

ArduiBox MKR

Rev B

construction manual

Rev.	Date	Description
A	2018-05-15	First Release
B	2020-12-17	Changed tor new ArduiBox MKR 2.0

Tools:

*a regulated soldering iron
(25..40W) with small tip*



*a wet sponge to clean the
tip*



thin solder wire



Side cutting pliers



Needle nose pliers



Medium cross slot screwdriver



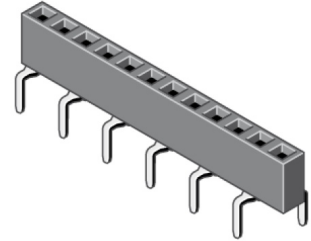
Parts Basic Version:



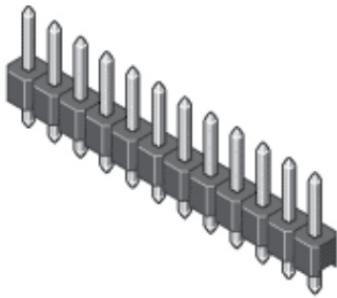
1x
2pole terminal block



2x
3pole terminal block



4x
14pole centipede header



2x
14pole male header



cathode

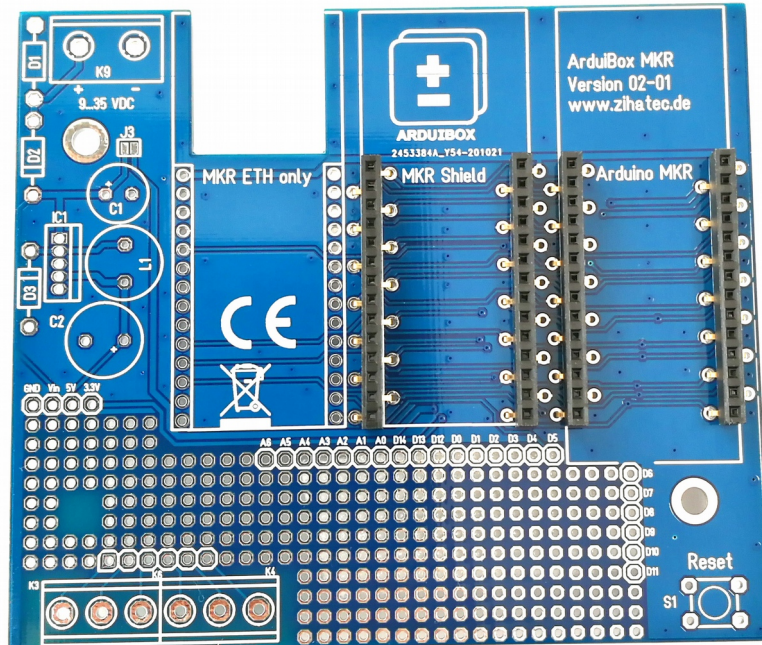
1x
Schottky diode
SB260
(D2)



2x
self-tapping screws

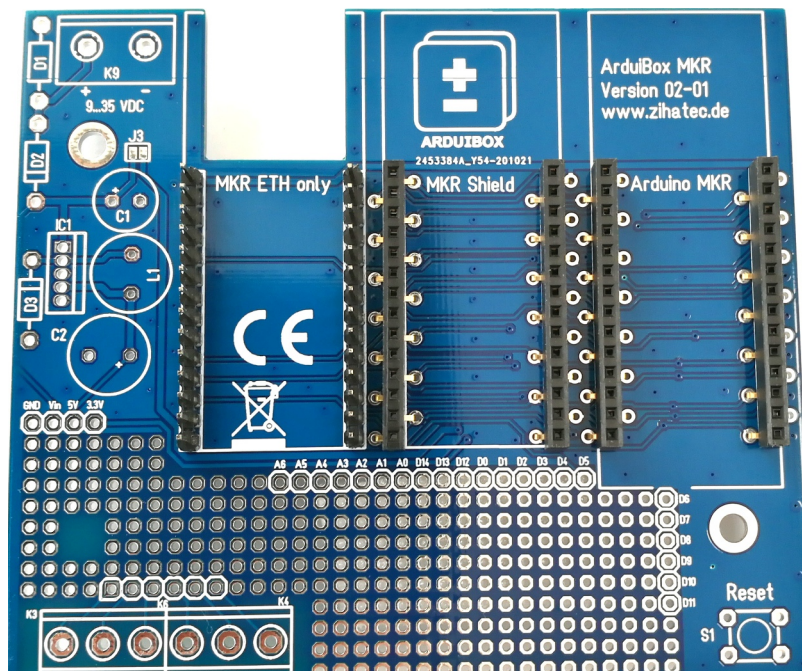
1.) Place and solder the centipede headers

