



The advanced Industrial Ethernet solution for automation, motion control and IT integration

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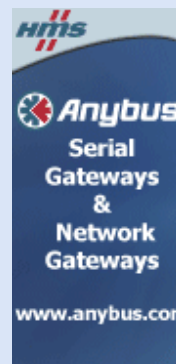
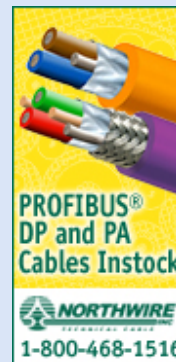


TRUTH IN MARKETING: *This issue marks the completion of our fourth year of PROFInews, North American Edition! For the New Year we've resolved that our popular 'Debunking the Myth' feature will only appear in 2009 when needed. We wish to thank all of those who have provided us with debunking fodder so far.*

Truth-in-marketing is what we are hoping for, going forward. So Pretty Polly is now on vacation until someone falls off the truth-in-marketing wagon. We remain tuned for violations! Our antennae include RSS Feeds, Google Alerts, Blog Feeds, Magazine eNewsletters, magazines, so violations are easy to spot.

Make your 2009 resolution 'truth-in-marketing'. A happy and prosperous New Year to you all.

GENERAL NEWS





2009 TRAINING SCHEDULE ANNOUNCED: PTO, in cooperation with the PROF Interface Center (PIC), will offer a full range of training opportunities for PROFIBUS and PROFINET in 2009.



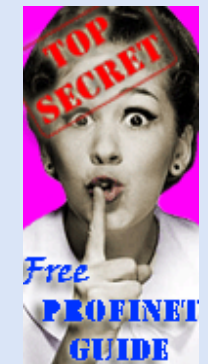
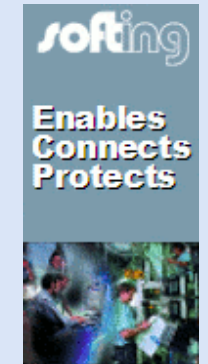
Certified Engineers: We will offer eight Certified Network Engineer classes for PROFIBUS and four for PROFINET. The week-long classes are normally delivered in Johnson City, TN. However, if you have at least eight students, we may be able to deliver a class at your site in North America. Please [email us](#) with your request. Successfully passing the theoretical and practical exams earns the attendee Certified Network Engineer status. The tuition cost is \$2,695 per student - or \$2,195 for PTO members. For schedule please see [PTO web site](#). The PIC also offers one- and two-day onsite installation/troubleshooting classes. [Email the PIC](#) for a quote.

FREE One-day Training Classes: These were highly successful in 2008 and will be held in 25 North American cities during 2009. Here's some feedback from 2008:

- *Very good presentation and handout. Very informative to prospective user like us. We are looking at using PROFIBUS - very good technology, simple and effective.*
- *Thanks for the information. This has given me a good picture for a project I will be working on in a few months.*
- *I learned things even though I've been through this a number of times.*
- *I thought this free training was a good way for our company to learn about the technology and the vendors. Thank you.*

In 2009 there will again be three themes: PROFIBUS, PROFIBUS in the Process Industries' (Process), and PROFINET. All classes are being updated with the latest technical advancements. Further, the PROFIBUS and Process classes are being extensively revised towards a more user-oriented perspective. Both classes are similar; but the Process classes carry an increased emphasis on Asset Management. Seven Process, eight PROFIBUS, and ten PROFINET classes are tentatively scheduled. Watch the web site for details or register for a class and we'll keep you posted.

