




BradCommunications™ Direct-Link™ Profibus-DP network interface cards allow deterministic I/O data acquisition for PC-based control applications.

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Direct-Link™ Profibus-DP

Data acquisition for real time Control applications

Features

- **NEW! RoHS compliant**
- Connect PC-Based Control applications directly to I/O devices
- Protocols supported:
 - Profibus-DP V0 Master/Slave Class-1 & 2
 - Profibus-DP V1 Master Class-1 & 2 (for PCI-Universal card only)
 - Profibus-DP Slave passive
- Available in various card form factor: PC/104, PCI-Universal and CompactPCI 3U
- 1 Serial or **Ethernet** port for remote configuration and diagnostic 
- Automatic devices detection on the network
- Embedded Communication on the card for powerful data throughput
- Configuration stored in the device (Flash memory), with auto boot mode



PCI-Universal



PC/104



CompactPCI

Overview

BradCommunications™ Direct-Link™ is a low range of automation components for industrial communication. It includes a variety of products such as diagnostic tools, intelligent connectors, tunneling gateways, fieldbuses network interface cards, and software drivers for industrial networks.

Simple as they are affordable, BradCommunications™ Direct-Link™ products allow you to acquire the equipment to develop your architectures and industrial applications at a lower cost.

Direct-Link™ products are characterized by their simple™ and fast implementation; they are modular and scalable. Moreover, they are designed to be easily embedded into computerized systems and are available in a wide selection of form factors.

Powerful Network Interface card

Particularly, the **BradCommunications™ Direct-Link™ Profibus-DP** interface cards are equipped with 1 Profibus port handling Profibus protocol in **Master and/or Slave modes** up to 12 Mbps.

A smart A.D.M (Automatic Dual port ram Mapping) mechanism avoids the I/O tags configuration in the Dual Port RAM of the card. More than a simple I/O acquisition card, the Direct-Link™ interface cards provide the applications with additional information such as: *device status and diagnostics, process data read/write monitoring, communication tools for troubleshooting, hardware and software Watchdog, etc..*

The communication layers are completely embedded on the cards, allowing easy and fast communication with field devices resulting in remarkable application performance.

Product package includes:

- Graphical console for configuration and diagnostic tools
- Data servers (Multi-protocol OPC DA 3.0 & 2.05, ActiveX, DAServer, FastDDE/SuiteLink)
- I/O libraries for Windows (DLL) and Ardence's hard real time extensions (RTX)
- Static library for non-windows OS

OS supported

Standard package

- Windows 32-bit (XP SP1/ 2000 SP4 / NT SP6, 2003 Server), Ardence RTX

Free Download




- Windows XP Embedded, QNX, VxWorks, Linux, Phar Lap ETS, DOS

Woodhead is a member of PTO (PROFIBUS Trade Organization), PNO (PROFIBUS Nutzerorganisation e. V.) and France Profibus.

