



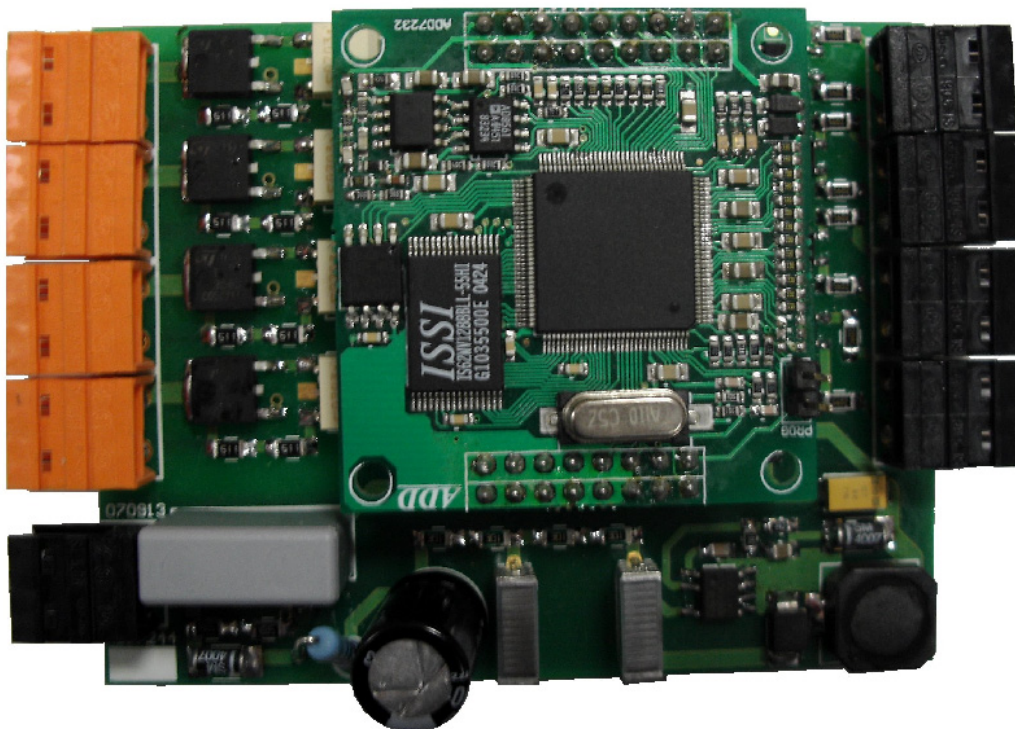
DESCRIPTION

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. ADD7244 motherboard is a module used to control four switches and four loads. The power of the load cannot be changed. It includes four triac outputs (T835-600B) and four 220vAC optocoupled inputs.

APPLICATIONS

- Blind / Projection screen automation
- Light switching (ON/OFF)
- Heating management
- Water leak detection and electrovalve operation

MODULE PICTURE





Advanced Digital Design
Providing Solutions

ADD7244

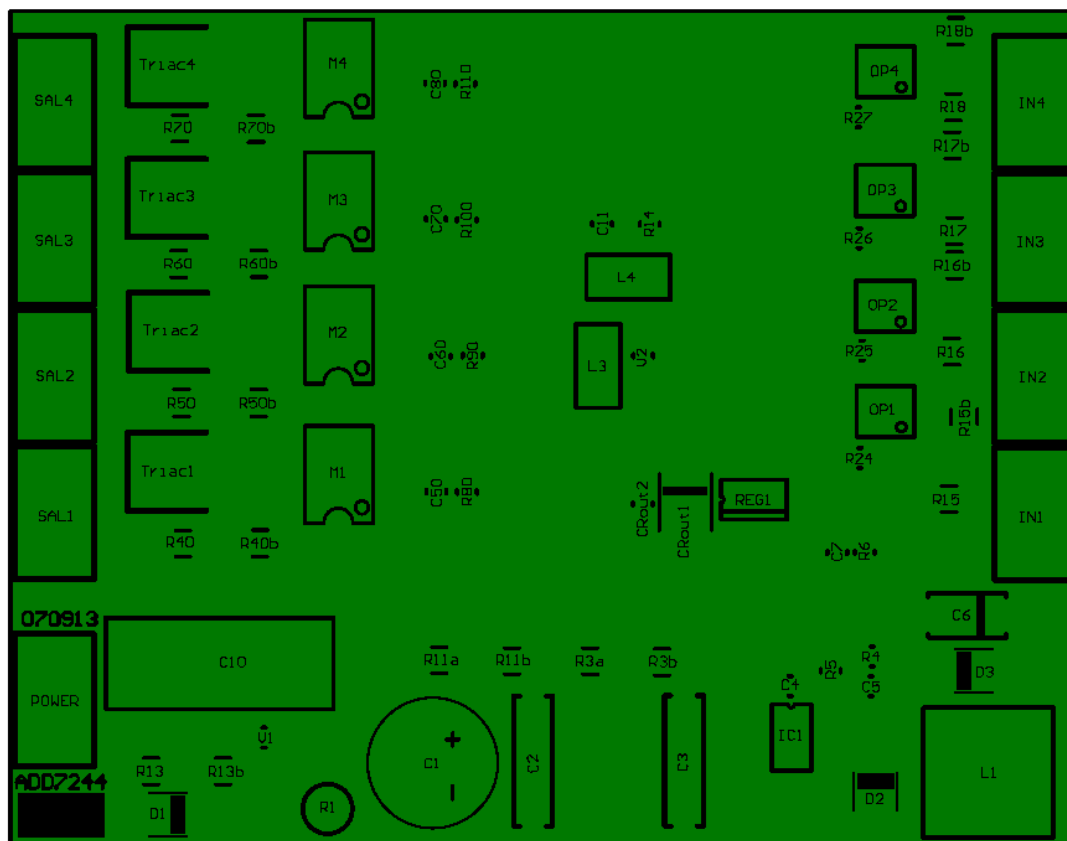
4 inputs - 4 on/off triac outputs
PLC controller module

