Micro Switch Sensing and Control

Smart Distributed System Sensors and Switches

Get “smart” about control solutions.

Device-level diagnostics and built-in intelligence maximize the power and versatility of your Smart Distributed System.

Programmable functions enable you to customize device operations.

All Smart Distributed System sensors and switches feature software-programmable control functions that are user-selectable and don’t require costly logic cards.

You get selectable:
- Batch counting
- Motion/jam detection
- Device addressing
- Normally open/normally closed
- On delay/off delay
- Timed response input
- Device tag names
**Proximity Sensors**

- Sense all metals with proximity sensors designed to meet your application requirements.
- Select from space-saving cylindrical styles in 18mm and 30mm diameters or a **breakthrough 12mm diameter version**.
- Increase uptime with **the industry’s finest predictive diagnostic functions**, such as broken coil detection, “target too close,” and target marginal on 18mm and 30mm cylindrical sensors.
- Rely on the Factory Mutual (FM) approved version for non-incendive, Class II, division 2 applications.
- Select from a variety of top- and side-sensing heads for modular versions featuring Smart Distributed System bases.
- Keep setup quick and easy with built-in LED alignment indicators.

**Limit Switches**

- Choose from solid-state Harsh Duty Limit Switches (HDLS), pre-leaded 14CE Limit Switches and full-size and miniature Global Limit Switches (GLS). Breakthrough technology includes device-level diagnostics. These smart devices also report conveyor and machinery status messages to the Smart Distributed System network. Also available are Cable-Pull Limit Switches, which can monitor the status of the switch and report it to the bus along with the location of a cord trip.
- Detect slow lever return, insufficient over-travel/pretravel (GLS), and product failure with **predictive diagnostic functions**.
- Locate wiring problems quickly with built-in power cycle monitoring.
- Meet IEC standards for global applications with any GLS product.
- Rely on fully sealed HDLS styles in tough and wet environments.
- Select from a wide variety of head styles.
- Small size 14CE style when space is at a premium.
Photoelectric Sensors

Select from photoelectric styles:

- PDMPs provide long scanning ranges and offer rugged, one-piece convenience at a low cost.
- CP18 cylindrical sensors are only 18mm in diameter and provide low-cost space-savings.
- MHP miniature high-performance sensors combine small size and superior sealing for NEMA 6P applications.
- MP modular sensors enable you to choose from a wide variety of options to meet your space and application requirements.
- Save troubleshooting time and reduce unwanted shutdowns with built-in “out of alignment” marginal gain diagnostics.
- Achieve flexibility with scanning ranges of up to 30 feet.

Ideal for material handling and palletizing applications, the PDMP maximizes installation savings, while the CP18 provides high performance in tight spaces. MHPs are designed specifically for the most demanding washdown conditions in industries like food processing, and modular MPs enable you to custom build photoelectric sensors to meet your specific needs.

For your most demanding applications, select a Harsh Duty Limit Switch. When global acceptance and the ultimate in flexibility are required, apply full-size or miniature Global Limit Switches. For monitoring-only applications on conveyors and other machinery, double-head Cable-Pull Limit Switches extend cable lengths to 400 feet.
Want to get smarter about Smart Distributed System solutions?

The Smart Distributed System, developed by Honeywell’s MICRO SWITCH Division, is an advanced industrial control system that’s open at both the controller and device levels to maximize freedom of choice for users. This open control solution harnesses powerful technologies—a CAN-based, device-level bus network; intelligent I/O devices; PC-based control hardware and software—and backs them up with comprehensive service and global support from Honeywell.

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Internet E-mail address for immediate reply: info@micro.honeywell.com
Integrated control made easy.

Honeywell’s MICRO SWITCH Division is complementing its growing installed base of Smart Distributed System networks and devices with an integrated industrial controller designed specifically for factory floor applications.

The Smart Distributed System’s product portfolio now includes an industrial PC; all the software needed to program, test, control, display and interface to higher-level networks; its established, CAN-based device-level network; a new, high-density I/O system; a wide selection of smart devices including “Partners” products; cables and wiring accessories; and complete integration and support services.

The Smart Distributed System’s PC Control architecture consists of open modules that are integrated by Honeywell and sold as a package or as individual pieces.

