Field Communication Insider

Kyle, Field Communication Insider is an e-newsletter featuring the latest news and developments in the application of HART, FOUNDATION Fieldbus and FDI technology around the world. To ensure that you continue to receive Field Communication Insider, please add pstudebaker@putman.net to your address book and subscribe here.

Make the Right Safety Choice

You depend on your car’s safety devices for protection when you need it the most. Have the same confidence in your Safety Instrumented System’s instruments with Moore Industries FS Functional Safety Series. Products including the new SIL 3 capable STZ Dual Input Smart HART Temperature Transmitter have been designed and built from the ground up to strict IEC 61508 standards, ensuring safe and reliable function. Learn more.

NEWS

FieldComm Group Working Groups: Delivering Value Across the Industrial Automation Space
Recent accomplishments include completion of the Field Device Integration Host Conformance Test Specification, update of Electronic Device Description Language Specification (harmonizing with FDI), and update of the FDI Specification (harmonizing with EDDL), among others. Read more.

TECHNOLOGY

New Development Solution Expedites Implementation of WirelessHART
WirelessHART module joins other software and hardware tools designed to simplify the development process and provide the best chance of compliance with test specifications. Read more.

Latest Registered FOUNDATION Fieldbus and HART Products
The number of FOUNDATION Fieldbus and HART products registered by the FieldComm Group continues to grow. Read more.

WIRELESSHART CORNER

Get Ready for WirelessHART Bootcamp!
Innovative program will enable enrollees to gain an understanding of topics such as mesh networking basics, WirelessHART system design, WirelessHART and wired systems, network security, and integrating WirelessHART into the organization. Read more.

Application Snapshot: Enabling Continuous Improvement Without Breaking the Budget
This operational assessment can help plants prioritize and justify project budgets previously deemed low-priority or unattainable with conventional wired instrumentation, as well as show how to consolidate projects that enable incremental improvements across multiple areas. Read more.
New product news you might be interested in:

- Emerson’s HART Vibrating Fork Level Detector Offers Greater Ease-Of-Use, Reliability And Safety
- Endress+Hauser’s Innovative Technology Provides Safe and Reliable Flow Measurement
- FCI’s Compact Thermal Flow Meter Line Expands With HART Bus Communication
- Moore Industries’ SSX and SST Safety Isolators Provide Reliable Isolation and Conversion for Digital HART Signals

Enable Your Wireless Device

Microcyber’s M1100S Module has passed FieldComm Group’s WirelessHART test and received certification. Based on M1100S, Microcyber developed our DK11 WirelessHART Development Toolkit and A1110 WirelessHART Adapter. The DK11 toolkit helps to quickly and efficiently develop WirelessHART field devices and shortens time to market. The A1110 adapter connects 4-20mA, HART and Modbus devices to WirelessHART, supporting loop, external and battery power. Learn more.

Upcoming Events

**North America**

- **Smart Industry Conference**
  Chicago, Illinois USA
  September 2017
  [More Information](#)

**Europe, Middle East, Africa (EMEA)**

- **Africa Automation Fair**
  Johannesburg, South Africa
  June 2017
  [More Information](#)

**FieldComm Group Working Groups**

- **FDI PlugFest**
  Berlin, Germany
  July 2017
  [More Information](#)

**Asia Pacific**

- **End User Seminar**
  Western Japan
  July 2017
  [More Information](#)

- **Oil & Gas Asia Exhibition**
  Kuala Lumpur, Malaysia
  July 2017
  [More Information](#)

- **End User Seminar**
  Eastern Malaysia
  August 2017
  [More Information](#)

- **Automation Expo 2017**
  Mumbai, India
  August 2017
  [More Information](#)

- **Miconex 2017**
  Shanghai, China
  September 2017
  [More Information](#)

- **SPS IPC Drives**
  [More Information](#)
Nuremberg, Germany
November 2017
» More Information

End User Seminar
Bangkok, Thailand
October 2017
» More Information

JEMIMA M&C 2017
Tokyo, Japan
November 2017
» More Information

End User Seminar
Seoul, Korea
December 2017
» More Information
FieldComm Group’s goal is to ensure high-quality, market-relevant products and standards are available in the industrial automation space. It turns to experts in the industry to achieve this effort. Members are encouraged to get involved and participate in the various technical working groups, which offer an opportunity to share expertise; direct technological enhancements; network with industry peers; and gain early access to technology developments, marketing strategies, and implementations.

