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## Contact us

# IBS PCI SC/RI-LK

Order No.: 2730187

http://eshop.phoenixcontact.de/phoenix/treeViewClick.do?UID=2730187

Termination board - system coupler with FO connection

## Commercial data

| | |
|---|---|
| GTIN (EAN) | 4 017918 193393 |
| Note | Made-to-order |
| sales group | K022 |
| Pack | 1 pcs. |
| Customs tariff | 84733020 |

## Product description

INTERBUS system coupler for PCs with PCI bus

System couplers integrate master and slave functions in one controller board at reduced space and low cost.

They can be used wherever the PC takes over control functions in a lower-level INTERBUS system and at the same time requires a non-interacting link to a higher-level INTERBUS system.

A typical example is the internal control of a robot with a PC and the simultaneous link to the system network.

The software interfaces to the application program are compatible with the INTERBUS Generation 4 PC controller boards, such as the IBS PCI SC/I-T. As with all Generation 4 boards, configuration, parameterization and diagnostics are supported by the INTERBUS CMD software.

The system coupler allows for the connection of an external 24 V DC power supply to ensure uninterrupted operation of the higher-level INTERBUS system.

## Technical data

### Control system

| | |
|---|---|
| Control system | PCI bus |
| Diagnostics tool | DIAG+ from version 1.14 |
| Configuration tool | CMD from version 4.5x |

### Software interfaces

| | |
|---|---|
| Software driver | Windows NT |
| | Windows 2000 |
| | Windows XP |
| | Windows 7 |
| | Venturcom RTX 5.x |
| | Further types on request |
| Application interface | HLI |
| | OPC |
| | DDI |

### Software requirements

| | |
|---|---|
| Configuration tool | CMD from version 4.5x |
| | Config+ from version 1.00 onwards |
| Diagnostics tool | DIAG+ from version 1.14 |

### Power supply

| | |
|---|---|
| Power supply connection | Via PCI bus (master) and 2-pos. MINI COMBICON (slave part) |
| Typical current consumption | 0.8 A |
| Supply voltage | 5 V DC |
| | 24 V DC (external, environment class 1) |
| Supply voltage range | 18.5 V DC ... 30.2 V DC (including ripple (0.5 Vpp)) |

### General data

| | |
|---|---|
| Weight | 280 g |
| Format | 176 x 107 mm (IBS PCI SC/RI/LK: 168 x 107 mm) |
| Degree of protection | IP00 |
| Ambient temperature (operation) | 0 °C ... 55 °C (in acc. with EN 60204-1) |
| Ambient temperature (storage/transport) | -25 °C ... 75 °C (in acc. with EN 60204-1) |
| Permissible humidity (operation) | 75 % (on average, 85% infrequently, no condensation) |
| Air pressure (operation) | 860 hPa ... 1080 hPa (up to 2000 m above mean sea level) |
| Air pressure (storage/transport) | 660 hPa ... 1080 hPa (up to 3000 m above sea level) |

### Data interfaces

| | |
|---|---|
| Interface | INTERBUS (Master) |
| Type of connection | F-SMA connector |
| Interface | INTERBUS remote bus, incoming |
| Type of connection | F-SMA connector |
| Interface | INTERBUS remote bus, outgoing |
| Type of connection | F-SMA connector |
| Interface | Parameterization/operation/diagnostics |
| Type of connection | RS-232-C, Mini-DIN female |
| Interface | Host system |
| Type of connection | IBM-compatible PCI slot in acc. with PCI specification 2.1 or higher, PCI bus, 32 bit, 33 MHz, 5 V |
| Interrupts | 1 IRQ, PnP |

### INTERBUS data

| | |
|---|---|
| Type | Master/Slave |
| Number of devices with parameter channel (PCP) | max. 126 (512 words) |
| Number of PCP data | max. 62 |
| Number of supported devices | max. 512 (in total, of which 254 are remote bus devices/bus segments) |
| Slave data length | 256 Bit (max., configurable, incl. parameter channel (PCP)) |

### INTERBUS slave function

| | |
|---|---|
| Type | Master/Slave |
| Slave data length | 256 Bit (max., configurable, incl. parameter channel (PCP)) |

## Certificates / Approvals



Certification                                GOST

Certifications applied for:                  UL / CUL

## Accessories

| Item | Designation | Description |
|---|---|---|
| **Plug/Adapter** | | |
| 2730611 | PRG CAB MINI DIN | Connection cable, to connect Remote Field Controllers to a PC (RS-232) for PC WORX, 3 m in length |
| **Software** | | |
| 2730307 | DIAG+ | Diag+, diagnostics software, for INTERBUS networks, area of application: Startup, maintenance and, for example, for integration in control desk software, can be integrated in 32 bit applications (ActiveX-capable) |
| 2721439 | IBS CMD SWT G4 | Network configuration software for INTERBUS Generation 4 |
| 2721442 | IBS CMD SWT G4 E | Network configuration software for INTERBUS Generation 4 |
| 2729127 | IBS OPC SERVER | INTERBUS OPC server, communication interface between distributed INTERBUS and Ethernet networks and visualizations. |
| 2730271 | IBS PCI DDK | Device driver development kit, for the development of device drivers for individual operating system (German, English) |