The modules include a Smart Distributed System application layer protocol for networking devices, I/O drivers, a real-time control engine, a human/machine interface (HMI), and a networking layer for interfacing to other PCs, other networks, and information systems. Windows™-based tools for application development are also included. The Smart Distributed System’s PC-based control system gives you everything needed to control your factory automation from a single Honeywell source.

Honeywell’s integration services provides you with assurance that the Smart Distributed System will perform in your factory floor application. Support services include everything from designing the architecture to selecting hardware and software, installing and commissioning the system, documentation, training, and complete life-cycle support. The modularity of the system’s
open components — with its interface cards, control software, operator interface software, and its hardware platform all independent of each other — also allows you to retain the flexibility and choice you expect of open system solutions.

**Open modules and related software.** An embedded Smart Distributed System Interface Card provides communication management of the device network I/O. The solution can support multiple I/O interfaces to meet the needs of users with existing, alternative I/O architectures as well.

Honeywell’s system uses a high-speed, real-time **operating system** designed by Intel to guarantee that control functions always take priority over any other function in the PC. The control program is compiled and runs as a real-time control task.

Honeywell’s **Logic Editor** is a Windows™-based software tool that includes development and run-time versions. The development version is used to create the application program. It features flow-chart programming and a product model library browser.

The Smart Distributed System’s HMI is Windows™-based and features user-friendly graphics to which operators can easily relate and respond. The HMI offers tightly integrated hooks to the control platform as well as **I/O drivers**. A Smart Distributed System **HMI Editor** is used to create the operator interface. It gives end users a real-time window into the process with access to internal arrays and bits within an array. An HMI Run-time version provides Ethernet remote capabilities for networking with higher level systems.

Honeywell’s **DDE server** provides connectivity to off-the-shelf software. Other Windows™ applications can access run-time data from the HMI or control engine through DDE with the same tag names used to specify I/O points in the flow chart programming and the HMI design.

Device and system configuration is performed with the Smart Distributed System **Network Manager**. In addition to off-line bus configuration, it allows users to monitor individual devices for troubleshooting purposes and to make some process set-up changes while the application is running. The tool accesses all functions from a single window and provides printed reports that list every device on the network and their configurations.

**Hardware.** Control hardware is comprised of standard, **industrial computer components** using Intel processors and architecture. They feature an industrial-grade power supply and shock-mounted disk drives in an industrial hardened enclosure. An industry-standard ISA backplane architecture with a well-defined migration path to PCI bus leverages Intel’s PC architecture technology.

Two hardware solutions are offered, including an industrial “universal” solution with a motherboard or passive backplane, 250-Watt industrial power supply, a 486DX-100Mhz microprocessor, 16Meg DRAM memory, 540Meg hard drive and a 1.44Meg floppy drive. It provides a serial port, parallel port, a VGA port, and a keyboard port. A smaller, bench- or rack-mount “shoebox” version is also available for stand-alone control applications.

**Four easy ways to get more information:**

- **On-line information:**
  http://www.honeywell.sensing.com

- **E-mail:**
  info@micro.honeywell.com

- **Honeywell Customer Response Center:**
  In the U.S., 1-800-537-6945
  In Canada, 1-800-737-3360

  Or contact your local Honeywell office.

*Windows is a trademark of Microsoft Corporation
  Pentium is a registered trademark of Intel Corporation*
Smart Distributed System Development Tools

Integrated control made easy.

Tools to help you design your own Smart Distributed System products

**Starter Kit**

- Reduce design cycle time with this convenient kit. It includes everything needed to fully explore Smart Distributed System capabilities from your desktop: A PC-to-Smart Distributed System interface (HSIM); a power supply with AC adapter; Bus Builder software; a Smart Distributed System switch, valve, and two sensors with diagnostic functions; demonstration software; connecting cables and tees for device connection; a video, and a Users’ Guide.

*Order: SDS-C1STARTER.*

**Device Conformance Tester**

- Test new devices for Smart Distributed System compatibility and verify device operation without writing a single line of code.
- Use the Device Conformance Tester software to test any Smart Distributed System Attribute, Action, or Event. Display results in real-time and write them to files.
- Create your own custom tests, using standard test files as templates.

