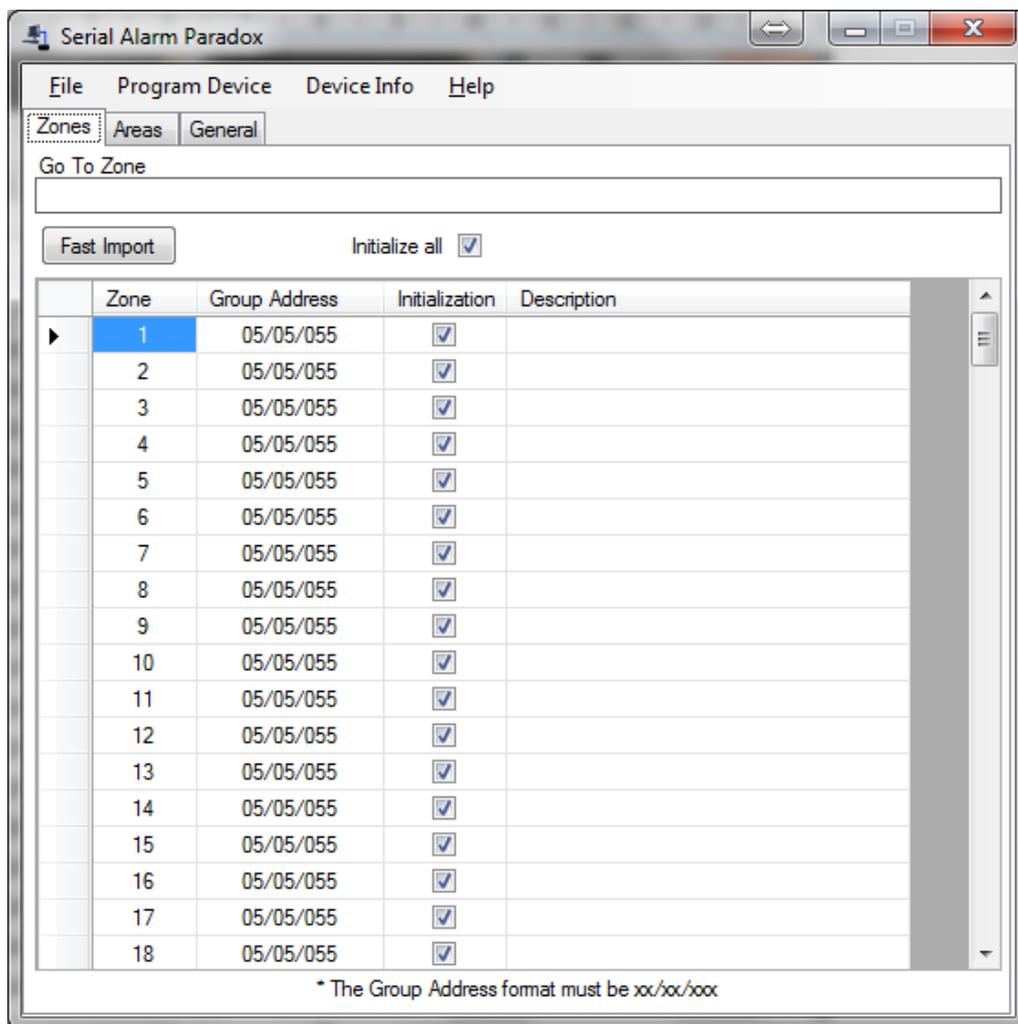
The window is structured in three tabs (**Zones, Areas, General**) and the folder management menus (**File**) , programming (**Program Device**) and displayed information (**Device Info , Help**)
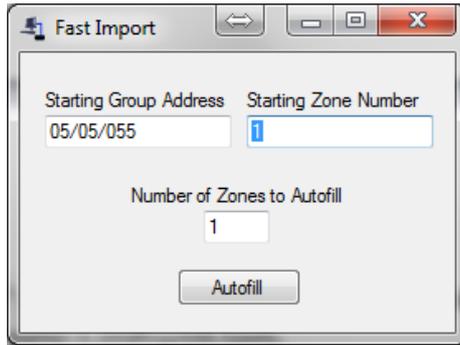
2.1 Zones Tab

Through the Zones tab, user may define matches between zones (**Zone**) of the alarm and the desired group address field (**Group Addresses**). Also it is possible to add descriptive comments regarding the operation of each zone/Group address (field **Description**). The field **Initialization** allows the user to choose for which zone alarm the device will send the status to the KNX-BUS during the device's initialization phase.

