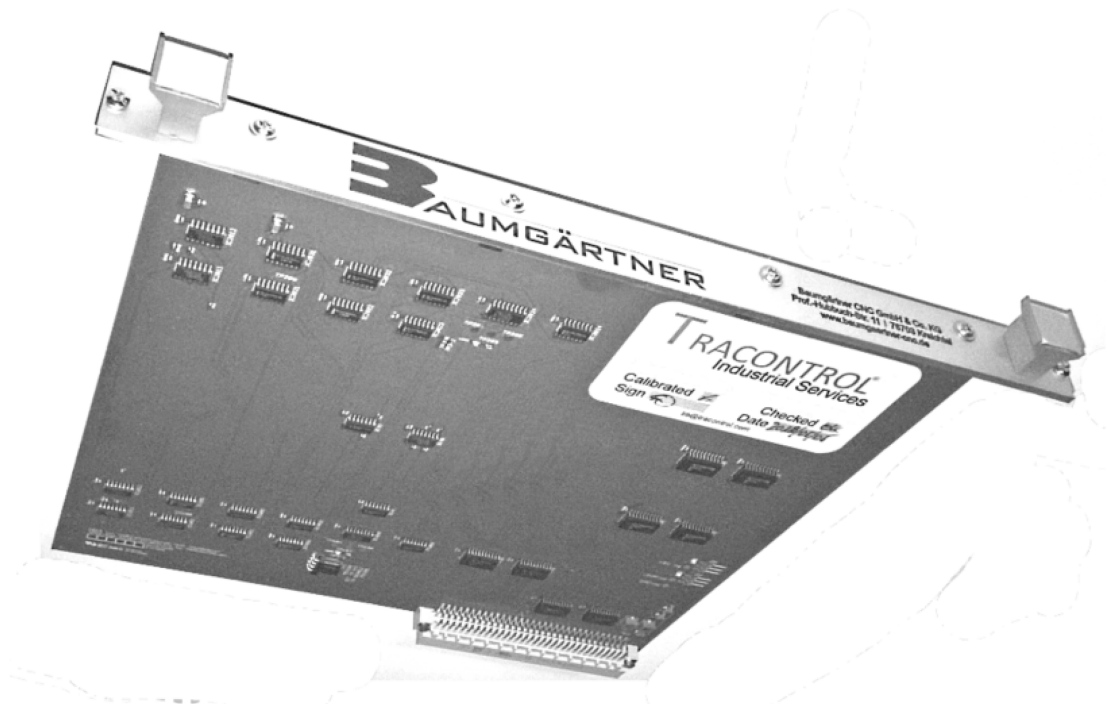


TRACONTROL®

MEMOMOX2

Product Documentation



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TRACONTROL®

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Table of Contents

Table of Figures	III
1 Preface.....	1
2 Safety instructions.....	2
2.1 Intended usage	2
2.2 Qualified personnel	2
2.3 Remaining hazards.....	3
3 Installation and Configuration	4
3.1 Before Installation.....	5
3.2 Mechanical Installation	6
3.3 Electrical Installation	6
3.4 Setup and checks.....	6
3.5 Power-On.....	8
3.6 After Installation	9
3.7 Power-On for Experts	10
4 Type label	11

Table of Figures

Fig 1.1: Overview	1
Fig 3.1: Voltage Supply Check.....	7
Fig 3.2: Power-Up Check	8
Fig 3.3: Card-Selection LED (one of two)	10

1 Preface

Thank you for using our products!

The "MEMOMOX2" is a Philips®/MAHO® compatible memory extension card that is capable of replacing up to two Philips/MAHO "MEMOMOD 1 MB" [4022-226-2340] cards. Thus, the "MEMOMOX2" incorporates 2 MB of memory in two sections for maximum compatibility.

For the optimum usage of this product please ensure that all people who handle this product "MEMOMOX2" have read and understood the product documentation. This documentation is part of the product and must be attached to the documentation of the CNC Controller.

The "MEMOMOX2" is manufactured in a state-of-the-art process with additional novelties with regards to mechanical, electrical stability and maximum EMI/EMC compliance. The "MEMOMOX2" is assembled in SMD technology.

The card is ready for use and no additional setup needs to be done on the card or in your CNC Controller.

The "MEMOMOX2" is compatible with the original card with respect to mechanical, electrical parameters and CNC-Controller (286/386 CPU) dependencies.

