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September 2009

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Featured This Month



**FOUNDATION Fieldbus ...
we put the pieces in place**



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People for Process Automation

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Foundation Briefs

New whitepaper outlines advancements in field diagnostics



The latest advancements in field diagnostics technology used by FOUNDATION fieldbus is the subject of a new Fieldbus Foundation whitepaper. Author Stephen Mitschke, the foundation's manager-fieldbus products, provides a comprehensive look at how field diagnostics can help process plants practice more preventive and less reactive maintenance.

As approximately half the work in most industrial organizations is preventive maintenance, the potential for cost savings through device diagnostics data is significant. Since May 2006, the Fieldbus Foundation has been collaborating with NAMUR, an international process industry end-user association based in Germany, on fieldbus performance enhancements such as device diagnostics. Both groups

determined that the user community requires further clarification and guidance in this area.

Key to the foundation's liaison with NAMUR was the establishment of a dedicated working group to investigate standard end-user work processes for employing field device diagnostics. This initiative was critical to ensuring FOUNDATION instruments are consistent with the NE107 guideline requiring that field devices deliver extensive diagnostics, which help ensure optimal plant efficiencies are achieved.

The Fieldbus Foundation/NAMUR working group analyzed specific requirements for device diagnostics in developing a field diagnostics profile specification. These included:

- Common view of instrument-specific diagnostics
- Common configuration environment
- Extensibility
- Leverage of existing "push" technologies (such as alerts and alarms)
- Flexible configuration to meet user applications
- Simulation for FAT/SAT activities
- Ease of understanding and implementation
- Adoption by system and instrument vendors

Using the power of FOUNDATION fieldbus, and considering the NAMUR NE107 recommendations, the Fieldbus Foundation developed a profiles specification enhancing the organization and integration of device diagnostics within FOUNDATION fieldbus systems. The new diagnostic profile includes a standard and open interface for reporting all device alarm conditions, and provides a means of categorizing alert conditions by severity. The technology facilitates routing of alerts to appropriate consoles based on user-selectable severity categories. In addition, it recommends corrective actions, provides detailed help, and offers an indication of the overall health of the device.

The FOUNDATION fieldbus Diagnostics Profile Specification (FF-912) was defined to allow any Electronic Device Description (EDD)-based system to access and configure the diagnostics in fieldbus devices. The field diagnostics profile makes no changes to the existing

FOUNDATION fieldbus stack specifications. However, it does introduce a new field diagnostic alert type. System updates will provide more extensive integration capabilities (such as Wizards for configuration) that will enhance diagnostics performance.

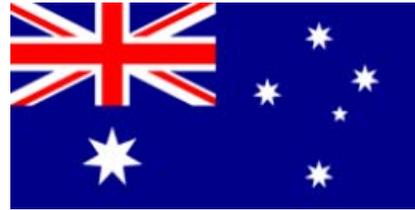
Most importantly, field diagnostics technology according to the NE107 recommendation offers a robust solution for implementing role-based diagnostics, meaning the right information is sent to the appropriate person—when they need it—without flooding others with alarms.

Download a free copy of the *Fieldbus Diagnostics* whitepaper from the [Fieldbus Foundation Website](#).

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Major automation companies help set up Australian Marketing Committee

Representatives from 14 major automation industry companies were among those involved in establishing the new Fieldbus Foundation Australian Marketing Committee (FFAMC). The FFAMC was officially approved at a set-up meeting in Melbourne on August 24.



Initial leaders, selected by the new committee at the meeting, include:

- Chairman: Tom Rolton, Emerson Process Management
- Vice Chairman: Shaun Loesch, ABB
- Secretary: Lindsay Hadland, Yokogawa
- Treasurer: Andrew Sia, Rockwell Automation

The committee met again on Monday, Sept. 14, at ABB's facility in Melbourne to finalize the group's organizational structure and develop a FOUNDATION fieldbus marketing plan for the Australia/New Zealand region.

Read future updates on the *Fieldbus Foundation Website*.