➢ With this software we can plan up to **64 alarm** zones (or 192 if we have pbi 192) and **8 partitions**.

➢ We can assign more than one zone in the same group address, but we cannot assign to the same zone more than one group addresses.

➢ The state is sent through the respective group addresses to the KNX-BUS (value: Faulted/Ok) (**Value 1**= Triggered, **Value 0** = Not triggered.

- With **"Initialize All"** we choose all or none of the zones at once.
- On the field **"Go To Zone",** input the number of the zone you would like to examine and press enter.
- For fast import for Group Addresses we can use the next function:
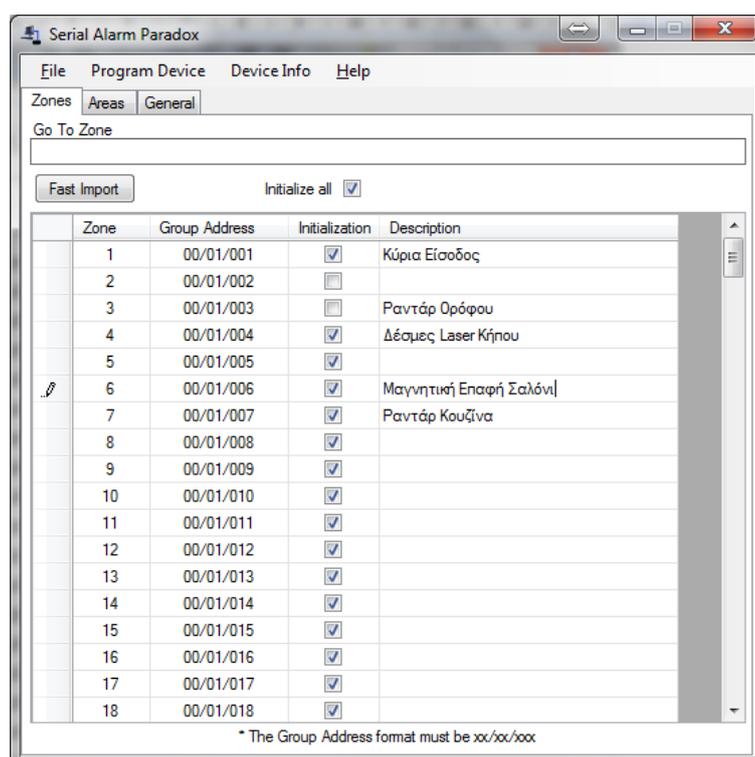
Click on **"Fast Import"**. The window bellow will open:

On the field **"Starting Group Address"** give the number of the 1st Group Address. On the field **"Starting Zone Number"** give the number of the starting zone. Give the desired zone number on **"Number of Zones to Autofill"** and press **"Autofill".**

2.2 Areas Tab

Through the Areas tab, user may define relations between the areas of the alarm and the desired group address. It is possible to add descriptive comments regarding the operation of each area.

The status of each area is described in two parts, which are the **alarm status** (alarm partition status) and the **arm status.** The field **Init,** allows the user to choose which partition status will be sent to the KNX-BUS during the device's initialization phase.
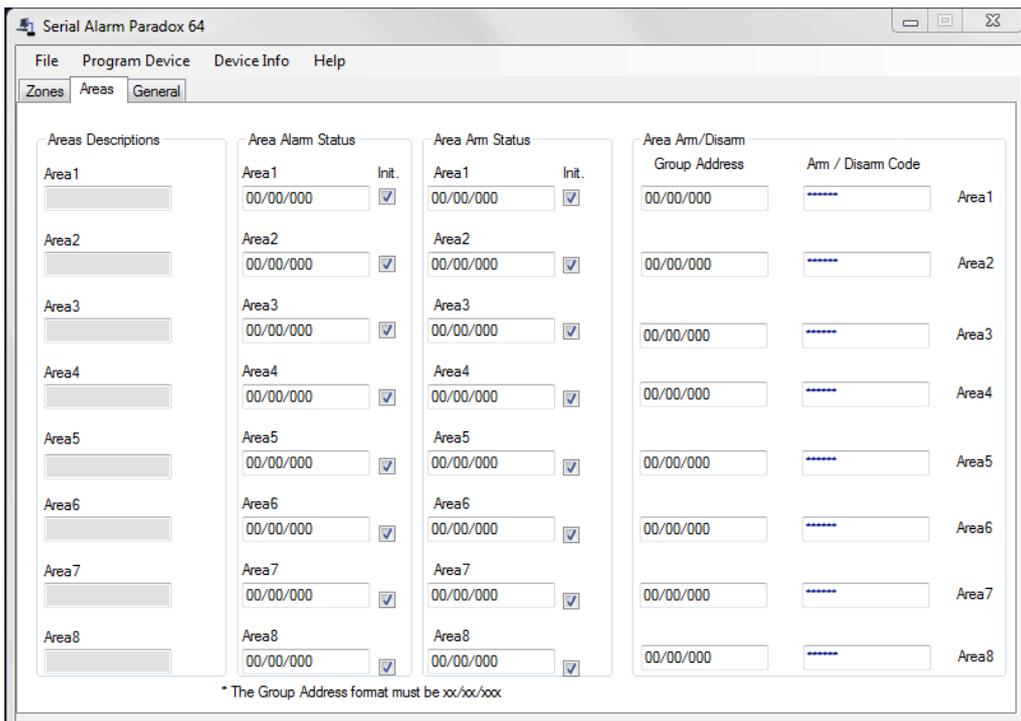
Arm Status can be used as either 1 bit object or 8 bits object
It has the following meaning:
As 1 bit object: 0 = Disarmed 1 = Armed (some how)
As 8 bits object: 0= Disarmed, 1 = Armed, 3:Instant Armed, 5: Stay armed

