

Industrial Communication

Allen-Bradley Remote I/O

AS-Interface

CANopen

CC-Link

ControlNet

Data Highway Plus

DeviceNet

Ethernet

InterBus

Modbus Plus

Profibus

Serial

WorldFIP

Solution Guide

April 2005

| applicom® | SST™ | Direct-Link™
| Brad Harrison® | RJ-Lnxx®

W | **Woodhead**

Company overview

Woodhead Industries, Inc. (NASDAQ: WDHD) develops, manufactures and markets electronic and industrial communications products, primarily serving the global automation and control market with connectivity solutions and specialty electrical products.

The company now employs more than 1500 people in 22 locations and 10 countries.



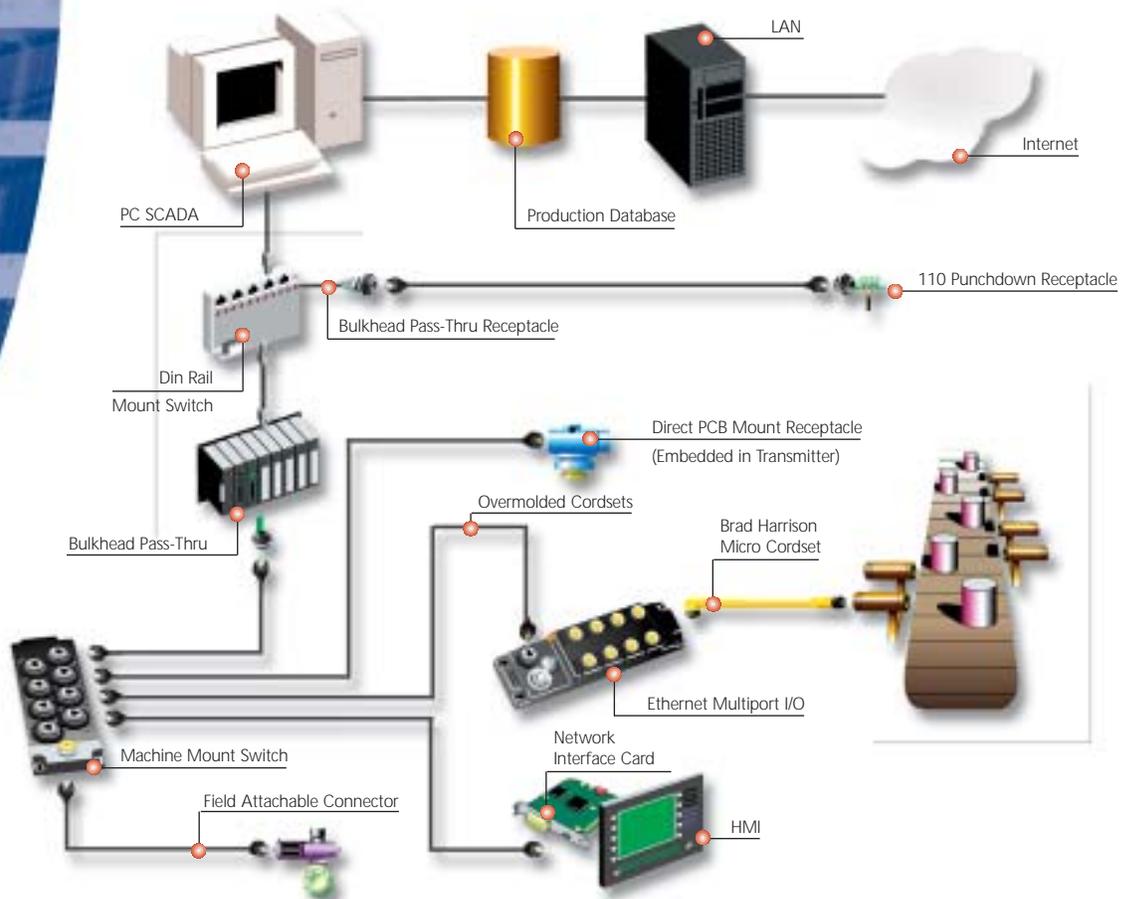
Network expertise and globally recognized brands

Woodhead is committed to leading the industry with innovative industrial communication and connectivity solutions backed by superior service and technical expertise. A broad range of products facilitates real-world applications that control and monitor factory floor processes and integrate them with management and support systems.

Woodhead products continue to meet the evolving needs of industry worldwide as factory automation expands through open systems.

Our industry-leading brands: **applicom**[®], **Brad Harrison**[®], **mPm**[®], **RJ-Lnxx**[®] and **SST**[™] make Woodhead the premier independent supplier of application specific connectivity solutions.

Specialty Protocols & Processing Needs



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Fully integrated package | applicom®

Security, Reliability and Flexibility



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Focused products for customised solutions | SST™

Performance, Value and Engineering Services



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Low end network components | Direct-Link™

Easy to use, widely available and easily affordable



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Harsh environment connectivity | Brad Harrison®, RJ-Lnxx®

Robust, secure and reliable



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Woodhead Global Brands

Since 1922, Woodhead has provided innovative solutions for challenging industrial environments. Through its world recognized Daniel Woodhead® brand, Woodhead offers a comprehensive range of *best-in-class* electrical products. To further strengthen its value, Woodhead has enhanced its reputation with its ability and willingness to design and produce custom products for real-world applications, both electrical and connectivity.

Through its leading connectivity brands, Woodhead also provides a complete suite of products designed to help you connect the factory floor to the office. Our hardware and software products encompass a diverse group of network protocols including: DeviceNet, Profibus, Ethernet, AS-Interface, CANopen, InterBus, Serial, Data Highway Plus, Modbus Plus and WorldFIP. Customer applications are further supported by years of technical network expertise.



applicom®



Complete solutions for industrial networks and fieldbuses

Direct-Link™



Low end components for industrial networks and fieldbuses

Brad Harrison®



Solutions for output device connectivity on the factory floor

Advanced Interconnect™



Fiber Optic and High Speed Copper Connectivity Solutions

mPm®



DIN 43650 Valve connectors for input device connectivity on the factory floor

Brad® Power



Round quick-disconnect systems for power distribution

RJ-Lnxx®



Industrial Ethernet and Harsh-Duty Datacom Solutions

Daniel Woodhead®



Electrical products for MRO in harsh environments

SST™



OEM customised solutions for industrial networks

Aero-Motive®



Industrial cable and hose reels, balancers, power distribution bars

Which solutions meet my industrial needs?

You are looking for...	So choose
<p>Fully integrated package</p> <p>All-in one solution: Products + services</p>	<p style="text-align: right;">page 8</p> <div style="text-align: center;">  </div> <p>Recommended solution for</p> <ul style="list-style-type: none"> • SCADA, HMI and specific development applications which require huge CPU capacity • Systems with large number of I/O Points • Multi protocol operations • Use of multiple cards on one computer <p>Includes</p> <ul style="list-style-type: none"> • PC cards with their own micro processor for high performance • Software interface (data servers, development libraries) • Smart gateways and Internet Web gateway • Upgrade and maintenance package • Full technical support • Additional services: training, engineering, consultancy

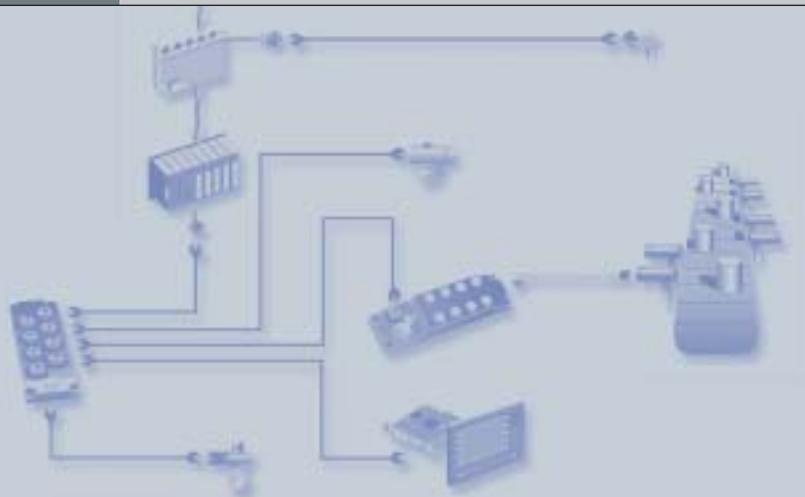
You are looking for...	So choose
<p>Focused products for customised solutions</p> <p>Build your own architecture by choosing ONLY what you need</p>	<p style="text-align: right;">page 28</p> <div style="text-align: center;">  </div> <p>Recommended solution for</p> <ul style="list-style-type: none"> • PC-based control systems • Soft Logic • Process control systems • High speed access to process data using open DP RAM <p>Includes</p> <ul style="list-style-type: none"> • PC Interface cards • PLC communication modules • I/O Simulation Software • Embedded Protocol stacks

You are looking for...	So choose
<p>Simple network components</p> <p>Plug & Play – Ready to use no knowledge required</p>	<p style="text-align: right;">page 48</p> <div style="text-align: center;">  </div> <p>Recommended solution for</p> <ul style="list-style-type: none"> • SCADA, HMI and specific development applications which require less CPU capacity • PC-based control systems for fieldbuses • Systems with small number of I/O Points <p>Includes</p> <ul style="list-style-type: none"> • PC Interface cards • Communication software driver • Data servers (OPC, DAsServer, DDE/SuiteLink, ActiveX) • Simple gateways • Intelligent connectors • Diagnostic Tools

Open on more than 40 protocols: Ethernet, Profibus, DeviceNet, CANopen, Modbus Plus, Serial, Data Highway Plus, ControlNet, WorldFIP, A-B Remote I/O, InterBus, AS-Interface, CC-Link...

You are looking for...	So choose	page 60
<p>Harsh Environment connectors, cord-sets and I/O blocks</p> <p>Rugged performance at a competitive price</p>	 <p>Recommended solution for</p> <ul style="list-style-type: none"> • All factory floor sensor interconnections • Network media infrastructure • Signal diagnostics and troubleshooting • Active Input and Output devices <p>Includes</p> <ul style="list-style-type: none"> • Molded and field attachable cord-sets • Harsh duty connectors and receptacles • Certified network media components • Rugged network I/O blocks 	

You are looking for...	So choose	page 62
<p>Harsh Environment Ethernet infrastructure</p> <p>Rugged performance at a competitive price</p>	 <p>Recommended solution for</p> <ul style="list-style-type: none"> • All factory floor Ethernet interconnections • Switch and segmenting infrastructure • Signal diagnostics and troubleshooting • Active Input and Output devices <p>Includes</p> <ul style="list-style-type: none"> • Molded and field attachable cord-sets • Harsh duty connectors and receptacles • Certified network media components • Rugged network switches and I/O blocks 	



Your complete **solution** Hardware, Software and Services

applicom[®] products offer a range of complete communication solutions covering more than 40 industrial communication protocols.

These include: Ethernet TCP/IP, Profibus, Modbus Plus, Data Highway Plus, WorldFIP, and Serial Links.

These solutions connect your PC-based applications to industrial equipment (programmable controller, I/O modules, industrial devices...).

With over 15 years of experience and technical expertise in industrial communication, today Woodhead has over 100 000 applicom[®] systems installed around the world in sectors as varied as petrochemical, automotive, food processing, technical building management...

Customer Focus

applicom[®] solutions are designed for end-users and system integrators that require powerful, user-friendly communications, adapted to each type of industrial network.

Our solutions are intended for companies seeking high technological added value, such as SCADA editors and industrial PC manufacturers who offer their customers a complete package combining product reliability and security.

applicom[®] solutions also meet the requirements of large customers whose choice is essentially based on quality of service and continued compliance with the standards in force. All of our quality practices are certified ISO compliant.

Applications

applicom[®] solutions are designed to enable deterministic data acquisition in various industrial applications:

- Visualization systems,
- HMI/MMI/SCADA,
- Control/command that is required to perform tasks with strong critical time constraints,
- Active Front-End acquisition for technical management such as fire systems, access control, energy distribution, HVAC,
- Measures and bench tests for process simulation, car engine validation, and experimental prototypes,
- Tools to help you design solutions to suit your particular needs such as a gateway feature, time table management, alarming...



Thanks to applicom[®] open technology, you design innovative projects to help your team come up with creative, effective solutions to your toughest challenges.



Our solution *Hardware and Software*

Network Interface Card

Hardware

applicom® solutions allow you to combine several cards (up to 8) and to run simultaneously from 1 to 32 protocols on various industrial networks in the same computer.

With applicom® embedded technology (built-in processor running Real time OS), every card is able to execute the management and processing of industrial protocols (ISO/OSI layers 1 to 7) without taking any CPU time from your computer, resulting in remarkable performance improvement. Moreover, you can use **all the protocols** available on the card at no extra cost.

The architecture of the applicom® product simultaneously supports network access in Client/Server mode and offers

3 data acquisition methods: cyclic, synchronous and asynchronous.

Each card has an internal memory of **32 Kbits and 32 Kwords**, called Data-Base applicom®. Without any prior configuration, this database is read/write accessible to carry out different types of data exchange (between applications, between equipment – inter PLC dialogue).

In addition, the cards support several bus formats: PCI, CompactPCI and PC/104.

For the latest generations of servers equipped with

a PCI 3.3V bus, Woodhead offers 3.3V and 5V compatible cards for the PCI universal and PCI-X buses.

Our cards comply with industrial standards and allow for both office and industrial use. To offer you reliable solutions in terms of quality and excellence, our cards are developed and fully tested in accordance with **the specifications in force in industrial organisations** (Profibus, Ethernet, Modbus Plus, etc).

Software

The core of applicom® solutions lies in our software tools; enabling fast integration of industrial communication into your applications.

We offer a set of integrated tools comprising:

- **The Console**, a graphic configuration tool, with advanced functions such as a configuration manager, import/export services, automatic detection of Plug & Play cards, a library of equipment...
- **Data servers** (OPC DA v1.0a, 2.05 and 3.0, DAServer, DDE, FastDDE and SuiteLink)
- **Software components** (ActiveX, NI LabVIEW/VI) and **development libraries** (DLL, Static Library, VenturCom RTSS, NI LabWindows/CVI) for the Microsoft. NET/C#/VB/C++/C, Borland Delphi, National Instruments, etc. environments.
- **Test and network diagnostic tools** for implementation and monitoring of your industrial architecture.

ONE diagnostic and ONE configuration tool for whatever protocol is used (no knowledge required): **unique library, unique OPC server, unique Wonderware I/O server**; reducing the time required to learn and integrate applicom® products in your architectures.

The applicom® package includes a multi-client driver for the Windows 32-bit (Windows XP, 2000, and NT4) environments. Also compatible with the Windows XPe/NTe, VenturCom RTX, VxWorks, QNX, Linux, and DOS environments, Woodhead offers a suite of applicom® software packs available for free download from our website.

For users who want to customise solutions in a proprietary environment, applicom® can be adapted to your hardware or software constraints using our development kits.

Industrial Gateways

Intelligent Industrial Gateways are also offered in the applicom® range. Very convenient and feature-rich, they ensure the interoperability of the networks and field equipment: counters, monitoring devices, I/O units, programmable controllers. Their hardware platform is an extremely compact board only server housed in a durable, easy to use enclosure.

The **webGATE** gateway contains a built-in Web server that enables you to monitor and control Serial and Profibus devices. The **GATEway** is the first solution that allows you to connect devices over to 20 Ethernet TCP/IP, Profibus and Serial protocols by using a single hardware platform. Designed for continuous network operation and secure access from the outside, these bridge/portal combinations provide exception value.

H A R D W A R E S O F T W A R E



Your complete *solution*

Our solution *Services*



Consultancy

Woodhead has achieved international recognition as the primary independent supplier of industrial communication solutions.

Our constant efforts with after-sales service have enabled us to obtain a reputation for excellence and quality. Our aim is to work in association with our customers to help them to optimise the use of our systems and contribute to the efficiency and productivity of their industrial installations.

Customer Service

Our technical sales staff brings quality expertise and wide experience in understanding customer projects. You will have on-going assistance of experts and a personal contact to evaluate with you the solution for your application.



Engineering

The highly qualified professional and technical resources of Woodhead are available around the world to satisfy customers' needs – management of your specifications - combining flexibility, efficiency and profitability, all working in accordance with our quality criteria.

Technical Support

Technicians in our Customer Support Centers worldwide guarantee you daily assistance in the development and deployment of your industrial architecture.

You benefit from free full telephone assistance from the technical support center during the warranty period. A support page can also be accessed through our website giving you the latest technical information about our products: technical notes, product documentation, knowledge base, FAQ, software updates and product registration.

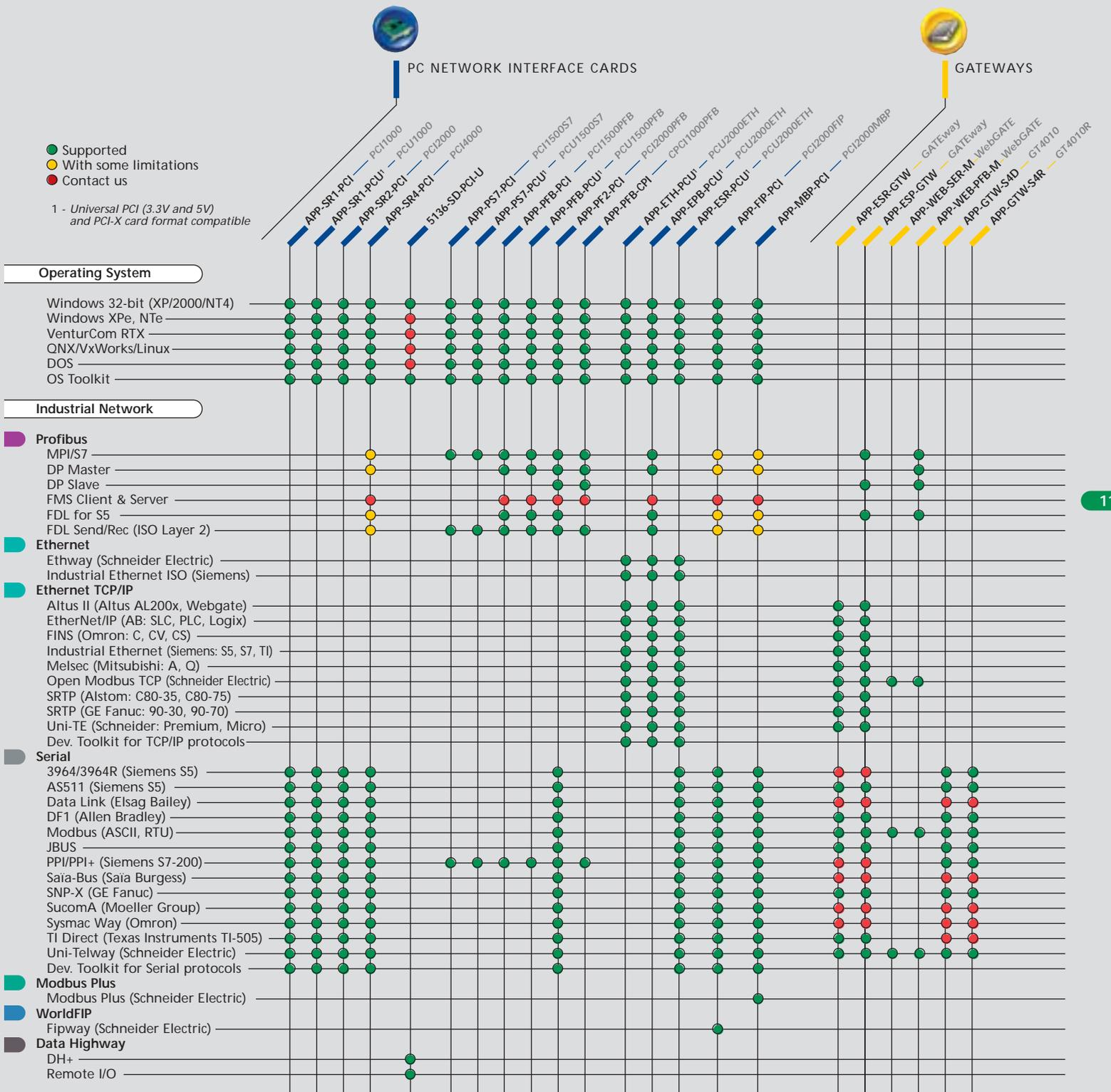


Training

Because Woodhead is more than a supplier of industrial communication solutions, our teams and certified partners will enable you to draw maximum benefit from the knowledge of applicom[®] solutions which you already have or will acquire. The subjects covered in our training enable precise knowledge to be acquired on network technologies to maximise the profitability of your investments.

We also offer custom training at our facilities or your own. We can train you and your team on applicom[®] solutions to be more knowledgeable about new technologies and optimise your opportunities to increase your business profitability!