DATA SHEET

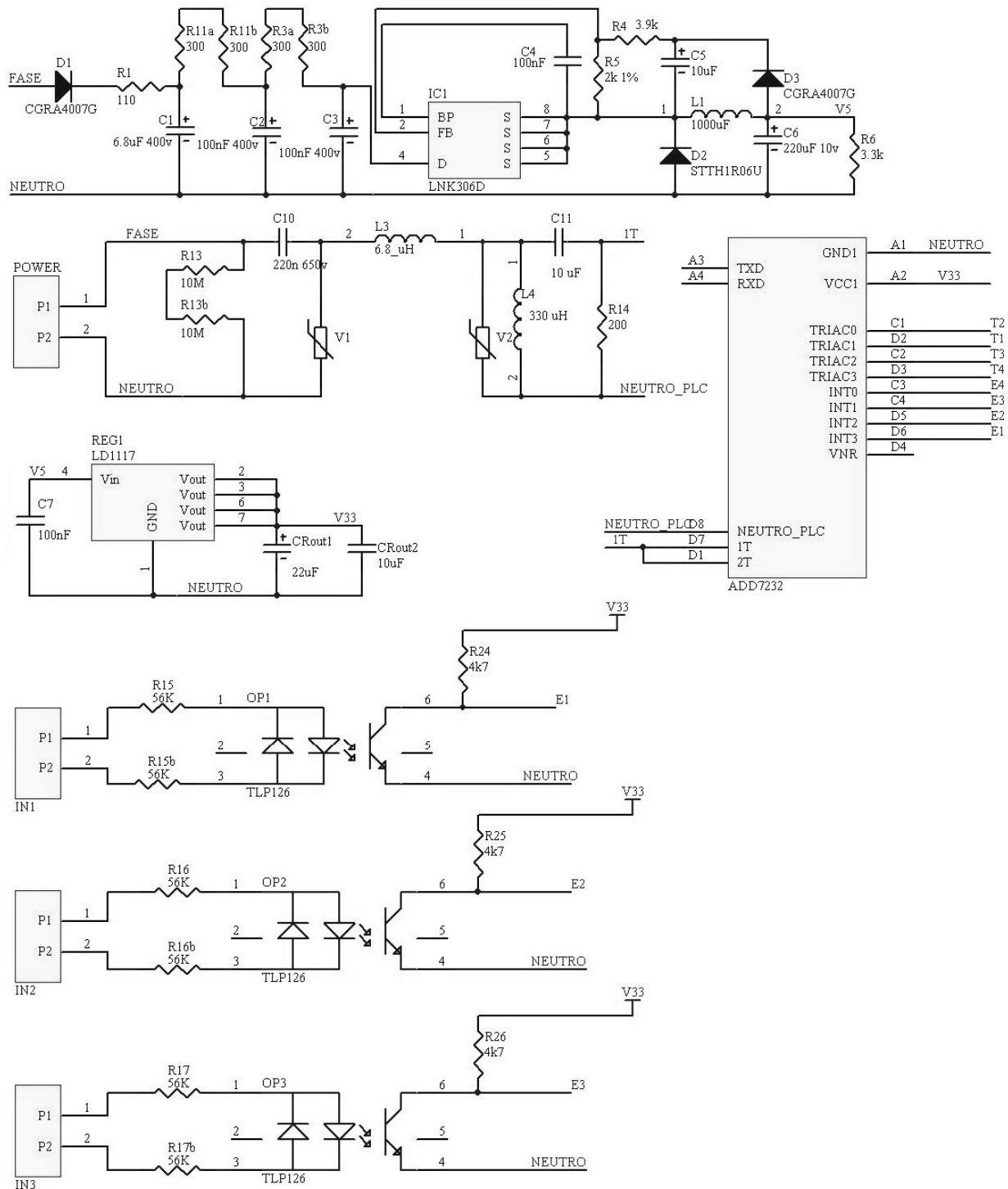
FEATURES

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)	82Lx64Wx21D
	Weight	50gr
TEMPERATURE	Operating	-5 to 40°C
	Storage	-10 to 70°C
LOAD	Maximum load	500W (resistive load)

