2. NOTES FOR THE OPERATION OF S7- GRAPH

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With the programming language S7-GRAPH, the function range of STEP 7 is extended to a graphic programming possibility for sequential control systems. With S7-GRAPH you can clearly and quickly program a sequential control system. The process is divided into single steps and the execution is plotted.

In the single steps, the required actions are specified. The continued switching conditions to the respective next step (transitions) can be provided in the programming language LAD or FBD. The programming language S7-GRAPH corresponds to the specified execution language SFC "Sequential Function Chart". in the Norm DIN EN 61131-3 (IEC 61131-3).

With the operation of S7-GRAPH, the following should be considered:

- The software package STEP 7 professional version (not STEP 7 Mini!) is required
- The provided programs are executable on CPUs of the SIMATIC S7-300 and S7-400.
- Due to the increased storage requirement of the program's applications, only the CPUs starting from CPU 315 are used.
- For training purposes, simple sequencers can start from CPU 314/314-IFM, as presented in this example document.

3. INSTALLATION OF THE S7-GRAPH SOFTWARE

S7-graph is an option package to STEP 7, thus it assumes that the professional version of STEP 7 is already installed on your computer. (see module A2-Installation of STEP 7 V5.x/handling of authorizing). S7-graph is delivered on CD ROM with an enclosed disk, which contains an authorization, that must be transferred to the PC in order to make the use of S7-GRAPH possible. This authorization disk can also be used on another PC or can be copied in order to authorize the software. For the topic of installation and transmission of authorization, please refer to module A2 (Installation of STEP 7 V5.x/handling of authorization).

To install S7-GRAPH, please proceed to the following measures.

- 1. Place the S7-GRAPH CD in the CD- ROM drive.
- 2. The setup program should start automatically. If not, it can be started by double clicking on the **setup.exe** executable file on the CD. The setup program will guide you through the whole installation process of the S7-GRAPH software.
- 3. In order to use the professional version of S7-GRAPH, the software must be authorized on your computer. The files from the authorization disk must be transferred onto the PC. This process will execute at the end of the software installation. A dialog window will appear and ask you if you would like to authorize the software. If **Yes** is selected, the authorization disk must be inserted in order to transfer the proper files to the PC.

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4. SEQUENTIAL CONTROL SYSTEMS

A sequential control system is a controller with inevitable step by step execution, in which the further phases from a step depend on further conditions, which take place on the next planned step. The step sequence can be programmed in a special way, e.g. with jumps, loops, branches. With S7-GRAPH, sequential control systems can be programmed, so that the step by step sequence can be very simply and quickly graphically displayed.

There are two types of sequential control systems:

4.1 Time-dependent sequential control system

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By the time-dependent sequential control system, the further operating conditions are only dependent on time. For the creation of the further conditions, e.g. timers, time counters, drum controllers or CAM mats with a continuous number of revolutions can be used.



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