Area Arm/Disarm: Can be used as 1 bit object or as 8 bits object.
As 1 bit object: 0 = Disarm, 1 = Arm
As 8bits object: 0=Disarm, 1=Arm, 2=Arm, 3=Instant,4=Instant,5=Stay,
6=Stay, 7=Force(*).   All other values are rejected.
* Forced arm and Armed always return status 1
Arm / Disarm Code: Write here the Arm/Disarm code for the respective
partition. Up to 6 decade digits pin is supported. Pins are not disclosed.
The respective fields always show asterisks (*). You can ask your client to
enter them himself or you can define special pins to the alarm unit for the
alarm interface.

➢ The alarm status and the arm status of each area must have different
   Group Addresses.

2.3 General Tab
In the General Tab 3 more group addresses can be found. **Alarm KNX device**,

Fire and **Error**.

Update Wrong Values field enables/disables the automatic overwriting. If a

group address receives a different value than the actual alarm system has.

The device will immediately transmit a telegram with the right value if a

conflict is detected.

Alarm KNX device is a special EIS 16 (14 bytes) address used to send
commands to the Alarm panel and to the alarm interface. (Find more details
below)

Fire It is 1 bit object. It is the group address that reports Fire (1) or No fire (0)
Error It is 1 bit object that transmits circularly one (1) when a communication
error with the alarm panel is detected. This can be stopped by a command
to the interface. The command is registered in the non volatile memory and
remains there for ever until to change it. (See below)

3 Program Device menu

3.1 Software update per unit (Firmware Upgrade)

If the PC and the PBI are correctly connected via RS-232 port and you have a valid firmware file for the device, then choose from the menu:: **Program Device -> Firmware Upgrade**
The device must not be connected with the power supply until the right moment

The following window will open :
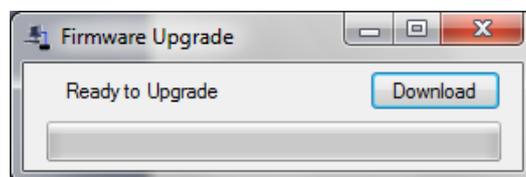
By pressing **Download** the valid update file can be chosen. Then select the appropriate PC serial port communication.

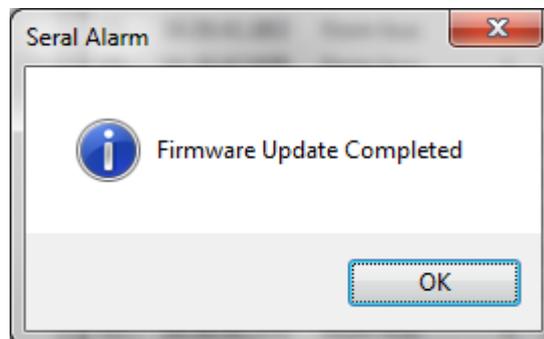Choose **program device**, and then, connect the main power supply to the device within 2 seconds. In case of failure, remove the power and try again after 15 seconds.