Please assemble the 4 female centipede headers as in the picture below:

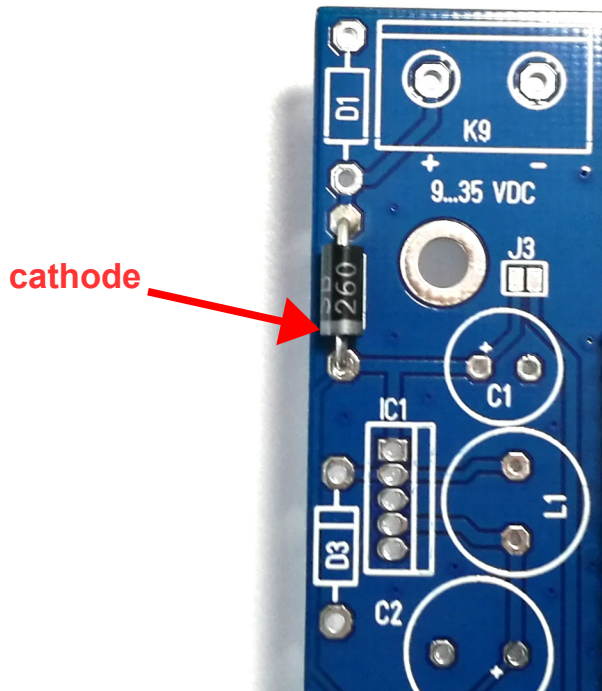


2.) Place and Solder the male headers

Please assemble the 2 straight male headers as in the picture below:

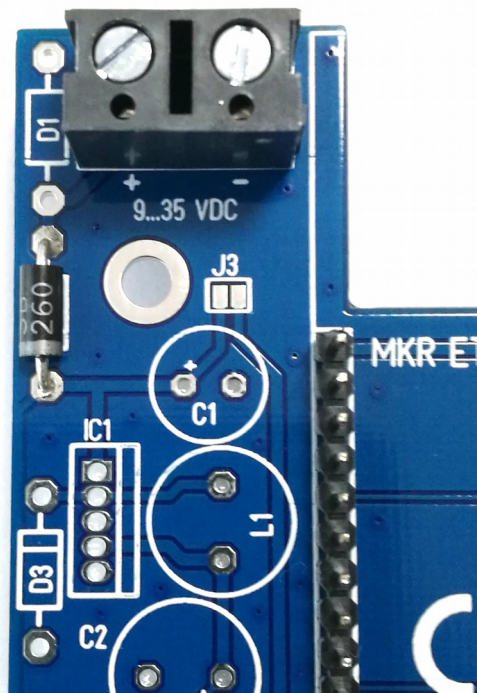


3.) *Place and solder the diode D2*



4.) *Place and solder the terminal K9*

We've to put the block into the proto plate. Make sure you place them so that the open ends are facing out as shown:



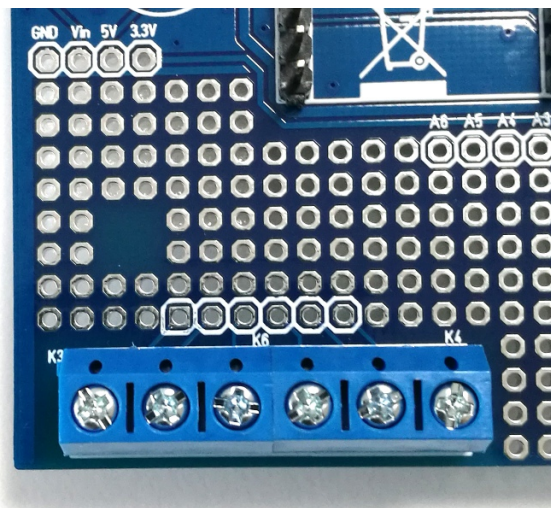
5.) *Preparing of 3pole terminal blocks*

Find the terminal blocks, they're grey or blue and come in 3-pin shape. We'll need to slide two 3-pin blocks together:



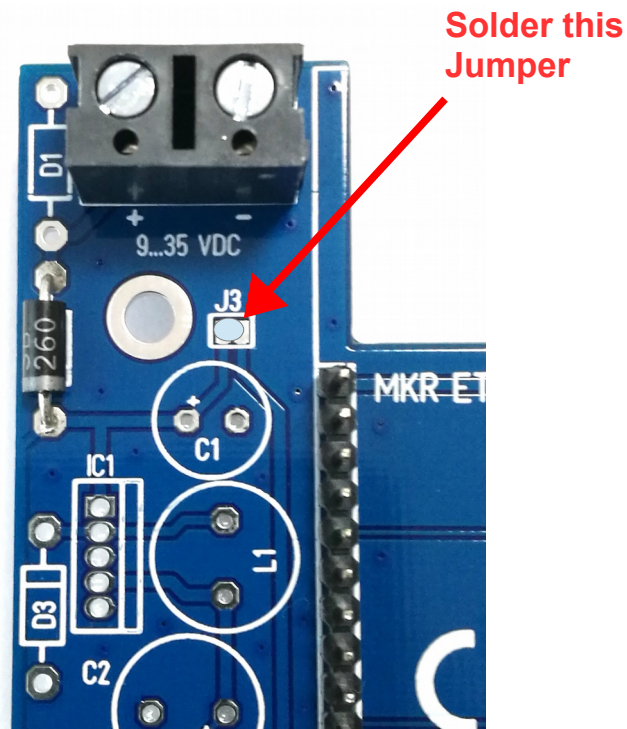
6.) *Place and solder 3pole terminal blocks*

We've to put the blocks into the proto plate. Make sure you place them so that the open ends are facing out as shown:



7.) Solder Jumper J3 (optional):

Perform this step only if you really don't want to use the additional voltage regulator of the standard kit. If you want to use the USB socket of the Arduino MKR for powering this step is unnecessary also.