Quick Reference Guide



Profibus solutions



applicom® PCI1500PFB

APP-PFB-PCI

PCI Network Interface
Card for Profibus



1 Profibus port (EN 50 170)

- 9.6 Kbps to 1.5 Mbps
- 9-pin, D-Sub, female
- Optical galvanic insulation 500V

Protocols

- Profibus-DP V0 Class-1 & 2 (Master)
- S7/MPI (Master)
- FDL S5 (Master)
- PPI/PPI+ (Master)
- FDL Send/Receive
- Profibus-FMS² (Client/Server)

Technical Data

- PCI bus, 5V
- Hardware Plug & Play
- Intel 80486DX4
- 4 Mb SDRAM
- EMC compliance¹

Key benefits ● Run all Profibus protocols simultaneously ● Best choice for SCADA applications
● Compatible Simatic S5 (95U, 115U, 135U, 155U Series) ● Compatible Simatic S7 (S7-300, S7-400)

applicom® PCU1500PFB

APP-PFB-PCU

PCI 3.3V/5V Network
Interface Card for Profibus



1 Profibus port (EN 50 170)

- 9.6 Kbps to 1.5 Mbps
- 9-pin, D-Sub, female
- Optical galvanic insulation 500V

Protocols

- Profibus-DP V0 Class-1 & 2 (Master)
- S7/MPI (Master)
- FDL S5 (Master)
- PPI/PPI+ (Master)
- FDL Send/Receive
- Profibus-FMS² (Client/Server)

Technical Data

- PCI Universal bus 3.3V/5V (PCI-X compatible)
- Hardware Plug & Play
- AMD SC520
- 8 Mb SDRAM
- 1 Mb Flash Memory
- EMC compliance¹

Key benefits ● Run all Profibus protocols simultaneously ● Best choice for SCADA applications
● Compatible Simatic S5 (95U, 115U, 135U, 155U Series) ● Compatible Simatic S7 (S7-300, S7-400)
● Combo Ethernet + Profibus version also available

applicom® PCI2000PFB

APP-PF2-PCI

PCI Network Interface
Card for Profibus



2 Profibus ports (EN 50 170) (default)

- Port1:** • 9.6 Kbps to 12 Mbps
Port2: • 9.6 Kbps to 187.5 Kbps
- 9-pin, D-Sub, female
 - Optical galvanic insulation 500V

or 1 Serial port (option)

- 50 to 38400 bps
- 9-pin, D-Sub, male
- RS485/RS422⁴ with optical galvanic insulation 500V

Protocols

- Profibus-DP V0 Class-1 & 2 (Master/Slave)
- S7/MPI (Master)
- FDL Send/Receive
- FDL S5³ (Master)
- Profibus-FMS^{2,3} (Client/Server)

Technical Data

- PCI bus, 5V
- Hardware Plug & Play
- AMD SC520
- Profibus ASIC ASPC2
- 8 Mb SDRAM
- 512 Kb Flash Memory
- EMC compliance¹

Protocols

See annex A page 16

Key benefits ● COMBO: Full Profibus 12 Mbps S7/MPI 187.5 Kbps
● Run all Profibus protocols together
● Profibus-DP Master/Slave simultaneously
● Optional Serial port

-1- Hardware complies with EMC for both industrial and office use (EN55022 Class B, EN61000-6-2, EN61000-3-2, and EN61000-3-3)
-2- Protocol Profibus-FMS on request. Consult us
-3- Profibus Port 2 only
-4- Other interface line (RS232, current loop 20mA, Profibus) are available as option. See annex C page 17

- **All-in-One solution** = Product + Services
- **OS Drivers:** Windows XP, 2000, NT4, XPe, NTe, VxWorks, QNX, Linux, DOS
- **Software Interface:** OPC Server, ActiveX Control, Wonderware DAserver, Wonderware I/O server, DLL library

PC NETWORK INTERFACE CARDS

applicom® PCI1500S7

APP-PS7-PCI

PCI Network Interface Card for Profibus dedicated to Siemens S7 series



1 Profibus port (EN 50 170)

- 9.6 Kbps to 1.5 Mbps
- 9-pin, D-Sub, female
- Optical galvanic insulation 500V

Protocols

- S7/MPI (Master)
- PPI/PPI+ (Master)
- FDL Send/Receive

Technical Data

- PCI bus, 5V
- Hardware Plug & Play
- Intel 80486DX4
- 4 Mb SDRAM
- EMC compliance¹

- Key benefits**
- Economical solution
 - Dedicated to Siemens Simatic S7 Series
 - FDL Send/Receive + S7 simultaneously

applicom® PCU1500S7

APP-PS7-PCU

PCI 3.3V/5V Network Interface Card for Profibus dedicated to Siemens S7 series



1 Profibus port (EN 50 170)

- 9.6 Kbps to 1.5 Mbps
- 9-pin, D-Sub, female
- Optical galvanic insulation 500V

Protocols

- S7/MPI (Master)
- PPI/PPI+ (Master)
- FDL Send/Receive

Technical Data

- PCI Universal bus 3.3V/5V (PCI-X compatible)
- Hardware Plug & Play
- AMD SC520
- 8 Mb SDRAM
- 1 Mb Flash Memory
- EMC compliance¹

- Key benefits**
- Economical solution
 - Dedicated to Siemens Simatic S7 Series
 - FDL Send/Receive + S7 simultaneously

applicom® CPC1100PFB

APP-PFB-CPI

CompactPCI Network Interface Card for Profibus



1 Profibus port (EN 50 170)

- 9.6 Kbps to 12 Mbps
- 9-pin, D-Sub, female
- Optical galvanic insulation 500V

Protocols

- Profibus-DP V0 Class-1 & 2 (Master/Slave)
- S7/MPI (Master)
- FDL Send/Receive
- Profibus-FMS² (Client/Server)
- PPI/PPI+ (Master)

Technical Data

- CompactPCI bus, 5V
- 3U format
- Hardware Plug & Play
- AMD SC520
- Profibus ASIC ASPC2
- 8 Mb SDRAM
- 512 Kb Flash Memory
- EMC compliance¹

- Key benefits**
- CompactPCI Bus
 - Flash memory for Auto-Boot
 - Speed up to 12 Mbps
 - Run all Profibus protocols simultaneously



Your complete **solution** Hardware, Software and Services

applicom®

Ethernet solutions

applicom® PCU2000ETH

APP-ETH-PCU

PCI 3.3V/5V Network Interface Card for Ethernet

APP-DRV-AB

Protocol license for A-B PCCC messaging



1 Ethernet port

- Fast Ethernet 10/100 Mbps, (auto negotiating)
- Base-T (RJ45),
- 4 leds (Rx, Tx, Link, 10/100)
- Win32 NDIS Driver (using interface as a standard Ethernet card)

Protocols

See protocol list below

Technical Data

- PCI Universal bus 3.3V/5V (PCI-X compatible)
- Hardware Plug & Play
- AMD SC520
- 8 Mb SDRAM
- 1 Mb Flash Memory
- EMC compliance¹

- Key benefits**
- All protocols are included and run simultaneously
 - On board co-processor eliminates data bottlenecks, ensuring delivery of time critical information
 - Best choice for HMI applications
 - Equipment redundancy via OPC server

applicom® PCU2000ETH

APP-EPB-PCU

PCI 3.3V/5V Network Interface Card for Ethernet and Profibus

APP-DRV-AB

Protocol license for A-B PCCC messaging



1 Ethernet port

- Fast Ethernet 10/100 Mbps, (auto negotiating)
- Base-T (RJ45),
- 4 leds (Rx, Tx, Link, 10/100)
- Win32 NDIS Driver (using interface as a standard Ethernet card)

Protocols

See protocol list below

Technical Data

- PCI Universal bus 3.3V/5V (PCI-X compatible)
- Hardware Plug & Play
- AMD SC520
- 8 Mb SDRAM
- 1 Mb Flash Memory
- EMC compliance¹

1 Profibus port (EN 50 170)

- 9.6 Kbps to 1.5 Mbps
- 9-pin, D-Sub, female
- Optical galvanic insulation 500V

Protocols

- Profibus-DP V0 Class-1 & 2 (Master)
- S7/MPI (Master)
- FDL Send/Receive
- FDL S5 (Master)
- Profibus-FMS² (Client/Server)

- Key benefits**
- COMBO: Ethernet 10/100 + Profibus 1.5 Mbps
 - Run all Ethernet and Profibus protocols simultaneously
 - Equipment redundancy via OPC server
 - Gateway feature: Ethernet ↔ Profibus

Ethernet Protocols run all in Client/Server modes simultaneously

Ethernet TCP/IP

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> • Altus - Alnet II (AL 200x, Webgate) • Alstom - SRTP (C80-35, C80-75) • Allen-Bradley - EtherNet/IP* (Logix, PLC-5 and SLC 500) | <ul style="list-style-type: none"> • GE Fanuc - SRTP (90-30, 90-70) • Mitsubishi - Melsec (A, Q) • Omron - FINS (C, CV, CS) • Schneider - Open Modbus TCP | <ul style="list-style-type: none"> • Schneider - UNI-TE (Premium & Micro) • Siemens - Industrial Ethernet (S5, S7, TI) • UDP Send/Receive (Free messaging) • Development toolkit for TCP/IP protocols |
|--|---|---|

Ethernet

- Schneider - Ethway
- Siemens - Industrial Ethernet ISO (S5, S7, TF and TI)

* EtherNet/IP protocol using PCCC messaging requires APP-DRV-AB software licence

-1- Hardware complies with EMC for both industrial and office use (EN55022 Class B, EN61000-6-2, EN61000-3-2, and EN61000-3-3)

-2- Protocol Profibus-FMS on request. Consult us

-3- Other interface line (RS232, current loop 20mA, Profibus) are available as option. See annex C page 17

- **All-in-One solution** = Product + Services
- **OS Drivers:** Windows XP, 2000, NT4, XPe, NTe, VxWorks, QNX, Linux, DOS
- **Software Interface:** OPC Server, ActiveX Control, Wonderware DAsServer, Wonderware I/O server, DLL library

PC NETWORK INTERFACE CARDS

applicom® PCU2000ETH

APP-ESR-PCU

PCI 3.3V/5V Network Interface Card for Ethernet and Serial

APP-DRV-AB

Protocol license for A-B PCCC messaging

1 Ethernet port

- Fast Ethernet 10/100 Mbps, (auto negotiating)
- Base-T (RJ45), 4 leds (Rx, Tx, Link, 10/100)
- Win32 NDIS Driver (using interface as a standard Ethernet card)

Protocols

See protocol list below

Technical Data

- PCI Universal bus 3.3V/5V (PCI-X compatible)
- Hardware Plug & Play
- AMD SC520
- 8 Mb SDRAM
- 1 Mb Flash Memory
- EMC compliance¹

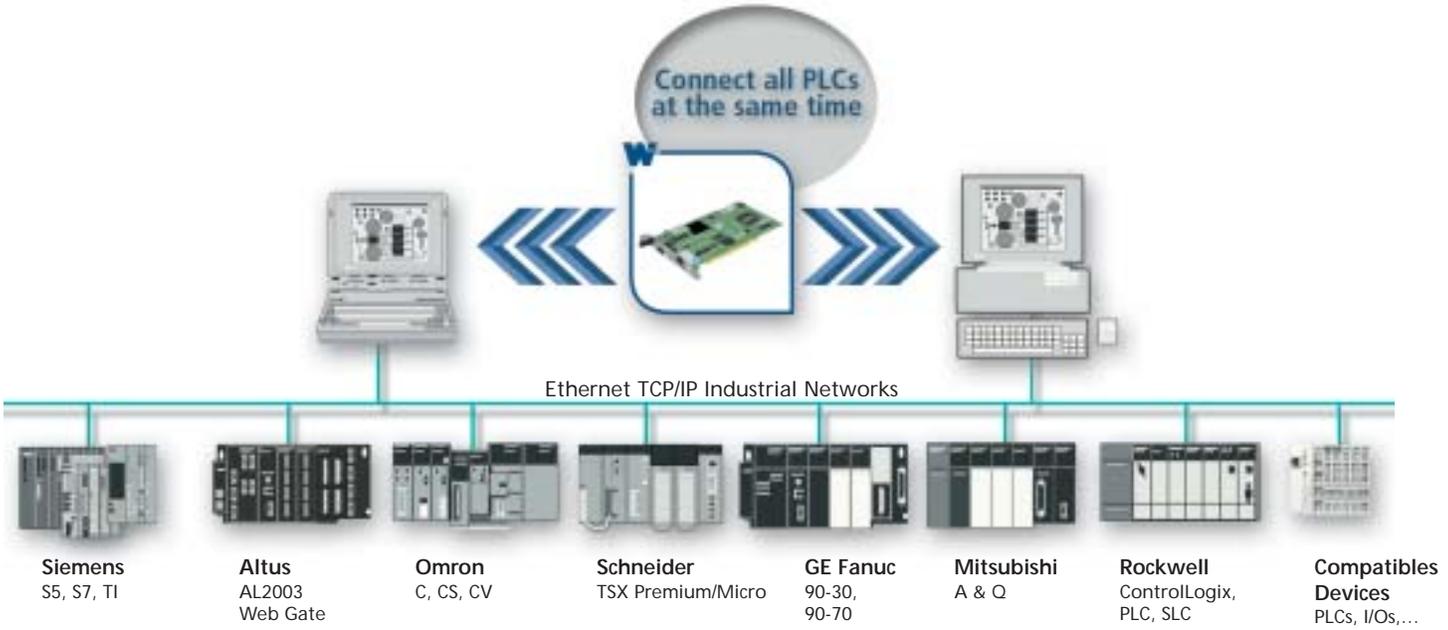
1 Serial port

- 50 to 38400 bps
- 9-pin, D-Sub, male
- RS485/RS422³ with optical galvanic insulation 500V

Protocols

See Annex A page 16

- Key benefits**
- All protocols are included and run simultaneously
 - On board co-processor eliminates data bottlenecks, ensuring delivery of time critical information
 - Best choice for HMI applications
 - Equipment redundancy via OPC server
 - Gateway feature: Ethernet ↔ Serial



Your complete **solution** Hardware, Software and Services





Serial solutions

applicom® PCI1000

APP-SR1-PCI

PCI Network Interface
Card for Serial Link



1 Serial port

- 50 to 38400 bps
- 9-pin, D-Sub, male
- RS485/RS422² with optical galvanic insulation 500V

Protocols

See Annex A

Technical Data

- PCI bus, 5V
- Hardware Plug & Play
- Intel 80386
- 4 Mb SDRAM
- EMC compliance¹

Key benefits

- Best choice for SCADA applications
- On-board RS485 interface, save you space and money

applicom® PCU1000

APP-SR1-PCU

PCI 3.3V/5V Network Interface
Card for Serial Link



1 Serial port

- 50 to 38400 bps
- 9-pin, D-Sub, male
- RS485/RS422² with optical galvanic insulation 500V

Protocols

See Annex A

Technical Data

- PCI Universal bus 3.3V/5V (PCI-X compatible)
- Hardware Plug & Play
- AMD SC520
- 8 Mb SDRAM
- 1 Mb Flash Memory
- EMC compliance¹

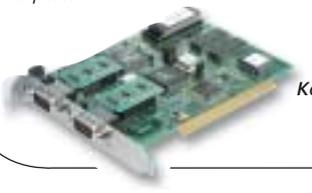
Key benefits

- Best choice for SCADA applications
- On-board RS485 interface, save you space and money

applicom® PCI2000

APP-SR2-PCI

PCI Network Interface
card for Serial Link
with 2 ports



2 Serial ports

- 50 to 38400 bps,
- 9-pin, D-Sub, male
- RS485/RS422² with optical galvanic insulation 500V

Protocols

See Annex A

Technical Data

- PCI bus, 5V
- Hardware Plug & Play
- Intel 80386
- 4 Mb SDRAM
- EMC compliance¹

Key benefits

- Best choice for SCADA applications
- On-board RS485 interface, save you space and money
- Gateway feature on 2 ports card

Annex-A

Serial Protocols

M: Master
S: Slave
C/S: Client/Server

• Allen-Bradley – DF1 (PLC-5 SLC 500 Series)	M, C/S	• Siemens – 3964/3964R (Simatic S5 Series)	M, C/S
• GE Fanuc/Alstom – SNP-X (90-xx and 80-xx Series)	M	• Siemens – AS511 (Simatic S5 Series)	M
• Elsag Bailey – Data Link (5000 & 2000 Series)	M	• Siemens – PPI/PPI+ (Simatic S7-200 Series)	M
• Modbus – ASCII & RTU, JBus	M/S	• Siemens – TI-Dir (Simatic TI-505 Series)	M
• Moeller Group – Sucoma (PS32, PS316 Series)	M	• Schneider – Uni-Telway (All TSX Series)	M/S, C/S
• Omron – Sysmac Way	M	• Development toolkit for Serial protocols	M/S
• Saia Burgess – S-Bus (PCD Series)	M		

Annex-B

Profibus Protocols

M: Master
C/S: Client/Server

• Profibus-DP Class-1 & Class-2	M	• Siemens - FDL S5 (Simatic S5)	M
• Profibus-FMS*	C/S	• Siemens - PPI/PPI+ (Simatic S7-200)	M
• Siemens-S7/MPI (Simatic S7-300, S7-400)	M	• FDL Send/Receive	

* Protocol Profibus - FMS on request. Consult us

- **All-in-One solution** = Product + Services
- **OS Drivers:** Windows XP, 2000, NT4, XPe, NTe, VxWorks, QNX, Linux, DOS
- **Software Interface:** OPC Server, ActiveX Control, Wonderware DAserver, Wonderware I/O server, DLL library

PC NETWORK INTERFACE CARDS

applicom® PCI4000

APP-SR4-PCI

PCI Network Interface Card
for Serial Link with 4 ports



4 Serial ports

- 50 to 38400 bps
- 9-pin, D-Sub, male
- RS485/RS422² with optical galvanic insulation 500V

Protocols
See Annex A

Technical Data

- PCI bus, 5V
- Hardware Plug & Play
- Intel 80386
- 4 Mb SDRAM
- EMC compliance¹

or Profibus³ ports

Protocols
See Annex B

- Key benefits**
- Best choice for SCADA applications
 - On-board RS485 interface, save you space and money
 - Mixed up to 4 Serial or Profibus ports

REMOTE SERIAL SPLITTER BOXES FOR PCI4000 CARD

applicom® BR4000

APP-SBX-BRD

Remote Serial Splitter box



Features

- Desktop version
- 4 ports, 9-pin, D-Sub male
- 185 x 110 x 30 mm (7.28 x 4.33 x 1.18")
- 1.5 m (4.92") junction cable

applicom® BX4010

APP-SBX-BXD

Remote Serial Splitter box
with galvanic insulation



Features

- Desktop version
- 4 ports, 9-pin, D-Sub male
- Galvanic insulation (2500 V) based on opto couplers
- 275 x 175 x 67 mm (10.83 x 6.89 x 2.64")
- Transmission LEDs (TX/RX)
- 110V/220V AC power supply
- 1.5 m (4.92") junction cable

applicom® BX4010R

APP-SBX-BXR

Remote Serial Splitter box
with galvanic insulation in 19" rack



Features

- 19" rack mounting, 1U version
- 4 ports, 9-pin, D-Sub male
- Galvanic insulation (2500 V) based on opto couplers
- 483 x 200 x 45 mm (19.02 x 7.87 x 1.77")
- Transmission LEDs (TX/RX)
- 110V/220V AC power supply
- 1.5 m (4.92") junction cable

Annex-C

Electrical Interfaces part number

APP-INT-232-G	APP-INT-232-N	APP-INT-485-G	APP-INT-485-N	APP-INT-CL2-N	APP-INT-PFB-G	APP-INT-PFB-N
Serial RS232 with galvanic insulation 1 unit	Serial RS232 without galvanic insulation 2 units	Serial RS485 with galvanic insulation 1 unit	Serial RS485 without galvanic insulation 2 units	Current Loop 20mA (passive) 2 units	Profibus 485 with galvanic insulation 1 unit	Profibus 485 without galvanic insulation 2 units

-1- Hardware complies with EMC for both industrial and office use (EN55022 Class B, EN61000-6-2, EN61000-3-2, and EN61000-3-3)

-2- Other interface line (RS232, current loop 20mA, Profibus) are available as option- See Annex C

-3- 1 x 500 Kbps Profibus port + 1 x 187.5 Kbps Profibus port + 2 x 9600 bps Serial ports.
1 x 500 Kbps Profibus port + 3 x 9600 bps Serial ports



Serial solutions

GATEWAY

applicom® GT4010/GT4010R

APP-GTW-S4D

Gateway communication,
4 Serial ports, desktop format



4 Serial ports

- 50 to 38400 bps
- 9 pin, D-Sub, male
- RS485/422 galvanic insulation 500V

Protocols

- JBUS/Modbus RTU (Master/Slave)
- Uni-Telway (Master/Slave)
- 3964/3964R (Master)
- AS511 (Master)
- DF1 (Client/Server)
- PPI/PPI+ (Master)
- SNP-X (Master)

Technical Data

- Intel 80386
- 512 Kb Flash Memory
- 512 Kb SDRAM
- EMC Compliance¹
- 8 Diagnostic LEDs
- 24 V AC power supply
- Data base: 32 Kbits, 32 Kwords

new

APP-GTW-S4R

Gateway communication,
4 Serial ports, in 19" rack format



Key benefits

- Stand alone box
- Run under Windows 2000 and XP environments
- Router feature

Modbus Plus solutions



PC NETWORK INTERFACE CARDS

18

applicom® PCI2000MBP

APP-MBP-PCI

PCI Network Interface
Card for Modbus Plus

1 Modbus Plus port

- 1 Mbps (Token Ring) Channel-A
- 9-pin, D-Sub, female

Protocols

- Modbus Plus Client/Server

Technical Data

- PCI bus, 5V
- Hardware Plug & Play
- Intel 80386
- 4 Mb SDRAM
- EMC compliance¹

APP-CON-MBP

Modbus Plus connector
for APP-MBP-PCI card

and choose

1 Serial port (default)

- 50 to 38400 bps,
- 9-pin, D-Sub, female
- RS485/RS422² with optical galvanic insulation 500V

Protocols

See annex A page 16

or

1 Modbus Plus redundant port (option)

Key benefits

- COMBO: Modbus Plus + Modbus
- Manage Network Global Data
- Automatic Medium redundancy on the same card by using optional Modbus Plus redundant port
- Powerful Modbus Plus diagnostic tools
- Compatible with third party-products Modbus Plus programming software



-1- Hardware complies with EMC for both industrial and office use (EN55022 Class B, EN61000-6-2, EN61000-3-2, and EN61000-3-3)
 -2- Other interface line (RS232, current loop 20mA, Profibus) are available as option. See Annex C page 17

- **All-in-One solution** = Product + Services
- **OS Drivers:** Windows XP, 2000, NT4, XPe, NTe, VxWorks, QNX, Linux, DOS
- **Software Interface:** OPC Server, ActiveX Control, Wonderware DAserver, Wonderware I/O server, DLL library

WorldFIP solutions

WorldFIP

PC NETWORK INTERFACE CARDS

applicom® PCI2000FIP

APP-FIP-PCI

PCI Network Interface Card for WorldFIP

1 WorldFIP port

- 1 Mbps
- 9-pin, D-Sub, male

Protocols

- Fipway Client/Server

Technical Data

- PCI bus 5V
- Hardware Plug & Play
- Intel 80386EX
- 4 Mb SDRAM
- EMC compliance[†]

APP-CON-FIP

FIP connector for APP-FIP-PCI card

1 Serial port

- 50 to 38400 bps,
- 9-pin, D-Sub, male
- RS485/422² with optical galvanic insulation 500V

Protocols

See annex A page 16

- Key benefits**
- COMBO: Fipway + Uni-Telway
 - Best choice for SCADA applications
 - Compatible with TSX/PMX Series (17,37/Micro, 47, 57/Premium, 67, 87, 107)



Data Highway Plus solutions

PC NETWORK INTERFACE CARDS

19

applicom® 5136-SD-PCI-U

5136-SD-PCI-U

PCI 3.5V/5V Network Interface card for A-B DH+/RIO network

1 DH+ port

- 57.6, 115.2 and 230.4 Kbps
- 6-pin, Screw terminal connector

Protocol

- A-B Data Highway Plus (Peer to Peer)
- A-B Remote I/O (Adapter or Scanner mode)

Technical Data

- PCI bus 3.5V/5V
- Hardware Plug & Play
- Intel 80386
- 4 Mb SDRAM
- EMC compliance[†]

- Key benefits**
- DH+ Analyzer/Monitor
 - Compatible with PLC-3, PLC-5, PLC-5/250, SLC 5/04 processors and ControlLogix
 - Software support for emulation of A-B's 1784-PKTX interface card
 - Compatible with Rockwell Software's RSLinx and its RS family



Your complete **solution** Hardware, Software and Services

applicom®



Gateways

applicom® GATEways **new**

APP-ESR-GTW

Ethernet to Ethernet/Serial gateway

The GATEway is the first hardware platform that allows **simultaneous communication** between industrial devices (PLC, SCADA etc.) using up to **20 different Ethernet TCP/IP, Profibus and Serial protocols**.