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Global News & Events

Fieldbus developer training courses offered during October



The Fieldbus Foundation will offer FOUNDATION fieldbus developer training this fall at its headquarters in Austin, TX. "Introduction to FOUNDATION Fieldbus," a one-day course, will take place Oct. 20. "Advanced Principles of FOUNDATION Fieldbus," a three-day course, will be held Oct. 21-23. Both are vendor-neutral and cover key aspects of open, non-proprietary FOUNDATION fieldbus technology.

"Introduction to FOUNDATION Fieldbus" is designed for developers, end users, marketing professionals, applications engineers, system integrators, and others interested in obtaining a fundamental knowledge of FOUNDATION technology. Students become familiar with the basic concepts and new terminology related to the FOUNDATION integrated architecture. They gain an understanding of the strategies for wiring and installing a fieldbus network. Design issues, such as power requirements, device types and technologies, are emphasized. This

introductory course has been updated to include new information about grounding and shielding, and Safety Instrumented Systems (SIS).

"Advanced Principles of FOUNDATION Fieldbus" is intended for manufacturers and developers of fieldbus hardware and software. It is directed at development engineers, test engineers, and those who need to understand the detailed, inner workings of a FOUNDATION fieldbus device. The course covers major tools used by FOUNDATION device developers. Students learn the basics of the bus monitor and apply this tool in interactive exercises demonstrating fieldbus communications and the use of filters for network troubleshooting. The curriculum also addresses H1 and High Speed Ethernet (HSE) communications between fieldbus devices.

The advanced course includes updated information on alerting/alarming and Electronic Device Description Language (EDDL), and includes new sections on developments in Field Diagnostics and Capability Files. The new technology implements role-based diagnostics, meaning the right information is sent to the appropriate person—when needed. A system of push diagnostics (rather than pull diagnostics) allows alerts to be delivered more quickly to the right people, instead of the user needing to request information from the devices. Although the Device Development section incorporates some previously included information, it has been expanded to better describe the process.

For more information on the courses, or to register, visit the Fieldbus Foundation [Website](#).

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North American seminars help end users 'achieve operational excellence'

The Fieldbus Foundation is offering free FOUNDATION fieldbus educational seminars at various North American locations in 2009. The events, based on the theme "Achieving Operational Excellence with FOUNDATION Technology," are intended for end users, system integrators, and engineering firms seeking to learn about the economic benefits of the FOUNDATION automation architecture. Topics include:

- Open, scalable integration/segment design and layout;
- Process integrity/SIL and SIF; and
- Business intelligence/maintenance and troubleshooting.



Attendees may earn professional development hours (PDH). Lunch is included.

The 2009 seminar program has attracted standing-room-only attendance at its initial events. In Coatzacoalcos, Mexico, more than 180 participated, while the Baton Rouge, Louisiana, event drew 90 attendees. Two seminars in Alberta, Canada (Calgary and Edmonton), attracted more than 160.

Seminars remaining in 2009 include:

- Oct. 15 – Long Beach, CA
- Nov. 3 – Pasadena, TX
- Nov. 4 – Houston, TX

Seminar updates and more information are available on the Fieldbus Foundation [Website](#).

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Engineering application seminar draws a crowd in China



More than 130 attendees eager to learn more about the implementation of FOUNDATION technology in China's growing industrial sector took part in a Fieldbus engineering application seminar in Kunming, China, this summer. Hosted by the Fieldbus Foundation China Marketing Committee (FFCMC), the July 16 event was sponsored ABB, BC, Emerson Process Management, Honeywell, Mettler Toledo, Metso, MTL Relcom, Pepperl+Fuchs, Rockwell Automation, R. Stahl, and Yokogawa.

Attendees included representatives from the chemical, metals, marine, and water treatment industries, design institutes, system integrators, and educational institutions. The seminar addressed the use of FOUNDATION fieldbus in process plant applications, and featured presentations by three leading Chinese end users.

Mr. Cai, director of the design department, automation control, for China Enfi Engineering Corp. (ENFI), shared insights from two recent FOUNDATION fieldbus projects. The presentation focused on reducing the number of design drawings, saving on cabling and installation, lowering operation and maintenance costs, and improving plant safety.

Mr. Zheng, from Yunnan Three Circles Chemical Co. Ltd., outlined three integrated FOUNDATION fieldbus control system installations at his facility. The systems are based on the complete FOUNDATION H1+HSE network architecture. Zheng stated that Ethernet-based HSE eases network design, engineering, and cabling, and said that he believes control in the field helps improve response time and accuracy. His presentation described how plant-wide supervisory control and information management improves visibility and coordination of production and asset management.



