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ADD7281

Serial port - 1 on/off relay output
PLC controller module

DATA SHEET

DESCRIPTION

The Power Line Communication (PLC) technology provides a low cost and easy way to connect and to control devices in the industrial, or domestic, environment. Advanced Digital Design PLC technology is based on ADD1000A chip. It implements a full PLC node, which includes an enhanced 8051 microcontroller, a Medium Access Controller (MAC) and a Modem circuit compatible with the EHS Power Line medium specifications. It is designed to be used by OEM and provides a low cost and small size solution for narrow band power line communications. ADD7281 motherboard is a module used to establish a gateway between a PC and the PLC network, through RS232 interface. Besides, it has a relay output (PCH-112D2H) to control a load. The power of the load cannot be changed.
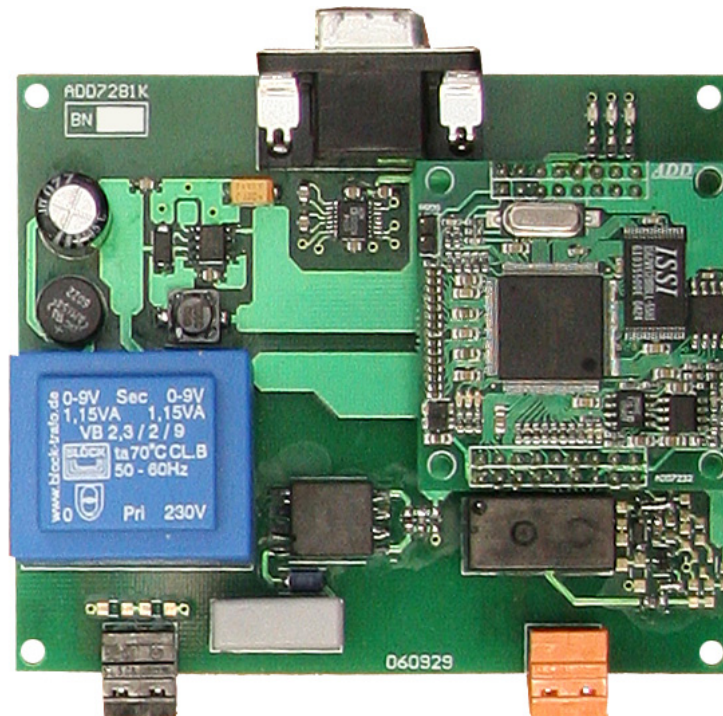
APPLICATIONS

• PC-PLC Network gateway

• Light switching (ON/OFF)