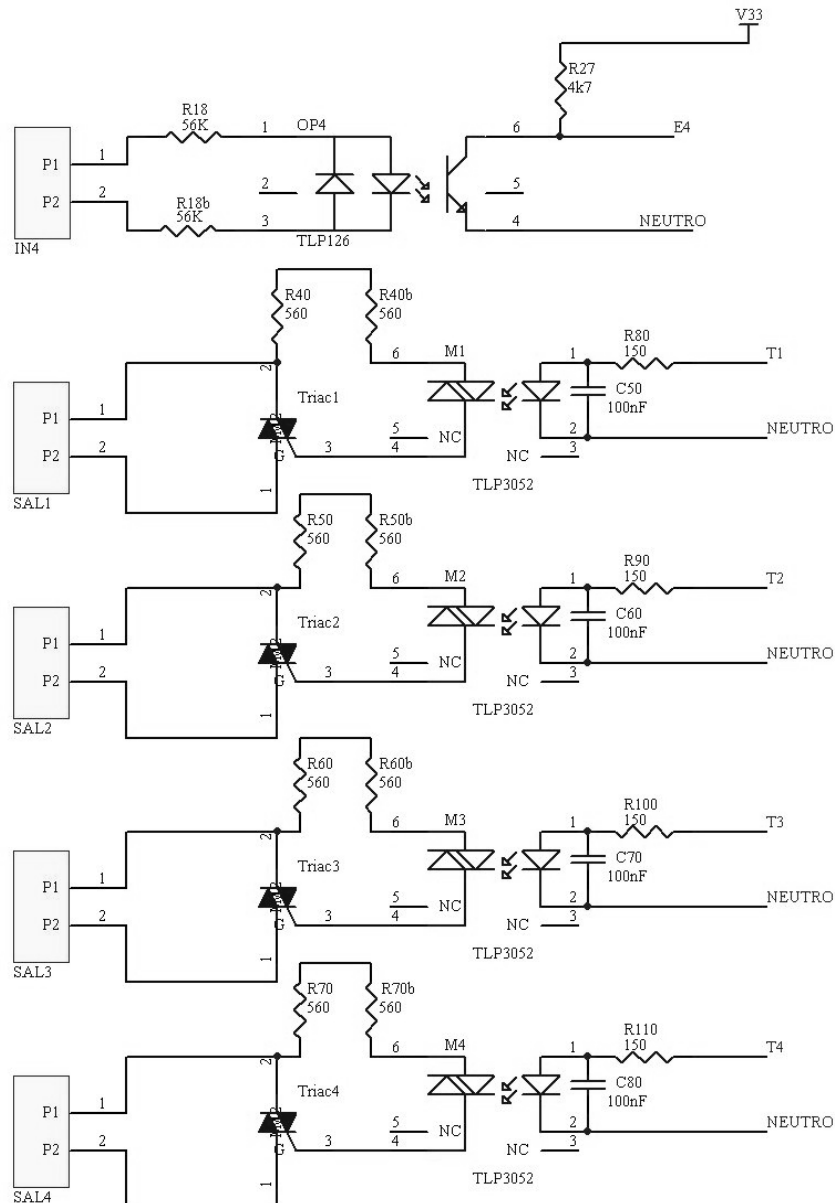
PRINTED CIRCUIT BOARD



SCHEMATIC



SCHEMATIC (Cont.)





BILL OF MATERIALS

DESIGNATOR	VALUE	VOLT/DIEL	TOLERANCE	PACKAGE
C1	6.8uF	400V	[+20%]	Radial
C10	220nF	400V	[+10%]	Radial
C11	10uF	6.3V	[+10%]	0805
C2	100nF	400V	[+10%]	Radial
C3	100nF	400V	[+10%]	Radial
C4	100nF	16V	[+10%]	0805
C5	10uF	10V	[-20%+80%]	0805
C50	100nF	16V	[+10%]	0805
C6	220uF	16V		
C60	100nF	16V	[+10%]	0805
C7	100nF	16V	[+10%]	0805
C70	100nF	16V	[+10%]	0805
C80	100nF	16V	[+10%]	0805
CRout1	22uF	10V	[+20%]	SMB
CRout2	10uF	10V	[-20%+80%]	0805
D1	CGRA4007G	1000V 1A		MELF
D2	STTH1R06U	600V 1A		SMB
D3	CGRA4007G	1000V 1A		MELF
IC1	LNK306D			SOIC8
L1	1mF	340mA	[+20%]	
L3	6.8uH	600mA	[+10%]	1812
L4	330uH	50mA	[+10%]	1210
M1	TLP3052			DIP6
M2	TLP3052			DIP6
M3	TLP3052			DIP6
M4	TLP3052			DIP6
O21	TLP126			SMD-4
OP1	TLP126			SMD-4
OP3	TLP126			SMD-4
OP4	TLP126			SMD-4
R1	110 ohm	0.5W	[+1%]	Axial
R100	150 ohm		[+5%]	0805
R110	150 ohm		[+5%]	0805
R11a	300 ohm		[+5%]	1206
R11b	300 ohm		[+5%]	1206
R13	10M		[+5%]	1206