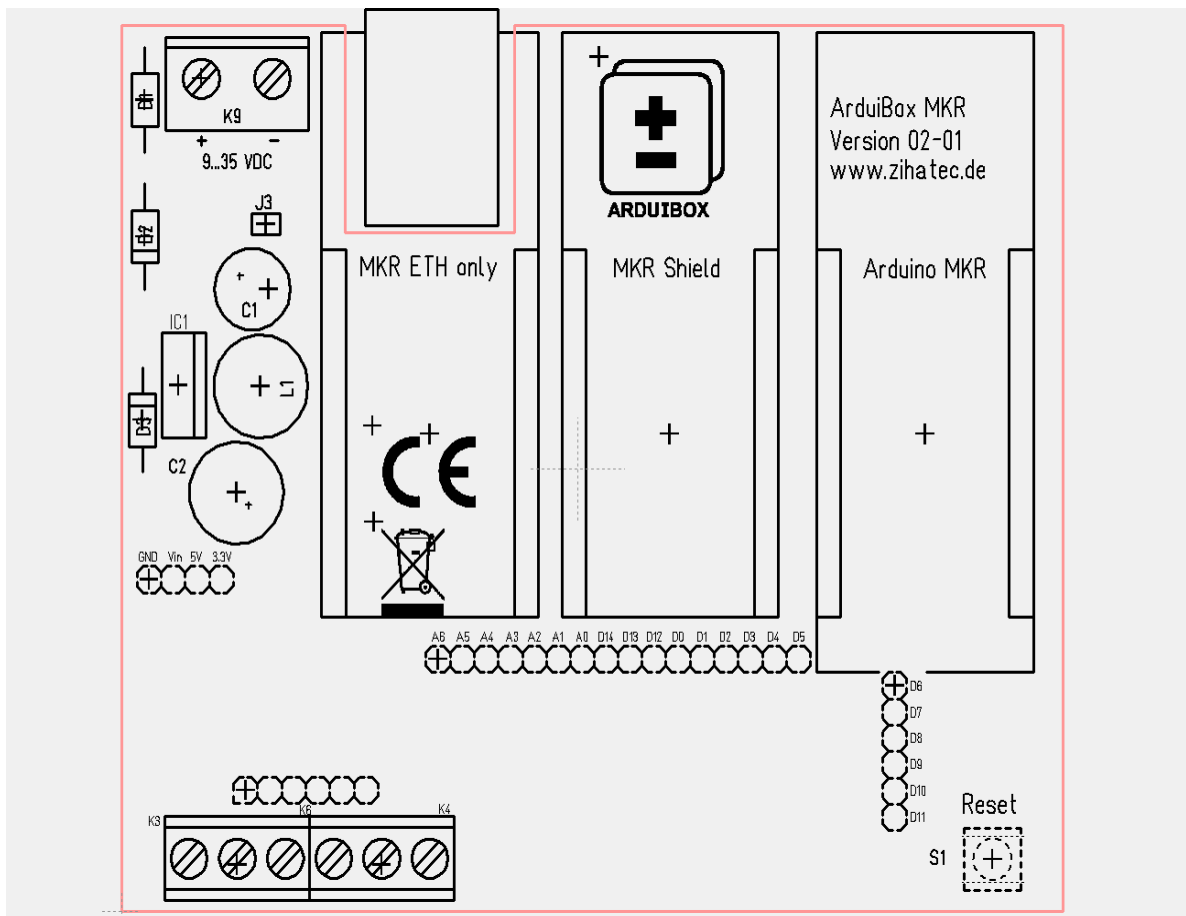
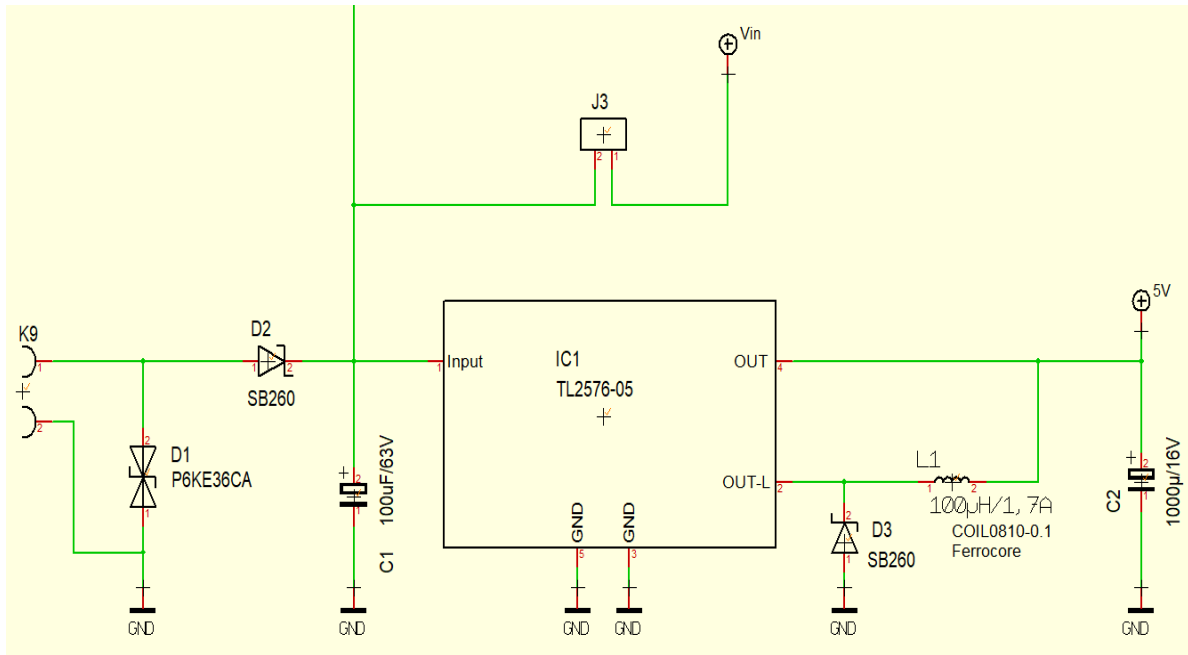
**Please note:
The supply voltage connected to K9 has to be 5V DC in this case.**

Perform the next steps only if you have the standard kit (includes the parts of the voltage regulator). Otherwise continue with step 14.

