

## Application Note AN1003

### Firmware Update on bentrup TC-S1/S2/M2 DIGIT600/700 Version 7

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**NOTE:** To update Hardware 3.0 or newer controllers (April 2009) you have to use Firmware Update Utility Version 3.0 or higher

#### 1.) General Informations

On bentrup TC-S1 / S2 / M2 and DIGIT600/700 controllers version 7 (production later than III/2003) you can upgrade the controllers firmware easily. This might be required to implement new features or bugfixes.

Check with bentrup periodically ([www.bentrup.de](http://www.bentrup.de)) whether there is a firmware updates available.

To download the firmware you need

- A TC-S1/S2/M2 or DIGIT600/700 controller version 7.04 or higher
- a PC link, usually the bentrup passive converter cable (same as used on WinConfing etc.)
- the bentrup firmware download utility (free of charge)
- a new firmware file (for example "BFW\_M2\_70\_712.ZIP", the name stands for "bentrup firmware" for TC-M2 hardware **7.0**, firmware version **7.12**, **ZIP**=packed), free of charge

#### 2.) Firmware update procedure

Make sure that you have the new firmware ready (unzip the file to get a \*.HEX file) and the bentrup download utility installed. If you haven't installed yet simply run the setup.exe of to install; it is a self installation process. To upgrade proceed as follows:

1. turn off the controller.
2. connect the controller to your PC (e.g. using the bentrup passive converter cable)
3. To start the update process press and hold the following keys while turning on the controller: TC-S1 keys "value -" and "start/stop", on TC-S2 keys "arrow left" and "Y", TC-M2 keys "brightness -" and "start/stop", on DIGIT600 or DIGIT700 keys "1" and "5"
4. The controller comes up with "firmware update ..." or a similar message
5. start the bentrup firmware upgrade utility (fwupd.exe). Press "connect"; the utility checks for any bentrup controller ready for update on all ports
6. the current hardware and software release of the controller is shown in the utility for verification. As well the button "update firmware" becomes active
7. press "update firmware" and select the new firmware (unpacked \*.hex file)
8. before starting the upgrade, you will be asked to confirm the upgrade process
9. wait for the messages on the controller and the utility to confirm the update is complete. Do not run other CPU intense programs on your PC during the update procedure
10. turn off and back on to resume normal operation. The current software release is shown in the lower right hand side during the boot sequence

### 3.) What if download is interrupted for any reasons?

Not a problem at all. If this happens, the controller will come up with an error message "firmware checksum error" or similar on power up. Simply start the upgrade procedure again as described in chapter 2.) before.

### 4.) How often can I upgrade the controllers firmware

As often you like. It does not harm the controller neither reduces lifetime of any parts etc.

### 5.) Do I loose configuration or firing programmes by updating?

Usually not. New firmware is compatible to configuration information in most cases.

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Initial Issue	Oct 28 <sup>th</sup> 2003	Be
Added TCS1, DIG600	May 12 <sup>th</sup> 2004	Be
Added TCS2, Hardw. 3	April 12 <sup>th</sup> 2009	Be
Corrected TCS2 keys	Dec 2 <sup>nd</sup> 2010	Be