MTL Instruments

Product Overview

COOPER Crouse-Hinds

Open system electronic components and protection equipment for the process control industries

‘MANY OF THE WORLD’S MOST SAFETY-CRITICAL PROCESSES ARE MONITORED, CONTROLLED OR PROTECTED BY MTL INSTRUMENTS PRODUCTS’

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Welcome to the

MTL Instruments Product Overview

MTL Instruments, a division of Cooper Crouse-Hinds, is a world leader in the development and supply of system infrastructure products and protection equipment to the Process Industries.

The combination of Cooper Crouse-Hinds’ expertise in the electrical components sector balances with MTL’s expertise in the instrumentation sector. This combination delivers a unified approach to intrinsic safety and explosion protection techniques in industrial plants, and provides customers with a unique, single source of supply.

MTL Instruments has built an enviable reputation as a leading global provider of Intrinsic Safety explosion protection devices, fieldbus and industrial network components and systems for use in process control applications, lightning, surge protection and gas analysis equipment.

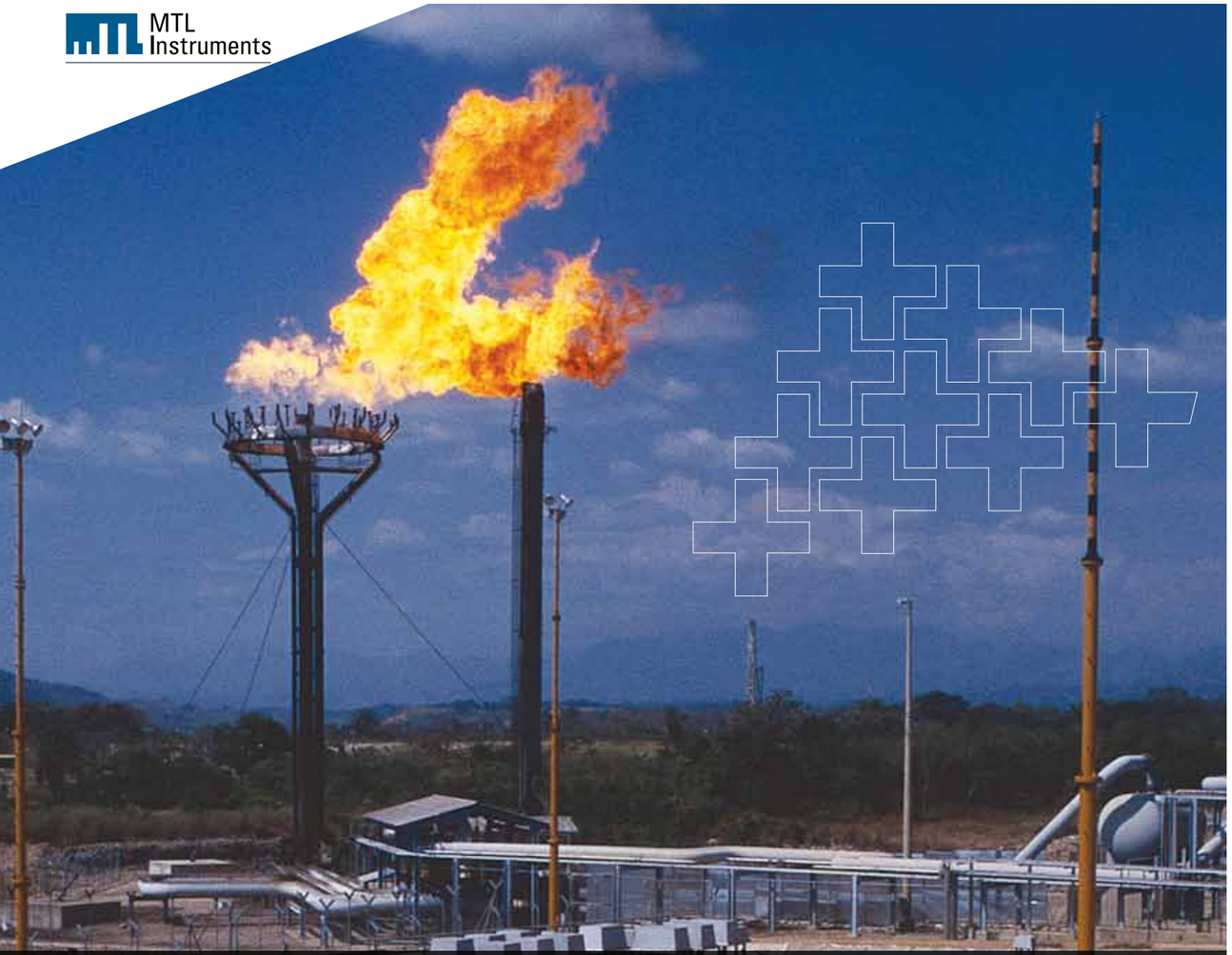
MTL Instruments Worldwide Headquarters, Luton, UK.

Many of the world’s most safety-critical processes are monitored, controlled or protected by MTL Instruments products and the company is distinguished by its global network of sales and support centres and by its acknowledged position as a thought leader in this high technology marketplace.

We hope this product overview gives an insight into the MTL Instruments product range. More detailed product information is available in separate, comprehensive catalogues or data sheets available from your local MTL Instruments office, or via our website.

MTL - Making Process Connections Worldwide

COOPER Crouse-Hinds

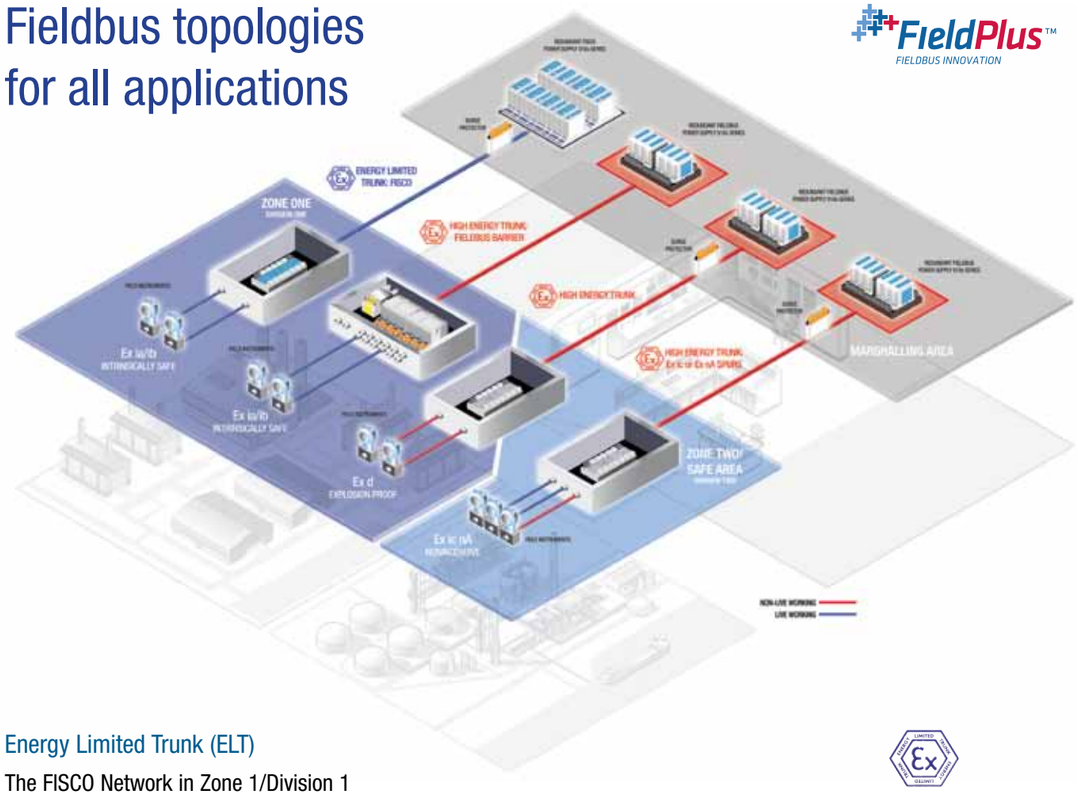


Foundation™ fieldbus Solutions

Foundation™ fieldbus H1 provides an open, non-proprietary fieldbus network for control systems and field instruments. It is intended primarily for process control, field-level interface and device integration. H1 is designed to operate on twisted pair instrument cabling and also supports Intrinsically Safe (IS) applications. Each device communicates via an all-digital, two-way communications system. MTL provides a comprehensive range of fieldbus power supplies, wiring components, diagnostic tools and displays for Foundation™ fieldbus H1 networks.

FieldPlus brings together MTL's complete range of fieldbus physical layer components to deliver an unrivalled source for system specifiers and all parties involved in the design, installation and commissioning of Foundation™ fieldbus networks.

Fieldbus topologies for all applications



Energy Limited Trunk (ELT)

The FISCO Network in Zone 1/Division 1

FISCO provides the framework for assembling intrinsically safe (IS) fieldbus networks in Zone 1 and Division 1 hazardous locations. In a FISCO installation, the fieldbus trunk and all spurs are IS, meaning that 'live-working' may be permitted on any part of the network in the presence of a flammable atmosphere and without gas-clearance procedures. This characteristic means that FISCO is recognised as the safest of all explosion protection methods, and is frequently chosen where safe activity in hazardous areas is the primary concern.

High Energy Trunk (HET)

The Fieldbus Barrier Network in Zone 1

Fieldbus Barriers are widely adopted for Foundation™ fieldbus networks where there is a requirement to connect to intrinsically safe field instruments in Zone 1 hazardous areas. The advantages of Fieldbus Barriers, when used as part of a 'High Energy Trunk' concept, are the ability to support heavily loaded segments and long trunk cable lengths, while retaining the ability to conduct 'live-working' on the intrinsically safe spur connections.

Exd Instrumentation in Zone 1/Division 1

High Energy Trunk networks provide high levels of power to the field wiring of fieldbus installations, allowing heavily loaded fieldbus segments and extending the overall segment length. When used in hazardous area applications, the key restriction is that the fieldbus trunk and spur wiring must not be interrupted whilst powered. Where this can be accommodated, High Energy Trunk provides a simple, robust and reliable installation.

The High Energy Trunk Network in Zone 2/Division 2/Safe Area

The ability to conduct live maintenance - such as replacement of field instruments - is desirable for fieldbus networks in hazardous areas. For fieldbus segments in Zone 2, the emerging 'Ex ic' protection technique allows the spur wiring to be safely manipulated without requiring gas clearance safety checks, replacing the 'Ex nL' method. In Division 2 applications, the spurs may be live-worked if the field devices are certified with non-incendive field wiring parameters.

