For over thirty years MTL has been the world leader in intrinsic safety (IS) interfaces for hazardous areas, producing barriers and isolating interfaces to help prevent explosions in process industries. As a result of this expertise, MTL have developed a range of integrated solutions specifically for use with Honeywell Control and Safety Systems.

Since 1992, MTL and Honeywell have collaborated on key projects and initiatives culminating in MTL being selected as the primary supplier of GuIS interfaces on the new flagship C300 Series system.
MTL Integrated Solutions allow users to efficiently interface field signals to Honeywell systems thus keeping life cycle costs to a minimum.

Integrated solutions are available for the new Series C300, Series C200, Process Manager and Safety Manager platforms.

The innovative design of the Series C I/O and controller modules combine function and style to provide efficient installation and maintenance with a compact footprint. MTL offers several custom products to support, maintain and extend the benefits of the Series C infrastructure providing specifically:

- Galvanic isolation and Intrinsic Safety (GI/IS)
- Fieldbus power supplies, integrated diagnostics and wiring components
- Fibre Optic Extenders (FOE) for I/O link

All MTL products are extensively tested within Honeywell to confirm their performance and suitability for purpose. This process ensures that they meet the demanding Honeywell quality standards, eliminate compatibility issues and reduce risk for the customer application.

The GI/IS fully integrated, custom Input/Output Termination Assembly (IOTA) solutions offers the highest level of integration. The IOTAs, with no interconnecting wiring, provide the user with a simple engineering solution. Working closely with Honeywell, the customised IOTAs from MTL are designed to fit on extended mounting channels within the cabinet. Connection of intrinsic safety field signals is made directly to the MTL4500 Series modules, providing galvanic isolation to the field and system IO, along side the Honeywell Input / Output Modules (IOMs), power and communication signals.

GI/IS IOTAs from Honeywell offer the most reliable, simple, and space saving solution. Honeywell’s integrity in the field of process control is brought together with MTL’s experience in intrinsic safety and reputation for quality and reliability in the industry.

“Integrated solutions are available for the new Series C300, Series C200, Process Manager and Safety Manager platforms.”
Fieldbus Interface Modules (FIMs) support communications with FOUNDATION Fieldbus™ field instruments but do not power the fieldbus segments. Redundant power for four (F660A) or eight (F860A) fieldbus segments is implemented by use of the MTL designs that fully comply with Honeywell IOTA dimensions and mechanical profile. Furthermore, continuous ‘online’ diagnostic information for each of the segments can be obtained by plugging a Physical Layer Diagnostics module (F809F) onto the F860A.

Field wiring of fieldbus network segments (Intrinsically Safe and Non-incendive) is rendered simple by use of Megablocks and these are ideal for both retrofit and greenfield installations. Megablocks minimise hand wiring and allow individual devices to be added to or removed from the segment without disrupting network communications. Also, the Fieldbus Barrier (9311-FB) is a field-mounted wiring hub that creates intrinsically safe spur connections from a non-intrinsically safe trunk, for connection to fieldbus field devices. MTL offer practical solutions for the integration of fieldbus devices with the C300 controller.

"MTL offer practical solutions for the integration of fieldbus devices with the C300 controller."

Fibre Optic Extenders

The C300 controller can be connected to remote Series C I/O or Process Manager I/O through the use of an I/O Link Fibre Optic Extender (FOE) module.

The FOE connects to the copper I/O link and provides two fibre optic ports enabling the connection from one local cabinet to multiple remote sites. This gives the ability to implement a variety of topologies combining fibre to copper conversion, re-transmitted fibre signals and branching of the incoming cable to provide a total of three repeated fibre-optic ports.
MTL knows the value of an integrated diagnostic capability. The F809F module is unique in that it provides simple "plug 'n play" physical layer diagnostics for any fieldbus user. And because it appears as a fieldbus device, the user interface is the standard instrument management software used for every other fieldbus device on the system. No extra cabling is required because it integrates seamlessly with the Honeywell C300 host system.