*Order: SDS-PCS-TK26 for software and user’s guide only, SDS-PCS-TK27 includes CAN card, interface cable and Readme file.*

**Developer’s Toolkit Software**

- Develop new object models with this Microsoft Access-based software with built-in help windows.
- View and print approved object models for current products, including specifications for Attributes, Actions and Events.
- Access automatic calculation of associated Primitive Tag values.

*Order: “Contact Honeywell for ordering information” for the Developer’s Toolkit Software.*

The Smart Distributed System Starter Kit includes a variety of products you can use to explore System capabilities from your own workstation. See how the Smart Distributed System enables you to identify, diagnose, and fix problems to minimize downtime, while reducing design cycle times and installation costs.

The Smart Distributed System Device Conformance Tester software allows Smart Distributed System “Partners,” who are developing third-party products for use with the Smart Distributed System, to test their product for conformance to Smart Distributed System specs prior to getting formal conformance testing performed.

Develop object models for Smart Distributed System-compatible products in Windows with the Developer’s Toolkit. The software guides developers in decision making and makes approved models available for reference.
Smart Distributed System Development Tools

Additional Tools

- **Sample Developer’s Code software** is available free of charge. Host Sample Code is “C” source code that supports Autobaud mapping, heartbeat, basic I/O and error handling. Guest Sample Code is Assembly source code that supports Autobaud and COS.

- **Preprogrammed Interface Chip Sets** make it easy to create your own Smart Distributed System devices. The chips provide built-in diagnostic functions for binary I/O devices and include a self-test diagnostic feature to test circuitry.

- **DDE to Network Interface Card software** enables data exchange between applications when used with a Smart Distributed System PC Interface Card. The software acts as a translator between Smart Distributed System components and Windows software such as Excel and many operator interface packages.

- **High End Bus Analyzer software** from Vector Informatik provides emulation and analysis for CAN and Smart Distributed System product development with a message builder. [http://www.vector-informatik.de](http://www.vector-informatik.de)  Phone +49 (0) 711 1399960

- **Bus Monitor Tool software** monitors message traffic on your Smart Distributed System network.

  Contact Honeywell for ordering information.

Want to get smarter about Smart Distributed System solutions?

The Smart Distributed System, developed by Honeywell’s MICRO SWITCH Division, is an advanced industrial control system that’s open at both the controller and device levels to maximize freedom of choice for users. This open control solution harnesses powerful technologies—a CAN-based, device-level bus network; intelligent I/O devices; PC-based control hardware and software—and backs them up with comprehensive service and global support from Honeywell.

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**MICRO SWITCH**
Honeywell Inc.
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Freeport, Illinois 61032

**Honeywell Industrial Control Systems Ltd.**
Newhouse Industrial Estate
Motherwell
Lanarkshire
ML1 5BB Scotland
+44 1698 481234 Phone
+44 1698 481014 Fax
Integrated control made easy.

Customize your Smart Distributed System layout using Honeywell’s bus cables and components

General Purpose and Harsh-Duty Cables, Tees, and Termination Caps

- Choose from polyvinylchloride (PVC) molded heads and jackets for dry applications or polyurethane jackets for harsh-duty applications.
- Rely on harsh-duty sealing to NEMA 1, 3, 4, 6P and IP67.
- Apply straight and right-angle designs—all terminated with gold-plated, mini or smaller micro connectors, or hardwire your system with pigtail versions.
- Check the built-in indicator on connectors for proper coupling.
- Connect non-bus devices using non-bus cables.
- Connect your industrial computer or PC to the bus with regular or harsh-duty PC cables available in 3- and 10-foot lengths.
- Prevent signal reflection at bus ends with termination caps that match the impedance of the bus’ signal communication lines.

Call 1-800-537-6945 for catalog listings.

Field Terminatable Connectors

- Cut cable to your specified length and install connectors wherever it’s convenient with field terminatable plugs and connectors.
- Choose from mini male and female versions to customize cabling to meet your needs on the spot during installation.

Ask for catalog listings SDS-FTC M and SDS-FTC F.

Choose from fully connectorized plug and play cables for harsh-duty or general purpose service available in many lengths. Or hardwire your Smart Distributed System using bulk cable and pigtail branches.
Smart Distributed System Interconnect Hardware

Accessories

- Permanently mount diagnostic tees in your network for easy access to the bus to change addresses or program add-ons. One tee comes with the Smart Distributed System Activator.
- Address individual devices using extra activator cables. Three cables are included with each Smart Distributed System Activator purchase.
- Keep unused tee and multiport connectors dirt-free and prevent short circuits with screw-on dust caps.

