Honeywell

Experion® LX
FOUNDATION™ Fieldbus Integration

Honeywell's Experion LX FOUNDATION Fieldbus solution delivers outstanding system performance and unparalleled ease of use while reducing installation costs, decreasing commissioning time and lowering maintenance expenses.

Experion LX and fieldbus meet the needs of the process control industry.

Experion LX's Unmatched Features and Benefits

- Full and easy access to the rich information contained in each FOUNDATION Fieldbus device

- Robust design with optional module redundancy

- Easy, intuitive engineering with Control Builder

- Instant device integration through direct use of Device Description (DD) files by Control Builder

- Efficient integration to other applications and control systems with Open Data Access

- Timesaving Firmware Download feature

- Unique Chart Visualization to get the right information in front of the operator

- Full, optimized support of the Link Active Scheduler (LAS) and multiple back-up LAS devices

- Controller-independent design for maximum cost-benefit

- Full support for smart asset management integration

- Efficient and effective integration with Honeywell's valuable suite of advanced applications

Transparent FOUNDATION Fieldbus Integration

The open standards of FOUNDATION Fieldbus are integrated transparently with Experion® LX, offering an advanced, high-performance fieldbus solution with a number of exceptional benefits. The solution delivers outstanding system performance and unparalleled ease of use while reducing installation costs, decreasing commissioning time and lowering maintenance expenses.

Why Buy the Experion LX Solution?

- Delivers significant and measurable cost savings and plant performance improvements

- Transparently integrates device and sensor information and diagnostics

- Provides unparalleled ease of use as well as performance unmatched in the industry

- Honeywell's fieldbus and asset management integration substantially increases safety, system and process availability — reducing unplanned downtime

- Supports implementation of fieldbus and a wide range of applications with globally-integrated engineering and project management services that are best-in-class

- Interoperability is verified and ensured through our global interoperability test laboratory

The Honeywell Advantage

The high-performance Experion LX Fieldbus Interface Modules (FIMs) thrust integration technology light years ahead by completely and transparently integrating FOUNDATION Fieldbus with the Experion LX system. The Series 8 Fieldbus Interface Module (FIM4) Kit helps provide the benefits you expect from this powerful technology.

The FIM4 Kit supports four (4) H1 links and can be configured in a redundant or non-redundant fashion and integrate transparently with the Experion LX C300 Controller. The FIM4 kit features a high-capacity design that delivers system-wide integration of data access, control, connections, diagnostics, and alarms with the Experion LX system.


The Experion LX FIM4 Kit delivers robust fieldbus device integration.

Control Builder Enables Easy Engineering

Control Builder, the common Experion LX engineering tool, integrates fieldbus and other control components into a single, unified database. Connections between FOUNDATION Fieldbus and controller function blocks are achieved easily, transparently and quickly with a stroke of the mouse. Control "in the field" (between fieldbus devices) is handled with equal ease. Fieldbus and Experion LX function blocks can be mixed and matched in the same control drawings. Just drag, drop and use!

The Control Builder tool not only offers an efficient process for control system configuration, but it also results in significant project cost and time savings. Control Builder helps make interconnection between FOUNDATION Fieldbus and Experion as effortless as possible.

Important timesaving features in Control Builder include device replacement (to replace failed devices), block assign and un-assign (for configuration flexibility), and device upload (to save valuable information in devices). Managing smart devices is made easier with the Compare Parameters function, where it is possible to easily validate the field instrument database against the control system.
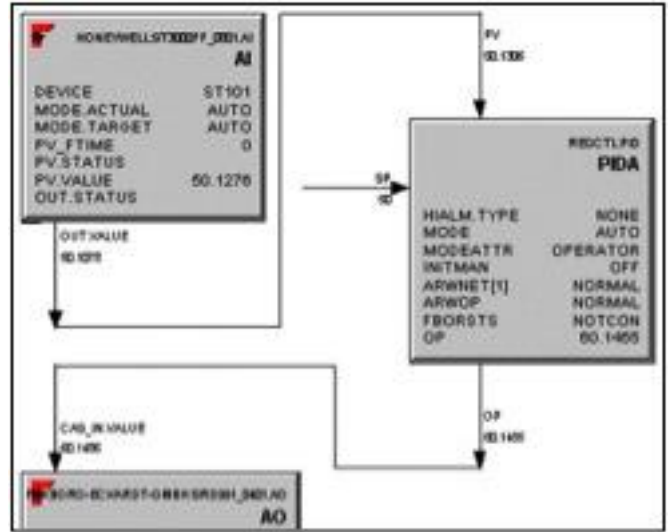
Connections between fieldbus and controller blocks are easy with the Experion Control Builder tool.