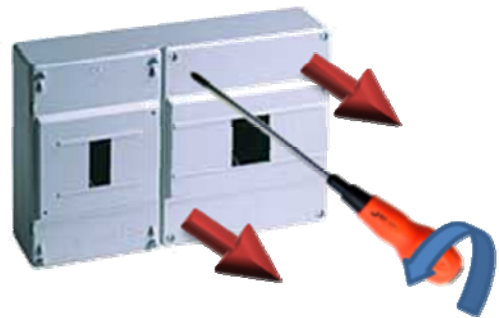
DESIGNATOR	VALUE	VOLT/DIEL	TOLERANCE	PACKAGE
R13b	10M		[+5%]	1206
R14	200 ohm		[+1%]	0805
R15	56K		[+5%]	1206
R15b	56K		[+5%]	1206
R16	56K		[+5%]	1206
R16b	56K		[+5%]	1206
R17	56K		[+5%]	1206
R17b	56K		[+5%]	1206
R18	56K		[+5%]	1206
R18b	56K		[+5%]	1206
R24	4K7		[+5%]	0805
R25	4K7		[+5%]	0805
R26	4K7		[+5%]	0805
R27	4K7		[+5%]	0805
R3a	300 ohm		[+5%]	1206
R3b	300 ohm		[+5%]	1206
R4	3K9		[+5%]	0805
R40	560 ohm		[+5%]	1206
R40b	560 ohm		[+5%]	1206
R45	560 ohm		[+5%]	1206
R5	2K		[+1%]	0805
R50b	560 ohm		[+5%]	1206
R6	3K3		[+5%]	0805
R60	560 ohm		[+5%]	1206
R60b	560 ohm		[+5%]	1206
R70	560 ohm		[+5%]	1206
R70b	560 ohm		[+5%]	1206
R80	150 ohm		[+5%]	0805
R90	150 ohm		[+5%]	0805
REG1	LD1117D33			SOIC8
Triac1	T835-600B			DPACK
Triac2	T835-600B			DPACK
Triac3	T835-600B			DPACK
Triac4	T835-600B			DPACK
V1	V3.5MLA0805H	3500VDC 120A		0805
V2	V3.5MLA0805H	3500VDC 120A		0805

INSTALLATION

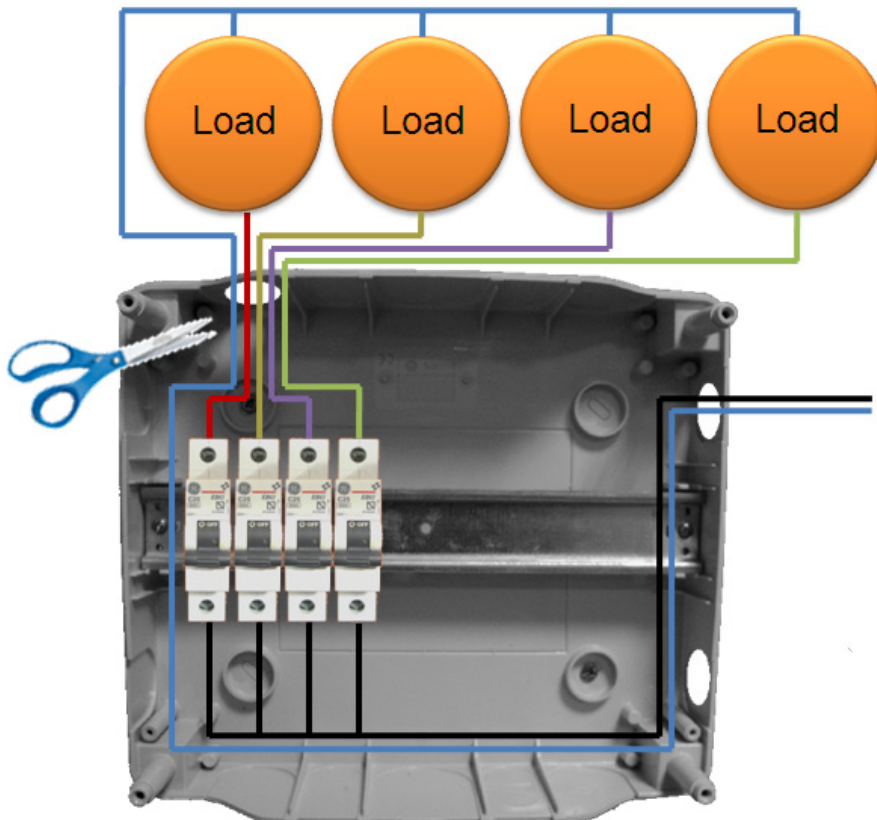
1. Power down the consumer unit:



2. Remove the distribution box frame:

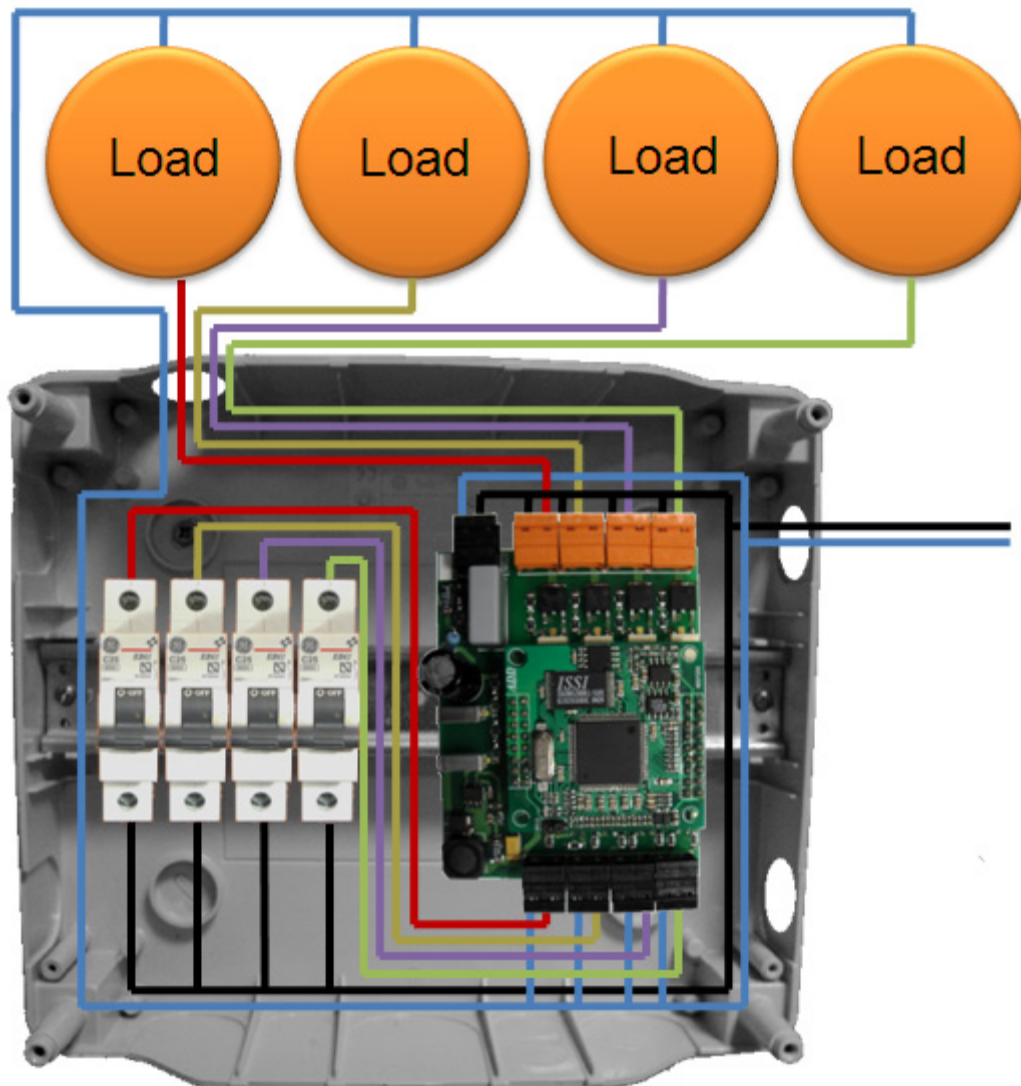


3. Locate the wires that connect the loads with the switches and cut them:



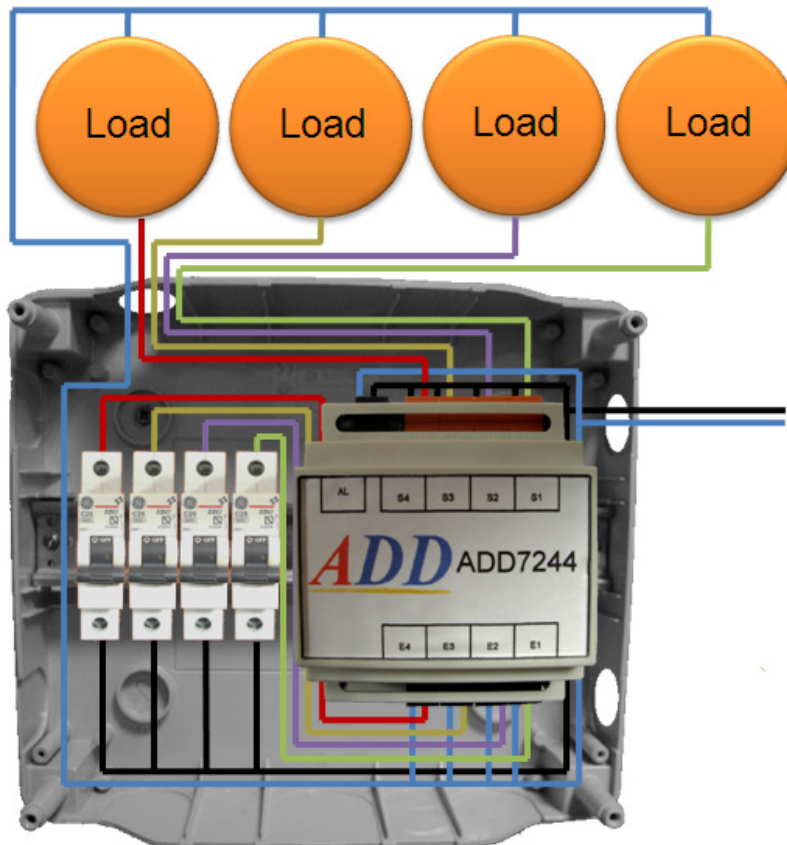
INSTALLATION (Cont.)

4. Place the ADD7244 board into the distribution box, and make these connections:



INSTALLATION (Cont.)