For further information about our "*FieldPlus*" network solutions products please visit **www.fieldplus.info**

Solutions to integrate with all fieldbus control system suppliers

MTL provides a wide range of fieldbus power supplies that ensure reliable power for Foundation™ fieldbus networks in safe and hazardous areas. From bulk power sources, through general purpose to fully redundant supplies to energy limited power supplies for full live working in hazardous area applications; MTL has a solution to meet your fieldbus requirements.

The wide range of power supplies can be easily integrated into your choice of control system with a selection of integrated solutions for all fieldbus control system suppliers.

Hazardous area applications are supported with the High Energy Trunk redundant or simplex power supplies integrated with wiring components or Energy Limited Trunk with FISCO (Fieldbus Intrinsically Safe Concept) power supplies for Zone 1/Div 1 locations and MTL's unique FNICO (Fieldbus Non-Incendive Concept) power supplies for Zone 2/Div 2.

FIELDBUS POWER SUPPLIES

FieldPlus™ FIELDBUS INNOVATION

Redundant Fieldbus power supplies
918x SERIES

MTL's new 918x Series Fieldbus power supplies are the first in the market to use an "N+1" architecture to provide redundant power for Foundation™ fieldbus networks, reducing the capital cost per segment by up to 25%. In contrast with conventional redundancy schemes that use power supply modules in a 1:1 arrangement regardless of actual segment loading, the 918x uses two or three modules per segment depending on the maximum demand current. For segments requiring redundant power up to 250mA - representing a significant proportion of segments in typical fieldbus projects - only two modules are required. The addition of a third module provides redundant power at 500mA.

The range also supports the full feature set required for today's large fieldbus projects, including small footprint, low power dissipation, on-line physical layer diagnostics and the option of integrated, pluggable surge protection.

- *Unique* "N+1" redundancy - can reduce initial capital cost by 25%
- Fully isolated hot-swappable power modules
- Integrated versions for major host control systems
- Reliable, screw secured pluggable field and power feed connections
- Choice of rising cage clamp screw or spring clamp terminals
- Screen pass-through or ground option without accessories
- On-line physical layer diagnostics option
- Pluggable trunk surge protection option

NEW PRODUCT RELEASE

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL Instruments office, or via our website.

Redundant fieldbus power for FOUNDATION™ fieldbus cards

FIELDBUS POWER SUPPLIES

FieldPlus™ FIELDBUS INNOVATION

Multi-segment power systems
F800 SERIES

The F800 Series carriers provide wire terminations for the 8 segments as well as mounting two F801 or F802 power supply modules. The F801 power supply modules provide 8 outputs of 21.5V, 350mA. The F802 power supply modules provides 8 outputs of 28V, 500mA for applications with fieldbus trunk lengths greater than 600m or heavily loaded fieldbus barrier applications.

- 1+1 redundancy
- Low power dissipation
- Choice of rising cage clamp screw or spring clamp terminals
- On-line diagnostics option

Single-segment Fieldbus power supplies
F10x

The F101, F102 and F104 fieldbus power supplies each provide power for a single Foundation™ fieldbus H1 segment. Galvanic isolation, power conditioning and segment termination are incorporated. The F10x Series modules are ideal for all new installations requiring single-segment, non-redundant power in small to medium scale applications such as batch processing.

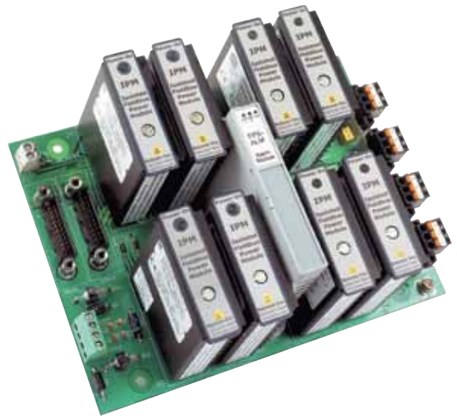
- Compact design
- Fully isolated
- Low power dissipation
- DIN rail power bus option

Single-segment power system
F600 SERIES

The F600 Series is a 'classic' single-segment power supply solution. Each F600A includes two FPS-IPM plug-in power modules for each of the fieldbus segments. These modules function as power conditioners, providing impedance between the input DC power supply and the fieldbus.

The F600A Series has now been superceded by their equivalent in the 9180 Series or F800 Series. For new applications, the 9180 Series or F800 Series are recommended, these offer benefits of greater efficiency, multichannel modules and new functionality.

The F600A Series option provides multi-segment fieldbus power using the FPS-IPM power modules.



FIELDBUS POWER SUPPLIES

FieldPlus™ FIELDBUS INNOVATION

FISCO (Fieldbus Intrinsically Safe Concept) power supplies
912X AND 910X SERIES

MTL's FISCO power supplies have become established as the industry-standard solution for Foundation™ fieldbus installations in which a fully intrinsically safe field network is required. The key benefits of intrinsic safety in fieldbus applications are the ability to carry out live maintenance on any part of the field wiring, and the elimination of complex mixed-protection techniques in the field junction box.

The introduction of power supply redundancy extends the benefits of FISCO into critical hazardous area applications requiring the highest levels of reliability. Such redundancy is routinely specified by knowledgeable end users and engineering companies for fieldbus installations in which failure could result in consequential damage or severe loss of production.

- Simplex (912x Series) and redundant (910x Series) options
- Safest possible technique in hazardous areas
- Fully live-workable field network
- Up to 265mA segment current
- Field junction box contains simple, highly reliable Megablock wiring hub
- Integrated versions for major host control systems
- Redundant power supply option provides unique combination of high system availability and operator safety

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FIELDBUS BARRIERS

FieldPlus™ FIELDBUS INNOVATION

Fieldbus Barriers
9370-FB SERIES

MTL's 9370-FB Series Fieldbus Barrier establishes a new benchmark for fieldbus networks in hazardous areas. It retains the major benefits of the High Energy Trunk technique while removing the drawbacks associated with existing Fieldbus Barrier implementations. The result is lower cost, safer operation and higher reliability throughout the life-cycle of the fieldbus network, with benefits not only for the plant operator but also for all parties involved in the design and installation process.

Uniquely, the key modular components of the system (Fieldbus Barrier, Terminator and Surge Protectors) may be 'hot-plugged' by design and without gas-clearance procedures or separate isolating switches. This virtually eliminates the risk associated with hazardous area maintenance activities, speeds module replacement and avoids the need for specialist operator training.

- Live-working for Foundation™ fieldbus networks in hazardous areas
- Complete enclosure system for 6 or 12 IS spur connections
- Integrated trunk and spur surge protection as initial build or retro fit
- Mount in Zone 1 (gas) or 21 (dust) with spurs into Zone 0
- Compatible with FISCO and Entity-certified fieldbus instruments
- Available in GRP or stainless steel enclosures
- Unique pluggable system components, without 'gas free' constraints
- Compact, modular construction, ergonomic mechanical design

Now with Redundant capability

Redundancy is routinely selected for fieldbus physical layer components, to avoid downtime and lost production. Now, for the first time, MTL gives users the choice of specifying redundant Fieldbus Barriers for segments that are critical to the 'up-time' of the process.

By duplicating the barrier function in the remote field enclosure, hardware failures are tolerated without interrupting the the operation of the fieldbus segment. When used in conjunction with redundant fieldbus power supplies, the redundant barriers deliver significant improvements in 'system availability' that will allow their use even in the most critical applications.

NEW PRODUCT RELEASE

FIELDBUS WIRING COMPONENTS

FieldPlus™ FIELDBUS INNOVATION

Megablock wiring hubs
F300 SERIES

The F300 Series represents the latest technology in fieldbus wiring hubs, building on three generations of Megablock products with an enviable installed base. Providing a simple and reliable means of connecting individual fieldbus instruments to the field network, Megablocks protect against spur short-circuits and allow instruments to be easily added to or removed from the segment without disrupting communications.

- Single-piece Trunk In/Trunk Out connector simplifies installation and maintenance
- Spur short circuit protection
- Removable Terminator
- Choice of rising cage clamp screw or spring clamp terminals for spurs
- Unique pluggable trunk and spur surge protection option
- Can be installed in Zone 2 or Division 2 with connections to Ex n or Ex ic field instruments

Intrinsically Safe Megablock wiring hubs
F200 SERIES

F200 Series Megablocks are specifically designed and certified for use in intrinsically safe fieldbus networks. When used with MTL's 912x or 910x Series FISCO power supplies, they allow complete IS segments to be assembled, for connection to field instruments carrying intrinsic safety FISCO certification. 'Entity' certified devices can also be supported using simple adaptors in each spur circuit. As the F200 Megablocks are part of an intrinsically safe circuit, no special certifications are required for the field enclosure - although the MTL range of range of Process Junction Boxes provide excellent environmental protection.

- Certified intrinsically safe for use in FISCO networks
- Compatible with simplex or redundant FISCO power supplies
- Spur short circuit protection
- Choice of rising cage clamp screw or spring clamp terminals for spurs

Increased Safety Megablock wiring hubs
F200-XE SERIES

The F200-XE Series Megablocks carry certification to the Increased Safety (Ex e) standard to allow installation in IEC Zone 1 hazardous areas. When mounted inside suitably certified Ex e field enclosures such as the MTL range of Process Junction Boxes, they avoid the need for heavy and expensive 'flameproof' (Ex d) field enclosures. They are compatible with conventional simplex or redundant fieldbus power supplies as part of 'High Energy Trunk' networks, with spur connections to Ex d certified field instruments.

- Installation in Zone 1 hazardous areas in suitably certified Ex e enclosures
- For connection to 'flameproof' (Ex d) field instruments
- Spur short circuit protection
- Choice of rising cage clamp screw or spring clamp terminals for spurs

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL Instruments office, or via our website.

FIELDBUS DIAGNOSTIC TOOLS

FieldPlus™ FIELDBUS INNOVATION

Diagnostic module
F809F

The physical layer is critical to the performance of the fieldbus system. The F809F Fieldbus diagnostics module monitors the performance of up to eight fieldbus segments providing comprehensive information on network health. During commissioning, the F809F collects data on the performance of the physical layer, provides alarms if any parameter is outside the preset limits, and is used to store a baseline segment performance within the system's Instrument Management Software.

