PBI 64-192

Paradox to KNX-BUS Interface

Manual

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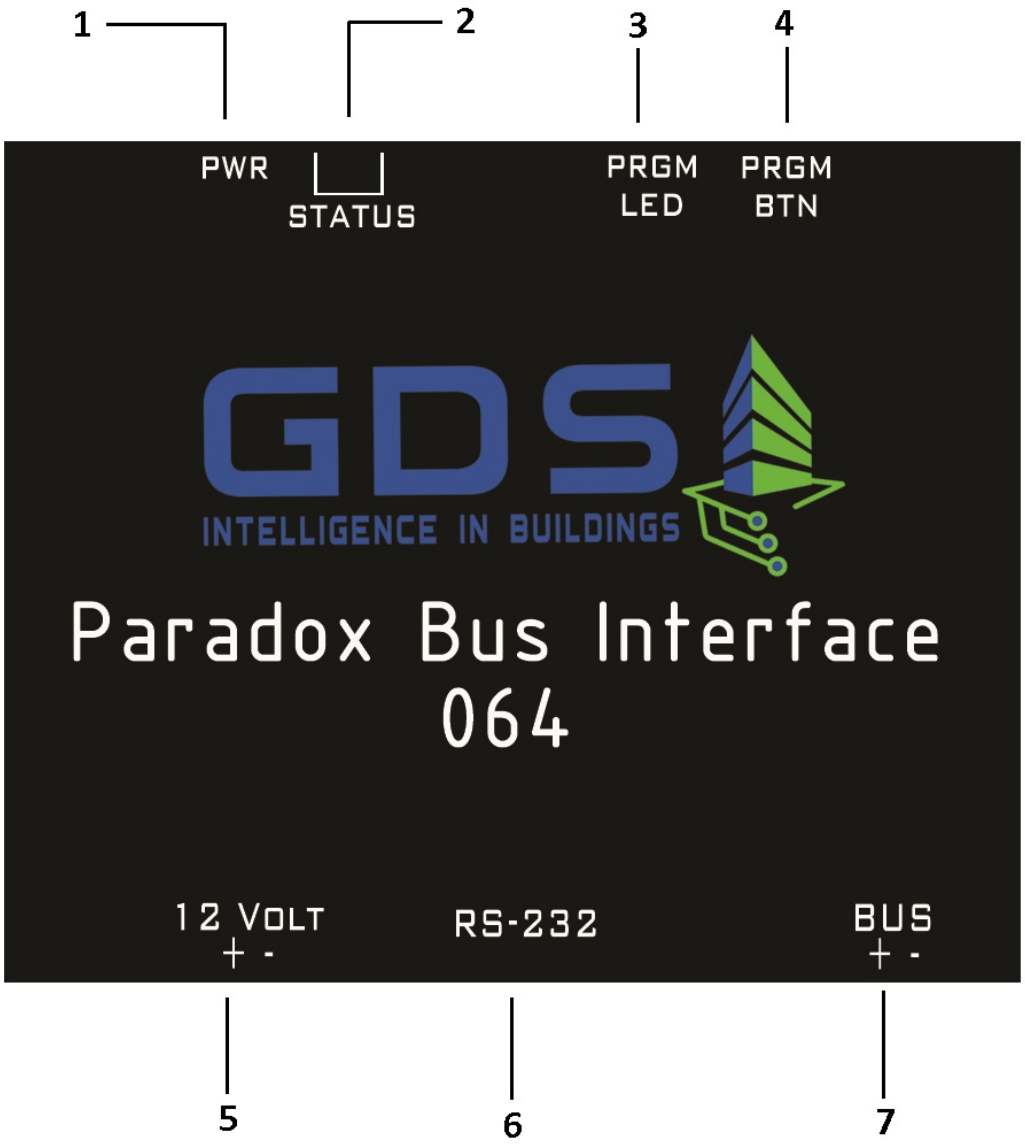
Contents

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 (6-12 VDC).

2. Connect the RS-232 port (Program mode/Alarm Mode) of the unit interface with the Computer via a male-female RS-232 straight cable.

➢ The power of KNX BUS connection is not necessary during the programming of the device.

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 subunit NX-587E of the alarm system (which is connected to the data BUS of the alarm) via a male-male RS -232 crossed wire.
3. Connect the power supply of the unit Pbi Interface (6-12 VDC).