5. Place the DIN Rail enclosure



6. Put the distribution box frame



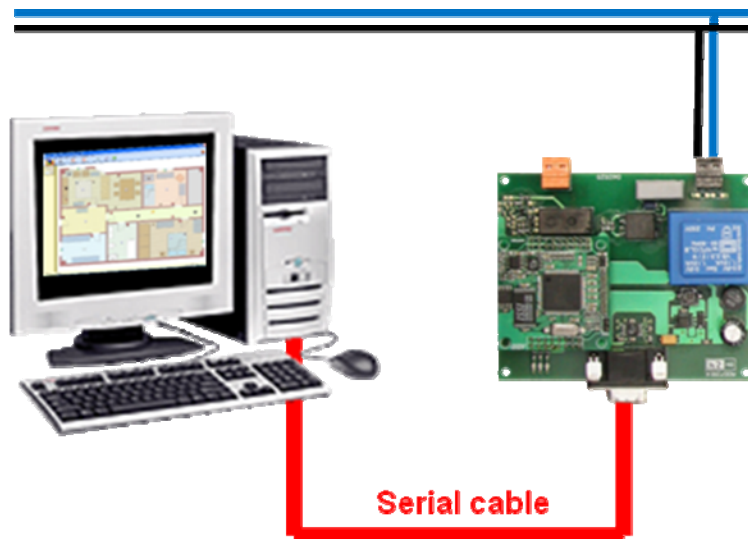
7. Power up the consumer unit



CONFIGURATION

Once the ADD7244 board is installed, it has to be configured. To do this, the following is necessary:

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

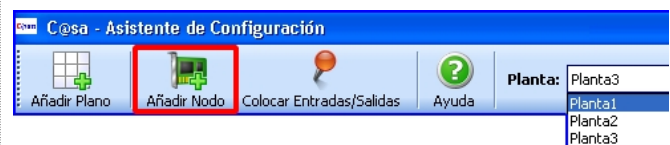


Steps to follow:

1. Access to Configuration Utility

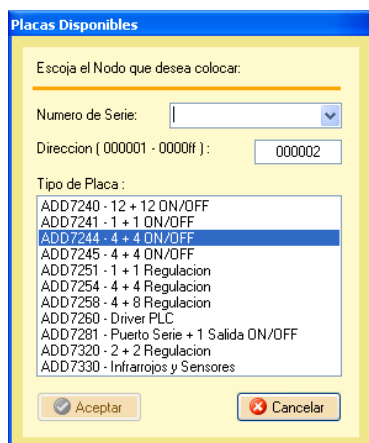


2. Click on *Add Node* button

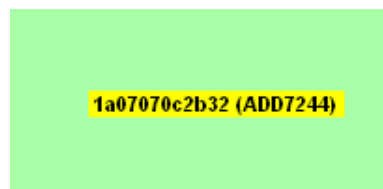


CONFIGURATION (Cont.)

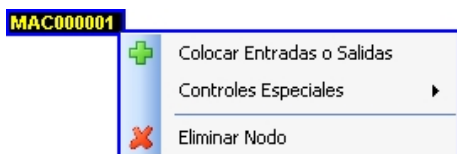
3. Select **ADD7244 – 4 +4 ON/OFF**, type the device serial number and click on **Accept** button



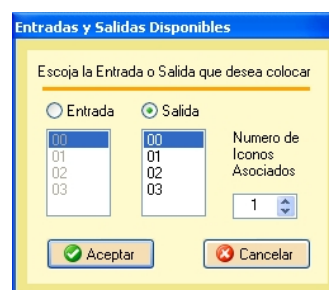
4. Place the device onto the floor plan



5. Click with right button on the device inserted, and click on **Place Inputs/Outputs** menu

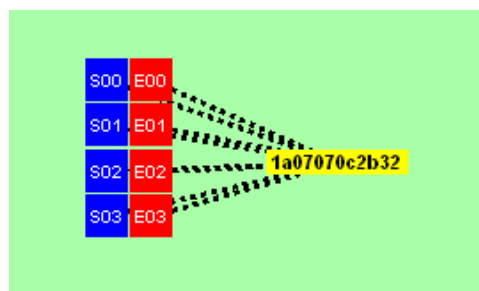


6. Click on the position where a load is located, choose output 00 in pop-up window, and click on **Accept** button



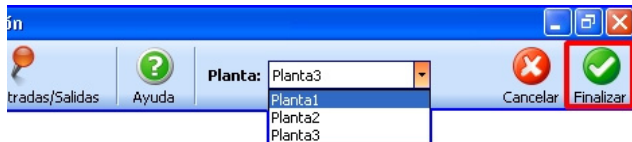
7. Repeat step 6 for every output and input

8. Device is now added

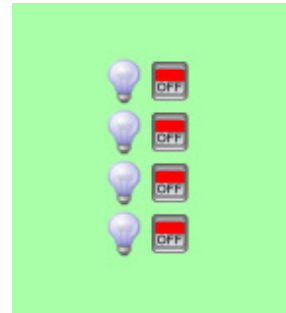


CONFIGURATION (Cont.)