- Monitors 8 fieldbus segments
- Reports parameters via Foundation™ fieldbus H1
- Easily integrates into your fieldbus control system
- Minimises total cost of ownership by integrating into the fieldbus H1 system
- Open system solution: compatible with all major DCS systems

Fieldbus monitor
FBT-6

The Fieldbus Monitor, FBT-6, is used to examine the operation of a live FOUNDATION™ fieldbus network without interfering with its operation. The FBT-6-PA Profibus PA Diagnostic Monitor can be used to examine the operation of a live Profibus-PA segment without interfering with its operation. These monitors are intended for maintenance personnel to verify network operation or to troubleshoot an errant network. Data collected can be saved into the FBT-6 and saved as a Microsoft® Excel formatted report that can be used to document commissioning or periodic monitoring.

FIELDBUS DEVICES AND ACCESSORIES

FieldPlus™ FIELDBUS INNOVATION

Fieldbus H1 and Profibus PA Displays
BAx SERIES

MTL supplies the widest range of fieldbus displays from 8 variable to cost effective single variable version, field and panel mount variants, safe and hazardous area version as well as FOUNDATION™ fieldbus H1 and Profibus PA versions. All versions are bus powered to simplify installation.

The 8 variable BA-x8x version provides a large 86 x 45 mm back-lit display with 9 standard screen options displaying 1 to 4 variables, measurement units and tags as well as bar graphs. The operator can select the displayed screen via the front panel push-buttons, or these buttons may be disabled. The instrument can be supplied with six isolated alarm outputs, each of which may be linked to any of the displayed fieldbus variables. Alarm setpoints can be entered via the front panel push-buttons, which in turn may be protected by a security code.

FOUNDATION

Enclosures

As part of the Cooper Crouse-Hinds organisation, MTL has access to a complete range of steel and GRP enclosures and is able to supply complete, engineered solutions for Megablocks and other field wiring components. Detailed specifications can be met for accessories and internal wiring, minimising the engineering and project management burden. Cooper Crouse-Hinds enclosures are internationally respected and often pre-qualified by end users and plant operators.

FOUNDATION

Surge Protection

The design and manufacture of Surge Protection devices has been an MTL strength for many years.

They afford the highest level of protection for complete networks, to defend control systems and associated fieldbus instruments from surges entering through the fieldbus trunk or spurs. Many MTL fieldbus products are supplied as standard with the ability to accommodate optional surge protectors, with the benefit of reduced engineering and wiring costs.

FOUNDATION

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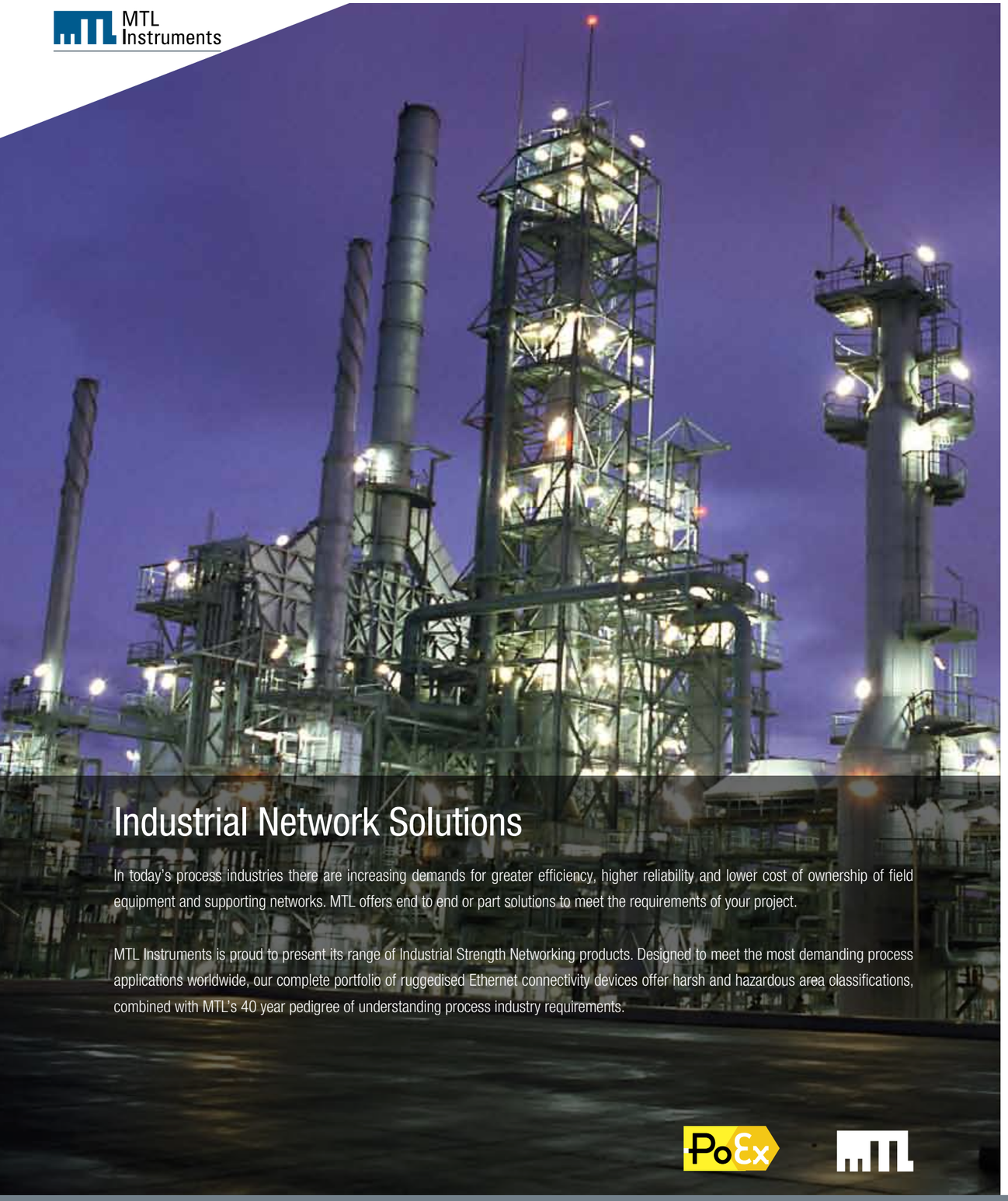
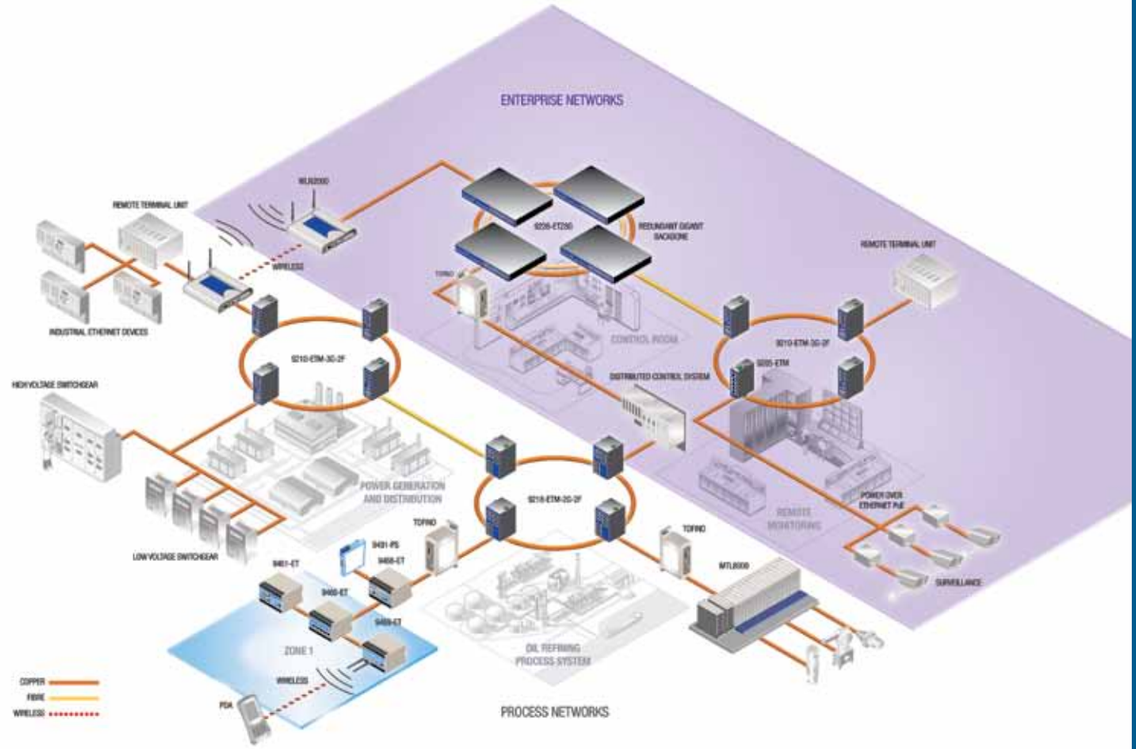


Industrial Network Solutions

In today's process industries there are increasing demands for greater efficiency, higher reliability and lower cost of ownership of field equipment and supporting networks. MTL offers end to end or part solutions to meet the requirements of your project.

MTL Instruments is proud to present its range of Industrial Strength Networking products. Designed to meet the most demanding process applications worldwide, our complete portfolio of ruggedised Ethernet connectivity devices offer harsh and hazardous area classifications, combined with MTL's 40 year pedigree of understanding process industry requirements.



Ruggedised Ethernet

MTL Instruments can supply a full range of "industrial strength" Ethernet products to satisfy the most demanding process applications. Our Ruggedised Ethernet range is designed to operate in the harsh process control environment and features multi-port managed and unmanaged switches, media converters, Gigabit connectivity and PoE (Power over Ethernet) solutions.

Intrinsically Safe Ethernet

For applications requiring access into Zone 1 and Zone 0 hazardous areas, including wireless access, then look no further than MTL's Intrinsically Safe Ethernet range. The 9460-ET Series delivers Intrinsically Safe "Power over Ethernet" (PoEx) with a single Cat 5e or Cat 6 cable, allowing live connection and disconnection of the end device in Zone 0 or Zone 1.

Industrial Wireless

In today's process industries there are increasing demands for greater efficiency, higher reliability and lower cost of ownership of field equipment and supporting networks. MTL offers end to end or part solutions to meet the requirements of your project.
From plant-wide 802.11 network infrastructure in hazardous area to simple sensor signal cable replacement, MTL brings the experience and the products to realise robust and secure wireless systems. MTL wireless technology supports industry standard connectivity and protocols maximising the flexibility of your system while reducing inventory and installation costs.

Industrial Security System

The move to open standards such as Ethernet,TCP/IP web technologies combined with greater plant integration, has seen a growing number of network security incidents affecting critical infrastructure and manufacturing industries.
The Tofino™ Industrial Security System is a unique solution that addresses the important issue of protecting Industrial Networks from modern cyber-security attacks.