1.3 Device features

- Send the state of each zone (Transmits on change)
- Send the state of Partition (Armed-Disarmed , Trouble/ No trouble)
- Selective send during the initialization for every zone and Partition(Armed-Disarmed / Alarm-OK)
- Update on changes of zones and partitions on/off
- Software updates
- Communication error with the alarm on separate Group Address
- For safety reasons, in case another device sends a telegram to a group address already used by the Alarm system the pbi informs immediately with the correct value of group address.
- Remote restart

1.4 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): 1 bit elements. Each element is assigned to a group address. The device transmits **1** if the respective partition is changing from not armed to armed state and **0** when changing from armed to not armed state. Transmission of each partition's status upon power up can be controlled individually for each partition.

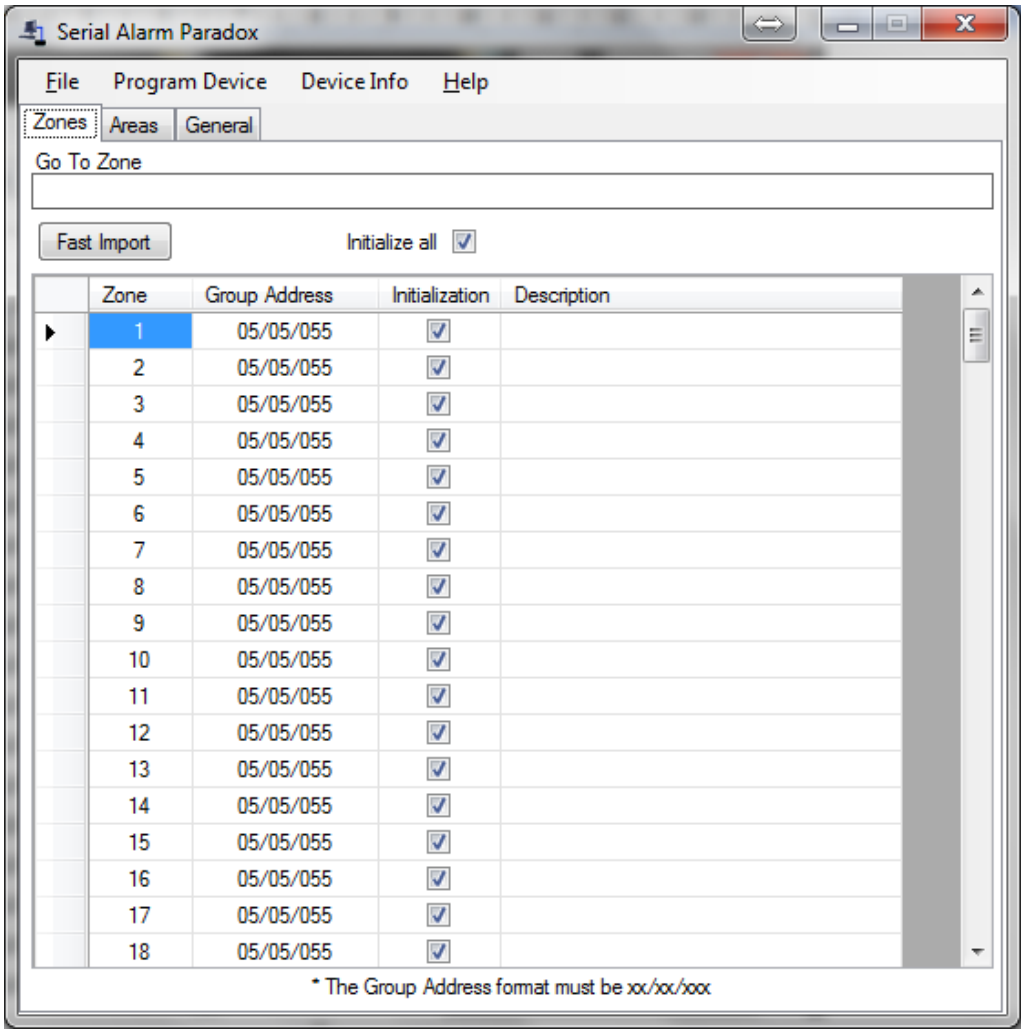
Alarm KNX device: 14 bytes element. Used to send commands to the central alarm unit via KNX. (See detailed description below)

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.