Once the process is completed successfully, the following window is displayed:

➢ If an error occurs please be sure that the serial properties are as bellow.
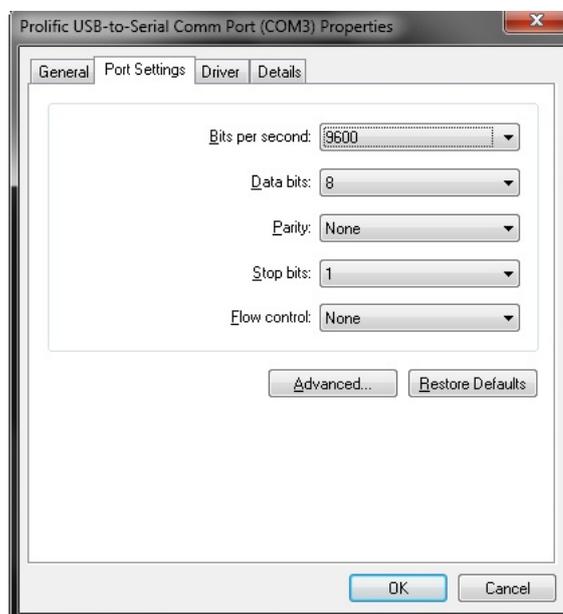
3.2 Group Address Download

To download the application program from serial alarm to the Pbi device, choose **Program Device->Group Address Download.**

 Press **Program** on the window :

Choose the appropriate serial port

If the process is successful the window bellow will appear :

4   Menu File
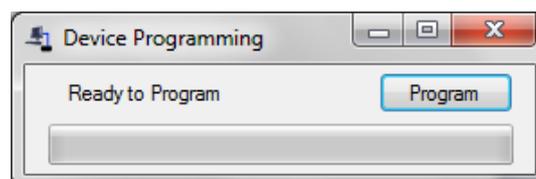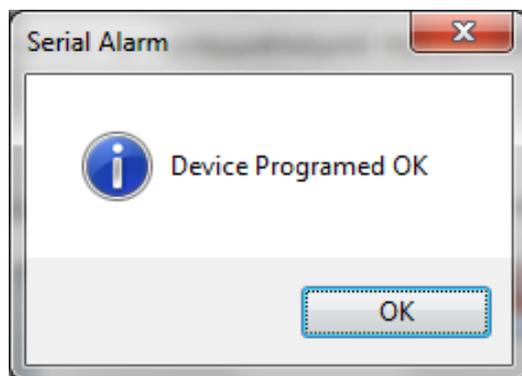
4.1   Open / Save File

Through the options **Save / Save as** the user is able to save the setup. The files are saved with the extension **.xml**.

By choosing **Open,** a previously saved setup can be loaded.

5   Device Info Menu

If the interface unit is connected to a computer's serial port, then through the **Device Info** menu selection, is possible to get information on the specific device like the product number and production date.

After selecting the **Device Info** menu and inserting the serial port an **Info** window will appear:
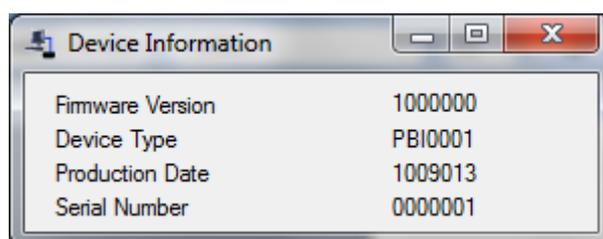
6   Help Menu