For further information about our "industrial strength" networking products contact -

Unmanaged Ethernet Switches
9200-ET SERIES

These rugged, 5 to 9 port DIN-rail and panel mount Ethernet switches are designed for use in harsh and hazardous environments. The full range is ATEX certified for Zone 2 and UL approved for Class 1, Division 2 hazardous areas.

- High performance at the lowest cost
- Plug and play functionality - works out of the box
- 10/100BaseT(X) via RJ45 and 100BaseFX via optical fibre
- Supports temperatures ranging from -40 to 85°C
- Redundant dual DC power inputs
- Up to 3 fibre optic ports for noise immune links
- Low power dissipation
- Long MTBF

Managed Ethernet Switches
9200-ETM SERIES

These rugged, 5 to 18 port DIN-rail and panel mount Ethernet switches with multiple Gigabit and fibre port options, support fast redundant ring and mesh networks for high availability. The full range is ATEX certified for Zone 2 and UL approved for Class 1, Division 2 hazardous areas.

- Excellent cost/performance ratio
- Redundant dual DC power inputs
- Up to 4 fibre optic ports for noise immune links
- Operating temperature range from -40 to +75°C
- Plug and play functionality EtherNet/IP™ and Video Surveillance - works out of the box
- Status of redundant ring, all ports and power feed provided over Modbus TCP
- Futureproof IP v6 support
- Low power dissipation
- Long MTBF

Managed Ethernet Switches
9200-ETZ

The 9226/32-ETZ rackmount Ethernet switches offer a space efficient method of increasing your network's capability. These 10/100 Fast Ethernet/ Gigabit Ethernet/Fibre enabled switches provides expanded connectivity to fulfill the most demanding applications in modern process engineering networks.

- 26/32 total Ethernet ports including-
- Up to 8 Gigabit ports including 4 combination ports
- Up to 4 fibre optic ports for noise-immune links
- Designed to meet industrial standards
- Space efficient 1U rack-mount design
- Redundant AC and DC power options
- Relay output contact to signal alarms

SFP Optical Transceivers
SFP-F/G

The MTL-SFP range of optical transceivers offer maximum flexibility to operators of Gigabit Ethernet networking equipment. The pluggable architecture allows the module to be installed into any suitable MTL Gigabit switch SFP port at any time – even with the host equipment operating and online. This facilitates rapid configuration of the equipment to precisely the user's needs – reducing inventory costs and network downtime.

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL Instruments office, or via our website.

INTRINSICALLY SAFE ETHERNET

IS Power Supply
9491-PS

The **9491-PS** Power Supply is the preferred method for supplying the **9460-ET** series of intrinsically safe Ethernet modules and is based on an isolating power supply. It takes a 24V DC safe area / Zone 2 supply and produces an intrinsically safe, 12V DC nominal output capable of powering the Ethernet modules mounted in a Zone 1 hazardous area. Each **9491-PS** can power a single Ethernet module.

- Isolated power supply
- Zone 2 & Division 2 mountable
- DIN-rail or backplane mounting
- ATEX / IECEx certified
- FM / FMC approved
- 200mA @ 10.9V DC - Ex ia IIB Groups C, D output
- 400mA @ 11.8V DC - Ex ib IIB output

Wireless Access Unit
9469-ETplus

The **9469-ET** is a multi-functional module that can be used as an Access Point, Wireless Bridge (Client) or Wireless Repeater When used in the Access Point (AP) mode, it allows wireless devices to connect through it onto the wired Ethernet network, either in AD-HOC or Infrastructure modes. When used as a Bridge, it makes it possible to turn any 10/100 Ethernet device into a wireless device. Additionally the module may also be used in its Wireless Repeater (WDS) mode to extend the range covered by a wireless network.

- Tri-Band operation
- Convert Ethernet device to wireless
- Zone 1, Division 1 mountable in suitable enclosure
- 10/100Mbs Ethernet
- ATEX / IECEx certified
- FM / FMC approved
- Wide temp. range –20°C to +60°C
- PoEx™ Power over IS Ethernet

Isolator
9468-ET

The **9468-ET** 10/100Mbps, Isolating Ethernet Barrier allows the interconnection of a Zone 2 or un-certified safe area device to the intrinsically safe **9400-ET** series of Ethernet networking products operating in the hazardous area. The isolating barrier provides a compact alternative solution to fibre optic cable and media converters and for when it is desirable to use Cat5e cables in preference to fibre.

- Zone 2 mountable for connections to Zone 0 and 1
- Galvanically isolated RJ45 ports
- Transparent operation
- Compact alternative solution to fibre optics and media converters
- ATEX / IECEx certified
- FM / FMC approved
- Wide temp. range –20°C to +70°C
- Single 20–30V DC power supply
- Status LEDs to show activity

INTRINSICALLY SAFE ETHERNET

Media Converter
9465-ET

The **9465-ET** 10/100Mbps Copper to Fibre Optic Media Converter allows an Ethernet network to be extended over a greater distance. The fibre optic link may be up to 8km in length when running at 100Mbps. Longer distances are obtained by simply connecting a **9466-ET** (10/100Mbps Ethernet Switch) between two **9465** media converters, effectively giving a 'repeater' function.

- Copper to Fibre Optic Converter
- 10/100Mbps wire speed
- Extend up to 5km (10Mbs)
- Zone 1, Division 1 mountable in suitable enclosure
- Transparent operation
- Choice of fibre optic connection styles
- ATEX / IECEx certified
- FM / FMC approved
- Wide temp. range –20°C to +70°C
- PoEx™ Power over IS Ethernet

Switch Module
9466-ET

The **9466-ET** 10/100Mbps, Layer 2, Ethernet switch allows the interconnection of **MTL 9400-ET** series networking modules via its 5 ports. It also enables an Ethernet network to cover a greater distance using either Cat5e cable or fibre-optic for longer spans. This capability is due to the low latency 'store and forward' mechanism integral to the switch, which ensures that the stringent timing associated with Ethernet is maintained.

- 5-port 10/100Mbps links
- Zone 1, Division 1 mountable in suitable enclosure
- Broadcast "storm" protection
- ATEX / IECEx certified
- FM / FMC approved
- Wide temp. range –20°C to +70°C
- Half/Full Duplex
- PoEx™ Power over IS Ethernet

Gateway
9461-ET

The 9461-ET Ethernet Gateway gives existing intrinsically safe equipment "Ethernet connectivity" by allowing conventional serial equipment to be connected to an Ethernet network. IS serial devices are supported with serial tunnelling and IS Modbus devices are supported with powerful serial to Modbus TCP/IP gateway functionality.

- Serial to Ethernet Gateway
- Zone 1, Division 1 mountable in suitable enclosure
- Four serial-port intrinsically safe inputs:
  2 x RS232/TTL 2 x RS485/RS422
- 10/100Mbs Ethernet
- ATEX / IECEx certified
- FM / FMC approved
- Wide temp. range –20°C to +70°C
- High Performance 32-bit processor
- PoEx™ Power over IS Ethernet

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Network Security

Supervisory Control and Data Acquisition (SCADA) and industrial control systems have long been considered immune to the cyber attacks suffered by corporate information systems. The move to open standards such as Ethernet TCP/IP and web technologies has seen control systems affected by a growing number of both malicious and non-malicious network security events impacting critical infrastructure and manufacturing industries.

The Tofino™ Industrial Security System is a unique solution from MTL Instruments that addresses the important issue of protecting Industrial Networks from modern cyber-security attacks.

NETWORK SECURITY

Tofino™ Ethernet based Industrial Security Appliance
9211-ET

Protect your control system against network problems and cyber threats.

You may never be attacked by a serious hacker, but typical control networks are extremely vulnerable to simple day to day security and reliability issues. Poor network segmentation, unprotected points of entry into the network, 'soft' targets such as un-patched PCs and vulnerable PLCs, and human error can result in significant production losses and even safety issues.

The Tofino Industrial Security Solution is a distributed system that quickly and cost-effectively implements cyber security protection within your control network.

Tofino's flexible architecture allows you to create security zones throughout your control network to protect critical system components. Tofino helps you meet and exceed NERC CIP requirements and ANSI/ISA-99 standards. Best of all, it helps you avoid expensive down time and achieve optimal performance in your plant.

- Industrial network protection
- Simple installation
- 10/100Mbs Ethernet
- Automatic device discovery
- "Transparent learning" option
- Power supply redundancy
- Assisted rule generation
- DIN-rail mounting
- Tailored security protection through "Loadable Security Modules"
- Future-proof network protection

Tofino™ CMP is an easy-to-use Windows-based software

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Don't leave your process network exposed

INDUSTRIAL WIRELESS

Easy Wireless I/O
WIO-900L/800L

The WIO-900L and 800L simply and reliably communicate transducer and switch data by providing a 4-20mA, mV and digital interface in a small footprint radio. The sensor data is transmitted to a remote output as digital and 4-20mA effectively replacing the cable. Line of sight distances of up to 10km for the WIO-800L and 20 miles for the WIO-900L are achievable.

- Point-to-point digital and/or analogue I/O transfer
- Easy to use - no configuration necessary
- Secure data encryption
- Intelligent wireless protocol, immediate exception reporting plus configurable high-scan updates

Access Point
WLN-2000

The WLN-2000 enables Ethernet and serial device connectivity over an 802.11 wireless connection for network access or standalone data transfer. Full networking solutions can be deployed to manage data between fixed and mobile devices on 2.4GHz and 5GHz license-free bands. The WLN-2000 has a built-in web server, containing web pages for analyzing and modifying the module's configuration.

- Ethernet and serial data over 802.11 a/b/g wireless network
- High wireless data rate (108Mbps turbo mode)
- Configurable transmit power (15mW – 400mW) for superior radio range
- Bridge /Router, Access Point /Client in one, reduces inventory costs
- Online diagnostics and configuration throughout the network

Serial Modems
WMO-900S/800S

The WMO-900S and 800S serial modems provide remote serial connectivity. Possessing both RS232 and RS485 ports for communication, this device is configurable for a variety of network topologies.

- Provides wireless connectivity for serial devices
- Licence-free 900MHz radio band
- Single hop distance 20 miles line-of-sight
- Repeater function for longer distances
- Radio data rate up to 115,200 bits/sec

Serial Modems
WMO-400S

The WMO-400S serial modem is ideal for long range SCADA applications. Providing serial communication for devices such as PLCs, intelligent transducers and data loggers the WMO-400S operates on the 400MHz frequency range for licensed and license-free applications. Features of the WMO-400S include configurable radio power, frequency, network topology and data pathing features.