While the Serial Alarm application is running 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**)

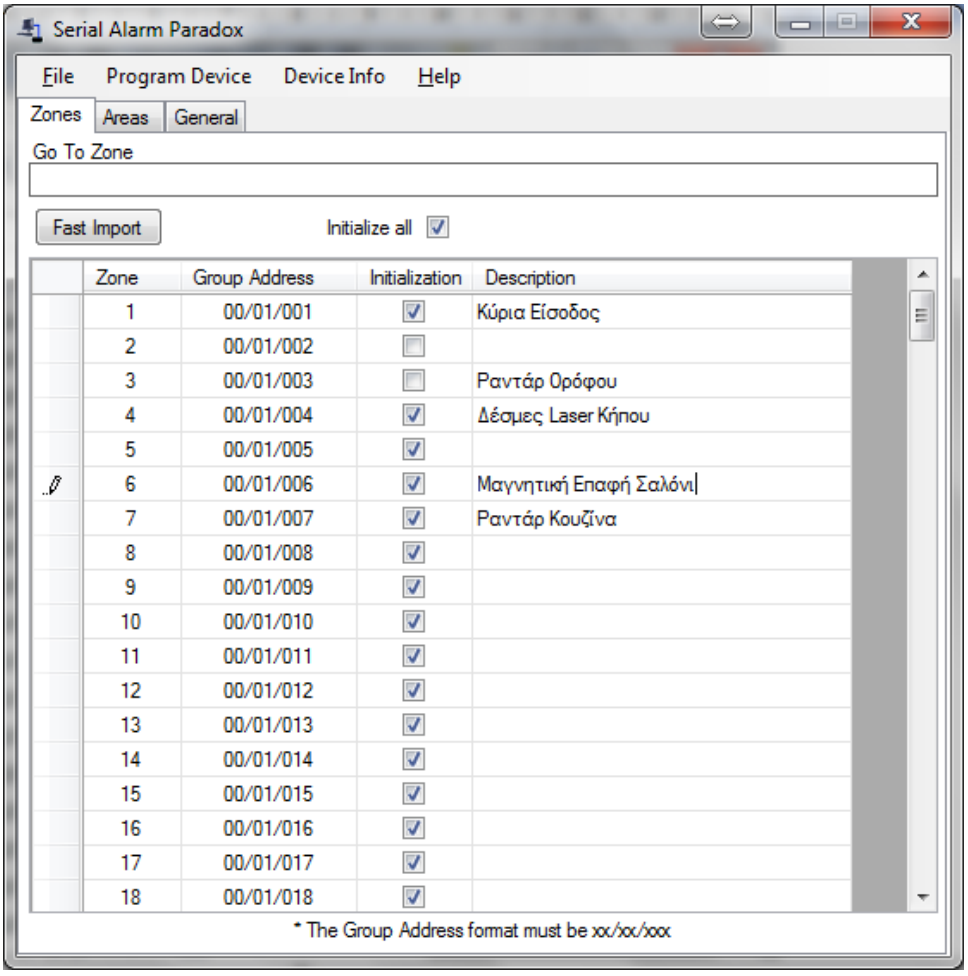
2.1 Zones Tab

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.

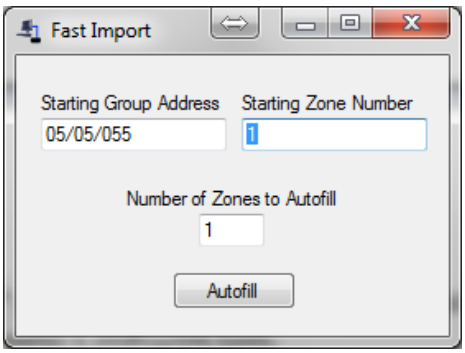
- With this software we can plan up to **64 alarm** zones (or 192 if we have pbi 192) and **8 partitions**.
- We can assign more than one zone in the same group address, but we cannot assign to the same zone more than one group addresses.