An especially useful feature is automatic recognition of non-commissioned (new) fieldbus devices on the link. When a new device is added to the link, its presence is detected and shown on the FIM's informative display as well as in Control Builder. Important information about the device, including tag name, address, model, and revision, are immediately available, so you always know which devices are on the link.
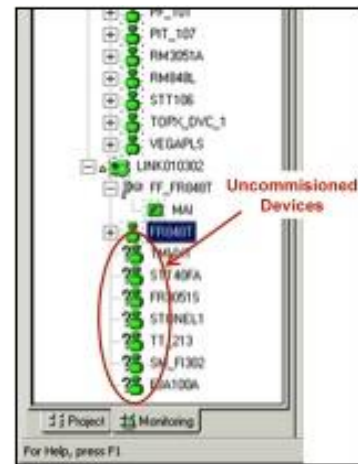
The Experion Control Builder tool provides on-line recognition of Fieldbus devices added to the link.

Control Builder Enables Direct Use of Device Files

There is no need to wait for special files to use the latest available FOUNDATION Fieldbus devices. Control Builder reads Device Description (DD & EDDL) and Capability Files (CFs) from the device manufacturers or from the Fieldbus Foundation. Devices are then added to the Control Builder library in seconds for off-line and on-line configuration. It's that simple and quick!
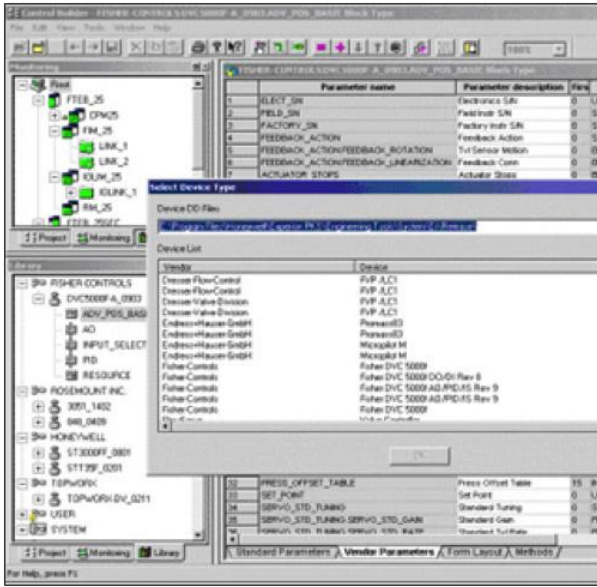
Reading Device Description and Capability Files is easy.

Parameter help information is embedded in the DD files. Additionally, each parameter is indexed to Control Builder. From Control Builder, the user simply selects a fieldbus parameter, strikes the F1 Help key, and KB is invoked with that parameter selected. There is no extra effort required. The entire process is handled by the system, with help information completely integrated and available when needed, saving time and expense.

Help information from DD files is automatically added to Knowledge Builder and indexed to Control Builder.

## Fieldbus Efficiently Integrates Other Applications

Honeywell's fieldbus solution is designed for efficient data access to any parameter, allowing the fastest possible call-up of device information. Whether you need detailed calibration information, a process variable or just a tuning constant, data call-up is quick and efficient, thanks to an ingenious and patented FIM caching mechanism.