MTL power supplies, diagnostics module and wiring components satisfy a wide variety of end-user preferences for maintenance practice and choice of explosion-protection methods:

**High Energy Trunk**

- Networks deliver the highest level of power to the fieldbus trunk, to support heavily loaded segments and long line lengths. The technique is adaptable to both safe area and hazardous area applications, providing sufficient power not only for general-purpose installations with Megablocks, but also for I/O multiplexers and multi-spur Fieldbus Barriers.

**Energy-Limited Trunk**

- Networks the entire field circuit, including the trunk and all spurs, is live-workable in hazardous areas. The Fieldbus Intrinsically Safe Concept (FISCO) and Fieldbus Non-Incendive Concept (FNICO) are recognised in international standards and widely adopted by users who wish to enjoy the full benefits of intrinsic safety maintenance practice in fieldbus systems.
In addition to the support of GI/IS interfaces through the Process Manager I/O, signal isolation and intrinsic safety for alternative I/O equipment can be implemented through the MTL5000 range of isolators. The MTL5000 series enable an effective solution for both small and large projects and can be mounted in any combination on standard DIN rail.

The link between HART® field instruments and the control system is provided by the MTL4840 HART® connection system. The MTL system strips the HART® digital signal from the 4-20mA signal (which passes to the control system unscathed) and sends it directly to a maintenance PC, thus giving access to the benefits offered by on-line configuration and predictive maintenance software packages.

MTL manufacture a wide range of integrated connection units for Honeywell systems to provide simple to install and cost effective HART® solutions. The customised boards are simply installed in place of the standard FTA’s to provide direct pickup of the HART® signal.

For C200 fieldbus installations MTL has developed the F650A 2-segment redundant power supply. This compact, DIN rail mounted unit features “hot swappable” power modules and on-board fault and alarm monitoring for maximum availability. Intrinsically safe environments will benefit from using the F656 FIM adaptor combined with two FISCO power supplies to give live working in hazardous areas and simplified documentation.

“An installed base of more than two million signal channels is testament to the suitability and reliability of the MTL4000 product line.”
SOLUTIONS FOR HONEYWELL SYSTEMS

To provide an interface to intrinsically safe process signals for the Safety Manager and Fail Safe Control (FSC™) safety systems, MTL offer a range of backplanes and interface cards as plug-in replacements for the Honeywell FTA’s. In addition to the full range of MTL4500 Series integrated solutions, the MTL4000-SR, MTL5000-SR and MTL4840 HART® products come fully certified to the IEC61508 standard for use in safety instrumented systems. HART® digital communications are also commonly used in conjunction with safety instrumented systems to exploit the benefits of the added diagnostics available with smart field devices. The MTL4840 HART® multiplexer is SIL certified so these functions can be used without compromising the integrity of the signal loops.

Honeywell has incorporated SafetyNet into their functional safety system offering. Honeywell’s Safety Manager, an integrated SIL 3 approved Safety Instrumented System, is optimized for concentrated high-density I/O and large system applications. The cost-effective SIL 2 approved SafetyNet complements the SIL 3 rated Safety Manager, providing affordable solutions for those applications that also require lower cost SIL 2 solutions.

MTL’s application note AN0025, ‘An introduction to Functional Safety’ explains the principles of IEC61508 along with worked examples of solving practical issues associated with the standard. Copies are available from www.mtl-inst.com or your local MTL office.

The modern electronics associated with today’s leading edge plant control systems rely heavily on very sensitive, low energy high-speed components. These components are very vulnerable to damage caused by induced current surges and transient voltages. Sources of these transients include natural phenomena (lightning, static discharge) and random, man-made events (power switching, spikes, welding current faults). Surge protection is designed to mitigate the risks to a plant control system from surges thereby avoiding downtime and unreliability associated with component failures.