• Control devices with serial communication

PACKAGE

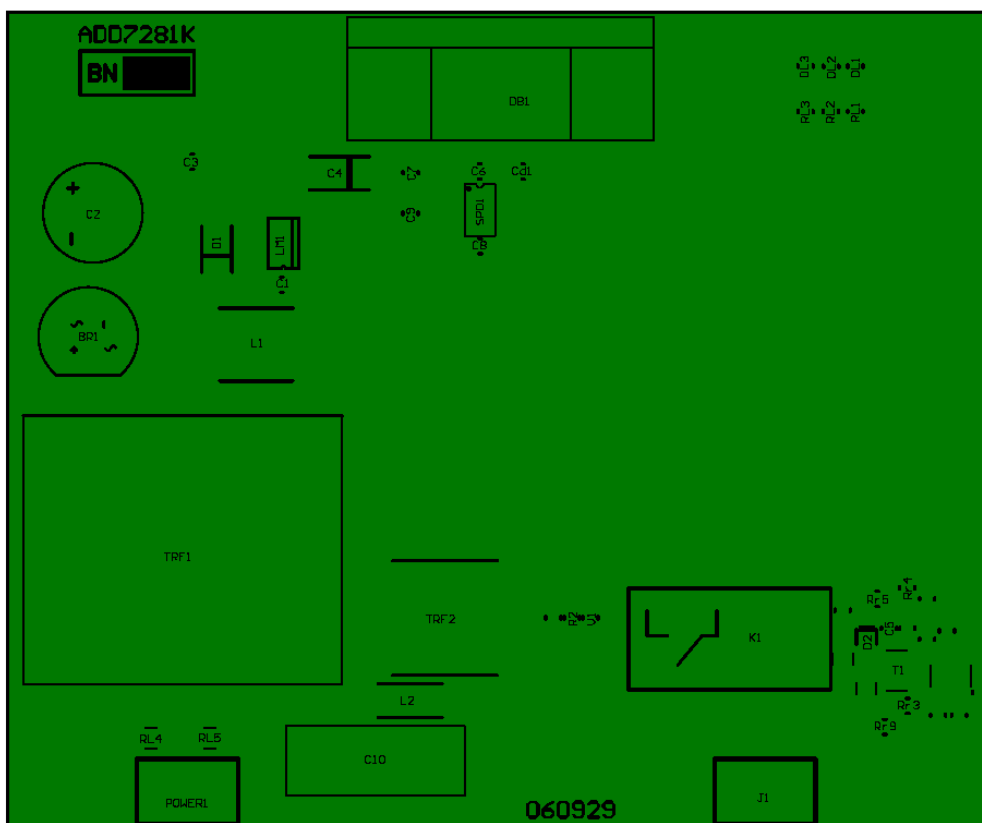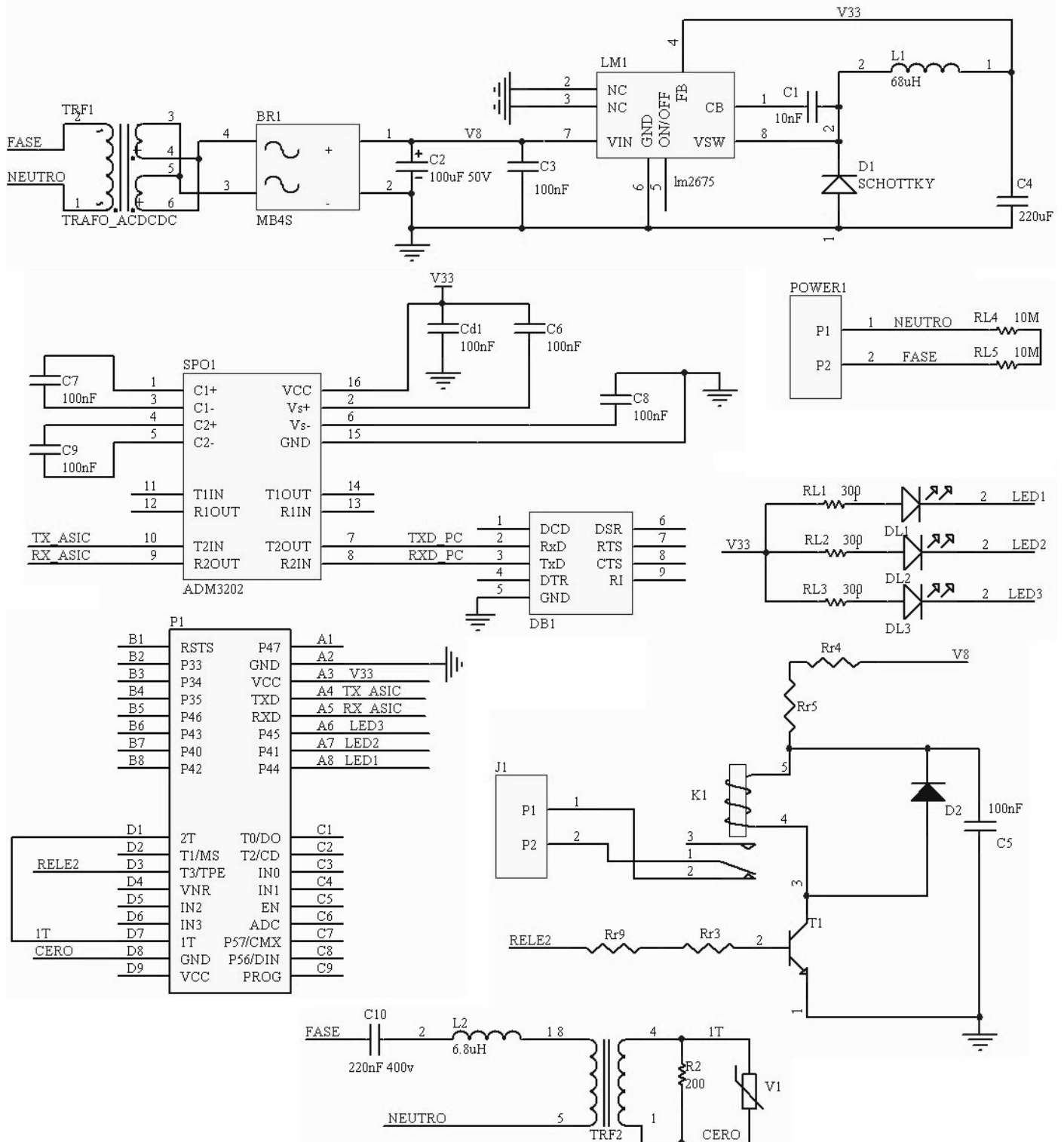6-Module DIN Rail Enclosure

