

**Brad**<sup>®</sup>  
from Woodhead Industries

# PROFIBUS SELECTION GUIDE

**BradCommunications**<sup>™</sup>

**BradConnectivity**<sup>™</sup>

**BradControl**<sup>™</sup>



**Woodhead Industries, a Division of Molex** "Empowers the Industrial Infrastructure" with innovative communication, control and connectivity solutions for a wide range of PROFIBUS applications - from the device and sensor level, to the operations and supervisory level, to connectivity with enterprise business and operations systems.

The success of PROFIBUS relies on the quality and performance of its underlying infrastructure - all the devices, components and pathways needed to support the network's communications, connectivity and control capabilities. Our Brad® automation and networking solutions are engineered to facilitate reliable information flow, from machines to PCs and PLCs, and all the way from the plant floor to the enterprise.

### Brad® Automation Solutions

Our Brad® product lines - including such globally recognized names as Brad Harrison®, applicom®, Direct-Link™, SST™, mPm®, and RJ-Lnxx® - are designed to help engineers, systems integrators, machine builders and other OEMs successfully implement their PROFIBUS networking projects in harsh and demanding industrial environments.

Brad® product lines are developed in compliance with the standards and specifications published by industrial organizations to guarantee you a high level of performance, reliability and availability. An active member of PROFIBUS Trade Organisation (PTO), Woodhead Industries provides the most complete product offering and technical support for your PROFIBUS network.

Our industrial network solutions include:

**BradCommunications™** - Network interface cards, PLC backplanes, switches, gateways, simulation software, diagnostic tools and embedded software stacks

**BradConnectivity™** - Connectors, cordsets and distribution boxes for sensor, actuator and bus network applications

**BradControl™** - Network I/O for on-machine and in-cabinet applications

**BradPower™** - Modular wiring systems for machine power distribution and motor control

Woodhead Industries, a Division of Molex, operates from 21 locations in 10 countries spanning North America, Europe and Asia/Pacific, so we have the resources to assist you locally with all of your PROFIBUS project needs.

## PROFIBUS Overview



PROFIBUS-DP (Decentralized Periphery) is a device level bus that supports both analog and discrete signals. It permits Mono-master or Multi-master systems, which provides a high degree of flexibility during system configurations. PROFIBUS allows all automation devices, sensors, actuators, PLC's, etc to communicate with each other over a single bus. It communicates at speeds from 9.6 Kbps to 12 Mbps over distances from 100 to 1,200 meters. PROFIBUS-DP doesn't natively support Intrinsically Safe installations.

PROFIBUS-PA (Process Automation) is a full-function fieldbus that is generally used for process level instrumentation. PROFIBUS-PA communicates at 31.25 Kbps and has a maximum distance of 1,900 meters per segment. PROFIBUS-PA is designed to support Intrinsically Safe applications.

## PROFIBUS Network Specifications

Type of Network	
DP	Device Bus
PA	Process Control Network
Physical Media	
Twisted pair, fiber	
Network Topology	
Bus, Ring, Star	
Maximum Devices	
DP	max.126 stations on one bus (maximum of 244 bytes input and output data possible for each slave)
PA	32 nodes/segment 4-6 per repeated segment depending on power requirements of devices and the type of Intrinsically Safe barrier used.
Maximum Distance	
DP	93.75Kbps and less - 1200 meters 500Kbps - 400 meters 1.5Mbps - 200 meters 12Mbps - 100 meters
PA	1,900 meters 9,500 meters with repeaters (max. of 9 repeaters can be used)

Communication Methods	
DP	Peer-to-peer, multicast or cyclic master-slave (uses token passing sequence)
PA	Client/server, Publisher/subscriber, Event. Both Scheduled and Unscheduled communications
Primary usage	
DP	Used for Discrete and Analog for PLC, Variable Speed Drives, Remote I/O communications
PA	Analog and discrete process control devices
Power and Communications	
DP	Power is supplied separately from communications bus
PA	Requires PA power supply
Device Power Supply	
DP	Devices are powered separately from communications bus
PA	Can be supplied from bus (typical)
Wiring Types	
DP	Shielded twisted pair #22 AWG
PA	Shielded twisted pair #18 AWG (0.8mm)



CONNECTORS, CORDSETS AND DISTRIBUTION BOXES FOR SENSOR, ACTUATOR AND BUS NETWORK APPLICATIONS

## BUS CONNECTIVITY

### Micro-Change® (M12) Cordsets



- Plug & play connection between PROFIBUS modules
- Single and double ended
- Straight and 90°
- Standard and application specific lengths

#### Characteristics

- PUR jacketed for chemical and oil resistant applications
- Anti-vibration feature prevents back-out in high vibration applications
- 360° shielded head design to reduce RFI/EMI and improve signal integrity
- IP65/67, NEMA 6P

### D-Sub (9-pin) Cordsets



- Plug & play connection between PROFIBUS interface cards and modules
- D-Sub to single or dual ended M12
- D-Sub to single or dual ended D-Sub
- Horizontal, vertical, straight or 90° configurations
- Standard and application specific lengths

#### Characteristics

- Same performance benefits as M12 cordsets
- Shielded D-Sub connector maintains signal integrity in noisy environments
- D-Sub includes termination switch for field installation flexibility

### Data Line Receptacles



- Connects the external bus with an enclosure
- Front panel mount
- Bulkhead feed-thru
- Wire or cable lead