Open Data Access (ODA) provides data from the Experion database, including fieldbus information, when needed by another application or control system. It offers direct, third-party access to all device parameters through several mechanisms, including OPC, ODBC Driver and Microsoft Excel Data Exchange.

Some examples of ODA applications include:

- Reading data into a Microsoft™ Excel spreadsheet

- Running a query on the database from Microsoft Access

- OPC Client requiring point data

Network Application Programming Interfaces (APIs) can integrate third-party applications with the control system. For example, Microsoft Excel Data Exchange enables Excel to access real-time and historical data from fieldbus and non-fieldbus devices. This option also provides read and write access to data for powerful data consolidation and reporting applications
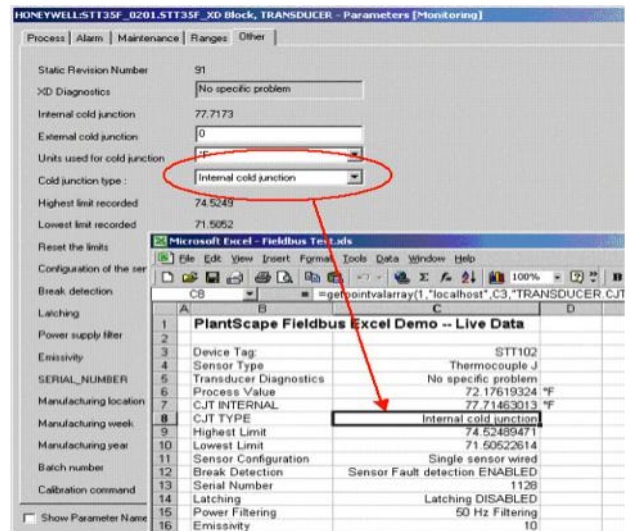
Reading data from devices into Excel spreadsheets is easy.

Update Devices In-Place with Firmware Download

Firmware Download is a unique and timesaving feature offered with Honeywell's FOUNDATION Fieldbus solution. With Firmware

Download, there is no need to physically change firmware, nor disconnect or remove devices for updating to the latest available revision, as the entire download process is handled directly from Control Builder. Honeywell pioneered this capability to handle new product enhancements and bug fixes, and it has now become a FOUNDATION Fieldbus specification.

Firmware download times vary by device. Experion can simultaneously download the latest firmware to multiple field devices, saving time and money, especially with large projects.

Unique Chart Visualization Feature Gets the Right Information to the Operator

FOUNDATION Fieldbus enables manufacturers to provide each device with a unique and differentiating set of capabilities and parameters. A temperature transmitter, for example, has a completely different set of capabilities and parameters than a control valve. Chart Visualization is a powerful, timesaving feature for viewing manufacturer-defined information. It presents device blocks (Resource and Transducer) and function blocks (AI, AO, PID, etc.) with all manufacturer-defined information, directly to the operator. Chart Visualization doesn't require custom forms or displays for every type of device.

There is no need to worry about security of parameters. Access to parameters follows the security level of the Operator Station and is the same as for parameters in all other displays. No special engineering effort is required and implementation time is reduced to zero.

Of course, Experion provides complete flexibility to create your own custom detail displays. Once you've used Chart Visualization, though, you'll probably want to take advantage of its time-saving feature.

Full Support for Link Active Schedule and Backup Link Schedule

Graphical support of the Link Active Schedule (LAS) allows you to see what's going on, providing complete flexibility to adjust schedules based upon the needs of your control scheme. Experion also supports the Back-up Link Active Schedule – a capability that Honeywell pioneered – in multiple LAS-capable devices.