Recent working group accomplishments include: Completion of the Field Device Integration (FDI) Host Conformance Test Specification, update of Electronic Device Description Language (EDDL) Specification (harmonizing with FDI), update of the FDI Specification (harmonizing with EDDL), update of FDI Tools Software, and update of the HART Communications Specification.
FieldComm Group President and CEO Ted Masters praised the contributions of his organization’s working groups. “FieldComm Group Working Groups tackle industry challenges and develop strategies and best practices to help our members compete more effectively,” Master said. “Working group participation is beneficial for those looking for a network of trusted colleagues and interaction with our industry’s most proven experts, providing support and knowledge that cannot be found anywhere else.”

FieldComm Group Working Groups are open to members, liaisons and guests. Each group maintains a roster of active participants. Members that do not register to participate in a Working Group can still monitor activities, attend meetings, engage in consensus-based discussions and access Working Group materials through our shared workspace portal.

**Current FieldComm Group Working Groups include:**

**Advanced Applications Working Group:** Charged with investigating and clarifying applications so the appropriate Working Groups can incorporate them into FieldComm Group technologies, the Advanced Applications Working Group accepts a high level description of a particular application identified within the FieldComm community, such as the Technology Working Groups or the Usability Working Group. It then develops technical requirements documents, including high-level architectures that describe the underlying technology or mechanism to support the application across the FieldComm Group technologies and delivers the documents to the appropriate Working Groups.

**Cyber Security Working Group:** Responsible for dealing with all cyber security aspects in documents and software products owned and/or maintained by the FieldComm Group, as well as its organization and infrastructure, the Cyber Security Working Group develops guidelines for cyber security, provides guidance to FieldComm Group management, and addresses the security of members’ products to the extent they meet the requirements of a FieldComm Group technology.

**Foundation Technology Working Group:** The Foundation Technology Working Group is dedicated to maintaining, improving, and enhancing existing FOUNDATION Fieldbus technology and associated documentation as all-digital communication system for the benefit the process automation industry, to enhance users’ experience, to provide asset management information and improve operational efficiencies, and to protect the investments end users and suppliers have made.

**HART Technology Working Group:** The HART Technology Working Group has responsibility for maintaining and managing HART Communications technology, enhancing existing HART Specifications to improve usability, reviewing Physical Layer Specifications maintained by the Physical Layer Working Group, and developing test specifications and procedures for devices and hosts.

**Integration Working Group:** The Integration Working Group is dedicated to establishing and maintaining worldwide standards for device integration across various industrial communication protocols. The group also develops companion conformance test specifications, test procedures and tool requirements, and helps drive new tools and components to ease adoption and increase industry acceptance of integration technologies. The key goals of device integration technology are cost reduction for all stakeholders and interoperability across systems.

**Physical Layer Working Group:** The Physical Layer Working Group is focused on the physical aspects of data transmission, including the physical transmission media, mechanical/electrical connection to the transmission media, bit or symbol transmission and reception, modulation, line coding, synchronization, flow control, multiplexing, carrier sensing, collision detection, equalization, and error correction.

**Usability Working Group:** Dedicated to technology ease of use, clarity and learnability, the Usability Working Group looks to continuously improve and promote usability across FieldComm Group technologies and their applications in member companies. It acts as a bridge between end-user groups (e.g., NAMUR, EUAC); third-party technology organizations; and other FieldComm Group working groups, committees and members.
FieldComm Group will conduct a working group meeting in Berlin, Germany, on July 10-14 in conjunction with an FDI PlugFest. This event is intended to improve the interoperability of FDI Device Packages and FDI Host Systems being developed and released onto the market.

For more information, please visit the FieldComm Group workspace portal.
New Development Solution Expedites Implementation of WirelessHART

By FieldComm Group
Jun 15, 2017

Microcyber Inc., a company involved with industrial control systems, instruments, communication boards and controllers based in Shenyang, China, has introduced an innovative development solution intended to help FieldComm Group members easily adopt and support WirelessHART in their product lines. The company’s M1100S WirelessHART module recently earned FieldComm Group registration.

The new WirelessHART module joins other software and hardware tools designed to simplify the development process and provide the best chance of compliance with test specifications. It can help device manufacturers with simple and rapid integration of the WirelessHART protocol in field devices to achieve safe, reliable and standard data transmission, improve product performance and ensure a competitive advantage.