#### Characteristics

- Used in control panels and junction boxes
- Epoxy potted for rugged industrial environments
- Male and female configurations

### Field Attachable Connectors



- Field termination for specific length or repair
- Easy field installation of quick-disconnect design
- D-Sub Horizontal or vertical

#### Characteristics

- Shielded to reduce RFI/EMI and improve signal integrity
- D-Sub IDC with or without built-in diagnostics
- Male or female configurations

### D-Sub Connectors with Diagnostics



- Plug & play connection between PROFIBUS interface cards and modules
- Horizontal, vertical, or 90° configurations
- 9-pin D-Sub connectors

#### Characteristics

- Integrated programming / diagnostics port available
- 12 MBaud supported
- LEDs for fast diagnostics and health status of bus and device available

### Terminators and Data Line Tees



- Provides quick disconnection of bus line
- Allows disconnection of node without shutting down the network
- Used with remote active IO modules

#### Characteristics

- Shielded to reduce RFI/EMI and improve signal integrity
- Male reverse key Micro-Change® Terminators
- M12 thread

## BUS CORDSETS - Order Number

### SINGLE-ENDED MICRO-CHANGE® (M12) CORDSETS

	MALE STRAIGHT	MALE 90°	FEMALE STRAIGHT	FEMALE 90°
2M	B05S06PP4M020	B05S07PP4M020	B05S00PP4M020	B05S01PP4M020
4M	B05S06PP4M040	B05S07PP4M040	B05S00PP4M040	B05S01PP4M040
5M	B05S06PP4M050	B05S07PP4M050	B05S00PP4M050	B05S01PP4M050
6M	B05S06PP4M060	B05S07PP4M060	B05S00PP4M060	B05S01PP4M060
10M	B05S06PP4M100	B05S07PP4M100	B05S00PP4M100	B05S01PP4M100

### DOUBLE-ENDED MICRO-CHANGE® (M12) CORDSETS (FEMALE/MALE)



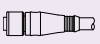




	STRAIGHT/STRAIGHT	90°/STRAIGHT	STRAIGHT/90°	90°/90°
0.6M	BB5S30PP4M006	BB5S31PP4M006	BB5S32PP4M006	BB5S33PP4M006
1M	BB5S30PP4M010	BB5S31PP4M010	BB5S32PP4M010	BB5S33PP4M010
2M	BB5S30PP4M020	BB5S31PP4M020	BB5S32PP4M020	BB5S33PP4M020
3M	BB5S30PP4M030	BB5S31PP4M030	BB5S32PP4M030	BB5S33PP4M030
4M	BB5S30PP4M040	BB5S31PP4M040	BB5S32PP4M040	BB5S33PP4M040
5M	BB5S30PP4M050	BB5S31PP4M050	BB5S32PP4M050	BB5S33PP4M050




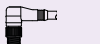





CONNECTORS, CORDSETS AND DISTRIBUTION BOXES FOR SENSOR, ACTUATOR AND BUS NETWORK APPLICATIONS

## BUS CORDSETS - Order Number







### D-SUB (9P) TO MICRO-CHANGE® (M12) CORDSETS

				
<b>Horizontal</b>	<b>MALE STRAIGHT [1]</b>	<b>MALE 90° [1]</b>	<b>FEMALE STRAIGHT [1]</b>	<b>FEMALE 90° [1]</b>
	1M BM5S60PP4M010 2M BM5S60PP4M020 5M BM5S60PP4M050	1M BM5S61PP4M010 2M BM5S61PP4M020 5M BM5S61PP4M050	1M BM5S30PP4M010 2M BM5S30PP4M020 5M BM5S30PP4M050	1M BM5S31PP4M010 2M BM5S31PP4M020 5M BM5S31PP4M050
<b>Vertical</b>				
	1M BM5S62PP4M010 2M BM5S62PP4M020 5M BM5S62PP4M050	1M BM5S63PP4M010 2M BM5S63PP4M020 5M BM5S63PP4M050	1M BM5S32PP4M010 2M BM5S32PP4M020 5M BM5S32PP4M050	1M BM5S33PP4M010 2M BM5S33PP4M020 5M BM5S33PP4M050
<b>Vertical with programming port</b>				
	1M BP5S62PP4M010 2M BP5S62PP4M020 5M BP5S62PP4M050	1M BP5S63PP4M010 2M BP5S63PP4M020 5M BP5S63PP4M050	1M BP5S32PP4M010 2M BP5S32PP4M020 5M BP5S32PP4M050	1M BP5S33PP4M010 2M BP5S33PP4M020 5M BP5S33PP4M050