- 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:

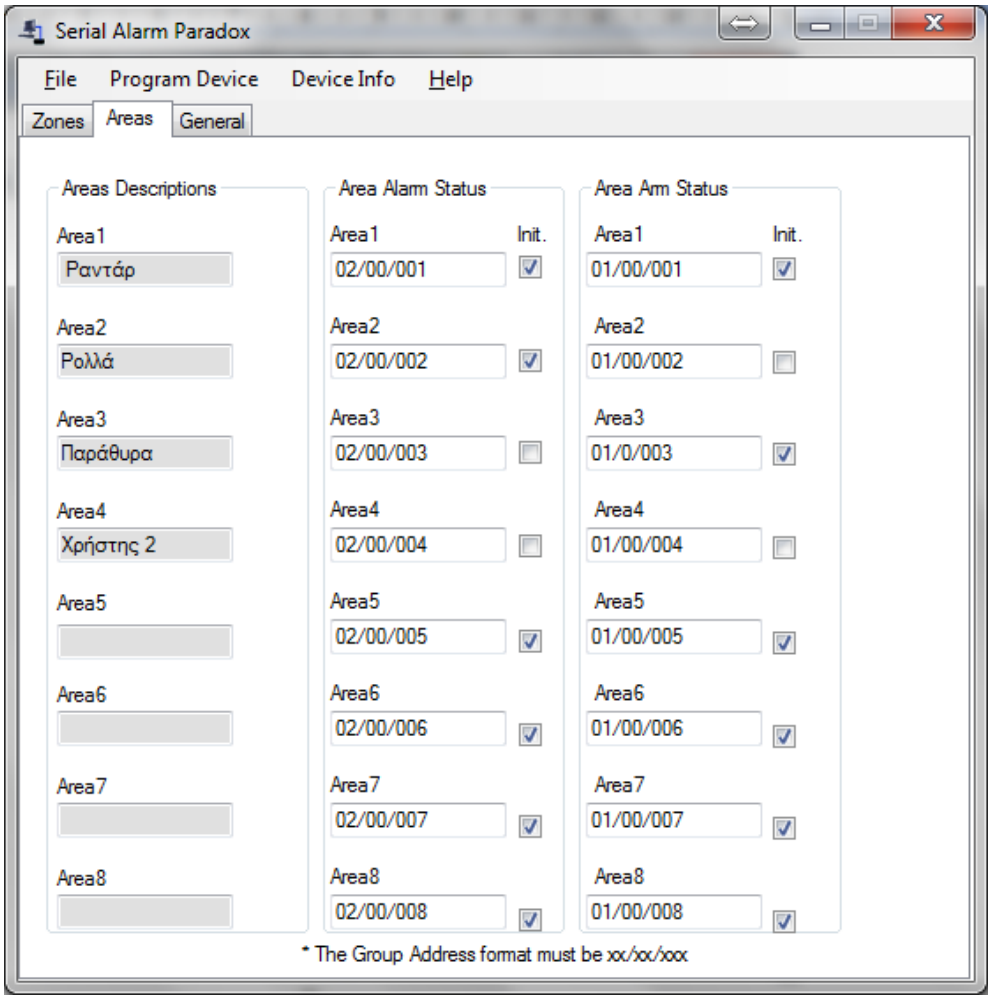


On the field **"Starting Group Address"** give the number of the 1st Group Address. On the field **"Starting Zone Number"** give the number of the starting zone. Give the desired zone number on **"Number of Zones to Autofill"** and press**"Autofill".**

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.