WirelessHART is a wireless mesh network communications protocol specially designed for process automation applications. The protocol is safe and stable using industry standard 2.4 GHz ISM frequency band. All information
is packaged in one packet to permit data transmission through Direct Sequence Spread Spectrum (DSSS) and Frequency Hopping Spread Spectrum (FHSS) technologies based on IEEE802.15.4.

The WirelessHART network structure consists of three key elements: field devices, gateway and network manager. It also incorporates a WirelessHART adapter to allow existing HART devices to access the WirelessHART network, and WirelessHART handheld devices to connect to adjacent WirelessHART devices.

Microcyber’s solution employs a wireless communication module compliant with the HART 7.6 protocol. The module can serve as the core part of a WirelessHART field device with its periphery providing a TTL serial port and control interface. Through the serial port, the module communicates with a special customized development board to provide a complete WirelessHART device. Communication between the development board and module employs HART commands. The control interface is used to control input and output of the serial port. This solution supports all the mandatory commands of devices in the HART 7.6 protocol and Burst mode.

In order to assist automation suppliers with quickly developing WirelessHART devices, the module solution is provided with HART protocol stack library files to parse and process the wired command set – eliminating the need to be an expert on HART protocol technology. Utilizing a simple application programming interface (API), users can streamline product development work, shorten the associated design cycle, and reduce product time to market.

For more information about product development resources, please visit the FieldComm Group website.
## New Registered Devices

<table>
<thead>
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<th>Protocol</th>
<th>Manufacturer</th>
<th>Type</th>
<th>Model / Device Name</th>
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<tbody>
<tr>
<td>HART</td>
<td>Anderson Instrument Co. Inc.</td>
<td>Level Meter</td>
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<td>HART</td>
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<td>Gas Detector</td>
<td>Xgard Bright</td>
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<td>ELMETRO GROUP</td>
<td>Mass Flow</td>
<td>Flomac</td>
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<td>Flowline</td>
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<td>FOUNDATION Fieldbus</td>
<td>General Electric</td>
<td>Ultrasonic Flowmeter</td>
<td>XMT1000</td>
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<td>HART</td>
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<td>Temperature Transmitter</td>
<td>STT 700 Smartline Temperature Transmitter</td>
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<td>M400 4-wire</td>
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<td>Magnetic Flowmeter</td>
<td>8712EM/8732EM HR7</td>
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<td>HART</td>
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<td>SIPART PS2</td>
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**Updated Registered Devices**

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<td>KROHNE Messtechnik</td>
<td>Coriolis Mass Flowmeter</td>
<td>OptiMASS MFC400</td>
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<td>Pressure Transmitter</td>
<td>VEGABAR 80 series HART SIL</td>
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<td>HART</td>
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**Updated Electronic Device Description (EDD)**

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<td>FOUNDATION Fieldbus</td>
<td>ABB Automation Products GmbH</td>
<td>Differential, Gauge, Absolute - Pressure Transmitter</td>
<td>2600T - 266 P-dP</td>
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<td>FOUNDATION Fieldbus</td>
<td>Emerson Process Management</td>
<td>Digital Valve Controller</td>
<td>DVC6200f/6000f</td>
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Are you looking to increase your knowledge of WirelessHART technology? If so, you should sign up for WirelessHART Bootcamp, a multi-week online educational program led by FieldComm Group staff and associates. This innovative program will enable enrollees to gain an understanding of topics such as mesh networking basics, WirelessHART system design, WirelessHART and wired systems, network security, and integrating WirelessHART into the organization.

WirelessHART Bootcamp will consist of six one-hour sessions with specific learning objectives and evaluations. Guest speakers will take part in some sessions to provide relevant expertise.

To register for online instruction, or for more information, please visit the WirelessHART Bootcamp Page on the FieldComm Group website.
Today, process plants of all sizes are finding that a wireless sensing infrastructure enabled by a common standard such as WirelessHART can create a framework to support multiple continuous improvement and safety initiatives, with these improvements capable of being implemented very quickly at low cost.

Wireless sensing infrastructure can be used as an alternative or as a complement to wired instrumentation to reduce cost, efficiently manage projects, and reduce the risk of cost escalation.

**Start off on the right foot**

The first step in implementing a robust wireless network solution is to perform an operational assessment of the plant. Through this assessment, you'll get a better handle on the status of current automation investments and potential problem areas pertaining to reliability, energy, or safety.
Wireless transmitters can be installed anywhere at minimal cost. Once installed with a supporting infrastructure, additional wireless devices can be added easily.

The second step is to define an automation roadmap for the site. Implicit within this definition is how technologies such as wireless can achieve a measurable difference in the problem areas defined within the assessment.