Schedule	PROFIBUS	Process	PROFINET
January			
February			
March	Columbus	Greenville	Detroit
April	Pittsburgh	Denver & Calgary	Austin
May	Salt Lake City	Newark	Jacksonville
June	Grand Rapids		Vancouver
July	Davenport		Boston
August	Portland, OR	Scottsdale	Milwaukee
September		New Orleans	Cincinnati & Toronto
October	St Louis		Minneapolis
November	Milpitas	Houston	Seattle
December			

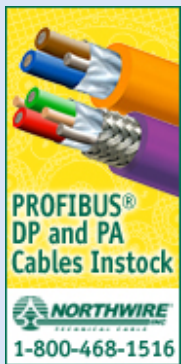




The webinar schedule for 2009 is still under construction. We anticipate webinars on PROFIBUS Basics, PROFIsafe, and more.

Prefer Web-based Training? You will find PROFIBUS Web-based Training [here](#).

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PROFIsafe DESIGNERS WORKSHOPS: The next PROFIsafe training days are on February 10 – 12, 2009, in Karlsruhe, Germany. They will be held in English. The 3-day course is for designers, developers, test engineers and safety assessors, and is organized by PNO Germany together with TÜV-Süd. The course includes a written test at the end of each day. Experts having passed all tests will receive a TÜV certificate 'Certified PROFIsafe Designer'. PI has mandated that the training course shall be repeated every second year in order to keep a Certified Engineer's knowledge up-to-date. [More information](#).

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PROFIsafe: A COMPETITIVE ADVANTAGE IN NORTH AMERICA: Adding functional safety to a machine used to be considered an expense; now it is considered an investment that can enhance asset management. In North America providing functional safety over a fieldbus has been allowed since 2002 when NFPA 79 (Electrical Standard for Industrial Machinery) was revised to allow such uses provided that the technology and hardware were 'approved for the purpose.' PROFIsafe is approved.



With individual hard-wired relays, troubleshooting was difficult.

'Which guard limit switch in a long series tripped?' 'Have any safeties been overridden?' 'Maintenance has to exercise every safety device how often?' Contrast this with the savings in hardware, installation time and commissioning time of a PROFIsafe installation - all the while improving safety! Read one North American manufacturer's experience [here](#).

PROFIsafe is a proven solution, as the next three articles show. The growth indicates increasing acceptance. A new PROFIsafe Starter Kit is designed to speed incorporation of PROFIsafe technology into devices. Device certification has been around for years, but with the increasing number of safe controllers (F-Hosts), the approved test tool expedites controller certification. If it's time for you to add PROFIsafe to your products, consider attending the training class [mentioned above](#).

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PROFIsafe GROWS 80%: At the end of 2007 there were 410,000 PROFIsafe-enabled devices installed around the world and the installed base is expected to have grown by 80% during 2008 says Wolfgang Stripf (right), the 'father' of PROFIsafe, shown alongside his product 'wall' at the SPS/IPC/Drives fair in Nuremberg in November.



The success of PROFIsafe is based on three paradigm shifts that bring significant cost savings, he adds.

1. It is possible to implement safety functions on PROFIBUS or PROFINET in almost identical ways. Independent safety-related hardware wiring can be eliminated.
2. PROFIsafe pioneered the so-called 'black channel' principle which allows secure transmission from end point to end point via proprietary back plane buses as well as PROFIBUS and PROFINET.
3. It enables the use of integrated safety functions in devices such as drives, thereby increasing flexibility during manufacturing as a result of parameterizable safety. It also achieves higher availability based on immediate startup after an emergency stop or when a warning occurs.

PROFIsafe is the only safety technology covering discrete, process and motion control. It is already well established in the all these markets. [Go to PROFIsafe blog for more stories and video of the PROFIsafe wall.](#)

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PROFIsafe STARTER KIT: Access to PROFIsafe for PTO members couldn't be simpler with the new PROFIsafe starter kit from PI.