Mr. Han, from Yunnan Chihong ZnGe Co. Ltd., described how his company achieved lower costs thanks to reduced cabling and installation space requirements with FOUNDATION technology. Other benefits included increased commissioning efficiency, faster project execution, improved maintenance operations, and enhanced asset management capabilities that enabled stable production processes.

News about future FFCMC events may be found on the Fieldbus Foundation [Website](#).

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Successful FOUNDATION fieldbus ‘study day’ held in Sardinia



Consorzio Fieldbus Foundation-Italia, the Fieldbus Foundation’s Italian Marketing Committee, held a successful end-user training event last summer in Sardinia. The study day, which took place June 11, 2009, at the Hotel Baia di Nora in Cagliari, carried the theme of “FOUNDATION Fieldbus—Process Automation and Distributed Control.” The event, also sponsored by the Italian end user organizations EXERA-CLUI and ANIPLA, updated attendees on developments in and application of FOUNDATION technology.

The program started with introductions to EXERA-CLUI and to the Fieldbus Foundation in Italy and worldwide. Technical presentations described FOUNDATION technology, device diagnostics, FOUNDATION for Safety Instrumented Functions (FF-SIF), control in the field, and Link Active Scheduler (LAS). They also addressed such benefits of fieldbus to end users as increased business intelligence; process integrity; and open, scalable integration. A live, multi-vendor technology demonstration and a “Frequently Asked Questions” session helped attendees gain a practical appreciation for applying FOUNDATION fieldbus in different applications.

Consorzio FF-Italia Chairman Massimo Guidi expressed delight with the success of the three end-user seminars held in Ravenna, Milan, and Cagliari so far this year. “The Fieldbus Foundation’s commitment to development of FOUNDATION technology and its future in a constantly changing market are clear. In turn, the Italian Marketing Committee is committed to supporting current and potential end users throughout the Italian region before, during, and after they implement FOUNDATION fieldbus in their own processes.”



For information about future activities, visit the Fieldbus Foundation [Website](#) or email the [FF Italian Marketing Committee](#).

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Middle East Marketing Committee schedules activities for late 2009



The Fieldbus Foundation's Middle East Marketing Committee (FFMEMC) is planning end-user seminars across the region as part of the next phase of its 2009 events schedule.

As the result of its close working relationship with several regional ISA groups, the FFMEMC, in cooperation with the ISA in Al Khobar, Saudi Arabia, will host an evening seminar and complimentary dinner for end users, contractors, and ISA members on Oct. 25. Presentations will include an overview of technical developments and progress of FOUNDATION fieldbus, and an update on local ISA activities.

Three additional road shows are planned at various hotel venues in October:

- Doha, Qatar, on Oct. 26, in association with the ISA Qatar chapter;
- Muscat, Oman, on Oct. 27; and
- Abu Dhabi, United Arab Emirates, on Oct. 28.

Following the theme "FOUNDATION Fieldbus—Engineering the Future," the seminars will include a comprehensive program including technology updates, and presentations about the implementation of FOUNDATION fieldbus from engineering contractor and end-user perspectives. Discussion and Q&A sessions with the presenters and fieldbus experts will let attendees share application experiences and gain practical insights into the implementation of FOUNDATION technology within their own processes. The events will conclude with a complimentary dinner.

In addition to the road shows, the FFMEMC will be working closely with the Fieldbus Foundation End User Council-Middle East (FFEUC-ME) to host the 5th FOUNDATION Fieldbus Middle East End User Council Conference, Multaqa 2009, at the Hotel Ramada Plaza in Doha, Qatar, Dec. 15-16, 2009. This two-day event will offer end users, system integrators, and engineers an extensive program of presentations by end users and implementers of FOUNDATION fieldbus, and FOUNDATION technical presentations by worldwide experts.

In addition to the presentations, a tabletop exhibit of products and devices from event sponsors will give attendees the opportunity to discuss applications with many Fieldbus Foundation member companies.

For more information, visit the Fieldbus Foundation [Website](#) or email the [FF Middle East Marketing Committee](#).