MODULE PICTURE

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FEATURES

POWER SUPPLY	Voltage/Frequency	110-230 VAC 50Hz
	Consumption on standby	300mW
	Maximum consumption (emitting)	1 W
COMMUNICATIONS	Transmission power (132.45KHz) @ 50 ohm	116 dBμV
	Transmission power (132.45KHz) @ 1 ohm	110 dBμV
	Reception sensitivity (132.45 KHz)	40 dBμV
	Input impedance (132.45 KHz)	200 ohm
DIMENSIONS AND WEIGHTS	Dimensions (mm)	99Lx82Wx31D
	Weight	180gr
TEMPERATURE	Operating	-5 to 40ºC
	Storage	-10 to 70ºC
LOAD	Maximum load	500W (resistive load)

PRINTED CIRCUIT BOARD

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SCHEMATIC

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BILL OF MATERIALS

DESIGNATOR	VALUE	VOLT/DIEL	TOLERANCE	PACKAGE
BR1	1W06			Radial
C1	10nF	16V	[-+10%]	0805
C10	220nF	400V	[-+10%]	Radial
C2	100uF	50V	[-+20%]	Radial
C3	100nF	16V	[-+10%]	0805
C4	220uF	16V		
C5	100nF	16V	[-+10%]	0805
C6	100nF	16V	[-+10%]	0805
C7	100nF	16V	[-+10%]	0805
C8	100nF	16V	[-+10%]	0805
C9	100nF	16V	[-+10%]	0805
Cd1	100nF	16V	[-+10%]	0805
D1	MBRA140T3G	1A 40V		SMA
D2	1N4148W-TP	100V 150mA		SOD-123
DB1	DB-9 connector			
DL1	SML-LXT0805IW-TR	Red LED		0805
DL2	SML-LXT0805YW-TR	Yellow LED		0805
DL3	SML-LXT0805GW-TR	Green LED		0805
J1	SL 5.08/2/90 3.2SN OR			
K1	PCH-112D2H	12V 3A		Radial
L1	ELL-6UH680M	68uH 700mA	[-+20%]	
L2	6.8Uh	600mA	[-+10%]	1812
LM1	LM2675M-3.3	3.3V 1A		SOIC8
POWER1	SL 5.08/2/90 4.5SN SW			
R2	200 ohm		[-+1%]	0805
RL1	300 ohm		[-+5%]	0805
RL2	300 ohm		[-+5%]	0805
RL3	300 ohm		[-+5%]	0805
RL4	10M		[-+5%]	1206
RL5	10M		[-+5%]	1206
Rr3	2K4		[-+5%]	0805
Rr4	0 ohm		[-+5%]	0805
Rr5	0 ohm		[-+5%]	0805
Rr9	2K4		[-+5%]	0805
SPO1	ADM3202ARUZ			TSSOP-16
T1	BC807-40 T/R	45V 500mA		SOT23
TRF1	VB2.3/2/9	0-9V 0-9V 2.3VA		Radial
TRF2	T60403K5024X04485			
V1	V3.5MLA0805H	3500VDC 120A		0805

