

TELEPERM M

Automation Systems AS 235 / AS 235 K / AS 235 H / AS 230 (E version) / AS 230 K (E version)

Handling Instructions for Conversion of above Systems to
Memory Module 6DS1 844-8AA and Software \geq G1.05

Handling Instructions

Order No. C79000-B8076-C500-02

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1 Conversion Requirements

Memory modules The following memory modules are used in the previously delivered basic units of the listed systems with software versions A, E, F or G:

- 6DS1 837-8AA / -8BA / -8CA / -8DA / -8EA / -8FA
- 6DS1 844-8CA / -8DA

These modules can be replaced by the memory module **6DS1 844-8FA with integrated 1-bit error correction**.

The module **6DS1 844-8FA** can be operated with the same system software as the modules to be replaced.

To permit utilization of the complete 1-bit error correction function, i.e. not only the soft error correction when reading from the memory but also the removal of a soft error by overwriting the memory location, an AS system version \geq G01.05 is required in addition to the EDC memory module.

Memory space The following sequence must be observed in order to provide the memory space required for the version G software:

1. Conversion of memory module to **6DS1 844-8FA** (module replacement)
2. Conversion of system software to \geq **G01.05**

In conjunction with **software version \geq G01.05**, the memory module **6DS1844-8FA** provides 1024 Kbyte system RAM and 4000 Kbyte user RAM.

The following upgrade packages are available:

(1) Upgrade package for automation systems with system software version G:

Name	System	SW version	Order No.
EDC upgrade package 1 comprising: - 1 x memory module 6DS1844-8FA - 2 x AS system software \geq G01.05 - Conversion Instructions C79000-Q8076-C500	AS 235 / AS 235 K	G	C79165-A3012-D230
EDC upgrade package 2 comprising: - 2 x memory module 6DS1844-8FA - 2 x AS system software \geq G01.05 - Conversion Instructions C79000-Q8076-C500	AS 235 H	G	C79165-A3012-D231

(2) Upgrade package for automation systems with system software version A, E or F:

Name	System	SW version	Order No.
EDC upgrade package 3 comprising: - 1 x memory module 6DS1844-8FA - Conversion Instructions C79000-Q8076-C500	AS 230 / AS 230 K AS 235 / AS 235 K	A, E or F	C79165-A3012-D232

EDC upgrade package 4 comprising: - 2 x memory module 6DS1844-8FA - Conversion Instructions C79000-Q8076-C500	AS 235 H	F	C79165-A3012-D233
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Ordering of upgrades Those who are already using an AS system software version G will receive the system software version \geq G01.05 when ordering the corresponding EDC upgrade package 1 (AS 235 / AS 235 K) or 2 (AS 235 H) as standard together with the EDC memory module. Users of a different AS system software version, i.e. those ordering the EDC upgrade packages 3 or 4, can order the system software version \geq G01.05 as an optional extra.

Software versions The EDC memory module can basically be used together with each AS system software versions A, E, F and G. However, when using system software version \geq G01.05, instead of version A, E, F or $<$ G01.05, the risk of a multibit error is less because of the cyclic writing of the memory locations. The software-specific differences in the debugging are listed in the following table.

System software versions	Debugging function
$<$ G01.05 Version A (all versions) Version E (all versions) Version F (all versions)	A 1-bit error is corrected when reading, but only removed from the associated memory location if a write operation takes place at this location during execution of the program. A further 1-bit error in the same byte results in a multibit error. This is signalled, but cannot be corrected.
\geq G01.05	A 1-bit error is corrected when reading and completely removed from the memory by a cyclic system program. A corresponding message is output if a multibit error is present.

Software $<$ G01.05 Those who do not use the software version \geq G01.05 may encounter further limitations in functions depending on the scope of functions of the system software version used. For example, the clock module of the memory module cannot be scanned with software versions A, E and F, and the usable memory volume is limited to 3 Mbyte. Basically any version of the system software A, E, F or $<$ G01.05 can be upgraded to the version \geq G01.05.

Direct upgrading is only possible from versions \geq F03.02 or \geq G01.02.

For all other starting versions it must first be clarified whether upgrading can be carried out in one step or whether intermediate steps are necessary, and also which other conditions have to be observed (especially when upgrading from versions A, E and $<$ F03.02 to version G).

This necessitates the examination of the product information of all subsequent versions as well as the TELEPERM M notifications relevant in this context. You can obtain support from:

AUT 7 PL 1S, Karlsruhe
 Mr. Neu
 Tel.: +49 721 595-6919
 Fax.: +49 721 595-2996

Clarification requirements as well as the requirements for installation of the system software are additional costs which are not included in the price of the system software or the EDC upgrade packages and will therefore be charged for.