BradCommunications™

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Technical data

	Direct-Link™ PCU-DPIO	Direct-Link™ PC104-DPIO	Direct-Link™ CPCI-DPIO
			
Key Benefits	<ul style="list-style-type: none"> • Fast data exchange (on-board processor take off the load of the host CPU) • Speed up to 12 Mbps • Serial or Ethernet (only for PCU card) port for remote configuration to use with exotic OS 		
	<ul style="list-style-type: none"> • DP-V0 Master Class 1 & 2/Slave simultaneously • DP-V1 Master Class 1 & 2 	<ul style="list-style-type: none"> • DP-V0 Master Class 1 & 2/ Slave simultaneously 	
Hardware			
Unit	PCI-Universal 3.3/5V, PCI-X compatible NEW	PC/104 bus	CompactPCI bus, 5V
Processor	AMD SC520, 133 Mhz	AMD SC520, 100 Mhz	AMD SC520, 133 Mhz
Profibus ASIC	UART High Speed	ASPC2	ASPC2
Memory	16 Mbytes SDRAM	8 Mbytes SDRAM	8 Mbytes SDRAM
Flash Memory	4 Mbytes	512 Kbytes	512 kbytes
Interruption	Hardware Plug&Play	2, 3, 4, 5, 6, 7, 10, 11, 12, 14, 15	Hardware Plug&Play
DPRAM Address	Hardware Plug&Play (32 Kbytes)	From C8000 to DE000 (8 Kbytes used per card)	Hardware Plug&Play (16 Kbytes)
Discrete Input	1 x Opto-coupled discrete input, Voltage -> +10 to +30 V DC or 24 V AC (50-60 Hz)	1 x Opto-coupled discrete input, Voltage -> +10 to +30V DC or 24V AC (50-60 Hz)	1 x Opto-coupled discrete input, Voltage -> +10 to +30V DC or 24V AC (50-60 Hz)
Discrete Output	1 x "WatchDog" output contact free from potential (floating) (24 V DC, 0.25 A)	1 x "WatchDog" output contact free from potential (floating) (24 V DC, 0.25 A)	1 x "WatchDog" output contact free from potential (floating) (24 V DC, 0.25 A)
Dimensions (LxW)	168mm x 107mm (6.61" x 4.21")	95mm x 90mm (3.74" x 3.54")	100mm x 160mm (3.93" x 6.29") - 3U
Consumption	5.5W (max. 1.2A)	5.5W (max. 1.2A)	5.5W (max. 1.2A)
Operating T°	0°C (32°F) up to +65°C (149°F)	0°C (32°F) up to +65°C (149°F)	0° C (32° F) ↔ +65° C (149° F)
Storage T°	-40° C (-40°F) up to +85°C (185° F)	-40° C (-40°F) up to +85°C (185° F)	-40° C (-40°F) up to +85°C (185° F)
EMC Compliance	EN55022 Class B, EN61000-6-2, EN61000-3-2, EN61000-3-3	EN55022 Class B, EN61000-6-2, EN61000-3-2, EN61000-3-3	EN55022 Class B, EN61000-6-2, EN61000-3-2, EN61000-3-3
RoHS Compliance	YES NEW	NO	YES NEW
Communication port			
Port type	1 Profibus port (EN 50170)	1 Profibus port (EN 50170)	1 Profibus port (EN 50170)
Connector	Profibus D-Sub, 9 pin, female	In standard: HE13 (2 x 5 pins) or in option: 9-pin, Sub-D, female	Profibus D-Sub, 9 pin, female
LED Indicator	2 bicolor Leds: bus fault and communication status	2 bicolor Leds: bus fault and communication status	2 bicolor Leds: bus fault and communication status
Electrical Interface	RS485 optical insulation (500 V)	RS485 optical insulation (500 V)	RS485 optical insulation (500 V)
Baud Rate	9.6 kbps ↔ 12 Mbps	9.6 kbps ↔ 12 Mbps	9.6 kbps ↔ 12 Mbps
Port for remote configuration and diagnostic			
Port Type	Ethernet port NEW	Asynchronous Serial port	Asynchronous Serial port
Connector type	RJ45	HE13 (2 x 5 pins)	9-pin, Sub-D, male
LED indicators	4 Leds - TX/RX/Link/100 Mbps		2 Leds - TX/RX
Electrical interface	Ethernet	RS232 – 2 signals	RS232 – 2 signals
Speed	10/100 Mbps	9600, 38400, 115200 bps	9600, 38400, 115200 bps



Protocol Specifications

All BradCommunications™ Direct-Link™ networks interface cards for Profibus-DP support following protocols:

- **DP-V0 Master/Scanner Class1 & 2 and Slave modes simultaneously**
- **DP-V0 Slave passive mode only**
- **DP-V1 Master Class 1 & 2** (for PCU card)

DP Master features	
Access Modes	<p>DPV0 Master/Scanner Class1 for optimized exchange of input/output data with the slaves (Data_Exchange).</p> <p>DP-V0 Master Class2 for:</p> <ul style="list-style-type: none"> ▪ Slave diagnostics ▪ Reading inputs/outputs of a slave ▪ Reading configuration data ▪ Changing the slave address. <p>DP-V1 Master Class1 & 2:</p> <ul style="list-style-type: none"> ▪ Read Data Block Class 1 ▪ Write Data Block Class 1 ▪ Read Data Block Class 2 ▪ Write Data Block Class 2 ▪ Abort Data Block Comm Class 2
Multi-master mode	Yes (able to share the bus with other DP masters connected on the network)
Watchdog control	Yes, enables the master to switch into error if no data has been exchanged during this period (Bus Fault)
Input/Output Data	<ul style="list-style-type: none"> ▪ Memory of I/O data image: <ul style="list-style-type: none"> - PC/104: up to 2Kbytes - PCI-Universal: up to 8Kbytes - CompactPCI: up to 4Kbytes ▪ Manage up to 244 data bytes per slave ▪ Automatic organization of I/O data in the DPRAM memory
Max. DP Slave	Connect up to 126 slaves
Data consistency	Yes (i.e. user gets the data up to 122 bytes of a slave from one and the same DP cycle)
Data format	Direct access to variable types (bit, byte, word, double word)
Local DP slave	Run simultaneously with Master modes. Offers data exchange with another master on the network. The size of the input and output data is user-definable, and all exchange combinations are possible (from 0 to 244 bytes). The slave can ensure data consistency up to 122 bytes. (see DP-Slave features below for details).

DP Slave passive features	
Access Mode	DP-V0 Slave passive (no management of Profibus token)
Input memory size	Configurable from 0 to 244 bytes
Output memory size	Configurable from 0 to 244 bytes
Slave address	Configurable from 0 to 126 by software configuration
GSD files	Provided on the CD-Rom
Data Format	Configurable Intel or Motorola
Address Assignment Master (Set_Slave_Address)	Not supported
Extended Diagnostic	Not supported

Direct-Link™ Profibus-DP



Software tools

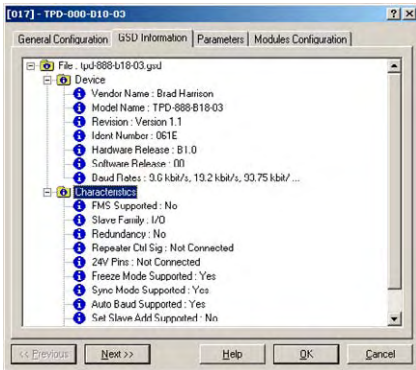
The core of BradCommunications™ Direct-Link™ PC Network Interface cards lies in effective software tools enabling fast integration of industrial communication into your applications.