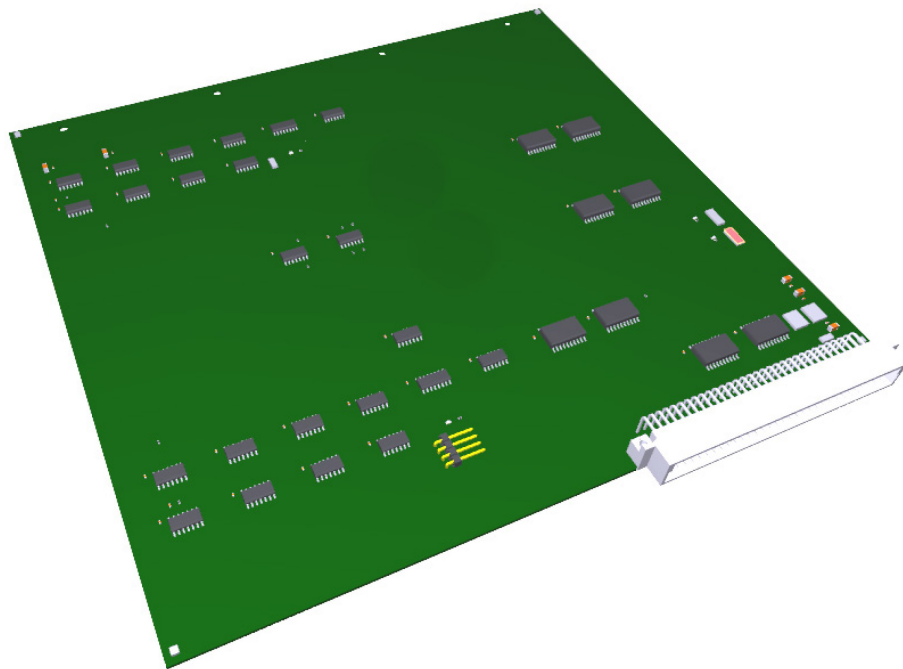


Fig 1.1: Overview

2 Safety instructions

To ensure the safe operation of this unit the instructions in this documentation must be strictly observed. In addition, all applicable legal and safety regulations for the respective application must be observed. The same applies to the use of accessories.

2.1 Intended usage

The "MEMOMOX2" is meant as a single storage extension of a Philips/MAHO CNC Controller appliance equipped with a 286 or 386 processor card.

Any other use is regarded not in accordance with the intended usage.

Machinery and installations must be designed in a way that faulty conditions cannot lead to harmful situations for operating personnel (e.g. by improper installation etc.).

The product "MEMOMOX2" is intended to be used in a commercial and professional (B2B) environment only.

2.2 Qualified personnel

The "MEMOMOX2" must only be operated in accordance with the technical specifications by qualified personnel. Personnel regarded qualified is familiar with the installation, assembly, putting into operation and operation of the units and possesses adequate professional qualification for the task.

All safety regulations like, "BetrSichV", "Maschinenrichtlinie", must be known and followed when changing or modifying commercial equipment.

2.3 Remaining hazards

The "MEMOMOX2" is state-of-the-art technology and safe to operate. A risk of hazard can occur when deployed and operated improperly by untrained personnel.

In this documentation remaining hazards are marked by the following warning symbol:



Special handling instructions or hazards (i.e. ESD handling or electrical shock) are marked by the following warning symbols:



These symbols indicate that non-observance of the safety guidelines may cause hazards to persons to the point of severe injury or death and/or the possibility of property damage – especially ESD.

3 Installation and Configuration

The following abstracts explain how to install the "MEMOMOX2" and integrate it in the CNC Controller Rack.



If there is an or two original MEMOMOD 4022-226-2340 card in the system please remove this card prior to installation of the "MEMOMOX2".



Before disassembling or modifying your CNC rack please ensure that the CNC controller is switched OFF and all precautions and safety rules are in place to avoid electrical shock or damages.



Handling of the card might be critical due to ESD – please handle only in ESD safe areas.

3.1 Before Installation



Before you start installing the product please check:

- That you have made a **SAFETY COPY of your machine parameters**.
- That you have made copies of ALL of the following sections of your CNC Controller:
 - **Program Memory**
 - **Sub-Program Memory**
 - **Tools Memory**
 - **Zero Adjustments Memory**
- That you are **TRAINED and FAMILAR** with installing this product.
- That your **CNC Controller is switched OFF**.
- That you have **UN-INSTALLED any (one or two) existing MEMOMOD cards**.