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Fieldbus Foundation plans educational events worldwide

The Fieldbus Foundation is planning many informational and educational events around the world in the remainder of 2009. Make plans now to attend an event in your area.

LOCATION	DATE	EVENT and CONTACT INFORMATION
EVENTS IN NORTH AMERICA		
Long Beach, California, USA	Oct. 15, 2009	FOUNDATION Fieldbus End User/EPC Seminar Click her for more information
Pasadena, Texas, USA	Nov. 3, 2009	FOUNDATION Fieldbus End User/EPC Seminars Click her for more information
Houston, Texas, USA	Nov. 4, 2009	FOUNDATION Fieldbus End User/EPC Seminar Click here for more information
EMEA (EUROPE, MIDDLE-EAST, AFRICA) EVENTS		
Brands Hatch, Kent, UK	Oct. 13, 2009	FOUNDATION Fieldbus End User/EPC Seminar Click here for more information

Grimsby, UK	Oct. 15, 2009	FOUNDATION Fieldbus End User/EPC Seminar Click here for more information
Slough, UK	Oct. 21, 2009	South Region Supplier Community Training Click here for more information
Al Khobar, Saudi Arabia	Oct. 25, 2009	ISA/Fieldbus Foundation Update Seminar & Dinner Click here for more information
Doha, Qatar	Oct. 26, 2009	ISA/Fieldbus Foundation Update Seminar & Dinner Click here for more information
Muscat, Oman	Oct. 27, 2009	Fieldbus Foundation Update Seminar & Dinner Click here for more information
Abu Dhabi, UAE	Oct. 28, 2009	Fieldbus Foundation Update Seminar & Dinner Click here for more information
Coventry, UK	Nov. 3, 2009	Midlands Region Supplier Community Training Click here for more information
Brielle, Netherlands	Nov. 12, 2009	10th Anniversary End User/EPC Seminar & Buffet More information to come
Frankfurt, Germany	November 2009	FOUNDATION Fieldbus End User/EPC Seminar More information to come
Manchester, UK	Dec. 1, 2009	North Region Supplier Community Training Click here for more information
Doha, Qatar	Dec. 15-16, 2009	Multaqa 2009 5th Middle East End-User Council Conference Click here for more information
Russia (various locations)	To be determined	FOUNDATION Fieldbus End User/EPC Seminars More information to come
SEMINARS IN SOUTH EAST ASIA		
Thailand	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
Malaysia	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
Jakarta, Indonesia	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
Vietnam	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
The Philippines	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
SEMINARS IN INDIA		
Chennai, India	Oct. 30, 2009	FOUNDATION Fieldbus End User Seminar More information to come
Surat, India	Q2 2010	ISA / FOUNDATION Fieldbus Event More information to come
Mumbai, India	Sept. 16-19, 2010	Automation 2010 More information to come
SEMINARS IN EAST ASIA		
Tokyo, Japan	September 2009	FOUNDATION Fieldbus End User Seminar More information to come

Shanghai, China	Oct. 20-23, 2009	Miconex 2009 More information to come
Beijing, China	November 2009	FOUNDATION Fieldbus End User Seminar More information to come
Tokyo, Japan	Nov. 18-20, 2009	JEMIMA M&C Exhibition More information to come
Osaka, Japan	To be determined	FOUNDATION Fieldbus End User Seminar More information to come
Korea	To be determined	FOUNDATION Fieldbus End User Seminar More information to come

For more information, visit the [Fieldbus Foundation Website](#).

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Technology News

Fieldbus Foundation releases updated H1 and HSE test kits



Updated FOUNDATION fieldbus conformance and interoperability test kits for use by plant automation equipment suppliers are now available from the Fieldbus Foundation. The kits include the H1 Interoperability Test Kit (H1-ITK) 5.2.0 and High Speed Ethernet Conformance Test Kit (HSE-CTK) 2.0.1.

The Fieldbus Foundation offers a comprehensive suite of powerful fieldbus conformance, interoperability, and Device Description (DD) tools. The test solutions include all hardware and software required to ensure a manufacturer's device conforms to current FOUNDATION fieldbus specifications and registration guidelines.