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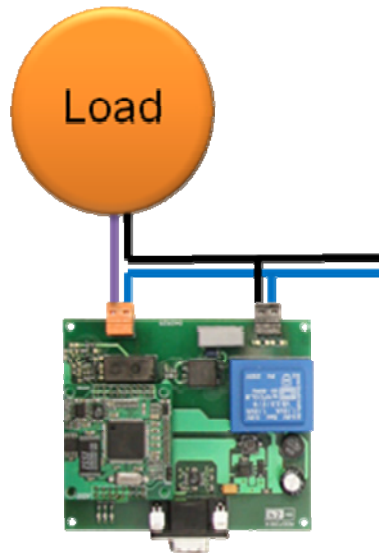
INSTALLATION – Gateway Mode

ADD7281 board is normally used to establish a gateway between a computer and a PLC network. A serial extension cable is needed. If computer has not a serial port, a USB-serial adapter can be used.   Make these connections:
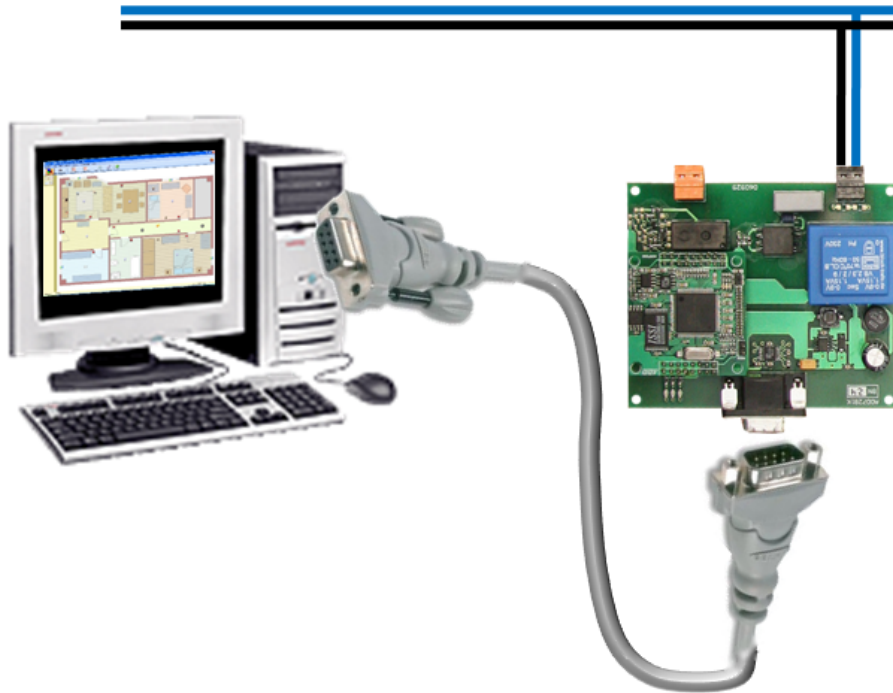
Next, power the board up and launch C@sa application. ADD7281 serial communication baud rate is 57600. Then, PLC network can be controlled and monitored.

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INSTALLATION – Load control mode

ADD7281 can also be used to control a load with its relay output. Connect the board as in the following figure:

Once the ADD7281 board is installed, it has to be configured. To do this, the following is necessary:

- Another ADD7281 module
- Serial cable
- Computer
- C@sa application installed in the computer

ADD7281

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INSTALLATION – Load control mode (Cont.)