3.2 Mechanical Installation

Mechanically, the "MEMOMOX2" is simply inserted carefully into a single available space in the CNC Controller Rack. Use the two screws for fixing the card in the rack. Any slot can be chosen for the installation. Please check that all pins of the 64-pin header (DIN 41612 A-C) are straight before inserting the card.

3.3 Electrical Installation

After insertion of "MEMOMOX2" into the rack all electrical installations are done.

3.4 Setup and checks

The "MEMOMOX2" is connected to the +5V supply line and the battery backed +5Vpp line of the CNC Controller rack via the backplane connector.

There are two (green) LEDs to visually check the +5V supply and the +5Vpp supply.



The +5Vpp LED is NOT permanently connected to limit the current drawn from the +5Vpp line. It can be enabled by a jumper for expert testing.

The +5V voltage supply LED is permanently connected and will be lit when the power supply is on.

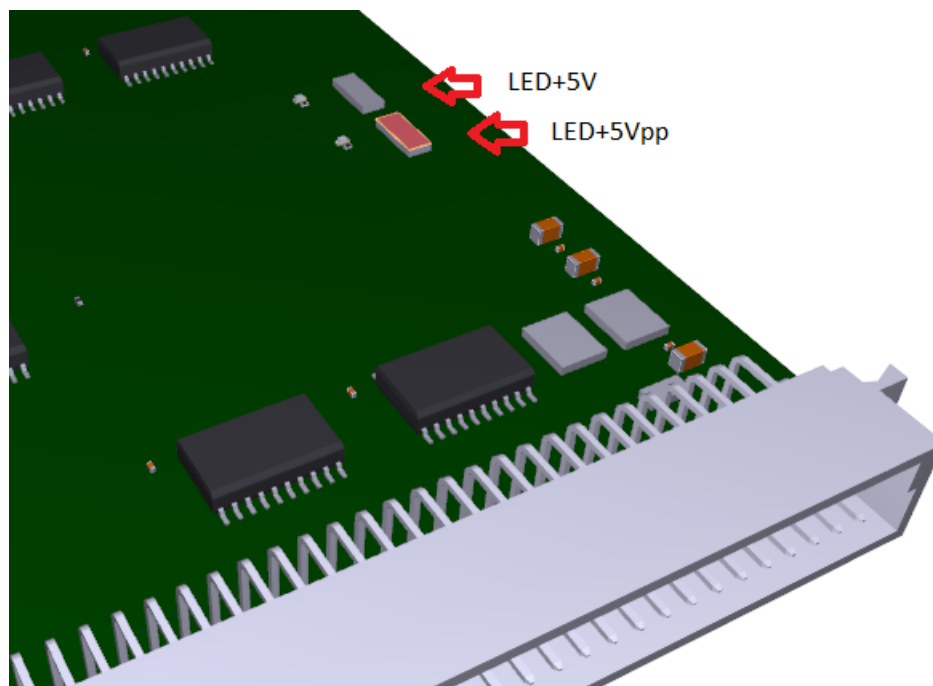


Fig 3.1: Voltage Supply Check



It's important that the battery backup line is fully functioning to preserve all data in the "MEMOMOX2" card when the mains are switched off. The CNC Controller will automatically check the data consistency stored in the "MEMOMOX2". If any inconsistencies are detected it will format the storage automatically.

At this point there are no additional configuration steps needed and the CNC Controller can be switched on again after following all necessary safety rules.

3.5 Power-On

When the CNC Controller starts its boot program it performs a collection of tests and hardware checks.

If the "MEMOMOX2" was installed correctly the power-up check must recognize the card indicating a "PASSED" for both "MEM.MOD.1" and "MEM.MOD.2.". The "MEMOMOX2" [in default setting] is acting like **TWO** "MEM.MOD.x" cards.



If the power-up check finds only **ONE** or **NO** "MEM.MOD.x" switch off the CNC Controller immediately and perform a re-check of the installation.

In rare cases, there might be a mechanical or electrical problem with the chosen slot/receptacle in the back-plane of the CNC Controller. Please try another slot in this case.