The Backup LAS is an important component of FOUNDATION Fieldbus robustness. It ensures that a device on the link will take control in the unlikely event of FIM failure, removal or disruption. Fully supporting FOUNDATION Fieldbus specifications, Experion provides all devices on the link with active Backup LAS capability, enabling maximum link availability.
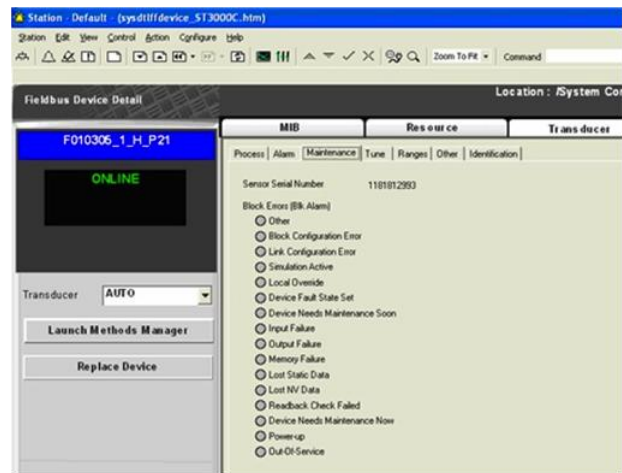
With Chart Visualization, operators have instant access to all fieldbus device information.

Experion supports a patented Link Schedule Optimization algorithm that optimizes the link function block publication schedule. This algorithm prioritizes and optimizes the link by maximizing parallel execution, minimizing loop latency (improving control), and maximizing available communications bandwidth (allowing for more devices or better performance), resulting in significant cost savings over competitive systems.

No Single Point of Failure with Robust Fieldbus Redundancy

With Experion, fieldbus redundancy is robust with no single point of failure. The Series C FIM4 and FIM8 support direct module-to-module redundancy. The CIOM-A FIM uses the Redundancy Module (RM) to completely synchronize the primary and secondary FIMs. fieldbus devices, function blocks, and control strategies are all built in the same way, whether redundant or not and regardless of FIM used. This makes redundancy transparent. The user sees a single set of tags, and there is no need to re-think control strategies to accommodate redundancy. Function blocks continue to execute and communicate during switchover or failover.

With Honeywell's advanced diagnostics, the primary and secondary fieldbus modules are in constant communication. The absence of a redundant partner, for example, is detected and the user receives a system notification rather than a process alarm.

Asset Manager Allows Real-Time Asset Management

Asset Manager continually monitors status, events and operating conditions around field devices and control system hardware devices. It automates collection and assessment of current asset conditions to support directed troubleshooting for condition-based monitoring. Reducing time for identifying and resolving system

faults, device faults and abnormal conditions dramatically improves performance related to maintenance activities. Most importantly, safety, system and process availability is substantially increased when off-spec product, unplanned downtime and process turn-around time is reduced.

Refer to the Asset Manager specifications for details.
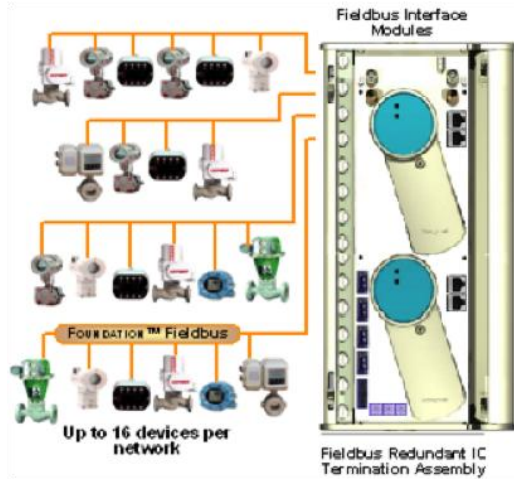
With Experion LX, your fieldbus system is secure. A redundant FIM4 is shown above.

Honeywell Field Device Manager (FDM)

Field Device Manager (FDM) provides an environment for remote management of smart instruments. Support is available for HART®, PROFIBUS® and FOUNDATION Fieldbus instruments connected to Experion and non-Experion networks. For fieldbus, this support is provided specifically for advanced diagnostics through FDT/DTM (Field Device Tool/Device Type Manager) technology. This enables the use of manufacturer-specific, specialized software (DTMs) created for complex devices such as valves to provide advanced functionality not available via DD or EDDL files.