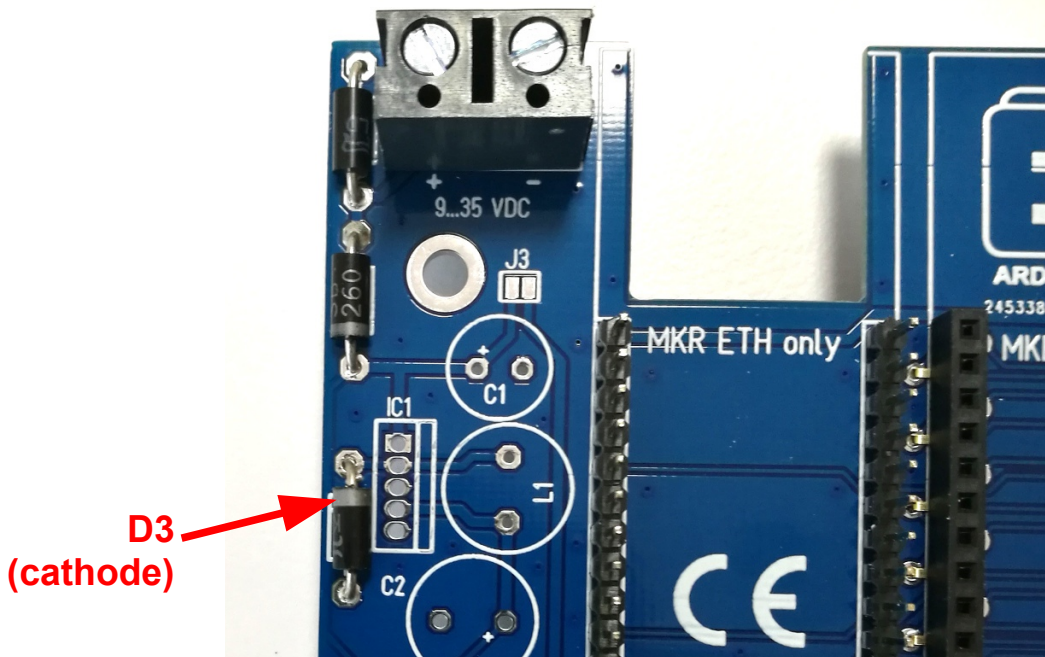
Additional parts of Standard Version:

 <p>1x inductor 100uH/2.0A (L1)</p>	 <p>cathode</p> <p>1x Schottky diode SB260 (D3)</p>	 <p>1x overvoltage limiting diode P6KE36CA (D1)</p>
 <p>1x voltage regulator TL2576-5 (IC1)</p>	 <p>1x electrolytic capacitor 100uF/63V (C1)</p>	 <p>1x electrolytic capacitor 1000uF/16V (C2)</p>
 <p>1x Reset Button S1</p>		

Power supply circuit:

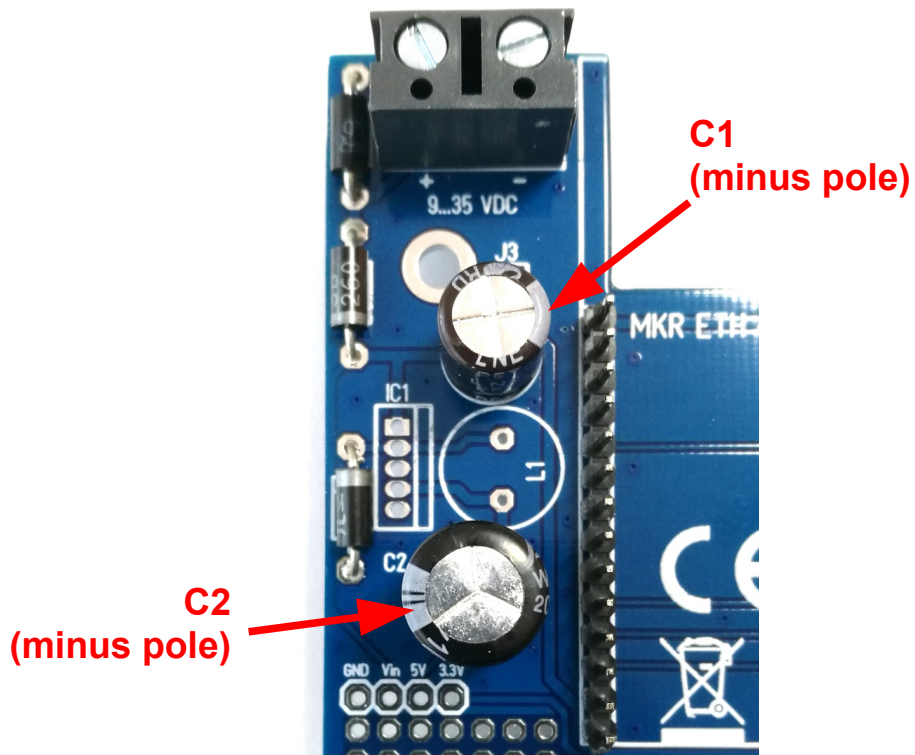


8.) *Place and solder Diode D3 and D1*



Please Note: D1 has no polarity!