Through the **Help** Menu selection, an information window will display, about the version and the copyright on this application
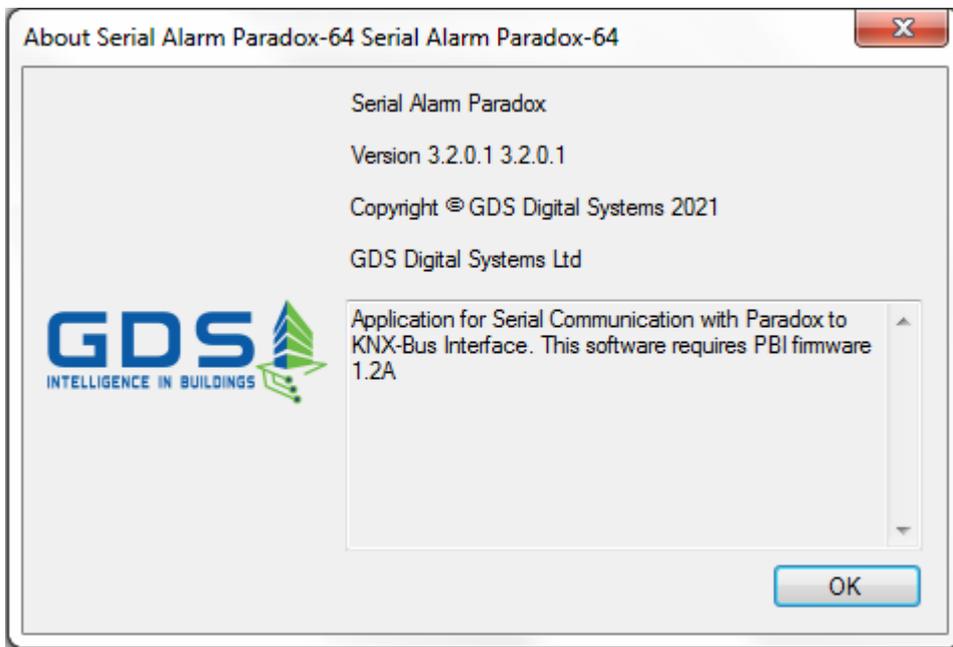
7 LED indicators

The PBI unit has **three LED indicators**.

- The green indicator indicates that the DC power is supplied to the device.

- The yellow and red indicators, indicate different operating statuses as shown in the following table:

Operating status	Yellow LED status	Red LED status
Basic operation/readiness status all the communications work	✗	✗
Initializing phase (duration approximately 2 seconds after restart)	✔	✗
Restart Phase 1 – checking for available software upgrade (duration about 4 seconds immediately after applying the DC power supply)	🔆 Low	✗
Restart Phase 2 – check for available software upgrade (duration about 2 seconds from restart.	🔆 Low	🔆 Low

Group Addresses programming (Group Address Download)	✗	✔
Download new software tool Phase (Firmware Download)	✗	🔆 **High**
Control of righteousness logged operating software Phase(Firmware Check)	✗	🔆 **Low**
Communication Error with KNX-BUS(requires a reboot of the device during the correction)	✔	🔆 **Low**
Communication error with the alarm system	🔆 **Low**	✔
Communication Error with the alarm system and with the KNX-BUS	🔆 **Low**	🔆 **Low**
Initialization Unit Error	✔	✔
Explanation Of Symbols		
✔ **=On** , ✗ **=Off** , 🔆 **High/Low = Flashing Fast/slow**		

8   Access to the interface unit via KNX-Bus

The **Alarm KNX device** group address

If the device is in the initialization state or in the intialization Error state it does not process incomming commands tothis communication object.

This device allows the user to remotely manage some of the functions and access to the alarm system installed via KNX-Bus.

то be possible to communicate with the unit , it must set the group address Alarm KNX Device in the General tab .

9   Remote device restart

For the remote Unit restart it is required to send a 5 characters telegram with the value **RESET**   to the Group Address indicated by the Alarm KNX device field described above.

In ETS application select the telegram length to 14 Bytes, 16.000 data type, and send the word **RESET** as value.

10 Filtering data on the KNX-BUS

Via an appropriate telegram to the KNX-Bus the telegrams sent fro mthe device can be filtered

The telegram value to the <u>Alarm KNX device group address</u> must be the following: "CT$XY" (No quotes)

$XY is a hexadecimal mask number composed as follows
B7 B6 B5 B4 B3 B2 B1 B0   X must always be 0   B3 must always be 0

      X   Y

B2 (Hex value 4) : **Error Bit** If this is set, error telegram will be transmitted periodically when communication error occurs. If 0 it will not.
B1 (Hex value 2) : **Zones bit**. If 1 a zone change will be transmitted If 0 not.
B0 (Hex value 1) : **Partitions Bit.** If 1, partition status will be transmitted If 0 not.

Combinations are allowed by adding the respective Hex values

For example:

- To allow zones and partitions : CT$03
- To allow zones   : CT$02
- To allow partitions   : CT$01
- To block all telegrams   : CT$00

Remember: This instruction is stored in the non volatile memory and it is used every time the device restarts.
➤ To command <zones & partitions allowed> via ETS define telegram length 14 Byte, data type 16.000, ASCII and send value "CT$03" (no quotes) to the <u>Alarm KNX device group address</u>

The unit is preset from the production to allow all the information on the KNX-Bus (Value CT$07) .