- Provides wireless connectivity for serial devices
- User-configurable frequency and RF power
- Remote configuration and diagnostics
- Supports wide range of network topologies
- Distances of up to 100km (60 miles) achievable

INDUSTRIAL WIRELESS

I/O Interface
SIO-100S

The SIO-100S series of wireless I/O multiplexers provide an interface to MTL wireless networks for sensors, transducers and switches. The SIO-100 can communicate via Modbus RTU or a point to point exception reporting protocol. The SIO-100S possesses configurable input types and supports a wide range of end devices.

- Analogue and Digital I/O multiplexer
- Data transfer via Modbus or exception reporting protocol
- RS232 and RS485 communication ports
- I/O interface for MTL wireless networks
- Configurable input types

Wireless Access Unit
9469-ETplus

The **9469-ET** is a multi-functional module that can be used as an Access Point, Wireless Bridge (Client) or Wireless Repeater When used in the Access Point (AP) mode, it allows wireless devices to connect through it onto the wired Ethernet network, either in AD-HOC or Infrastructure modes. When used as a Bridge, it makes it possible to turn any 10/100 Ethernet device into a wireless device. Additionally the module may also be used in its Wireless Repeater (WDS) mode to extend the range covered by a wireless network.

- Tri-Band operation
- Convert Ethernet device to wireless
- Zone 1, Division 1 mountable in suitable enclosure
- 10/100Mbs Ethernet
- ATEX / IECEx certified
- FM / FMC approved
- Wide temp. range –20°C to +60°C
- PoEx™ Power over IS Ethernet

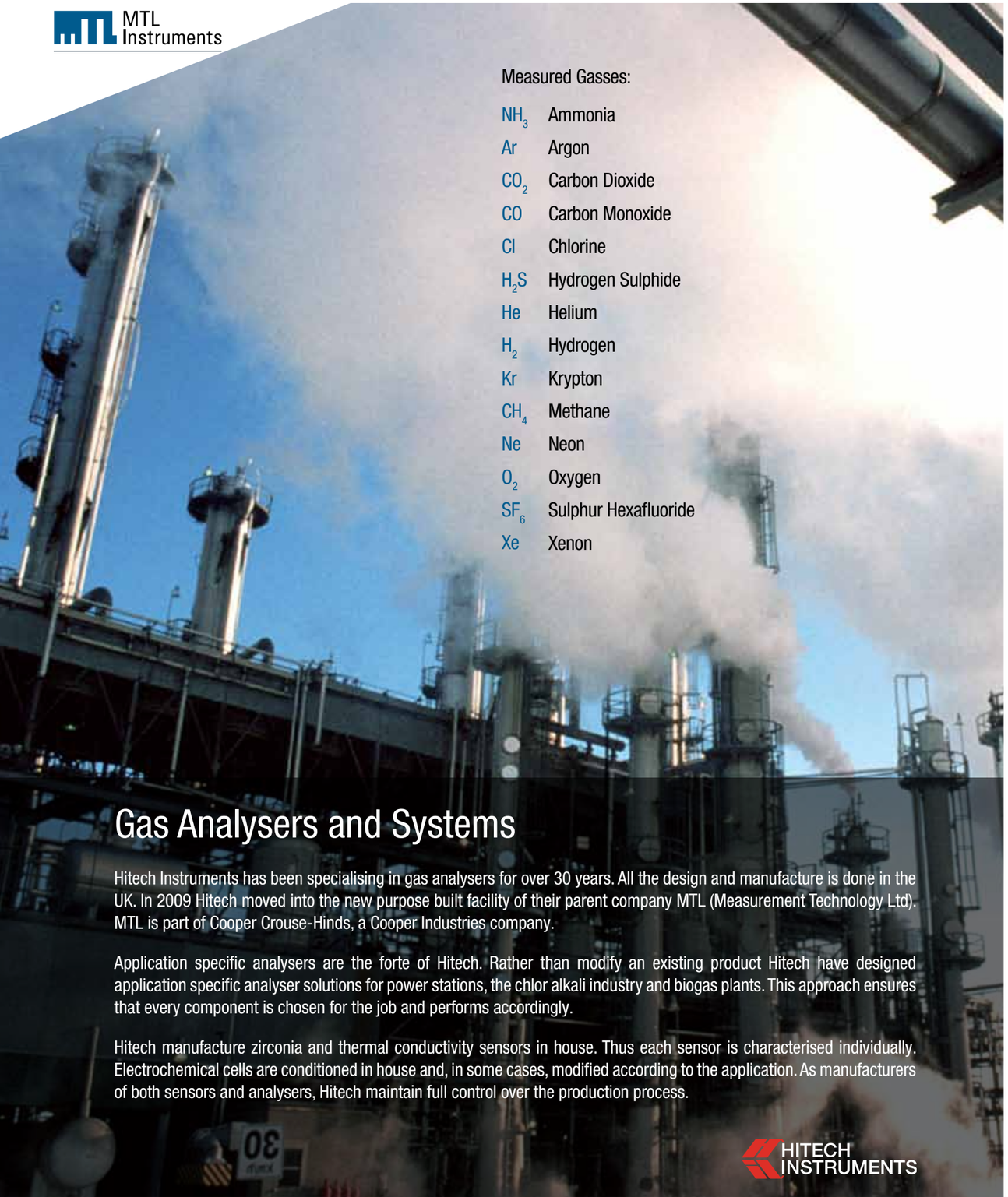
Antennae Protection
CA Series

CA Series devices are wideband, high current devices for the protection of radio transmitters and receivers connected to coaxial feeders.

A wide range of connector styles is available to suit all application requirements with a choice of working voltage and characteristic impedance provided for most of the series. Bulkhead mounting options are available where insertion into a panel is preferable. Typical applications for the CA Series include the protection of radio telemetry systems, mobile communications base stations and where high induced voltages may be present in aerial systems.

- Suitable for the protection of radio transmitters and receivers connected to coaxial feeders
- Range of connector styles to suit all applications
- Large bandwidth dc to >2GHz
- Range of mounting kits and enclosures available

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL Instruments office, or via our website.



Measured Gasses:

NH_3	Ammonia
Ar	Argon
CO_2	Carbon Dioxide
CO	Carbon Monoxide
Cl	Chlorine
H_2S	Hydrogen Sulphide
He	Helium
H_2	Hydrogen
Kr	Krypton
CH_4	Methane
Ne	Neon
O_2	Oxygen
SF_6	Sulphur Hexafluoride
Xe	Xenon

Gas Analysers and Systems

Hitech Instruments has been specialising in gas analysers for over 30 years. All the design and manufacture is done in the UK. In 2009 Hitech moved into the new purpose built facility of their parent company MTL (Measurement Technology Ltd). MTL is part of Cooper Crouse-Hinds, a Cooper Industries company.

Application specific analysers are the forte of Hitech. Rather than modify an existing product Hitech have designed application specific analyser solutions for power stations, the chlor alkali industry and biogas plants. This approach ensures that every component is chosen for the job and performs accordingly.

Hitech manufacture zirconia and thermal conductivity sensors in house. Thus each sensor is characterised individually. Electrochemical cells are conditioned in house and, in some cases, modified according to the application. As manufacturers of both sensors and analysers, Hitech maintain full control over the production process.

HITECH INSTRUMENTS

GAS ANALYSERS AND SYSTEMS

Analysers
Fixed, portable, hazardous areas and OEM

Most analysers are available in a variety of configurations to suit customer demand. Panel mount, rack mount, wall mount and bench top options are offered as fixed units, while portable units are presented in rugged cases to extend lifetime in harsh plant conditions. For OEM customers and large PLC systems 'blind' transmitter versions are available. Hitech can respond quickly to solve application specific demands from all process industries.

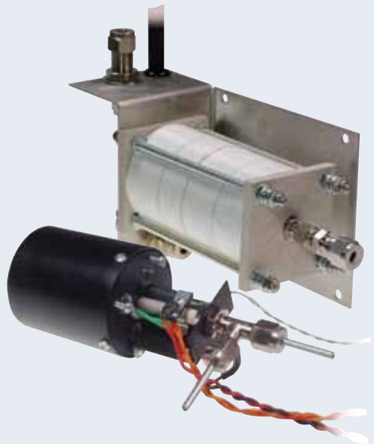
Wireless connectivity is achieved with MTL products and hazardous area situations with MTL barriers and isolators.

Sensors
Zirconia, electrochemical, infrared and katharometers

Zirconia sensors and galvanic (electrochemical) cells are the two technologies used for oxygen measurement. A range of options are available for applications including low ppm levels, mildly acidic gases or hydrocarbons. Hydrogen sulphide is also measured with an electrochemical cell.

Katharometers are thermal conductivity devices ideal for measurement in binary or pseudo-binary mixtures. Hydrogen, dissociated ammonia, sulphur hexafluoride, helium and other inert gases where no dedicated sensor exists, are ideal candidates for this method.

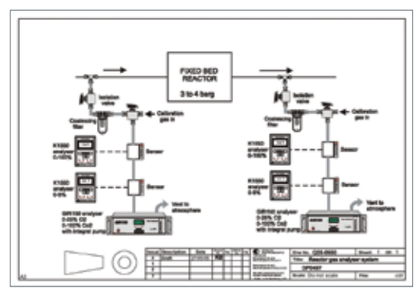
Infrared sensors are used typically for methane, carbon dioxide and carbon monoxide in biogas and 'syngas' applications.



Sample Conditioning Systems
Bespoke systems for specific applications

Analysers and sensors depend heavily on the condition of sample supplied. Hitech supplies a number of component parts – filters, flowmeters, regulators, pumps, etc – as well as bespoke sample conditioning systems designed for specific customer applications. Water vapour and particulate matter will routinely prevent accurate analysis but can easily be eliminated with careful choice of sample system.

Application questionnaires ensure that all process parameters are fully considered.



For further information about our "gas analysers and systems" products contact -

Oxygen Analysers

From low ppm to high %

The G1010 panel mount oxygen analyser with electrochemical cell options is Hitech's 'best seller' and used in a wide variety of industries and applications. ATEX certified configurations are available.

Zirconia oxygen sensors have a rapid response and are usually more accurate at low ppm oxygen levels. The Z4010 is a rugged, transportable unit ideal for use at multiple points on a plant, e.g. air separation and gas blending applications. The Z1920C is designed with a catalytic reactor to measure fuel:air ratios in flame treatment and burner applications. Fixed instruments often feature remote sensors and bi-directional RS232 for true remote capability.

Katharometers

For hydrogen, helium, SF_6, dissociated ammonia and inert gasses

Hitech is a market leader in novel katharometer design employing established thermal conductivity principles. The K1550R panel mount analyser with remote sensor can be supplied in different configurations, either with barriers to mount the sensor in hazardous areas or with full ATEX housing.