### D-SUB (9P) TO DUAL MICRO-CHANGE® (M12) CORDSETS

					<b>MALE STRAIGHT [1] / FEMALE STRAIGHT [1]</b>
<b>Horizontal</b>	<b>MALE STRAIGHT [2]</b>	<b>MALE 90° [2]</b>	<b>FEMALE STRAIGHT [2]</b>	<b>FEMALE 90° [2]</b>	
	1M BM5G60PP4M010 2M BM5G60PP4M020 5M BM5G60PP4M050	1M BM5G61PP4M010 2M BM5G61PP4M020 5M BM5G61PP4M050	1M BM5G30PP4M010 2M BM5G30PP4M020 5M BM5G30PP4M050	1M BM5G31PP4M010 2M BM5G31PP4M020 5M BM5G31PP4M050	1M BM5G70PP4M010 2M BM5G70PP4M020 5M BM5G70PP4M050
<b>Vertical</b>					
	1M BM5G62PP4M010 2M BM5G62PP4M020 5M BM5G62PP4M050	1M BM5G63PP4M010 2M BM5G63PP4M020 5M BM5G63PP4M050	1M BM5G32PP4M010 2M BM5G32PP4M020 5M BM5G32PP4M050	1M BM5G33PP4M010 2M BM5G33PP4M020 5M BM5G33PP4M050	1M BM5G72PP4M010 2M BM5G72PP4M020 5M BM5G72PP4M050
<b>Vertical with programming port</b>					
	1M BP5G62PP4M010 2M BP5G62PP4M020 5M BP5G62PP4M050	1M BP5G63PP4M010 2M BP5G63PP4M020 5M BP5G63PP4M050	1M BP5G32PP4M010 2M BP5G32PP4M020 5M BP5G32PP4M050	1M BP5G33PP4M010 2M BP5G33PP4M020 5M BP5G33PP4M050	1M BP5G72PP4M010 2M BP5G72PP4M020 5M BP5G72PP4M050

### D-SUB (9P) TO D-SUB (9P) CORDSETS

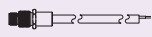
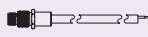
			
<b>Horizontal</b>	<b>HORIZONTAL</b>	<b>VERTICAL</b>	<b>SINGLE-ENDED</b>
	1M MM3S60PP4M010 2M MM3S60PP4M020 5M MM3S60PP4M050	1M MM3S62PP4M010 2M MM3S62PP4M020 5M MM3S62PP4M050	1M M03S06PP4M010 2M M03S06PP4M020 5M M03S06PP4M050
<b>Vertical</b>			
	1M MM3S62PP4M010 2M MM3S62PP4M020 5M MM3S62PP4M050	1M MM3S63PP4M010 2M MM3S63PP4M020 5M MM3S63PP4M050	1M M03S07PP4M010 2M M03S07PP4M020 5M M03S07PP4M050
<b>Vertical with programming port</b>			
	1M MP3S62PP4M010 2M MP3S62PP4M020 5M MP3S62PP4M050	1M MP3S63PP4M010 2M MP3S63PP4M020 5M MP3S63PP4M050	1M P03S07PP4M010 2M P03S07PP4M020 5M P03S07PP4M050

### D-SUB (9P) TO DUAL D-SUB (9P) (DAISY-CHAIN) CORDSETS




			<b>HORIZONTAL [1] / VERTICAL [1]</b>
<b>Horizontal</b>	<b>HORIZONTAL [2]</b>	<b>VERTICAL [2]</b>	
	1M MM3G60PP4M010 2M MM3G60PP4M020 5M MM3G60PP4M050	1M MM3G61PP4M010 2M MM3G61PP4M020 5M MM3G61PP4M050	1M MM3G70PP4M010 2M MM3G70PP4M020 5M MM3G70PP4M050
<b>Vertical</b>			
	1M MM3G62PP4M010 2M MM3G62PP4M020 5M MM3G62PP4M050	1M MM3G63PP4M010 2M MM3G63PP4M020 5M MM3G63PP4M050	1M MM3G72PP4M010 2M MM3G72PP4M020 5M MM3G72PP4M050
<b>Vertical with programming port</b>			
	1M MP3G62PP4M010 2M MP3G62PP4M020 5M MP3G62PP4M050	1M MP3G63PP4M010 2M MP3G63PP4M020 5M MP3G63PP4M050	1M MP3G72PP4M010 2M MP3G72PP4M020 5M MP3G72PP4M050

## BUS RECEPTACLES - Order Number

### DATA LINE MICRO-CHANGE® (M12) RECEPTACLES

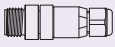
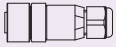
		
<b>BACK-PANEL MOUNT</b>	<b>MALE STRAIGHT</b>	<b>FEMALE STRAIGHT</b>
1M cable 2M cable 5M cable	BR5U76PP4M0103 BR5U76PP4M0203 BR5U76PP4M0503	BR5U70PP4M0103 BR5U70PP4M0203 BR5U70PP4M0503

### TRUNK RECEPTABLES (M12)

			
<b>FRONT-PANEL MOUNT</b>	<b>MALE STRAIGHT</b>	<b>FEMALE STRAIGHT</b>	<b>BULKHEAD PASS-THROUGH</b>
3" wire	81688-030	81689-030	BR5L30

## BUS FIELD-ATTACHABLE CONNECTORS - Order Number

### FIELD ATTACHABLE MICRO-CHANGE® (M12) CONNECTORS


	
<b>MALE STRAIGHT</b>	<b>FEMALE STRAIGHT</b>
BA5S06-32	BA5S00-32

### FIELD ATTACHABLE CONNECTORS D-SUB

			
<b>D-Sub with diagnostics</b>	<b>VERTICAL</b>	<b>HORIZONTAL</b>	<b>45°</b>
	PA9D01-42	MA9D00-42	PA9D0B-42
<b>D-Sub without diagnostic</b>			
	PA9S01-42		