1 Serial port

- 1 x RS485/422 (2-wire or 4-wire)
- 9 pin, D-Sub, male
- 2400 bps up to 115.2 Kbps

Protocols

- GE Fanuc, SNP-X Master
- Schneider, Modbus Master (ASCII & RTU)
- Schneider, Modbus Slave (ASCII & RTU)
- Schneider, Uni-Telway Slave Client/Server
- Siemens, AS511 Master
- Allen Bradley, DF1 Full Duplex
- Siemens, TI-Dir Master

Technical Data

- ST Micro STPC Vega (equivalent P200MHz)
- RAM 32 Mbytes; Flash Disk 32 Mbytes
- EMC Compliance
- Diagnostic LEDs

APP-ESP-GTW

Profibus to Ethernet/Serial gateway

1 Ethernet port

- 10/100BaseT (RJ45), shielded
- IEEE 802.3

Protocols

- Allen Bradley, EtherNet/IP PCCC
- Altus, Alnet II
- Alstom, SRTM
- GE Fanuc, SRTP
- Mitsubishi, Melsec
- Omron, FINS
- Schneider, Open Modbus
- Schneider, Uni-TE
- Siemens, Industrial Ethernet

1 Profibus port

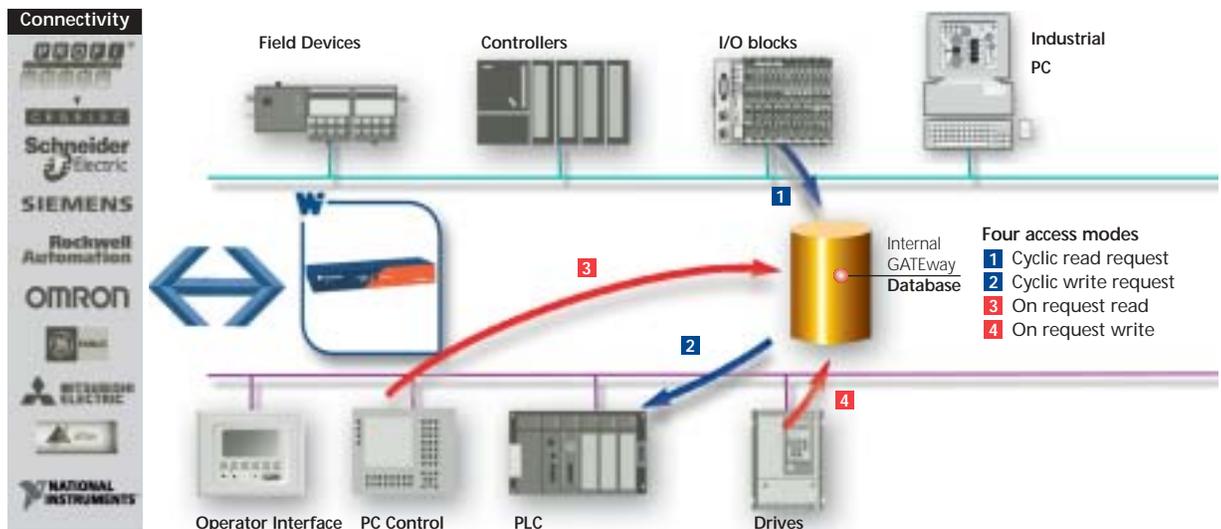
- 9-pin, D-Sub, female with galvanic insulation 500V
- 9600 bps up to 12 Mbps
- 2 LEDs: BF (Bus Fault) ST (Communication status)

Protocols

- Siemens S7/MPI Client
- Siemens S5 Client
- DP-V0 Master/Slave Class 1 & 2



- Key benefits**
- Read/Write cyclic functions can be driven through associated flags
 - Supports unsolicited data exchange from Client device
 - Fast data exchange through integrated database (32 Kbits/32 Kwords)
 - No programming, just configuring (tools included)
 - Automatic detection of Profibus-DP devices





- **All-in-One solution** = Product + Services
- **OS Drivers:** Windows XP, 2000, NT4, XPe, NTe, VxWorks, QNX, Linux, DOS
- **Software Interface:** OPC Server, ActiveX Control, Wonderware DAServer, Wonderware I/O server, DLL library

applicom® webGATE **new**

APP-WEB-SER-M

Internet to Serial gateway with integrated modem

The webGATE is a *customizable* Web enabled gateway providing both local and remote monitoring services for Serial/Profibus connected devices. The gateway creates the connection from **Serial** and **Profibus** installations to LAN based networks.

The webGATE hardware platform is an extremely compact board-only server housed in a compact and easy to install enclosure. Designed as an « always on » device, network connectivity is facilitated with the Serial/Profibus installations.

APP-WEB-PFB-M

Internet to Profibus or Serial gateway with integrated modem

1 Serial port

- 1 x RS485/422 (2-wire or 4-wire)
- 9 pin, D-Sub, male
- 2400 bps up to 115.2 Kbps

Protocols

- Modbus RTU Master/Slave
- Uni-Telway Slave Client/Server

Technical Data

- ST Micro STPC Vega (equivalent P200MHz)
- RAM 32 Mbytes; Flash Disk 32 Mbytes
- EMC Compliance
- Diagnostic LEDs
- Web server, FTP server and SMTP Client

1 Ethernet port

- 10/100BaseT (RJ45), shielded
- Modbus TCP gateway feature: TCP/IP <-> Serial

1 Profibus port

- 9-pin, D-Sub, female with galvanic insulation 500V
- 9600 bps up to 12 Mbps
- 2 LEDs: BF (Bus Fault) ST (Communication status)

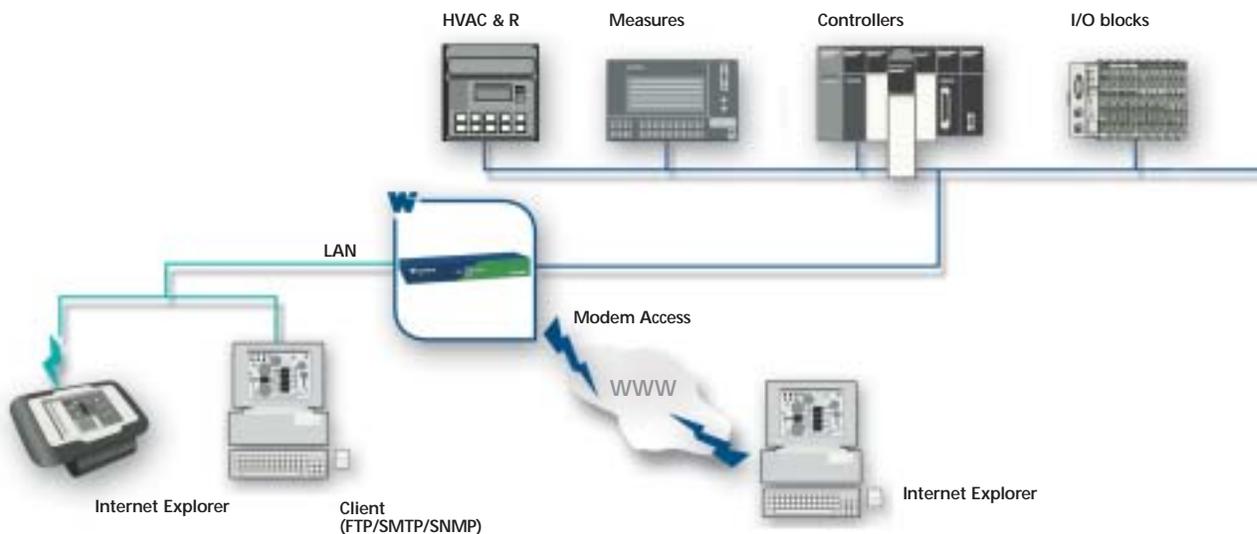
Protocols

- Siemens S7/MPI Client
- Siemens S5 Client
- DP-V0 Master Class 2 & DP-V0 Slave (simultaneously)
- DP-V0 Slave (only)

1 Modem: V90 (RJ11)



- Key benefits**
- Monitors and controls your Serial or Profibus devices using a standard Web browser
 - Performs specified local data logging for recording
 - Manages alarms status information to remote device centers (email, SMS, IPcallback) for monitoring
 - Customizes built-in web pages to create a user interface for real-time visualization



Software solutions



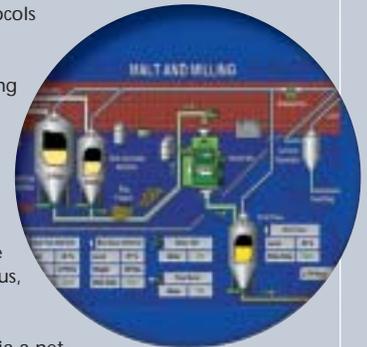
applicom® **new**

WONDERWARE DAServer



The applicom® standard package includes a Wonderware DAServer which enables simultaneous connectivity between FactorySuite applications (InTouch, InControl, InBatch, InTrack, and IndustrialSQL Server.) and industrial devices (PLCs, RTUs, DSCs, flow controllers, loop controllers, scales and other hardware).

The applicom® Wonderware DAServer is compatible with all industrial protocols of the applicom® range. These servers use our intelligent interface card technology, benefiting from the embedded execution of industrial protocol management and command processing. Support of multi-protocol access allows a single I/O server connection to simultaneously send and receive equipment data coming from more than 40 protocols (Ethernet, Profibus, Serial...).



It can be used locally or remotely via a network connection and supports the following protocols:

- **OPC** (OLE for Process Control) is a non-proprietary set of standard interfaces based upon Microsoft's OLE/COM technology.
- **SuiteLink** is a Wonderware proprietary protocol based on TCP/IP and is designed specifically to meet industrial needs such as data integrity, high-throughput, and easier diagnostics. It supports data properties (VTQ) for Value, Time stamp, and Quality, which are especially important for alarming, historical archiving and SCADA applications.
- **DDE** (Dynamic Data Exchange) is a communication protocol developed by Microsoft to allow applications in the Windows environment to send/receive data and instructions to/from each other. It implements a client-server relationship between two concurrently running applications

For the monitoring, DAServers provide special items that allow you to set up and diagnose their working modes dynamically (write error, polling period, etc). When debugging while a client application is running, you can display various counters concerning a topic, as well as information related to the maximum number of I/O Items.

- Key benefits**
- First DAServer from a Wonderware solution Provider
 - Compatible with all components of FactorySuite 2000 and FactorySuite A2
 - Independent from the card and the protocol used





applicom®

OPC SERVER



OPC (OLE for Process Control) is a communication standard based on Microsoft technologies (OLE/COM/DCOM) which forms the new means of exchanging information between Windows-32bit applications.

The applicom® OPC Server is an OPC Data Access (DA) compliant server that enables data exchange between OPC clients and a broad range of device manufacturers through networks such as: Ethernet TCP/IP, Profibus, Serial, Modbus Plus, WorldFIP,

applicom® OPC Server provides Real-Time Data Access. It benefits from our powerful interface card concept: embedded multi-task kernel, on-board protocols management, multi-process and multi-thread access drivers. This multi-thread structure ensures the OPC server optimized parallel access to each applicom card and allows it to benefit fully from the embedded performance of the concept.

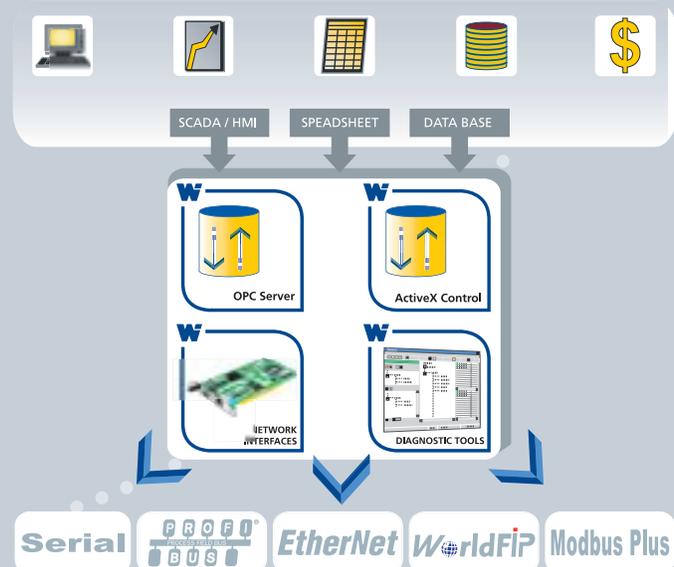
Features include:

- **Fully OPC compliant:** by participating regularly in OPC Foundation interoperability workshops, applicom servers are proven compliant with Data Access V1.0a, V2.05 and V3.0 specifications and products.
- **Open to networks and protocols:** through one unique OPC server, you can easily open your applications to main fieldbuses and industrial networks: Ethernet TCP/IP, Profibus, Serial, Modbus Plus, WorldFIP.
- **Easy to use:** diagnostic tools are included to monitor Client/Server connections, all OPC objects (group, item, ...) and log/display of all communication requests.
- **Tag Name:** manufacturers syntax descriptor can be associated to each protocol. With these descriptors, you can use mnemonics similar to manufacturer syntaxes to name the variables in your client applications. For instance, on Siemens Simatic® S7 equipment, Word 10 of the DB1 will be identified by DB1.DBW10.
- **Access modes:** Synchronous in Read / Write, Asynchronous in Read / Write or Monitoring (OPC client feeds back information to the server if the data monitored have been modified).
- **Equipment redundancy:** allows any third party OPC client to dynamically change from a primary PLC to a secondary, or from a port to another port or more from a card to another card (into the same PC), without unadvised items.
- **Data types:** supports standard data types (Bit, Byte, String, Word, Dword and Float) using Signed or Unsigned data format. It also manages Array and depending of the protocol used, it can also support special area of memory controller such: Timers, Counters,...
- **Optimization mechanism of data transfer:** it reduces the number of network requests on medium. It automatically sorts and groups items in frames to provide you the best data acquisition throughput.

- **Item browsing:** new-browsing interface to optimize data transfer between the OPC Client/Server. Client chooses number of branches and leaves returned by Server during the browsing process avoiding receiving a big amount of data.



- Key benefits**
- OPC Data Access V1.0a, V2.05 & V3.0
 - Multi protocol server
 - OPC item browsing
 - Multiple client access simultaneously in COM and DCOM modes
 - Managing equipment redundancy
 - A-B ControlLogix online/offline tag browsing compatible





applicom®



COMMUNICATION ACTIVEX CONTROL

The applicom® Communication ActiveX Control allows you to develop easily and quickly applications requiring communication with industrial devices.

Included with all applicom® packages, this component can be integrated in all « ActiveX Container » development environments like Visual Basic, Visual C++, Delphi, MS-Office, Scada packages...

Using one ActiveX, your applications can transparently communicate with a large variety of industrial devices without any development related to the communications protocols.

- **Easy to use**

By configuring the ActiveX Control properties and with only 3 lines of Visual Basic code, your application exchanges data with the devices.

- **High-performance**

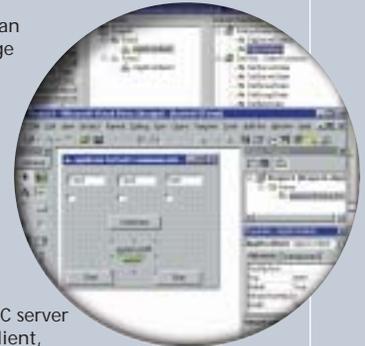
The ActiveX uses the applicom® OPC server feature (COM/DCOM). As an OPC client, it benefits from the advantages of: Client/Server architecture, Item browsing, Network access optimizations.

- **Integrated services**

- Graphical configuration: In the design phase, the configuration is done via the ActiveX property tabs. No development is necessary.
- Event-driven data update: item values are refreshed on state change to the application by using an event-driven mechanism (Callback Function).
- Dialogue Boxes: allowing an immediate integration of special functionalities such as data writing, server state reading.
- Synchronous and asynchronous read/write modes.

Increases productivity and reduce software bugs, a Programming Wizard has been added. It simplifies the use of applicom® ActiveX control in a Visual Basic 6 project by automatically generating the code corresponding to the ActiveX method requested. The Wizard adds declaration of global and local variables, manages error handling and exception, and provides rich comments with explanations.

- Key benefits**
- Included as standard with all applicom® packages
 - Independent from the card and the protocol used
 - Easy to use
 - NO license required, NO extra cost
 - High performance
 - Programming Wizard to accelerate your developments
 - Usable through Visual Basic.Net





applicom®

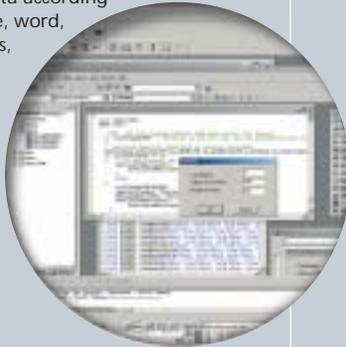
LIBRARY/DLL

Created specifically for systems integrators and programmers who need to develop custom applications.

The applicom® package includes an API library that enables you to directly control and command the functionalities of the applicom® cards.

From your programming environment, the API functions allow you to:

- Access in read/write to device data according to various type formats (bit, byte, word, float ...) and modes (synchronous, asynchronous, cyclic)
- Access in read/write to applicom® Database, the internal memory card (32Kbits, 32Kwords)
- Log update data into a FIFO event
- Set up equipment Redundancy feature
- Drive modems connected on Serial ports and other miscellaneous functions.



The API functions are standardized and independent of the operating system and the protocol used.

As a result you save time and money for your future application developments.

The API library is delivered as DLL for Windows 32-bit environments and can be used with all Windows based programming languages:

- Microsoft Visual Basic, Visual Basic .NET, Visual C/C++/C#/J#
- Borland Delphi, Borland C/C++
- National Instruments LabWindows/CVI, LabView/VI
- PCSoft Windev

The API library is also included with applicom® solutions for non-windows operating systems such as: VxWorks, QNX, Linux, DOS. You can download free of charge these drivers and electronic documentation from the web site www.woodhead.com.

- Key benefits**
- Included as standard with all applicom® packages
 - Independent from the card and the protocol used
 - NO license required, NO extra cost
 - Available for Windows 32-bit and other operating systems



applicom®

CONSOLE

The applicom® Console is the *heart* of the applicom® software suite. It is an intuitive project management and configuration tool integrating powerful features that allow quick, easy, and labor-saving integration of your industrial communication with your application.

Whatever the card and the protocol used, you always set up your project in the same way.

The Console environment is totally integrated to ensure that you can efficiently access all of the functions by a mouse click of the toolbar menu.

The Console offers a powerful graphical user interface to create and manage your industrial communication.

The user configuration is represented in easy-to-use graphical form based on a tree structure.



Console highlights:

- **Configuration Manager**
Allows you to create multiple user configuration and backup/restore your projects.
- **Automatic PCI cards detection**
All the applicom® PCI and CompactPCI cards plugged into the PC will be automatically detected by the console.
- **Remote TCP/IP configuration**
Start the Console and connect to a remote station through TCP/IP to configure and manage its applicom® cards.
- **Equipment library**
For each protocol, a list of supported equipment is displayed in a tree. You just have to drag & drop the equipment to insert them in your user configuration.
- **Network detection**
Depending of the protocol used, the Console scans your network to detect the active equipment. Once detected, just drag & drop devices into your user configuration.
- **Automatic Topic naming**
Avoids the double typing; the Console automatically creates OPC/DDE topic based on the property name defined to each equipment.
- **Card Status info bar**
Lets you know instantly the status of each applicom® card and if your current user configuration is identical to one running in the cards.
- **OPC client for testing**
The Console launches an OPC client that connects automatically to the applicom® OPC server. Thus you can access in read/write to process data.

- Key benefits**
- One single configuration tool whatever the card and protocol used
 - Powerful Graphical User Interface
 - Allow remote configuration through TCP/IP
 - 2 configuration modes: standard and expert
 - One mouse click access to powerful features: network diagnostic, OPC connection, Read/Write data...



applicom®

DIAGNOSTIC AND TEST TOOLS

applicom® package includes a set of powerful and easy-to-use tools for testing and monitoring your industrial communication.

These tools are an invaluable help to the implementation of applicom® product and to the troubleshooting of the whole control and communication system. They can be used during systems implementation and also during operation since the tools can coexist with your industrial applications.

Network Tool Analysis

These are dedicated tools specific to each protocol that provide specialized network analysis. They provide real-time information about network traffic (network load, number of requests, data rate...).

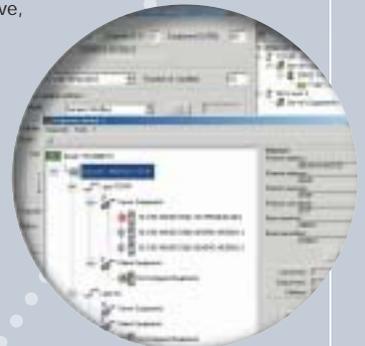
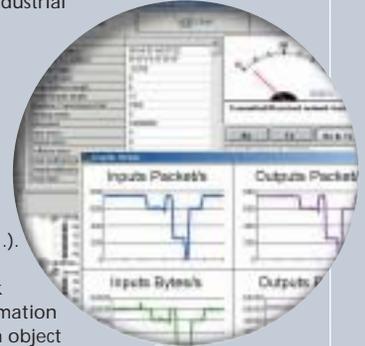
A tree structure displays the network topology that provides specific information corresponding to the communication object selected: card, channel, protocol, and equipment. Animated icons provide rapid information about status of equipment (connected, active, error, not configured...).

Utilities for Data Transfer Testing

Those utilities enable you to send Read and Write requests using various data formats to the industrial equipment and to the internal Data-Base of the applicom® card. The requests are confirmed with status words indicating successful read/write attempts or indicating errors encountered.