Hydrogen is often measured by this technique and compensation inputs can be provided for non-binary mixtures.

Multi-Parameter Analysers

Custom led, application specific products

The Hitech Design department is experienced at solving customer led application demands as new markets evolve. Some recent examples include.

- KG1550 panel mount and KG6050 rugged portable units for both hydrogen and oxygen; parameters critical to some biomass applications.
- GIR250 bench top unit for oxygen and carbon dioxide is used in fermentation monitoring, sports science and modified atmosphere packing
- KIR4250 is a dual channel portable unit for hydrogen and carbon dioxide, designed for a leading manufacturer of industrial catalysts

HITECH INSTRUMENTS

Hydrogen and Chlorine Analysers

Hydrogen measurement in the chlorine manufacturing process

The KK650 is designed to measure both hydrogen and chlorine at all stages of the chlorine manufacturing process. Unique dual katharometer design even allows accurate, continuous measurement at start-up. The analyser is suitable for measuring at all stages of the chlor alkali process - 'wet' chlorine, 'dry' chlorine and tail gases. Custom design sample systems enable reliable measurement in 'wet' chlorine. Low maintenance and no consumables result in low cost of ownership. An accurate system which compares very favourably with technologies costing five times as much.

Biogas and Landfill Analysers

Process measurement for efficiency and safety

The new GIR5500 and GIR5000 series analysers are the ideal instruments for biogas applications, where the measurement of methane (CH_4), carbon dioxide (CO_2), oxygen (O_2) and hydrogen sulphide (H_2S) have implications on both the efficiency and safe working of biogas processes. Two-, three- and four-gas versions are available in a variety of configurations and all are ATEX certified.

Alternator Purge Gas Monitors

Hydrogen purity and purge cycle analysers for power stations

Even small changes in hydrogen purity can affect the efficiency of turbogenerators significantly. For maintenance, the system needs to be purged carefully and efficiently to avoid the risk of explosive gas mixtures of hydrogen and air. The alternator purge gas monitors from Hitech are ideal for this application. The K1650 panel mount and K6050 rugged portable have three different ranges to measure hydrogen purity, hydrogen in air and carbon dioxide in air. Samples systems are available to regulate and calibrate pressurised systems.

For further information about our "gas analysers and systems" products contact -

Surge Protection Devices

MTL supplies a comprehensive range of surge protection devices offering solutions for all mains power, process control, network and communications, telecom, wireless and RF systems.

Our commitment to not only meet, but surpass our customers' high expectations can only be achieved by maintaining very high standards in all aspects of our business. Independent verification of our quality and safety procedures is of paramount importance and our accreditation to internationally recognised standards such as ISO 9001 is proof of this commitment. Our new 10 year 'no fuss' product warranty, is even further evidence of our confidence in our products and their application capabilities.

10 YEAR 'NO FUSS' WARRANTY

FIELDBUS SURGE PROTECTION

FP32 SERIES

FP32 devices provide surge protection along the trunk or spurs of fieldbus systems from damaging the associated electronics such as terminators, spur blocks, and the bus control equipment. Fully automatic, the FP32 reacts immediately to ensure that equipment is never exposed to damaging surges by directing surges safely to earth and then resets automatically.

- Meets the requirements of IEC61158-2:2000 for Foundation™ fieldbus
- Plug connectors for quick and easy connection or rewiring
- 20kA maximum surge current
- FM, CSA, FISCO and ATEX approved
- Lloyds approval

FS32

The FS32 surge protection device prevents surges and transient over-voltages conducted along the Trunk or Spurs of fieldbus systems from damaging the associated electronics such as terminators, spur blocks and the bus control equipment. In operation the FS32 does not adversely affect the performance or operation of the fieldbus or connected equipment, and allows signals to pass with little attenuation.

- Protects IS spurs on MTL 937x-FB Series Fieldbus Barriers
- 20kA maximum surge current per line
- Plug connectors for quick and easy connection or rewiring
- Meets the requirements of IEC61158- 2:2004
- Can be used on MTL Megablocks or other fieldbus equipment

TP32 & 32-T (with built-in Fieldbus Terminator)

- Fieldbus specific - meets the requirements of IEC61158-2:2000 and ANSI/ISA-50.02-2 1992
- TP32-T includes a Fieldbus TERMINATOR in addition to surge protection
- Intrinsically safe and flameproof to CENELEC standards
- FM, CSA, FISCO and ATEX approved
- SIL Suitable

The TP32 is specifically designed to protect process transmitters and devices on fieldbus systems. The TP32 is a hybrid design consisting of high-power, solid state electronics and a gas discharge tube which is capable of diverting surges up to 10kA.

TP-P-32 SERIES for Fieldbus

- For fieldbus transmitters with only ONE conduit entry
- SIL Suitable

MA15

The MA15 was designed to protect electronic equipment and computer networks against the effects of 'noise pollution' induced in power supplies. These units clean up the effects of industrial noise and surges caused by lightning, switching devices, thyristor controls, transmission system overloads and power-factor correction circuits. UL 1449 Recognised Components (certified by UL for both US and Canadian requirements), the MA15 exceeds the requirements of IEC 61000-4-5.

- Protects panel loads up to 15 Amps in series, unlimited Amps in parallel
- Suitable for AC or DC applications
- Thermal and short circuit protection
- UL 1449 Recognised Component

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL Instruments office, or via our website.

COMBINATION SURGE PROTECTION PRODUCTS

Although MTL supplies many unique and diverse stand-alone protection devices, there may be times when complete mains, telecom and/or network protection is required in a single, compact device.

MTL offers several professional protection ranges for home, office or industrial use which meet this criteria. These versatile devices are fully configurable, simply choose from a wide range of protection modules and just 'plug and protect'.

DATA AND SIGNAL SURGE PROTECTION

Induced surges and transient voltages can destroy or, perhaps more worryingly, render inaccurate sensitive control and measurement instruments. Control systems, sensors and telecommunications equipment may be subjected to a barrage of interference and surges of energy, therefore to disregard the need for simple, effective and reliable surge protection is to compromise the safety of the plant.

MTL surge protection devices provide protection both at the controller and at the field-mounted instrument, with specifically designed devices suitable for all data & signal requirements.

SIL SUITABLE

NETWORK AND COMMS SURGE PROTECTION

Network technologies from the Internet to LANs have revolutionised the way businesses operate. From traffic control and sensing to the real-time status of a remote pumping station, industry relies on computer networks now more than ever.

Network surge protection is essential if your business relies on IT services for its minute to minute operation. MTL provides a complete line of ruggedized network surge protection devices to protect the sensitive equipment in these harsh environments.

POWER SURGE PROTECTION

Surges and spikes from nearby lightning strikes, arc-welders and high voltage cables can destroy or disrupt unprotected electronic equipment. These destructive forces enter mains power circuits within buildings by a variety of methods.

The primary route is where power, often "dirty" and spike-laden, actually enters the building and it is at this point that surges should be stopped in order to prevent them from propagating further.

However, surges and RFI can also corrupt mains power supplies from within the building. By providing protection at the main power distribution board and then at each piece of equipment, mains borne surges and spikes are eliminated before they can cause damage.

SPECIALIST SURGE PROTECTION PRODUCTS

MTL has a wealth of experience in the design and manufacture of surge protection solutions for very specialized areas of application. Whether protection is required for wireless telecommunications, satellite, CCTV or general antenna protection, MTL can supply a superior protection device to meet your requirements. It is not just the obvious areas, such as mains power, networks and telecom systems that require protection - these specialist applications should not be overlooked.

TELECOMMS SURGE PROTECTION

Highly integrated, small signal telecommunications equipment is becoming increasingly sensitive to damage and disruption from voltage surges and spikes. It makes sound sense to protect expensive telephone installations from damage and commercially damaging downtime by fitting effective and unobtrusive protection wherever surges could enter the system.

MTL can supply that protection, whether for private wire or public switched telephone network (PSTN) requirements and with a range of mounting and enclosure types to suit all applications.

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL Instruments office, or via our website.

HMI and Visualisation

Many industries now prefer to site their operator terminals and HMI on the plant floor. The MTL Instruments range of Visualisation products includes ruggedised and extended temperature range operator terminals and panel PCs suitable for both hazardous and non-hazardous area mounting. For over 15 years GECMA Components, a part of the MTL Instruments group, has concentrated on the production of high-quality HMI and on-site operating stations for industrial and Ex-classified production areas.

The flexible modular concept consisting of intrinsically safe components and the deliberate selection of high-quality materials allows CHALLENGER Remote PC terminals and EXPLORER Panel PC's to be used under the strictest of hygienic conditions as well as in aggressive production environments. Even under temperature conditions of -30°C to +60°C there is no functional impairment.

CHALLENGER REMOTE PC TERMINAL

CHALLENGER 15i/18i/22i

The CHALLENGER range of remote PC terminals are designed for use in extreme hazardous areas such as those encountered in Pharmaceutical, Chemical, Biotech and Oil and Gas industries. CHALLENGER Terminals can be configured in a modular manner to meet with the plant installation requirements. All the components including the display, touch screen, keyboard, pointing devices, etc. - are certified for use in hazardous areas as control panel-mounted modules and can be mounted independently into various enclosures / walls or into our CHALLENGER FHP standard enclosure which provides environmental protection.

CHALLENGER PC Terminals are an optimum solution for demanding tasks in on-site operation and visualization in Zone 1 / 2 / 22 hazardous areas.

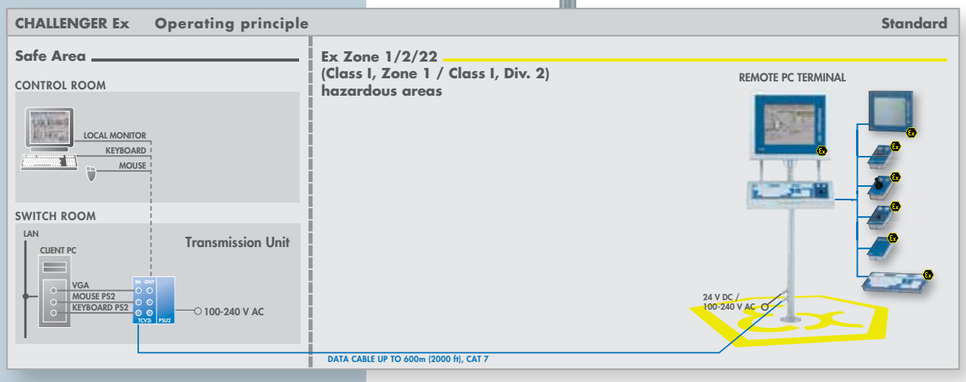
In the SAFE area the CHALLENGER transmission unit picks up the data from a PC via VGA / KEYBOARD / PS2 MOUSE and transmits the data up to 600m /2000ft to the CHALLENGER Terminal on site – in hazardous area zone 1 / 2 / 22. High quality bright images are visualized at the terminal.