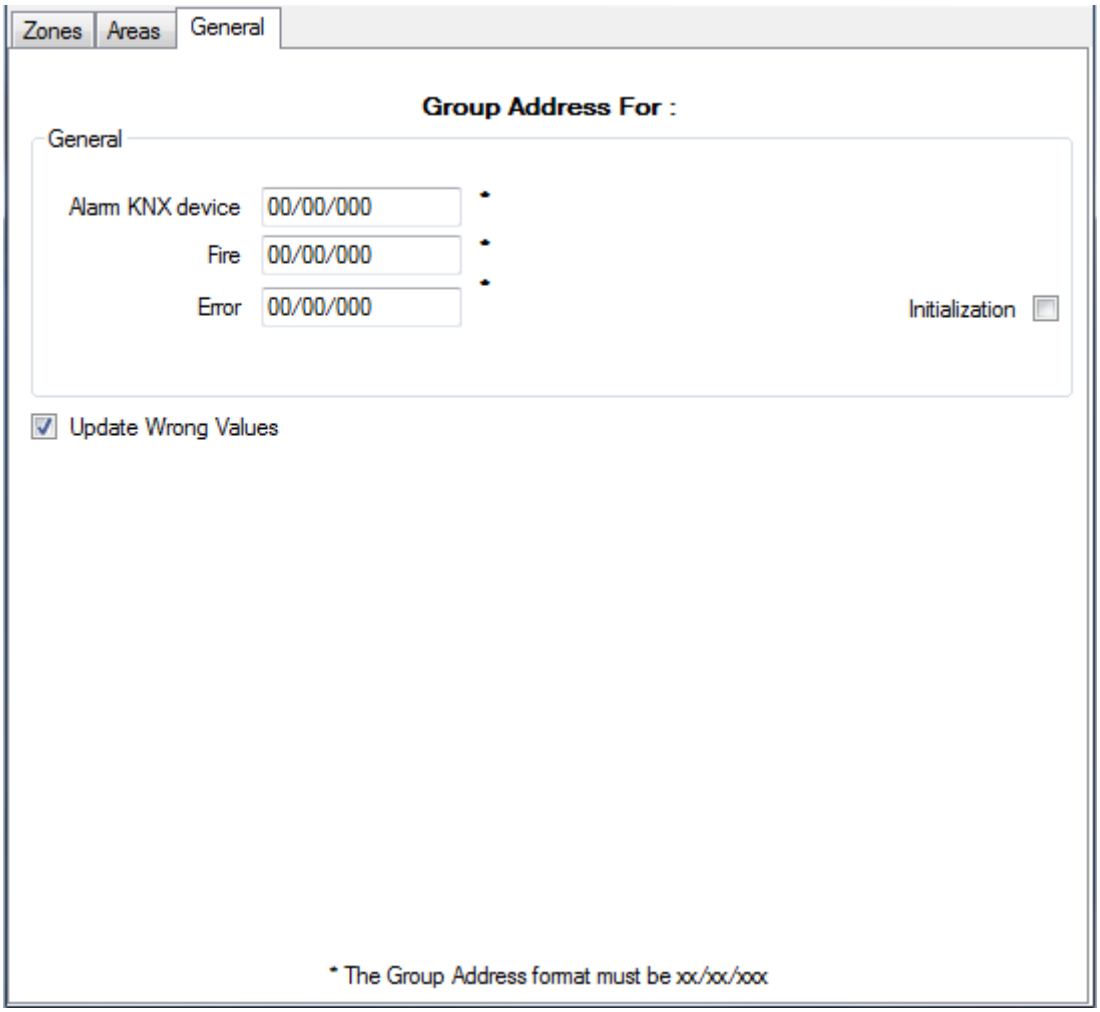


- We can connect more than one area in the same group address, but not the opposite.
- The alarm status and the arm status of each area must have different Group Addresses.

2.3 General Tab

Through the General Tab user may define correspondences between the various indications of the actual alarm panel and the desired group addresses. Also, two special unit group interface addresses are set (field **Alarm KNX device**) and reported (field **Error**).

Update Wrong Values field enables/disables the automatic overwriting. If a group address receives a different value than the actual alarm system, it immediately transmits a telegram with the right value.

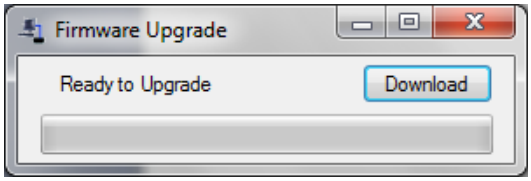


3 Program Device menu

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**
(Caution, Paradox to KNX-Bus Interface (Pbi) should not be connected with the power supply until it is asked.)

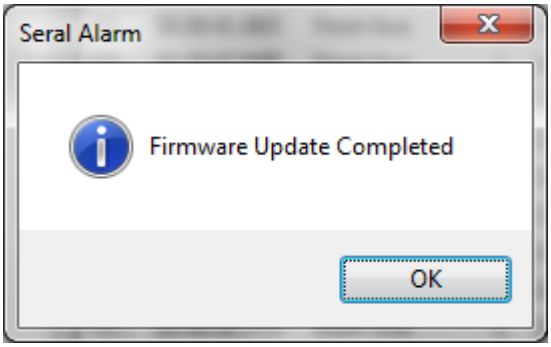
The following window will open :