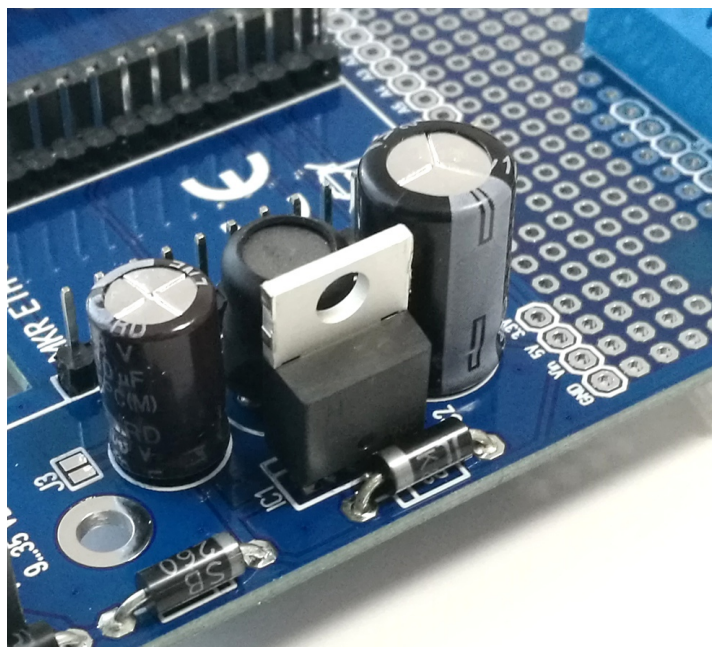
9.) *Place and solder the electrolytic capacitors C1 and C2*