Version 3.4 reflects the present status of the PROFIsafe profile

Version 2.4 and IEC 61784-3-3. It contains a few important add-ons

for engineering. In addition, a number of user requests have been implemented, such as multi-instance capability and variable process

data during runtime. Besides all PROFIBUS and PROFINET

specifications, the starter kit contains the source files for the

PROFIsafe driver software (PSD) and a detailed implementation manual in English and German. It also

provides CRC (cyclic redundancy check) tools and aids for creation of safety-related GSD files. Sample

adaptations of the PSD for commonly used stacks are provided and special monitors allow the PROFIsafe

protocol sequences to be observed in slow motion. A completely new feature is the support for the iPar-

Server (option for storage and reload of individual safety parameters) and the Tool Calling Interface (TCI).

The CD-ROM contains example applications for both PROFIBUS and PROFINET that guide the user step-by-step in getting started with PROFIsafe. More at the [PROFIsafe web page](#) and [PROFIsafe web site](#).



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PROFIsafe F-Host CERTIFICATION: PI is now delivering certification services for safety-related hosts (F-Hosts). PROFIsafe hosts must hold a PROFIBUS or PROFINET certificate for the controller in which the PROFIsafe host is integrated (basic test). The PROFIsafe host test itself, which is approved by TÜV, is virtually an automated test performed at accredited test laboratories. The advantages to the user are obvious: When products with a PROFIsafe certificate are deployed, the residual error probability in data transmission is no longer of concern because this has already been proven generally for all proper implementations. In addition, all deterministic error models (e.g., delays in data transmission or repetition of safety-related frames) have been proven.

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ENHANCING PROFINET IN LINE NETWORKS: PI experts have pushed the technical limits of Ethernet to enhance the performance of PROFINET for the kind of short frame transmissions typically found in motion control and fast IO applications. The solution, which is fully compatible with the IEEE802.3 Ethernet specification, improves the performance of PROFINET in smaller line networks yet does not jeopardize the openness of PROFINET or its compatibility with existing PROFINET devices and networks.



The step mainly targets the communication needs of drives and fast IO in linear networks and will become an optional 'performance' extra that can be deployed when needed. It means that the performance of PROFINET comfortably exceeds that of all other Industrial Ethernet solutions right across the application spectrum.

A demonstration at the recent SPS/IPC/Drives fair in Nuremberg Germany showed how the solution works. Two methodologies are employed: in the first - Dynamic Frame Packing (DFP) - frames become shorter and shorter as they pass through subsequent nodes. The second - Fast Forwarding – ensures a short transit time near the technical limit of Ethernet, without compromising any of the openness of TCP/IP or PROFINET as deployed today.

PTO Executive Director Mike Bryant said: "Complete compatibility with today's PROFINET devices is retained and existing devices will be fully interoperable with devices using the new 'fast' mechanisms. From the user's perspective nothing changes."

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IN THE PROFIBLOG: PTO's intrepid reporter Carl Henning blogged almost continuously from the SPS/IPC/Drives fair in Nuremberg late November. His posts were crammed full of latest developments in the industry, opinions on the fair, what it means for automation and lots more. New this time were video and audio reports to support the written word. Carl blogs as often as he can from fairs, where he's good at digging under the surface for the facts. PROFIBUS and PROFINET news dominates of course, but general Industrial Ethernet news is fair game too, with plenty of interplay with other industry bloggers en route. To follow PROFIBlog [start here](#).

NUMBERS FOR NUMBERS SAKE? We get fascinated by the numbers depicting the growth of PROFIBUS and PROFINET (and PROFIsafe), but they don't project the full message. We know we are well on our way to 30,000,000 PROFIBUS nodes and 2 million PROFINET nodes, but don't overlook the more powerful underlying message - that PROFIBUS and PROFINET are well-established, widely-used and globally-supported, with thousands of products available.



We can't promise to de-emphasize the numbers this year, but we will keep reminding ourselves (and you) of why they're important. The beginning of the year is also a good time to set goals. Our goal for PROFIBUS nodes is 50,000,000 by 2012. [Ok, now we'll stop talking about numbers :-)]

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PROFIBUS AND PROFINET IN ACTION

Three case studies this time, one from Korea describing how PROFIBUS has been chosen by a major water company and the others covering the use of PROFINET in ship control, and in the production of concrete products where safety and wireless are both deployed on the PROFINET network. Please click [here to go](#) to our special applications page covering all three stories.