Key benefits

- Graphical tools
- Work in parallel of your industrial applications
- Sophisticated network monitoring
- Data Traffic display in real-time
- Protocol frame viewer
- Access in Read/Write to process data



Additional products, services and contracts



additional products *Protocol Development Toolkit*

APP-KIT-ETH

applicom® development toolkit for Ethernet TCP/IP protocol

APP-KIT-SER

applicom® development toolkit for asynchronous Serial protocol

These kits allow you to develop in C Language any protocol (Ethernet TCP/IP or asynchronous Serial master/slave) and to use it as any other protocol. Without extra development, your protocol is automatically integrated in the applicom environment (configuration, diagnostic tools) and process data can be accessed via application interfaces such as DLL, Data servers (OPC, DDE/SuiteLink) or ActiveX control.

APP-KIT-SAT

applicom development toolkit for embedded C programming

This kit enables you to develop industrial tasks which will run in the multitask kernel of the card providing outstanding performances. These tasks may be: data treatment, embedded cyclic treatments, time-table management, gateway functionality.

additional services and contracts

APP-VMC-REN

Annual contract for applicom range for a new and renewed contract in the active period (1 per site)

APP-VMC-REI

For reinstating annual contract in the non-active period (1 per site)

With this annual contract, customers (system integrators, end-users, OEMs) can take advantage of:

1. discounted price for ALL interface cards
2. receiving each applicom update (paper data sheets + Cd-Rom)

additional updates

APP-UPG-CRD

applicom upgrade package + 6 months support extension for cards

APP-UPG-KPR

applicom upgrade package + 6 months support extension for development protocol toolkit

All the applicom products are supplied with full technical support during the warranty period of 2 years. Past this time, you may purchase a 6 months full support extension and you will receive an applicom upgrade package.



Focused Products for Customised Solutions

SST™ communication solutions have been developed for major industrial suppliers (Rockwell Automation, Schneider Electric, Siemens) as well as open networks such as Profibus, DeviceNet, InterBus, AS-Interface and ControlNet.

These solutions enable optimized data transfer for high speed control or other critical performance applications. By selecting from our premium software components or asking our team to customize a standard product, you can achieve an ideal solution to meet exactly your needs.

The SST™ product line includes network interface cards, PLC network modules for programmable controllers, and also I/O simulation and diagnostic software. SST™ also provides tools for OEMs and machine builders to adapt and integrate communication into their systems.

Woodhead is committed to provide First-Class OEM service with flexibility, excellent quality and reliability, high volume base, attractive volume discount, and strong back-end support to succeed in OEM business.

As a result, we have developed strategic partnerships with major industry leaders while accumulating nearly 20 years of know-how and technical expertise in industrial communication.

Today, more than 150,000 SST™ systems are installed around the world covering a wide range of industrial segments such as automotive, food processing, petrochemical, semi conductor, general manufacturing, military and machine builders.

Customer Focus

SST™ solutions have been developed for designers of automation and control systems looking for reliable and high performance communication solutions. Our products will enable you to shorten the design and startup times for your installations.

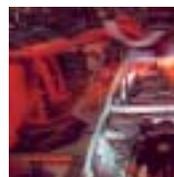
Our expertise also allows us to offer customized products that take into account the unique needs of leading suppliers in many industry segments: automotive, material handling, semi conductor and food and beverage, process.

Therefore we offer a wide range of cost-effective solutions which result in immediate benefits and profitability due to the high level of reliability associated with our products.

If you are a systems integrator, you will appreciate our complete and user-friendly communication solutions. Our products are so easy to use that you will save precious time during the configuration and installation phases of your project. In the event of a breakdown, our integrated diagnostic tools will get you up and running again quickly.

If you are an OEM, the rapid deployment of our solutions will allow you to concentrate on your core work without worrying about the industrial communication aspect. The quality and performance of our products will enable you to really make the most of your installations and increase your production.

If you are a machine builder, you will appreciate the modular aspect of our products which allow fast customization to shorten your time-to-market. Our technology can be adapted to meet your requirements and/or integrated into the design of a specific application (hardware design, protocol stack).





Applications

Our products are renowned for their high performance, ease of use and their ability to work with a wide range of industrial applications.

For example when used as a Scanner on fieldbuses, our network interface cards allow you to connect your PC-Based control applications to decentralized I/O. With high speed data acquisition and direct access to the memory map, SST™ cards are perfectly adapted for motion control applications and

industrial automation that use I/O blocks, HVAC, batch control and material handling.

Our multi-slave card offering allows you to simulate network devices to validate your automation and train the operators before the site is operational.

Our PLC Network Modules for programmable controllers are used for controlling and monitoring I/O devices on the fieldbus. They open up your proprietary architecture to a large choice of industrial networks.

Our Solution

SST™ product offering:

• Network interface cards

SST™ Network Interface Cards connect computers to various industrial networks including Allen-Bradley DH+/RIO, ControlNet, DeviceNet, CC-Link, Profibus, Reliance AutoMax DCS/RIO. These cards support several computer expansion slots such as PCI, ISA, PC/104, PCMCIA, CompactPCI, and VME.

SST™ cards have the following components - hardware driver, configuration software, diagnostic tools, software interfaces, etc – from which you can select to fulfill your needs. To provide open links to your industrial software applications, SST™ also offers data servers such as OPC, DDE and FastDDE (Wonderware).

• PLC network modules

SST™ network modules make your PLC more versatile by allowing it to communicate with other networks. Supported PLCs include Allen-Bradley SLC 500/PLC5/ControlLogix/CompactLogix MicroLogix and GE Fanuc Series 90-70.

Our products are single-slot modules that you place into the PLC chassis. Reliable and flexible, they include features such as on-board flash memory for auto-booting, direct I/O mapping in the PLC memory, firmware upgradeability – all to suit your requirements.

• I/O simulation software

PICS® Pro Simulation enables you to perform control systems testing and operator training before you go on-line. Using SST PICS® Pro Simulation software, you can quickly create a dynamic model on a PC that duplicates the behaviour of the actual process and provides simulated device feedback.

PICS® Pro Simulation is a risk-free solution. It enables you to identify and correct control system errors in the office, implement new processes quickly and accurately avoid the high cost of production downtime before you turn the switch on.





Focused Products for Customised Solutions

Services



Due to the quality of our products and our dedication to new technologies, Woodhead has been a preferred partner of major vendors using industrial communication for many years.



Our reputation is based not only on the quality of our products but also on the quality of the in-depth technical expertise that we provide to our worldwide customer base to deliver customer satisfaction.



Customization Service

Woodhead provides a wide spectrum of know-how in all fields of technology relevant for the implementation of innovative connectivity solutions in the industrial automation business.

In order to satisfy customers' time-to-market requirements, Woodhead provides services in a rapid cycle to provide customization services covering the full family of SST™ connectivity products.

We are able to provide Consulting and Feasibility Studies for:

- Specification
- Hardware Development/ Adaptation
- Protocol Implementation
- Portation of the Protocol Software
- Integration into the Application
- System Test
- Certification
- Manufacturing

Support and Warranty

SST™ products are warranted for 1 year for parts and labour relating to the material components and 3 months for the software solutions. Our dedicated technician experts located in 6 Customer Support Centers worldwide provide you with daily assistance in the development and deployment of your industrial architecture.

Additional support and maintenance contracts are available upon request.

The support section of our website gives you the latest technical information on our products: technical notes, product documentation, knowledge base, FAQ, software updates and product registration.

Training

Because Woodhead is more than a supplier of industrial communication solutions, our team and certified partners will enable you to draw maximum benefit from the knowledge of SST™ solutions which you already have or will acquire.

The subjects covered in our training enable precise knowledge to be acquired on network technologies to maximise the profitability of your investments.

We also offer custom training at our facilities or your own.



Quick Reference Guide



PC NETWORK INTERFACE CARDS

- Supported
- Contact us

EMBEDDED NETWORK INTERFACE

Operating System	5136-CN-104	5136-CN-PCI	5136-CN-VMIE	5136-SD-104	5136-SD-ISA	SST-DHP-PCU	5136-SD-VMIE	SST-DN3-104-1	SST-DN3-104-2	5136-DNP-ISA	SST-DN3-ISA	SST-DN3-PCU-1	SST-DN3-PCU-2	5136-DNP-PCU	5136-DNP-CPCI	SST-DN3-PCM	SST-DN3-VMIE	SST-PB3-104	SST-DPS-104	SST-PB3-ISA	SST-PB3-PCU	5136-PB3-PCI	SST-PB3-PCM	SST-PB3-VMIE	SST-CCS-PCU	DC100DPM-S (Sub-D9)	DC100DPM-H (HF13)	DC100MPI-S (Sub-D9)	
Windows 32-bit (XP/2000/NT4)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Linux, VxWorks, QNX, DOS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Industrial Network																													
Profibus																													
DP Master																													
DP Slave																													
DP Multi Slave																													
FDL Send/Rec (ISO Layer 2)																													
MPI / S7																													
DeviceNet																													
DeviceNet Master																													
DeviceNet Slave																													
ControlNet																													
ControlNet	●	●	●																										
Data Highway																													
DH+																													
Remote I/O																													
CC-Link																													
CC-Link Slave																													



PLC NETWORK INTERFACE MODULES

- Supported
- Contact us

Manufacturer compatibility	SST-PFB-CLX-RLL	SST-PFB-PLC5	SST-PFB-SLC	SST-PFB-SLC-ADP	SST-IBS-CLX-RLL	SST-IBS-SLC	SST-ASI-CMX	SST-ASI-SLC	SST-ASI-CLX
Rockwell Automation									
Allen-Bradley SLC 500 Series			●	●					
Allen-Bradley PLC-5 Series		●							
Allen-Bradley ControlLogix Series	●				●				●
Allen-Bradley CompactLogix							●		
Industrial Network / Fieldbus									
AS-Interface									
AS-interface Master/Scanner							●	●	●
InterBus									
InterBus G4 Master					●	●			
Profibus									
DP Master & Slave	●	●	●	●					
FDL Send/Rec (ISO Layer 2)	●	●	●	●					

Profibus solutions



SST™ PB3-PCU **new**

SST-PB3-PCU

PCI 3.3V/5V Network
Interface Card for Profibus



1 Profibus port

- 9,6 Kbps to 12Mbps
- 9 pin, D-Sub, female

Protocols

- Profibus Master DP-V1 Class 1 & 2
- Profibus Master DP-V0 Class 1 & 2
- Profibus Slave DP-V0
- FDL Layer 2

Technical Data

- Universal PCI bus 3.3V/5V
- Hardware Plug & Play
- Motorola ColdFIRE 5272
- Siemens ASPC2 LAN controller
- 16 Mb SDRAM
- 256 Kb Memory Window

OS Drivers

- Windows XP, 2000, NT4
- Custom driver development

Software components

- Data Server: OPC
- Dev Library: Windows DLL with C Source Code
- Network diagnostic and configuration software
- FDT ready: CommDTM driver

new —

Key benefits

- High performance control
- Easy access to DP-V1 and PA variables from FDT frame applications
- Flash memory for auto-boot

SST™ PBMS-PCI

SST-PBMS-PCI

PCI Multi-Slave Network
Interface Card for Profibus-DP



1 Profibus port

- 9.6 Kbps to 12 Mbps
- 9-pin, D-Sub, female and 5-pin Phoenix Connector
- Diagnostic LEDs for instantaneous status of network

Protocols

- Profibus-DP Multi-Slave

Technical Data

- PCI bus
- Hardware Plug & Play
- 512 Kb Flash Memory

OS Drivers

- Windows XP, 2000, NT4
- Custom driver development

Software components

- Data Server: OPC
- Dev Library: Windows DLL with C Source code

Key benefits

- Emulates or monitors 1 to 125 DP Slaves using one physical Profibus connection!
- Ideal for full load network testing of DP Masters and other Profibus connection
- Use to connect OI/HMI applications to Profibus-DP

SST™ PB3-ISA **new**

SST-PB3-ISA

ISA Network Interface
Card for Profibus



1 Profibus port

- 9,6 Kbps to 12Mbps
- 9 pin, D-Sub, female

Protocols

- Profibus Master DP-V1 Class 1 & 2
- Profibus Master DP-V0 Class 1 & 2
- Profibus Slave DP-V0
- FDL Layer 2

Technical Data

- ISA bus
- Motorola ColdFIRE 5272
- Siemens ASPC2 LAN controller
- Max. 256 Kb and default 16 Kb Memory Window

OS Drivers

- Windows XP, 2000, NT4
- Custom driver development

Software components

- Data Server: OPC
- Dev Library: Windows DLL with C Source Code
- Network diagnostic and configuration software

Key benefits

- High performance control
- Simultaneous execution of Profibus protocols
- Flash memory for auto-boot

SST™ products mean:

- First Class OEM Service
- Vertical industry focus
- Special proprietary networks
- Highly customisable products
- Time critical data acquisition

PC NETWORK INTERFACE CARDS

SST™ PB3-104 **new**

SST-PB3-104

PC/104 Network Interface
Card for Profibus



1 Profibus port

- 9,6 Kbps to 12Mbps
- 9 pin, D-Sub, female

Protocols

- Profibus Master DP-V1 Class 1 & 2
- Profibus Master DP-V0 Class 1 & 2
- Profibus Slave DP-V0
- FDL Layer 2

Technical Data

- PC/104 bus
- Motorola ColdFIRE 5272
- Siemens ASPC2 LAN controller
- Max. 256 Kb and default Memory Window

OS Drivers

- Windows XP, 2000, NT4 • Custom driver development

Software components

- Data Server: OPC
- Dev Library: Windows DLL with C Source Code
- Network diagnostic and configuration software

Key benefits

- High performance control
- Simultaneous execution of Profibus protocols
- Embedded solution ready!
- Flash memory for auto-boot

SST™ PC104-DPSIO **new**

SST-DPS-104

PC/104 Network Interface
Card for Profibus-DP Slave



1 Profibus port (EN 50 170)

- 9.6 Kbps to 12 Mbps
- HE13 (Connector for ribbon cable male) or 9-pin, D-Sub, female
- Optical galvanic insulation 500V

Protocols

See protocol specifications

- Profibus-DP Slave

Technical Data

- PC/104 bus
- Intel i960 RISC
- Siemens ASPC2 LAN controller
- 512 Kb Flash Memory

OS Drivers

- Custom driver development

Software components

- Data Server: OPC
- C Source Code sample

Key benefits

- Ideal for OEM requirements
- Dedicated for Profibus-DP Slave only
- Direct Memory Map Access

Protocol Specifications

Profibus-DP Services

Cyclic Data Exchange	up to 244 bytes of Input - up to 244 bytes of Output	Synchronization	Sync, Freeze
Conf and parameters	Set-Prm, Check-Cfg, Get-cfg, Watchdog control	Master Class 2 access	Yes (Read-Input, Read-Output)
Address assignment master	Yes	Diagnostic	Slave-Diag

SST™ 5136-PFB-PCM

5136-PFB-PCM

PCMCIA Network Interface
Card for Profibus



1 Profibus port

- 9.6 Kbps to 12 Mbps
- 9-pin, D-Sub, female and 5-pin Phoenix Connector
- Diagnostic LEDs for instantaneous status of network

Protocols

- Profibus-DP Master & Slave
- FDL Send/Rec (ISO layer 2)

Technical Data

- PCMCIA bus
- Hardware Plug & Play
- Intel i960 RISC
- Siemens ASPC2 LAN controller
- 512 Kb Flash Memory

OS Drivers

- Windows XP, 2000, NT4 • Custom driver development

Software components

- Network diagnostic and configuration software
- Data Server: OPC, DDE, FastDDE
- Dev Library: Windows DLL with C Source code
- FDT ready: CommDTM driver

new

Key benefits

- Flash memory for auto-boot
- Speed up to 12 Mbps
- Hardware Watchdog
- Auto baud rate detection



SST™ PB3-VME **new**

SST-PB3-VME-1

VME Network Interface Card for Profibus

1 Profibus port

- 9,6 Kbps to 12Mbps
- 9 pin, D-Sub, female
- Diagnostic LEDs for network status

Protocols

- Profibus Master DP-V1 Class 1 & 2
- Profibus Master DP-V0 Class 1 & 2
- Profibus Slave DP-V0
- FDL Layer 2

Technical Data

- VME bus, 6U double-eight
- Motorola ColdFIRE 5272
- Siemens ASPC2 LAN controller
- 256 Kb Memory Window

SST-PB3-VME-2

VME Network Interface Card for Profibus with 2 ports

OS Drivers

- Custom driver development

Software components

- Console software
- Dev Library: Windows DLL with C Source Code

Key benefits

- High performance control
- Simultaneous execution of Profibus protocols
- Compatible with GE Fanuc Rx7i and 90-70 series



SST™ DC100PFB **new**

SST-DC100DPM-H

Embedded Network Interface for Profibus DP, HE13

1 Profibus port

- 9,6 Kbps to 12Mbps
- 9 pin, D-Sub, female or HE13 2x5 pins connector

Protocols

- Profibus Master/Slave DP-V0 Class 1 & 2
- Profibus Master DP-V1 Class 1 & 2
- FDL

Technical Data

- 186 core, 48 MHz
- 512 Kb Flash Memory
- 512 Kb SDRAM
- Size: 40 x 90mm
- Proprietary host connector technology (ISA bus signals)
- EMC Compliance

SST-DC100DPM-S

Embedded Network Interface for Profibus DP, Sub-D9

SST-DC100MPI-S

Embedded Network Interface for MPI Client, Sub-D9

OS Drivers

- Custom driver development

Software components

- C Source Code sample

Key benefits

- Embedded communication firmware
- Fast implementation of Profibus into your machine
- Simple integration with direct DP-RAM access
- Lower engineering and integration costs



SST™ PFB-CLX-RLL **new**

SST-PFB-CLX-RLL

Profibus Network Interface Module for A-B ControlLogix supporting Remote Link Library

1 Profibus port

- 9,6 Kbps to 12Mbps
- 9 pin, D-Sub, female

Protocols

- Profibus Master DP-V1 Class 1 & 2
- Profibus Slave DP-V0 Class 1 & 2

Technical Data

- Siemens ASPC2 LAN controller
- Flash Memory

Features

- Profibus-DP Master configuration tool
- Optical isolation on 9-pin remote bus connector
- Supports downloading of configuration files via RS-Linx or local Serial port
- Allows browsing of your DP network for slave devices configuration via RSLinx or local Serial port

Key benefits

- RLL Feature: Remote Link Library – remotely monitor or download changes to your Profibus configuration via Ethernet!
- Simultaneous operation of Profibus Master and Slave



SST™ products mean:

- First Class OEM Service
- Vertical industry focus
- Special proprietary networks
- Highly customisable products
- Time critical data acquisition

PLC NETWORK INTERFACE MODULES

SST™ PFB-SLC

SST-PFB-SLC

Profibus Network Interface
Module for A-B SLC 500



1 Profibus port

- 9.6 Kbps to 12 Mbps
- 9-pin, D-Sub, female

Protocols

- Profibus-DP Master & Slave
- FDL Send/Rec (ISO layer 2)

Technical Data

- Siemens ASPC2 LAN Controller
- 512 Kb Flash memory

SST Profibus module connects your Allen-Bradley SLC 5/03 or higher controller to Profibus network.

Features

- Includes Profibus-DP Master configuration tool
- Automatic mapping of Profibus I/O data into CPU memory
- 9-pin serial port for upload of I/O configurations
- Supports exported configuration files

Key benefits

- Extremely fast: scan rate for DP Master, 6000 I/O in ms!
- Simultaneous operation of Profibus protocols
- Serial port for software downloading and configuration

SST™ PFB-SLC-ADP

SST-PFB-SLC-ADP

Profibus Slave Adapter
for A-B SLC 500



1 Profibus port

- 9.6 Kbps to 12 Mbps
- 9-pin, D-Sub, female

Protocols

- Profibus-DP Slave

Technical Data

- Siemens ASPC2 LAN Controller
- 512 Kb Flash memory

SST Profibus SLC 500 adapter connects your Allen-Bradley SLC 500 module to a Profibus-DP slave.

Features

- Supports exported configuration files
- 9-pin serial port for upload of I/O configurations
- Status LEDs for notification of I/O or network errors

Key benefits

- Fast, easy set up into SLC backplane
- Auto configuration: set slave address, plug it in and it's ready
- Auto baud detect

SST™ PFB-PLC5

SST-PFB-PLC5

Profibus Network Interface
Module for A-B PLC-5



1 Profibus port

- 9.6 Kbps to 12 Mbps
- 9-pin, D-Sub, female

Protocols

- Profibus-DP Master & Slave

Technical Data

- Siemens ASPC2 LAN Controller
- 512 Kb, Flash memory

SST Profibus module connects your Allen-Bradley PLC-5 controller to Profibus network.

