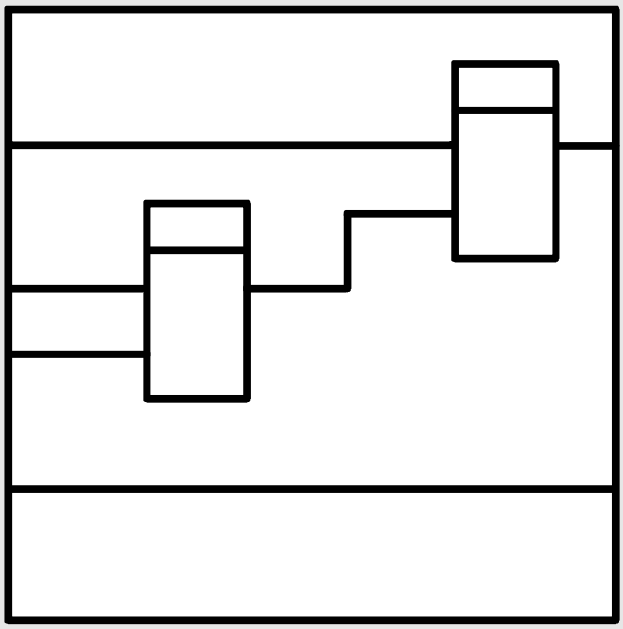
SIMADYN D
Digital Control System

User Manual

Memory Board MS41



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User Manual, Memory Board MS41

Edition		Status
1	Memory Board MS4/MS41	03.91
2	Memory Board MS4/MS41	05.95
3	Memory Board MS41	04.97

We have checked the contents of this Manual to ensure that they coincide with the described hardware and software. However, deviations cannot be completely ruled-out, so we cannot guarantee complete conformance. However, the information in this document is regularly checked and the necessary corrections included in subsequent editions. We are thankful for any recommendations or suggestions.

Contents

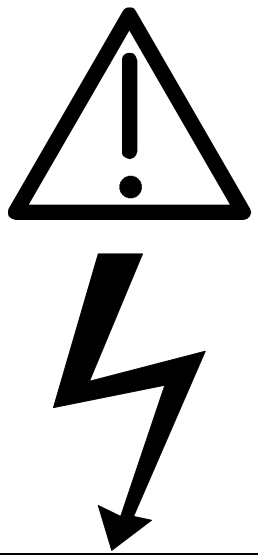
N O T E !

The information in this Manual does not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met in connection with installation, operation or maintenance.

Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, please contact your local Siemens office.

Further, the contents of this Manual shall not become a part of or modify any prior or existing agreement, committment or relationship. The sales contract contains the entire obligation of Siemens. The warranty contained in the contract between the parties is the sole warranty of Siemens. Any statements contained herein do not create new warranties nor modify the existing warranty.

Warning information



W A R N I N G !

Electrical equipment has components which are at dangerous voltage levels.

If these instructions are not strictly adhered to, this can result in severe bodily injury and material damage.

Only appropriately qualified personnel may work on this equipment or in its vicinity.

This personnel must be completely knowledgeable about all the warnings and service measures according to this User Manual.

The successful and safe operation of this equipment is dependent on proper handling, installation, operation and maintenance.

Definitions

* **QUALIFIED PERSONNEL**

For the purpose of this User Manual and product labels, a „Qualified person“ is someone who is familiar with the installation, mounting, start-up and operation of the equipment and the hazards involved. He or she must have the following qualifications:

1. Trained and authorized to energize, de-energize, clear, ground and tag circuits and equipment in accordance with established safety procedures.
2. Trained in the proper care and use of protective equipment in accordance with established safety procedures.
3. Trained in rendering first aid.

* **DANGER**

For the purpose of this User Manual and product labels, „Danger“ indicates death, severe personal injury and/or substantial property damage will result if proper precautions are not taken.

* **WARNING**

For the purpose of this User Manual and product labels, „Warning“ indicates death, severe personal injury or property damage can result if proper precautions are not taken.

* **CAUTION**

For the purpose of this User Manual and product labels, „Caution“ indicates that minor personal injury or material damage can result if proper precautions are not taken.

* **NOTE**

For the purpose of this User Manual, „Note“ indicates information about the product or the respective part of the User Manual which is essential to highlight.

C A U T I O N !

This board contains components which can be destroyed by electrostatic discharge. Prior to touching any electronics board, your body must be electrically discharged. This can be simply done by touching a conductive, grounded object immediately beforehand (e.g. bare metal cabinet components, socket protective conductor contact).

W A R N I N G !

Hazardous voltages are present in this electrical equipment during operation.

Non-observance of the safety instructions can result in severe personal injury or property damage.

It is especially important that the warning information in all of the relevant Operating Instructions are strictly observed.

1. Ordering information

6DD 1610 - 0AG1	MS41 memory board

A SIMADYN D Parallel Programmer is required to program the boards.

2. Function description

The MS41 memory board is a small PC board with one 28-pin and four 32-pin slots.

The EPROMs contain the machine code for the operating system and the configured user program. Changing operating parameters, for example, controller gains, are stored in the EEPROM.

The MS41 memory board is inserted in the processor board through a cut-out in the front panel.