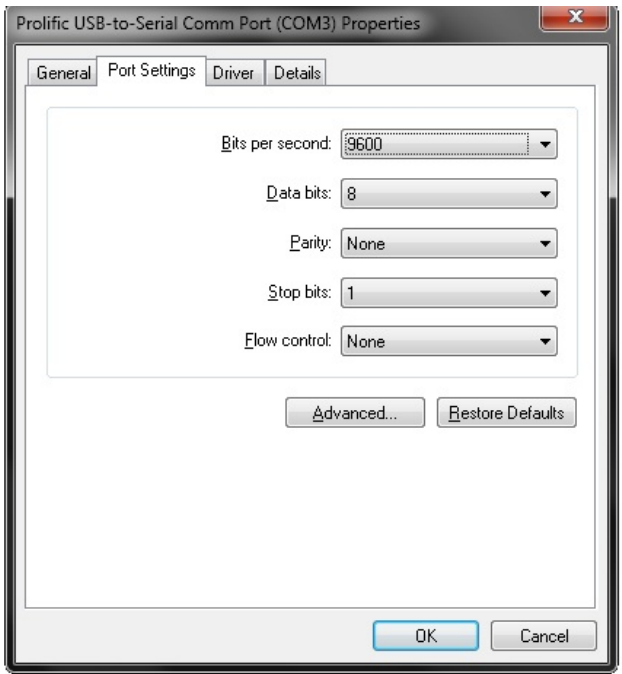
By pressing **Download** the valid update file can be chosen. Then select the appropriate PC serial port communication.

Choose **program device**, and connect the main power supply to the device.

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



- If an error occurs please be sure that the serial properties are the same as bellow.

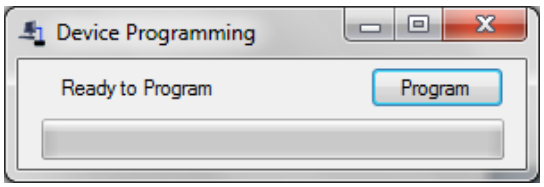


- If the error persists then reboot the device, (disconnect and reconnect the power supply), and try again after 15 seconds.

3.2 Group Address Download

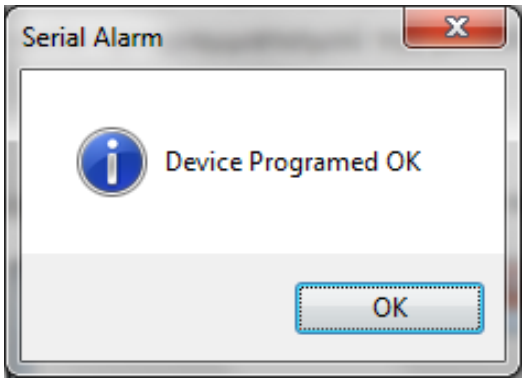
To download the application program from serial alarm to the Pbi device, choose **Program Device->Group Address Download.**

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

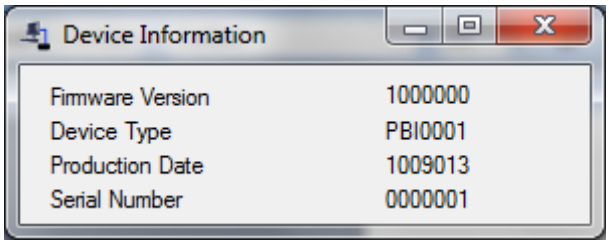
Through the options **Save / Save as** the user is able to save the setup. The files are saved with the extension **.xml**.