Features

- Profibus-DP Master configuration tool
- Automatic mapping of Profibus I/O data into CPU memory
- 9-pin serial port for upload of I/O configurations
- Supports exported configuration files

Key benefits

- Extremely fast: scan rate for DP Master, 6000 I/O in ms!
- Serial port for software downloading and configuration

Focused Products for Customised Solutions



DeviceNet solutions



SST™ DN3-PCU **new**

SST-DN3-PCU-1

PCI 3.3V/5V Network Interface Card for DeviceNet

SST-DN3-PCU-2

PCI 3.3V/5V Network Interface Card for DeviceNet with 2 ports



DeviceNet port

- 125, 250, 500 Kbps
- 5-pin DeviceNet connector
- 500 V optically isolated CAN interface

Protocols

- See Protocol Specifications
- DeviceNet Master & Slave

Technical Data

- Universal PCI bus 3.3V/5V
- Hardware Plug & Play
- 66 MHz ColdFIRE
- 256 Kb Memory Window

OS Drivers

- Windows XP, 2000, NT4
- Custom driver development

Software components

- Data Server: OPC
- Dev Library: Windows DLL with C Source Code
- Network diagnostic and configuration software

Key benefits

- DeviceNet Interface card Certified by the ODVA Test lab
- Fast scan times and high performance

SST™ DN3-104 **new**

SST-DN3-104-1

PCI104 Network Interface Card for DeviceNet

SST-DN3-104-2

PCI104 Network Interface Card for DeviceNet with 2 ports



DeviceNet port

- 125, 250, 500 Kbps
- 5-pin DeviceNet connector
- 500 V optically isolated CAN interface

Protocols

- See Protocol Specifications
- DeviceNet Master & Slave

Technical Data

- PC/104 bus
- 66 MHz ColdFIRE
- 256 Kb Memory Window

OS Drivers

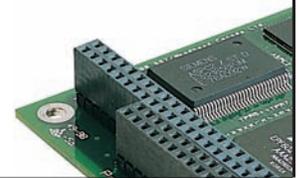
- Windows XP, 2000, NT4
- Custom driver development

Software components

- Data Server: OPC
- Dev Library: Windows DLL with C Source Code
- Network diagnostic and configuration software

Key benefits

- DeviceNet Interface card Certified by the ODVA Test lab
- Fast scan times and high performance



Protocol Specifications

DeviceNet

- Entire DeviceNet Protocol is executed in hardware
- UCMM capable, Group 1, 2, and 3 dynamic explicit connections supported
- Simultaneous execution of Group 2 Client (master) and Server (slave) operation
- Full DeviceNet implementation including polled, strobed, COS, cyclic and explicit messaging
- Supports CAN data rate up to 1 Mbps
- DeviceNet compliance is ensured at the card level for I/O scanner and device applications
- Supports CAN 2.0B specifications



Focused Products for Customised Solutions

SST™ products mean:

- First Class OEM Service
- Vertical industry focus
- Special proprietary networks
- Highly customisable products
- Time critical data acquisition

PC NETWORK INTERFACE CARDS

SST™ 5136-DNP-CPCI

5136-DNP-CPCI

CompactPCI Network Interface Card for DeviceNet



1 DeviceNet port

- 125, 250, 500 Kbps
- 5-pin DeviceNet connector
- 500 V optically isolated CAN interface

Protocols

- See *Protocol Specifications*
- DeviceNet Master & Slave

Technical Data

- 3U Compact PCI bus
- Hardware Plug & Play
- 512 Kb Flash Memory

OS Drivers

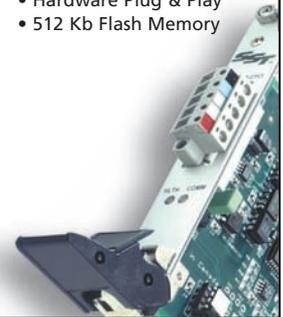
- Windows XP, 2000, NT4
- Custom driver development

Software components

- Network diagnostic and configuration software
- Data Server: OPC
- Dev Library: Windows DLL with C Source code

Key benefits

- DeviceNet Interface Card certified by the ODVA Test Lab
- Fast scan times and high performance
- Also available in 2, 4, 8 channels versions



SST™ 5136-DNP-ISA

5136-DNP-ISA

ISA Network Interface Card for DeviceNet



1 DeviceNet port

- 125, 250, 500 Kbps
- 5-pin DeviceNet connector
- 500 V optically isolated CAN interface

Protocols

- See *Protocol Specifications*
- DeviceNet Master & Slave

Technical Data

- ISA bus
- 512 Kb Flash Memory

OS Drivers

- Windows XP, 2000, NT4
- Custom driver development

Software components

- Network diagnostic and configuration software
- Data Server: OPC
- Dev Library: Windows DLL with C Source code

Key benefits

- DeviceNet Interface Card certified by the ODVA Test Lab
- Fast scan times and high performance

Protocol Specifications

DeviceNet

- Entire DeviceNet Protocol is executed in hardware
- UCMM capable, Group 1, 2, and 3 dynamic explicit connections supported
- Simultaneous execution of Group 2 Client (master) and Server (slave) operation
- Full DeviceNet implementation including polled, strobed, COS, cyclic and explicit messaging
- Supports CAN data rate up to 1 Mbps
- DeviceNet compliance is ensured at the card level for I/O scanner and device applications
- Supports CAN 2.0B specifications



SST™ 5136-DNP-PCM

5136-DNP-PCM-ST

PCMCIA Network Interface Card with 5-pin DeviceNet connector for DeviceNet

5136-DNP-PCM-SM

PCMCIA Network Interface Card with sealed micro connector for DeviceNet



1 DeviceNet port

- 125, 250, 500 Kbps
- 5-pin DeviceNet connector or sealed micro connector
- 500 V optically isolated CAN interface

Protocols

See Protocol Specifications page 37

- DeviceNet Master & Slave

Technical Data

- PCMCIA bus, Type II
- Hardware Plug & Play
- 512 Kb Flash Memory

OS Drivers

- Windows XP, 2000, NT4
- Custom driver development

Software components

- Network diagnostic and configuration software
- Data Server: OPC
- Dev Library: Windows DLL with C Source code

Key benefits

- DeviceNet Interface Card certified by the ODVA Test Lab
- Fast scan times and high performance



SST™ DN3-VME **new**

SST-DN3-VME-1

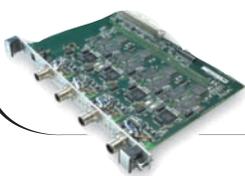
VME Network Interface Card for DeviceNet

SST-DN3-VME-2

VME Network Interface Card for DeviceNet with 2 ports

SST-DN3-VME-4

VME Network Interface Card for DeviceNet with 4 ports



DeviceNet port

- 125, 250, 500 Kbps
- 5-pin DeviceNet connector
- 500 V optically isolated CAN interface

Protocols

See Protocol Specifications page 37

- DeviceNet Master & Slave

Technical Data

- VME bus,
- 66 MHz ColdFIRE
- 256 Kb Memory Window

OS Drivers

- Windows XP, 2000, NT4
- Custom driver development

Software components

- Data Server: OPC
- Dev Library: Windows DLL with C Source Code
- Network diagnostic and configuration software

Key benefits

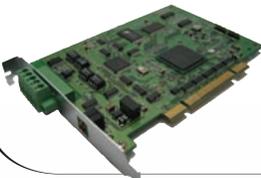
- DeviceNet Interface card Certified by the ODVA Test lab
- Fast scan times and high performance
- Compatible with GE Fanuc 90-70 series



SST™ CCS-PCU **new**

SST-CCS-PCU

PCI 3.3V/5V Network Interface Card for CC-Link Slave



1 CC-Link port

- 156 kbps to 10 Mbps
- 5pin CC-Link terminal block Connector
- M12 Male option available upon request
- Optical Galvanic Isolation 500V

Protocols

- CC-Link Slave ver1.11

Technical Data

- PCI Universal Bus 3.3V/5V
- Coldfire MCF5484
- 256KB Flash Memory

OS Drivers

- VxWorks 5.5
- Custom driver development

Software components

- Dev Library: API Binaries

Key benefits

- Full featured cost competitive CC-Link Slave Card
- Ideal for embedding into various remote device

SST™ products mean:

- First Class OEM Service
- Vertical industry focus
- Special proprietary networks
- Highly customisable products
- Time critical data acquisition

InterBus solutions



PLC NETWORK INTERFACE MODULES

SST™ IBS-CLX-RLL

SST-IBS-CLX-RLL

InterBus Network Interface Module for A-B ControlLogix supporting Remote Link Library



1 InterBus port

- 500 Kbps to 2 Mbps
- 9-pin, D-Sub, female
- Optical isolation on 9-pin remote bus connector
- Diagnostic LEDs for instantaneous state of network

Protocols

See *Protocol Specifications*

- InterBus Master

Technical Data

- Generation 4 (G4) InterBus firmware with support for InLine and Loop 2
- Phoenix Contact USC/4.2 controller for InterBus functions
- 512 Kb Flash memory

SST InterBus module connects your Allen-Bradley ControlLogix controller to InterBus network.

Key benefits

- RLL: Remote Link Library enables you to remotely monitor or download changes to your Interbus configuration through Ethernet.
- Flash memory
- Serial port for software downloading and configuration
- InterBus I/O mapped into the CLX processor's I/O tables

SST™ IBS-SLC

SST-IBS-SLC

InterBus Network Interface Module for A-B SLC 500



1 InterBus port

- 500 Kbps
- 9-pin, D-Sub, female

Protocols

See *Protocol Specifications*

- InterBus Master

Technical Data

- Generation 4 (G4) InterBus firmware with support for InLine and Loop 2
- Phoenix Contact USC/4.2 controller for InterBus functions
- 512 Kb Flash memory

SST InterBus module connects your Allen-Bradley SLC 5/03 or higher controller to InterBus network.

Key benefits

- Quick start configuration with SLC G-File
- Fast, easy setup into SLC backplane through Ethernet

Protocol Specifications

Protocol	Specifications
InterBus	<ul style="list-style-type: none"> • Uses InterBus PCP v4.0 • Serial port supports CMD (configure, monitor, diagnose) for G4 InterBus features • Supports asynchronous scan mode • Support for the following: 256 remote bus slave-devices, 256 local bus devices, 62 PCP 4.0 slaves, Scans 3936 InterBus I/O, 16 remote bus levels in tree topology



Focused Products for Customised Solutions





SST™ ASI-SLC

new

SST-ASI-SLC

AS-Interface Network Interface Module for A-B SLC 500

2 AS-Interface ports

- 167 Kbps
- 4-pin Phoenix connector

Protocols

- AS-Interface Master
- Compliance with AS-i specifications 2.0

Technical Data

- Intel 80C188 processor
- Max. Number of Slaves: 62 per network
- Maximum I/O:
 - I/O files: 64 Words In, 64 Words out
 - M0 file: 40 Words In
 - M1 file: 40 words Out



SST AS-Interface module connects an Allen-Bradley SLC 5/03 or higher controller to 2 AS-Interface networks.

Features

- Follows AS-Interface M1 full master profile
- Fast, easy setup into SLC backplane
- AS-Interface I/O data mapped into SLC processor's I, O files
- Status information mapped into the M0/M1 files
- Scans two independent AS-Interface networks
- Configures the scanner with RS Logix 500 or APS

Key benefits

- 2 independent AS-Interface ports
- Flash memory
- Serial port for software downloading and configuration

SST™ ASI-CLX

new

SST-ASI-CLX

AS-Interface Network Interface Module for A-B ControlLogix

2 AS-Interface ports

- 167 Kbps
- 5-pin Phoenix connector

Protocols

- AS-Interface Master
- Compliance with AS-i specifications 2.1

Technical Data

- Max. number of Slaves: 62 per network
- I/O data arrays:
 - 49 Words In
 - 49 Words Out



SST AS-Interface module connects your Allen-Bradley ControlLogix controller to 2 AS-Interface networks.

Features

- Advanced diagnostics for configuration, power and network behavior
- AS-i I/O data and status information mapped into the PLC processor's I/O data
- Transfer of analog signals via AS-i integrated in the scanner

Key benefits

- Supports connection to two AS-i networks
- Fast and easy setup into backplane
- Simple and easy commissioning using 2 push buttons and integrated display
- Software AS-Interface control tools with serial transmission cord

SST™ ASI-CMX

new

SST-ASI-CMX

AS-Interface Network Interface Module for A-B CompactLogix / MicroLogix 1500

1 AS-Interface port

- 167 Kbps
- 5-pin Phoenix connector

Protocols

- AS-Interface Master
- Compliance with AS-i specifications 2.1

Technical Data

- Max. number of Slaves: 62 per network
- I/O data arrays:
 - 34 Words In,
 - 33 Words Out



SST AS-Interface module connects your Allen-Bradley CompactLogix / MicroLogix 1500 controller to AS-Interface network.

Features

- Advanced diagnostics for configuration, power and network behaviour
- AS-i I/O data and status information mapped into the PLC processor's I/O data
- Transfer of analog signals via AS-i integrated in the scanner

Key benefits

- Fast and easy setup into backplane
- Simple and easy commissioning using 2 push buttons and integrated display

SST™ products mean:

- First Class OEM Service
- Vertical industry focus
- Special proprietary networks
- Highly customisable products
- Time critical data acquisition

Allen-Bradley DH+ solutions

PC NETWORK INTERFACE CARDS

SST™ DHP-PCI

SST-DHP-PCI

PCI Network Interface

Card for A-B DH+/RIO networks



1 DH+ or Remote I/O port

- 57.6, 115.2 and 230.4 Kbps
- 6-pin, screw terminal connector

Protocols

- A-B Data Highway Plus (Peer to Peer)
- A-B Remote I/O (Adapter or Scanner mode)

Technical Data

- PCI bus 5V
- Hardware Plug & Play
- Interrupts supported
- 16 or 32 Kb DPRAM (Software Configurable)

OS Drivers

- Windows XP, 2000, NT4
- Custom driver development

Software components

- Development Library + Samples (DOS C source code, Windows DLL)

Key benefits

- Compatible with PLC-3, PLC-5, SLC 500 and ControlLogix processors
- Software Support for emulation of A-B's 1784-PKTX interface card
- Compatible with Rockwell Software RSLinx and its RS family

SST™ 5136-SD-104

5136-SD-104

PCI104 Network Interface

Card for A-B DH+/RIO networks



1 DH+ or Remote I/O port

- 57.6, 115.2 and 230.4 Kbps
- 6-pin, screw terminal connector

Protocols

- A-B Data Highway Plus (Peer to Peer)
- A-B Remote I/O (Adapter or Scanner mode)

Technical Data

- PCI/104 bus, Single card
- Interrupts supported
- 16 or 32 Kb DPRAM (Software Configurable)

OS Drivers

- Windows XP, 2000, NT4
- Custom driver development

Software components

- Development Library + Samples (DOS C source code, Windows DLL)

Key benefits

- Compatible with PLC-3, PLC-5, SLC 500 and ControlLogix processors
- Software Support for emulation of A-B's 1784-PKTX interface card
- Compatible with Rockwell Software RSLinx and its RS family

SST™ 5136-SD-ISA

5136-SD-ISA

ISA Network Interface

Card for A-B DH+/RIO networks



1 DH+ or Remote I/O port

- 57.6, 115.2 and 230.4 Kbps
- 6-pin, screw terminal connector

Protocols

- A-B Data Highway Plus (Peer to Peer)
- A-B Remote I/O (Adapter or Scanner mode)

Technical Data

- ISA bus
- Interrupts 2,3,4,5,6 and 7 supported
- 16 or 32 Kb DPRAM (Software Configurable)

OS Drivers

- Windows XP, 2000, NT4
- Custom driver development

Software components

- Development Library + Samples (DOS C source code, Windows DLL)

Key benefits

- Compatible with PLC-2, PLC-3, PLC-5, SLC 500 and ControlLogix processors
- Software Support for emulation of A-B's 1784-KT interface card
- Compatible with Rockwell Software RSLinx and its RS family

SST™ 5136-SD-VME

5136-SD-VME

VME Network Interface
Card for A-B DH+/RIO networks

1 DH+/RIO port

- 57.6, 115.2, 230.4 Kbps
- 6-pin terminal connector

Protocols

- Allen-Bradley Data Highway Plus (Peer to Peer)
- Remote I/O (Adapter or Scanner mode)

VME bus

- **Size:** Double height (6U height), single width card using P1 connector compatible with ANSI/IEEE 1014
- **Capabilities:** Memory SD16, SD08 (E0), SA24. Registers SD08 (0), SA16
- **Addressing:** Standard = 64 Kbytes on any 64 Kb boundary, per channel. Short = 1 Kb on any 1 Kb boundary, per channel
- **Interrupts:** switch selected level 1-7, software set 8-bit vector, release on acknowledge (ROAK)



Key benefits

- 2 versions available: Single and Dual channel (both channels independent of each other)
- Diagnostic LEDs for quick verification of card operation
- Control up to 32 Allen-Bradley Remote I/O racks
- Connects a VME bus computer or GE Fanuc Series 90-70 to DH/DH+/RIO networks

SST™ 5136-CN-VME

5136-CN-VME

VME Network Interface
Card for ControlNet

2 ControlNet ports

- 5 Mbps
- 2 BNC connectors
- ControlNet LEDs for each channel
- ControlNet redundancy implemented in hardware
- Isolated network Access Port (Nap)

Protocols

- See Protocol Specifications
- ControlNet Scanner & Adapter

Technical Data

- VME bus, 6U height, P1 compatible
- Intel i960 RISC
- 1 Mb SDRAM
- 512 Kb Flash Memory



OS Drivers

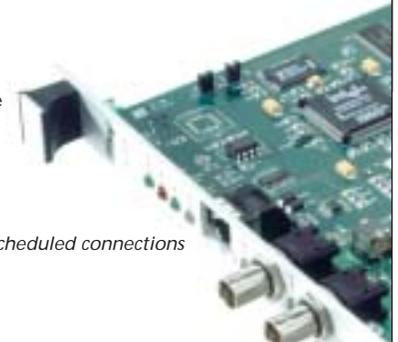
- Custom driver development

Software components

- Network Configuration and configuration software
- Dev Library: Windows DLL with C Source Code

Key benefits

- Deterministic data exchange
- ControlNet Conformance Tested
- Simultaneous operation of 128 scheduled and unscheduled connections



SST™ products mean:

- First Class OEM Service
- Vertical industry focus
- Special proprietary networks
- Highly customisable products
- Time critical data acquisition

ControlNet solutions

PC NETWORK INTERFACE CARDS

SST™ 5136-CN-PCI

5136-CN-PCI
PCI Network Interface
Card for ControlNet



2 ControlNet ports

- 5 Mbps
- 2 BNC connectors
- ControlNet LEDs for each channel
- ControlNet redundancy implemented in hardware
- Isolated Network Access Port (NAP)

Protocols

- See *Protocol Specifications*
- ControlNet Scanner & Adapter

Technical Data

- PCI bus
- Hardware Plug & Play
- Intel i960 RISC
- 1 Mb Flash Memory

OS Drivers

- Windows XP, 2000, NT4
- Custom driver development

Software components

- Network diagnostic and configuration software
- ControlNet Analyser
- Data Server: OPC
- Dev Library: Windows DLL with C Source code

Key benefits

- *Deterministic data exchange*
- *ControlNet Conformance Tested*
- *Typical applications: PC Control, SCADA, PLC programming*

SST™ 5136-CN-104

5136-CN-104
PC/104 Network Interface
Card for ControlNet



2 ControlNet ports

- 5 Mbps
- 2 BNC connectors
- ControlNet LEDs for each channel
- ControlNet redundancy implemented in hardware
- Isolated Network Access Port (NAP)

Protocols

- See *Protocol Specifications*
- ControlNet Scanner & Adapter

Technical Data

- PC/104 bus
- Intel i960 RISC
- 2 Mb Flash Memory

OS Drivers

- Windows XP, 2000, NT4
- Custom driver development

Software components

- Network diagnostic and configuration software
- ControlNet Analyser
- Data Server: OPC
- Dev Library: Windows DLL with C Source code

Key benefits

- *Deterministic data exchange*
- *ControlNet Conformance Tested*
- *Typical applications: PC Control, SCADA, PLC programming*



Protocol Specifications

ControlNet

- Simultaneous operation of 128 scheduled and 128 unscheduled message screeners
- Simultaneous functionality of ControlNet Messaging, Scanner and Adapter
- Rockwell Software RSLinx support
- LAN Controller (no ControlNet ASICs used) is implemented in a Field Programmable Gate Array (FPGA)
- 5136-SD DH+ emulation

Focused Products for Customised Solutions





SST™

OPC SERVER



SST-DN3-OPC

*DeviceNet OPC Server
for SST-DN3 Network Interface Cards*

SST-PB3-OPC

*Profibus OPC Server
for SST-PB3 Network Interface Cards*

OPC (OLE for Process Control) is a communication standard based on Microsoft OLE/COM technology which enables the exchanging of information between Windows-32bit applications.

It offers greater interoperability between OPC client applications (SCADA, HMI, RDBM...) and industrial devices (PLCs, I/O blocks, drives...) through dedicated OPC servers.



The OPC concept is based on the Client/Server architecture. A single client application can poll several servers simultaneously. The servers can be located either on the local machine, or on remote machines (via DCOM).

Data access

SST OPC servers support 3 modes

- Synchronous in read/write
- Asynchronous in read/write
- Monitoring: equivalent of the DDE advise

The client feeds back information to the server if the data being monitored is modified.

Efficient

SST OPC server includes powerful optimization mechanism to reduce the number of network requests on the medium. It automatically sorts and groups item in frames to provide you the best data acquisition throughput.

Easy-to-Use

SST OPC server includes diagnostic tools to monitor Client/server connections, all OPC objects (group, item...) and log/display of all communication requests.

Key benefits

- OPC Data Access v2.05 and V3.0
- OPC Item Browsing
- Multiple client access simultaneously in COM and DCOM modes
- Supports SST-DN3 and SST-PB3 Network Interface Cards





SST™

CONSOLE

SST-DN3-CNF-P

DeviceNet Configuration Console, Parallel Key

SST-DN3-CNF-U

DeviceNet Configuration Console, USB Key

SST-PB3-CNF-P

Profibus Configuration Console, Parallel Key

SST-PB3-CNF-U

Profibus Configuration Console, USB Key

The SST Console is the heart of the SST software suite. It is an intuitive project management and configuration tool integrating powerful features that allow quick, easy, and labor-saving integration of your industrial communication with your application.

The Console environment is totally integrated to ensure that you can efficiently access all of your functions by a mouse click on the toolbar menu. The Console offers a powerful graphical user interface to create and manage your industrial communication. The user configuration is represented in easy-to-use graphical form based on a tree structure.

Console highlights:

- **Configuration Manager**
Allows you to create multiple user configurations and backup/restore your projects.
- **Automatic PCI cards detection**
All the PCI cards plugged into the PC will be automatically detected by the console.
- **Equipment library**
For each protocol, a list of supported equipment is displayed in a tree. You just have to drag & drop equipment to insert them in your user configuration.
- **Network detection**
Depending on the protocol used, the Console scans your network to detect the active equipment. After that, just drag & drop them into your user configuration.
- **Automatic Topic naming**
Avoids the double typing; the Console automatically creates OPC/DDE topic based on the property name defined to each equipment.
- **Card Status info bar**
Lets you know instantly the status of each card and if your current user configuration is identical to one running in the cards.
- **OPC client for testing**
The Console launches an OPC client that connects automatically the SST OPC server. Thus you can access in read/write to process data.



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Key benefits

- *Powerful Graphical User Interface*
- *2 configuration modes: standard and expert*
- *One mouse click access to powerful features: network diagnostic, OPC connection, Read/Write data...*



Software solutions



SST™

PICS® Pro

SST-PICS-PRO

Full PICS system includes the DDE client I/O Driver
SST-PICS-PRO requires either a real-time I/O driver, the OPC client driver or the DDE client server (included) along with any required interface cards

SST-PICS-PRO-U

Full PICS system, USB Key

SST-PICS-TRN

PICS Pro Training software

SST-PICS-TRN-U

PICS Pro Training software USB Key

PICS-PRO-AB

PICS Pro Allen-Bradley Remote I/O Driver
Requires Allen-Bradley interface cards¹: 5136-SD-ISA or SST-DHP-PCI

PICS-PRO-PBMS

PICS Pro Profibus-DP Multi-Slave I/O Driver
Requires Profibus interface card¹: SST-PBMS-PCI

PICS-PRO-OPC

PICS Pro OPC Server

PICS-PRO-DDE

PICS Pro Wonderware I/O Servers

I/O Simulation Software

PICS allows you to perform control systems testing and operator training before you go online.

You can quickly create a dynamic model on a PC that duplicates the behaviour of the actual process and provides the control software with simulated device feedback.