More precisely, Direct-Link™ package includes configuration software called **Console** used to set up card, network and equipments connected to the fieldbus. The Console performs dynamic network diagnostic and allows defining access items to the input/output data used by the software interfaces (OPC server, ActiveX Control, DAServer, DDE/SuiteLink server).

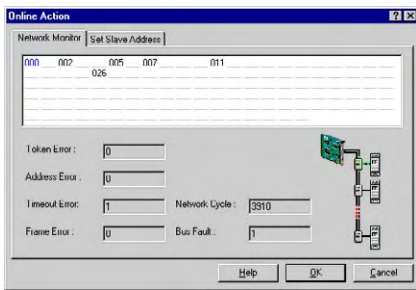
The console is common to all fieldbuses of Woodhead offer as EtherNet/IP, Modbus/TCP, DeviceNet and CANopen.

Other great features managed by the Console:

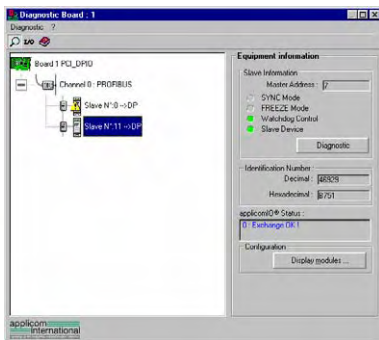
- Powerful Graphical User Interface
- Automatic detection of cards plugged into the host computer
- User configuration manager: create, backup and restore many user configurations
- Manual or Automatic device configuration
- Profibus scanner (automatic configuration by detection of slaves connected)
- GSD library. Add/Remove GSD file
- Diagnostic monitor; scan devices connected on the bus, able to change DP slave address
- Card Status indicator: allows you to quickly find the initialization status of each card



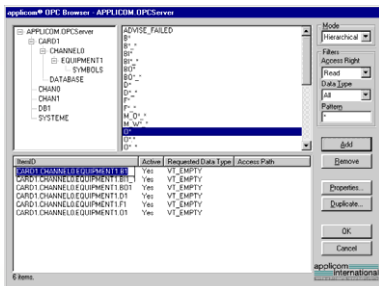
- Device Configuration -



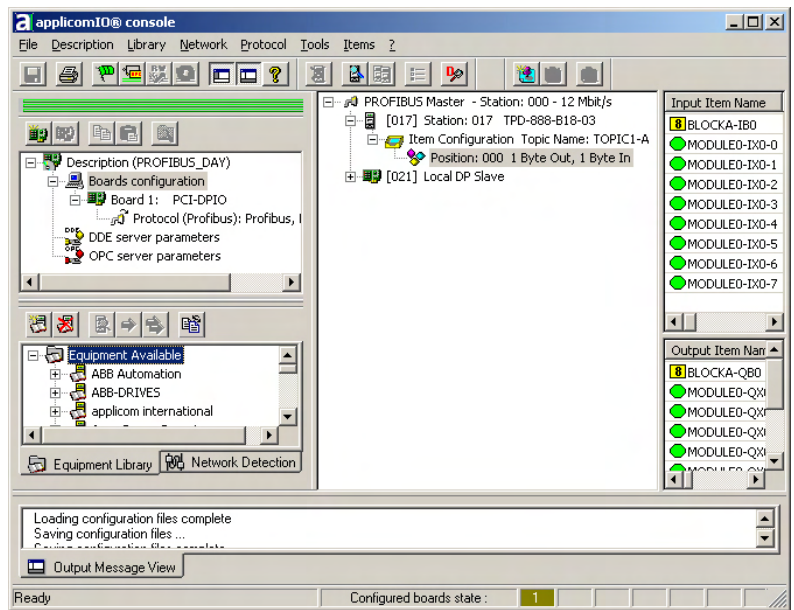
- Profibus Network Monitoring -



- Troubleshooting & Testing tool -



- Browsing of OPC Server -



Ordering Information

Part Number	Product Description
DRL-DPM-PCU	BradCommunications™ Direct-Link™ PCU-DPIO Profibus-DP Master/Slave 12 Mbps, PCI-Universal bus, 3.3/5V
DRL-DPM-CPI	BradCommunications™ Direct-Link™ CPI-DPIO Profibus-DP Master/Slave 12 Mbps, CompactPCI bus
DRL-DPM-104	BradCommunications™ Direct-Link™ PC104-DPIO Profibus-DP Master/Slave 12 Mbps, PC/104 bus

For product and technical information, visit: www.woodhead.com

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