

Alba Elektronika

## ARDUINO MINI PRO IOT / SMART HOME KIT

ARDUINO MINI PRO / Esp01 Esp8266 / PROGRAMMER Esp01/ RELAY Esp01 /  
BREADBOARD / CHARGERS / ADAPTERS / VOLTAGE & AMPERE INDICATOR

Level : Medium / Advanced  
May require soldering

### Index

Required hardware & software .....	1
External links .....	1
Inside the box.....	1
Configurations.....	2
Programmer USB to TTL converter for Esp01 Esp8266 .....	2
Arduino mini pro .....	2
Voltage / Amper indicator .....	3
Relay & Esp01 Esp8266 .....	3
Further developments .....	3

## Required hardware & software

A phone / computer / laptop

The Arduino app / software such as Arduino.cc / PlatformIO

Arduino mini pro is not soldered but can be used as such on the prototype solderless board. For pictures look up our shop website.

Install CH340 USB drives

## External links

<https://create.arduino.cc/projecthub/>

<https://www.espressif.com/>

<https://learn.sparkfun.com/tutorials/serial-communication>

<https://learn.sparkfun.com/tutorials/using-the-arduino-pro-mini-33v>

<https://www.esp8266.com/>

## Inside the box

Arduino mini pro	ATmega328P 5V / 16 MHz	1
Esp01 Esp8266	Serial Transceiver / Receiver module Wifi	2
Esp01 Programmer	UART CH340G USB to Esp8266 Serial Wifi	1
Esp01 Relay module	Smart home remote control switch Wifi	1
Connectors	female-female	8
	male – male	10
	female - male	8
Voltage check	USB + Oled	1
Adapter	UCB / UCB	1
Breadboard	830 pins PVC solderless board	1
Breadboard Charger	5V / 3.3 V MB102	1
Manual	Description / Tips	1

<https://github.com/Alba-Elektronica>

## Configurations

Different configurations are possible:

1. Connect programmer to computer and Arduino mini to Esp01 module
2. Connect Arduino mini to programmer Esp01 connected to computer
3. Connect programmer with Esp01 to relay with Esp01
4. Connect Arduino mini with Esp01 connected to repay Esp01

## Programmer USB to TTL converter for Esp01 Esp8266

- ➔ Download software from Arduino.cc; Install
- ➔ Install Esp8266 in the preference window / additional board manager URL field

[http://arduino.esp8266.com/stable/package\\_esp8266com\\_index.json](http://arduino.esp8266.com/stable/package_esp8266com_index.json)

- ➔ Select board *Generic 8266 module*
- ➔ Connect programmer Esp01 Esp8266 with Esp01 module
- ➔ Select the port of the connection
- ➔ The module could be used either as a programmer or UART
  - Switching between the two modes requires some soldering
  - Update drivers from espressif.com

## Arduino mini pro

- ➔ Install Arduino mini on the breadboard
- ➔ Connect to the power lines of the breadboard
- ➔ Connect to Esp01 Esp8266 programmer using (male – male) connectors
- ➔ Connect the programmer to computer with USB to USB Adaptor
- ➔ Select Arduino mini pro board and corresponding port

<https://github.com/Alba-Elektronica>

## Voltage / Amper indicator

Use the USB voltage indicator to check the voltage / amper health for both programmer or breadboard charger.

## Relay & Esp01 Esp8266

- ➔ Connect Arduino with Esp01
- ➔ Connect Relay with Esp01
- ➔ Troubleshooting: <https://www.esp8266.com/>

## Further developments

For further ideas on how to combine Arduino with sensors please consult our github webpage (<https://github.com/Alba-Elektronica>)