10.) *Place and solder the inductor L1*

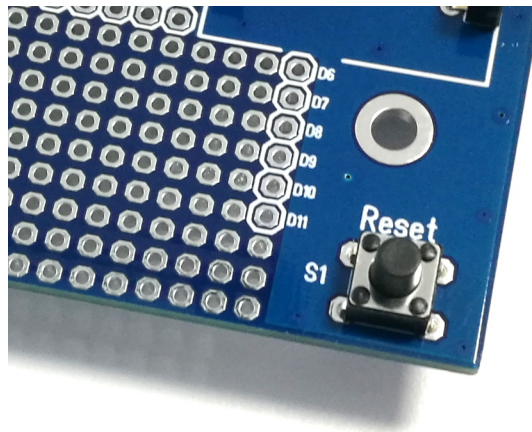


11.) *Place and solder the voltage regulator IC1*

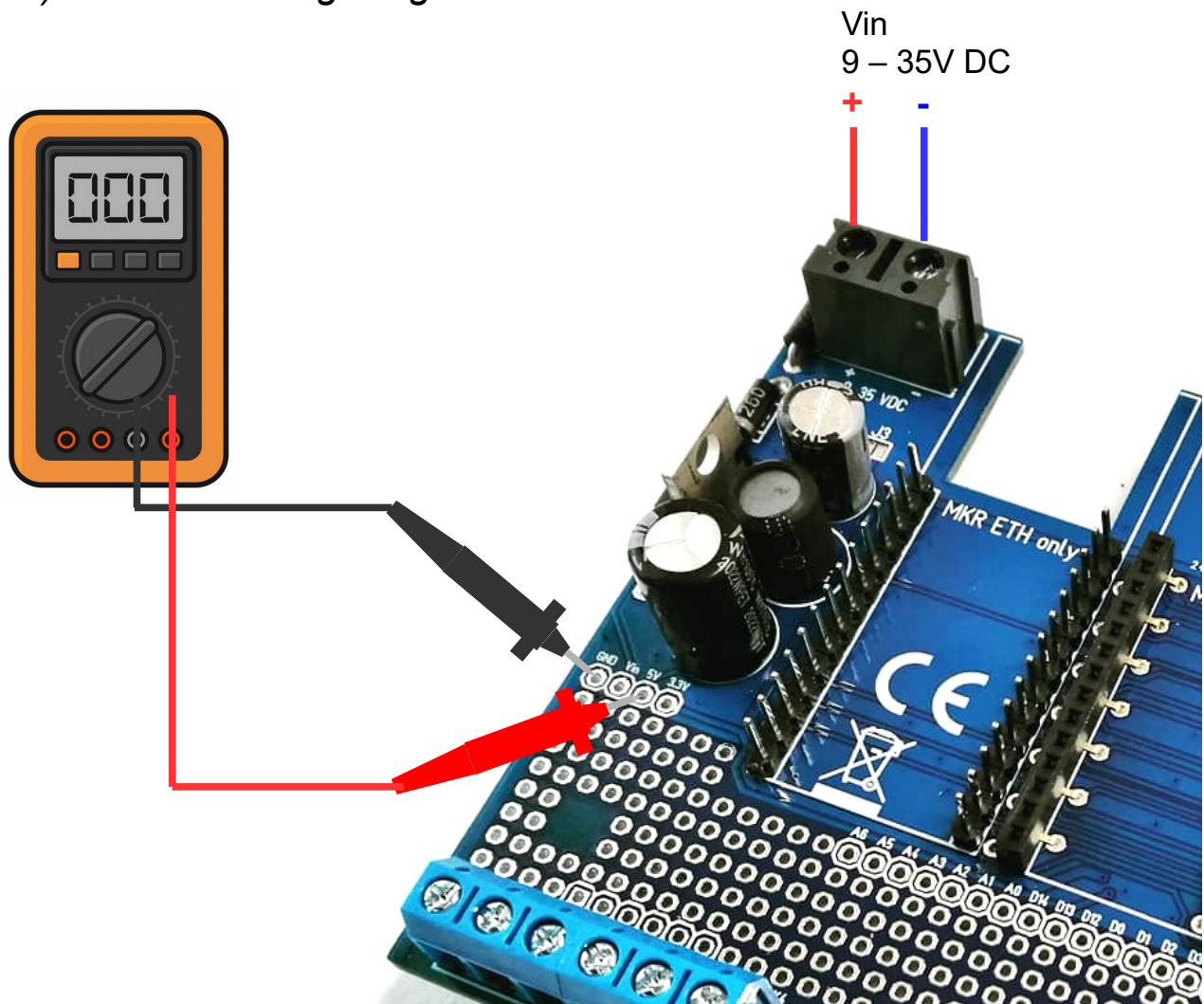


Note: Please take care that the jumper J3 is not be bridged!