## BUS TEES - Order Number

### DATA LINE MICRO-CHANGE® (M12) TEES


PDS01

## BUS TERMINATORS - Order Number

### MICRO-CHANGE® (M12) TERMINATORS


<b>STRAIGHT</b>
B05S06

[1] - one connector configuration

[2] - two connector configuration



CONNECTORS, CORDSETS AND DISTRIBUTION BOXES FOR SENSOR, ACTUATOR AND BUS NETWORK APPLICATIONS

## POWER CONNECTIVITY

Auxiliary Power  
5-Pole Media



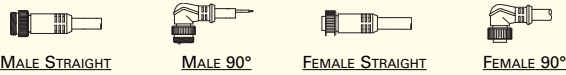
- Supplies auxiliary power to a variety of devices, including active I/O modules or machine stop tees
- Complete system of cordsets (single and double-ended), tees and receptacles
- Standard and application-specific lengths

### Characteristics

- Rugged IP68 rated connectors bring power to active I/O modules reliably
- Variety of connector configuration and cable length options available

## POWER CORDSETS - Order Number

### SINGLE-ENDED MINI-CHANGE® CORDSETS



UL STOOW PVC CABLE, NEC COLOR CODE

Length	Male Straight	Male 90°	Female Straight	Female 90°
2M	105006A01M020	105007A01M020	105000A01M020	105001A01M020
4M	105006A01M040	105007A01M040	105000A01M040	105001A01M040
5M	105006A01M050	105007A01M050	105000A01M050	105001A01M050
6M	105006A01M060	105007A01M060	105000A01M060	105001A01M060
10M	105006A01M100	105007A01M100	105000A01M100	105001A01M100

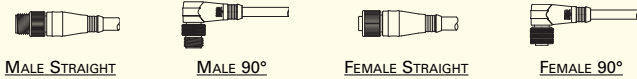
### DOUBLE-ENDED MINI-CHANGE® CORDSETS (FEMALE/MALE)



UL STOOW PVC CABLE, NEC COLOR CODE

Length	Straight/Straight	90°/Straight	Straight/90°	90°/90°
0.6M	115030A01M006	115031A01M006	115032A01M006	115033A01M006
1M	115030A01M010	115031A01M010	115032A01M010	115033A01M010
2M	115030A01M020	115031A01M020	115032A01M020	115033A01M020
3M	115030A01M030	115031A01M030	115032A01M030	115033A01M030
4M	115030A01M040	115031A01M040	115032A01M040	115033A01M040
5M	115030A01M050	115031A01M050	115032A01M050	115033A01M050

### SINGLE-ENDED MICRO-CHANGE® (M12) CORDSETS



PVC CABLE, IEC COLOR CODE FOR COMPACT I/O MODULES [1]

Length	Male Straight	Male 90°	Female Straight	Female 90°
0.6M	-	-	-	-
1M	-	-	-	-
2M	805006A09M020	805007A09M020	805000A09M020	805001A09M020
3M	-	-	-	-
4M	805006A09M040	805007A09M040	805000A09M040	805001A09M040
5M	805006A09M050	805007A09M050	805000A09M050	805001A09M050
10M	805006A09M100	805007A09M100	805000A09M100	805001A09M100

### DOUBLE-ENDED MICRO-CHANGE® (M12) CORDSETS (FEMALE/MALE)



Length	Straight/Straight	90°/Straight	Straight/90°	90°/90°
0.6M	885030A09M006	885031A09M006	885032A09M006	885033A09M006
1M	885030A09M010	885031A09M010	885032A09M010	885033A09M010
2M	885030A09M020	885031A09M020	885032A09M020	885033A09M020
3M	885030A09M030	885031A09M030	885032A09M030	885033A09M030
4M	885030A09M040	885031A09M040	885032A09M040	885033A09M040
5M	885030A09M050	885031A09M050	885032A09M050	885033A09M050
10M	885030A09M100	885031A09M100	885032A09M100	885033A09M100

UL ITC/PLTC HIGH FLEX TPE CABLE, IEC COLOR CODE FOR COMPACT I/O MODULES [2]

Length	Male Straight	Male 90°	Female Straight	Female 90°
0.6M	-	-	-	-
1M	-	-	-	-
2M	805006K05M020	805007K05M020	805000K05M020	805001K05M020
3M	-	-	-	-
4M	805006K05M040	805007K05M040	805000K05M040	805001K05M040
5M	805006K05M050	805007K05M050	805000K05M050	805001K05M050
10M	805006K05M100	805007K05M100	805000K05M100	805001K05M100

Length	Straight/Straight	90°/Straight	Straight/90°	90°/90°
0.6M	885030K05M006	885031K05M006	885032K05M006	885033K05M006
1M	885030K05M010	885031K05M010	885032K05M010	885033K05M010
2M	885030K05M020	885031K05M020	885032K05M020	885033K05M020
3M	885030K05M030	885031K05M030	885032K05M030	885033K05M030
4M	885030K05M040	885031K05M040	885032K05M040	885033K05M040
5M	885030K05M050	885031K05M050	885032K05M050	885033K05M050
10M	885030K05M100	885031K05M100	885032K05M100	885033K05M100