3. Board design

- Small PC circuit board with a 48-pin plug connector

- CMOS EPROMs can be used for operation, with self-ventilation

- Memory capacity in kbyte

EPROM	512
EEPROM	2

- Starting address, hex

EPROM	80000
EEPROM	7C000

- Access time when writing	MS41
EPROM	70 ns
EEPROM	300 ns

- Data format

EPROM	16 bit
EEPROM	8 bit

- Write cycle

EEPROM	max. 2 ms

4. Application information

The modules may not be programmed when they have been warmed-up (e.g. after they have been removed from the erase device).

The MS41 board uses components which can be destroyed by electrostatic discharge (ESD). The following protective measures must be observed when handling the boards:

- Only touch the board, if a grounded object is simultaneously touched (e.g. cabinet ground, grounding panel)

- Only transport the board in the original conductive packing

- Only set the board down on conductive surfaces

- It must not come into contact with highly insulating materials (e.g. plastic, articles of clothing manufactured from man-made fibers).

The MS41 board could be destroyed when programming in an office environment (carpets). It is necessary to set-up a special programming station with grounded desktop and grounding band for the operating personnel.

Labels are provided with every memory board. These labels must be attached over the EPROMs after the board has been programmed to protect it from light.

5. Connector assignment

The three-row, 48-pin plug connector has the following assignment:

Pin No.	Row a	Row b	Row c
1	P5/6	GND	A12
2	A2	A1	A0
3	A5	A4	A3
4	A8	A7	A6
5	A11	A10	A9
6	*OE1	A14	A13
7	D9	D8	*WR
8	D12	D11	D10
9	D15	D14	D13
10	D2	D1	D0
11	D5	D4	D3
12	A15	D7	D6
13	A16	*CS3	*CS1
14	K3	*CS4	*CS2
15	*OE2	P5*	
16	*CS5	GND	Vpp/*OE

P5/6	=	EPROM 5V power supply voltage 6V or 6.25V when programming
P5*	=	EEPROM power supply voltage
GND	=	Ground
Axx	=	Address lines 0 to 16
Dxx	=	Data lines 0 to 15
*CSx	=	Chip select 1 to 4 for the EPROM Chip select 5 for the EEPROM
*OEx	=	Output enable 1 and 2

6. Technical data

Insulation group	A acc. to VDE 0110 Para.13 Group 2 at 5V DC
Ambient temperature	0 to 55 degrees C
Storage temperature	-40 to +70 degrees C
Humidity rating	F acc. to DIN 40040
Dimensions	101.4 * 53.3 mm
Weight in kg	0.08
Current drain P5	
Typ. in mA	150 Typ. (at 16MHz)
	250 max.

7. STRUC L mask in the master program

: MS41 "Memory board 512k"

8. Attachments

8.1. Dimension drawing and table of the connectors

Dimension drawing and table of the connectors 3SE 465 610 9006.01 MB

9. ESD instructions

Components which can be destroyed by electrostatic discharge (ESD)

Generally, electronic boards should only be touched when absolutely necessary.

The human body must be electrically discharged before touching an electronics board. This can be simply done by touching a conductive, grounded object directly beforehand (e.g. bare metal cubicle components, socket outlet protective conductor contact).

Boards must not come into contact with highly-insulating materials - e.g. plastic foils, insulated desktops, articles of clothing manufactured from man-made fibers.

Boards must only be placed on conductive surfaces.

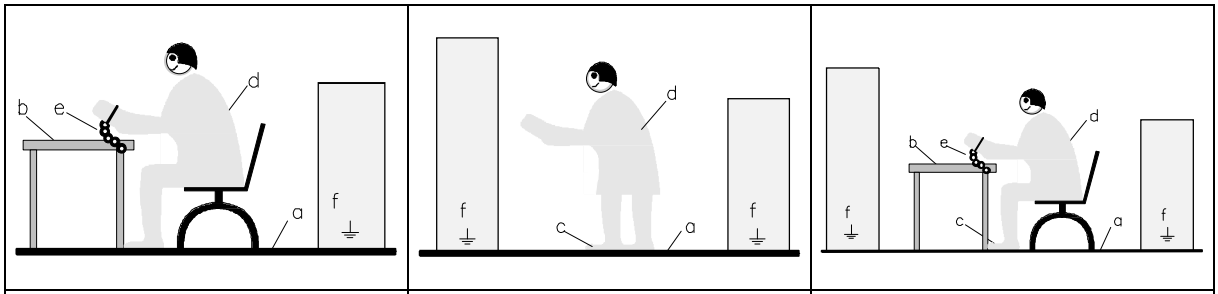
When soldering, the soldering iron tip must be grounded.

Boards and components should only be stored and transported in conductive packaging (e.g. metalized plastic boxes, metal containers).

If the packing material is not conductive, the boards must be wrapped with a conductive packing material, e.g. conductive foam rubber or household aluminum foil.

The necessary ESD protective measures are clearly shown in the following diagram.

a = Conductive floor surface
b = ESD table
c = ESD shoes
d = ESD overall
e = ESD chain
f = Cabinet ground connection



Seated	Standing	Standing / sitting

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