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WORLD NEWS



JAPAN: The Japanese PROFIBUS Organization (JPO) held their 'PROFIBUS Day 2008' this year in Tokyo in October. A total of 130 people attended. Softing, Hilscher Japan, HMS, Endress Hauser Japan, Auma Japan, Siemens and JPO explained latest developments, applications and technologies. A 'PROFIBUS Day 2009' is now under preparation. **KOREA:** 'Industrial Ethernet, PROFINET today and future' was the title of a seminar held in

Seoul in September (see photo above left), which more than 250 persons attended - 100 more than expected! The opening presentation was given by Jörg Freitag, PI Chairman, and Cha Young-Sik, Chairman of KPA. Freitag was impressed by the great interest of Korean industry in PROFINET, which was underlined by the large number of attendees: 30% were end users from the automotive and heavy industries, 40% were system integrators and 15% were device vendors. **SOUTH EAST ASIA:** A new board committee for PROFIBUS South-East-Asia was elected during the Annual General Meeting in October.

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NEW PRODUCTS

PROFIBUS ENCODERS: FRABA POSITAL's PROFIBUS DP encoders, part of the OPTOCODE series, are now also available with integrated M12 connectors. Start-up requires no more than plugging in the devices. They also provide the full feature set including isochronous mode and slave-to-slave communication. There's also a teach-in option which allows the user to determine the gear ratio directly on site. An improved version of the optoelectronic scanning method is used. The single-turn model, the encoder provides a resolution of 65,536 steps per revolution (16 bit). The multi-turn model registers a maximum of 16,384 revolutions (14 bit). All OPTOCODE encoders operate without backup batteries and instantly provide current absolute position values without homing even after power failure. [FRABA](#)



EMBEDDED IO FOR PROFINET: HMS has introduced an Anybus-IC interface for implementing PROFINET IO slaves easily. The new module is certified and comes in a housing measuring 9sq. cm. containing all hardware and software. It reduces the development effort needed to design a communication interface by up to 70%, says HMS. Space and power supply requirements are minimized so that even small devices such as barcode readers or motor starters can be economically equipped with PROFINET. [HMS](#)



PROFIsafe IN ZONE 1 APPLICATIONS: The IS1 remote I/O system now supports PROFIsafe in Zone 1 applications. IS1 is the first remote I/O system to allow for safe process shutdown via the fieldbus in SIL2 applications in hazardous areas. The system has analog input modules for SIL2-compliant communication via PROFIsafe over PROFIBUS. A digital output module allows for shutdown of outputs via a separate Ex i input. The system is HART transparent, even in SIL networks, which enables the use of HART-based asset management functions. All IS1 modules are hot swappable within Zone 1. Additionally, they can fulfill high availability requirements through redundant line and/or component installation. [STAHL](#)

PROFIsafe InLine: PROFIsafe can now be flexibly integrated into automation systems based on Inline I/O modules. Depending on the bus coupler, PROFIsafe modules can be used in PROFIBUS DP or PROFINET networks. They also support the Interbus safety protocol. The modules allow up to eight safe sensors and/or safe actuators to be connected. The settings allow users to configure one or two channels of peripheral devices. [PHOENIX CONTACT](#)



SPUR REPEATER: The new ProfiHub C5 is designed for even rougher and demanding repeater applications. The ProfiHub family is a collection of popular PROFIBUS DP network components that enable long spur lines and backbone structures with star/tree segments. They contain 5 isolated repeater channels which individually handle a maximum of 31 devices and a cable length equal to the main bus. ProfiHub C5 distinguishes itself with its double metal housing and hybrid power + PROFIBUS connectors.



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