Technologies such as WirelessHART are internationally recognized standards that build upon existing HART technology, which is already in common use in process plants. This means the WirelessHART standard is readily accepted and easily integrated into most any automation system, irrespective of the system's age. The user is thus not constrained by the limitations of the site's existing automation and instrumentation systems.

**Address key priorities together**

A wireless infrastructure is scalable and flexible, so once it's in place, other operational expense (OPEX) or health, safety, security and environment (HSSE) projects can leverage the initial investment in the wireless network by layering other applications, which can all coexist in the same network. For example, a program to improve compliance to regulatory directives in the monitoring of safety showers can use the same wireless network infrastructure as a heat exchanger monitoring system.

Modernization projects requiring conventional instrumentation upgrades can also significantly benefit. For example, even substituting a few wireless signals on a mostly wired project can deliver significant benefits for the project and into the future. Present benefits are gained when wireless is used to provide access to instruments located in areas, which are difficult and expensive to access with wires. Future benefits are realized by virtue of the fact that once deployed, the wireless infrastructure is there for future projects.

**Make the most of the technology**

Compared with wired installations, wireless instrument installations are inexpensive, quick and simple. Therefore, wireless infrastructure and instrumentation are often ideal for quickly reducing operating expenses at minimal cost.

The first hurdle to kicking off a conventional wired project on an existing Brownfield site is the sheer complexity of getting all stakeholders aligned and signed up for the required engineering effort. A wireless project, on the other hand, requires minimal support from each department, so interdisciplinary coordination is greatly simplified, and project critical path planning is less onerous. For example, instrument commissioning is not reliant on a whole range of other things being in place such as marshalling panels, junction boxes, conduit, I/O cards, etc. The simplified wireless implementation means the cost and time to deploy is minimal, with installations taking days rather than weeks.

Once in operation, the wireless network can accommodate multiple applications, unlike a wired project, which is typically designed to solve the problem at hand. Ongoing reliability and maintenance is also greatly reduced, as wired instrument installations require periodic inspections as defined in IEC60079 Part 17, while wireless installations do not.

**Remember important guidelines**

Many process plants have realized benefits by installing wireless instruments and infrastructure for applications such as monitoring heat exchangers, pressure relief valves at flare gas stacks, pumping systems, and steam traps. In many cases, wireless instrumentation can be installed where wired instruments would be too difficult or expensive to install.

Be sure to set up a cross-functional working group to align the organization, define current problem areas and set a road map for functional requirements. Look at manual processes where repeatability and consistency are required for uniform operations, and determine how these can be automated.

In addition, involve maintenance personnel to identify pieces of equipment that cause problems. In many cases, plants rely on manual rounds because conventional instrumentation has been far too expensive to justify
considering automating monitoring. With wireless, almost any piece of equipment anywhere in the plant can be monitored for a reasonable cost.

Plants should also put into practice a system of continuous improvements, where manual tasks or lack of information can be addressed through the addition of measurement points. Once a wireless infrastructure is in place, additional projects become easier and less expensive.

Significant benefits can be realized from adopting HART-based technology plantwide. This technology is readily accepted in most every facility because the tools and device interactions for WirelessHART devices are the same as for wired 4-20 mA HART devices. This lets plants focus on the information rather than the technology transport mechanism.

The operational assessment described above can help plants prioritize and justify project budgets previously deemed low-priority or unattainable with conventional wired instrumentation. The assessment also can show how to consolidate projects that enable incremental improvements across multiple areas. Finally, an operational assessment can illustrate how to extend the life of an aging automation system by wirelessly enabling that platform, allowing for an expansion of signals and enhancing the capability to receive additional actionable information through wireless signals.
Emerson’s HART Vibrating Fork Level Detector Offers Greater Ease-Of-Use, Reliability And Safety

By FieldComm Group
Jun 15, 2017

Emerson Automation Solutions has launched the Rosemount™ 2140, the world’s first wired HART vibrating fork level detector. Offering enhanced ease-of-use, smart diagnostics, and a remote proof-testing capability, the device provides reliable level detection while helping increase safety and efficiency of both plant and workers.

The Rosemount 2140 performs in applications with high temperatures and harsh conditions unsuitable for other level monitoring devices. It is easy to install and maintain as there are no moving parts. The device is virtually unaffected by flow, bubbles, turbulence, foam, vibration, sediments content, coating, liquid properties and product variations. It can be used to monitor not only liquids but also liquid-to-sand interface, which enables the build-up of sand or sludge deposits in a tank to be detected.