## POWER RECEPTACLES - Order Number

### MINI-CHANGE® RECEPTACLES



FRONT-PANEL MOUNT  
½" NPT thread + 12" leads  
M16 thread + 12" leads

MALE STRAIGHT  
1R5006A20A120  
51209-030

FEMALE STRAIGHT  
1R5000A20A120

## POWER FIELD-ATTACHABLE CONNECTORS - Order Number

### MINI-CHANGE® FIELD-ATTACHABLE CONNECTORS

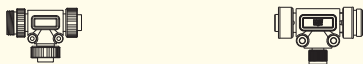


MALE STRAIGHT  
1A5006-34

FEMAL STRAIGHT  
1A5000-34

## POWER TEES - Order Number

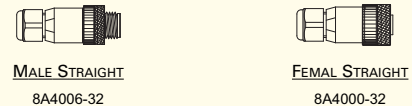
### MINI-CHANGE® TEES MINI-CHANGE® / MICRO-CHANGE® (M12) TEES



STANDARD BUS DROP TEE  
PBAPT

BUS DROP MICRO TEE  
PBAPT-D

### MICRO-CHANGE® (M12) FIELD-ATTACHABLE CONNECTORS (FOR COMPACT I/O)



MALE STRAIGHT  
8A4006-32

FEMAL STRAIGHT  
8A4000-32

[1] The standard coupling nut is nickel-plated brass. For 316 Hex stainless steel, add an "8" at the end

[2] The standard coupling nut is nickel-plated brass with Teflon coating. For 316 Hex stainless steel, add an "8" at the end



## NETWORK I/O FOR ON-MACHINE AND IN-CABINET APPLICATIONS

### IP20 I/O MODULES

#### IP20 Fieldbus Couplers



- DP-V0 Slave
- Digital and Analog signals
- Carrier Rail DIN 35

#### Characteristics

- Speed: 9.6 Kbps to 12 Mbps
- Port: D-Sub, 9 pin, female
- Slave address: 1 - 99 (via rotating wheels)
- Front status LED for easy diagnostic

#### Order Number

**BCB-APB-001** PROFIBUS coupler

#### IP20 Digital Modules



- Input and output modules
- Easy replacement of module without unwiring
- CAGE CLAMP® Connection

#### Characteristics

- Carrier Rail DIN 35
- Status through Signal LED
- Size: 98 x 80 x 93 mm
- 24 VDC

#### Order Number

**BCB-FDI-081** 8 input (5ms)  
**BCB-FDI-161** 16 input (5ms)  
**BCB-FDI-162** 16 input (w/ counter)  
**BCB-TDI-011** Terminal module

**BCB-FDO-081** 8 output (1 A)  
**BCB-FDO-083** 8 output (2 A w/ scp<sup>[1]</sup>)  
**BCB-FDO-161** 16 output (1 A)  
**BCB-FDO-163** 16 output (2 A w/ scp<sup>[1]</sup>)  
**BCB-TDO-012** Terminal module  
**BCB-FDM-161** 8 input (5ms) & 8 output (1A)  
**BCB-FDM-163** 8 input (5ms) & 8 output (2A, scp<sup>[1]</sup>)  
**BCB-FDM-164** 8 input (0.5ms) & 8 output (2A, scp<sup>[1]</sup>)  
**BCB-TDM-013** Terminal module  
**BCB-FDM-165** 16 input (5ms) - 16 output (2A, scp<sup>[1]</sup>)  
**BCB-TDM-016** Terminal module  
**BCB-FRO-081** 8 relay output (220V/2A)  
**BCB-TRO-051** Terminal module

#### IP20 Analog Modules



- Input modules
- Output modules
- Easy replacement of module without unwiring
- CAGE CLAMP® Connection

#### Characteristics

- Carrier Rail DIN 35
- Size: 98 x 80 x 93 mm
- 12 bit resolution
- 24 VDC

#### Order Number

**BCB-FAI-082** 8 input (0 - 10 V DC)  
**BCB-TAI-023** Terminal module  
**BCB-FAI-084** 8 input (0 - 20 mA)  
**BCB-TAI-124** Terminal module  
**BCB-FAO-041** 4 output +/- 10V  
**BCB-FAO-042** 4 output 0-20mA  
**BCB-TAO-022** Terminal module

\* All BradControl™ IP67 modules with Micro-Change® (M12) ports accept both threaded cordsets and the new BradConnectivity™ Ultra-Lock™ Connection System, the fastest, easiest, and most secure connection ever. Ultra-Lock™ technology is designed for higher performance and reliability to eliminate downtime, increase productivity, and lower costs.

For more information visit:

[woodhead.com/ultralock](http://woodhead.com/ultralock)



### IP67 I/O MODULES

Compact with 8 Ports, M8 Connection



Compact Threaded and Ultra-Lock™ with 4 Ports, M12 Connection



Classic Threaded and Ultra-Lock™ with 8 Ports, M12 Connection



- IP67 digital I/O modules - Reliable world-class product for harsh environment
- Standard mounting hole pattern allows for interchangeably with popular I/O modules
- Visible diagnostic through status LEDs for network, module, external power, inputs & outputs

#### Characteristics

- 30 mm wide package size
- 8 ports, M8 Nano-Change®
- Speed: 9.6 Kbps to 12 Mbps
- Slave DP-V0

#### Order Number

**TBDPB-880x-B84**<sup>[2]</sup> 8 input  
**TBDPB-862x-B84**<sup>[2]</sup> 6 input, 2 output  
**TBDPB-844x-B84**<sup>[2]</sup> 4 input, 4 output  
**TBDPB-808P-B84**<sup>[2]</sup> 8 output

#### Characteristics

- 30 mm wide package size
- 4 ports, M12 Ultra-Lock™ technology\*
- Speed: 9.6 Kbps to 12 Mbps
- Slave DP-V0