2 Conversion of AS 230(E) / AS 230 K(E) / AS 235 / AS235 K Systems

Initial state

Memory module 6DS1 837-8xA or 6DS1 844-8CA/-8DA
in the basic unit

System software version \geq F03.02 or G

Handling

The hardware is converted using the following steps (also applicable are the commissioning steps described in the Instruction Manual) :

- Save application software on diskettes or using PROGRAF
- Switch off basic unit and replace memory 6DS1 837-8xA or 6DS1 844-8CA/-8DA by the new memory module 6DS1 844-8FA
(backup battery not inserted!)
- Switch on basic unit.
- Boot with supplied system software version \geq G01.05
- Insert backup battery.
- Load application software from diskette or PROGRAF

3 Conversion of AS 235 H System

Requirement The AS 235 H must be brought to the software version \geq F03.02 prior to upgrading!
The following rules must be observed when upgrading the AS 235 H (also applicable are the commissioning steps described in the Instruction Manual).
The upgrading is described below for the case that the hardware operating state at the commencement of the upgrading process is M/R
(equivalent applicable when starting from the hardware operating state R/M).

3.1 Conversion of Hardware

Initial state Memory module 6DS1 837-8xA or 6DS1 844-8CA / -8DA
for CPU I and CPU II

System software version F (with release \geq F03.02) for CPU I and CPU II

Hardware operating state M/R

Handling The hardware is converted using the following steps:

- Check function of master changeover (using SYST.HBED).
- Switch off CPU II (see note below).
The AS enters the hardware operating state M/F.
Replace associated memory module 6DS1 837-8xA or 6DS1 844-8CA / -8DA by memory module 6DS1 844-8FA.
- Switch on CPU II and boot with the system software from CPU I.
- When starting from the following:
6DS1 837-8xA with memory configuration of 1 or 2 MB or
6DS1 844-8CA/DA **and** F-SW
an additional input operation is required:
Enter "RA=1;" in the first screen form of SYST.HBED ("OPERATION OF
HARDWARE OPERATING STATE").
- If AE was = 1: wait until hardware operating state M/R.
If AE was = 0: synchronize using keyboard ("EE=1;") or with the key (BU) on the front panel of the VKB and wait until hardware operating state is M/R.
- Switch off CPU I (see note below).
The AS enters the hardware operating state F/M.
Replace associated memory module 6DS1 837-8xA or 6DS1 844-8CA / -8DA by memory module 6DS1 844-8FA.
- Switch on CPU I and boot with the system software from CPU II.
Synchronize (if "AE=0") using keyboard ("EE=1;") or with the key (BU) on the front panel of the VKB (wait until hardware operating state is R/M).

+ Switching the CPUs off and on

Problems which may occasionally occur when switching on can be avoided by switching the CPU off and on by disconnecting and reconnecting the AMP plug contact d22 (+FR) on the switching controller plug (SR).

When switching on the fuse F1 or F2 it may occur with unfavorable power supply conditions that the central unit of the AS 235 H which is currently in operation may fail.

3.2 Upgrading of System Software to Version \geq G01.05

Initial state

Memory module 6DS1 844-8FA for CPU I and CPU II

System software version with release \geq F03.02 for CPU I and CPU II

Hardware operating state R/M (or M/R)

Handling

The system software is upgraded to version \geq G01.05 in the following steps:

- Boot CPU I with software version \geq G01.05 using switch on front panel of memory module. To do this, set the switch to position "BOOT" and hold in position. In this state, press the ZRS button on the associated CPU and release again; then release the switch on the memory module (wait until hardware operating state is P/M)
- In the first screen form of SYST.HBED ("OPERATION OF HARDWARE OPERATING STATE "), first enter "RA=1;" and then "SA=1;". [The memory extension or activation to 4 MB only starts when commissioning the software version G.]
- Synchronize using keyboard ("EE=1;") or with the key (BU) on the front panel of the VKB. The AS 235 H temporarily assumes the hardware operating state B/M and then changes to M/P, in which the CPU I carries out a startup (abbreviated startup).

The following two steps are only required if upgrading is carried out from F to G software.

- Boot CPU II with software version G using switch on front panel of memory module. To do this, set the switch to position "BOOT" and hold in position. In this state, press the ZRS button on the associated CPU and release again; then release the switch on the memory module (wait until hardware operating state is P/M)
- Synchronize using keyboard ("EE=1;") or with the key (BU) on the front panel of the VKB (\Rightarrow hardware operating state M/R)

Upgrading to the software version \geq G01.05 with memory module 6DS1 844-8FA has now been completed.

+ **Initiating booting**

Only initiate booting using the controls on the front panel of the memory module or the CPU, *not* by switching the fuses off and on.

When switching on the fuse F1 or F2 it may occur with unfavorable power supply conditions that the central unit of the AS 235 H which is currently in operation may fail.