9. Click on *Finish* button



10. Lamp icons and switch icons have been added to the floor plan



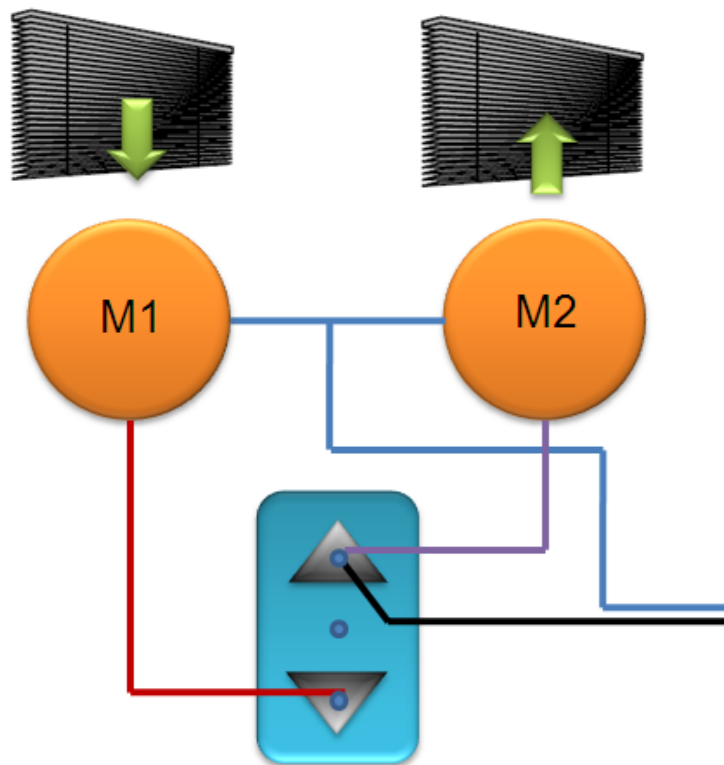
11. Now, clicking on a lamp icon, the lamp must be switched on/off. If not, check the board connection.

If the problem continues, please contact to support@advanceddd.com

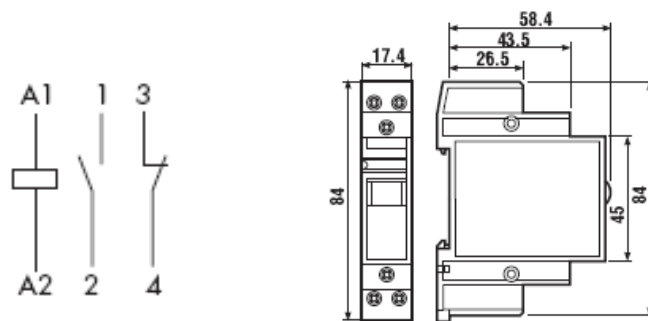
12. See C@sa help to learn how to change the icon, create relations between a switch and a lamp, and other issues.

APPLICATION NOTE: BLIND AUTOMATION

This application note explains how to control a blind engine with the ADD7244 module. Two relays are used to avoid overloads in case of heavy blinds. The following is a typical circuit of blind automation. There is a three position switch (up, stop and down), and a double-way engine (M1 and M2):