Compatible with the HART 5 and HART 7 hosts, the Rosemount 2140 enables operators to continuously monitor electronic and mechanical health. Frequency profiling functionality immediately detects any build-up, fork blockage, or excessive corrosion, indicating maintenance may be required and allowing this to be scheduled during periods of downtime. In addition, Power Advisory functionality monitors voltage and current drawn over the device’s lifetime with a Process Alert for potential issues that could become a problem, such as corrosion.

For more information, please visit the Emerson website.
Endress+Hauser’s Innovative Technology Provides Safe and Reliable Flow Measurement

By FieldComm Group
Jun 15, 2017

Endress+Hauser’s Proline 300 electromagnetic and Coriolis flowmeters combine well proven flow sensors and innovative transmitters to provide a new level of user convenience. The portfolio covers all aspects of flow measurement from simple quantities through process control to custody transfer. Versions, with FDA, SIL and Ex-certification as required, are available for e.g. oil, water, chemical, pharmaceutical and food applications. Every device is checked using accredited and traceable calibration facilities (ISO/IEC 17025).

Proline 300 has an optional FOUNDATION Fieldbus interface. In addition to providing field diagnostics, the sensor, electronics, configuration and process conditions are also monitored. Diagnostic messages, with remedial information, are sorted into four distinct categories, making it easy for users to identify and rectify faults. Additional diagnostic information is provided in an event log, which records all diagnostic, configuration and process events encountered in daily operation.

Optional Heartbeat Technology supports in-situ, metrologically traceable verification with automatic documentation. Other innovations include a WLAN display unit and integrated web server for data retrieval via wireless and laptop.

If cost-effective and efficient operation, maintenance and calibration are your goals, look no further than the new Proline generation.

For more information, please visit the Endress+Hauser website.
FCI’s Compact Thermal Flow Meter Line Expands With HART Bus Communication

By FieldComm Group
Jun 15, 2017

Featuring an all-new advanced electronics design, FCI’s thermal air/gas flow meter line now includes HART Version 7 digital bus communication and more. The new Models ST51A, ST75A and ST75AV Thermal Mass Flow Meters from Fluid Components International (FCI) provide users with an economical yet rugged solution to measuring air or gases in demanding industrial process and plant applications. They combine all-new, surface-mount, lead-free, RoHS-compliant electronics with highly accurate, repeatable, all-welded, equal-mass flow sensors.

In addition to HART bus communications, standard ST51A, ST75A and ST75AV outputs are dual 4-20 mA that meet NAMUR NE43 and feature a 500 Hz pulse. The electronics are housed in a rugged, IP67-rated, dual-cable port transmitter enclosure available in aluminum or a stainless steel version. The transmitter can be mounted directly to the flow sensor or remotely mounted up to 100 feet (30 meters) away.

The highly reliable ST51A, ST75A and ST75AV Flow Meters already have obtained the CE mark, and Div.1/Zone 1 Ex agency approvals of FM, FMc, ATEX and IECEx. Additionally, they have also been independently verified to meet International Electrotechnical Commission’s (IEC) standard IEC 61508 for Safety Integrity Level (SIL-1) rating.

For more information, please visit the FCI website.
Moore Industries’ SSX and SST Safety Isolators Provide Reliable Isolation and Conversion for Digital HART Signals

By FieldComm Group
Jun 15, 2017

Moore Industries’ SSX and SST Safety Isolators and Splitters provide reliable isolation and signal conversion for HART data in functionally safe process control settings. Part of Moore Industries’ FS FUNCTIONAL SAFETY SERIES, the two-wire (loop-powered) SSX and four-wire (line/mains-powered) SST have been certified by exida for single use in Safety Instrumented Systems up to SIL 2. They were designed and built from the ground up to the strict IEC 61508:2010 standards for safety-related applications.

The SSX and SST protect safety systems by isolating an SIS from basic process control or monitoring systems so that disconnections or other failures don’t impact the safety system. They also have 1,500 Vrms of isolating capability to protect safety I/O cards and systems from surges, spikes and transients in the field. Standard 20V/m RFI and EMI protection stops damages caused by radio frequencies and electromagnetic interference.

While most isolators “strip off” HART data, the SSX and SST pass along HART data to asset management systems, programming devices or host systems. In addition, the SSX stops ground loop noise and solves “bucking” power supply problems caused when two devices try to source power to the same loop.

For more information, please visit the Moore Industries website.