Steps to follow:

1. Access to Configuration Utility

2. Click on *Add Node* button

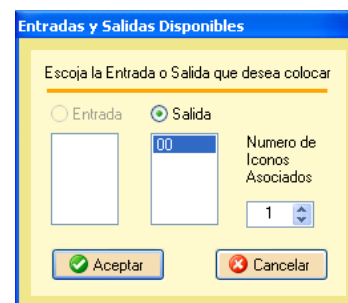3. Select *ADD7281 – Serial Port + 1 ON/OFF*, type the device serial number and click on *Accept* button

4. Place the device onto the floor plan

1a07070c2b32 (ADD7281)
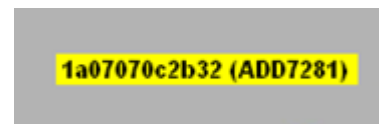
5. Click with right button on the device inserted, and click on *Place Inputs/Outputs* menu
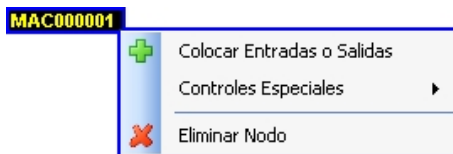
6. Click on the position where the load is located, choose output 00 in pop-up window, and click on *Accept* button
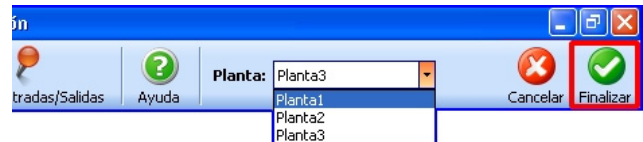
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INSTALLATION – Load control mode (Cont.)
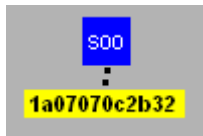
|	
7. Device is now added	8. Click on *Finish* button
9. A lamp icon has been added to the floor plan	10. Now, clicking on a lamp icon, the lamp must be switched on/off. If not, check the board connection. If the problem continues, please contact to support@advanceddd.com See C@sa help to learn how to change the icon, create relations between a switch and a lamp, and other issues.

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Serial port - 1 on/off relay output
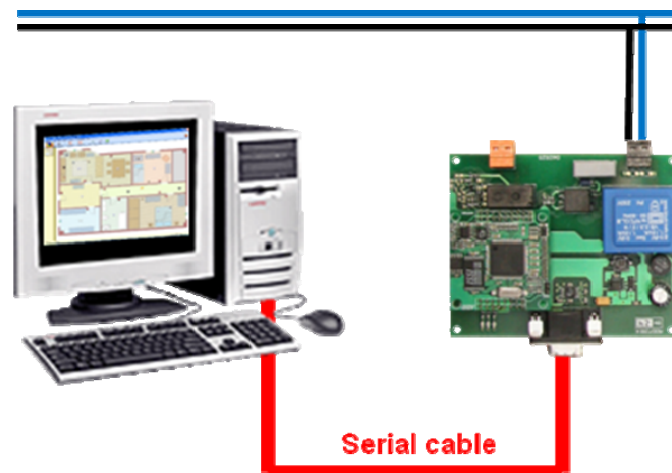PLC controller module
DATA SHEET

INSTALLATION – Serial communication device control mode

Devices with serial communication, like oscilloscopes and video projectors, can be controlled with the ADD7281 board. Connect the board as in the following figure:
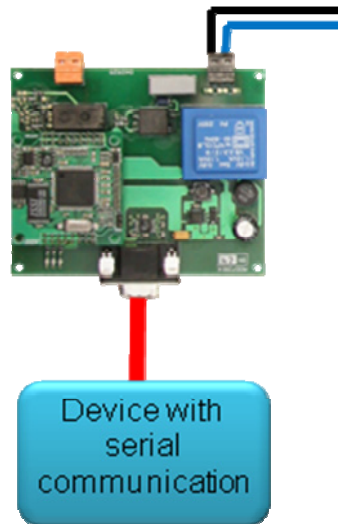
Once the ADD7281 board is installed, it has to be configured. To do this, the following is necessary:

- Another ADD7281 module
- Serial cable
- Computer
- C@sa application installed in the computer