#### Order Number

**TBDPB-480x-B8U**<sup>[2]</sup> 8 input  
**TBDPB-462x-B8U**<sup>[2]</sup> 6 input, 2 output  
**TBDPB-444x-B8U**<sup>[2]</sup> 4 input, 4 output  
**TBDPB-408P-B8U**<sup>[2]</sup> 8 output

#### Characteristics

- 60 mm wide package size
- 8 ports, M12 Ultra-Lock™ technology\*
- Speed: 9.6 Kbps to 12 Mbps
- Slave DP-V0

#### Order Number

**TCDPB-8D0x-B1U**<sup>[2]</sup> 16 input  
**TCDPB-8C2x-B1U**<sup>[2]</sup> 14 input, 2 output  
**TCDPB-8B4x-B1U**<sup>[2]</sup> 12 input, 4 output  
**TCDPB-888x-B1U**<sup>[2]</sup> 8 input, 8 output

[1] - scp, short circuit protection provided

[2] - replace x by N for NPN input or P for PNP input



NETWORK INTERFACE CARDS, PLC BACKPLANES, SWITCHES, GATEWAYS, SIMULATION SOFTWARE AND DIAGNOSTIC TOOLS

## PLC BACKPLANES

Backplane for A-B SLC 500



- Connects your Allen-Bradley SLC 500 to a PROFIBUS network
- Simultaneous operation of protocols

### Characteristics

- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - Master DP-V0
  - Slave DP-V0
  - FDL Send/Receive

### Order Number

**SST-PFB-SLC** Backplane for A-B SLC 500

Backplane for A-B PLC-5



- Connects your Allen-Bradley PLC-5 to a PROFIBUS network
- Simultaneous operation of protocols

### Characteristics

- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - Master DP-V0
  - Slave DP-V0

### Order Number

**SST-PFB-PLC5** Backplane for A-B PLC-5

Backplane for A-B ControlLogix



- Connects your Allen-Bradley ControlLogix to a PROFIBUS network
- RLL support: remote configuration and monitoring via A-B RSLinx
- Data exchange up to 1984 bytes I/O
- CommDTM driver - Easy access to DP-V1 devices from any FDT frame applications

### Characteristics

- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - Master DP-V1 Class-1 & 2
  - Master DP-V0 Class-1 & 2
  - Slave DP-V0

### Order Number

**SST-PFB-CLX-RLL** Backplane for A-B ControlLogix  
**SST-PFB-CLX-DTM** CommDTM Software driver

## NETWORK INTERFACE CARDS

Best Choice for SCADA Applications



- Fully integrated package: solution + services
- Compatible with Siemens Simatic® S5 and S7 PLC series
- All PROFIBUS protocols run simultaneously

### Characteristics

- PCI Universal 3.3/5V (PCI-X compatible)
- RoHS compliant
- Speed: 9.6 Kbps to 1.5 Mbps
- Protocols:
  - Master DP-V0 Class-1 & 2
  - Client S7/MPI
  - Master FDL S5
  - Master PPI/PPI+
  - FDL Send/Receive
- Software Interfaces included<sup>[1]</sup>
- Compatible with various OS<sup>[2]</sup>

### Order Number

**APP-PFB-PCU** PCI bus, 3.3/5V, all protocols  
**APP-PS7-PCU** PCI bus, 3.3/5V, S7/MPI protocol only

Combo Card - PROFIBUS + Ethernet



- Combo offer: full PROFIBUS 1.5 Mbps + Ethernet 10/100 Mbps
- All PROFIBUS and Ethernet protocols can run simultaneously

### Characteristics

- PCI Universal 3.3/5V (PCI-X compatible)
- RoHS compliant
- Software Interfaces included<sup>[1]</sup>
- Compatible with various OS<sup>[2]</sup>
- Protocols:
  - PROFIBUS 9.6 Kbps to 1.5 Mbps
    - Master DP-V0 Class-1 & 2
    - Client S7/MPI
    - Master FDL S5
    - Master PPI/PPI+
    - FDL Send/Receive

### Order Number

- Ethernet TCP/IP** 10/100 Mbps
  - EtherNet/IP PCCC Logix 5000 (Allen Bradley)
  - Alnet II (Altus)
  - SRTP (Alstom)
  - SRTP (GE Fanuc)
  - Melsec (Mitsubishi)
  - Fins (Omron)
  - ModbusTCP & UDP
  - Uni-TE (Schneider)
  - Industrial Ethernet (Siemens)

**APP-EPB-PCU** PCI bus, 3.3/5V, all protocols

CompactPCI 3U Interface Card



- All PROFIBUS protocols run simultaneously
- Run DP up to 12Mbps

### Characteristics

- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - Master DP-V0 Class-1 & 2
  - Slave DP-V0
  - Client S7/MPI
  - Master FDL S5
  - Master PPI/PPI+
  - FDL Send/Receive
- Software Interfaces included<sup>[1]</sup>
- Compatible with various OS<sup>[2]</sup>

### Order Number

**APP-PFB-CPI** CompactPCI 3U bus

USB Adapter - FDT/DTM



- Connects your laptop to PROFIBUS DP-V1
- CommDTM driver - Easy access to DP-V1 devices from any FDT frame applications

### Characteristics

- USB adapter 2.0 & 1.1, RoHS compliant
- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - Master DP-V1 Class-1 & 2

### Order Number

**SST-PFB-USB-DTM** USB adapter with DTM Driver

USB Adapter - for Scada Applications



- Economical solution
- Ideal for OEM applications

### Characteristics

- USB adapter 2.0 & 1.1, RoHS compliant
- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - Client S7/MPI
  - PFB DP-V0 Master/Slave
  - PFB DP-V1 Master/Slave
  - S7/MPI Master
  - S7/MPI Slave
  - S5 for Simatic
- Software Interfaces included<sup>[1]</sup>
- Compatible with various OS<sup>[2]</sup>

### Order Number

**DRL-MPI-USB** USB adapter MPI/S7  
**DRL-PFB-USB** USB adapter Full PROFIBUS

[1] - Software interfaces include: OPC Server, ActiveX control, Wonderware DAserver, Wonderware I/O server, development libraries (DLL, NI LabVIEW / Labwindows, etc.)