Refer to the FDM PIN document for full details.

Advanced Diagnostic Handling

All fieldbus devices provide and report a comprehensive set of diagnostic conditions and information. Although very valuable, this information can flood the operator with information that can't be effectively processed or managed.

The Honeywell advanced alarming feature allows the user to categorize and prioritize device diagnostics into manageable information that an operator can more easily understand and more effectively respond to.
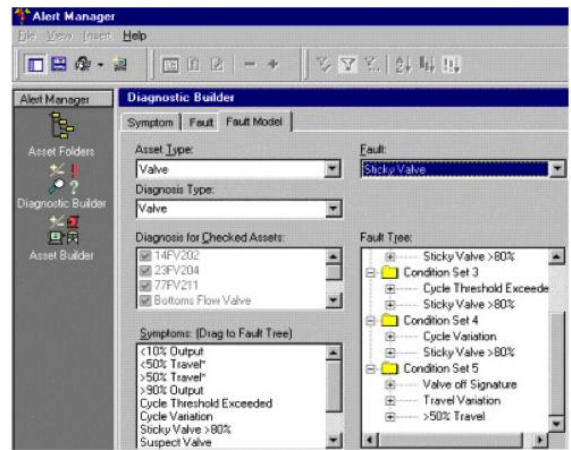
Alert Manager provides simple diagnostic configuration with easy drag and drop capabilities to quickly build fault models.

World-Class Fieldbus Project and Engineering Services

Honeywell best-in-class project execution and delivery capabilities provide application knowledge and experience for your next fieldbus project. Globally integrated project management and engineering deliver the full potential of your process automation hardware and software systems. We have Experion fieldbus installations that range from small pilot operations to large plants with thousands of devices. Applications include chemical plants, boilers, pilot plants, offshore and on-shore oil and gas, refining and pharmaceuticals.

Fieldbus Interoperability Test Lab Ensures Successful Device Integration

Experion uses the Control Builder tool to create a library of fieldbus devices and their function blocks. Experion also uses Control Builder's off-line capabilities to implement strategies involving fieldbus devices and to support live device commissioning. For the system and the FIM to work properly, devices must be registered with the Fieldbus Foundation at level ITK 4.0 or higher.

The official Fieldbus Foundation Registration Mark.

Honeywell maintains a Fieldbus Interoperability Test Laboratory for testing FOUNDATION Fieldbus devices with Experion. Although most devices integrate easily, in some cases, device manufacturers' interpretations of the fieldbus specifications may vary. When device interoperability problems arise, Honeywell and the device manufacturer work together to create a successful integration.

Contact Honeywell to find out which devices have been tested and to arrange for testing of any devices that are required for your project.

New Host Profile Registration Process

The Fieldbus Foundation's previous Host Interoperability Support Test (HIST) provided a host test protocol with no provision for formal product registration. With HIST, the host vendor chose the implementation.

As of January 2009, all host systems must pass a formal test process (administered by the foundation) to be considered an official registered Host.

Under the new Host Profile Registration Process, the foundation conducts functional testing with a test device and specialized test DDs and CFs. The host profile under test must support a clear set of required features.

With Experion LX R120 and subsequent releases, Experion LX is a 61a-compliant system and has passed all required host profile registration testing.

Refer to the Fieldbus Foundation website at the following link for proof of compliance: http://www.fieldbus.org/. Host systems that have not passed the formal testing cannot appear on the website.

For more details and specifications, refer to the Experion LX FOUNDATION Fieldbus Integration Product Specification.

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For More Information
Learn more about how Honeywell's Experion LX solution can improve plant performance, visit our website www.honeywellprocess.com or contact your Honeywell account manager.

Honeywell Process Solutions
Honeywell
1250 West Sam Houston Parkway South
Houston, TX 77042

Honeywell House, Arlington Business Park
Bracknell, Berkshire, England RG12 1EB UK

Shanghai City Centre, 100 Junyi Road
Shanghai, China 20051

www.honeywellprocess.com

Honeywell