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

5 Device Info Menu

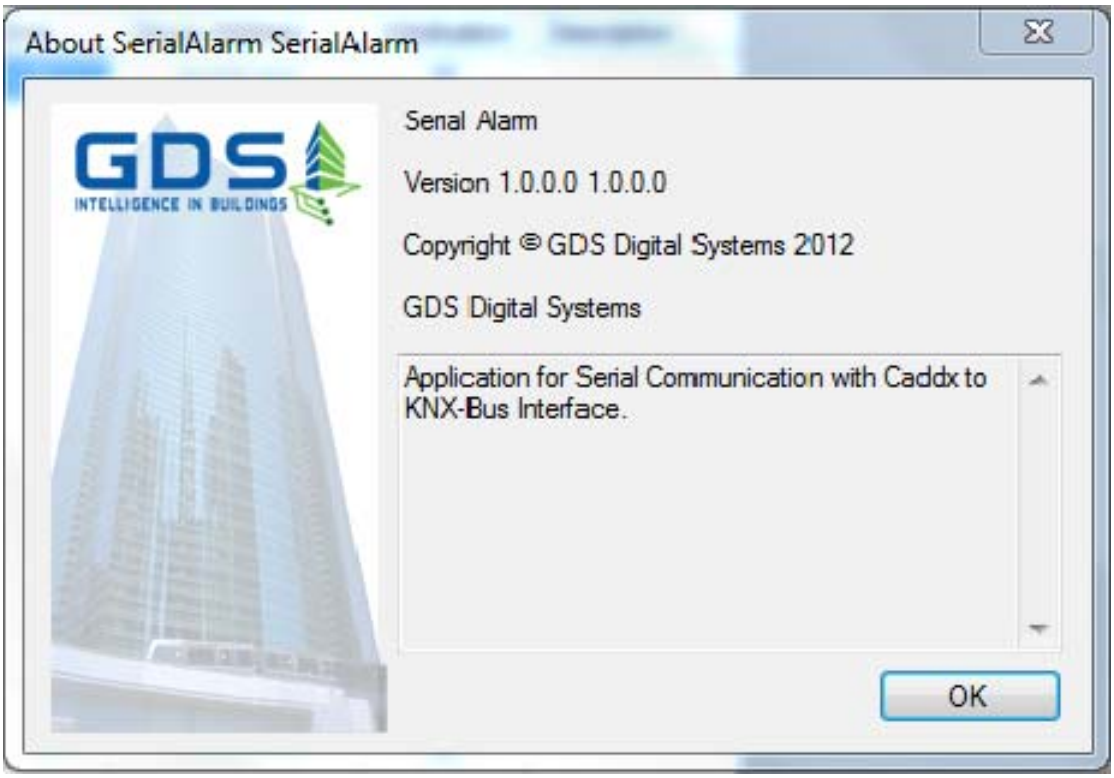
If the interface unit is connected to a computer's serial port, then through the **Device Info** menu selection**,** is possible to get information on the specific device like the product number and production date.

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

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

το be possible to communicate with the unit , it must set the group address in the Alarm KNX Device setups 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 word "RESET" as value.

10 Filtering data in the exported Commands of KNX-BUS

The user through an appropriate telegram to the KNX-Bus can filter the displayed indications of the alarm.

The telegram structure must be the following: "CT$XY" where the content is presented via ASCII character string.

So if for example we wan0t to view zones and partition in the KNX-Bus we will have the parameterize number :

parameterize number **=** view changes in zone list + show changes in the apartment state = 2 + 1 = 3

So the string " XY " is equal to " 03 " and therefore must be sent telegram content "CT$03" for the activation of the desired filter .

So:

- In order to have visibility zones and partitions : CT$03
- To have only viewing zones : CT$02
- In order to have a single view of partitions : CT$01
- To not have visibility or zones or partitions : CT$00

➢ To send filter command via ETS define telegram length 14 Byte, data type 16.000, ASCII and value "CT$03" in relation to this example .

Tthe unit is preset from the production to allow the passage of all the information in the KNX-Bus (parameterize value of 3) .

Commands PBI

To carry out operations: armed, disarm , stay and force, using the protocol found in the datasheet of PRT3 module , the device required to speak the PBI with the alarm. We use the GA of PBI and send characters that correspond to commands.

For arm:

AA (Area Arm) + 001(Partition 1-9) + A(Arm, Stay, Force, Instant mode) + 1234(code)

For example:
Normal arm of partition 3 with code 1234 send:
AA003A1234

Stay arm of partition 2 with code 2468 send:
AA002S2468.