[2] - Support Windows 32 bits (XP, 2000, 2003 Server), XPe, NTe, Ardence RTX, VxWorks, QNX, Linux, DOS



NETWORK INTERFACE CARDS, PLC BACKPLANES, SWITCHES, GATEWAYS, SIMULATION SOFTWARE AND DIAGNOSTIC TOOLS

## NETWORK INTERFACE CARDS

### Embedded Network Interface



- OEM module for fast and easy implementation into systems
- Lower integration costs with direct DPRAM access
- Quick start with development and evaluation kit

#### Characteristics

- Compact size - 80 x 40 mm
- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
 

- Master DP-V1 Class-1 & 2	- Client S7/MPI
- Master DP-V0 Class-1 & 2	- FDL Send/Receive
- Slave DP-V0	

#### Order Number

- SST-DC100DPM-S** DP Protocols
- SST-DC100DPM-H** DP Protocols (HE13 conn. version)

### Slave Only Interface Card



- PROFIBUS-DP Slave only
- Low cost OEM solution - Ideal for integration into systems
- Direct I/O memory map access

#### Characteristics

- Port: HE13 10 pin
- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - DP-V1 Slave
  - DP-V0 Slave

#### Order Number

- SST-DPS-104** PC/104 bus

### Low Cost MPI/S7 Interface Card



- Economical solution
- Dedicated to Siemens Simatic® S7 PLC series
- Ideal for OEM applications

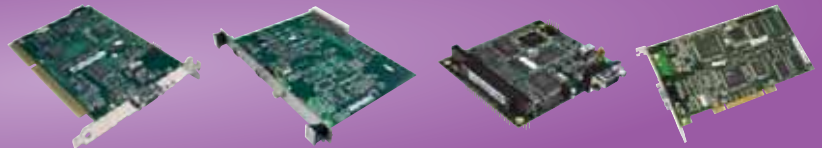
#### Characteristics

- PCI Universal 3.3/5V (PCI-X compatible)
- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - Client S7/MPI
- Software Interfaces included<sup>[1]</sup>
- Compatible with various OS<sup>[2]</sup>

#### Order Number

- DRL-MPI-PCU** PCI bus, 3.3/5V

### Interface Cards for High Speed Control Applications



- High speed deterministic communication for control applications
- Highly customizable network access via Direct DPRAM services
- OEM ready, hardware and software components provided separately
- Manage DP Master and Slave modes simultaneously
- CommDTM driver - Easy access to DP-V1 devices from any FDT frame applications

#### Characteristics

- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - Master DP-V1 Class-1 & 2
  - Master DP-V0 Class-1 & 2
  - Slave DP-V0
  - FDL Send/Receive
- Software Components
  - Configuration and Diagnostic Console (Optional)
  - OPC Server DA 3.0 (Optional)
  - Windows DLL in C-Source Code
  - FDT Ready - CommDTM Driver

#### Order Number

- SST-PB3-104** PC/104 bus
- SST-PB3-ISA** ISA bus
- SST-PB3-PCU** PCI bus, 3.3/5V (PCI-X compatible)
- SST-PB3-VME-1** VME 6U double-eight bus, 1 port
- SST-PB3-VME-2** VME 6U double-eight bus, 2 ports
- SST-PB3-OPC** OPC DA Server
- SST-PB3-CNF-P** Configuration and Diagnostic Console, Parallel Key
- SST-PB3-CNF-U** Configuration and Diagnostic Console, USB Key

### Interface Cards for Control and Scada Applications



- Deterministic data acquisition
- Auto mapping of I/O in DPRAM card
- Easily embedded in computerized systems
- Manage DP Master and Slave modes simultaneously
- All in one configuration, diagnostic tools, data servers and development libraries

#### Characteristics

- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - Master DP-V0 Class-1 & 2
  - Slave DP-V0
- Software Interfaces included<sup>[1]</sup>
- Compatible with various OS<sup>[2]</sup>
- RoHS compliant (PCU)

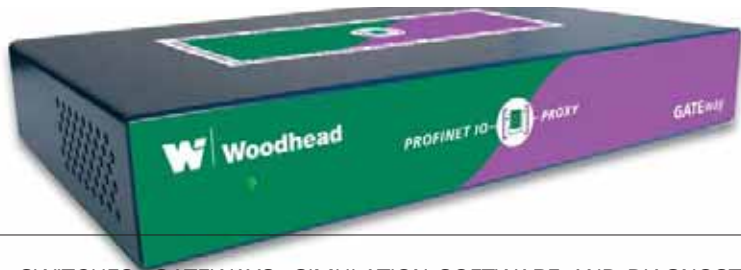
#### Order Number

- DRL-DPM-PCU** PCI bus, 3.3/5V (PCI-X compatible)
- DRL-DPM-CPI** CompactPCI 3U bus
- DRL-DPM-104** PC/104 bus (HE13 conn. version)

[1] - Software interfaces include: OPC Server, ActiveX control, Wonderware DASServer, Wonderware I/O server, development libraries (DLL, NI LabVIEW / Labwindows, etc.)