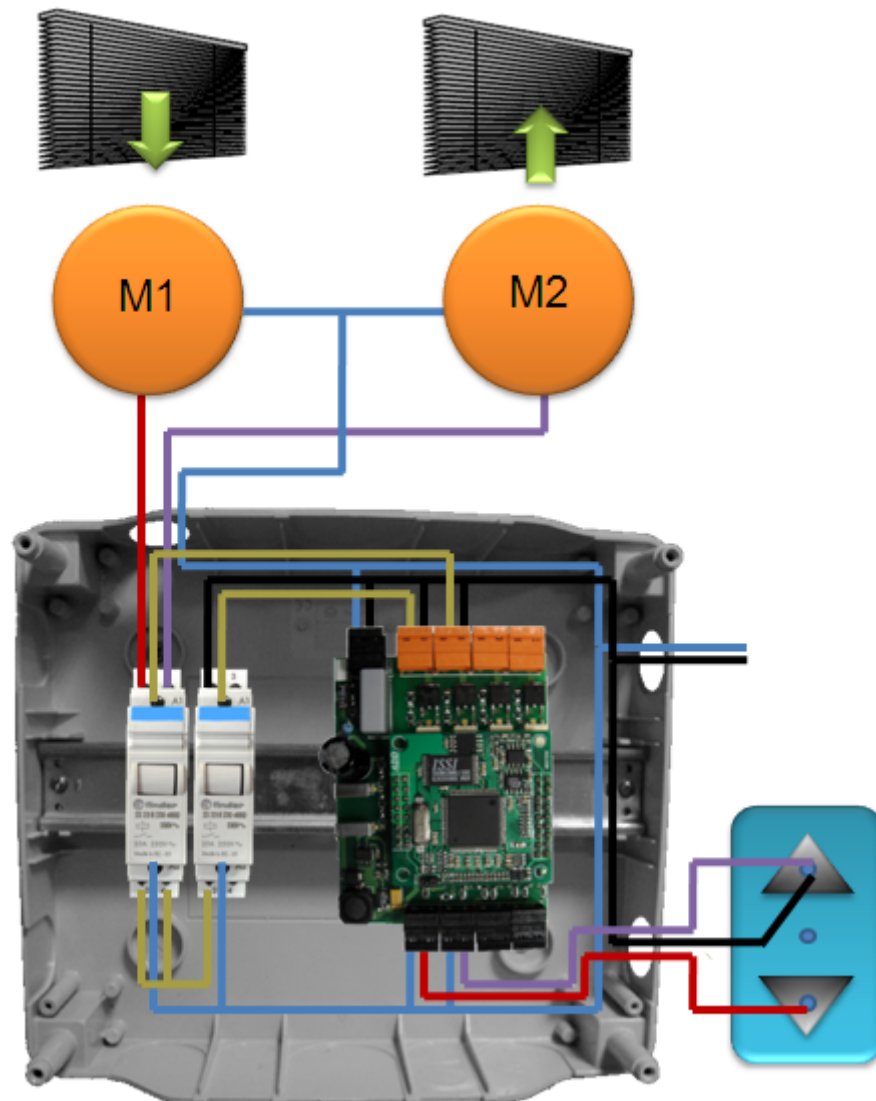


Relays used have two contacts (1 NO + 1 NC) and they are for DIN Rail mounting:



APPLICATION NOTE: BLIND AUTOMATION (Cont.)

These are the connections to be made into the distribution box:



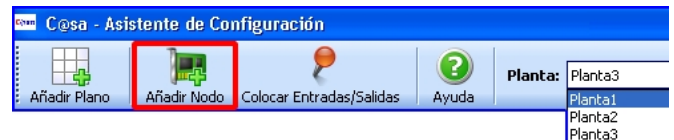
APPLICATION NOTE: BLIND AUTOMATION (Cont.)

To configure the board, follow these steps:

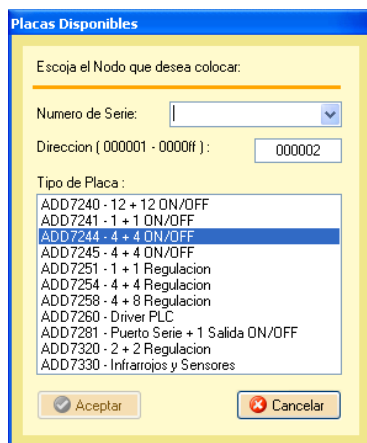
1. Access to Configuration Utility



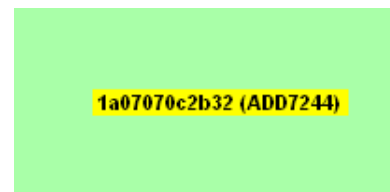
2. Click on Add Node button



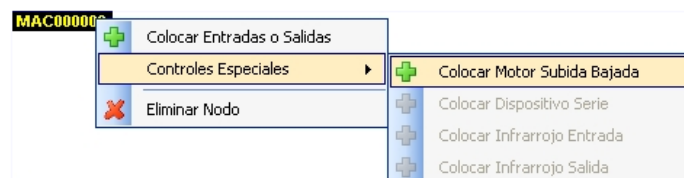
3. Select ADD7244 - 4 +4 ON/OFF, type the device serial number and click on Accept button



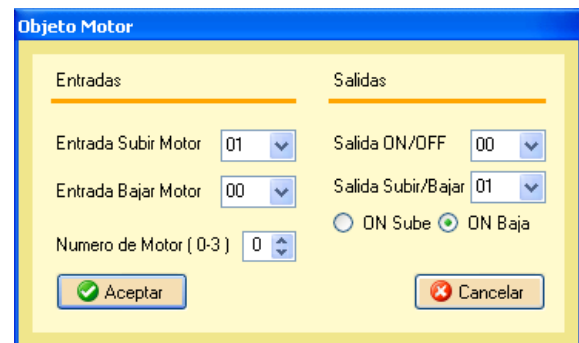
4. Place the device onto the floor plan



5. Click with right button on the device inserted, and click on Special Controls → Place Up/Down Engine menu

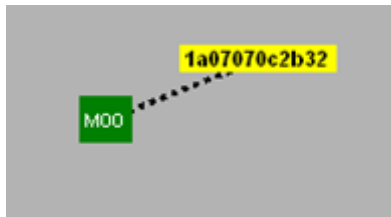


6. Fill the fields as seen on the image, and click on Accept button

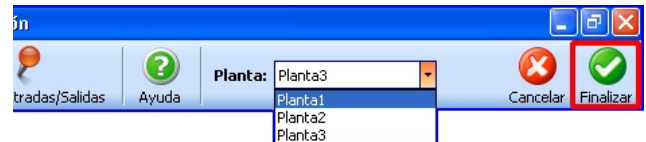


APPLICATION NOTE: BLIND AUTOMATION (Cont.)

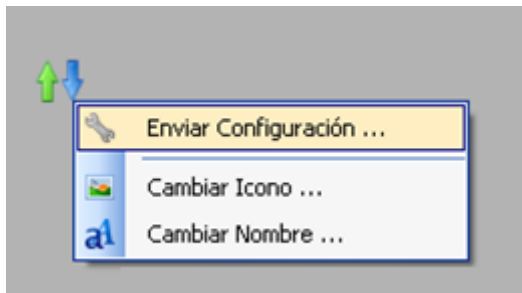
7. Device is now added



8. Click on *Finish* button



9. Two arrows have been added to the floor plan. Click with right button on them, and select *Send Configuration* menu to save the configuration in the ADD7244 board.



10. Now, click with right button on the arrows, and select Up or Down menu to pull up/lower the blind