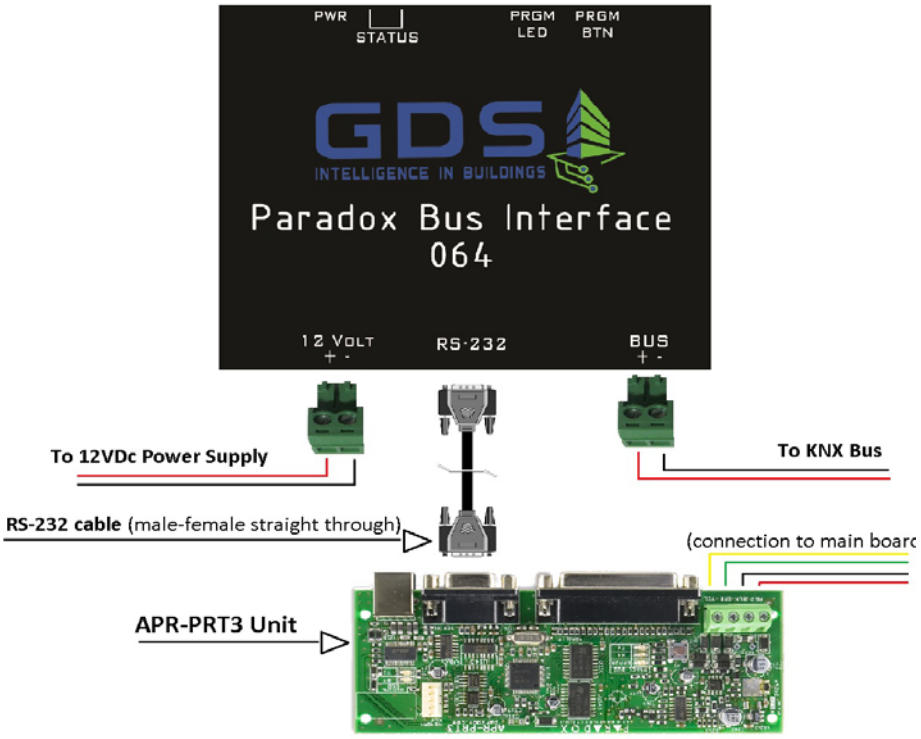
disarm: AD (Area Disarm) + 001(Partition 1-9) + 1234(code).
For disarm Partition 2 with code 1234 send:
AD0021234

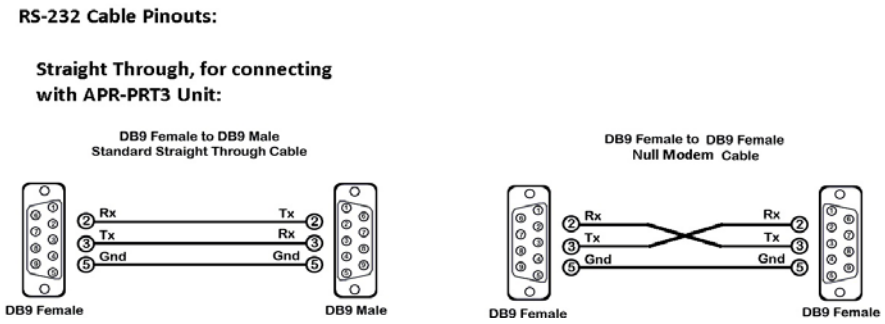
11 Remote access to the alarm system keypad

When done sending a telegram to the destination group of the unit management and the content does not respect the previous two cases , the unit transmits the contents of the telegram to the alarm as input from the alarm keypad.
For example, to remote typing the code "1234" via the ETS program define telegram length of 14 Byte, data type 16,000 , and ASCII value of " 1234 " .

Physical connection to knx-bus interface.

The Pbi is physically connected to the peripheral APR - PRT3 via the serial RS - 232. port To enable the communication between two devices , you need the APR - PRT3 to be adjusted.
In tab peripheral (module section) set the baud rate to 9600 baud [2 - on], [3 - off], activate the serial port 016 define [1 - on] and select serial port usage [4 - on].
For detailed instructions refer to the manual of the device APR - PRT3.





12 Connecting the Pbi device with the ets program

- Create in the ETS program a virtual device (you can choose any device from the database)
- Select the virtual machine and give the physical address that we want our Pbi device to have .
- Press the PRGM BTN and program the Pbi device with the physical address created.

- Then the group addresses can be registered as planned in application Serial Alarm.

- Warning!! Do NOT! Download any application to the device using ETS. If you do, the device will stop functioning

13 Unit electrical characteristics

Operating temperature: 5 ^{0}C up to 45^{0}C
Storage Temperature: 0 ^{0}C up to 55^{0}C
Maximum operating voltage: 12 V DC
Max current : 100 mA

14 Warranty

The device is covered by a one year warranty if installed and put into 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's warehouse.

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

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

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