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PROFIboard

Hardware User Manual

Part number: PB-IF-03/HWUM
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FCC Information

FCC Class B Approved: This equipment has been tested and found to comply with the limit for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: reorient or relocate the receiving antenna; increase the separation between the equipment and receiver; connect the equipment into an outlet on a circuit different from that to which the receiver is connected; consult the dealer or an experienced radio or TV technician for help. CAUTION: Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the users authority to operate the equipment.

FCC-ID: NH9PB-IF03V1
 This device complies with part 15 of the FCC Rules.
 Operation is subject to the following two conditions
 (1) This device may not cause harmful interference, and
 (2) this device must accept any interference received,
 including interference that may cause undesired operation

NOTE:

- To satisfy the EMC and FCC requirements, the used equipment (PC, monitor, ...) also has to meet the EMC and FCC requirements.
- To meet the EMC and FCC requirements, a shielded cable must be used (e.g. SINEC L2 from Siemens) and the cable shield must be electrically connected to the metal housing of the PROFIBUS connector.

3. Technical data

- Unit: ISA PC board, short AT format
- CPU: Microprocessor Siemens SAB-C165
- Memory: 512Kbyte Flash, 512Kbyte SRAM, 16Kbyte dual-port RAM
- Supported PC IRQs: 5, 10, 11, 12, 15
- Physical interface: Galvanically isolated RS-485
- Connector type: Sub-D 9-pin female
- Connector assignment: According to the PROFIBUS standard (DIN 19 245 part 1)
- PROFIBUS ASIC: ASPC2 and SPC3
- Transfer rate: 9.6 Kbit/s up to 12 Mbit/s
- PC connector: PC ISA connector
- Power supply: +5V (±5%); typ. 700mA
- Ambient conditions: Operating temperature: 0°C up to 55°C
 Storage temperature: -20°C up to 70°C
 Relative humidity < 90% (non-condensing)

1. Installation

Please follow the instructions given in the next sections for proper installation of the PROFIBUS in your PC. This manual includes only the hardware installation. The software installation is described in the "PROFIBUS Application Program Interface User Manual".

1.1. System requirements

To run the PROFIBUS on a PC, the PC must meet the following requirements:

- IBM PC or 100%-compatible PC with a free 16-bit wide ISA or EISA slot
- A free 4-byte I/O area between 000hex and 3FFhex
- A free 16-Kbyte memory area in the PC Upper Memory between address C8000hex and F7FFFhex- if a memory manager (EMM386, QEMM386, 386MAX, ...) is used, this 16-Kbyte memory area must be excluded by adding a special parameter (see DOS user manual) to the call of the memory manager in the config.sys file (e.g. device=c:\dos\emm386.exe x=D000-D3FF). This memory area is referenced later during software installation.
- A free PC interrupt (only if communication via interrupt is used)

1.2. Configuration of the PROFIBUS

Choose a free I/O area for the PROFIBUS and set the DIP switch "SW0301" on the board according to the first address.

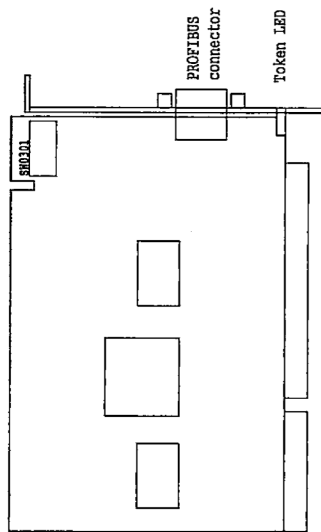


Fig. 1 Layout of PROFIBUS

NOTE:

- Make sure that the selected I/O area is not used by another board. You can use the MS-DOS tool MSD.EXE to verify this.
- To avoid any damage to the PROFIBUS or to the PC, please ensure, before touching, that you are free of any electrostatic charges.

The following table shows the recommended I/O areas (1=ON; 0=OFF):

DIP switch setting	I/O area (hex)
1 2 3 4 5 6 7 8	240 (standard)
1 0 0 1 0 0 0 0	244
1 0 0 1 0 0 0 1	260
1 0 1 0 0 0 0 0	284
1 0 1 0 0 0 0 1	300
1 1 0 0 0 0 0 0	304
1 1 0 0 0 0 0 1	340
1 1 0 1 0 0 0 0	344

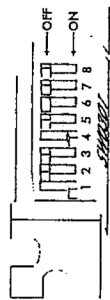


Fig. 2 Recommended I/O areas

For other I/O areas, calculate the address by adding the value of every switch that is in the ON position:

Switch	1	2	3	4	5	6	7	8
Value	200hex	100hex	80hex	40hex	20hex	10hex	8hex	4hex

Fig. 3 Value of the DIP switches

1.3. Mechanical installation

Follow the steps listed below to install the PROFIBUS mechanically on the PC:

- **First switch OFF power of the PC.**
- Make sure that all peripheral devices are powered down (Monitor, ...).
- Remove the housing cover of the PC (refer to the corresponding PC manual on how to do this).
- Select an available long AT slot (not a short XT slot) for the PROFIBUS and remove the slot cover (bracket).
- Plug the board into the socket on the motherboard of the PC.
- Fasten the bracket of the PROFIBUS using the screw.
- Reassemble the housing cover.
- Turn ON the PC and applicable peripheral devices.

2. Environment

CE Information

This device meets the requirements of the EC directive 89/336/EEC "Electromagnetic Compatibility" (EMC directive).

The product meets the following requirements:

- Noise emission: EN50081-1:1992 (EN55022: 1994 Class B)
- Noise Immunity: EN50082-2:1995

The "Declaration of Conformity" in accordance with the above standards has been made and is filed at Softing GmbH, Germany.