PICS® Pro Simulation is a low-risk solution. It enables you to identify and correct control system errors in the office, implement new processes quickly and accurately and avoid the high cost of production downtime before you flip the switch.

PICS® Pro software uses two types of I/O drivers to communicate with the control system: real-time I/O drivers and OPC/DDE client drivers. I/O drivers are interchangeable for the same core PICS Pro software package, providing maximum flexibility.

PICS® Pro software can simulate a growing range of protocols by using OPC servers and Wonderware 3rd party DDE/SuiteLink Servers as PICS Pro drivers. PICS Pro is both an OPC client supporting any OPC compliant server and a DDE client supporting any DDE or fast DDE/SuiteLink compliant server.

Features

- Windows NT4, 2000, XP
- Easy-To-Use, Graphical User Interface
- Modern, customizable, visual development/debugging environment
- Ladder diagram editor for developing simulation logic (based on the IEC-1131 standard)
- Simulate multiple controllers at the same time and with a single package
- Import of I/O variables from popular PLC programming packages or any delimited file formats
- Triggers to automatically save or apply a scenario no watching the screen for a condition to occur
- Create and wire multiple devices in an external spreadsheet
- Material handling tracking features
- Import bitmap backgrounds from other applications

Key benefits

- Save overall project time and MONEY
- Find & fix software bugs earlier
- Improve operator training
- Minimize process downtime and startups costs
- Maximize productivity



I/O Drivers Supported	PICS Pro Drivers	Protocol/Manufacturer
	Real-Time I/O driver	
	Allen-Bradley	1771 Remote I/O
	Modicon*	800 Series & Quantum I/O 908 network
	Profibus	Profibus-DP
	Client I/O Driver	
	DDE	Depends on server
	OPC	Depends on server
	Wonderware I/O Server	Allen-Bradley, GE Fanuc, Modbus, Omron, Schneider, Siemens and more ²

*Required SST interface card obsoleted July 2005.

-1- Not included in the PICS® Pro package
-2- For the list of I/O servers available, please consult the Wonderware web site

Technical Support

SST™

TECHNICAL SUPPORT



WSE-ESV-TSP-A

Annual Technical Support agreement

WSE-ESV-TSP-1

1 hour block, Technical Support

WSE-ESV-TSP-8

8 hour block, Technical Support



WSE-ESV-EDS-1

1 hour of Engineering Development Support

WSE-ESV-EDS-8

8 hour block, Engineering Development Support



For additional assistance with your communications needs, various engineering services are available.

Please contact your Woodhead representative for details.

Easy to use, widely available and easily affordable

With Direct-Link™ products, Woodhead expands its range by proposing a wide selection of simple solutions for industrial communication. This new range includes a variety of products such as intelligent connectors, gateways, dedicated cards for fieldbuses and software solutions for industrial networks.

Direct-Link products offer more than 20 protocols among a choice of networks: Ethernet TCP/IP, Profibus-DP, CANopen, DeviceNet, Siemens S7/MPI and Serial links. Simple as they are affordable, 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 use and fast implementation. The solutions are modular and scalable. Moreover, the products are designed to be easily embedded in computerized systems and are available in a wide selection of bus formats (PCI, CompactPCI, PC/104 and software driver).

Direct-Link™ solutions balance between having just enough performance, making the software components easy to use and achieving the price/performance ratio you expect. The functionality of Direct-Link™ products was designed on the basis of user recommendations to perfectly meet market requirements.

Customer Focus

The Direct-Link™ range is designed for users in search of innovative and appealing products. It is especially suitable for **system designers** concerned about reducing the total cost of automatic operation infrastructures while guaranteeing a high level of reliability and performance.

Its simplicity of use enables non-specialists to quickly develop communicating applications without having to worry about industrial communication.

Direct-Link™ products are also appreciated by **system integrators** who use fieldbus technology to realise such applications as control/command, PC-based Softlogic and visualization. As for the software solutions, they are well adapted to embedded environments used by operator interface manufacturers and **OEM equipment manufacturers** wishing to make their computerized systems communicate.

Applications

The functions of Direct-Link™ products cover a wide scope.

Data acquisition software solutions are ideally suited to small and medium-sized applications with low time constraints. They easily adapt to the light architectures as laptop, operator interface and workstation. Widely adopted by the industry our solutions are used amongst others for technical management in the building sector, electrical installations, tests and measurements.



Our solution

Details of the Direct-Link™ product range:

• PC Communication Software Interfaces

Economical, reliable and user-friendly, the software solutions allow your PC-based applications to communicate with your industrial equipment. These solutions use the resources of your computer (memory, processor, ports) to communicate by using:

- your PC standard Ethernet card (3COM, Netgear...)
- your PC standard Serial port (COM1, COM2...)
- a Profibus S7/MPI non intelligent interface on PCI bus

Exclusively available in Windows XP, 2000 and NT 4.0 environments, the solution integrates configuration and diagnostic tools as well as data servers (OPC, Wonderware I/O server, DAServer, ActiveX control) for data exchange with the applications.

• PC Fieldbuses Network Interface Cards

These solutions, on intelligent cards with a built-in processor, propose a cost effective solution for PC-based control applications using fieldbuses: CANopen, DeviceNet, Profibus-DP and Ethernet I/O. Our cards support different bus formats: PCI, CompactPCI and PC/104.

Available in Windows XP, 2000 and NT 4.0 environments and other real time OS platforms (QNX, Linux, VxWorks, Venturcom), the product integrates local and remote configuration and diagnostic tools as well as data servers (OPC, Wonderware I/O server). The solution also comprises of libraries (DLL, ActiveX control, VI LabView) for the development of specific applications. Our cards are developed in compliance with the technical specifications of industrial organisations (Profibus, ODVA, CIA) and comply with the applicable industrial standards.



• Simple Gateway Adapters

The Direct-Link™ Gateway family is designed to connect in the simplest and cheapest way the combination of two industrial networks. The product family supports various different fieldbus networks including AS-interface, CANopen, DeviceNet, Profibus, Modbus RTU and Modbus/TCP.

Easy configuration and integrated diagnostics are the key features. No programming is necessary; the gateway transfers cyclically I/O data between two networks according to the user configuration.

The housing is designed for cabinet mounting with standard DIN rail mounting, IP20 rating and 24 VDC power supply. The typical applications include connection of existing serial devices, simple network extensions, remote data acquisition through Ethernet, monitoring your plant floor...

Simple to use

Support and Warranty

The parts and labour for the hardware components of the Direct-Link™ product range are **warranted 6 months** and the software components are warranted 3 months.

During this period *you benefit from technical support accessible by fax and email*. Our Web site is also available for you to look up technical information (FAQ, technical notes, product documentation) and to download the latest Service Packs/Drivers free of charge.

Direct-Link™ range also offers you the ability to extend to a 6 months period for full technical support including phone calls; please contact your Sales representative.



Quick Reference Guide

● Supported
● Contact us

1 - Universal PCI (3.3V and 5V) and PCI-X card format compatible

	PC NETWORK INTERFACE CARDS								PC SOFTWARE INTERFACES			GATEWAYS										
	DRL-DPM-PCI	PCI-DPIO	PC104-DPIO	CPCI-DPIO	PCI-CANIO	PC104-CANIO	PCI-DVNI0	PC104-DVNI0	DRL-EIO-PCU ¹	PCU-ETHIO	DRL-ALL-SW	DRL-MPI-PCU ¹	SW1000ETH/SER	PCU100PFB	DRL-2AS1-CAN	DRL-2AS1-DN	DRL-2AS1-ETH	DRL-2AS1-PFB	DRL-2AS1-SER	DRL-PFB-SRE	DRL-DVNI-SRE	
Operating System																						
Windows 32-bit (XP / 2000 / NT4)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Windows Embedded XPe	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Windows Embedded NTe	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Windows CE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Kuka CE_Win	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
VenturCom RTX	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
QNX / VxWorks / Linux	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Phar Lap ETS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DOS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Industrial Network / Fieldbus																						
AS-interface																						
AS-interface Master															●	●	●	●	●			
Profibus																						
DP Master	●	●	●																			
DP Slave	●	●	●														●			●		
MPI / S7										●												
Ethernet I/O																						
EtherNet/IP Master/Slave									●													
Modbus TCP & UDP Master									●													
CAN																						
CANopen Master/Scanner			●	●																		
CANopen Slave															●							
DeviceNet																						
DeviceNet Master/Slave								●	●													
DeviceNet Slave															●						●	
Ethernet TCP/IP																						
Altus II (Altus AL200x , Webgate)										●												
FINS (Omron: C, CV, CS)										●												
Industrial Ethernet (Siemens: S5, S7, TI)										●												
Melsec (Mitsubishi: A, Q)										●												
Modbus TCP & UDP (Schneider Electric)										●							●			●	●	
SRTP (Alstom: C80-35, C80-75)										●												
SRTP (GE Fanuc: 90-30, 90-70)										●												
Uni-TE (Schneider: Premium, Micro)										●												
Serial																						
AS511 (Siemens S5)										●												
Modbus (ASCII, RTU)										●												
PPI/PPI+ (Siemens S7-200)										●												
SNP-X (GE Fanuc)										●												
TI Direct (Texas Instruments TI-505)										●												
Uni-Telway (Schneider Electric)										●												



Profibus solutions



Direct-Link™ PCI-DPIO

DRL-DPM-PCI

PCI Network Interface Card for Profibus-DP



1 Profibus port (EN 50 170)

- 9.6 Kbps to 12 Mbps
- 9-pin, D-Sub, female
- Optical galvanic insulation 500V

Protocols

See protocol specifications

- Profibus-DP Class-1 & 2 (Master/Slave)
- Profibus DP-V0 (Slave only)

Technical Data

- PCI bus, 5V
- Hardware Plug & Play
- AMD SC520
- EMC compliance⁷

Direct-Link™ PC104-DPIO

DRL-DPM-104

PC/104 Network Interface Card for Profibus-DP



1 Profibus port (EN 50 170)

- 9.6 Kbps to 12 Mbps
- HE13 (Connector for ribbon cable male) or 9-pin, D-Sub, female
- Optical galvanic insulation 500V

Protocols

See protocol specifications

- Profibus-DP Class-1 & 2 (Master/Slave)
- Profibus DP-V0 (Slave only)

Technical Data

- PC/104 bus
- AMD SC520
- 8 Mb SDRAM
- 1Mb Flash Memory
- EMC compliance⁷

Direct-Link™ CPCI-DPIO

new

DRL-DPM-CPI

CompactPCI Network Interface Card for Profibus-DP



1 Profibus port (EN 50 170)

- 9,6 Kbps to 12Mbps
- 9 pin, D-Sub, female

Protocols

See protocol specifications

- Profibus-DP Class-1 & 2 (Master/Slave)
- Profibus DP-V0 (Slave only)

Technical Data

- CompactPCI, 5V
- Hardware Plug & Play
- AMD SC520
- Profibus ASIC ASPC2
- 8 Mb SDRAM
- 512 Kb Flash Memory
- EMC compliance⁷

OS Drivers

- Windows XP, 2000, NT4, XPe, NTe and CE
- Kuka CE_Win
- VxWorks, QNX, Linux, Phar Lap ETS and DOS
- Development toolkit for proprietary OS

Software components

- Console software
- Diagnostic and Test tools
- Data Server: OPC, Wonderware I/O servers and Wonderware DAServers
- SoftPLC Drivers
- Dev Library: ActiveX control, DLL and VenturCom RTX



Key benefits

- Deterministic data acquisition for real time Control applications
- I/O Scanner (automatic configuration by detection of slaves connected)
- Auto mapping of I/O in card DPRAM
- Remote Access via TCP/IP and Serial connection

Protocol Specifications

Profibus

- DP Master/Scanner Class-1 & Class-2 and Slave mode simultaneously
- Multi-Master compatible
- Connect up to 126 slaves
- Manage Watchdog control (bus fault)
- GSD library
- Direct access to variable types (bit, byte, word, double word)
- I/O data image: up to 2 Kbytes
- Manage up to 244 data bytes per slave
- Integrated data consistency

Direct-Link™ products mean:

- Range of simple products
- More affordable, well-equipped
- Less skills required
- Common networks supported

PC NETWORK INTERFACE CARDS

Direct-Link™ PCU100PFB

DRL-MPI-PCU

PCI 3.3V / 5V Network
Interface Card for
S7/MPI protocols



1 Profibus port (EN 50 170)

- 9.6 Kbps to 12 Mbps
- 9-pin, D-Sub, female
- Optical galvanic insulation 500V

Protocols

- S7/MPI (Master)

Technical Data

- PCI Universal bus 3.3V/5V (PCI-X compatible)
- Hardware Plug & Play
- ASPC2 Profibus Controller
- 128 Kb SDRAM
- EMC compliance⁷

OS Drivers

- Windows XP, 2000 and NT4

Software components

- Console software
- Diagnostic and Test tools
- Data Server: OPC, Wonderware I/O servers and Wonderware DAServers
- Dev Library: ActiveX control

Key benefits

- Economical solution
- Dedicated to Siemens Simatic S7 Series
- Ideal for OEM applications

GATEWAY

Direct-Link™ DRL-PFB-SRE

new

DRL-PFB-SRE

Profibus to Serial
or Ethernet networks gateway



The Direct-Link Profibus to Serial or Ethernet gateway supports local communications through an RS232/RS485 serial port, a 10/100 Base-T Ethernet port and a Profibus port. Network data mapping is used to automatically transfer data between devices connected to the gateway. A simple software application is provided to create the routing tables and data mappings.

1 Profibus port

- 9-pin, D-Sub, female
- RS485, 2-wire half duplex
- 9.6 Kbps to 12 Mbps

Protocols

- Profibus DP Proxy/Slave

Serial Port

- RS485/232, 2-wire half duplex
- 300 bps to 230.4 Kbps

or

Ethernet Port

- UTP, RJ45, 10 Base-T/100 Base-TX
- 10/100 Mbps

Protocols

- Modbus RTU Master/Slave
- Modbus ASCII Master/Slave

Protocols

- Modbus TCP Master/Slave

Typical applications

- Connecting serial devices
- Remote data acquisition through Ethernet
- Monitors your plant floor

Key benefits

- Wide choice of connectivity with Profibus, Ethernet and Serial ports
- DIN rail, IP20 mounting
- Easy configuration and diagnostics with software tools included
- Certified by the Profibus organization

-1- Hardware complies with EMC for both industrial and office use (EN55022 Class B, EN61000-6-2, EN61000-3-2, and EN61000-3-3)

Direct-Link™ PCI-DVNI0

DRL-DVN-PCI

PCI Network Interface Card for DeviceNet



1 DeviceNet port

- 125, 250, and 500 Kbps
- CAN Controller: Phillips SJA1000
- Standard DeviceNet connector (unsealed screw connector)

Protocols

See protocol specifications

- DeviceNet Master/Slave

Technical Data

- PCI bus, 5V
- Hardware Plug & Play
- Intel 80486DX4
- 4 Mb SDRAM
- EMC compliance⁷

Direct-Link™ PC104-DVNI0

DRL-DVN-104

PC/104 Network Interface Card for DeviceNet



1 DeviceNet port

- 125, 250, and 500 Kbps
- CAN Controller: Phillips SJA1000
- HE13 (2 x 5 pins)

Protocols

See protocol specifications

- DeviceNet Master/Slave

Technical Data

- PC/104 bus
- AMD SC520
- 8 Mb SDRAM
- EMC compliance⁷

OS Drivers

- Windows XP, 2000, NT4, XPe, NTe and CE
- Kuka CE_Win
- VxWorks, QNX, Linux, Phar Lap ETS and DOS
- Development toolkit for proprietary OS

Software components

- Console software
- Diagnostic and Test tools
- Data Server: OPC DAserver and Wonderware I/O
- SoftPLC Drivers
- Dev Library: ActiveX control, DLL and VenturCom RTX

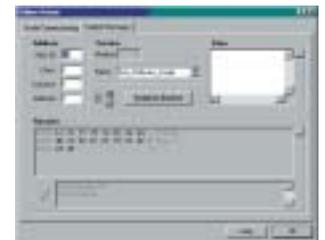
Key benefits

- *Deterministic data acquisition for PC-based Control applications (Ready with softPLCs)*
- *Easy configuration: automatic detection of slave devices*
- *Auto mapping of I/O in DPRAM card*
- *Remote Access via TCP/IP and Serial connection*
- *Certified by the ODVA Test Lab*

Protocol Specifications

DeviceNet

- Run DeviceNet Master and Slave modes simultaneously
- Devices supported: "Group 2 Only Server" and "U.C.M.M. capable"
- Manage up to 63 nodes
- Node parameter online configuration
- I/O slave messaging: Strobe, Polling, Cyclic and Change of State
- Explicit and I/O Peer to Peer messaging
- I/O data image: up to 2 KBytes
- Integrated data consistency
- Direct access to variable types (bit, byte, word, double word)
- Input and Output data size: 1 to 255 Bytes on Slave mode
- EDS library



-1- Hardware complies with EMC for both industrial and office use (EN55022 Class B, EN61000-6-2, EN61000-3-2, and EN61000-3-3)

Direct-Link™ products mean:

- Range of simple products
- More affordable, well-equipped
- Less skills required
- Common networks supported

GATEWAY

Direct-Link™ DRL-DVN-SRE new

DRL-DVN-SRE

DeviceNet to Serial
or Ethernet networks gateway

The Direct-Link DeviceNet to Serial or Ethernet gateway supports local communications through an RS232/RS485 serial port, a 10/100 Base-T Ethernet port and a DeviceNet port. Network data mapping is used to automatically transfer data between devices connected to the gateway. A simple software application is provided to create the routing tables and data mappings.



DeviceNet Port

- CAN controller
- DeviceNet Open connector
- 125, 250, 500 Kbps

Protocols

- DeviceNet Slave

Serial Port

- RS485/232, 2-wire half duplex
- 300 bps to 230.4 Kbps

Protocols

- Modbus RTU Master/Slave
- Modbus ASCII Master/Slave

or

Ethernet Port

- UTP, RJ45, 10 Base-T/100 Base-TX
- 10/100 Mbps

Protocols

- Modbus TCP Master/Slave

Typical applications

- Connecting serial devices
- Remote data acquisition through Ethernet
- Monitors your plant floor

Key benefits

- Wide choice of connectivity with DeviceNet, Ethernet and Serial ports
- DIN rail, IP20 mounting
- Easy configuration and diagnostics with software tools included
- Certified by the Open DeviceNet Vendors Association



55



Easy to use, widely available and easily affordable

**DIRECT
LINK™**

Ethernet solutions

PC NETWORK INTERFACE CARDS

Direct-Link™ PCU-ETHIO

DRL-EIO-PCU

PCI 3.3V/5V Network Interface Card for Ethernet I/O



1 Ethernet port

- Fast Ethernet 10/100 Mbps
- Base-T (RJ45)
- 4 Leds (Rx, Tx, Link, 10/100)

Protocols

See protocol specifications

- Modbus TCP & UDP Master/Scanner
- EtherNet/IP Master/Scanner and Slave

Technical Data

- PCI Universal bus 3.3V/5V (PCI-X compatible)
- Hardware Plug & Play
- AMD SC520
- 8 Mb SDRAM
- 1Mb Flash Memory
- EMC compliance¹

OS Drivers

- Windows XP, 2000, NT4, XPe, NTe and CE
- Kuka CE_Win
- VxWorks, QNX, Linux, Phar Lap ETS and DOS
- Development toolkit for proprietary OS

Software components

- Console software
- Diagnostic and Test tools
- Data Server: OPC DAServer and Wonderware I/O
- SoftPLC Drivers
- Dev Library: ActiveX control, DLL and VenturCom RTX

Key benefits

- 1000 I/O in 1ms!
- Deterministic data acquisition for PC-based Control applications (Ready with softPLCs)
- Auto mapping of I/O in DPRAM card
- Remote Access via TCP/IP and Serial connection

Protocol Specifications

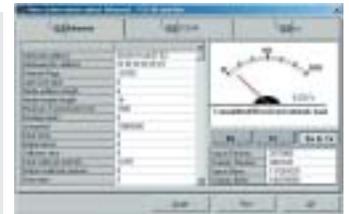
Ethernet TCP/IP

Open Modbus Client mode

- All Modbus TCP/IP and UDP devices server according to Modbus-IDA specifications (www.modbus.org)
- Up to 127 simultaneous devices

EtherNet/IP

- I/O Master/Scanner and Slave according to EtherNet/IP specifications
- Up to 128 simultaneous CIP based connections (Implicit and Explicit messages)
- Generic EtherNet/IP devices supported.
- IP address settings configurable via the console or DHCP/BOOTP server
- Client DNS Supported



¹- Hardware complies with EMC for both industrial and office use (EN55022 Class B, EN61000-6-2, EN61000-3-2, and EN61000-3-3)



Easy to use, widely available and easily affordable

Direct-Link™ products mean:

- Range of simple products
- More affordable, well-equipped
- Less skills required
- Common networks supported

CANopen solutions

CANopen

PC NETWORK INTERFACE CARDS

Direct-Link™ PCI-CANIO

DRL-CNO-PCI

PCI Network Interface Card for CANopen



1 CANopen port

- 10 Kbps to 1 Mbps
- CAN Controller: Phillips SJA1000
- D-Sub 9, CANopen Standard

Protocols

See protocol specifications

- CANopen Master/Scanner

Technical Data

- PCI bus 5V
- Hardware Plug & Play
- Intel 80486DX4
- 4 Mb SDRAM
- EMC compliance¹

Direct-Link™ PC104-CANIO

DRL-CNO-104

PC/104 Network Interface Card for CANopen



1 CANopen port

- 10 Kbps to 1 Mbps
- CAN Controller: Phillips SJA1000
- HE13 (2 x 5 pins)

Protocols

See protocol specifications

- CANopen Master/Scanner

Technical Data

- PC/104 bus
- AMD SC520
- 8 Mb SDRAM
- EMC compliance¹

OS Drivers

- Windows XP, 2000, NT4, XPe, NTe and CE
- Kuka CE_Win
- VxWorks, QNX, Linux, Phar Lap ETS and DOS
- Development toolkit for proprietary OS

Software components

- Console software
- Diagnostic and Test tools
- Data Server: OPC DAServer and Wonderware I/O
- SoftPLC Drivers
- Dev Library: ActiveX control, DLL and VenturCom RTX

Key benefits

- Deterministic data acquisition for PC-based Control applications (Ready with softPLCs)
- Easy configuration; automatic detection of slave devices
- Auto mapping of I/O in DPRAM card
- Remote Access via TCP/IP and Serial connection
- Flash memory for Auto-boot

Protocol Specifications

CANopen

- Specifications CIA DS 301 v4.0, DS 302 v4.02
- Supported profiles: DSP 401, DSP 402, DSP 403, DSP 404, DSP 406
- Connect up to 127 slave stations
- Send/Rec of PDOs (3500) and TPDO/RPDO (256/256)
- PDO modes: Event driven, Sync Cyclic, Sync Acyclic, Async
- Dynamic PDO mapping
- Integrated Data consistency
- Direct access to variable types (bit, byte, word, double word)
- EDS library





Direct-Link™

The Direct-Link AS-Interface gateway line provides an easy integration path for your AS-I sensors and actuators into other fieldbus systems like Profibus Ethernet or DeviceNet.