CHALLENGER Terminals are also available as non Ex products for industrial applications up to a screen size of 22".

INDUSTRIAL

Intrinsically safe Remote PC terminals for hazardous areas Zone 1 / Zone 2 / Zone 22 (non-conductive dusts)

Certified by ATEX, IECEx, TIIS, FTZU, UL/C-UL (Class I, Zone 1 / Class I, Div. 2), NEPSI …



More detailed product information in separate, comprehensive catalogues or datasheets are available from your local GECMA office, or via our website.

EXPLORER PANEL PC

EXPLORER 15i/18i

Designed as a PANEL PC, the new EXPLORER is also based on a modular concept - in line with our world-wide established CHALLENGER remote PC terminals.

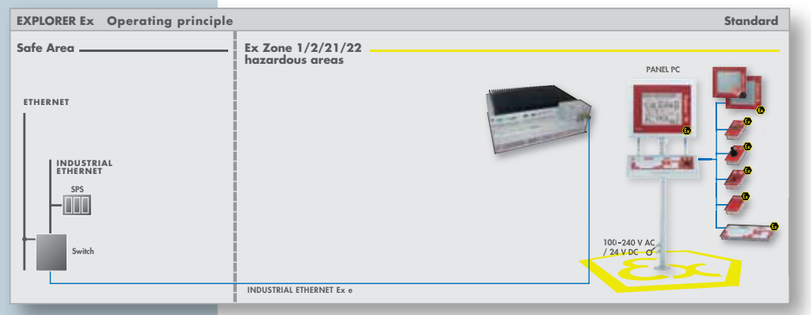
Whether for local display or operation of software in Ex Zone 1 / 2 / 21 / 22, for client server applications, such as a web terminal or for control of PLC, balances etc - the EXPLORER Panel PC offers maximum adjustability to individual requirements.

All operating and visualization components (display, touch screen, trackball, joystick, keyboard...) can be configured according to the requirements of the plant. Constructed as intrinsically safe panel mounting modules and certified for Ex Zone 1 / 2 (Gas), Zone 21/22 (Dusts) the EXPLORER Panel PC can easily be integrated into our FHP standard enclosure, as well as existing enclosures, walls and cabinets.

In addition to the Ethernet interface the EXPLORER offers USB, RS232, RS485 and RS422 interfaces to integrate further electrical equipment or for the functionality of WLAN or BLUETOOTH.

With our new EFU converter we have created the possibility to realize various ways of data transmission. The most important ways are: Ethernet via Fiber optic / Redundant Ethernet / Redundant Ethernet via Fiber optic....further options on request.

EXPLORER Panel PC's are also available as non Ex products for industrial applications up to a screen size of 18".



STANDARD ENCLOSURES/MOUNTINGS

The universal housing system used across the Challenger and Explorer range of units is the FHP standard enclosure. Our mounting components, stand STF and elbow pipe EBF, together with the MB coupling provide a universal method for simple and secure fastening. Both in base/wall and ceiling orientations, our HMI's can be mounted quickly, using only a few screws. The special MB coupling is manufactured as a one-piece item and allows rotation up to 300°, thus making optimum operation and visualization possible.

- Hygienic, ergonomic Field Desk Enclosure
- Designed to accommodate the Display, Keyboard, Mouse or Trackball and Card Reader
- Keyboard inclined by 30°
- Protection system IP 66 / NEMA 4X
- Stainless Steel 1.4301 (1.4404/316L opt.)
- Polished to 240 granulation

CUSTOM ENCLOSURES

The Challenger and Explorer modular concept enables application in a wide variety of special and customized housings. GECMA's inhouse engineering department will assist clients in achieving the optimum housing solution to suit their particular working environment, e.g. limited space, integration of various control elements, special resistant housing surfaces, integration into wall, cabinets and current housings. Our extensive knowledge of HMI's in hazardous areas allows us to optimize the design to best suit the customer's application in hazardous, clean room and any particular demanding environment.

ACCESSORIES

A comprehensive range of accessories and options are available for Challenger Terminals and Explorer Panel PCs that can support and optimize customer's individual processes and plant requirements. Whether you have a requirement to interface to the IT world outside of the hazardous area by wireless communication, ensure access control, select the optimum ergonomic input device and display option for your demanding environment, enable easy hardware based file transfer, or interface external input devices like Barcode Scanners, GECMA's original accessories and options are approved in various hazardous areas.

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local GECMA office, or via our website.

MTL Instruments

Intrinsic Safety Solutions

For over thirty years MTL Instruments has been the world leader in intrinsic safety (IS) interfaces for hazardous areas, producing barriers, isolators and integrated IS to help prevent explosions in process industries. Whatever the application, MTL Instruments helps to protect investments in hazardous areas.

The products range from industry renowned (IS) barriers and isolators through to sophisticated process control products, all designed for the harsh environments often encountered in the process industry.

As part of our 'Customer Commitment' process, we regularly produce educational reference material to assist users in understanding the latest EU regulations and directives.

FUNCTIONAL SAFETY MANAGEMENT

Many MTL products are certified as safe for use in hazardous areas; that is places where explosive material may be present. The products are designed and certified to show that they are incapable of igniting the gas or dust and causing fire or explosion.

Another type of safety is called Functional Safety, which applies when products are used in safety and protection systems, in which a failure may mean that a protective system will not operate as it should. MTL products have been used in safety systems for some time, but there are increasing requirements to demonstrate an adequate level of functional safety, especially after the Buncefield, Texas City and Deepwater Horizon accidents. More and more, customers are demanding that products they use in safety systems meet the requirements of the second edition of the IEC 61508 Functional Safety standard, and they require evidence to show that they do. This is to enable the use of our products within instrumentation loops that are designed to achieve a specific Safety Integrity Level (SIL).

When MTL designs a product in the expectation that it will be used in functional safety-related systems, both the design process and the product needs to comply with IEC 61508:2010. MTL has chosen to obtain Functional Safety Management (FSM) certification for the company. FSM means that MTL has the necessary processes and competence to design products according to IEC 61508:2010. Certification means that a notified body is ensuring that our processes are correct and that we are working to them. Together, FSM Certification gives our customers confidence in the company and the use of our products for functional safety.

MTL is the first supplier of process instrumentation to be certified as a Functional Safety Management (FSM) company.

SIRA, a UKAS accredited body, has certified **MTL** as being compliant with IEC 61508-1:2010.

INTRINSIC SAFETY ISOLATORS

Backplane mounted Intrinsic Safety Isolator
MTL4500 SERIES

The new MTL4500 Series is the next generation of backplane mounting Intrinsic Safety Isolators, compatible with clients existing installed base of MTL4000 equipment and introducing many new key application benefits. Utilising innovative planar transformer technology at its heart and extensive automation in construction, the MTL4500 Series offers industry leading features and performance in a single package. It is designed with the requirements of system vendors in mind, for 'project focussed' applications such as Distributed Control Systems (DCS), Emergency Shutdown Systems (ESD) and Fire and Gas monitoring (F&G).

With fast module installation, easier system integration, improved performance from low-power circuit designs and more I/O channels in each module giving the highest packing density on the market plus 3 port isolation as standard.

DIN-Rail mounted Intrinsic Safety Isolator
MTL5500 SERIES

The new MTL5500 Series Intrinsic Safety Isolators are DIN-rail mounting and meet the needs of the IS interface market for "application focussed" projects. These range from single instrument loops, through various combinations and enclosures to fully equipped cabinets, across all industries where hazardous areas exist.

Based upon the same core technology as the MTL4500 Series, the MTL5500 Series has a slim, compact housing and the range of module options contains both single and multiple channel devices which enables the user to choose the functionality and integrity needed without sacrificing cabinet space. The modules can be used for a wide variety of interface tasks for process instrumentation. All signal wiring is made through removable connectors which facilitates fast installation and simple maintenance procedures.

Backplane mounted Signal Isolators
MTL4600 SERIES

Building on the base of the MTL4500 series solutions, the MTL4600 offers a high level of signal isolation for installations where multiple loops on a common connection are not desirable.

Signal isolation provides excellent protection against surges, common faults and noisy environments. It also eliminated the risk of earth loops between different areas of the plant, which if not isolated, can cause significant errors or failures under fault conditions.

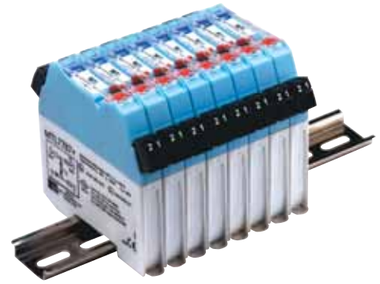
The MTL4600 isolators are fully compatible with all existing backplanes used with MTL4500 series and many control systems. The form factor and signal types offer the user a common approach for both IS and non-IS signals.

INTRINSIC SAFETY BARRIERS

DIN-Rail mounted Safety Barriers
MTL7700 SERIES

The **MTL7700** Series follows closely in the footsteps of the **MTL700** but as a DIN-rail mounting barrier providing quick and easy installation without the need for special hardware. Removable terminals are used for ease of installation, maintenance and for providing a loop disconnect by simply unplugging the terminals from the side of the module. The barriers clamp simply and securely onto standard T-section DIN rail, simultaneously making a reliable IS earth connection.

When the **MTL7700** Series is used in conjunction with the **MTL7798** power feed module the user has a fully protected, electronically fused supply to many barriers with no additional wiring required.



INTRINSICALLY SAFE ALPHANUMERIC DISPLAYS

Field and Panel Mounting Displays
MTL646/647 SERIES

The MTL646/7 text displays are located in the hazardous area where they display alphanumeric data & graphics from a safe area host controller. This is transmitted by a serial data link passing through an MTL5051 isolating interface. This serves the dual purpose of isolating the IS indicator and converting RS232 or RS422 serial data to the MTL signal level and vice versa. Bi-directional communication permits operators to acknowledge messages and to request process action when necessary. If required, an audible or visual alarm can be connected to attract the operators attention.

INTRINSICALLY SAFE INDICATORS

Loop Powered Indicators
MTL660 SERIES

The 660 Series indicators are loop powered units and the low voltage drop across their input terminals allows them to be installed in almost any 2-wire, 4-20mA loop.

Large liquid crystal displays make the process variables easily visible at a distance and a backlight option may also be ordered for use in low light conditions. Process units are configured into the display area. Instant readout of percentage or loop current is available at the push of a button.