Ask for catalog listings SDS-DIAG, SDS-ACTA, SDS-ACTS, or SDS-ACTB, SDS-CAP-MCRO, SDS-CAP-MEXT or SDS-CAP-MINT.

A host of new accessories make it easier than ever to update and maintain your Smart Distributed Systems.

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Internet E-mail address for immediate reply: info@micro.honeywell.com
Three simple ways to get non-bus compatible products on your Smart Distributed System

**High-Density I/O Concentrator**
- Put up to 128 non-Smart Distributed System remote I/O devices on the bus at a single node using up to eight bus addresses.
- Map up to 16 digital (AC/DC) inputs or outputs, or up to 12 relays on a single address per plug-in module.
- Opt for DIN rail or panel mounting.
- Select from a 3-, 4-, 6-, or 9-slot base.
- Use it in a local control panel or in decentralized I/O applications.

*Call 1-800-537-6945 for catalog listings.*

**Quad I/O Concentrator**
- Interface up to four I/O points—AC or DC, inputs or outputs.
- Opt to use single- or multiple-addressing capabilities.
- Maximize space savings with a small footprint capable of being mounted in a 4-in. by 4-in. junction box or on a DIN rail.
- Select from 24 AC/DC input and output interface modules from Potter & Brumfield and 12 modules from Grayhill.

*Ask for catalog listing SDS-C2SUB-4.*

For areas with dense I/O, **minimize node address usage** and **add flexibility** with a Smart Distributed System High-Density I/O Concentrator.

For **ultimate wiring flexibility** on smaller jobs, the Smart Distributed System Quad I/O Concentrator provides mounting slots for four I/O points.
**Smart Distributed System I/O Concentrators**

**Sensor/Actuator Multiport Concentrators**

- Add up to four input devices using just one bus address with the connectorized Sensor Multiport.
- Add one or two DC output devices, or up to four AC output devices, each with its own address, with the connectorized Actuator Multiport.
- Rely on a fully sealed enclosure for your NEMA 1, 3, 4, 12, 13 and IP67 applications.
- Use either Multiport with Smart Distributed System plug and play cabling.
- Mount it in minutes using two pre-drilled holes.

*Ask for catalog listing SDS-C2MNA-S4-AAA or ABA or SDS-C1MNA-A2-ACA or SDS-C1MNA-A4-ADA.*

When **sealing protection** is a concern, select sealed and connectorized Smart Distributed System Sensor and Actuator Multiport Concentrators.

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Smart Distributed System Control Interfaces

Integrated control made easy.

Whether you choose PC or PLC control, you can access all the power of the Smart Distributed System

Network Interface Card

- Interface your industrial computer and PC-control software to the Smart Distributed System network with this ISA bus card offering two, independent bus channels.
- Access 64 Smart Distributed System electrical loads and 126 device addresses on each channel.
- Supports full diagnostics offered by smart devices and duplicate missing node detection.
- Maximize speed and efficiency with convenient Dual Port RAM access and reset capability.
- Ensure effective system setup with automatic device configuration via user-defined configuration files.
- Compatible with Honeywell PC Control software or other commercially available packages. C Language libraries and utilities (source code) are included.

Ask for catalog listing SDS-C1PC-ST.

VME Interface Module

- Interface your Smart Distributed System with any industry-standard VME bus-based PLC or industrial computer to access full Smart Distributed System services through two, independent bus channels.
- Access 64 electrical loads and 126 device addresses per channel.
- Supports diagnostic messages through a Dual Port RAM with user-selectable addressing.
- Read bus status with three LED indicators per channel.

Ask for catalog listing SDS-VME-CC-1.

The Network Interface Card works with any ISA bus PC, making it easy to combine the power and versatility of PC control with the flexibility and efficiency of the Smart Distributed System.

The VME Interface Module connects any VME-based PLC or industrial computer to the Smart Distributed System, delivering Smart Distributed System services in an open architecture environment.