Those gateways act as a Master in the AS-I system and as a Slave for the selected fieldbus system. For the master of the fieldbus system the AS-I gateway always behaves like a modular I/O device. System setup as well as Error can be done without any Serial communication, simply by using the buttons and display on the Gateways

2 AS-Interface Rungs

- Screw terminals
- DIN rail, IP20

DRL-2ASI-PFB

AS-I to Profibus gateway, 2 channels, integrated display

- Profibus interface
 - Sub-D9
 - 9.6Kbps to 12Mbps

- Protocols
 - Profibus-DP Slave, DIN 19245, part3



DRL-2ASI-DN

AS-I to DeviceNet gateway, 2 channels, integrated display

- DeviceNet interface
 - CombiCon
 - 125Kbps to 500Kbps

- Protocols
 - DeviceNet, Group2 Slave, No strobed IO



DRL-2ASI-CAN

AS-I to CANopen gateway, 2 channels, integrated display

- CANopen interface
 - CombiCon
 - 10Kbps to 1Mbps

- Protocols
 - CANopen Slave, DS 401



DRL-2ASI-ETH

AS-I to Modbus TCP gateway, 2 channels, integrated display

- Ethernet TCP/IP interface
 - RJ45
 - 10Mbps

- Protocols
 - Modbus TCP/IP, IEEE 802.3



DRL-2ASI-SER

AS-I to Modbus Serial gateway, 2 channels, integrated display

- Serial interface
 - Sub-D9
 - 1.2Kbps to 57.6Kbps

- Protocols
 - Modbus Serial, RS485



- Features**
- Wide choice of connectivity with Profibus, DeviceNet, CANopen, Modbus TCP and Serial
 - AS-Interface certificate

- Key benefits**
- Less installation effort: single flat cable for power and data transmission
 - Simple and inexpensive bus interfaces because of protocol ASICs
 - Reduces maintenance cost because of standardized components
 - No configuration software required: automatic address mode and identification of devices



Software solutions

Direct-Link™ SW1000ETH/SW1000SER

DRL-ALL-SWL-x*

Software interface
1000 tags, all protocols
included

Features

- Well suited for embedded and light architecture (laptop, panel PC, MMI)
- Use a standard Ethernet (3COM, NE2000) or Serial interface card (COM1, COM2)
- Windows TCP/IP socket
- Fast Ethernet compatible
- 100% software solution
- Software or Dongle (Parallel or USB) Protection

DRL-ALL-SWF-x*

Software interface
Full tags, all protocols
included

Protocols

Serial		
Modicon - Modbus ASCII & RTU		M / S
GE Fanuc/Alstom - SNP-X (90-XX and 80-XX Series)		M
Schneider - Uni-Telway (TSX 17, 37, 57 Series)		S, C / S
Siemens - AS511 (Simatic S5 Series)		M
Siemens - PPI/PPI+ (Simatic S7-200 Series)		M
Siemens - Ti-Dir (Simatic TI-505 Series)		M

Ethernet <i>all protocols can run simultaneously</i>		
Altus - Alnet II (AL200x, webgate)		C / S
Alstom - SRTP (C80-35, C80-75)		C / S
GE Fanuc - SRTP (C90-30, C90-70)		C / S
Mitsubishi - Melsec (A & Q)		C / S
Omron - FINS (C, CV, CS)		C / S
Schneider - Modbus TCP & UDP		C / S
Schneider - UNI-TE (Premium & Micro)		C / S
Siemens - Industrial Ethernet (S5, S7, TI)		C / S

M: Master, S: Slave, C: Client, S: Server

* to order, replace x
by the letter corresponding

x	Type of protection
S	Software Key
P	Dongle for parallel port (Short format)
U	Dongle for USB port (not supported on NT4)

OS Drivers

| SW1000SER and SW1000ETH may not be used at the same time

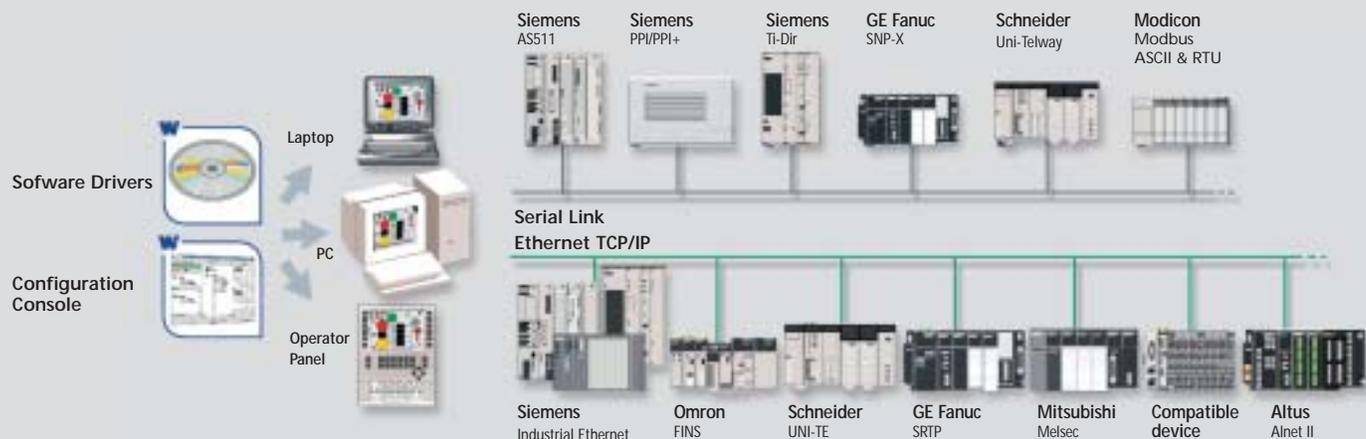
- Windows XP, 2000 and NT4

Software components

- Console software
- Diagnostic and Test tools
- Data Server: OPC, Wonderware DAServer and Wonderware I/O
- Dev Library: ActiveX control, Library DLL

Key benefits

- Economic solution
- All protocols run simultaneously
- Wide variety of open and vendor specific industrial protocols
- Database (32Kbits, 32 Kwords) to exchange data with applications



Harsh environment connectivity

Brad Harrison® has been the leader in quick disconnect technology since the '60s.

The Brad Harrison® product line offers a wide range of harsh environment components such as general connectors, cordsets, multi-port interconnection systems, power infrastructure, diagnostics and sensor actuators. This rugged expertise has now been particularly applied to network infrastructure products producing one of the finest lines of harsh data communications infrastructure in the world.

Those products are particularly well designed for harsh environments that require high speed data connections to facilitate communication with machinery from anywhere in the factory.

In addition to industrial factory applications (robotics, fluid power equipment, OEM pressure transducers and switches), these solutions are ideal for any connectivity project where the environment is a factor or quick disconnect flexibility is an advantage.





Customer Focus

Brad Harrison® products are being used in many industries and applications. Some of those segments include Military, Theater & Lighting, Harsh Commercial, Building Automation, Logistics & Delivery and Retail. Clearly Brad Harrison® can be used virtually anywhere that a hardened and reliable connection system is required. In many cases our products replace painful and expensive glanding, enclosures and do-it-yourself patches that customers have been living with for years in the absence of a properly designed and manufactured alternative.

Customers can access this line through one of the widest distribution channels on the planet, with more than 1500 authorized locations on every continent. When you need help building customized solutions, our engineers are standing ready to make the alterations you need for your application. When questions arise about particular applications of the product, our technical support lines are available in 14 languages all over the world to quickly find answers to your problems.

The system comprises of:

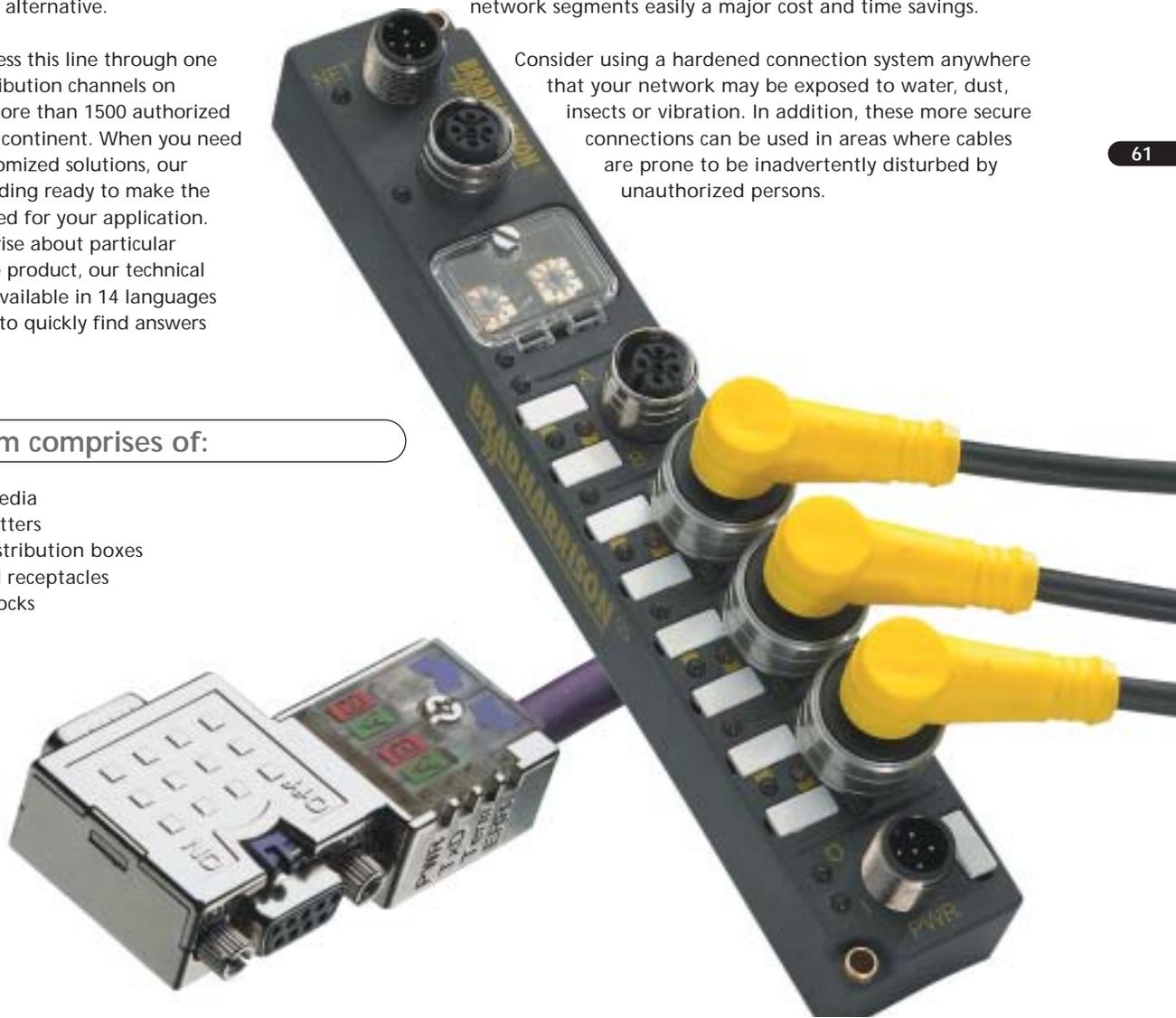
- Trunk line media
- Tees and splitters
- Multiport distribution boxes
- Cordsets and receptacles
- Active I/O blocks

Applications

Consider machines that need to be assembled and disassembled as part of their shipment and commissioning. Quick disconnect technology that is labeled and keyed can make this task simple and fast compared to the hard wiring alternative many are still using today. We call this concept *soft wiring*.

Factories that require frequent line extensions or reconfiguration will find having the ability to disconnect and extend network segments easily a major cost and time savings.

Consider using a hardened connection system anywhere that your network may be exposed to water, dust, insects or vibration. In addition, these more secure connections can be used in areas where cables are prone to be inadvertently disturbed by unauthorized persons.



Harsh environment connectivity

The RJ-Lnxx® family of industrial Ethernet IP67 products features the infrastructure components required to enable you to reliably use Ethernet, the world's most popular network, in a harsh environment. Our focus has been to enable the factory floor to use this powerful network to exchange information with the Enterprise System, serve as a control network, or to web enable equipment for remote data collection and diagnostics.

The RJ-Lnxx® product line is designed to meet the growing Ethernet demand for extending office communication networks to the factory floor, in order to provide access to real time process control and monitoring information.

RJ-Lnxx® overmolded RJ-45 connectors were the industry's first Industrial Ethernet connectors to bring Ethernet to the factory floor. In addition to improving our industry first connector, there are now two new connector options available to meet your project need. They include a bayonet style RJ45 connector as well as an M12 round style connector, these solutions are also being applied to many other segments requiring harsh-duty connections.

Customer Focus

RJ-Lnxx products are being used in many industries and applications. Some of those segments include Military, Theater & Lighting, Harsh Commercial, Building Automation, Logistics & Delivery and Retail. Clearly RJ-Lnxx can be used virtually anywhere that a hardened and reliable Ethernet system is required. In many cases our products replace painful and expensive glanding, enclosures and do-it-yourself patches that customers have been living with for years in the absence of a properly designed and manufactured alternative.

Applications

The RJ-Lnxx® product family is used in applications for machine control & monitoring, data acquisition, visual displays, weighing, machine tools, mechanical handling, food processing, textile production, marine and petrochemical industries. Consider using our hardened connection system anywhere that your network may be exposed to water, dust, insects or vibration. In addition, our more secure connections can be used in areas where cables are prone to be inadvertently disturbed by unauthorized persons.

The system comprises of:

Ethernet connectors

Available in three families – RJ-45 threaded closure, RJ-45 bayonet style closure and M12 round style connectors. All are available as field attachable or over-molded connectors.

Ethernet receptacles

110 punchdown, through panel and PCB mount formats are available for every application you need

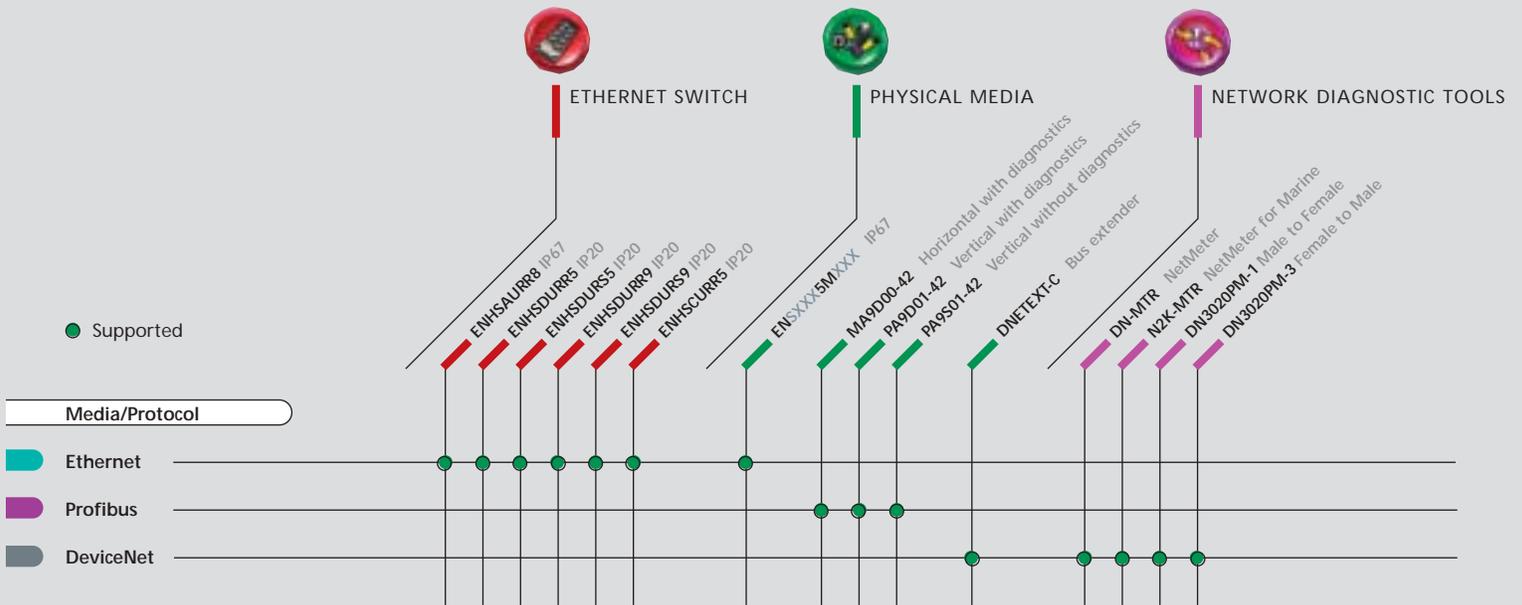
Ethernet switches

IP67 machine mount, DIN Rail mount with industrial temperature/vibration ratings and in-cabinet commercial grade

Ethernet active I/O modules



Quick Reference Guide



For a full list of connectors visit our web site www.woodhead.com

Brad Harrison® **new**

Classic block M12

TCDPB-8D0x-B1U

• 16 input

TCDPB-888x-B1U

• 8 input • 8 output

TCDPB-8C2x-B1U

• 14 input • 2 output

TCDPB-8B4x-B1U

• 12 input • 4 output



Brad Harrison® IP67 I/O Modules for Profibus provide a reliable world-class product for harsh environments and are available in different sizes:

- Classic 60 mm, 8 ports, M12 connection
- Compact 30 mm, 4 ports, M12 connection
- Compact 30 mm, 8 ports, M8 connection

The Classic and Compact (4 ports) I/O Modules are enhanced by the use of a patented I/O connector system called Ultra-Lock™ which allows reliable quick connect and disconnect of I/O cordsets.

These three I/O modules are able to withstand areas where water, weld sparks or vibration may be present.

LEDs provide high visibility for maintenance personnel to easily assess I/O and network status.

Unique LED colors and labels quickly identify inputs from outputs.

Diagnostic features provided by the compact module are also available at the PLC level through Profibus diagnostic information.

Compact block M12

TBDPB-480x-B8U

• 8 input

TBDPB-408x-B8U

• 8 output

TBDPB-444x-B8U

• 4 input • 4 output

TBDPB-462x-B8U

• 6 input • 2 output



Technical Data

- All Profibus baud rates supported: up to 12 Mbaud
- I/O connectors: M12 Micro-Change® 5-pole Female Ultra-Lock internally threaded or M8-Nano-Change (Compact, 8 ports version)
- Bus connectors: M12 Micro-Change® 5-pole B-Coded
- Auxilliary power connector: M12 Micro-Change 5-pole Male (power in) and 5-pole Female (power out) or M8 Mini-Change 5-pole Female (Compact 8 ports version)

Features include

- Industry first Ultra-Lock™ connector system
- Several I/O Configurations to choose from
- Visible diagnostics through status LEDs
- Supports PNP and NPN inputs

Key benefits

- Classic and Compact designs provide space savings for direct machine mount applications
- Standard hole pattern allows for interchangeability with popular I/O modules
- Module and channel diagnostics supported through Profibus

Compact block M8

TBDPB-880x-B84

• 8 input

TBDPB-808x-B84

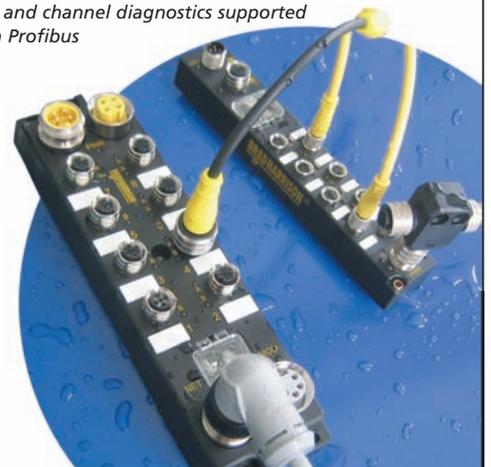
• 8 output

TBDPB-844x-B84

• 4 input • 4 output

TBDPB-862x-B84

• 6 input • 2 output



To order, replace x by the letter corresponding:
N for NPN Input, P for PNP Input



Brad Harrison® products mean:

- Harsh environment
- Rugged performance
- Security and reliability

PHYSICAL MEDIA

Brad Harrison®

To complete your industrial communication on the factory floor, **Woodhead** offers **Brad Harrison®** quick-disconnect products for Profibus in a variety of forms for auxiliary power, bus-line and interface connections.

Brad Harrison connectivity products are renowned for their superior performance and reliability in even the toughest environments.

The product line is both deep and customizable to provide application-specific connection systems.

Connector Products include

- Single-ended Cordsets, straight and 90° (PVC or PUR)
- Double-ended Cordsets, straight and 90° (PVC or PUR)
- D-Sub Cordsets (PUR jacketed for resistance to chemicals and oil)
- Data Line Receptacles (front panel, bulkhead feed-through, back panel mount)
- Data Line and Power Tees
- Field-attachables (shielded to reduce RF/EMI)
- Terminators (shielded to reduce RF/EMI)



CONNECTORS

Brad Harrison®

MA9D00-42

Horizontal with diagnostics



Brad Harrison® Diagnostic D-Sub Connectors effectively reduce installation, connection and troubleshooting time with their unique design.

The dual cable entry guide makes connections virtually foolproof. Profibus network troubleshooting is easy thanks to LED display that indicates power, bus, device, and termination errors. An integrated port is also included for field diagnostic monitors, tool analyzers and laptops.

Enclosed in a sturdy metal case, the Diagnostic D-Sub is protected from outside interference and damage in harsh applications.