According to Stephen Mitschke, Fieldbus Foundation manager-fieldbus products, the release of updated device testing tools demonstrates the foundation's commitment to continuous improvement for the benefit of the fieldbus community. "We have worked with and listened to suppliers and end-users and responded with additional testing solutions that support the interoperability of registered FOUNDATION fieldbus devices," said Mitschke. "These testing tools enable developers and users to have the highest level of confidence that best-in-class fieldbus devices can be chosen for specific control applications."

H1-ITK verifies the functionality of an H1 (31.25 kbit/s) device and its conformity with FOUNDATION fieldbus Function Block and Transducer Block specifications. An excellent tool for troubleshooting and debugging devices, the test kit helps manufacturers verify device interoperability as specified by the foundation's registration testing procedure. The H1-ITK lets device developers run tests identical to those used by the Fieldbus Foundation before submitting their devices for official registration.

The H1-ITK has been updated with positioner transducer block test cases to support the FOUNDATION fieldbus Positioner Transducer Block Final Specification (FF-906), and also includes miscellaneous product improvements and enhancements. The new Positioner Transducer Block specification is a key resource supporting the organization and integration of advanced device diagnostics within fieldbus systems. The specification provides standard definitions for positioner transducer blocks, including an analog positioner for basic and complex device access, a discrete positioner for basic and complex device access, and a combination analog/discrete positioner for basic and complex device access. It also includes new parameter structure definitions for better data organization with fieldbus devices, including partial/full stroke test (PST/FST) of valves. The document groups parameters conveniently in function-based categories and offers a variety of helpful diagrams.

HSE-CTK is a complete package that allows end-users to ensure a manufacturer's device communication "stack" conforms to HSE registration testing and registration guidelines. To pass interoperability testing, a device must contain a foundation-registered communication stack that has passed conformance tests. Developers can use the kit to verify the correct communication behavior of an HSE stack as defined in the FOUNDATION HSE specifications. The updated HSE-CTK includes a host of miscellaneous product

improvements and enhancements.

More information about the test kits may be found on the [Fieldbus Foundation tools page](#).

To purchase the test kits, email [Fieldbus Foundation Member Services](#).

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Positioner Transducer Block final specification now available



The final FOUNDATION fieldbus Positioner Transducer Block specification is now available from the Fieldbus Foundation. The new release supports the implementation of advanced field diagnostics capabilities benefiting end-users of FOUNDATION fieldbus technology.

Fieldbus Foundation specifications define the open, non-proprietary FOUNDATION fieldbus protocol. The technology provides an all-digital, two-way, multi-drop communications link among intelligent field devices and automation systems. It serves as the local area network (LAN) for instruments used in process automation, and has a built-in capability to distribute the control application across the network.

The new release includes:

- FF-906 Positioner Transducer Block final specification (Version FS 1.0);
- FF-902 Transducer Block Common Structures (Version FS 1.2);
- FF-846 Device Coupler Test Specification Phase I (Version FS 1.1);
- AN-007 Device Replacement application note;
- AN-012 Mode Use in Transducer Block application note; and
- TN-017 Response to a CD technical note.

The Positioner Transducer Block specification is a key resource supporting the organization and integration of advanced device diagnostics within fieldbus systems. It provides standard definitions for positioner transducer blocks, including an analog positioner for basic and complex device access, a discrete positioner for basic and complex device access, and a combination analog/discrete positioner for basic and complex device access. The specification also includes new parameter structure definitions for better data organization with fieldbus devices, including partial/full stroke test (PST/FST) of valves. The document groups parameters conveniently in function-based categories and offers a variety of helpful diagrams.

Said Stephen Mitschke, Fieldbus Foundation manager-fieldbus products, "The new Positioner Transducer Block specification provides a standardized way of defining device diagnostics for plant instrumentation, such as advanced valve packages. This capability is complemented by our existing field diagnostics technology, which provides a means of reporting these diagnostics to the end-user via asset management tools for use in condition based monitoring strategies. Field diagnostics technology per the NAMUR NE107 recommendation offers a robust solution for implementing role-based diagnostics," continued Mitschke, "meaning the right information is sent to the appropriate person—when they need it—without flooding operators, engineers, and maintenance with nuisance alarms. Field diagnostics enhances user control and distribution of messages between field devices and host/asset management systems. This allows for faster response times as each message is presorted according to criticality, whether it is a process alarm or a maintenance alarm. Users can map alerts based on their particular device situation and its importance to the overall process."