[2] - Support Windows 32 bits (XP, 2000, 2003 Server), XPe, NTe, Ardence RTX, VxWorks, QNX, Linux, DOS





NETWORK INTERFACE CARDS, PLC BACKPLANES, SWITCHES, GATEWAYS, SIMULATION SOFTWARE AND DIAGNOSTIC TOOLS

## INDUSTRIAL GATEWAYS

### Multi-Protocol Intelligent Industrial Gateways



- Enables high speed data exchange between industrial devices (PLC, I/O blocks, etc) through PROFIBUS, Ethernet TCP/IP or Serial connections
- Typical uses: Integration of legacy devices into new architecture, integration of different networks/manufacturers, data concentrator for SCADA connectivity
- No programming, just configuring
- No protocol knowledge required
- Powerful "Change of State" (COS) write access management
- 6 digital inputs / 2 digital outputs

#### Characteristics

- Protocols:
  - PROFIBUS** 9.6 Kbps to 12 Mbps
    - Master DP-V0
    - Slave DP-V0
    - Client S7/MPI
    - Client FDL S5
  - Serial** 2400 bps to 115.200 kbps
    - Master DF1 (Allen Bradley)
    - Master SNP-X (GE Fanuc)
    - Master Modbus
    - Slave Modbus (ASCII & RTU)
    - Slave Uni-Telway (Schneider)
    - Master AS511 (Siemens)
    - Master TI-Dir (Siemens)

- Ethernet TCP/IP** 10/100 Mbps
  - EtherNet/IP PCCC (Allen Bradley)
  - Alnet II (Altus)
  - SRTP (Alstom)
  - SRTP (GE Fanuc)
  - Melsec (Mitsubishi)
  - Fins (Omron)
  - Modbus TCP & UDP
  - Uni-TE (Schneider)
  - Industrial Ethernet (Siemens)

#### Order Number

- APP-ESR-GTW** Ethernet to Ethernet/Serial Gateway
- APP-ESP-GTW** PROFIBUS to PROFIBUS /Ethernet/Serial Gateway

### Multi-Protocol PROFINET IO Proxy



- Provides real-time connectivity between a PROFINET IO controller and PROFIBUS devices
- Easy to use: no programming, just configuring

#### Characteristics

- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - Master DP-V0 Class 1 & 2
  - Slave DP-V0
  - Client S7/MPI
  - Client FDL S5

#### Order Number

- APP-PNT-GTW-P** PROFINET IO Proxy to PROFIBUS or Ethernet or Serial

### Web Remote Gateway



- Monitors and controls PROFIBUS devices using a standard web browser
- Customizes built-in HTML pages to create user interface
- Manages alarms information to remote centers (email, SMS, IPcallback)

#### Characteristics

- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - Master DP-V0 Class-1 & 2
  - Slave DP-V0
  - Client S7/MPI
  - Master FDL S5

#### Order Number

- APP-WEB-PFB-MTH** Web Remote Gateway with modem
- APP-WEB-TH** thinHMI graphical interface for Webgate

### Low Cost PROFIBUS to Serial Gateway



- Easy integration of legacy Serial devices
- Easy configuration of data exchange through GSD
- DIN Rail, IP20 mounting

#### Characteristics

- Manages to up to 20 Slave Modbus devices
- I/O memory size:
  - 0 to 244 bytes in Read, 0 to 244 bytes in Write (max 300 I/O)
- Protocols:
  - Slave DP-V0 (9.6 kbps to 12 Mbps)
  - Master & Slave Modbus RTU/ASCII (600 to 57600 bps)

#### Order Number

- DRL-DPS-SRM** PROFIBUS to Modbus Serial Gateway, Serial installation monitoring

### Simple Ethernet/Serial Tunneling Gateway



- Cost-effective Gateway solutions
- Allows easy integration of legacy Ethernet/Serial devices to a PROFIBUS network
- DIN Rail, IP20 mounting

#### Characteristics

- Speed:
  - PROFIBUS: 9.6 Kbps to 12 Mbps
  - Ethernet: 10/100 Mbps
  - Serial: 300 bps to 230.4 Kbps
- Protocols:
  - Slave PROFIBUS DP-V0
  - Master & Slave Modbus RTU & ASCII
  - Client & Server Modbus TCP

#### Order Number

- DRL-PFB-SRE** Ethernet or Serial to PROFIBUS-DP Slave Gateway

### Simple AS-Interface Tunneling Gateway



- Allows easy integration of AS-i sensors and actuators to a PROFIBUS network
- Supports 2 AS-i rungs to connect up to 104 AS-i devices
- Easy-to-use through buttons and display on the Gateway
- DIN Rail, IP20 mounting

#### Characteristics

- Speed: 9.6 Kbps to 12 Mbps
- Protocols:
  - Slave PROFIBUS DP-V0
  - Master AS-interface v2.1

#### Order Number

- DRL-2ASI-PFB** AS-interface to PROFIBUS-DP Slave Gateway

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