If this does not help please contact your sales partner for further diagnosis.

```

                                POWER-UP CHECK    703
                                HARDWARE CHECK
CPU 80386          16MC          PASSED
MATH. CO-PROCESSOR          PASSED
PROM                6702.703/03 PASSED
LANGUAGE GE/EN          6702.703/03 PASSED
IPLC    GE/EN    GR14#2.2    PASSED
RAM                512K          PASSED
MEM.MOD.1          1024K        PASSED
MEM.MOD.2          1024K        PASSED
DRIVE                                NO RESPONSE
IN/OUT  1                                PASSED
CONTROL/TELET                                PASSED
GRAPHICS          2PL          703    PASSED
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Fig 3.2: Power-Up Check

3.6 After Installation



Technically the "MEMOMOX2" is now installed and ready for use.

After restoring the machine parameters from the parameter backup, you need to make the additional memory being known to the CNC Controller Configuration to enable the CNC Controller Software to make use of the additional memory.

You do this by adopting the machine parameter "N2" to the installed total memory:

$$\text{CPU-Memory [KB]} + 2048 \text{ [KB]} \text{ by "MEMOMOX2"} = \text{Total [KB]}$$

Example:

If your CNC Controller is equipped with a CPU-386 (which is equipped usually with 512 KB of memory), adding a "MEMOMOX2" will add 2048 KB. Thus, the machine parameter "N2" needs to be set to $512 \text{ KB} + 2048 \text{ KB} = 2560 \text{ KB}$.

$$\text{N2 C2560 [NC RAM (KBYTE) \{4..2560\}]}$$

Remark:

According IEC 60027-2, 1 KB denotes 1024 Bytes; 1 MB denotes 1024 KB.

3.7 Power-On for Experts

On the "MEMOMOX2" there are two additional LEDs (red), each located close to the control logic. Like in the original MEMOMOD card, this LED(s) are lit when the CNC Controller is switched ON and will be unlit when the CNC Controller detected the card successfully.

If the CNC Controller power-up check succeeds both card-selection LED (red) must be unlit until the next power-on cycle of the CNC Controller.

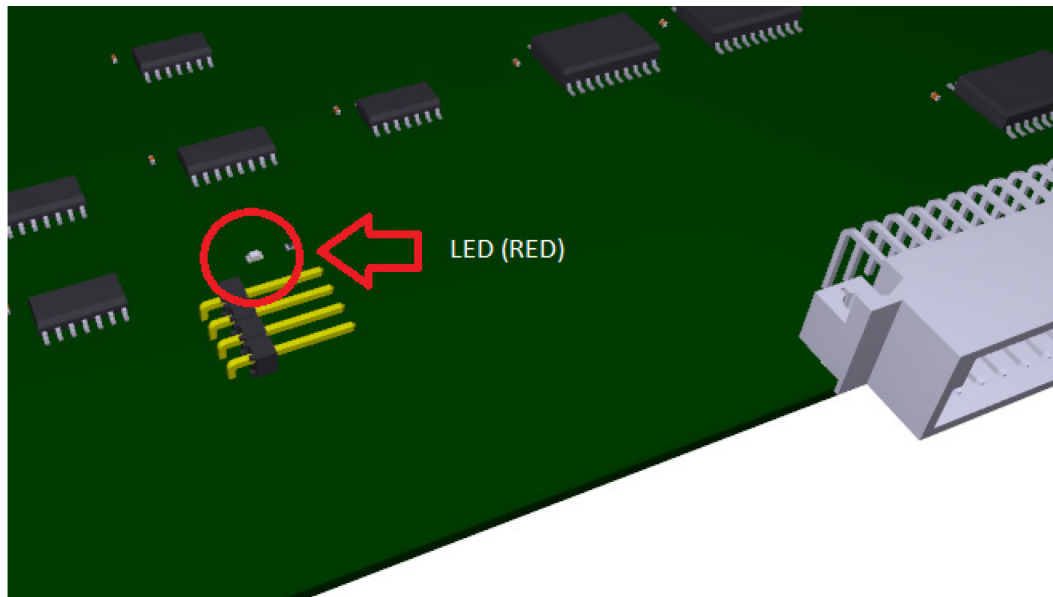


Fig 3.3: Card-Selection LED (one of two)

The connector (3 or 4 pins) shown in this picture is equipped with a jumper which is only for the purpose of diagnosis and should not be removed.

4 Type label

This documentation being part of the product "MEMOMOX2", the following type label for the product identifies the product according to the conformity declaration (93/68/EWG) even if it's not printed onto the product.

Product name

MEMOMOX2

2 MB Mem. Ext. Card for Philips/MAHO CNC Controller

Manufacturer

TRACONTROL Inh. Stephan Daub e.K.,

Im See 1, DE-76703 Kraichtal-Neuenbürg



Date: 01.06.2018

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