10.1 Commands to PBI

If you don't want to use the 1 bit address to arm/disarm the panel, you can do it by sending appropriate commands using the <u>Alarm KNX device group address.</u> To carry out operations: arm, disarm , stay force, Instant you must use the AA and AD commands to PBI.

For **Arm/Disarm** send to <u>Alarm KNX device group address</u>:

AA/AD<PPP>[A,S,F,I]CODE

AA/AD= the letters "AA" for Arm or "AD" for Disarm
PPP = 3 digits corresponding to the partition number (001 – 008)
[A,S,F,I] = Choose one of the letters (<**A**>rm, <**S**>tay, <**F**>orce, <**I**>nstant)
CODE = A valid user Pin that allows arming / disarming the indicated partition
Examples:
Normal arm of partition 3 with code 1234 send:
"AA003A1234" (Without the quotes)

Stay arm of partition 2 with code 2468 send:
"AA002S2468" (Without the quotes)

To **Disarm** Partition 2 with code 1234 send:
"AD0021234" (Without the quotes)

Read the device's SERIAL NUMBER
To read the PBI's Serial number send the command:
"SERNO" (no quotes) to the <u>Alarm KNX device group address</u>:

# 11 Remote access to the alarm system keypad

When sending a telegram to the <u>Alarm KNX device group address</u>: and the content is not recognized as one of the previous commands the device transmits the contents of the ASCII telegram to the alarm as input from the alarm keypad.
For example, to remote type the code "1234" send to the <u>Alarm KNX device group address</u>: "1234" (no quotes) .
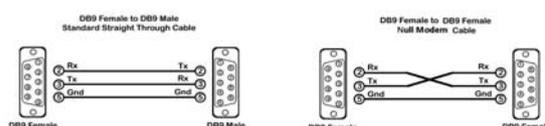
12 How to connect the interface

The PBI is physically connected to the panel's peripheral APR - PRT3 via the serial RS - 232 port. To enable the communication between the two devices , you need the APR - PRT3 to be properly configured for 9600 8 N 1 communication parameters.
For detailed instructions refer to the APR - PRT3 manual.

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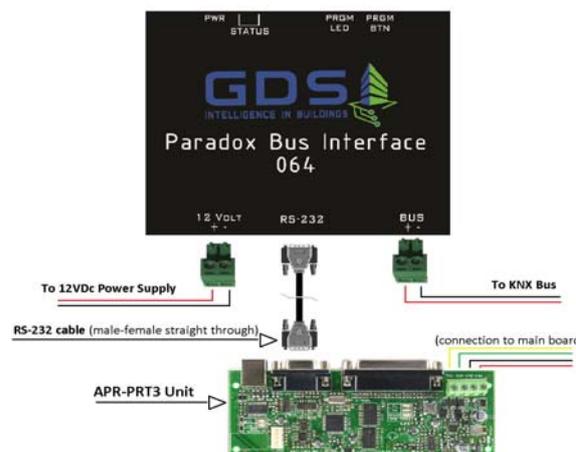
13 How to program the physical address

- Create in the ETS a virtual device (you can choose any device from the Catalog).

- Select that virtual device and give it the physical address you want the Pbi device to have .

- Press the PRGM BTN and program the PBI's physical address.

- **DO NOT!! Download any application -not even a dummy application.** Only physical address is allowed to be downloaded to the device using ETS or other program. Device commissioning must be solely carried by Serial Alarm program released by GDS Digital systems LTD.

14 Unit electrical characteristics

Operating temperature:	5ºC - 30ºC
Storage temperature:	0ºC - 40ºC
Maximum operating DC voltage:	14VDC
Maximum operating DC current:	100mA
Maximum KNX DC voltage:	30VDC
Maximum KNX current:	10mA

The device maintains galvanic isolation between the KNX and ALARM system

15 Warranty

The device is covered by a one year limited warranty if installed and put in operation by a certified technician in the KNX technology. The certified installer must declare details (name, KNX-number and e-mail) with an e-mail to the address sales@gds.com.gr clearly stating the serial number of the device within the warranty period which starts from the day of first shipment of the device from GDS.

Should a device has a problem, it must be sent within the warranty period to GDS which at its absolute discretion if it discovers a manufacturing fault, can choose whether to replace or to repair the device. Opening or modifying the device voids the warranty.

Any transport costs, customs clearance, duties or taxes are all carried by the buyer.

Liability Disclaimer
In any case, GDS responsibility is limited at most to the cost of the device which results from a GDS issued invoice for the device.