12.) *Place and solder reset switch SW1*

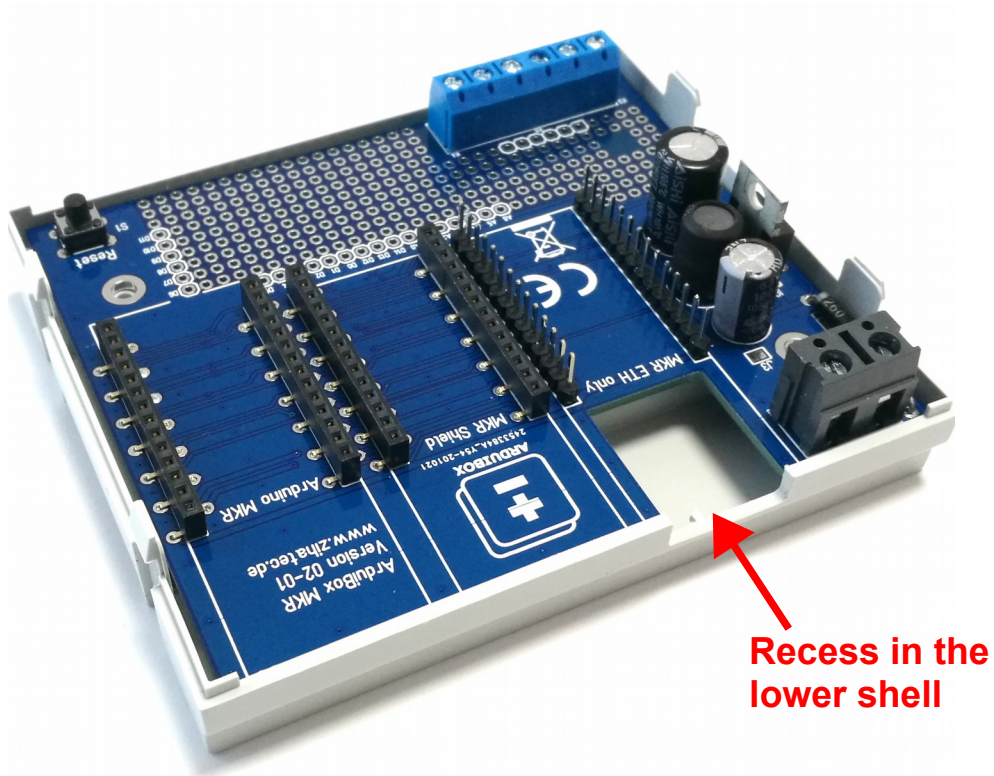


13.) *Test the voltage regulator*

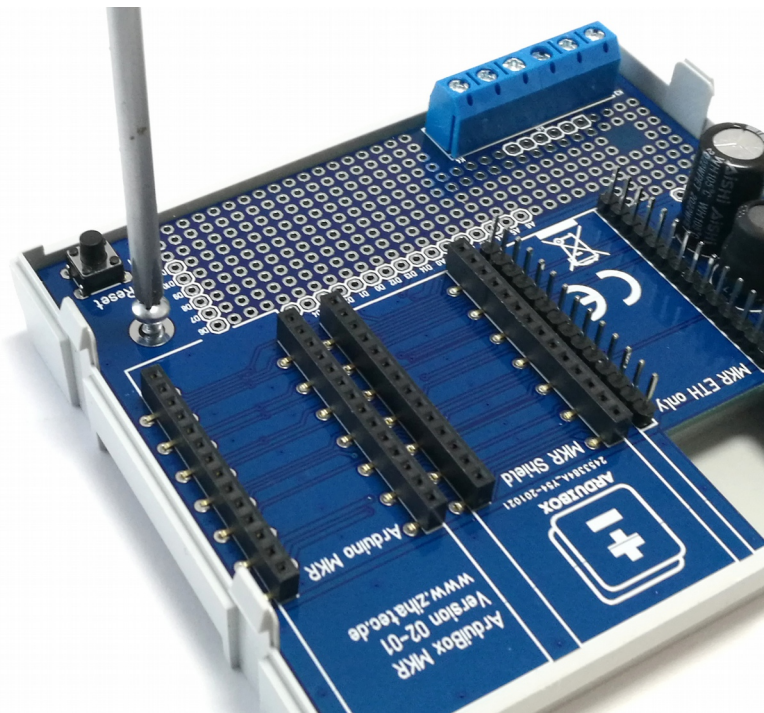


You have to measure a voltage between 4.9 – 5.1V!

14.) *Mount the pcb into the bottom shell*

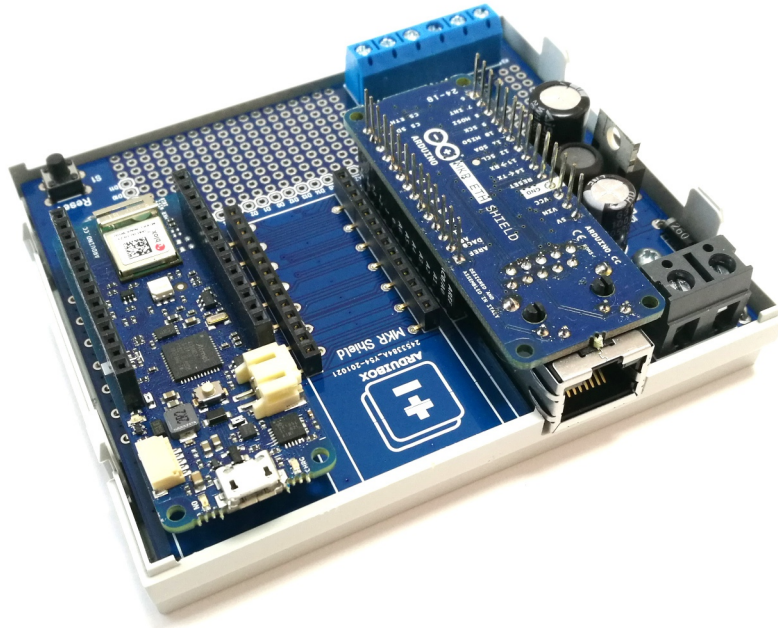


15.) *Fix the pcb in the lower shell with the screws*



16.) Mount the Arduino MKR & shields

It's time to mount the Arduino MKR board and optional shields:



17.) Mount the top shell



Finish!