



3. Using your Enigma-E

In the previous chapters we've described how to build the **Enigma-E** PCB and how to connect it to the outside world. It's now about time to turn it on for the very first time. Before you do that, please check all wires and solder junctions once more to ensure that everything is connected in the right place.

3.1 Testing the Enigma-E

Ensure that only jumper ⑤ is fitted to the header (J1) and connect the battery or power adapter to the unit. If you are using a power switch, turn it on now. The first thing you should see, is a rotating line on each of the LED displays followed by some initialisation messages.

If this doesn't happen, something is wrong. Check the state of the power switch. Also check the amount of current taken up by the unit. If it's using much more than 20mA, something really is wrong (e.g. a component fitted the wrong way around)! If you don't have access to a current meter, check the multifuse (FUSE1) by touching it with your hand. If it's hot, turn the **Enigma-E** off immediately! Now check the PCB for short circuits and also check if any of the components is fitted the wrong way around.

If you can't work it out, use a volt meter to check the power between the rightmost pin of the Voltage Regulator and its case (the bolt). This should be 5V. If the 5V is present, you should at least see something on the displays. You may also try to disconnect the Steckerbrett. Next try the **Enigma-E** again. If it works, you know for certain that the problem is in the Steckerbrett. You may also check the section on *Trouble Shooting* on our website at: <http://www.xat.nl/enigma-e/>.

Left of the PIC (IC14) is a green LED, which can be regarded as the heartbeat of the unit. If the software is running OK, it should flash once every second.

3.2 Storing frequently used settings

When experimenting with enciphered messages, it may be useful to store a number of commonly used Enigma settings. The **Enigma-E** can store up to 8 of these settings in its non-volatile memory. These settings, called **A** thru **F**, are retained when you turn the power of the unit off! This can be very useful if you want to return to the *Grundstellung* of a certain message frequently. The following settings will be stored in the on-board memory:

- Enigma Emulation: M3 or M4,
- Walzenlage (wheel order),
- Umkehrwalze (reflector),
- Ringstellung (ring settings),
- Grundstellung (initial settings).

If you've just finished building your **Enigma-E**, the 8 memory positions are, of course, empty and the display will show the message **FAIL** on startup. This is not a malfunction. You need to store a valid setting in memory position **A** before you can recall it. We'll explain how to do this in a few moments.

3.3 Configuring the Enigma-E

To alter the basic settings of your **Enigma-E**, you need to enter the **Configuration Mode**. Press the **MODE** button (to the left of the displays) briefly. The Enigma will now show the message 'SELECT AN ENIGMA' in the displays. The first red LED to the left of the displays will now be lit, to indicate that you may select an Enigma model. In the display you'll now see '***M4***', which means that it is currently set to emulate an M4 Enigma. You may now use any of the up/down keys to select another model.