An updated version of the FOUNDATION fieldbus Device Description (DD) Library also is now available from the Fieldbus Foundation. It provides standardized source code for all fieldbus blocks and parameters, making it easy for developers to build DDs for fieldbus instrumentation. Suppliers need only implement custom blocks and other additional supplier-specific parameters. The DD Library also promotes a standardized view of field device information across manufacturers, enabling consistent configuration by end users. The library is maintained to describe the most recent FOUNDATION specification.

DD Library, version 3.5, enhancements include:

- Additional Device Description Language (DDL) code to support the FF-906 Positioner Transducer Block specification, and the capability revision in the AN-007 Device Replacement application note; and
- Additional DDL code for support of Complex Transducer Blocks.

For more information about FOUNDATION fieldbus specifications, visit the [Fieldbus Foundation specification page](#).

For more details on the DD Library, visit the [Fieldbus Foundation tools page](#) or email the [Fieldbus Foundation sales department](#).

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New Device ITK Profile preliminary specification completed



The FOUNDATION fieldbus Device Interoperability Test Kit (ITK) Profile preliminary specification (FF-946) is now available, the Fieldbus Foundation has announced. The new specification offers an easy way of mapping field device requirements to the foundation's ITK versions.

Fieldbus Foundation's H1 and High Speed Ethernet (HSE) interoperability test kits are excellent tools for troubleshooting and debugging devices. They help automation equipment manufacturers verify device interoperability as specified by the FOUNDATION fieldbus registration testing procedure. Device developers can use the test kits to run tests identical to those used by the foundation before submitting devices for official registration.

Within the fieldbus device development environment, ITK traceability to the latest FOUNDATION fieldbus specifications can be challenging for several reasons:

- ITK and FOUNDATION fieldbus technology specifications have different product maintenance cycles; and
- New device requirements are spread across several specification documents.

The ITK Profile Specification helps instrumentation suppliers identify future mandatory requirements for field devices more easily. Profiles defined in the specification document contain features that may be incorporated into new device implementations, including but not limited to:

- Standard block profiles
- Non-block features
- Extensible parameters such as "OPTS", FEATURES, etc.
- Device Description (DD)/Capability File (CF) technologies
- Communication "stack" requirements

For more information, visit the [Fieldbus Foundation specification page](#) or email the [Fieldbus Foundation sales department](#).

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End User Information

BP's choice of MTL Redundant FISCO seen as FOUNDATION fieldbus endorsement



MTL Instruments, a division of Cooper Crouse-Hinds, will supply Redundant Fieldbus Intrinsically Safe Concept (FISCO) power supplies for use on the PSVM (Plutao, Saturno, Venus, and Marte) development by BP in Angola's offshore Block 31 oilfield. BP's choice of Redundant FISCO for the project is seen as a major endorsement of FOUNDATION fieldbus as a technology platform and FISCO as the technology-of-choice for hazardous areas.

The MTL supply comprises Redundant FISCO power supplies and field junction boxes containing FISCO Megablocks with surge protection for the network trunk. Spur short-circuit protection is already accommodated within the Megablock wiring hub.

Major refinery, petrochemical, and pharmaceutical companies have been seeking an

intrinsically safe (IS) redundant solution that allows “live working” and supports the high device count on a fieldbus segment that drives the capital benefits of this technology. Redundant FISCO offers not only increased reliability versus other IS solutions. The complete installed solution from power conditioner through field device also is cost-effective compared to alternatives, without having to worry about mixed protection methods in the field.

Redundant FISCO continues the MTL tradition of innovative, customer-focused solutions that provide high levels of reliability, ease of use, and application of open industry standards.

For more information, visit the [MTL Website](#).

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Products & Solutions

MooreHawke power supply delivers up to 500 mA per segment



Trunkguard TPS400 Fieldbus Power Supply from MooreHawke, a division of Moore Industries-International Inc., is designed for general purpose and non-incendive applications. Available models supply 350 mA (for non-isolated, energy limited applications) or 500 mA (for high current demand applications) of isolated, conditioned simplex (non-redundant) or duplex (redundant) power to up to four segments.