## FAQs

- **Consistency settings for Slave and Master data.**

  Master data is exchanged synchronously with the bus system. Therefore, the coupling memory is always accessed from a bus cycle. Several accesses may come from different cycles. It is not possible to detect a cycle change. The firmware copies the slave data into the memory in word consistent format. It is not possible to set a greater consistency.

- **DIP switch settings do not take effect automatically.**

  If the slave board settings are changed using DIP switches, the slave and master must be reset for the changes to take effect.

- **Directly addressed registers are always set to zero in the address monitor.**

  Directly addressed registers are registers that are assigned a location in the coupling memory (Multi-Port Memory: MPM) of the controller board for host system access. For this, the byte position must be entered with the syntax "#1025". These registers are required, for example, to copy the diagnostic data directly from the lower-level INTERBUS system to the slave data of the higher-level INTERBUS system. Although the correct values are always assigned to the addresses, the values are specified with zero in the address monitor.

- **Driver update under Windows 2000 (Beta->1.08). Driver parameters are not properly updated.**

  To access the Windows 2000 driver for INTERBUS controller boards IBS PCI SC... with IBS CMD SWT G4 (E) some system parameters have to be updated. Please follow these steps: 1. Uninstall the hardware "PCI-MPM Interbus Controller" with the hardware assistant under Control Panel 2. Delete any files in "<system directory>\INF" e.g. "C:\WINNT\INF" similar to OEM?.INF, OEM??.INF, OEM?.PNF and OEM??.PNF (for example: OEM0.INF, OEM1.INF, OEM2.INF...OEM10.INF, OEM11.INF, OEM12.INF... and OEM0.PNF, OEM1.PNF, OEM2.PNF...OEM10.PNF, OEM11.PNF, OEM12.PNF...). If none of those files appear, you will need to change your file "View" in Windows Explorer: Within Explorer, choose: Tools - Folder Options - View: Select "show hidden files and folders" and make sure "hide file extensions for known file types" is unchecked. 3. Install the new driver using the hardware assistant.

- **Incorrect length code for setting ID03 and 1 data word using CMD.**

  If 1 data word (DW) and ID code 3 are set on the module using CMD, CMD automatically converts this and executes the project in 10 DW. The length of 1 DW can be set without problems using firmware commands. Remedy: Parameterize the module using the firmware or select another length in CMD.

- **Is it possible to implement a bus parameterization with isolated disconnection if an incorrect bus is connected?**

  Yes, it is possible. Before a bus start it however is necessary to activate the configuration frame. Activate configuration frame: Code: 0711 Parameter_Count: 0001 Frame_Reference: 0001 Start bus: Code: 0701

- **No ID code update for parameterizing controller boards with INTERBUS.**

  In general, each firmware command that can be executed via a serial interface and a PCI interface can also be executed using INTERBUS (PNM7 communication channel). If the module is configured with CMD and this configuration is to be implemented by INTERBUS, the project must be transferred to the memory card of the module via "Memory Card->Save" and activated by resetting the controller board. Reason: The other option, i.e., selecting the menu item "Controller Board->Parameterization->Execute", which transmits and executes each command individually, does not transfer slave data. This is because any changes made to the slave setting may cause the connection to abort randomly.

- **The outputs on the controller board cannot be set using the process data monitor in CMD.**

  When the driver is running, the driver application data is cyclically copied to the board memory. However, CMD writes the data using another channel. Therefore, the driver cyclically writes zeros into the output data. This behavior prevents output variables on INTERBUS from being set in the process data monitor using CMD. At present no remedy is possible.

- **Why is no data being transmitted to the controller board, even though the driver and mailbox interface are operating without errors?**

  The problem: Despite the fact that the driver software has been started and INTERBUS is running, no process data can be copied. Communication with the board is possible via the mailbox. Possible cause and remedy: The controller board has been set manually or in the CMD project to asynchronous mode. However, the Windows NT driver only operates in asynchronous with synchronization pulse mode. Under CMD, check the bus operation menu item in the controller board settings. Here asynchronous with synchronization pulse must be selected as the default operating mode for the PCI controller boards. The correct operating mode must be set, especially when transferring existing projects e.g., from IBS PC ISA SC /I-T.

## Address

PHOENIX CONTACT Inc., USA
586 Fulling Mill Road
Middletown, PA 17057,USA
Phone (800) 888-7388
Fax (717) 944-1625
http://www.phoenixcon.com