IBS PCI SC/I-T

Controller Board for PC Systems With PCI Bus

Data Sheet 6039B 01/2002

Product Description

INTERBUS Generation 4 controller board with a host interface for the PCI bus.

Features

- INTERBUS protocol (IEC 6 11 58)
- Permanent storage of the parameterization data on the controller board
- Data preprocessing on the controller board
- User-defined addressing
- PCP 4.x support
- Firmware download via diagnostic interface
- Parameter settings via CMD
- Connection for direct inputs and outputs (in preparation)
- Driver software for Windows NT 4.0 and Windows 2000
- High-Level Language Interface HLI
- INTERBUS OPC server

Applications

Connecting simple sensors/actuators and intelligent field devices directly to a control system with PCI interface via INTERBUS.

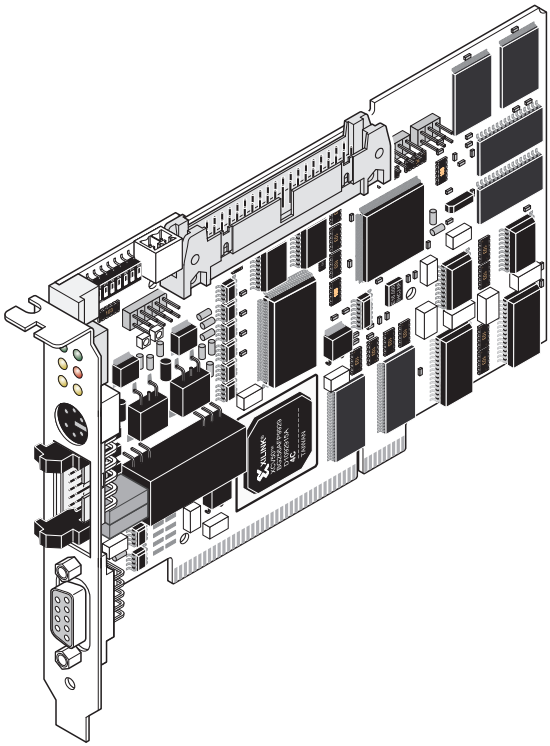

Figure 1 IBS PCI SC/I-T

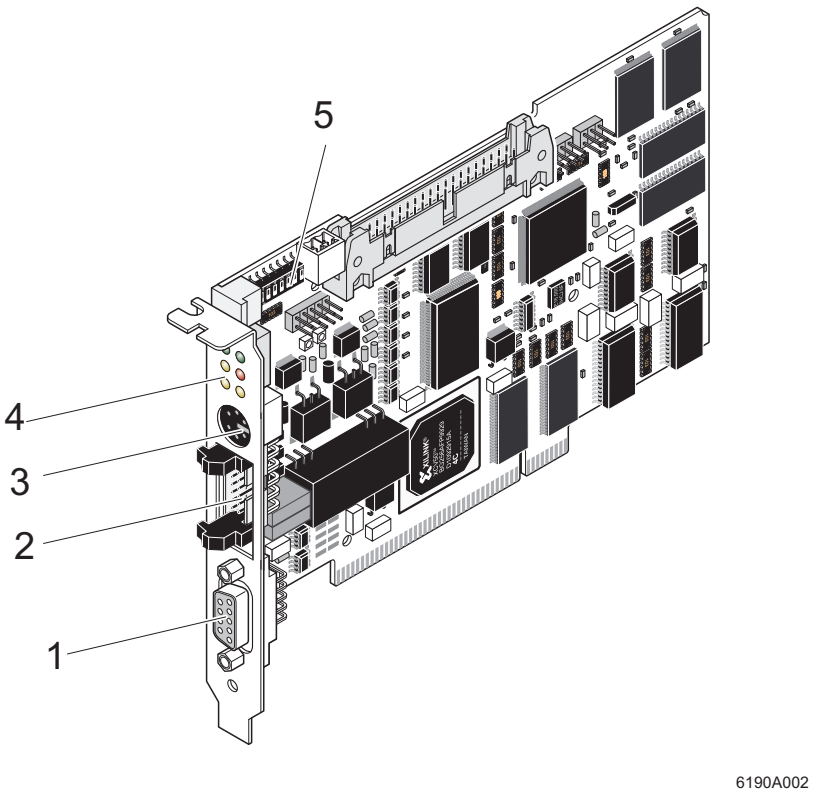

Figure 2 Structure of the IBS PCI SC/I-T controller board

The controller board has the following components:

1 INTERBUS remote bus interface

2 Connection for direct inputs and outputs (in preparation)

3 RS-232 interface

4 Diagnostic LEDs

5 DIP switches for setting the board number

RS-232 Interface (Mini-DIN Female Connector)

INTERBUS diagnostics can be used via the serial interface (RS-232) using IBS CMD SWT G4 E. In addition, the controller board firmware can be downloaded. In this way, it is possible to meet future system requirements by means of updates.

Programming

Individual applications are created with the support of the corresponding drivers. These drivers are available for commonly used operating systems and programming languages. The drivers execute the write and read operations to the MPM and the I/O addresses.

Operating System	Driver	Installation
Windows® NT	Kernel mode driver	Setting of the board parameters using the SETUP program.
Windows® 2000	WDM driver	Setting of the board parameters using the SETUP program.

To create drivers for other operating systems, use the Device Driver Development Kit, Order Designation IBS PCI DDK, Order. No. 27 30 27 1.

Watchdog for Host Monitoring

There is a watchdog circuit on the controller board that you can use for monitoring your PC program (PC system crash, program runtime error).

When the watchdog is triggered, the INTERBUS system is set to a defined state (reset of all outputs).

User Interfaces

User interfaces are available for the following operating systems.

Operating System	DDI	HLI	OPC
Windows® NT 4	X	X	X
Windows® 2000	X	X	X

Device Driver Interface (DDI)

The Device Driver Interface (DDI) is already installed with the drivers, providing the user with the basic functions for accessing the controller board.

High-Level Language Interface (HLI)

The High-Level Language Interface (HLI) can be used to enable easy development of control programs in a high-level language. It connects to the Device Driver Interface (DDI).

Advantages of the High-Level Language Interface:

– Direct configuration with CMD
– Operating system and hardware-independent access to INTERBUS
– Supports many programming languages
– Faster and easier data exchange using variable names
– Integrated bus and error management
– Identical access to all controller boards (IBS ... SC)
– Automatic PCP communication establishment and monitoring

The HLI supports the following programming languages:

	WIN NT
Microsoft C/C++	X
Borland C/C++ (or compatible)	X
Microsoft VB 4.0 (or later)	X
Borland Delphi 2.0 (or later)	X

INTERBUS OPC Server

It is also possible to use an OPC server (Designation IBS OPC SERVER, Order No. 27 29 12 7) as a High-Level Language Interface or as an interface to any visualization system. The OPC server makes it possible to access INTERBUS data under Windows NT/Windows 2000 via a standardized software interface.

For additional information please refer to the OPC server data sheet.

Comparison of HLI and OPC

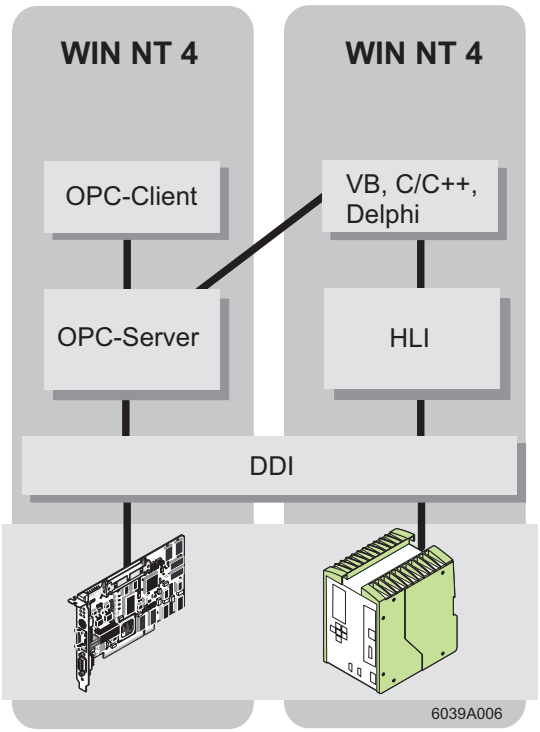

Figure 3 Comparison of HLI and OPC

High-Level Language Interface:

– Windows 16/32-bit
– Fast data exchange
– High-level language programming

OPC server:

– Windows NT 4.0/Windows 2000
– Network-wide data exchange
– Worldwide standard
(High-Level Language Interface and interface to almost all visualization packages)

Technical Data

Up-to-date information can be found on the Internet at www.phoenixcontact.com.

General Data	
Order Designation	IBS PCI SC/I-T
Order No.	27 25 26 0
Dimensions	168 mm x 107mm (6.614 in. x 4.213 in.)

Voltage Supply	
$V_{S,\ controller}$ (PC supply)	5 V DC ±5%
Power consumption	Approximately 3.5 W, typical

Host Interface	
Connection method	Direct edge connection
Bus system	PCI 32 bits/33 MHz/5 V
Data width	8, 16 or 32 bits
Address area	256-kbyte memory window

Remote Bus Interface	
Connection method	9-pos. D-SUB female connector
Interface type	RS-422
Electrical isolation	Yes (test voltage 0.5 kV)

Diagnostic Interface	
Connection method	6-pos. Mini-DIN female connector (PS/2)
Interface type	RS-232
Transmission rate	9600 baud

Ambient Conditions	
Temperature (according to EN 60204-1)	Operation: 0°C to 55°C (32°F to 131°F), storage and transport: -25°C to 75°C (-13°F to 167°F)
Humidity (according to EN 60204-1)	Storage and operation: 75% on average, 85% occasionally (DIN 40040); no condensation
Air pressure	Operation: 860 hPa to 1080 hPa (up to 1500 m [4921 ft.] above sea level) Storage and transport: 660 hPa to 1080 hPa (up to 3500 m [11483 ft.] above sea level)
Vibration	2g, criterion 1 according to IEC 68-2-6

Conformance With EMC Directive 89/336/EEC

Noise Immunity Test According to EN 50082-2		
Electrostatic discharge (ESD)	EN 61000-4-2 IEC 61000-4-2: 1995	Criterion B 6 kV contact discharge 8 kV air discharge
Electromagnetic fields	EN 61000-4-3 IEC 61000-4-3: 1996	Criterion A Field strength: 10 V/m
Fast transients (burst)	EN 61000-4-4/ IEC 61000-4-4: 1995	Criterion B Signal/data lines: 2 kV
Surge test	EN 61000-4-5 IEC 61000-4-5: 1995	Criterion B Signal/data lines: 1 kV
Conducted interference	EN 61000-4-6 IEC 61000-4-6: 1996	Criterion A Test voltage 10 V
Noise Emission Test According to EN 55011 (Industrial Area)		
Emitted interference	EN 55011	Class A

Ordering Data

Description	Order Designation	Order No.
Controller board	IBS PCI SC/I-T	27 25 26 0
CD-ROM with documentation in German and English and drivers for Windows NT 4	CD IBS PCI SC	27 33 00 3
RS-232 cable	PRG CAB MINI DIN	27 30 61 1
User manual for the controller board including driver software for Windows NT 4 and Windows 2000	IBS PCI SC UM E	27 25 25 7
System package with controller board, mounting set, user manual including driver software and CMD operating software	IBS PCI SC SYSKIT E	27 32 99 4
Configuring and Installing the INTERBUS Product Range User Manual	IBS SYS PRO INST UM E	27 43 80 2
CMD operating software	IBS CMD SWT G4 E	27 21 44 2
INTERBUS OPC server	IBS OPC SERVER	27 29 12 7
Device Driver Development Kit including VxWorks driver source code	IBS PCI DDK	27 30 27 1

Windows NT 4 is a trademark of the Microsoft Corporation.

All drivers, HLI, INTERBUS OPC server (demo version), and all documentation can be downloaded free of charge at www.phoenixconact.com.

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