Surge protection devices are available for all the commonly used instrumentation on today’s modern process plant and the range of products available include:

- FP32 for Foundation Fieldbus trunk networks
- TP32 for Foundation Fieldbus field devices
- MA4000 Series for ac or dc power supplies
- SD and SLP Series for I/O applications
- Zone Barrier Series for single/multi-port network protection
- Zone Defender for lighting systems and distribution panels
Ethernet Everywhere with MTL support - all the way into Zone 1/Div 2 - just the combination you need to ensure a successful project, including our new Industrial Security Appliance "Tofino™" that makes sure that your data and network stay that way. MTL can provide a complete suite of Ethernet appliances from switches, to media converters, protocol converters (EIA-232 and EIA-485), video drivers, and wireless access points. And with Intrinsically Safe "Power Over Ethernet" - PoEx™ - technology we can deliver your signals safely into Zone 1/Div 1 hazardous areas.

With ELPRO industrial wireless products, we provide secure and reliable solutions for a wide range of industries and applications. ELPRO technology focuses on Industrial Wireless I/O, Gateway Serial and Ethernet products using license-free & licensed radio bands. The Wireless / Radio Telemetry products are fully integrated, easy to use, easy to configure and offer high reliability. The ELPRO WIB - Wireless Instrumentation Backbone - offers a plant wide wireless network for connecting instrumentation and control signals. The WIB utilises ELPRO’s field-proven 105U & 905U range of license-free radios. Our products are designed for both unit expansion along with network expansion. Wireless I/O units have additional I/O expansion modules that increase functionality along with extending networking capabilities through easily configured module stations.

Visualisation & Displays

Designed as a Panel PC, the EXPLORER is based on a modular concept - in line with our range of CHALLENGER remote PC terminals. Using this concept RAM, CPU, Ethernet, Industrial Ethernet, USB, RS 322, RS 422, RS 422 interfaces etc. can all be configured in the same way as all operating and visualization components (display, touch screen, trackball, joystick, keyboard…). Whether for local display purposes or operation of software in Ex Zone 1 / 2 / 21 / 22, for client server applications (SCADA) for control of PLC or as a web terminal – the EXPLORER PANEL PC offers maximum flexibility to individual requirements. Constructed as an intrinsically safe panel mounting module, this PANEL PC can be easily integrated into all FHP housings, as well as any customized housings.

Ethnic Network Security

The Tofino™ Industrial Security Solution is designed specifically to provide a defence-in-depth solution for both new and legacy control systems. Think of it as a combined personal firewall and intrusion detection system for operator stations, PLC, RTU and DCS systems, giving your control system layers of security with which to protect itself, rather than one single point of security failure. It even understands SCADA and process control protocols, so it acts as a barrier to prevent all unauthorized access while in no way obstructing valid control commands.

MTL and CSL, two companies known for their knowledge in Intrinsic Safety, are proud to introduce another world first, Intrinsically Safe "Power Over Ethernet" PoEx™. This ground breaking technology brings the concept of a single cable connection for Industrial Ethernet enabled devices suitable for mounting in any environment through to Zone 0. The range, consisting of an Ethernet Switch, Serial Gateway, Wireless access point, and Media Converter – all suitable for Zone 1 mounting, combine with a Zone 2 mounted Power Supply and Isolator unit to provide a complete “Ethernet anywhere” solution.

Plant and personal safety is a key consideration in today’s working environment. RTK Instruments supplies alarm systems and associated instrumentation - from a single sounder to a complete plant wide alarm and monitoring system. In the safety business, reliability is everything, and RTK offers a Five Year Warranty on all its standard products. And the technology itself is even more impressive. Products such as the Series 725 Programmable Alarm Annunciator are the most innovative on the market today - anywhere in the world. The LN1000 Intrinsically Safe Alarm Annunciator is a totally unique product - worldwide - helping to keep operators and the environment safe and process plants running smoothly.
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