Serial cable

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INSTALLATION – Serial communication device control mode (Cont.)
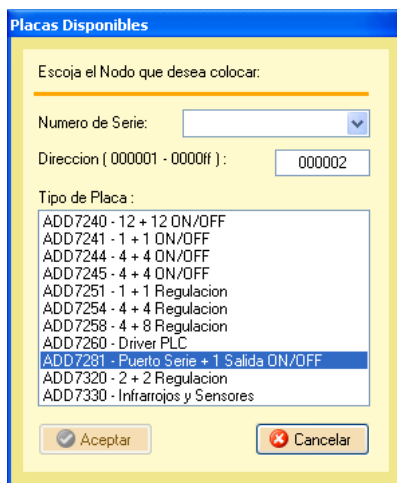
Steps to follow:
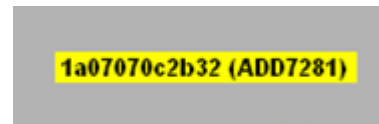
1. Access to Configuration Utility

2. Click on *Add Node* button
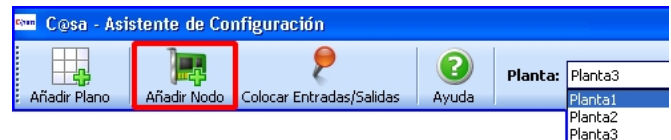
3. Select *ADD7281 – Serial Port + 1 ON/OFF*, type the device serial number and click on *Accept* button
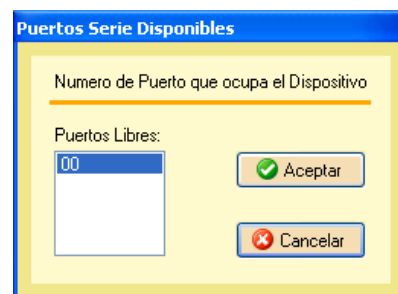
4. Place the device onto the floor plan

5. Click with right button on the device inserted, and click on *Special Controls* → *Place Serial Device* menu

6. Click on the position where the device is located, choose port 00 in pop-up window, and click on *Accept* button

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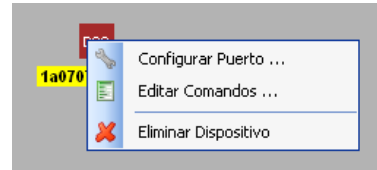PLC controller module
DATA SHEET

INSTALLATION – Serial communication device control mode (Cont.)
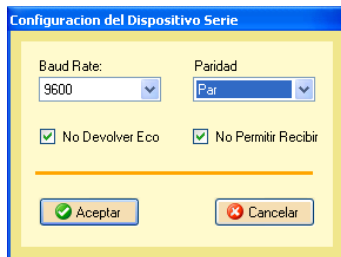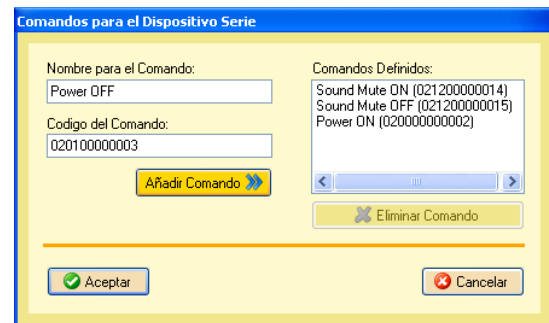
7. Device is now added

8. Click with right button on the device inserted, and click on *Configure Port* menu

9. Fill in the fields according to the device's serial communication options and click on Accept button.

If communication with ADD7281 board fails, check the board connection. If the problem continues, please contact to support@advanceddd.com

10. Click with right button on the device inserted, and click on *Edit Commands* menu. Add commands (in hexadecimal format) according to device's specification.
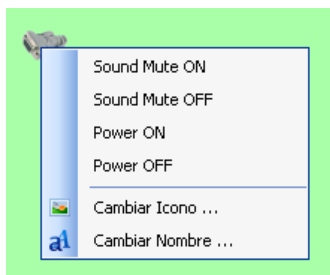

8. Click on *Finish* button

9. A icon has been added to the floor plan

10. Click with right button on the icon inserted, and send a command to the device

12. See C@sa help to learn how to change the icon, send a command when a switch is pressed, and other issues.