Field mounting units are housed in a rugged aluminium IP67, NEMA 4X case. GRP options are available for highly corrosive atmospheres.

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL Instruments office, or via our website.

Process Alarm Equipment

As a global supplier RTK provide Alarm products for both safe and hazardous environments. Our Alarm Annunciators capture and display critical alarms with options to timestamp to 1mS resolution and transmit this data to third party devices over various protocols.
Sequential events can also be recorded within Substation Automation System by using the RTK Substation annunciator that utilizes various protocols such as IEC61850 and DNP 3.0. RTK's network annunciator uses the same protocols to display critical alarms as an intelligent lamp unit with features such as :-

- Integral Dual redundant PSU's
- Alarm events can be transmitted over IEC61850 and DNP3 Protocols
- IEC61850 & DNP3.0 protocols can drive RTK annunciators for critical alarms
- SNPT synchronisation
- For safety instrumented systems also offer the SIL725, a unit that is certified to IEC61508

ANNUNCIATORS AND EVENT RECORDERS

As a world leading supplier of process alarm equipment RTK are able to provide a solution for all safe and hazardous area industrial applications. Used to monitor critical alarms our Alarm Annunciators are all designed as modular products, manufactured to your exact needs with a range of options added as required.

The range includes products for all hazardous areas and also the SIL725 Annunciator certified to IEC61508 at SIL2 level for use as part of a safety instrumented system.

Units can be supplied as pure Event Recorders to time-stamp events to 1ms or as a combined Event Recorder/ Alarm Annunciator.

HAZARDOUS AREA NOTIFICATION

Operators working within a hazardous area need to be quickly and clearly informed of any potential hazard, our range of Notification products serves this purpose perfectly. The range includes Sounders, Beacons, Light Towers, LED Clusters and Alarm Displays all certified for use in potentially hazardous areas.

The Sounders all provide programmable tones and outputs in excess of 100dB and all the Visual products use the latest LED technology to provide maximum brightness with a limited supply current. The DA135 ruggedised LED Beacon can be combined with the Sounder to create a unique single point Annunciator system or supplied as a dual colour version to indicate different fault severities.

ENGINEERED SOLUTIONS

Many clients require much more than the simple supply of loose products. To service these customers our experienced team of engineers can provide a consultancy service to help them select the most appropriate solution. These solutions can consist of any intrinsically safe or explosion proof system or custom alarm or event recording systems.

Our systems team will manage each project throughout its life-cycle. This will include creation of the specification and design of the complete system for approval by the client. Following approval, the project passes to production where the complete system, including any software, is fabricated and wired. The finished package, with all agreed documentation, is then ready for the Factory Acceptance Test prior to shipment to site. Commissioning and training can also be provided if required.

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local RTK Instruments office, or via our website.

HART® Interfacing

Every HART® field device is capable of providing significant data about its performance and the process it is controlling. Don't ignore such a valuable asset!

If you have smart field devices installed and you are not making full use of their capabilities, then you need MTL's HART® connection system. MTL has solutions that provide the connections between the HART field instruments, the control systems and the process automation maintenance software. MTL's HART multiplexer system provides on-line access from a PC to the HART field devices for monitoring device performance. HART devices may be selected for regular status monitoring and alerts to be issued if the status changes.

MULTIPLEXERS

The MTL4850 HART Multiplexer offers a smaller footprint solution ideally suited to both retrofit and new project applications. Termination boards, carriers and integrated backplanes are available to enable the MTL4850 to interface to various instrumentation applications.

- Channel to channel isolation
- Isolated power supply
- Auto baud-rate detection
- LED indication for fault diagnosis
- Supports HART Rev. 5-7 devices
- Firmware upgradeable on site (MTL/Triconex support personnel)
- Onboard event log
- ATEX, FM and CSA certification.

BACKPLANES

As every plant is different MTL offer a wide range of both generic and customised HART connection boards for all types of installations to offer the optimum cost effective solution. On board isolation, filtering, signal conditioning, labelling and system specific connectors combine to offer customer specific solutions.

Whatever the application, MTL have, or can design, an integrated solution to allow simple, flexible and space effective connection to your control system. Installations worldwide show that users everywhere recognise the quality and reliability of MTL Integrated Solutions.

HART SOFTWARE

Powerful instrument management software is being widely adopted by the process industry to provide detailed process and maintenance information for a broad range of HART field devices.

The online access to the information contained within HART devices allows users to diagnose field device troubles before they lead to costly problems. Software such as AMS, PRM and FieldCare can capture and use diagnostic data from HART field instruments via the MTL HART connection hardware. This allows users to realise the full potential of their field devices to optimise plant assets, which results in significant operations improvement and direct maintenance savings.

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local MTL Instruments office, or via our website.

Terminal Enclosures and Connectivity

CEAG explosion protected terminal enclosures have been developed for instrumentation and control installations. They act as a link between the main cable to the control room and the branch cables into the field. In addition to this, they may also be used for the direct connection of actuators and sensors.

The robust design of the stainless steel terminal boxes provides a high degree of safety for offshore applications and in places where particularly adverse chemical, mechanical and climatic operating conditions prevail within the hazardous area.

STAINLESS STEEL TERMINAL ENCLOSURES

N-TB

The N-TB series is our premium range of enclosures making it the number one choice for instrumentation and electrical applications for highly demanding environments.

- Body 1.5 mm and 2.0 mm electro-polished 316L stainless steel
- High integrity “one piece” foam closed cell neoprene gasket
- M10 external/internal brass earth stud
- IP66 to IEC 60529 ingress protection
- -45°C to +80°C operating temperature
- Impact resistance, hazardous area 7J (Nm)
- Certification - ATEX, IECEx, cULUS to UL50/C22, No 94-M91 types 3S,4,4X, GOST-R, -K, Germanischer Lloyd, American Bureau of Shipping.

Ex CONNECTORS

eXLink Hot Swap Connectors

With eXLink Cooper Crouse-Hinds provides a NEW, complete system for connecting and disconnecting products electrically. This system is available in different versions for different applications.

The self-cleaning Ex-e multi-contact conducting pins provide permanent faultless electrical connection. To ensure that the contact system remains fully functional even during long-term use in aggressive environments all conducting pins are silver-plated. The quality of the connection means that the system is suitable for current in the mA range up to 16 A continuously. All eXLink plugs, inlets, receptacle and connectors are designed for hot swapping of apparatus in hazardous areas without disconnecting terminals, without shutting down circuits and without a “hot work permit!”

MULTI PURPOSE TERMINALS

More power for hazardous areas

The new multi purpose terminal employs a 2-step removal process to ensure that possible high energy sparks will be kept inside the flame proof enclosure of the terminals. The metal pins of the module remain within the flame proof area until the module is removed manually. At this point sparks will have been extinguished already and the module will be volt free.

Applications include:

- Fusing of Ex-d valves, signal lamps, sounders etc.
- Diode separation of supply circuits simple OR gate for Zone 1 mounting
- Visible disconnect of field devices
- Relay switch for power circuits
- Bus termination, current limitation, opto-coupler etc.

More detailed product information in separate, comprehensive catalogues or datasheets are available from your local Cooper Crouse-Hinds office, or via our website.

Services and Support

With our years of Intrinsic Safety and Foundation™ fieldbus experience the staff of MTL can provide instant value to your project – at any time in its lifecycle and at all stages of the project from Front End Engineering Design (FEED) to construction and commissioning right through to post-project network integrity maintenance.

MTL SERVICES - TAILORED FOR YOUR NEEDS

Getting it right from the start is the key to the success of any project and MTL is here to help you get your industrial network right. Regardless of whether you are designing a "traditional" analogue system, HART® based system or a complete digital system incorporating Foundation™ fieldbus, Industrial Ethernet and Wireless systems, MTL can add value tailored to your specific needs for Project Definition, Network Services and Knowledge Capture.

With our global network of Sales associates, help is never far away because it is the local sales person with whom you have been dealing for years, who will continue to be your interface to the complete MTL organization, helping you get your project completed on budget and on time, with real and sustainable benefits.

PROJECT DEFINITION AND SCOPE

Generate the rewards and synergies of early involvement of MTL at the front end of your project activities. In today's demanding environment finding the right skills at the right time is often as big a challenge as doing the work itself. MTL can help by either taking on responsibility for the Industrial network scope of your project or simply providing those "extra bodies," that are so hard to find today.

MTL's team of professionals provide you with unbiased expertise starting with FEED and specification development to commissioning and check out. Whether you want to handover complete responsibility for the industrial network to MTL – single source solution; have someone coach you through the process; help you over a hump; be there in the background, or simply have an impartial outsider give you the confidence that you are "on track", our team is here to help.

INTEGRITY AND AVAILABILITY

With security as a 'Top of Mind' issue and the ever increasing cost of network downtime, capitalise on the real benefits of a thorough and periodic 'Health Check' of your network infrastructure.

As we all embrace the new world of IP and Ethernet based technologies we must also face the challenges of the network security. MTL and its partners have several leading world authorities on this subject as part of our team. So not only do you get a well designed network, the solution will be secure as well. Of course, if you already have a system installed and need a third party audit to confirm that you really are as secure as you believe, MTL can help you again.

KNOWLEDGE CAPTURE

Enjoy the benefits of improved education and awareness of network support staff leading to smooth and efficient operations as well as a more structured approach to troubleshooting with time and cost savings.

DOCUMENTATION

MTL will also review the project specifications and Control Narratives. This will help identify potential savings opportunities and any non-compliances from the original design and specification, through more efficient network layout/design.

Another key deliverable of the Engineering design is the documents to verify that what is delivered meets the design intent. MTL can help here as well with preparation of the FAT, SAT, and Commissioning check sheets. Then when you actually are in the field, MTL again comes to your aid with support services including a person to assist with collection and verification of the baseline data and signal integrity between devices and host system.

TRAINING

The key to a successful project is knowledge. The MTL team can provide the necessary knowledge to your team at all stages of your project and to all the members of your team whether they be the engineering design team, installation contractor, maintenance team, or plant operators. Our programs are custom tailored to meet the needs of your project and your facility. Our training classes combine both theory and practice with extensive demonstrations and hands-on opportunities to quickly implement the new skills being transferred to your team. Since not all training is done in the classroom, as part of MTL's Solution, we can also mentor your team on a consultancy basis by providing design templates, worked examples and reviews throughout the project, not just key milestones.

'GETTING IT RIGHT FROM THE START IS THE KEY TO THE SUCCESS OF ANY PROJECT AND MTL IS HERE TO HELP YOU GET YOUR INDUSTRIAL NETWORK RIGHT.'

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