PA9D01-42

Vertical with diagnostics

PA9S01-42

Vertical without diagnostics



Features include

- All metal construction for harsh duty
- Fully shielded for noise immunity
- Captive single screw mechanism -no loose parts
- High transmission rate – 12 Mbaud
- Integrated switchable terminators
- Transparent cable slots and covers for high visibility
- 4 LEDs for fast diagnostic reading

Key benefits

- *Faster implementation and troubleshooting of Profibus applications*
- *Easy, error-free connections*
- *Rugged for harsh applications*
- *Reduced downtime*

PBSTRIP

Cable stripping

Brad Harrison® **new**

IP67 Classic 60 mm M12

TCDDN-8D0x-10U

- 16 input

TCDDN-888x-10U

- 8 input • 8 output

TCDDN-8C2x-10U

- 14 input • 2 output

TCDDN-8B4x-10U

- 12 input • 4 output



IP67 Compact 30 mm M12

TBDDN-480x-80U

- 8 input

TBDDN-408x-88U

- 8 output

TBDDN-444x-88U

- 4 input • 4 output

TBDDN-462x-88U

- 6 input • 2 output



IP67 Compact 30 mm M8

TBDDN-880x-804

- 8 input

TBDDN-808x-884

- 8 output

TBDDN-844x-884

- 4 input • 4 output

TBDDN-862x-884

- 6 input • 2 output



IP67 Short block

TDDDN-240P-10U

- 4 input

TDDDN-220P-10U

- 2 input

TDDDN-221P-10U

- 2 input • 1 output

TDDDN-202P-10U

- 2 output



Brad Harrison® IP67 I/O Module for DeviceNet provides a reliable world-class product for harsh environment in different sizes:

- Classic 60 mm, 8 ports, M12 connection
- Compact 30 mm, 4 ports, M12 connection
- Compact 30 mm, 8 ports, M8 connection
- Short Blocks

The module design (except the Compact M8 version) is enhanced by the use of a patented I/O connector system called **Ultra-Lock™** which allows **reliable quick connect and disconnect of I/O cordsets**.

These I/O modules are able to withstand areas where water, weld sparks or vibration may be present.

LED's provide high visibility for maintenance personnel to easily assess I/O block and network status. Unique LED color and labels quickly identify inputs from outputs.

These modules support many of new DeviceNet enhancements such as Automatic Device replacement (ADR) and Quick Connect.

Technical Data

- All DeviceNet baud rates supported: 125, 250, 500 Kbaud and AutoBaud
- I/O connectors: Micro-Change® 5-pole Female Ultra-Lock internally threaded
- Bus connectors: Mini-Change® 5-pole Male (network in) and 5-pole Female (network out)
- I/O data: polled, cyclic and COS

Features include

- Industry first Ultra-Lock™ connector system
- Several I/O Configurations
- Visible diagnostics through status LEDs
- Supports ADR and Quick-Connect
- Supports ODVA Group 2 Server Slave functionality
- Supports PNP and NPN inputs (other than Short Block which is PNP only)

Key benefits

- Classic and Compact design provide space savings for direct machine mount applications
- Standard hole pattern allows for interchangeability with popular I/O modules
- Easy to set rotary MAC ID switches through Profibus

To order, replace **x** by the letter corresponding:
N for NPN Input, P for PNP Input



Brad Harrison® products mean:

- Harsh environment
- Rugged performance
- Security and reliability

BUS EXTENDER

Brad Harrison®

DNETEXT-C

DeviceNet Bus Extender

The Brad Harrison® Bus Extender extends the allowable trunk or drop line length of a DeviceNet system. The Bus Extender allows you to multiply cable lengths to increase drop lines, or can facilitate the creation of a star topology on the network. As an added benefit, the extender can isolate sections of the network from electrically *noisy* devices such as variable frequency drives or DC switching power supplies.

Features include

- Extends drop or trunk line length
- Can isolate noisy sections of the bus line from other sections
- Allows star topology in DeviceNet
- Panel mount with 4 screws
- IP65 protection

For a Male Mini-Style connection use DN10X-MXXX cordset.
For a Female Mini-Style connection use DN01X-MXXX cordset.



PHYSICAL MEDIA

Brad Harrison®

The Brad Harrison® line of DeviceNet media is the standard by which all other DeviceNet connection media are measured.

Woodhead pioneered the market for miniature industrially rated sealed connectors presenting the first quick-disconnect alternative to hardwiring.

Woodhead offers a broad selection of DeviceNet *thin*, *mid*, and *thick* cordsets and connectors as well as power media.

All Mini-Change® (M12) and Micro-Change® (M18) connectors feature phosphor bronze contacts, the best contact material in the industry providing better yield strength and resistance to stress.

Offering

DeviceNet users can choose from the following products:

- Trunk Single-ended Cordsets
- Trunk Field-attachable Connectors
- Drop Double-ended Cordsets
- Drop Single-ended Cordsets
- Trunk Terminators
- Open Drop Connectors
- Molded Cordsets
- Drop Receptacles
- Bus and Trunk Drop Tees
- Emergency and Machine Stop Tees
- Auxiliary Power Cordsets
- Diagnostic Tees
- Power Taps
- Splitters





DeviceNet solutions



Brad Harrison®

DN-MTR

NetMeter for DeviceNet

DN-MTR-BAG

NetMeter carrying case

DN-MTR-CAL

NetMeter Calibration Testing

715-0016

NetMeter User's Guide



NetMeter™ Diagnostic Tool

The NetMeter diagnostic tool empowers untrained personnel to certify, diagnose and troubleshoot DeviceNet quickly and easily, without risk. Completely passive on the network, the DeviceNet NetMeter analyzes the signal and power lines on your DeviceNet network. In seconds, both network-wide and device-specific traffic, signal voltage and power quality information is captured and displayed on a familiar user interface.

The NetMeter tool features two modes of operation:

AutoSearch Mode

For the DeviceNet novice, and for rapid fault detection, AutoSearch locates any problems for you. Simply connecting the NetMeter device to a live network and moving the selector to the AutoSearch position rapidly analyzes all pertinent network voltages, traffic, errors, and more.

What's more, AutoSearch tells you if anything is wrong with intuitive icons:

- ☺ No faults found
- ☹ One or more measurements is close to limits (warning)
- ☹ One or more measurements exceeds limits (fault)

If all nodes are active and NetMeter device finds no problems – you can be confident that your network will continue to operate problem-free.

Expert Mode

For the more experienced DeviceNet user, the DeviceNet NetMeter tool allows you to examine 677 key DeviceNet measurements and assist your troubleshooting efforts.

Advanced features include:

	Present Value	Maximum	Minimum	Per Node
Error Rate (per second)	■	■	■	■
Error Counter (cumulative)	■	■	■	■
% Bandwidth Used	■	■	■	■
Message Rate (per second)	■	■	■	■
Bus Power Voltage, DC	■	■	■	
Bus Power	■	■	■	
Voltage, AC	■	■	■	
Shield Voltage	■	■	■	
Common Mode Voltage	■	■	■	
CANH/L differential	■	■	■	
CANH voltage	■	■	■	
CANL voltage	■	■	■	

N2K-MTR

NetMeter for Marine applications



Key benefits

- Anyone can use it
- Certifying new DeviceNet installations
- Speed DeviceNet maintenance and repair time
- Preventing network downtime by predicting faults caused by marginal operating characteristics

NetMeter™ for Marine applications

The NetMeter for NMEA2000 is a diagnostic tool that aids with both installation and troubleshooting of NMEA 2000® networks. The meter will detect and isolate NMEA2000 network physical layer problems as well as validate new NMEA2000 network installations.

The National Marine Electronics Association (NMEA) 2000 is a CAN based network that allows multiple marine electronic equipment (GPS, Compass, etc.) to communicate on vessels.

Brad Harrison® products mean:

- Harsh environment
- Rugged performance
- Security and reliability

DIAGNOSTIC TOOLS

Brad Harrison®

DN3020PM-1

DeviceNet PowerMonitor®
- Tee - male to female

DN3020PM-3

DeviceNet PowerMonitor®
- Tee - female to male

115011A-PM-1

DeviceNet PowerMonitor®
- in-line - male to female

115011A-PM-3

DeviceNet PowerMonitor®
- in-line - female to male

115011NB-PM-1

DeviceNet PowerMonitor®,
nickel-brass coupling
- in-line - male to female

115011NB-PM-3

DeviceNet PowerMonitor®,
nickel-brass coupling
- in-line - female to male

115011SS-PM-1

DeviceNet PowerMonitor®,
stainless steel coupling
- in-line - male to female

115011SS-PM-3

DeviceNet PowerMonitor®,
stainless steel coupling
- in-line - female to male

PowerMonitor® Tee

The PowerMonitor® Tee or *in-line connector* for DeviceNet constantly monitors your network in real-time for power fluctuations.

These devices monitor and indicate the status of bus (*left*) to Female (*right*) voltage levels as to whether an under - or overvoltage indication exists or whether a voltage spike or complete loss of power has occurred over the last 24 hours.

These failures are logged for a period of 24 hours that can be easily reset with a magnet.

Multi-colored LEDs provide immediate and intuitive feedback about DeviceNet power:

Indication	LED Color	Condition
OK	Green	Normal
HI	Red	Overvoltage
LO	Blue	Undervoltage
AC	Yellow	Ripple or Glitch
OK	Flickering Green	Power cycle within last 24 hrs
HI	Periodic Red	Flash Surge within last 24 hrs
LO	Periodic Blue Flash	Brownout within last 24 hrs
AC	Periodic Yellow	Flash Glitch within last 24 hrs

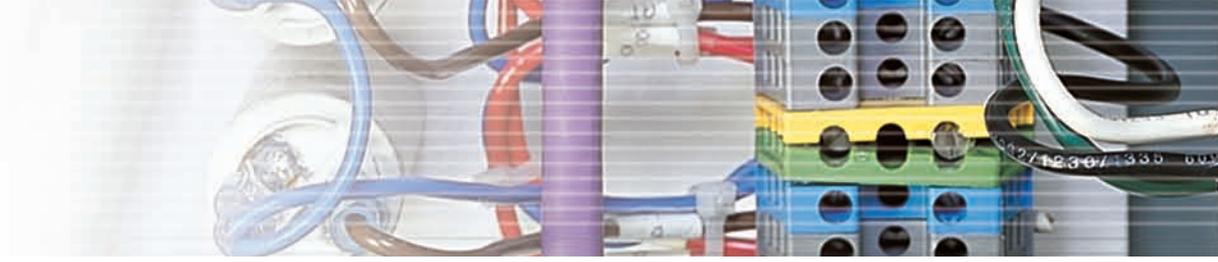
Hardware specifications

Power supply	7 – 30Vdc, <50mA
Environment	0 – 60°C, IP67
Connectors	DeviceNet Standard Sealed Mini (compatible with flat media and microconnectors with suitable adapter, not included)
Min. Low voltage threshold	Below 12.96V
Nominal "OK" voltage range	12.96V – 24.78V
Max. "High" voltage threshold	Above 24.78V
Glitch & Ripple threshold	Fast transients (! to 250Hz) ±0.67V Slow transients (" to 10Hz) ±1.26V



Key benefits

- Anyone can use it
- Immediate detection of power problems
- Preventing network downtime by predicting faults caused by power problems
- Status logged for 24 hours



AS-Interface solutions



Brad Harrison® **new**

IP67 Digital M8

TAS-422-8E4-00

• 2 input • 2 output

TAS-404-8E4-00

• 4 output

TAS-440-8E4-00

• 4 input



The Brad Harrison compact AS-Interface M8 modules are ideal for handling equipment and robot arms.

The inputs can be connected with 2-wire - and 3-wire-sensors. The electronic outputs are designed for 24 V DC and for currents up to max 0.5 A (max. 2A for M12 blocks). The connector interface for the sensors/actuators is the M8 or M12 connector. The AS-Interface bus and the power supply of the M8 modules are connected via round cable converter to the flat wire of the AS-Interface. The M12 modules are connected directly with the AS-Interface flat cable.

LEDs indicate the actual switch function of each channel.

Technical Data

- M12 / M8 connectors with 5 poles for the inputs/outputs (I/O)
- M12 connector Ultra-Lock®
- LEDs for channel and AS-Interface power supply

Features include

- AS-Interface certificate
- Compact design, easy to mount
- IP67 protection
- AS-Interface Specification 2.1 (M12) and 2.0 (M8)

Key benefits

- *Less installation effort: single flat cable for power and data transmission*
- *Simple and inexpensive bus interfaces because of protocol ASICs*
- *Reduces maintenance cost because of standardized components*
- *Reliable, sealed and fast connect/ disconnect*

IP67 Digital M12

TAS-422-CD4-00

• 2 input • 2 output

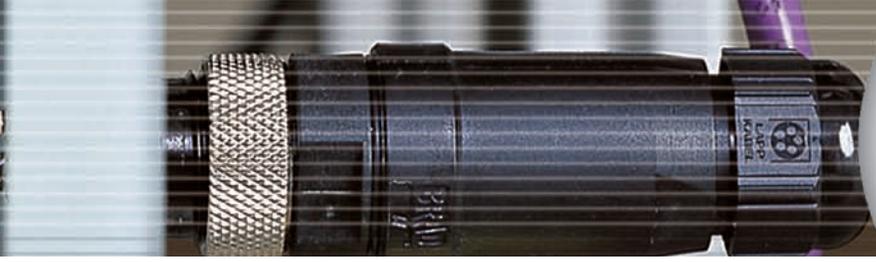
TAS-440-CD8-00

• 4 input

TAS-442-CD4-00

• 4 input • 2 output





Brad Harrison® products mean:

- Harsh environment
- Rugged performance
- Security and reliability

I/O MODULE

Brad Harrison®

IP65 Analog M12

TAS-ANA-4IA

M12 analog module
• 4 input 4...20mA

TAS-ANA-4IV

M12 analog module
• 4 input 4...10V

TAS-ANA-4OA

M12 analog module
• 4 output 0...20mA

TAS-ANA-4OV

M12 analog module
• 4 output 0...10V

TAS-PWR-4A

Power supply, 230V / 4A



The Brad Harrison IP65 analog module has 4 analog inputs or 4 analog outputs. The connection of the sensors / actuators is made by M12 connectors.

The current supply of the sensors can be made out of AS-Interface or an external voltage supply (according to PELV).

The current supply switches automatically to the supply out of external voltage supply, as soon as an external voltage is connected. The analog sensors and the analog actuators are galvanically isolated from the AS-Interface.

The conversion of the measured value and the data transmission via AS-Interface occur asynchronously according to AS-Interface Profile 7.3. The resolution of the analog data is 16 Bit.

Technical Data

- M12 connectors with 5 poles for the sensors/actuators
- Infrared interface for Slave programming
- Galvanic isolation to AS-Interface
- Profile 7.3, Plug & Play

Features include

- AS-Interface certificate
- Compact design, easy to mount
- IP65 protection
- AS-Interface substructure module for 1 AS-I flat cable and 1 additional power

Key benefits

- Less installation effort: single flat cable for power and data transmission
- Simple and inexpensive bus interfaces because of protocol ASICs
- Reduces maintenance cost because of standardized components

CC-Link solution

CC-Link

I/O MODULE

Brad Harrison® new

TCDCC-8D0N 88U

• 16 input, 2 per port



Brad Harrison® CC-Link Input module provides direct connection to the CC-Link fieldbus, accommodating a variety of 24 VDC NPN sensors or dry contacts.

Installation is simple thanks to two rotary switches for address and DIP switch selector for baud rate mounted behind a sealed clear cover.

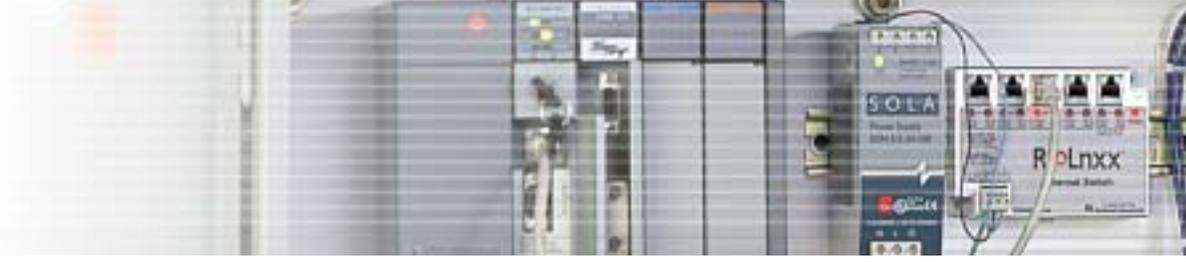
The module is intended for heavy duty industrial use and is designed to meet IEC IP67 and Nema 6P requirements.

Features include

- Inputs are short circuit protected
- Connectors have robust metal threads
- LED diagnostics for network, auxiliary power and input status
- Ultra-Lock® input connections are compatible with Micro-Change® (M12)

Key benefits

- Harsh environment suitability
- Easy to install
- Fast Commissioning



Ethernet solutions

I/O MODULE

RJ-Lnxx®

TEN-888-R18-05

Open protocol
IP67 rated Ethernet



RJ-Lnxx® EtherNet/IP I/O helps leverage Ethernet for control on the manufacturing floor.

Using the open standard of EtherNet/IP, the module interfaces with PLC -or PC- based control and data collection systems. Designed to survive under the toughest conditions, the module mounts directly onto machinery simplifying wiring and network design and reducing the need for enclosures.

- Features include**
- Environmentally sealed to IEC IP67 for harsh environments
 - 8 input and 8 output points per module
 - Supports EtherNet/IP application layer
 - Static or dynamic IP address configuration
 - 10/100Mbps autosensing capability
 - Diagnostic LEDs provide status information at a glance
 - Built-in Web server for remote monitoring and configuration

- Key benefits**
- Consolidated networks for increased uptime
 - Increased throughput
 - Permits low cost control and data collection
 - System using commonly available tools.
No need for enclosure

Cordset Options

T XX 888 X1U 05

Network Protocol

Ethernet/IP	EN
Modbus TCP.....	EM
Profinet	EP

Port configuration

8 Ports	8
8 Digital Inputs	8
8 Digital Outputs	8

Connector type

RJ-Lnxx Style	R
8 pin M12	8
Bayonet	S

Connector connection

Ultra-Lock	U
------------------	----------



RJ-Lnxx® products mean:

- Harsh environment Ethernet infrastructure
- Rugged performance and reliability
- Competitive price

RJ-Lnxx®

Ethernet switches allow all devices to transmit messages simultaneously, without collision. This is essential for enabling deterministic delivery of time critical information. Switches are intelligent devices, keeping locations; this allows messages to be transmitted only from the necessary port, leading to improved network performance. RJ-Lnxx® products are built to thrive in adverse conditions. Enclosures are eliminated and network design is simplified, while your business enjoys the highest level of data integrity.

Key benefits

- Extended temperature ranges
- Hazardous duty ratings
- Vibration resistance
- Secure robust connections
- Industrial mounting methods

Machine Mount Switch

ENHSAURR8

- 8 ports, IP67



Features

- IP67 protection
- Vibration resistance to IEC68-2-6
- Class1/Div2 for use in hazardous environments
- A store and forward switch with address auto learning
- 10/100 Mbps auto-negotiation
- Auto-programming for simplified set up

DIN Rail Mount Switch

ENHSDURR5

- 5 ports, IP20

ENHSDURS5

- 5 ports, IP20
with fiber optic uplink port



Features

- IP20 protection
- Simple DIN rail mount for quick, simple installation in an industrial enclosure
- Class1/Div2 for use in hazardous environments
- A store and forward switch with address auto learning
- 10/100 Mbps auto-negotiation
- No programming required

ENHSDURR9

- 9 ports, IP20

ENHSDURS9

- 9 ports, IP20
with fiber optic uplink port

Cabinet Mount Switch

ENHSCURR5

- 5 ports, IP20



Features

- IP20 protection
- Unique magnet mounting allowing the switch to be installed on any steel or iron surface
- All ports support MDI/MDIX autodetection of cross over
- A store and forward switch with address auto learning
- No programming required

RJ-Lnxx®

ENSXXX5MXXX



RJ-Lnxx® cordsets are available two ways :

1. with two industrial sealed connectors for applications that require both ends to be used in harsh environments, and
2. with one industrial sealed connector and one RJ-45 connector for applications where one end may be located on a patch panel in a clean environment.

Various cables are offered to meet different needs. Solid core, shielded PUR cable is used for longer *horizontal cross-connect* runs, and is ideal for attaching to a punchdown block. Stranded PVC is appropriate for shorter *patch cord* applications, where greater cable flexibility is desired.

For industries such as entertainment technology, where the cabling may be subjected to a great deal of abuse and movement, Kelvar wrapped cable provides an additional measure on insurance.

Jacket colors (for stranded cable) other than black are available upon request.

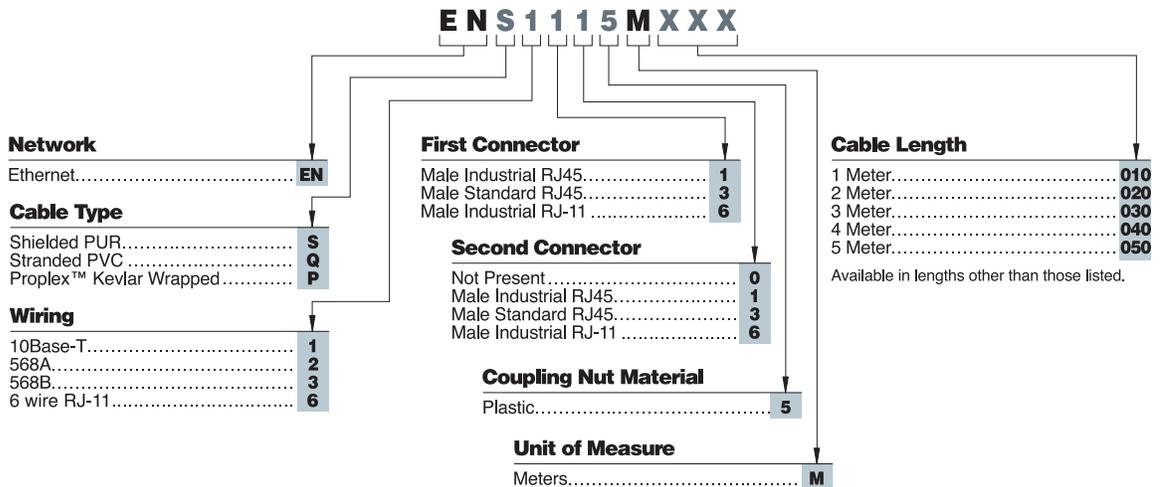
Designed to survive under the toughest conditions, the module mounts directly onto machinery simplifying wiring and network design and reducing the need for enclosures.

Features include

- RJ-45 plug for providing secure and robust connection
- Category 5e compliant
- Several cable options available
- Achieves IEC IP67 rated sealed when mated with an RJ-Lnxx® receptacle

Cordset Options

Example: ENS2135M020 = Cordset with 568A wiring, sealed industrial RJ-45 on one end, commercial RJ-45 on the other end, 2.0 meters in length.





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