Courtesy of Steven Engineering, Inc. • 230 Ryan Way, South San Francisco, CA 94080-6370 • Main Office: (650) 588-9200 • Outside Local Area: (800) 258-9200 • www.stevenengineering.com
Smart Distributed System Control Interfaces

**Sensor and Actuator Interface Terminal Strips**

- Interface your Smart Distributed System with any brand of PLC through parallel I/O.
- Use the Sensor Interface Terminal Strip (ITS) to receive communication from up to 16 input devices and convert them for use by your PLC.
- Use the Actuator ITS to receive up to 16 parallel I/O points from the PLC and communicate them to 16 actuators on your bus.
- Select setup functions via DIP switches.
- Diagnostics and error annunciation for ITS and network devices.
- Pluggable terminal blocks.
- Supports all single-point devices.

*Ask for catalog listings SDS-C1ITS-S16 and SDS-C1ITS-A16.*

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Integrated control made easy.

Tools to keep you in command of your Smart Distributed System

**Activator**
- Interface with your Smart Distributed System from a single point on the bus with this hand-held electronic tool for performing both installation and maintenance functions.
- Connect the Activator directly to devices during system installation.
- Save maintenance downtime by connecting the Activator to the bus via an adapter cable and diagnostic tee for remote access to the system while it runs.

*Order: SDS-C1ACT-1000.*

**Bus Builder**
- Reduce design cycle-time for your next Smart Distributed System with Bus Builder Spreadsheet software.
- Let the software enforce design rules and detect bus layout errors while you work.
- Use the Build worksheet to enter bus topology requirements, and watch it graphically illustrate your design.
- Check out the Chart worksheet for graphic representation of your voltage drop information.
- Let the software automatically generate a system Bill of Materials as you design.

*Order: SDS-PCS-TK24.*

Programmable functions and features accessible through the Smart Distributed System HSIM Portable Device Manager and hand-held Activator:
- Normally open/closed
- Motion or jam detection
- Light operate or dark operate
- Batch counting
- On-delay/off-delay
- Number of operations counting
- Device addressing
- Power cycles counting
- Device naming
- Network data descriptor
- “Partner” ID/name
- Software version
- Input/output variables
- Serial number
- Date code
- Component tag name
- Diagnostic error counter
- Input mask
- Logical device diagnostics

**Courtesy of Steven Engineering, Inc.**

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HSIM Portable Device Manager

- Interface your PC and Smart Distributed System bus with this portable RS232/CAN interface and Windows™-based software.
- Configure network devices and save system configurations for reference or print out.
- Monitor the status of individual devices and the system, including on/off status and missing devices.
- Create and save off-line network files for easy retrieval and downloading.
- Edit your device information, change device addresses or tag names, and run diagnostics.
- Copy and write device data between multiple networks.
- Access on-line help.

Order: HSM-PTB100 (Device Manager)
About Smart Distributed System Partners

The Smart Distributed System is open and available to anyone; therefore, in an effort to develop this open system, the "Partners" group was established in March 1994. These companies help define and develop the wide range of device models, protocol extensions, and end products now available for the Smart Distributed System.

You can locate Smart Distributed System products by: using our keyword search, searching by product category, or searching by partner.

Product Category Search

Select a Smart Distributed System product category and click the "GO!" button.

Bridge/Gateway

Address Information Index

Use the alphabetical index provided below or scroll to find a partner.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

ACT'L
Electronic Engineering
12 Avenue de l'artisanat
B-1420 Braine L'Alleud Blegium
Telephone: 322-328.27.82
Fax: 322-384.47.16
[PC Software]

Accu-Sort Systems, Inc.
511 Schoolhouse Rd.
Telford, PA 18969
Telephone: 215-723-0981
Toll Free: 1-800-BAR-CODE
Fax: 215-996-8249
email: radiamo@accusort.com
http://www.accusort.com
[Smart I/O]
ASAP
100 North Main
Suite 235
Chagrin Falls, OH 44022
Telephone: (216) 247-9216
[PC Software]

Banner
9714 Tenth Avenue North
Minneapolis MN 55441
Telephone: (612) 544-3164
Fax: (612) 544-3213
http://www.baneng.com/
[Smart I/O]

Burkert
2602 McGaw Ave.
Irvine, CA 92614
Telephone: 714-223-3100
Fax: 714-223-3198
[Pneumatic Valves]