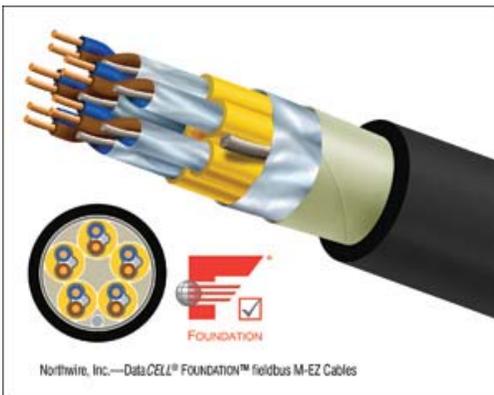
The fieldbus power supply's high-availability, modular design features modules that are hot-swappable with load-sharing in redundant pairs to maintain power to the segment should one module in a pair need to be removed. It also includes a rugged industrial metal housing, optional pluggable surge protection, and multi-segment H1 connectors that deliver simple, error-free wiring to a DCS to reduce installation time. An economical Diagnostics Module (FDM252) option provides a master alarm and LED-based alarms for segment noise, dc voltage levels, and conditioner status faults.

TPS400 is ideal for use with MooreHawke Series 200 and Series 300 Trunkguard Fieldbus Device Couplers, and also works with any other manufacturer's non-intrinsically-safe fieldbus device couplers.

For more information, visit the [MooreHawke Website](#).

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Northwire cables promote fast, simple cabinet wiring



Northwire's DataCell FOUNDATION fieldbus M-EZ (Marshal-EZ) cables enable fast, simple installation into marshaling cabinets without shrink tubing. They are engineered with up to 24 individually foil-shielded pairs that have an extruded PVC binder over each pair—all contained within a single cable.

Easy to strip and install, the cables offer superior ground system integrity and eliminate the potential for cross continuity between shields. FF-844 certified DataCell FOUNDATION fieldbus M-EZ cables are ITC /PLTC-rated for exposed-run applications. They pass crush and impact tests for metal-clad cable and allow users to do without the conduit. The line includes arctic-rated and marine shipboard-listed versions, suitable for temperatures to -60 C. CSA, ABCD armored cables are also offered.

Options include single- or multi-paired bus cables; individually or overall foil-shielded pairs with drain; overall tinned copper braid for low-frequency noise immunity; 16 AWG for longer runs, and 18 AWG in single-shielded twisted-pair snip cables or multi-pair cable; and several jacket and inner-conductor colors with optional ground wire

Characteristic impedance Z0 is $100\Omega \pm 10\Omega$ at 31.25 kHz.

Other versions are available off-the-shelf in bulk quantities. Contact Northwire for information and product samples at 1-715-294-2121.

For more product information, visit the Northwire [Website](#).

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Pepperl+Fuchs hosts segment design seminars



Pepperl+Fuchs is hosting educational FOUNDATION fieldbus segment design seminars at its state-of-the-art training facility in Houston, TX.

The non-commercial training sessions, held on Sept. 16 and Nov. 18, 2009, communicate basic principles, advantages, and benefits of fieldbus technology and segment design. Communication networks will be designed with FOUNDATION fieldbus using practical examples. The design, configuration, and parameterization of a fieldbus segment will be demonstrated using a hands-on approach.

Classes cover physical layer constraints, communication constraints, design verification, and risk management, including process, startup, and maintenance constraints. Upon completing the course, attendees can expect to:

- Understand the basic rules and operation criteria necessary to design a fieldbus segment;
- Know how to install a fieldbus network properly and understand the importance of the physical layer attributes; and
- Recognize the limitations of digital communication and how proper loop design improves performance.

Classes run from 8 am to 5 pm. The \$350 per person registration fee also covers materials and lunch. Attendees will receive a professional development hours certificate for completing the course.

For more information, or to register, visit the Pepperl+Fuchs [Website](#).

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9005 Mountain Ridge Drive, Bowie Building – Suite 200, Austin, Texas 78759-5316 USA

Tel: 512.794.8890 • Fax: 512.794.8893 • E-mail: info@fieldbus.org

www.fieldbus.org