Contemporary Control Systems Inc.
2512 Wisconsin Avenue
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Fax: 708-963-0109
email: info@ccsi.chi.il.us
[Bus Management]

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1-905-624-6518 Canada
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011-65-479-6533 Asia
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http://www.dgtech.com/
See: Vector Informatik
[Bus Management]

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International: +49-511-372980
Fax: 05 11/633650
email:sales@esd.h.eunet.de
http://www.esd-electronics.com
[Controller Interface Products]

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Hales Corners WI 53130
414-427-8002
Fax: 414-427-8034
Bulletin Board Service: 317-581-1752
email: event.technologies@industry.net
http://www.industry.net/event.technologies
[PC Software]

Extron
General Offices & Mfg. Plant
8043 Lewis Rd.
Minneapolis MN 55427
Telephone:ephone: 612-544-4197
Fax: 612-544-4419
[Remote I/O]

Facts Engineering
34760 U.S. Highway 19
Palm Harbor, FL 34684
Telephone: 1-800-783-3225 ext. 28
Fax: 813-789-5287
[Controller Interface Products]
Festo Corporation
395 Moreland Road
Hauppauge NY 11788
Telephone: (516) 435-0800
Fax: (516) 435-8026

GE Electrical Distribution & Control
General Electric Company
41 Woodford Ave
Plainville CT 06062
Telephone: (860) 747-7823
Fax: (860) 747-7543

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http://www.honeywell.com/sensing/

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Telephone: 1-800-691-8302
Fax: 1-503-675-1654
http://www.holjeron.com

Horner Electric, Inc.
Advanced products Group
640 North Sherman Drive
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100 Foxborough Blvd.
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Fax: 1-508-543-1503
Bulletin Board Service: 1-508-543-3881
email: info@iconics.com
[PC Software]
<table>
<thead>
<tr>
<th><strong>Numatics</strong></th>
<th><strong>Parker Hannifin</strong></th>
</tr>
</thead>
</table>
| 1450 N. Milford Rd.  
Highland, MI 48357  
Telephone: (248) 887-4111  
Fax: (248) 887-4768 | 257 Huddleston Ave.  
Cuyahoga Falls, OH 44221  
Telephone: (330) 923-5202  
Toll Free: (800) 426-3259  
email: PAECLEVE@AOL.COM |

<table>
<thead>
<tr>
<th><strong>Parker Motion &amp; Control</strong></th>
<th><strong>Parker/Skinner Valve</strong></th>
</tr>
</thead>
</table>
| Pneumatic Division  
8767 East M-89  
Richland MI 49083  
Telephone: (616) 629-5000  
Fax: (616) 629-5385 | 95 Edgewood  
New Briton, CT 06051  
Telephone: 860-827-2473  
Fax: 860-827-2384  
email: skinner@parker.com  

<table>
<thead>
<tr>
<th><strong>PLC Direct</strong></th>
<th><strong>ROLAC Design</strong></th>
</tr>
</thead>
</table>
| 315 Allen St.  
Cumming, GA 30130  
Telephone: 1-800-633-0405  
Fax: 404-889-7876  
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<table>
<thead>
<tr>
<th><strong>SMC Pneumatics, Inc.</strong></th>
<th><strong>Schrader Bellows</strong></th>
</tr>
</thead>
</table>
| 3011 N. Franklin Road  
Indianapolis, IN 46226  
1-800-SMC-SMC1 (762-7621)  
http://www.smcusa.com/ | Pneumatic Division  
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Telephone: (216) 923-5202  
Fax: (800) 426-3259 |

<table>
<thead>
<tr>
<th><strong>SoftPLC</strong></th>
<th><strong>Schrader Bellows</strong></th>
</tr>
</thead>
</table>
| 7702 FM 1960 East  
Humble, TX 77346  
Telephone: 1-800-SOFT-PLC  
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Fax: (800) 426-3259 |
Steeplechase Software Inc.
771 Airport Blvd.
PO Box 3049
Ann Arbor MI 48106-3049
Telephone: (313) 995-3348
Fax: (313) 995-7218

Synergetic Micro Systems
2506 Wisconsin Avenue
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e-mail: sales@synergetic.com
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[Control Interfaces]
[Remote I/O]

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[Interconnect Hardware]
[Remote I/O]

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